CFA Institute Research Challenge

Hosted in

CFA Society Finland

Team A

CARGOTEC

Industrial Goods & Services
Cargotec Oyj
OMX Helsinki (CGCBV)

CFA Research Challenge
February 10, 2019

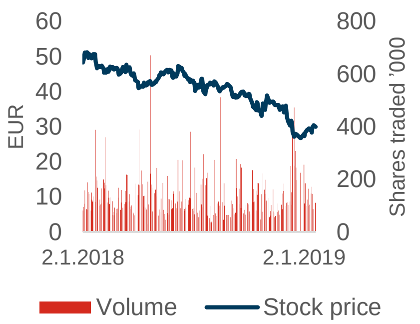
Recommendation: BUY

Target price	**EUR 41.00**
Fair Value	**EUR 41.24**
Share price[1]	**EUR 32.30**
Upside	**27.0%**

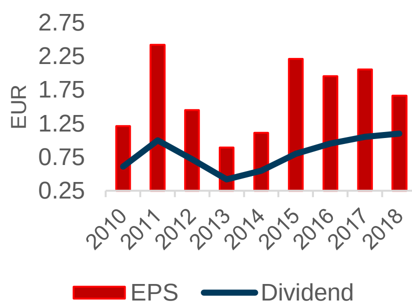
Key figures

Symbol	**CGCBV**
Listed share class	**B-series**
Annual dividend (EUR)	**1.10**
Dividend Yield	**3.3%**
52w Low (EUR)	**26.72**
52w High (EUR)	**50.65**
Avg. daily vol (3 month)	**221**
# of shares, total (m)	**64.33**
Revenue 2018 (EURbn)	**3.30**
Market cap (EURbn)	**2.08**
EV (bn EUR)	**2.72**
Free float (%)	**49.0%**
TTM P/E	**18.2x**
Beta	**1.39**

Share price development



Dividend/share and EPS



Cargotec Oyj, a global leading cargo-handling solutions provider, was formed in 2005 when it was demerged from Kone Corporation. Cargotec is listed in the Helsinki stock exchange.

Investment summary

We issue a buy recommendation on Cargotec with a target price of EUR 41.00, presenting 27.0% upside potential on the closing price of EUR 32.30 on February 8, 2019. Our valuation is based 50% on Discounted Free Cash Flow and 50% on EV/EBIT multiple valuation. Our DCF analysis values the equity of the company at EUR 38.22. Compared to the current market value this implies that the company is undervalued by 18.3%.

Our multiples approach yields an implied share price of EUR 44.25 which represents an undervaluation of 37.0%. We believe that Cargotec is severely undervalued compared to its peer group as it remains more profitable than most of its key competitors and is operationally more efficient than its competitors.

Further robustness to our valuation is provided by EV/EBITDA and P/E multiples valuation, sum-of-the-parts valuation, real option valuation and growth regression.

The key characteristics supporting our view are: (1) cargo handling automation, (2) increase in service revenue decreasing cyclicality and improving margins, and (3) expected further correction in valuation towards the levels of Cargotec's key peers.

1) Cargotec is best positioned to benefit from cargo handling automation trend. We see substantial potential in increasing investments for terminal automation globally. Cargo handling is expected to become increasingly data-driven, posing a significant upside potential to market leaders in the field. Cargotec as an automation market leader is best positioned to capture this potential. The trend is already ongoing: in 2018, Kalmar received five substantial port automation orders, one of which at the value of EUR 80m.

2) Increasing share of service revenue decreases cyclicality. Increasing service business sales will both decrease the cyclicality of sales and improve profit margins. Software and service revenue steadily increased at 10.3% CAGR over the last cycle while equipment sales were more driven by the macroeconomic environment. As the share of software and service revenue increases, Cargotec will become more resilient to market disruptions while also improving the overall profitability of the group in EBIT and free cash flow basis.

3) Market has overreacted to Cargotec's temporary supply chain issues and FX costs. We believe market has overreacted to Cargotec's temporary supply chain issues and consequent FX costs that sent its shares down by over 40% in 2018. Cargotec is trading significantly below its closest peers by almost any indicator. We see this discount to be unfounded, as Cargotec is more profitable on EBIT level than most of its peers driven by best-in-class operating efficiency as measured by NWC, Capex and inventory metrics.

KEY FIGURES

EURm	**2014**	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**
Total revenue	3,358	3,729	3,514	3,250	3,304	3,412	3,530
EBITDA (adj)	187	269	293	331	321	326	352
EBIT (adj)	106	192	208	259	244	246	269
EBIT (adj) margin	*3.2%*	*5.2%*	*5.9%*	*8.0%*	*7.4%*	*7.2%*	*7.6%*
EPS (adj)	1.47	2.46	2.77	2.62	2.52	2.63	2.90
DPS (ord)	0.55	0.80	0.95	1.05	1.10	1.16	1.29
EV/EBIT (adj)	16.5	12.4	13.5	14.0	11.1	11.0	10.1
P/E (adj)	18.6	13.4	16.2	18.6	12.8	12.3	11.1
P/BV	1.4	1.7	2	2.1	1.5	1.4	1.3
FCF yield	*3.9%*	*9.2%*	*8.7%*	*4.1%*	*3.3%*	*5.1%*	*6.0%*
Net debt	723	625	506	474	638	648	615
Net debt/EBITDA	3.5	2.2	1.8	1.6	2.4	2.1	1.9

Source: Thomson Reuters, Cargotec, Team analysis
Note: [1] Closing price as of February 8, 2019

Figure 1: Sales by geographic area, 2018

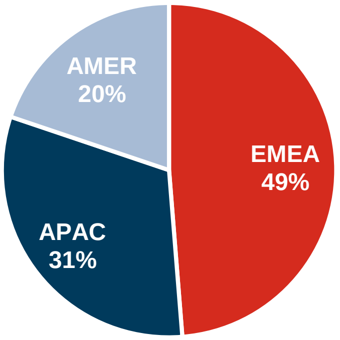


Figure 2: Sales by business area, 2018

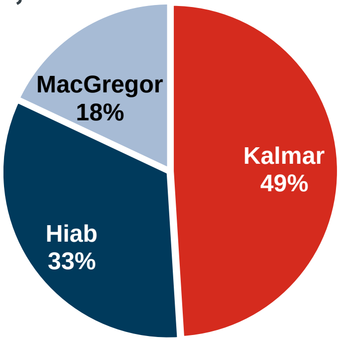


Figure 3: Order book 2017-2018

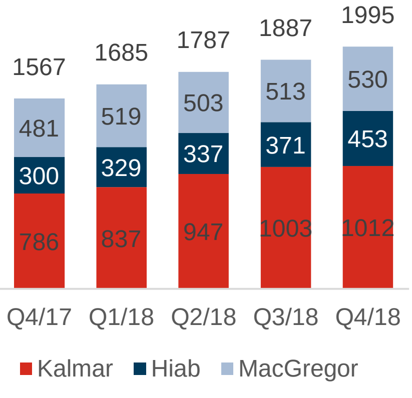
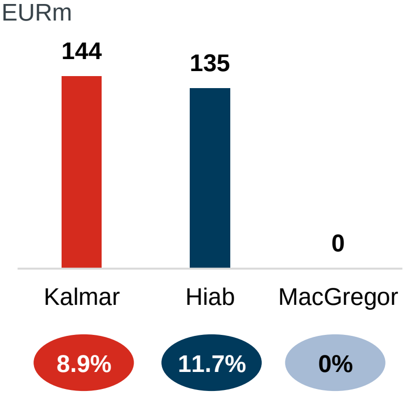


Figure 4: Business unit EBIT (margin), 2018



Current Highlights

Cost savings program proceeding. Cargotec was able to reach EUR 21m cumulative savings at the end of 2018 of the planned EUR 50m annual group-wide savings from 2020 onwards. The plan is to reduce indirect purchasing spend by over EUR 30m and improve support functions by EUR 20m. It opened new support function services in Sofia, Bulgary in January 2018. Moreover, EUR 13m savings for MacGregor in 2018 were fully realized and EUR 8m savings in Q4 of Kalmar's EUR 13m plan in 2018.

Successful M&A to strengthen abilities. In 2017, Cargotec acquired Rapp Marine to strengthen MacGregor's offering for fishery and research vessel, Argo to expand Hiab to Brazilian loader cranes and Inver Port Solutions to broaden Kalmar's services in Australia. Acquisition of TTS Marine and offshore business in early 2018 strengthens MacGregor's position and yields estimated EUR 30-35m annual cost synergies.

On track to leadership in digitalization. In 2017, it added 100 digital-focused employees and established an IoT Cloud data platform as well as XVELA industry collaboration platform. Software sales have grown by 54% since 2013. Target is to double software and digital services revenues during the next 3-5 years. Cargotec is in a good position to capture increasing port automation potential as only 1200 terminals are currently automated.

Share buyback program initiated in December 2018. Cargotec's Annual General Meeting of 20 March 2018 authorized the Board of Directors to repurchase up to 952,000 A shares and 5,448,000 B shares. The company's capital structure is well equipped for this as its Cash and cash equivalents were at EUR 189.3m as of 30 September, 2018.

2018 results and guidance for 2019 published on Feb 8, 2019. Operating profit (excl. restructuring costs) declined by 6% and landed to EUR 244m (EUR 259m in 2017). This was in line with the lowered guidance in late 2018. Kalmar's profitability was strong whereas Hiab was burdened by FX and supply chain bottlenecks. MacGregor suffered from capacity issues and project costs. Operating profit is expected to improve in 2019. Cargotec's share price increased by 10.8% during the announcement day.

Business description

Overview. Cargotec is a cargo and load handling solutions provider with headquarters located in Helsinki, Finland. Cargotec's class B shares are quoted on the Nasdaq Helsinki Large Cap list. It has three business areas: Kalmar, Hiab and MacGregor. In 2018, Cargotec reached total sales of EUR 3,304m (2017: EUR 3,250m), 7.4% EBIT margin (2017: 8.0%) and, at the end of the year, employed about 12,000 people (2017: 11,251). They have a global spread with operations in more than 100 countries of which 45 have Cargotec's own employees. Wide sales and service network enables serving customers locally. Manufacturing is largely outsourced to partner plants mainly in Asia. Cargotec has captured the 1st and the 2nd market positions in its major segments of container traffic, port automation, construction activity and ship building.

Geographic and business segments. The greatest part of Cargotec's sales comes from Europe. Geographical sales split is rather even between EMEA, APAC, Americas with EMEA representing the biggest market in 2018 with 49% (2017: 44%), Americas following with 31% (2017: 32%) and then APAC with 22% (2016: 24%) (Fig. 1). Sales in EMEA and Americas have grown while sales in APAC have decreased. When divided by business areas, Kalmar represented 49% of total sales in 2018 (2017: 49%), Hiab 35% (2017: 33%) and MacGregor 16% (2017:18%) (Fig. 2). Kalmar and Hiab grew by sales while McGregor decreased as the annual sales growth in 2018 was 1% for Kalmar, 6% for Hiab and -6% for MacGregor while the recent quarterly growth of the order books was positive for all during the period of 2017-2018 with 6.5% for Kalmar, 51% for Hiab and 10% for MacGregor (Fig. 3).

Kalmar. Kalmar has been operating for over 100 years currently offering cargo handling equipment and automated terminal solutions, software and services. In 2018, Kalmar totalled sales of EUR 1,618m, 49% of group total sales, and its EBIT-margin was 8.9% (EUR 143.6m) (Fig. 4). A trend in orders has been growing during the last 12 months with 29% growth in 2018 from 2017. Kalmar's offering includes straddle and shuttle carriers, terminal tractors, yard cranes, STS cranes, reach stackers and forklift trucks (App. 2). Navis terminal operating systems (TOS) for container and equipment optimization, Bromma spreaders and Xvela collaboration platform bring great future potential. Kalmar's customers include ports, terminals and distribution centres. Every fourth of the over 700 million yearly port containers moved is handled by Kalmar.

Source: Cargotec

Figure 5: Strategy

Vision	**Global leader in intelligent cargo handling**	
Must-win battles	Win through customer centricity	Accelerate digitalization
	Advance in services	Productivity for growth

Figure 6: Expected savings compared to 2016 cost level

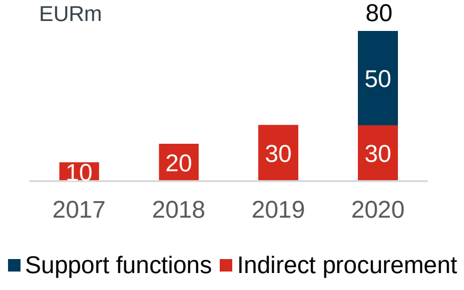


Figure 7: Service and software sales

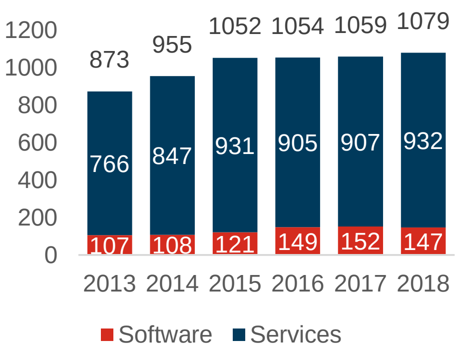


Figure 8: Revenue split – equipment vs service and software

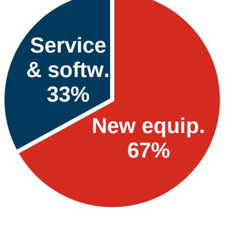
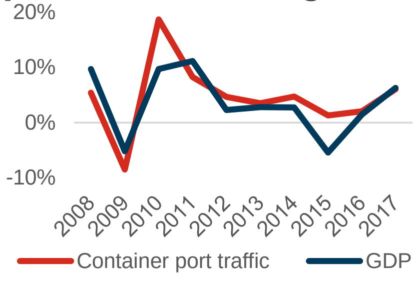


Figure 9: Global container port traffic and GDP growth



Source: Cargotec

Hiab. Hiab's offering comprises of products and equipment for loading, unloading and lifting things for its customers operating in on land transport and delivery. Hiab's 2018 total sales were EUR 1,149m (35% of total sales) with EBIT-margin of 11.7% (EUR 134.5m) (Fig. 4). It is the global market leader within on-road load handling solutions. Hiab's solutions include loader cranes, tail lifts, truck mounted forklifts, forestry and recycling cranes, hooklifts and skiploaders (App 2). It has expanded its service offering with spare-parts webshop in over 28 countries, ProCare™ service contract offering and HiConnect™ service providing users with real-time web-based insights. Trends in orders during 2017-2018 for Hiab was positive increasing by great 51%.

MacGregor. MacGregor provides engineering solutions and services designed for usage on the sea by its customers: merchant cargo and passenger vessels, offshore oil and gas and renewable energy sector, fishing, research and marine-resource vessels, naval operations and logistics vessels as well as ports and terminals. It positions as the leader in all maritime segments. MacGregor sales represent 16% of total sales totalling EUR 538m in 2018 while its EBIT dropped very low to 0.0% (EUR 0.1m) (Fig. 4). Its orders grew by 10% during 2017-2018. As much as 50 percentage of the world's ships carry MacGregor equipment. MacGregor's brand names are MacGregor, Hatlapa, Porsgrunn, Pusnes, Triplex and Flintstone.

Strategy. Cargotec has refined its strategy in Q3/2018 adding focus on customer centricity and productivity. Its vision is to become the global leader in intelligent cargo handling. Cargotec outlines four main strategic priorities to aim to win the competition. The first goal is to "win through customer centricity" by aligning offering better to customer needs. Second is to "advance in services" by extending their offering to intelligent solutions to serve customers across lifecycles. The third priority is to "accelerate digitalization" with new and expanded digital solutions for better customer experience and process efficiency. Forth and last main goal is to enhance "productivity for growth" by focusing on value-added development of operations and common platforms. (Fig. 5).

Financial targets. Cargotec's financial targets are to improve growth, profitability, service and software, balance sheet and dividend. In specific, Cargotec targets to 1) grow faster than the market through M&A and organic growth supported by megatrends and strong market position, 2) increase service and software sales to 40% of net sales, minimum EUR 1.5bn in 3-5 years, 3) a 10% operating profit and 4) a gearing less than 50% and increasing dividend in the range of 30-50% of EPS, to be paid twice a year. Profitability enhancement is planned to come from higher service and software sales, from cost savings with EUR 13m from Lidhult assembly transfer in Kalmar in 2018, EUR 13m in MacGregor in 2018 and EUR 50m from indirect purchasing and new Business Services operations in 2020 as well as through product re-design and improved project management. (Fig. 6).

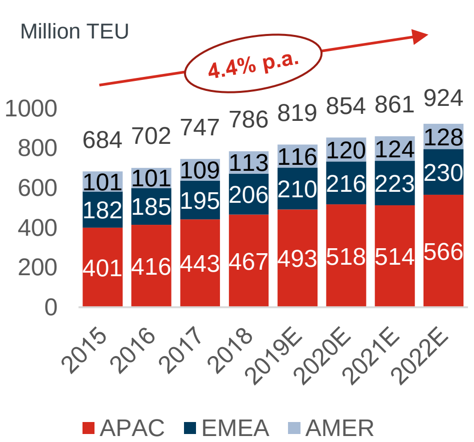
Service and software. Cargotec's service and software business as well asset-light business model provides stability and have proved steady growth with 6.6% annual growth for software and 4.0% annual growth for services during 2013-2018. (Fig. 7). In 2017, new equipment represented 67% of total sales while service and software business generated 33%. (Fig. 8). Cargotec service sales totalled EUR 907m in 2017 of which 50% from spare parts and 30% from maintenance. Cargotec believes services to provide their biggest medium term growth. It estimates the Equipment & Projects market size to be EUR 6bn of which its share is at 20-30%, the Software market to be EUR 0.5-1bn and the share also 20-30% as well as the Services market size to be EUR 8bn of which it has a 3-5% market share.

Industry overview

Megatrends supporting Cargotec. Long-term megatrends supporting market growth include digitalization, globalization, trade growth, urbanization and growing middle class. Importance relies on the ability to adapt to the changes of these trends. According to the OECD**,** global GDP growth will slow down a little in 2019 to 2.9% from 3.9% in 2018. Trade is projected to grow by a rate of approximately 3.7% in 2019 and private investment has revived supporting the growth as long as new tensions like trade war and vulnerabilities do not hinder the recovery. Global container port traffic and GDP growth are highly correlated (Fig. 9) and this market environment is forecasted to support shipping demand growth (3.4% in 2018). Current fourth industrial revolution requires adapting to the disrupting digitalization including big data, IoT and artificial intelligence (AI).

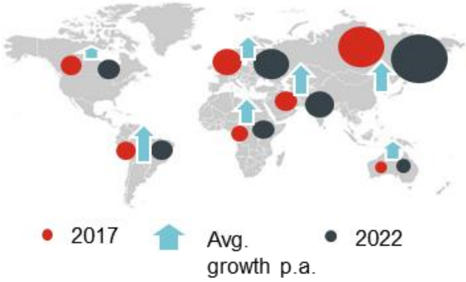
Key market drivers for the three business units. Kalmar is driven by container handling volume, Hiab by construction activity, and MacGregor by merchantor shipping sector development.

Figure 10: Global container throughput



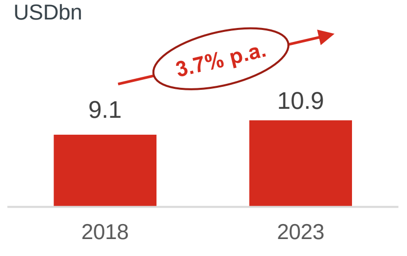
Source: Cargotec

Figure 11: Regional container handling volume and average annual growth 2017-2022



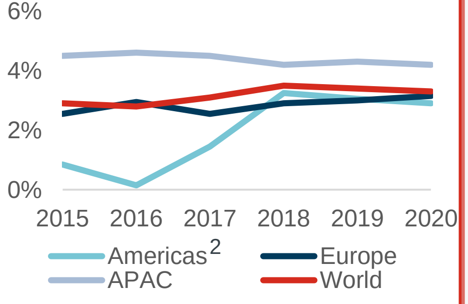
Source: McKinsey

Figure 12: Automated container terminal market



Source: Cargotec

Figure 13: Annual construction output forecast



Source: Cargotec

Market drivers for Kalmar. The key underlying driver is **container handling, as measured by global container throughput** (Fig. 10). Container handling volumes have seen continuous growth, and development in automation will likely increase volumes further. Currently, customers are taking first steps into automation and making rather phased investments but there lies great future potential. Changes in the container shipping industry follow growth in emerging markets, manufacturing footprints, dematerialization of demand and policy uncertainties.

Global container throughput has been growing at 4.4% annually, the biggest market APAC growing by 5.0% and the Americas and Europe by 3.4% p.a. (Fig. 10). **Average project utilization** is forecasted to increase from 68% in 2017 to around 80% by 2022. **Regional container handling growth** during 2017-2022 is expected to be highest in South America (6.6%) followed by Asia (6.1%) and the Middle East (5.8%). Europe and Australia are estimated to grow at 4.5%, Africa at 5.5.% and the US at 3.7%. **Intra-Asian container trade flows** are the largest supported by population concentration while India and Africa might become the next offshore hubs (Fig. 11; App. 4).

Current **replacement market** size for key terminal equipment is EUR 1bn and is expected to double in the next ten years as the container terminal capacity has rapidly expanded from TEU[1] 200m in 1995 to around TEU 1,800m in 2018. Industry megatrends support long-term growth such as the **ever-larger vessels** requiring more capacity from port operators and **tightened environmental requirements** that demand intelligent and sustainable machines**.** **I**n the year 2067, vessels will have grown to sizes of up to 50,000 TEU of today's maximum of 20,000 TEU following an increase in container trade becoming 2-5 times greater than today. **Continuing industry consolidation** and alliance building between shipping lines calls at multiple-terminal management and higher efficiency. **Digital and automated** solutions demand better operations. The automated container terminal market is expected to grow from USD 9.1bn in 2018 to USD 10.9bn by 2023, at a 3.7% annual growth rate (Fig. 12).

Market drivers for Hiab. The business is highly correlated with the **construction activity indicated by a construction output measure.** Construction activity is on satisfactory levels in Europe (Q2/2018 LTM growth 3.4%) and the US (Q2/2018 LTM growth 3.2%). The activity is expected to grow steadily in both regions until 2022 (App. 5). The estimated global growth for 2019 is 3.4% and for 2020 is 3.3% which is lead by APAC with a little over 4% annual growth (Fig. 13). Global construction output will grow by 85% to USD15.5tr by 2030, with 57% coming from China, US and India. Average global construction growth is estimated at 3.9% per annum to 2030, outpacing global GDP growth as developed countries are recovering, India in the lead.

Other key demand factors for Hiab are **overall economic development, investment activity into infrastructure, construction, or by housing, logistics investments and truck sales.** Important customer segments like construction, waste & recycling, logistics and governmental business display continuing growth. Regarding **geographic trends**, Hiab's main markets of North America and in Europe continue to grow while emerging markets show great potential for load handling equipment penetration.

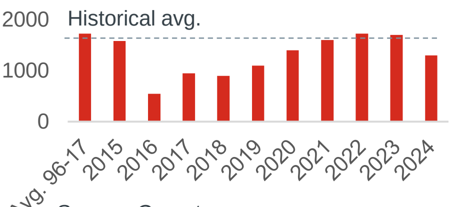
Market drivers for MacGregor. Demand is driven by global **seaborne trade and shipbuilding** and by **global offshore exploration and production spending** which are linked to energy price development. **Crude oil trade** is expected to increase by only 1.2% until 2022. However, there is expected an 18% annual growth of global offshore investments till 2025 after a significant drop by 22% annually during 2014-2010 (App. 6). Another key driver is the development of the merchant market. **Merchantor sector** has improved though orders remained at historically low level. Merchant ships have increased by 33% from 1-9/2017 to 1-9/18 while mobile offshore units have increased by 8% in the same period. These traditional core markets are recovering and supporting the industry growth as Cargotec expects an annual 7.6% growth during 2019-2024 while mobile offshore units are expected to grow by 2.9% in 2019 and by 4.3% annually during 2019-2024 (Fig. 14 & 15).

Competitive positioning

We continue to analyse Cargotec's stance in each business unit. Cargotec's competitive position is very strong: it is a market leader on all of its operating segments. Porter's Five Forces analysis finds a moderate to high threat of new entrants and substitutes. Cargotec's competitive advantage is driven by leadership in automation, high and increasing share of service and software revenue and strong track record of increasing order intake.

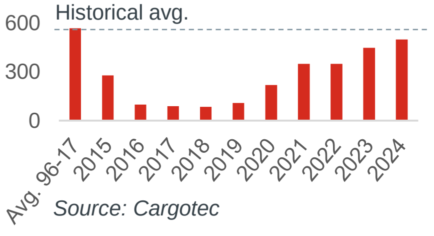
Sources: Cargotec, McKinsey, Global Construction Perspectives, Oxford Economics, OECD, Drewry, Rystad Energy
Note: [1] Twenty-Foot Equivalent Unit
[2] Americas represents the average of North and South America construction output growth

Figure 14: Long term contracting of merchant ships, 2015-2024



Source: Cargotec

Figure 15: Long term contracting of mobile offshore units, 2015-2024

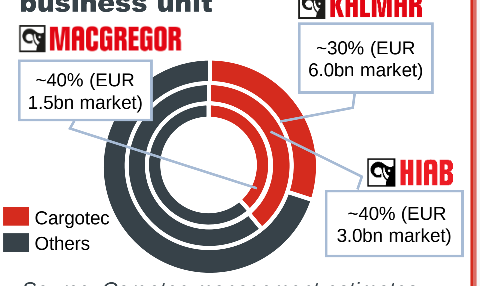


Source: Cargotec

Figure 16: Key competitors by business area

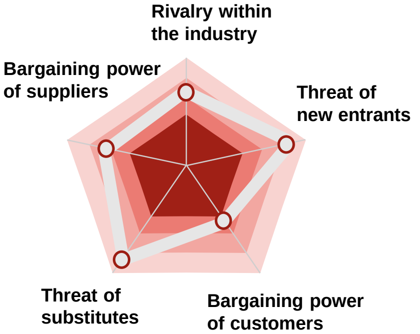
BU	Key competitor(s)
KALMAR	KONECRANES Lifting Businesses; ZPMC
HIAB	PALFINGER
MACGREGOR	KONGSBERG; Rolls-Royce

Figure 17: Market share by business unit



Source: Cargotec management estimates, Credit Suisse and team analysis

Figure 18: Porter's Five Forces



Source: team analysis

Competition by business area. The closest competitors for Kalmar are Konecranes and ZPMC, both of which are focused on port cranes (App. 7). The port equipment market is **moderately concentrated after years of industry consolidation** (e.g. acquisition of Terex's material handling and port solutions business by Konecranes closed in 2017). The on-road load handling market (Hiab) is dominated by two large and a myriad of smaller players and consequently, there is **only one competitor with both a similar offering and global presence**, Palfinger. MacGregor's key competitors are mainly **multi-industry giants** such as Kongsberg and Rolls-Royce and no single clear competitor can be named. Cargotec announced to acquire the marine and offshore businesses from TTS Group, previously the closest competitor for MacGregor, in February 2018. (Fig. 16 and App. 3 and 7)

Market shares. Cargotec is a **leading player on all of its business segments** and has substantial market share in large attainable markets (Fig. 17). Of the port cargo handling market, Kalmar holds approximately 30%. In on-road load handling as well as marine and offshore cargo flow industries, Hiab and MacGregor are clear leaders and substantially more focused than their competitors. Consequently, of those markets, Hiab and MacGregor hold approx. 40%, respectively.

Porter's Five Forces. The competitive position can also be analysed through Porter's Five Forces framework (App. 8). Cargotec aims to be the leader in intelligent cargo handling and port solutions and the investment in R&D and innovation have enabled Cargotec to distinguish itself from its competitors. Even though the price competition and rivalry within the MacGregor business area is heavy, on group level the competition is modest due to light competition in the cargo handling and port solutions space. The biggest threat to Cargotec's future business stems from the consolidation of its customers. As visualized in Figure 41, the maritime industry has consolidated into three large alliances and the same trend seems to ongoing in the landside operations. We estimate that **the increased negotiation power of Cargotec's customer base will have a moderate to considerable impact on the company's future business**. As the company operates in three separate business areas, the company is well-diversified in the landside and maritime industries. The company, however, does not provide solutions to air cargo industry solutions, which will as shown in Figure 42, rapidly grow in the next 20 years. Even though air cargo will take out a larger market share of the global cargo industry, we estimate the impact on Cargotec's business to remain modest. Cargotec has largely outsourced its manufacturing to partner companies, thus posing a risk of increased bargaining power of its suppliers. The company is not however heavily reliable on its partners as it can fairly flexibly move, spread and split up its manufacturing operations on a global scale.

Cargotec's competitive advantage. Cargotec has (1) a leadership position in terminal automation, (2) significant share of service and software business, and (3) strong order intake.

1. The macro trend of terminal automation, as discussed in the Industry overview section, provides a major competitive advantage for Cargotec who is the clear **leader in terminal automation solutions**. The automated container terminal market is expected to grow at 3.7% CAGR (Fig. 12), of which Cargotec could capture a significant share. As a supporting view, up to 55% of work activities in the transportation sector could be automated with existing technology[1].
2. A third of Cargotec's revenues come from services and software (Fig 8.) and therefore, the firm is able to yield income from high-margin and resource-light streams. This **high share of service and software revenue** also increases customers switching costs. As the share of service revenue increases, the underlying cyclicality is consequently expected to decrease – during the last financial crisis, service revenue was significantly more persistent compared to new equipment sales (Appendix 12).
3. Cargotec has been able to **steadily increase its order intake** (Fig 3.). This signals customers' trust in Cargotec's equipment quality and service level as well as competitive pricing.

Financial Analysis

Revenue. Historically Cargotec's revenues have been cyclical, which reflects the underlying business' dependence on the overall macroeconomic development. Kalmar's business follows to a large extent the global container trade development while Hiab's business model is related to new truck sales and to the residential construction industry. MacGregor's business follows the development of new ship orders with a lag, as its order to revenue generation is slow which is partly explained with the long build times of ships.

Source: Cargotec

Note: [1] McKinsey Global Institute (2019) Globalization in transition: The future of trade and value chains
Forward-looking values based on Thomson Reuters analyst consensus for peers, team forecasts for Cargotec

Figure 19: Revenue split between divisions

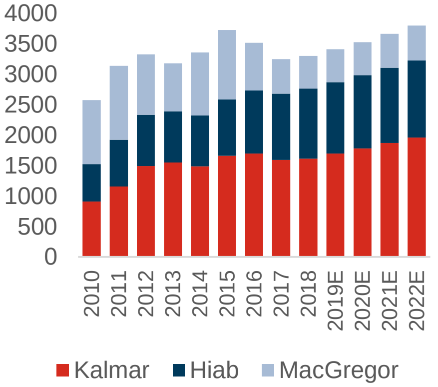


Figure 20: Service sales as % of revenue[1]

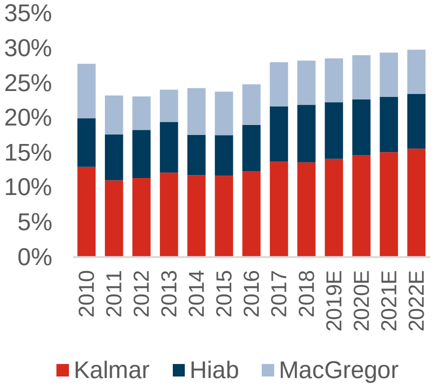


Figure 21: Operating profit and margin

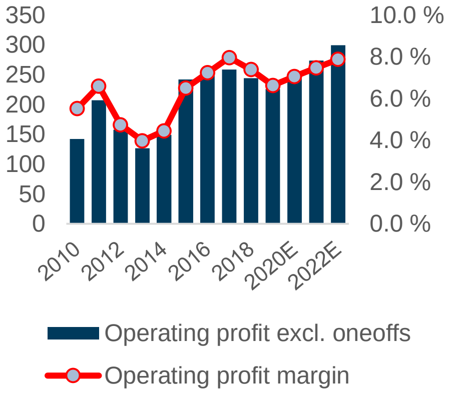


Figure 22: Cost of Goods Sold and R&D Capex per Revenue

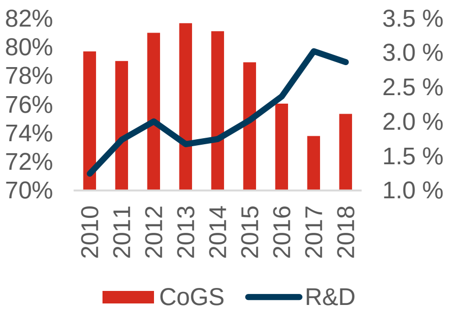


Figure 19 portraits the revenue split between Cargotec's three business divisions Kalmar, Hiab and MacGregor. Between 2010 and 2018, Kalmar has increased its share of Group revenues from a little over 35% to ca. 50%. Meanwhile, Hiab's revenues have grown steadily, increasing its share from 25% to 33%. MacGregor's revenues have decreased in that time due to the challenging market environment – caused mainly by the oversupply of merchant ships and lower oil price driven uncertainty causing weaker investment activity by its clients. MacGregor's revenues amounted to 16% of total revenues in 2018.

Figure 20 depicts the service sales to total revenues at each business unit. Kalmar is Cargotec's largest division revenue wise and has traditionally had the highest share of service sales to its own revenues (excl. 2017 and 2018) – a result of Cargotec's increased focus on maintenance, Navis software and port automation sales. The growth in Service sales in the 2010s came mostly from Kalmar and Hiab while MacGregor's Service sales growth has been flat.

Cargotec targets to generate a minimum of EUR 1.5bn from its service and software sales within 3 to 5 years, a CAGR of 10.6-18.3%. Currently, spare parts form 50% and maintenance 30% share of its total service sales. During downturn times, spare part sales have proved to be more robust than the maintenance business. With an increased focus on service, software and automation sales, we see Cargotec being on a path to being a less cyclical company as service sales are less dependent on macroeconomic trends.

Costs. Cargotec's cost base consists largely of its products' variable costs. Cost of goods sold (COGS) amounted to EUR 2489m in 2018, 75.4% of sales, and has averaged 78.5% of sales between 2010 and 2018 (Fig. 22). The company has increased its sales faster than its cost base as revenue growth amounted to a CAGR of 3.2% vs. COGS growing at a CAGR of 2.4%. Selling, general and administration expenses (SG&A) amounted to EUR 487m in 2018 (2017 EUR 495m). Administration expenses decreased by ca. EUR 20m from the previous year while sales and marketing expenses increased by EUR 13m.

Cargotec has in recent years implemented several cost savings actions by reducing indirect purchasing and outsourcing manufacturing as well as setting up a business service center. It has directed some of these savings to its research and development initiatives (R&D) which have focused on digitalization, competitiveness and cost efficiency of products. Average R&D as a share of revenue amounted to 2% between 2010 and 2018 and has grown by 14.5% CAGR demonstrating the company's willingness to invest in its products.

Continuing bottlenecks in component supply chain and equipment installation capacity in 2018 led the company to release a profit warning. The increased costs were a result of delivery problems from a key component supplier and consequent costs negatively affected the company's FX hedging performance.

Operating profit. Cargotec has enjoyed robust growth in its underlying business profitability in the past few years. Between 2010 and 2018, Cargotec's operating profit has grown over 33% - a CAGR of 3.7%. Its operating margin doubled between 2013 and 2017 due to higher service and software sales and cost-saving actions (Fig. 21). While revenue growth during the same time period has been moderate, the company has increased the share of its higher margin service business revenue, now accounting to ~28% of Group revenues.

As the largest revenue generating division, Kalmar also generates the most operating profit while Hiab has the highest operating profit margin. Hiab has also traditionally had the highest operational profitability while MacGregor's profitability has been weak in recent years due to difficult market conditions. In 2018 Kalmar's operating profit amounted to EUR 144m (EUR 133m 2017), Hiab's EUR 135m (EUR 157m) and MacGregor's EUR 0.1m (EUR 11m).

Net working capital and capital expenditure. Cargotec's net working capital (NWC) and capital expenditure (CapEx) per revenues have decreased in the 2010s. Average NWC/Revenue ratio for Cargotec amounted to 10.9% while its peer group's ratio was ca. 25%. Cargotec's Capex/Revenue ratio averaged to 2.45% while its peer group averaged to 2.85%. Figure 25 depicts these developments and provides evidence for Cargotec's superb operational efficiency over its peers[2].

We analyze Cargotec's inventory turnover in Figure 23. Cargotec's inventory turnover amounted to 3.76, on average, during the 2010s while its peer group averaged 3.06. It seems that Cargotec is able to generate sales with a smaller proportional inventory than its peer group i.e. it has to tie up less cash in its operations. We believe that this is the result of Cargotec's focus on outsourcing in recent years. Cargotec's asset light business model derives from having no in-house component manufacturing and efficient assembly operations – resulting in higher operating profit margins than its peers during 2016 and 2017.

Source: Cargotec, IMF, team analysis.
Note: [1] Service sales in Figure 20 do not include software sales.
[2] Peer group includes ABB, Konecranes, Palfinger, Terex, Kongsberg, Rolls-Royce and NOV (App 13).

Figure 23: Inventory turnover

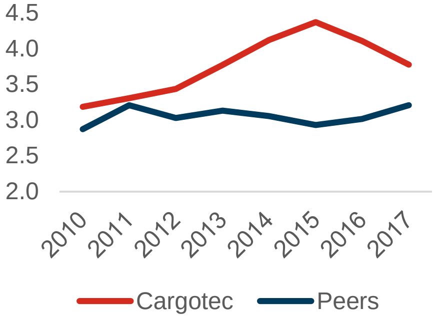


Figure 24: Net debt and gearing ratio

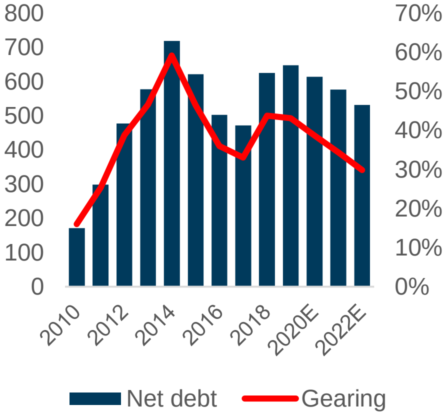


Figure 25: Acquired revenue, 2016-2018[1]

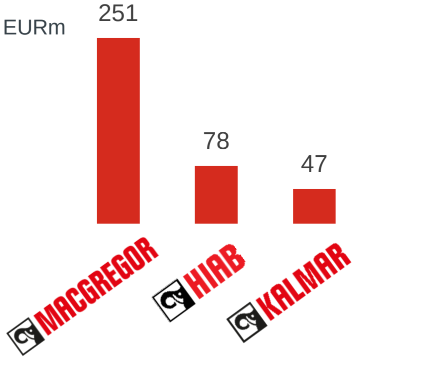
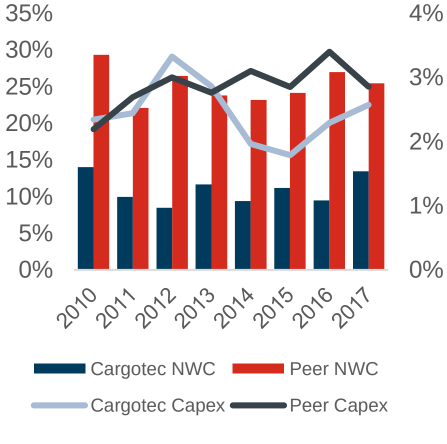


Figure 26: NWC (LHS) and Capex (RHS) as % of revenue



In Appendix 26, we present our analysis of Cargotec's 2017 free cash flow to firm (FCFF) components peers showing how Cargotec generates higher operational cash flows per revenue than its median peer. Cargotec's FCFF/Revenue is in line with the median peer thus shedding support for the company's persistent undervaluation relative to its peer group.

Forecasted future performance. We believe that growth in the service sales is key to reaching the 10% operating profit target and here Kalmar plays an important role. While Kalmar has a significant market share in both global equipment and software business' (20-30%), its services business still has market share to be captured (currently 3-5%).

Kalmar's main clients', the port terminal operators, largest cost items are personnel costs which could be reduced by up to 60% with port automation according to Cargotec. The underlying sentiment in the port automation business has so far been cautious but once the container terminals begin their automation investments, Cargotec is poised to receive a substantial part of these as one of the market leaders. Currently, the ports' capacity utilizations are increasing thus pressuring the port operators to increase their capital expenditure, as the maritime traffic forecasts remain strong. We believe that port automation will drive at increasing level Kalmar's revenues.

As Cargotec holds a significant market share in the equipment business, and given that the market is relatively consolidated, we believe that the main factor driving its growth in the equipment business is the overall market's growth. These drivers remain robust, as the global economy and world trade are poised to growth by ca. 4% p.a. during 2019 giving support especially to Kalmar. Key drivers for Kalmar include container throughput and automated container terminal growth while Hiab benefits from construction output and global truck volume growth. MacGregor's revenues are driven by the trend in the long-term contracting and containership fleet growth.

Our forecasted future performance for Cargotec is based on the continued strong development of key macroeconomic drivers. We see no immediate turnaround in MacGregor's situation until 2021 when the oversupply of merchant ships should turn around with the shipping industry's consolidation and stabilized oil prices resulting in increased offshore drilling. We see significant upside potential for Cargotec in the booming port automation business where Kalmar has received five major deals in 2018.

Financial targets. Cargotec's financial targets are focused on healthy capital structure and countering the business cyclicality with increased service sales. The company has a dividend policy in place which aims to pay out an increasing 30-50% dividend of EPS while maintaining gearing levels below 50%. Traditionally Cargotec's net debt has varied significantly from the lows of EUR 171m in 2010 to the highs of EUR 719m in 2014 depending on business performance and on any financed M&A transactions, as seen in Figure 23.

M&A strategy. Cargotec has actively pursued its M&A strategy focused on bolt-on acquisitions in order to achieve its target of growing faster than the market. Cargotec seeks target companies that are able to expand its service footprint and software offering, geographical presence and installed base. Figure 24 shows how recent transactions have supported Cargotec's revenue growth and from it, we see that inorganic growth has largely focused on the marine division MacGregor that has acquired several distressed assets and software companies in recent years.

Cyclicality assessment. Appendix 14 depicts the cyclicality assessment of Cargotec. We map the new equipment and service revenues over the previous recession and see that Cargotec's service business is more robust to cyclicality, growing at an 11% CAGR between 2005-2018. Cargotec's new equipment business follows closely its order book development and is largely affected by the current macroeconomic cycle. An increased share of service revenue protects the company against cyclicality and is likely to provide the company a competitive advantage. Cargotec reported a record development in its order book growth in its 2018 results, which we see supporting for our growth model.

Off-balance sheet items. We have analyzed Cargotec's off-balance sheet items that consist mainly of operating leases, gross worth at the end of 2018 totaling EUR 203.2m (2017 EUR 189.4m). These will be capitalized to Cargotec's balance sheet with the introduction of IFRS 16, growing Cargotec's 2018 gearing ratio from 43.8% to 58.0% and increasing its EBITDA as lease expenses decrease (EUR 45m in 2018). As this might decrease comparability between the peer group, we've chosen to use EV/EBIT for our multiples valuation. We have also noted inconsistencies in the discount rate used to calculate the present value of these leases: 20%, 15% and 0% for leases maturing in less than one year, between 1 to 5 years and in over 5 years, respectively[2].

Source: Cargotec, IMF, team analysis.
Note: [1] Includes acquisitions of Rapp Marine, Flintstone, TTS Marine, Argos, Effer, INVER and Interschalt
[2] Discount rates from 2017 Annual Review.

Figure 27: Assumptions for WACC

Risk-free rate	1.4%
Equity-risk premium	6.1%
Levered beta (1 year)	1.39
Cost of Equity	9.9%
Pre-Tax Cost of Debt	2.2%
After-Tax Cost of Debt	1.6%
Tax Rate	27%
Net Debt (Bn EUR)	0.64
Market Cap (Bn EUR)	2.08
Enterprise Value (Bn Eur)	2.72
WACC	7.35%

Figure 28: Scenarios for share price

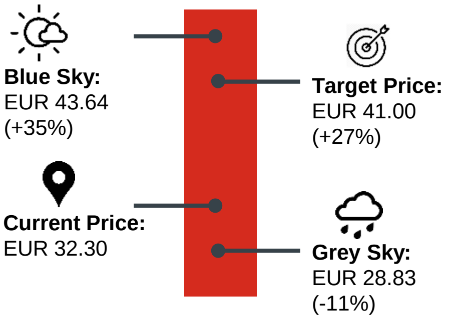


Figure 29: Valuation range

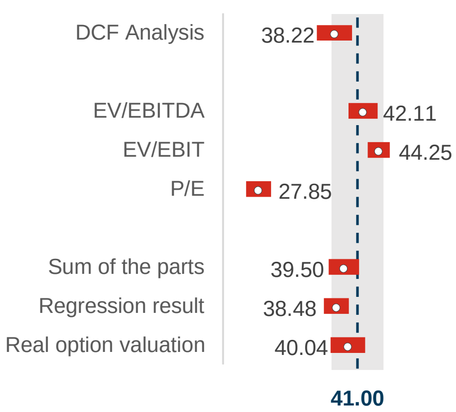
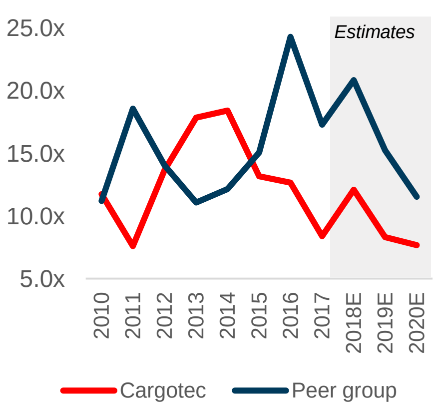


Figure 30: Cargotec and avg. peer group EV/EBIT[1]



Valuation

We issue a BUY recommendation on Cargotec with a target price of EUR 41.00, representing a 27.0% upside. We complement our DCF model with multiples analysis to understand where the company should trade at based on its future performance and current peer group valuation.

Our target price calculation is based on 50% DCF model with a target price of EUR 38.22 and 50% EV/EBIT multiple analysis with a target price of EUR 44.25.

Sales growth. We estimate Cargotec's group revenue growth to gain new momentum after long on-going restructuring implementation is finished and as Cargotec's investments to software development is realised. Furthermore, Cargotec's strong order book gives future growth solid foundation. Revenue development for Hiab is mainly driven by global construction. Cargotec's revenue growth will achieve 3.8% by 2022 mainly driven by Kalmar's strong growth output with a stable growth rates between 2-3%. MacGregor will achieve a positive revenue growth by 2021 (App. 20).

Adjusted group EBIT. Group's adjusted EBIT level will reach the targeted 10% by 2025 from the current 7.4%. EBIT margin development is mainly driven by increased service and software sales supported by the ongoing restructuring program. Unadjusted EBIT will also improve by 2019 as current levels of one-offs will decrease after 2018. Kalmar reaches adjusted EBIT level of 9% by 2022 and the targeted 10% by 2025. Hiab is expected to increase their margins from the current 10.9% to 11.5% by 2022. MacGregor, is expected to achieve modest adjusted EBIT margin of 2.3% at the same time.

Balance sheet. We expect capital expenditure to increase due to investments in PPE & increase in D&A until 2022. In the same time horizon we expect working capital to follow the development of group revenue while considering the changing mix between service/software & new equipment business. After 2020 we expect NWC growth to slow down as temporary supply chain problems are expected to be resolved by then, releasing excessive inventory levels.

Risk-adjusted discount rate. We apply a weighted average cost of capital rate of 7.35% to our projected cash flows. See Figure 27 for WACC components.

Free cash flow to firm. The FCFF model was selected as Cargotec has stable cash flows. Free cash flow to firm is expected to increase over time in two phases. The first phase of stronger growth is based on a detailed year-to-year revenue & cost forecasts up to 2022, where we believe Cargotec's strong focus on software & service development allows them to fully capitalize on the market growth. The second phase consist of constant growth of 2.0%. Based on our FCFF analysis, the estimated price for Cargotec's B-series share is EUR 38.22.

DCF analysis. To assess the robustness of our DCF valuation, we evaluated the sensitivity of our result for the most influential inputs, namely WACC and the terminal growth rate. The sensitivity analysis show the upside potential to be moderately sensitive to WACC and more sensitive to the perpetual growth rate (App. 27). However, given the nature of Cargotec's business we believe the terminal growth rate of 2.0% is moderate.

Multiples valuation. We value Cargotec with a multiples analysis method to reach a value for its equity. We analyse Cargotec's global competitors and form the peer group of them for Cargotec's valuation. We calculate P/E, EV/EBIT and EV/EBITDA for the peer group companies, remove outlier ratios and calculate a median of them. We choose to use EV/EBIT multiple for our valuation as it provides the best comparability between companies. The IFRS 16 standard requires operational leases to be capitalized which might decrease the comparability between companies on an EBITDA level. We chose not to use P/E as two of the peer companies had posted negative net incomes.

Our analysis shows that Cargotec trades below its peers both at EV/EBIT and EV/EBITDA levels and slightly above on P/E level. We calculate a median EV/EBIT of 17.5x for the peer companies and use this to valuate Cargotec's equity to EUR 2,845m or EUR 44.25 per share. This represents a 37.0% upside potential over the share price as of close on February 8th, 2019. Our analysis reveals that Cargotec's share price is being significantly discounted to its peers' which we find unjustified as Cargotec's operational efficiency is better and its underlying business' profitability on par with most of its peers.

We see the markets severely undervaluing Cargotec due to its recent temporary supply chain issues and FX hedging losses and the sustained underperformance in the marine crane division MacGregor. Our view is that Cargotec is poised to benefit from the upcoming port automation investments and continuing macroeconomic trends driving its equipment and service businesses.

Source: Cargotec, Thomson Reuterns, team analysis

Note: [1] 2018 reported EBIT for Cargotec and Konecranes, analyst mean EBIT estimates used otherwise in 2018-2020
Forward-looking values based on Thomson Reuters analyst consensus for peers, team forecasts for Cargotec

Figure 31: Composition of the Board of Directors

Ilkka Herlin (CoB)	Peter Immonen
Tapio Hakakari	Teresa Kemppi-Vasama
Teuvo Salminen	Johanna Lamminen
Kimmo Alkio	Kaisa Olkkonen
Jorma Eloranta	Heikki Soljama

Figure 32: Composition of the Executive Board

Name	Position
Mika Vehviläinen	CEO
Mikko Puolakka	Executive Vice President, CFO
Mikael Laine	SVP, Strategy
Soili Mäkinen	SVP, Digitalisation
Mikko Pelkonen	SVP, Human Resources
Antti Kaunonen	President, Kalmar
Scott Phillips	President, Hiab
Michel van Roozendaal	President, MacGregor

Figure 33: Share classes

Share class	Shares ('000)	%	Votes ('000)	%
Class A	9,526	14.7	9,526	63.3
Class B	55,182	85.3	5,515	36.7
Total	64,708	100.0	15,041	100.0

Figure 34: Ownership, total shares

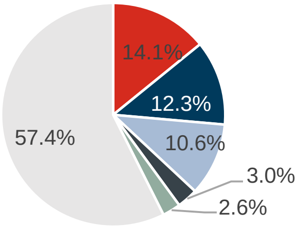
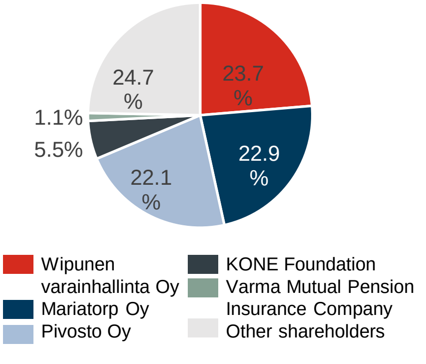


Figure 35: Total voting rights



We believe that the management is able to meet its financial targets of 1.5bn service sales within 3-5 years and a 10% operating profit margin by 2025. We also see a steady change in the drivers behind MacGregor's revenues, an increase in long-term contracting, shipping fleet growth and sustained increase in oil price which should change the course in the division's performance by 2021.

Scenarios analysis. In addition to our base case for the DCF model, we tested several scenarios to asses the fair value for Cargotec share (Fig. 26). In our most positive case we left Cargotec's revenue drives as is, but assumed Cargotec could reach their EBIT target by 2023. In our grey-sky scenario we assumed an economic downturn in 2019-2021 which affect Cargotec's revenue growth & EBIT levels (App. 21). Despite these pessimistic assumptions our analysis show possible downside of only 10.7%.

Real option & regression analysis. We analysed the robustness of our DCF & multiples analysis by conducting real option analysis (App. 28), Sum-of-the-parts analysis (SOTP) (App. 29) and Sales CAGR '19-20E to EV/EBITDA regression (App. 30). All of these alternative analyses show an underpriced asset.

Corporate governance

Board of Directors. Cargotec has a Board of Directors consisting of ten members (Fig. 31). Board members are elected at the AGM for a term of office of one year. The Board includes Audit and Risk Management, and Nomination and Compensation committees. BoD is reported to be highly independent from the company: all members are independent of the company and all members except Mr. Herlin and Mr. Immonen are independent of major shareholders. However, we think Mr. Herlin's independence should be re-examined as he has been the CoB for nearly 14 years and is by a significant margin the largest shareholder. BoD has a diversity policy to include diverse work experience, culture, education, age and gender. Currently, there are seven male and three female directors. There is no term limit for BoD members, and consequently, three members have served in the board for over ten years. This could raise concerns for courage to innovate or change strategic directions. Some members hold positions in up to five other boards, potentially raising concerns if sufficient time is allocated to Cargotec. There are no non-Finnish members, which could limit both the experience and credibility of overseeing an international business. (App. 34).

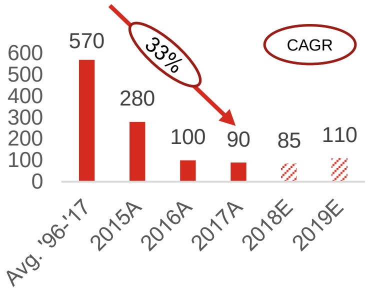
Executive Board. The Executive Board currently consists of eight members and is lead by the CEO (Fig. 32). Executive Board is responsible for business development and overseeing operative activities along with the targets set by the BoD and CEO. In early 2018, the SVP of Digitalisation Soili Mäkinen was included to the Executive Board, signalling a strong focus in digitalization: Cargotec is clearly considering IT to be critical for future growth. Scott Phillips was nominated as the President of Hiab business area in August, 2018. During his 28-year career he has served in various global management positions in construction and mining businesses, providing valuable experience to Hiab. As a whole, the Executive Board holds wide experience in leading industrial companies. Nearly all executives are of Finnish origin. The compensation structure for the Executive Board consists of a base salary and an incentive plan based on short and long term targets. (App. 32 & 33).

Shareholder structure and rights. Cargotec has two classes of shares, of which B shares are listed on the Nasdaq Helsinki stock exchange and A shares are unlisted (Fig. 33). At the AGM, each class A share is assigned one vote, as is each block of ten class B shares. Therefore, the owners of the unlisted A-shares have a significant voting power. The largest shareholder is Wipunen varainhallinta Oy (controlled by CoB Ilkka Herlin). Together, the three largest shareholders Wipunen varainhallinta Oy, Mariatorp Oy (controlled by Mr. Herlin's brother Niklas Herlin) and Pivosto Oy (controlled by Mr. Herlin's sister Ilona Herlin) hold 37% of total share ownership and 69% of voting rights (Fig. 34 & 35). The larger voting power of A-shares works as a strong takeover defence, potentially raising corporate governance concerns and the concentrated ownership decreases free float. However, as the Herlin family is well-know for its business successes, this can also be a signal of a strongly managed company.

Sustainability. Cargotec communicates strong emphasis on sustainability and corporate responsibility issues. The Cargotec Sustainability Council aligns corporate and business area level strategies and setting concrete and measurable sustainability targets annually. These targets support and link to United Nations' Sustainable Development Goals. Cargotec reports its sustainability measures using the GRI index. (App. 35).

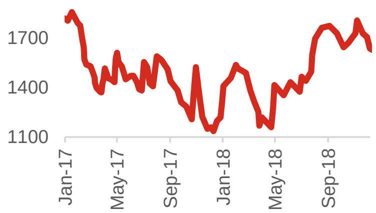
Source: Cargotec, team analysis, Thomson Reuters

Figure 36: Long term contracting 2015-2024, Mobile offshore units, CAGR (%) 2015A-2018E



Source: Cargotec

Figure 37: World Container Index (US$/40ft container)



Source: Drewry

Figure 38: Cargotec's acquisitions in 2016-2018

Source: Cargotec

Figure 39: Balance sheet exposure to currency risks

Currency	Balance sheet exposure	Net exposure (EURm)
EUR	101.9	3.2
USD	-282.4	16.2
SEK	90.2	-7.1
PLN	21.0	-19.7
NOK	49.0	-0.2
CNY	24.1	-1.5
Others	-3.8	9.1

Source: Cargotec

Risk analysis

Macroeconomic risks. Maritime transportation and offshore industries have had a difficult market environment in recent years and there is a significant risk of the trend to continue in the upcoming years. As in Figure 36, the long-term contract market for mobile offshore units has decreased significantly in the recent years. The market risk has had a significant negative impact on MacGregor's business and the continuation of the trend would imply a need to downsize MacGregor's operations.

The slowing growth in the European and global cargo transportation might have a negative impact on Kalmar and Hiab's business. World Container Index (Fig. 37), a composite of freight rates on eight major routes to/from the US, Europe and Asia, showcases a negative turn in global cargo transportation. The decline poses a risk to Kalmar and Hiab's order volume growth, which if realized, will have a negative impact in Cargotec's top line growth.

Trade war poses a risk for Cargotec's business. The company's three business areas operate in over 100 countries and they have a significant operational emphasis on the US and China. The on-going uncertainty could potentially delay customers' investment decisions and Cargotec could potentially shift manufacturing capabilities to the USA to avoid tariffs. Even though trade war is a significant threat, the management has signalled that large cranes such as ASC's and RTGs are expected to avoid the proposed tariffs.

Consolidation of the global shipping lines weakness negotiation power of Cargotec. In the past decades, the container lines have formed increasingly larger alliances and consolidated the market through mergers and acquisitions. In the maritime industry, three large alliances, 2M, Ocean Alliance and The Alliance, have been formed in recent years. By joining forces and forming alliances, carriers have strengthened their bargaining power vis-à-vis seaports when negotiating port calls and terminal operations[3].

Operational risks. Inefficiencies in production are causing a bottleneck problem for Hiab and Kalmar. A strong order book growth accompanied with supply chain issues have led to a margin shrinkage. According to management, the root cause of the supply chain issues for Hiab stem from Polish factory's key component delivery problem. The factory has been a long-term problem for Hiab's product but according to the 2018 Q4 report, the risk of the supply chain issues to continue in the future has decreased. For Kalmar, the bottleneck problem is due to the very strong order book development. The issues on Kalmar's side are less severe risk for the company as the supply chain hiccup a demand-driven issue.

Labour union strikes could have a large negative impact on Cargotec. Transformation towards automation, for instance in ports, will lead to laying off employees. Labour unions' strikes would have a large negative impact on Cargotec's operations. For instance International Longshoremen's Association, the largest union of maritime workers in North America, are currently protesting against the expansion of automated terminals in the port of Los Angeles[4].

The transformation from manual to automated operations could lead to **operational delays**, which in turn would cause severe bottlenecks as well as hit margins. Even though the risk is not likely, if realized, the impact for the existing terminals would be severe.

M&A strategy focusing on **bolt-on acquisition** – company has done many acquisitions. As in Figure 38, Cargotec has done seven acquisitions that in total have generated EUR 376m inorganic growth. Even though the company has capabilities for post-merger integration, the expected synergies could prove to be lower than the company expects.

Financial Risks. Cargotec is exposed to **foreign currency risk** stemming from on- and off-balance sheet items. The balance sheet exposure and net exposure are shown in Figure 39. The consequent FX costs have pressed Cargotec's share price down. As of now, the risk of future troubles seems to be on the low end. At the moment, the net exposure to currency risks is relatively small due the fact that the company has exposure in most of the currencies Cargotec receives sales and thus there is a natural hedge against currency fluctuations.

Regulatory and Legal Risks. Operations may involve **legal risks relating to contracts with customers** and for instance, severe delays in supply could lead to additional **contractual penalties**. As the manufacturing of Cargotec's products involves manual labour, the company could face a class action lawsuit if **safety rules** would be violated in company factory or the machines cause danger for the operators. Cargotec worldwide operations are effected by different jurisdictions. Failures in compliance can result in penalties and fines, potentially impairing company's business.

Source: [3]UNCTAD, Review of Meritime Transport 2018; [4] International Longshoremen's Association website,
Notes: [1]Flintstone sales has not been disclosed
[2] Interchalt business is split between Kalmar and MacGregor business areas.

Term or abbreviation	Definition
ASC	Automated stacking crane
APAC	Asia-Pacific
Construction output	Construction production volume, a key market driver for Hiab
Container throughput	A measure of the number of containers handled over a period of time. It is a standard measure for the productivity of a seaport. Container throughput is measured by twenty-foot equivalent units (TEU). Key market driver for Kalmar
EMEA	Europe, Middle East and Africa
HiConnect™	Service offering for Hiab equipment. Real-time dashboards showing the utilisation, condition and operation of connected equipment.
HiVision™	Software to control the movement of a forestry crane from a truck cabin
Hooklift	Hydraulic lifters that can be mounted on heavy-duty trucks
Loader crane	Crane attached to a truck
Merchant cargo	Commercial shipping of products, goods and materials
Navis	Cargotec's terminal operating system (TOS) brand
Offshore	Industrial activity at sea, e.g. drilling and pumping at an oil or gas well
OneTerminal	Kalmar's OneTerminal is an integrated automation solution that brings together Kalmar and Navis software systems, equipment and services
Reachstacker	A machine for container handling, industrial handling and intermodal handling
RMG	Rail-mounted gantry crane
RTG	Rubber-tyred gantry crane for large terminals
RoPax vessel	Roll-on/roll-off passanger vessel for freight vehicle transport and passenger accommodation
RoRo vessel	Roll-on/roll-off vessel, designed to carry wheeled cargo that are driven on and off the ship
Shuttle carrier	Carriers to pick, carry, stack and ground containers or for example moving containers from ship to shore
Skiploader	Hydraulic truck-moundable loader to lift pallets
Straddle carrier	Carriers for ship-to-shore operations
STS	Ship-to-shore crane for moving containers from ships to terminal
Tail lift	Mechanical lifting device that can be attached to the rear of a truck or other vehicle
Terminal tractor	Terminal tractors can be used for short distance transportations in ports and container terminals, distribution and logistic centres as well as industrial sites
TEU	Twenty-Foot Equivalent Unit which can be used to measure a ship's cargo carrying capacity. The dimensions of one TEU are equal to that of a standard 20′ shipping container. 20 feet long, eight feet tall.
TLS	Terminal logistic system
TOS	Terminal operating system
Truck mounted forklift	Forklifts for loading and unloading cargo without assistance. Fits at the rear of a truck or trailer

Source: Cargotec

Appendix 2 Description of Cargotec's offering by business unit

Unit	KALMAR	HIAB	MACGREGOR
Sales (EBIT %)[1]	1,618 (8.9%)	1,149 (11.7%)	538 (0.0%)

Products and services

KALMAR

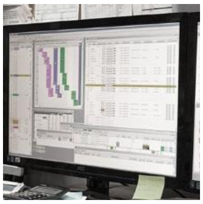

Straddle and shuttle carriers


Ship to shore cranes


Terminal tractors


Reachstackers


Forklift trucks


Automation and software

HIAB


Truck-mounted forklifts


Forestry and recycling cranes

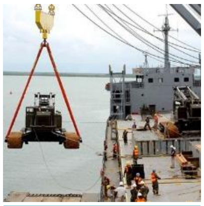

Loader cranes


Tail lifts


Skiploaders and hooklifts


Services and systems

MACGREGOR


Merchant cargo products


Offshore oil and gas solutions


Fishery and research cargo


Naval logistics


Port and terminal cargo


Services and maintenance

Source: Cargotec
Note: [1]2018, EURm including restructuring costs

Appendix 3 Herfindahl-Hirschman Index of market concentration[1]

Cargo handling

Company	Market share	Sq. market share
Kalmar	30%	900
Konecranes	22%	484
ZPMC	10%	100
Liebherr	12%	144
ABB	8%	64
Others	18%	324
HHI		**2016**

Moderately concentrated

On-road load handling

Company	Market share	Sq. market share
Hiab	38%	1444
Palfinger	35%	1225
Fassi	10%	100
HMF	8%	64
Others	9%	81
HHI		**2914**

Highly concentrated

Offshore and marine

Company	Market share	Sq. market share
MacGregor	38%	1444
Kongsberg	27%	729
Rolls-Royce	20%	169
IHI	13%	400
Others	2%	4
HHI		**2746**

Highly concentrated

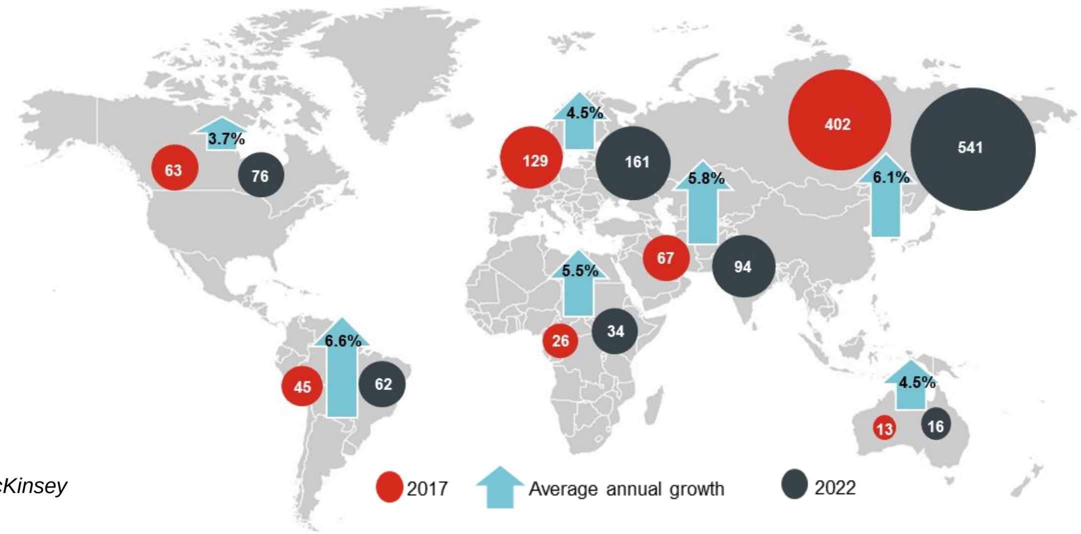
Herfindahl-Hirschman Index limits

<1500: Unconcentrated 1500-2500: Moderately concentrated >2500: Highly concentrated

Source: Team analysis, Credit Suisse, European Comission, Thomson Reuters
Note: [1] Global excluding China, subject to definitions of the target market and estimations on the share of total revenue applicable to each market.

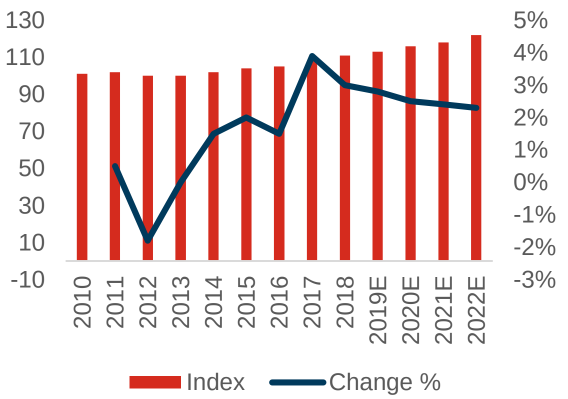
Appendix 4 Projected regional container handling (million TEU) and annual growth (%), 2017-2022

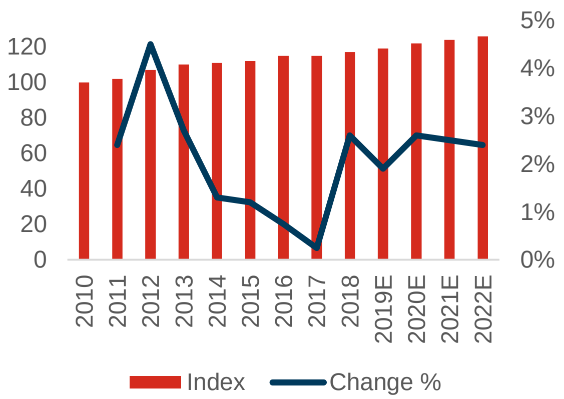
Regional container handling growth on average during 2017-2022 is expected to be highest in South America at 6.6% following Asia at 6.1% and Middle East at 5.8% annually indicating growth in developing countries.



Source: McKinsey

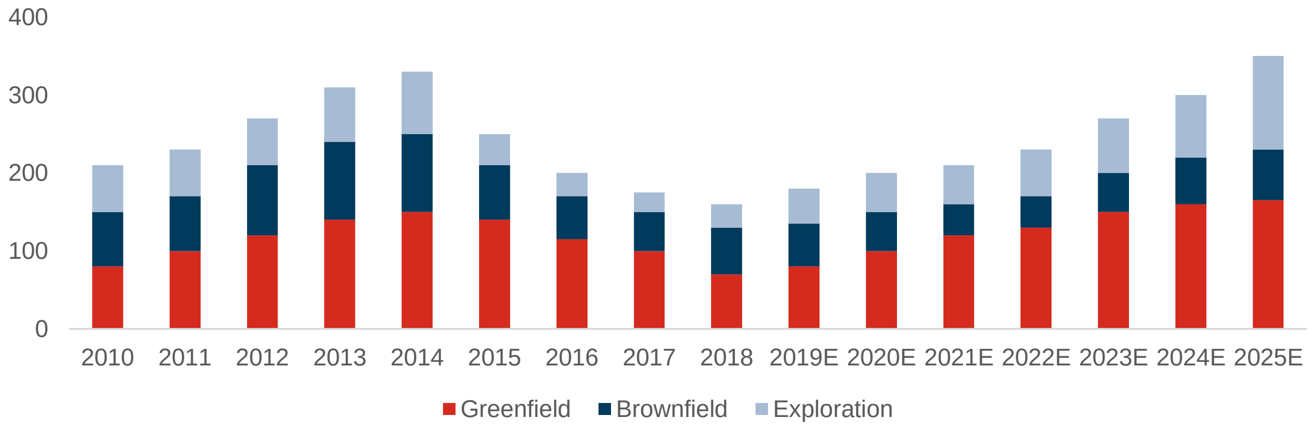
Appendix 5 Construction output





Source: Cargotec

Appendix 6 Global offshore investments, USD billion



Source: Rystad Energy

Appendix 7 Key competitors by segment

The key competitors by segment are based on a group of companies the management of Cargotec identifies to be the closest competitors. As some of these companies are not listed, this group differs from the peer group used in the valuation.

Port cargo handling (Kalmar)

Company	Main offering	HQ	Revenue[1], EURm	Market cap, EURm	Relevance
KONECRANES Lifting Businesses	Lifting equipment for ports and industrial use	Hyvinkää, Finland	3,136	2,420	
ZPMC	Ship-to-shore crane modernisation	Shanghai, China	2815	1,994	
LIEBHERR	Manufacturer of varied heavy equipment	Bulle, Switzerland	9,854	Private	
SANY	Machinery for construction, mining and ports	Beijing, China	4,963	9,573	
ABB	Heavy electrical equipment and automation technology	Zürich, Switzerland	29,140	41,715	

On-road load handling (Hiab)

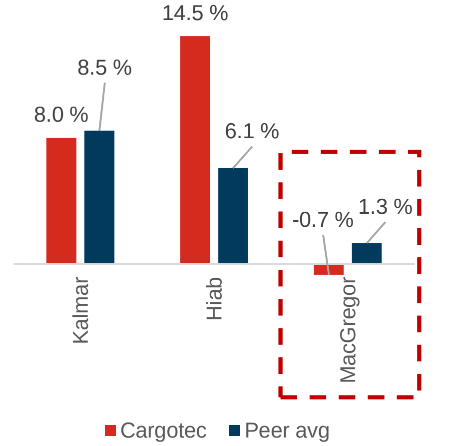
Company	Main offering	HQ	Revenue[1], EURm	Market cap, EURm	Relevance
PALFINGER	Lifling equipment for vehicles and maritime	Salzburg, Austria	1,471	0,970	
FASSI	Hydraulic loader cranes	Rome, Italy	166	Private	
HMF	Truck-mounted loader cranes	Højbjerg, Denmark	137	Private	
HYVA	Truck-mounted loader cranes	Alphen aan den Rijn, The Netherlands	497	Private	
TERBERG	Specialist vehicles, incl. truck-mounted forklifts	Utrecht, The Netherlands	890	Private	

Offshore and marine solutions (MacGregor)

Company	Main offering	HQ	Revenue[1], EURm	Market cap, EURm	Relevance
KONGSBERG	Technology solutions for e.g. maritime, defence and aerospace industries	Kongsberg, Norway	1,499	2,194	
Rolls-Royce	Power systems for aerospace, defence, energy and marine	London, UK	18,610	19,375	
NOV	Equipment focusing on oil and gas drilling	Houston, TX, US	6,377	10,012	
IHI	Heavy equipment manufacturer for diversified industries	Tokyo, Japan	12,701	4,170	

Source: Cargotec, Thomson Reuters as of Feb 3, 2019
Note: [1]Revenue for 2018 or most recent available, EURm

Figure 40: Cargotec's business areas EBIT (%) 2017A vis-à-vis peers[1]



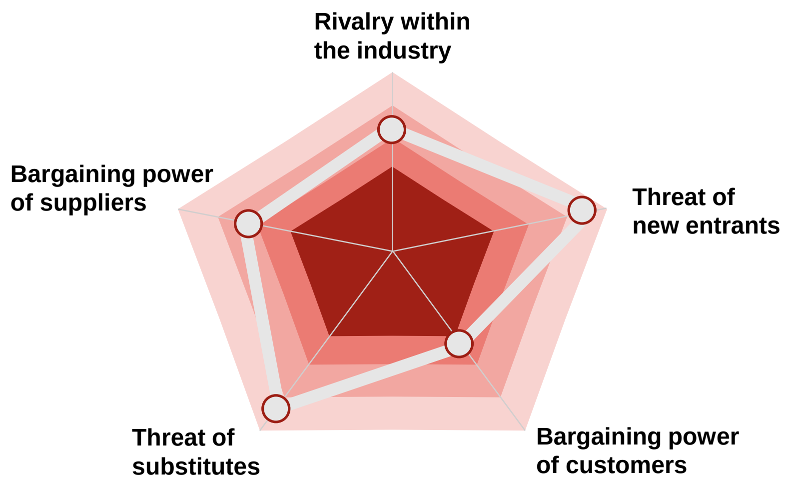


Figure 41: Consolidation within shipping industry

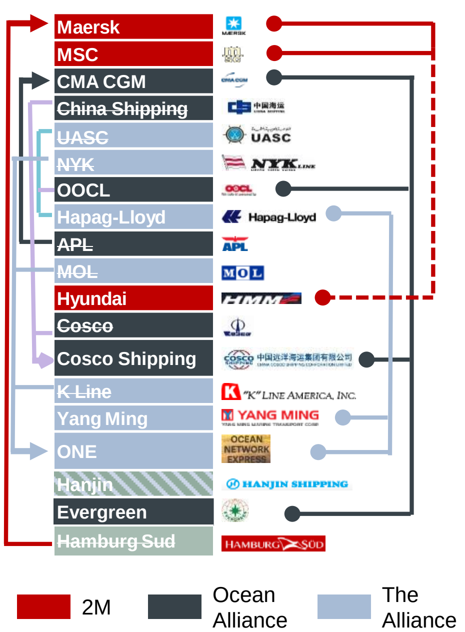
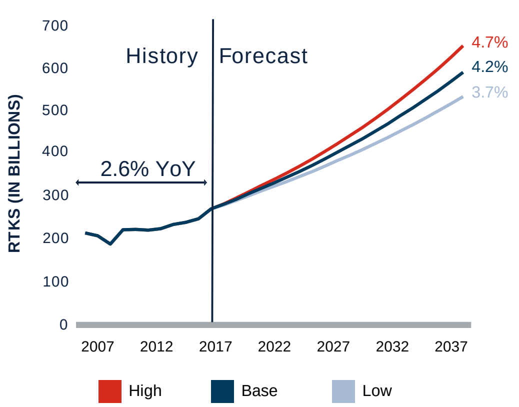


Figure 42: World Air Cargo growth



Source: Boeing

Rivalry within the industry (2)

Based on profitability and Herfindahl-Hirschman Index analysis (App. 3), Cargotec's rivalry within the relevant industries is modest. For MacGregor, freight and charter rates have been driven down across dry-bulk, tanker, as well as in the container segment due to overcapacity issues in the maritime transportation industry. As shown in Figure 40, competitors' lower margins increases pressure for MacGregor but same cannot be said about Hiab and Kalmar. Hiab's high margin stems from strong R&D launches and large service offering, which in turn have resulted in premium offering that the competitors have not yet been able counter to. Kalmar is the largest player in the cargo handling business and there is no signals of price competition as the competitors seem to be focusing on cost-side improvements that automatization of the industry is enabling.

Threat of new entrants (1)

Threat of new entrants entering the cargo and load handling solutions business is low. For all of the three business area's, the business is based on long-term client relationships and long-term contracts. For years, the market has been concentrating and the leading players, Cargotec and Konecranes, have led the M&A activity. As economies of scale play a big role in the industry, we anticipate market consolidation to continue in the future.

Bargaining power of customers (3)

Over decades, container lines have formed increasingly larger alliances and consolidated the market through mergers and acquisitions (Fig. 41). In maritime industry, three large alliances, 2M, Ocean Alliance and The Alliance, have been formed in the recent years. The idea of larger alliances is now also spreading to landside operations in turn having an effect on, not only MacGregor but also Kalmar and Hiab. Concentration of the operations can potentially heavily increase the negotiation power of Cargotec's customers.

Threat of substitutes (1)

Cargotec as whole is quite well diversified against threat of substitutes as it operates in both landside and sea business. Air cargo, however, is a business Cargotec does not serve. As one can see in Figure 42, air cargo is estimated to grow rapidly in the next 20 years, potentially cannibalizing other means of goods transportation. Still, we estimate the threat of air cargo to be fairly low.

Bargaining power of suppliers (2)

Manufacturing is largely outsourced to partner plants mainly in Asia. Cargotec has captured the 1st and the 2nd market positions in its major segments of container traffic, port automation, construction activity and ship building. As the company's manufacturing model heavily relies on its suppliers, there moderate risk of increasing partner bargaining power. However, as Cargotec is a global player in all three fronts, the company can split, move and create new manufacturing models, and thus the company can protect itself from severe business impacts stemming from the increased bargaining power.

Source: *Team analysis*
Note: *[1] Peer groups per business area for Kalmar include ABB and Konecranes, for Hiab Palfinger and Terex, and for MacGregor Kongsberg Gruppen, Rolls-Royce and National Oilwell Varco*

Appendix 9 SWOT Analysis

We prepared a SWOT analysis to examine the external and internal, positive and negative factors affecting Cargotec's current and future situation.

S

- ✓ Leading market position on all operating segments
- ✓ Focus and significant investments on R&D
- ✓ Strong ESG and focus on employee health and safety
- ✓ Wide range of end users mitigating risks on single industries or markets
- ✓ Strong order book and recent contract wins
- ✓ Experienced management

W

- ✓ MacGregor's non-satisfactory recent performance, highly due to weak underlying market
- ✓ Concerns regarding shareholder governance
- ✓ Supply-chain issues squeezing margins

O

- ✓ Significant upside potential from increased cargo handling automation and equipment upgrades
- ✓ Lowering cyclicality due to increased share of revenue from continuous service operations
- ✓ Group-wide restructuring program to bear fruit
- ✓ Bolt-on acquisitions to boost growth
- ✓ Opportunities for further horizontal expansion in e.g. air cargo

T

- ✓ Ongoing consolidation within the shipping industry likely to increase their bargaining power
- ✓ Uncertainty and potential tariffs due to trade disputes
- ✓ Labour union strikes as a backslash to increasing automation
- ✓ Threat of constructual penalties and fines due to cross-border operations
- ✓ ZPMC and other Chinese equipment makers becoming more competitive in automation offering

Appendix 10 Leases and impact of IFRS 16

IFRS 16 reporting standards (effective from January 1, 2019) will require capitalising leases that where previously recognised as operational leases. This will have an impact on the balance sheet, interest expenses and depreciation, and consequently increase gearing. It will also impact the comparability of EBITDA-level profitability and EV/EBITDA multiples before and after the introduction of the reporting standard.

EURm	2017	2018
Non-cancellable operating lease payables	189.4	203.2
Non-cancellable finance lease payables	11.3	n.a.
Present value of non-cancellable finance lease payables	10.9	n.a.
Aggregate operating lease expenses for the financial year	40.1	45.0

~ EUR 45m

Estimated **EBITDA improvement** from capitalising operating leases, estimated from the aggregate operating lease expenses for FY2018

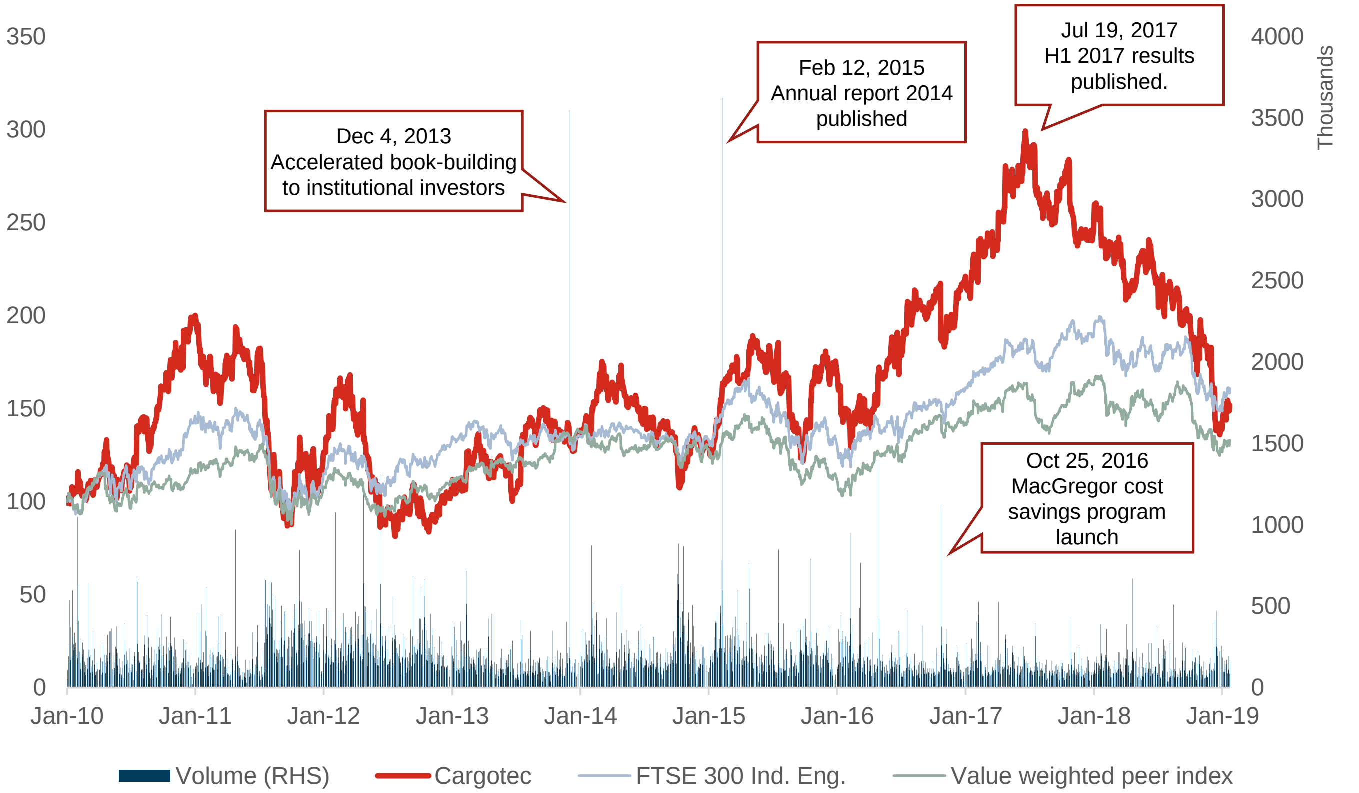
~ EUR 200m

Estimated **increase of lease liabilities and assets**, estimated from the gross non-cancellable operating lease payables at FY 2018

Source: Cargotec, team analysis

Appendix 11 Share price development

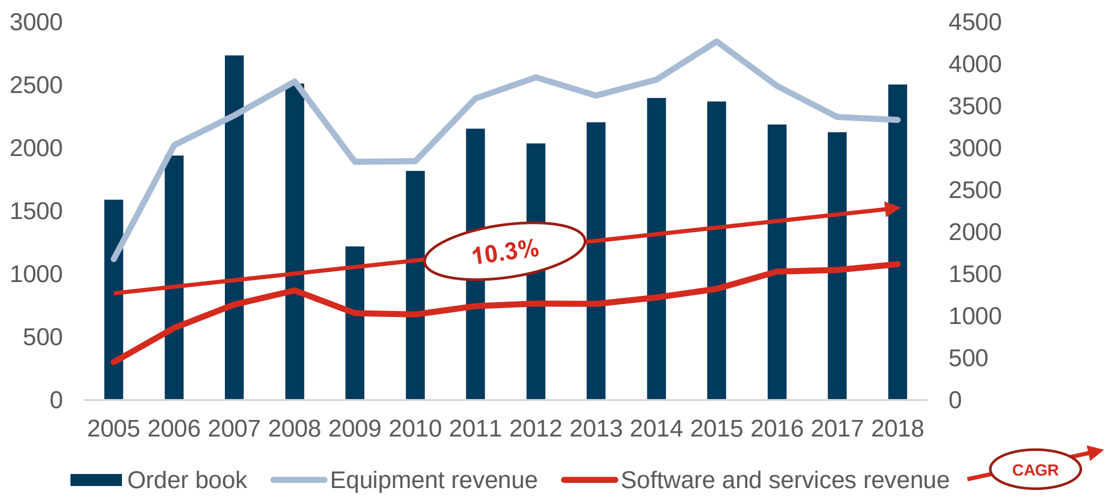
Share price development of Cargotec, value-weighted peer group (ABB, Konecranes, Palfinger, Kongsberg, Rolls-Royce and NOV) and the FTSEurofirst 300 Industrial Engineering index. All indexed to Jan 4, 2010=100.



Source: Thomson Reuters as of Jan 29, 2019

Appendix 12 Cyclicality assessment

In order to asses how vulnerable Cargotec is to macroeconomic cyclicality, we map the equipment and service revenues over the previous recession. We can clearly see that the **equipment revenue is much more cyclical, and follows closely the order book development**. **Software and services revenue is much more persistant over the downturn**. Cargotec has tripled its software and services revenue, increasing form EUR 300m to EUR 1,079m at an 10.3% CAGR (2005-2018). We asses that as the share of service revenue increases further, Cargotec is much **better protected against cyclicality** than before, also likely to provide **competitive advantage and more investor confidence**.



Source: Cargotec, team analysis

Appendix 13 Peer group and current and historical multiples

As the peer group for the multiples valuation analysis, we have chosen ABB, Konecranes, Palfinger, Terex, Kongsberg, Rolls-Royce and National Oilwell Varco (NOV). We selected the companies Cargotec lists as their global competitors, excluding private companies (Liebherr), companies with limited financial data (SANY and ZPMC), and TTS due to recent acquisition (Cargotec acquired the marine and offshore businesses in early 2018).

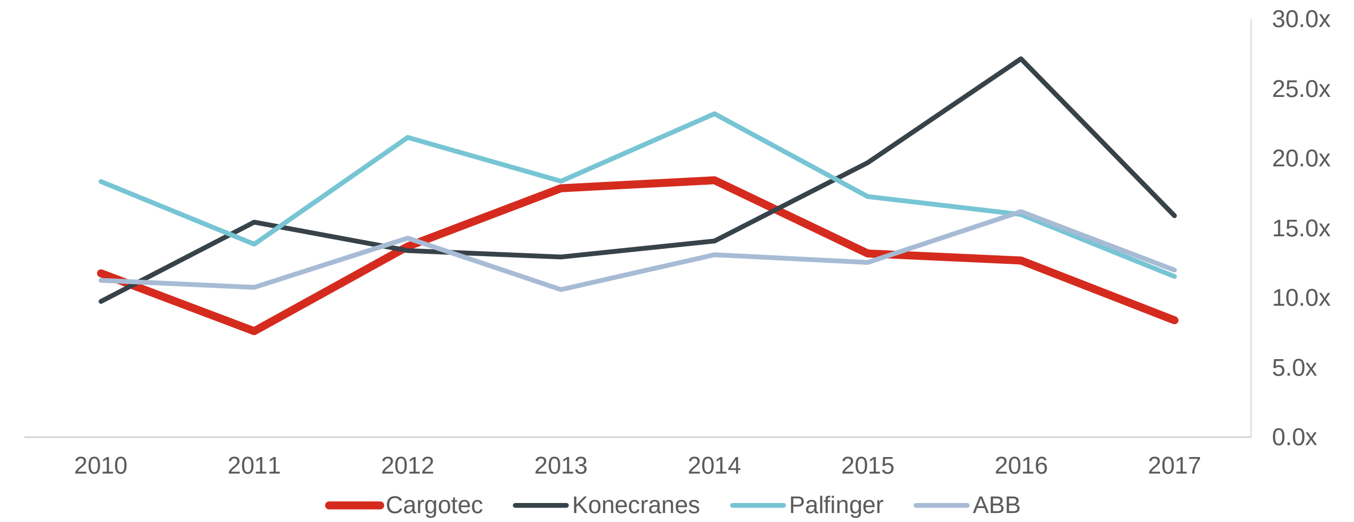
We believe that this group of companies that are largely of similar size, geographical footprint and product offering are a valid benchmark for Cargotec. These companies are likely used by investors to evaluate Cargotec's relative performance and valuation levels. In the Appendices 9-12 we analyse how Cargotec's valuation and operational performance positions itself against the closest peers. Operative benchmarking is largely based on 2017 figures as Konecranes is the only peer who has reported their FY2018 results as if February 8, 2019.

Cargotec's current valuation is below its peer average and median for all multiples excluding price-to-earnings.

Company	EV/EBITDA 2018E and 2019E	EV/EBIT 2018E and 2019E	P/E 2018E and 2019E	EV/Sales 2018E and 2019E
CARGOTEC	8.6x 6.5x	12.1x 8.3x	17.4x 10.1x	0.7x 0.6x
ABB	9.0x 8.4x	11.5x 10.4x	14.6x 13.2x	1.3x 1.2x
KONECRANES	9.0x 7.4x	17.5x 9.8x	16.5x 12.1x	0.9x 0.9x
PALFINGER	7.8x 6.9x	11.2x 9.6x	13.1x 10.6x	1.0x 0.9x
TEREX	7.8x 6.7x	9.3x 7.8x	12.1x 10.1x	0.6x 0.6x
KONGSBERG	17.0x 15.6x	24.8x 28.2x	26.9x 28.3x	1.5x 1.0x
Rolls-Royce	12.6x 10.1x	35.7x 21.4x	n.m. n.m.	1.2x 1.1x
NOV	12.3x 9.3x	35.9x 19.5x	n.m. n.m.	1.5x 1.4x
Peer median	9.0x 8.4x	17.5x 10.4x	14.6x 13.2x	1.2x 1.0x
Peer average[1]	12.0x 8.1x	20.1x 14.1x	16.6x 14.9x	1.1x 1.0x

Historically, Cargotec has been in line with peer valuation. However, in the past years, investors have valued Cargotec's ability to generate operating profit lower than some key peers.

Historical EV/EBIT multiple for Cargotec and selected key peers



Source: Thomson Reuters as of Feb 8, 2019
Note: [1] Excluding outliers
Forward-looking values based on Thomson Reuters analyst consensus for peers, team forecasts for Cargotec

Appendix 14 Operative benchmarking: profitability

Cargotec's profitablity is in line with the closest peers, and analysts' expected profit making capabilities to further improve in the upcoming years. Sales growth is slighly lagging, mostly driven by poor performance in MacGregor.

Company	Sales growth		Avg. EBITDA%		Avg. EBIT%		ROIC		ROE		ROA	
	2015-17	2018E-20E	2015-17	2018E-20E	2015-17	2018E-20E	2016	2017	2016	2017	2016	2017
CARGOTEC	-6.6%	3.4%	9.2%	9.7%	7.0%	7.4%	6.4%	6.9%	9.2%	9.4%	3.4%	3.6%
KALMAR	-1.2%	5.0%	10.1%		7.5%	8.2%						
ABB	-1.7%	4.2%	14.6%	14.4%	11.3%	11.8%	12.7%	14.4%	13.6%	15.7%	4.7%	5.4%
KONECRANES	21.5%	22.7%	8.5%	11.4%	5.7%	8.5%	6.2%	19.5%	8.3%	26.5%	2.5%	8.9%
HIAB	8.1%	2.4%	13.8%		12.9%	11.0%						
PALFINGER	9.4%	7.6%	11.9%	13.3%	8.3%	9.5%	6.2%	4.8%	11.7%	9.6%	4.5%	3.4%
TEREX	-6.8%	7.0%	6.2%	8.5%	4.1%	7.3%	-5.9%	6.1%	-10.5%	9.5%	-3.3%	3.0%
MACGREGOR	-28.9%	0.4%	1.8%		-0.4%	0.6%						
KONGSBERG	-7.8%	-5.1%	8.4%	7.9%	5.3%	5.2%	9.3%	6.7%	10.2%	7.9%	3.2%	2.6%
Rolls-Royce	3.9%	-0.1%	13.1%	11.2%	7.6%	5.1%	-105.6%	173.6%	-117.3%	238.6%	-16.8%	13.7%
NOV	-29.6%	6.5%	3.2%	11.7%	-4.9%	4.2%	-14.2%	-1.5%	-15.9%	-1.7%	-10.2%	-1.1%

Appendix 15 Operative benchmarking: leverage and liquidity

Cargotec's leverage and liquidity ratios are largely in line with the peer median with no significant concerns arising. Interest coverage and short-term liquidity are satisfactory, as well as long term leverage figures.

Company	EBITDA interest coverage		EBIT interest coverage		Current ratio		Quick ratio		D/E		Net debt/ EBITDA		Equity ratio		Gearing	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
CARGOTEC	11.2	10.0	8.5	7.8	1.2	1.3	0.8	0.9	0.6	0.6	1.7	1.5	0.4	0.4	39%	34%
ABB	26.3	24.8	20.3	19.4	1.4	1.3	1.1	1.0	0.5	0.5	0.2	0.3	0.3	0.3	7%	11%
KONECRANES	11.2	12.8	8.1	7.8	1.2	1.3	0.8	0.8	0.7	0.6	0.7	1.7	0.3	0.3	28%	39%
PALFINGER	12.3	8.4	8.7	5.8	1.4	1.7	0.8	0.9	0.9	1.1	3.3	3.0	0.4	0.4	98%	100%
TEREX	1.9	3.8	0.9	2.7	1.9	2.3	1.3	1.4	1.0	0.9	6.1	1.6	0.3	0.3	77%	29%
KONGSBERG	-13.9	13.6	-7.2	8.3	1.4	1.5	0.9	1.2	0.4	0.5	2.1	0.3	0.3	0.3	33%	5%
Rolls-Royce	0.5	-0.4	0.3	-0.1	1.3	1.0	1.0	0.7	1.0	2.2	0.3	0.4	0.1	0.1	33%	44%
NOV	-5.4	19.1	-10.6	-12.6	2.6	3.1	1.5	1.8	0.2	0.2	-2.4	3.0	0.6	0.7	13%	9%

Source: *Thomson Reuters as of Feb 8, 2019*
Note: *Forward-looking values based on Thomson Reuters analyst consensus for peers, team forecasts for Cargotec*

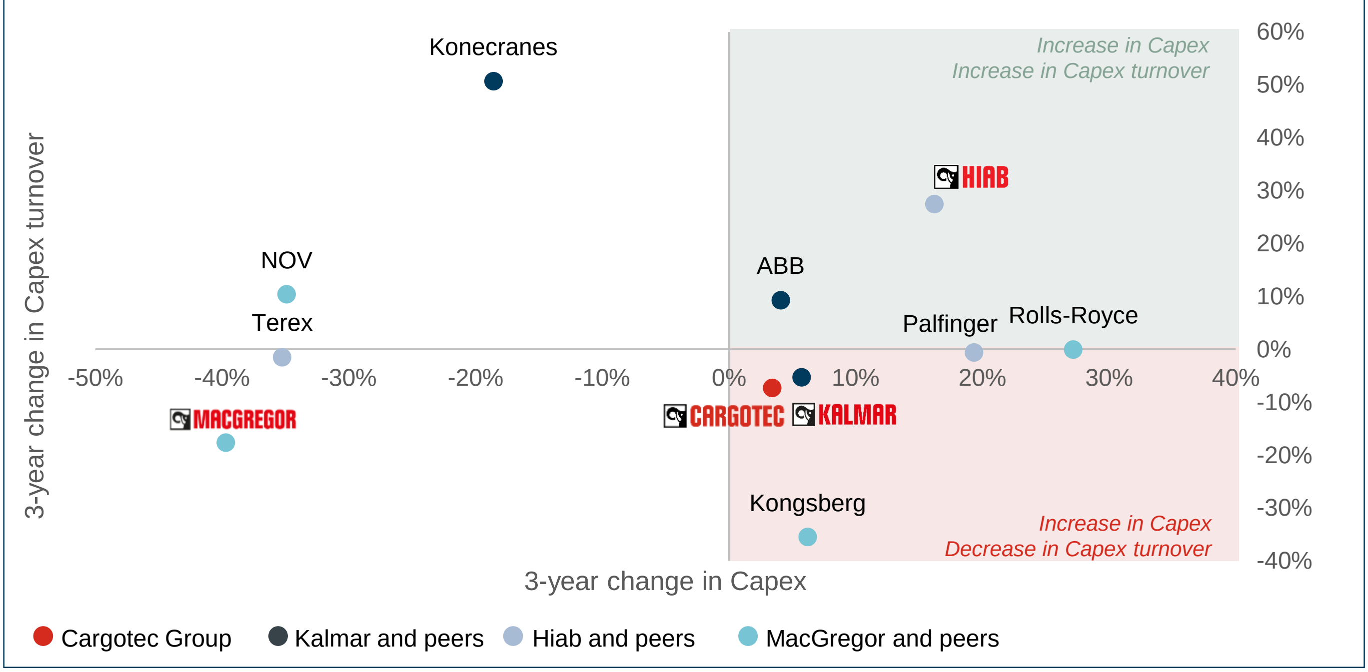
Appendix 16 Operative benchmarking: efficiency

Cargotec overperforms most of its peers in efficiency ratios, namely NWC and Capex as percentage of sales. However, asset turnover is slightly below the peer group.

Company	NWC/Sales 2016	NWC/Sales 2017	Capex/sales 2016	Capex/sales 2017	Asset turnover 2016	Asset turnover 2017	Sales/employee (EURm) 2016	Sales/employee (EURm) 2017
CARGOTEC	9.5%	13.5%	2.3%	2.6%	96.2%	89.0%	0.3	0.3
KALMAR			3.5%	3.9%	121.8%	112.2%	0.3	0.3
ABB	17.5%	16.5%	2.5%	2.8%	84.0%	83.0%	0.3	0.3
KONECRANES	6.7%	10.3%	1.3%	0.9%	140.5%	123.2%	0.2	0.2
HIAB			0.7%	1.0%	171.5%	174.7%	0.3	0.3
PALFINGER	13.4%	17.5%	5.4%	5.6%	98.8%	95.5%	0.1	0.1
TEREX	29.1%	30.9%	1.6%	1.0%	83.7%	103.0%	0.4	0.4
MACGREGOR			0.6%	0.5%	76.4%	62.6%	0.3	0.3
KONGSBERG	21.9%	26.0%	5.7%	3.6%	78.6%	69.2%	2.2	2.1
Rolls-Royce	22.2%	1.4%	8.1%	9.8%	62.5%	55.5%	0.3	0.3
NOV	66.6%	66.6%	3.9%	2.6%	30.8%	35.3%	0.2	0.2

As a further measure of operational efficiency, we map Cargotec, its competitors and the three business areas on change in Capex (x-axis) and change in Capex revenue turnover (y-axis). This chart illustrates that Cargotec has not been able to adjust its capital spenditure on sales growth as well as peers – most of the effect derived from MacGregor

Capex efficiency



Source: *Thomson Reuters as of Feb 8, 2019*
Note: *Forward-looking values based on Thomson Reuters analyst consensus for peers, team forecasts for Cargotec*

Appendix 17 F-Score

Piotroski's F-Score measures a company's financial position and quality of earnings with assinging a value of 0 or 1 to nine accounting ratios. F-score value of 8-9 (1-2) is considered to be strong (weak).

Criteria		Commentary
Profitability		
ROA	1	Positive ROA by a large margin
Operating cash flow	1	Positive operating cash flow in 2018
Δ ROA	0	Decrease of 0.5% in ROA between 2017 & 2018
Accruals	0	Net income > cash flow from operations in 2018
Leverage, liquidity and source of funds		
Δ Leverage	0	Slight increase in leverage
Δ Current ratio	1	2.6% increase in current ratio
Equity issue	1	No equity issued in 2018
Operating efficiency		
Δ Gross Margin	0	1.6% decrease in gross margin in 2018
Δ Asset turnover	1	Asset turnover improved by 5.6%
Piotroski F-score	**5**	

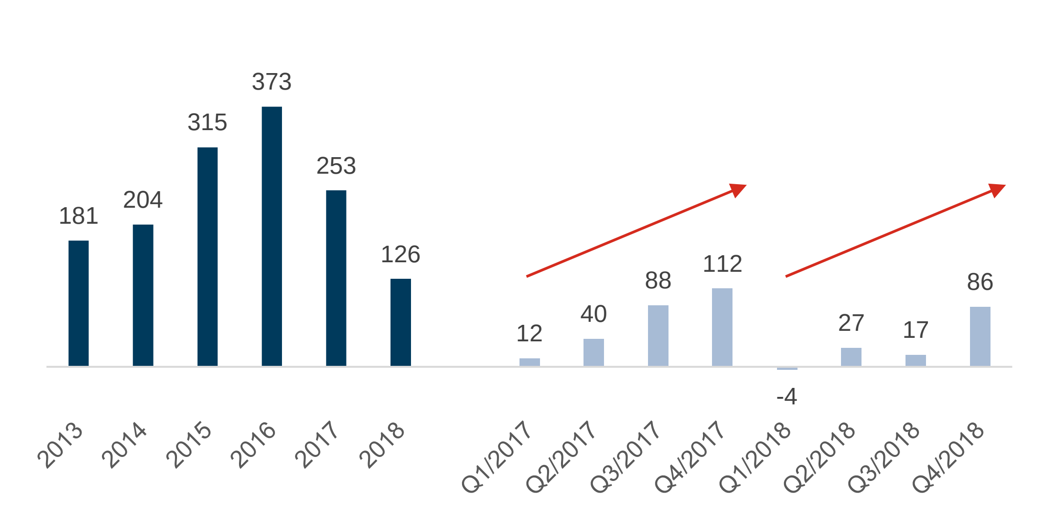
Appendix 18 Intensity of core earnings

Intensity of core earnigns is a model for measuring the core (permanent) and non-core (transient) portions of company earnings.

EURm	2014	2015	2016	2017	2018
Sales	3,357.8	3,729.3	3,513.7	3,249.8	3,303.5
Net income	72.1	142.9	125.3	132.7	108.0
Net income margin	2.1%	3.8%	3.6%	4.1%	
4-year average of NI%				3.4%	
Core component of earnings:					112.6
Non-core component of earnings:					4.6
Intensity of Core Earnings:					**0.96**

Appendix 19 Quartile cyclicality in cash flows

Cash flow from operations, EURm

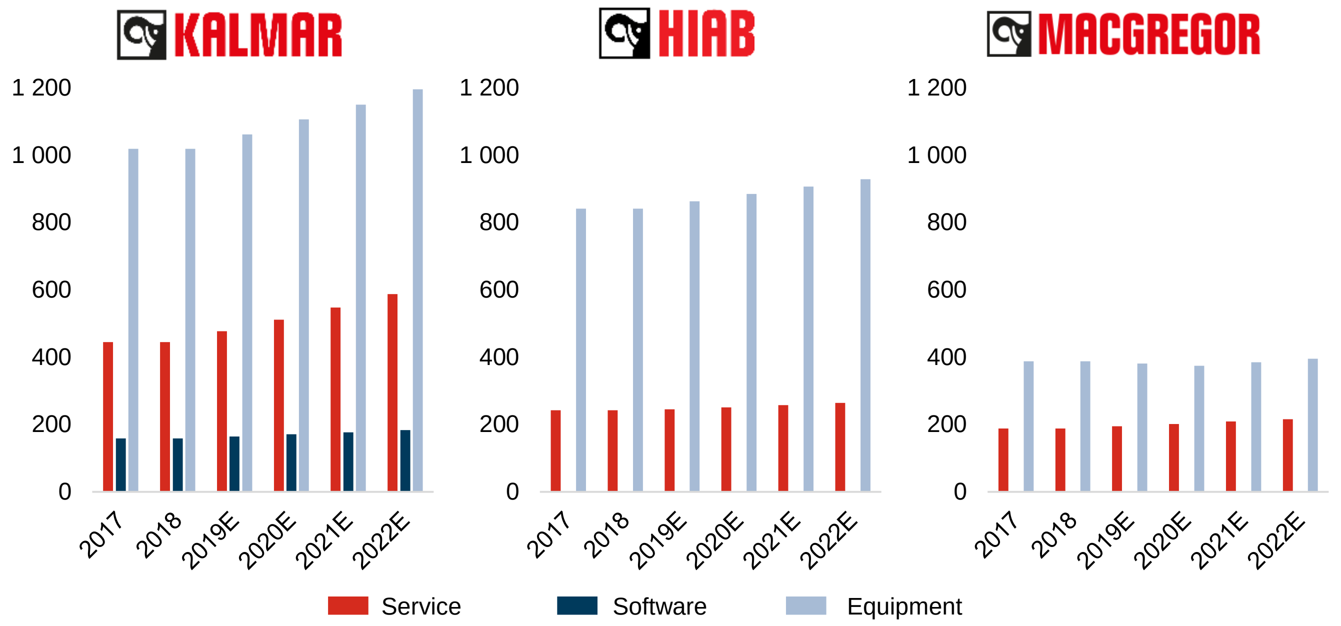


There appears to be quarterly cyclicality in operating cash flows where cash flows increase towards the end of the year. However, in Q3/2018, cash flows were below the level of the previous quarter. According to the management, this and the low total cash flow in 2018 were largely caused by increased working capital.

Source: Cargotec, team analysis

Appendix 20 Estimated business unit revenue development

Our operating model of future revenue growth forecasts moderate growth in all business areas with Kalmar's equipment and service businesses being the most significant growth drivers



Appendix 21 Income statement

EURm	2011	2012	2013	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E
Revenue	**3,138.7**	**3,327.3**	**3,181.0**	**3,357.8**	**3,729.3**	**3,513.7**	**3,249.8**	**3,303.5**	**3,412.4**	**3,530.0**	**3,664.3**	**3,802.3**
Growth y/y	21.9%	6.0%	-4.4%	5.6%	11.1%	-5.8%	-7.5%	1.7%	3.3%	3.4%	3.8%	3.8%
Adjusted EBITDA	**241.7**	**186.9**	**154.6**	**187.1**	**268.6**	**292.8**	**330.6**	**321.0**	**325.7**	**351.6**	**379.3**	**408.3**
Margin %	7.7%	5.6%	4.9%	5.6%	7.2%	8.3%	10.2%	9.7%	9.5%	10.0%	10.4%	10.7%
Depreciation & Amortization	(63.3)	(70.0)	(76.6)	(81.2)	(76.5)	(84.8)	(72.0)	(77.2)	(79.7)	(82.5)	(85.6)	(88.9)
Adjusted EBIT	**178.4**	**116.9**	**78.0**	**105.9**	**192.1**	**208.0**	**258.6**	**243.8**	**245.9**	**269.1**	**293.6**	**319.4**
Margin %	5.7%	3.5%	2.5%	3.2%	5.2%	5.9%	8.0%	7.4%	7.2%	7.6%	8.0%	8.4%
One-offs	(3.1)	(15.5)	(34.1)	(20.7)	(15.9)	(53.9)	(36.5)	(53.8)	(20.0)	(20.0)	(20.0)	(20.0)
Operating profit	**207.0**	**131.4**	**92.5**	**126.6**	**213.1**	**197.7**	**222.1**	**190.0**	**225.9**	**249.1**	**273.6**	**299.4**
Margin %	6.6%	3.9%	2.9%	3.8%	5.7%	5.6%	6.8%	5.8%	6.6%	7.1%	7.5%	7.9%
Net interest	(15.1)	(8.9)	(13.8)	(28.4)	(26.9)	(28.6)	(32.9)	(28.9)	(21.2)	(21.0)	(20.8)	(20.6)
Financial income	2.1	0.6	3.4	5.5	1.7	(7.7)	(32.9)	(28.9)	2.0	2.2	2.4	2.6
Financial expense	(17.2)	(9.5)	(17.2)	(33.9)	(28.6)	(20.9)	--	--	(23.2)	(23.2)	(23.2)	(23.2)
EBT	**191.9**	**122.5**	**78.7**	**98.2**	**186.2**	**169.1**	**189.2**	**161.1**	**204.8**	**228.1**	**252.8**	**278.8**
Income taxes	(42.7)	(33.1)	(23.3)	(26.1)	(43.3)	(43.8)	(56.5)	(53.1)	(55.3)	(61.6)	(68.3)	(75.3)
Net income	149.2	89.4	55.4	72.1	142.9	125.3	132.7	108.0	149.5	166.5	184.6	203.5

Source: Thomson Reuters, Cargotec, team analysis

Appendix 22 Balance sheet

EURm	2011	2012	2013	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E
Property, plant and equipment	283	304	310	303	306	309	311	309	319	330	342	355
Goodwill	805	834	866	963	976	1,025	987	971	971	971	971	971
Other intangible assets	176	187	219	284	272	290	261	279	298	318	340	363
Investments in associates and joint ventures	11	97	97	109	121	127	110	100	102	104	106	108
Deferred tax assets	122	130	139	178	184	185	150	137	137	137	137	137
Other non-current assets	51	55	10	25	43	28	20	46	46	46	46	46
Total non-current assets	**1,448**	**1,607**	**1,640**	**1,862**	**1,902**	**1,963**	**1,838**	**1,841**	**1,872**	**1,906**	**1,942**	**1,980**
Inventories	821	747	631	691	655	647	623	689	712	736	764	793
Trade and other receivables	636	721	712	870	740	758	763	842	869	899	934	969
Current tax assets	11	13	46	25	98	94	36	56	56	56	56	56
Cash and cash equivalents	204	209	306	205	176	273	309	256	282	315	354	399
Total current assets	**1,672**	**1,691**	**1,696**	**1,791**	**1,669**	**1,773**	**1,731**	**1,843**	**1,919**	**2,007**	**2,107**	**2,216**
Total assets	**3,120**	**3,298**	**3,336**	**3,652**	**3,571**	**3,736**	**3,569**	**3,684**	**3,791**	**3,913**	**4,049**	**4,196**
Equity attributable to equity owners of the parent	1,173	1,214	1,233	1,209	1,339	1,395	1,423	1,426	1,500	1,584	1,676	1,778
Non-controlling interest	4	4	6	5	2	2	2	3	3	3	3	3
Total equity	**1,177**	**1,219**	**1,239**	**1,214**	**1,342**	**1,397**	**1,425**	**1,429**	**1,503**	**1,587**	**1,679**	**1,781**
Deferred tax liabilities	51	65	56	78	72	73	13	28	28	28	28	28
Interest-bearing financial liabilities	421	440	585	753	768	657	674	717	717	717	717	717
Pension obligations	46	68	61	72	71	81	88	92	92	92	92	92
Other non-current liabilities	31	59	31	35	42	49	62	59	60	62	64	66
Provisions (non-current)	33	37	38	24	23	38	17	11	11	11	12	12
Total non-current liabilities	**582**	**669**	**771**	**962**	**977**	**898**	**853**	**907**	**909**	**911**	**913**	**916**
Current financial liabilities	98	259	300	193	69	165	121	213	213	213	213	213
Advances received	403	404	253	319	269	242	194	190	197	203	211	219
Current tax liabilities	40	44	14	13	24	32	49	40	41	42	44	46
Trade and other payables	820	704	759	952	890	1,002	927	906	929	957	989	1,022
Total current liabilities	**1,361**	**1,410**	**1,325**	**1,477**	**1,252**	**1,441**	**1,292**	**1,349**	**1,379**	**1,415**	**1,457**	**1,500**
Total equity and liabilities	**3,120**	**3,298**	**3,336**	**3,652**	**3,571**	**3,736**	**3,569**	**3,684**	**3,791**	**3,913**	**4,049**	**4,196**

Source: Thomson Reuters, Cargotec, team analysis

Appendix 23 Forecast assumptions

Base case	2019	2020	2021	2022	Commentary
Kalmar revenue growth	5.0%	5.0%	4.9%	4.9%	Container terminal capacity & throughput volume growth
Hiab revenue growth	2.2%	2.6%	2.5%	2.5%	Global truck volume growth & construction output growth
MacGregor revenue growth	0.4%	0.5%	3.1%	3.1%	Long-term contracting & containership fleet growth
COGS (% of sales)	74.8%	74.5%	74.2%	73.9%	Improved margins driven by changing product mix
Adj. EBIT (% of sales)	8.0%	8.3%	8.6%	8.9%	Target EBIT achieved by 2025

Grey-sky case	2019	2020	2021	2022	Commentary
Kalmar revenue growth	4.0%	1.0%	1.8%	2.5%	Economic downturn slowing down container volume growth
Hiab revenue growth	-2.0%	-2.4%	0.0%	2.0%	Construction industry facing downturn 2019-2021
MacGregor revenue growth	0.0%	-0.5%	-0.5%	0.0%	Slight negative growth due to containership fleet growth slowing down
COGS (% of sales)	74.8%	75.4%	75.6%	74.6%	Tough market conditions increasing COGS
Adj. EBIT (% of sales)	8.0%	7.4%	7.2%	8.2%	Driven by worsened market conditions

Blue-sky case	2019	2020	2021	2022	Commentary
Kalmar revenue growth	5.0%	5.0%	4.9%	4.9%	Container terminal capacity & throughput volume growth
Hiab revenue growth	2.2%	2.6%	2.5%	2.4%	Global truck volume growth & construction output growth
MacGregor revenue growth	0.1%	0.1%	3.0%	3.0%	Long-term contracting & containership fleet growth
COGS (% of sales)	72.8%	72.3%	71.6%	71.2%	Improved margins driven by changing product mix & cost savings
Adj. EBIT (% of sales)	8.0%	8.5%	9.2%	9.6%	Target EBIT achieved by 2023

Appendix 24 WACC decomposition

Assumption	Value	Commentary
Risk-free rate	1.45%	Germany 30-Y Government Bond Yield as of February 8, 2019
Equity risk-premium	6.10%	Dimson, Marsh, Staunton (2008) world arithmetic mean 1900-2007
Levered beta for Cargotec	1.39	Reuters reported levered beta for Cargotec
Value of equity	2,078	Cargotec market value of equity as of February 8, 2019
Value of debt	930	Cargotec book value of debt as of December 31, 2018
Tax rate	27%	Cargotec historical average tax rate 2010-2018
Return on debt	2.2%	Cargotec reported return on debt in 2018
Return on equity	9.92%	Calculated using the CAPM model
WACC	**7.35%**	Return on debt and return on equity weighted by capital ratio

Source: Thomson Reuters, Cargotec, team analysis

Appendix 25 Discounted cash flow analysis summary

Our DCF model uses mid-year convention and discounts the free cash flows to firm to Feb 10, 2019 with weighted average cost of capital of 7.35%.

	2019E	2020E	2021E	2022E
Net income to common shareholders	149.5	166.5	184.6	203.5
Net noncash charges	79.7	82.5	85.6	88.9
Interest expense x (1-Tax rate)	29.5	29.5	29.5	29.5
Investment in fixed capital	-110.9	-115.8	-122.0	-127.1
Investment in working capital (and other current assets)	-21.5	-19.9	-22.0	-22.8
Free cash flow to firm (FCFF)	**126.3**	**142.8**	**155.7**	**172.0**
Free cash flow to equity (FCFE)	**106.2**	**123.7**	**138.1**	**154.7**

Terminal value				3278.2
Discount factor	0.97	0.91	0.84	0.79
Discounted FCFF	122.9	129.4	131.5	2 712.8
Cumulative discounted FCFF	122.9	252.3	383.7	3 096.6
Enterprise value	**3,097**			
Net debt	638			
Equity value	**2,459**			
Shares outstanding	64.3			
Implied share price	**38.22**			

Appendix 26 Valuation summary

Valuation method	Implied share price (EUR)	Notes
DCF Analysis	38.22	WACC 7.4%, terminal growth 2%
EV/EBITDA	42.11	2018E EV/EBITDA 9.1-10.0x
EV/EBIT	44.25	2018E EV/EBIT 11.9-12.8x
P/E	27.85	2018E P/E 17.1-19.3x
Sum of the parts	39.50	See Appendix 29
Regression result	38.48	See Appendix 30
Real option valuation	40.04	See Appendix 28

41.00
Target price

Commentary

- We base our valuation 50% on DCF analysis and 50% on EV/EBIT 2018E for the peer group
- DCF analysis reveals an undervalued share price, with fair value of EUR 38.22 representing an upside potential of 18.3%
- EV/EBIT provides a fare value of 44.25 representing an upside potential of 37.0%
- Cargotec is considered to be valued at a discount to closest peers, mainly due to temporary supply-chain problems & FX headwind
- We provide further robustness with EV/EBITDA and P/E multiples and, a regression analysis on Sales CAGR '19-20E to EV/EBITDA, SOTP valuation and real option valuation

Source: Cargotec, team analysis

Appendix 27 DCF sensitivity analysis

Sensitivity on the upside from the DCF to current share price on weighted average cost of capital and terminal growth rate.

Terminal growth rate	WACC 7.1%	7.2%	7.3%	7.4%	7.5%	7.6%	7.7%	7.8%
1.5%	8%	8%	8%	7%	7%	6%	6%	6%
1.6%	10%	10%	10%	9%	9%	8%	8%	8%
1.7%	13%	12%	12%	11%	11%	11%	10%	10%
1.8%	15%	14%	14%	14%	13%	13%	12%	12%
1.9%	17%	17%	16%	16%	16%	15%	15%	14%
2.0%	20%	19%	19%	**18%**	18%	17%	17%	17%
2.1%	22%	22%	21%	21%	20%	20%	20%	19%
2.2%	25%	24%	24%	23%	23%	23%	22%	22%
2.3%	27%	27%	27%	26%	26%	25%	25%	24%
2.4%	30%	30%	29%	29%	28%	28%	27%	27%
2.5%	33%	33%	32%	32%	31%	31%	30%	30%

Source: *Thomson Reuters, Cargotec, team analysis*

Appendix 28 Real option valuation

Due to MacGregor's sluggish development in the recent years, we see the business area as a potential spin-off target for Cargotec. As shown in the sum-of-the-parts analysis (App. 29), the value of MacGregor's business is marginal. We see that the future of MacGregor is binominal success-or-fail, but successful turnaround, it could turn into a solid business.

Real option valuation inputs		Commentary
Cargotec's implied share price (EUR, per share)	41.85	As of SOTP for Cargotec as a whole
Estimated value of Cargotec's existing businesses (EUR, per share)	39.60	As of SOTP for Kalmar and Hiab only
MacGregor implied share price	2.26	Imputed per-share value of MacGregor's real options
Cargotec's shares outstanding (in millions)	64.3	Shares outstanding as of Feb 8, 2019
Life of option [T for Time] (in years)	5	Time that a Cargotec can defer spin-off
Risk-free rate [r] (%)	0.37%	Finnish government bond yield (10-year maturity)
Project volatility [s] (%)	70.0%	Estimated volatility of a MacGregor's future value
Turnaround cost of MacGregor (EURm)	14.7	Implied[1] turnaround costs to MacGregor revenue 2020E
Present value of FCFF improvement (EURm)	57.4	Implied[1] net income improvement (2019-2020) as of 2020E revenue
Estimate of potential project value [S/X] (%)	391.4%	

We used Konecranes' recent turnaround in 2015A-17A as a benchmark[1] to estimate cost and potential positive outcome of a distressed project. Using these inputs, we first estimate the MacGregor's imputed real-options value and next we calculate the potential value of the project when the company exercises the real option (S), and the size of the investment expenditure necessary to exercise the real option (X). Using **the Black-Scholes options pricing model**, we obtain the following results:

Real option valuation output	
Value of current business (EURm)	3 034.44
Value of MacGregor real option (EURm)	177.74
Implied Enterprise value (EURm)	3 212.18
Less net debt (EURm)	-637.7
Market cap (EURm)	**2574.48**
Shares outstanding (EURm)	64.3
Share price (EUR)	**40.04**

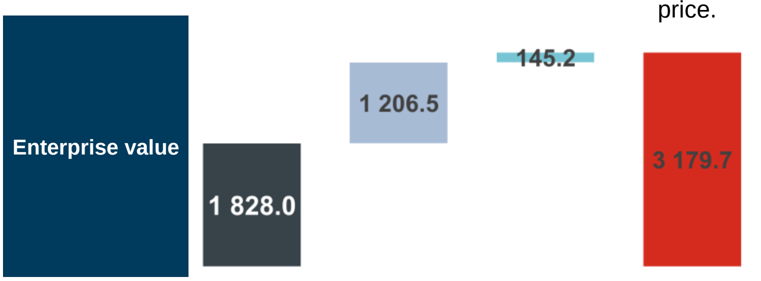
Life of option (years)	Volatility (%) 55%	60%	65%	70%	75%	80%	85%
3	190.5	189.0	187.4	185.6	183.8	181.9	180.0
4	187.7	185.7	183.6	181.5	179.3	177.1	174.9
5	185.0	182.6	180.2	177.7	175.3	173.0	170.8
6	182.3	179.7	177.0	174.5	171.9	169.6	167.3
7	179.9	177.0	174.3	171.6	169.0	166.6	164.4

Source: *Cargotec, Konecranes, team analysis*

Notes: *[1]As of Konecranes 2015A-17A turnaround project. The company was able to increase its FCFF/Revenue ratio from 2.7% in 2015 to 10.6% in two years. The reported turnaround cost was EUR 84.8m.*

Appendix 29 Sum-of-the-parts valuation

As Cargotec's three business units; Kalmar, Hiab and MacGregor; differ from each other in terms of business drivers and closest peers, we have decided to conduct a sum-of-the-parts (SOTP) valuation to strengthen our view of the target share price.



Business unit	KALMAR	HIAB	MACGREGOR	Total
EBIT 2018[1]	125.8	117.9	6.3	
EV/EBIT 2018E[2]	14.5x	10.2x	23.0x	
Peers used	ABB, KONECRANES	PALFINGER, TEREX	KONGSBERG, Rolls-Royce, NOV	

We value each of the three business units using a EV/EBIT 2018E multiple from peer companies. We used 2018 business unit EBITs excluding one-offs and with corporate administration and support function costs allocated to each business unit. For MacGregor, we used 2019E EBIT and peer multiple because we believe the business faced only temporary downturn in 2018 and will begin to revert to its underlying performance in 2019.

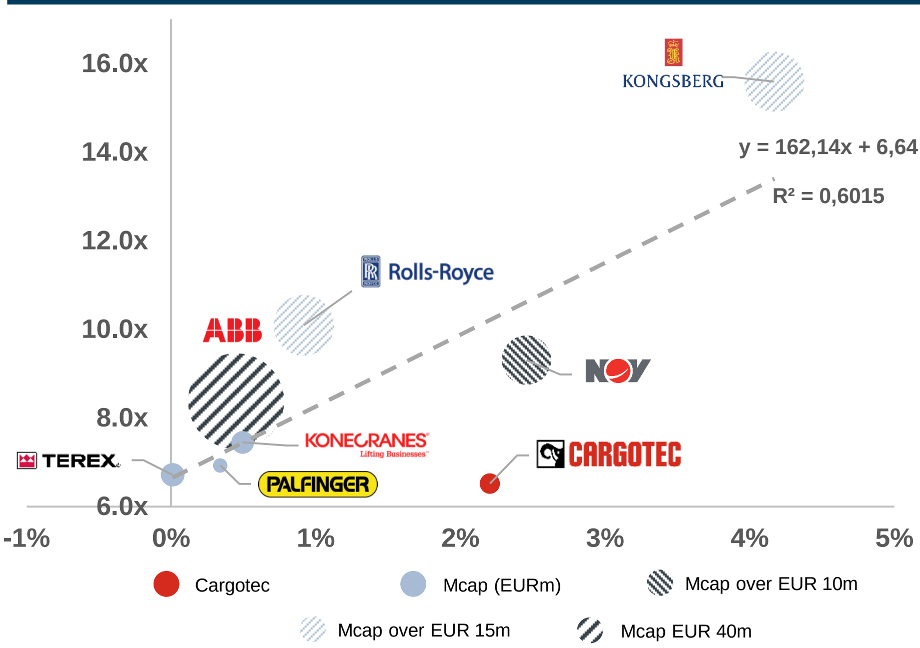
Implied EV	**3 179.7**
Net debt	*637.7*
Market cap	**2542.0**
Shares outstanding	*64.3*
Implied share price	**39.5**

Source: Cargotec, team analysis
Note: [1] EBIT excluding one-offs and including group admin costs, 2018A for Kalmar and Hiab and 2019E for MacGregor, EURm
[2]Peer group EV/EBIT 2018E for Kalmar and Hiab, 2019E for MacGregor

Appendix 30 Implied EV analysis (Sales CAGR '19-20E to EV/EBITDA '19E)

The figure shows a regression of EV/EBITDA 2019E multiple on revenue CAGR 2019-20E. Based on the analysis, Cargotec is trading below the trendline, indicating an undervaluation in relation to its peers. The implied Cargotec EV/EBITDA 2019E multiple of 10.2x results in valuation of EUR 38.48 per share.

Regression analysis

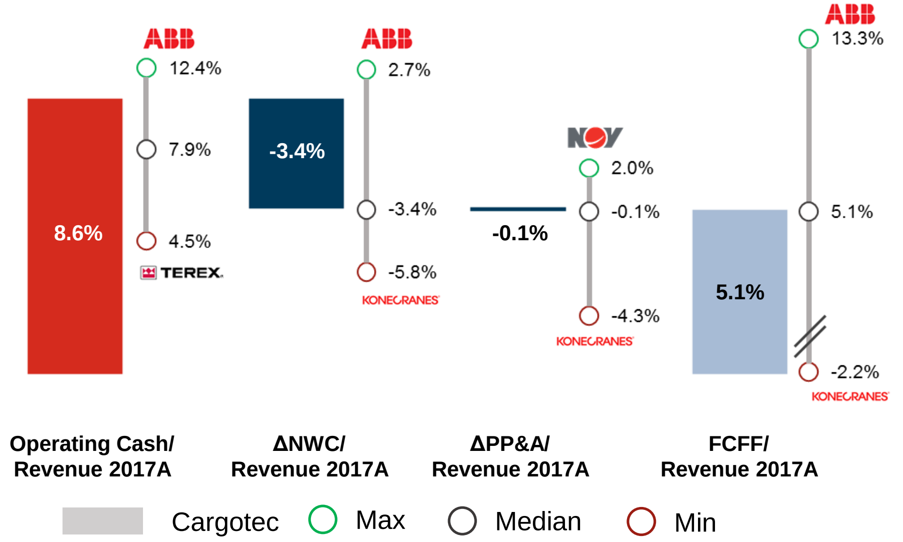


Output	
Revenue growth '19-20E (%)	2.20%
Regression coefficient	162.14
Intercept	6.63
Implied EV/EBITDA '19	**10.2x**
EBITDA '19E (EURm)	305.7
Enterprise value (EURm)	3112.0
Net debt	637.7
Implied market cap	2474.3
Shares outstanding	64.3
Implied share price	**38.48**

Source: Thomson Reuters

Appendix 31 FCFF 2017A / Revenue 2017A Waterfall

In the figure, FCFF/Revenue 2017A, has been decomposed to its parts. Cargotec's FCFF/Revenue 2017A is in the middle of the group[1] and the firm's operating cash is in the top quartile.



Cargotec's FCFF conversion is on par with its peer group and compared to Cargotec's closest peer Konecranes, the company's FCFF conversion is strong.

FCFF conversion should correlate with valuation but in Cargotec's case, the company is valuated below its peer group.

Source: Thomson Reuters
Notes: [1]Kongsberg is excluded from the peer group due to outlier FCFF line items

Appendix 32 Executive Board

Title	Name	Description	Stock ownership[1]
CEO	Mika Vehviläinen (since 2013)	• Born 1961, Finnish, M.Sc. (Econ.) • Former CEO of Finnair, nearly 30 years of experience from Nokia	56,044
Executive Vice President, CFO	Mikko Puolakka (since 2016)	• Born 1969, Finnish, M.Sc. (Econ.) • Former CFO of Outotec (engineering) and Elcoteq (electronics manufacturing), 20 years of experience in finance functions	1,200
SVP, Strategy	Mikael Laine (since 2014)	• Born 1964, Finnish, M.Sc. (Econ.) • Former CEO of Moventas (manufacturing), previous experience from strategy and business development roles	4,456
CIO, SVP, Digitalisation	Soili Mäkinen (since 2006)	• Born 1960, Finnish, M.Sc. (Econ.) • Over 20 years of experience in MacGregor and Cargotec as CIO	n.a.
SVP, Human Resources	Mikko Pelkonen (since 2013)	• Born 1970, Finnish, B.A. • Former VP of Human Resources at Nokia Siemens Networks, over 15 years of experience in HR positions	16,189
President, Kalmar	Antti Kaunonen (since 2015)	• Born 1959, Finnish, D.Sc. (Tech) • Experience from mechanical engineering and forestry industries, former Professor at Tampere University of Technology	3,200
President, Hiab	Scott Phillips (since 2018)	• Born 1966, US citizen, MBA and B.Sc. (Ind. Tech.) • Experience from mining and construction industries	n.a.
President, MacGregor	Michel van Roozendaal (since 2015)	• Born 1963, Dutch citizen, MBA and M.Sc. (Aerospace Eng.) • Experience from global management in transportation and manufacturing	5,341

Appendix 33 Executive Board compensation plan (2017)

EURm	CEO Vehviläinen	Other Executive Board members
Base salary	706,860	2,005,484
Short-term incentives	575,505	993,200
Long-term incentives[2]	1,055,946	1,126,685
Total	**2,338,331**	**4,125,369**

CEO
46x

EXECS
13x

CEO Vehviläinen and other Executive Board members earned 46 and 13 times the average employee salary of 51,000 EUR, respectively

Source: Cargotec
Notes: [1]Stock ownership as of December 31, 2017
[2]Including 2014 share-based incentive program and 2016 restricted shares program payout

Appendix 34 Board of Directors

Title	Name	Independence	Description	Stock ownership[1]
CoB	Ilkka Herlin (since 2005)	Independent from company, significant shareholder	Born 1959, Finnish, D.Sc. (Tech), D.Sc. (Agr. & For.)	2,940,067 A shares, 6,207,918 B shares
Vice CoB	Tapio Hakakari (since 2009)	Independent	Born 1953, Finnish, LL.M.	159,335 B shares
Board Member	Teuvo Salminen (since 2010)	Independent	Born 1954, Finnish, M.Sc. (Econ.)	8,857 B shares
Board Member	Kimmo Alkio (since 2016)	Independent	Born 1963, Finnish, BBA, eMBA	2,313 B shares
Board Member	Jorma Eloranta (since 2013)	Independent	Born 1951, Finnish, M.Sc. D.Sc. (Tech)	8,844 B shares
Board Member	Peter Immonen (since 2005)	Independent from company, dependent of significant shareholders	Born 1959, Finnish, M.Sc. (Econ.)	53,970 B shares
Board Member	Teresa Kemppi-Vasama (since 2017)	Independent	Born 1970, Finnish, M.Pol.Sc. and MBA	2,253 B shares
Board Member	Johanna Lamminen (since 2017)	Independent	Born 1966, Finnish, D.Sc. (Tech)	253 B shares
Board Member	Kaisa Olkkonen (since 2016)	Independent	Born 1964, Finnish, LL.M.	543 B shares

Appendix 35 ESG Score

Thomson Reuters ESG Score was selected as the methodology to assess the environmental and social responsibility and corporate governance. The score is based on ESG indicators and is measured relative to a peer group. Cargotec is above average in environmental sustainability but there is yet to improve in particular governance related to shareholders.

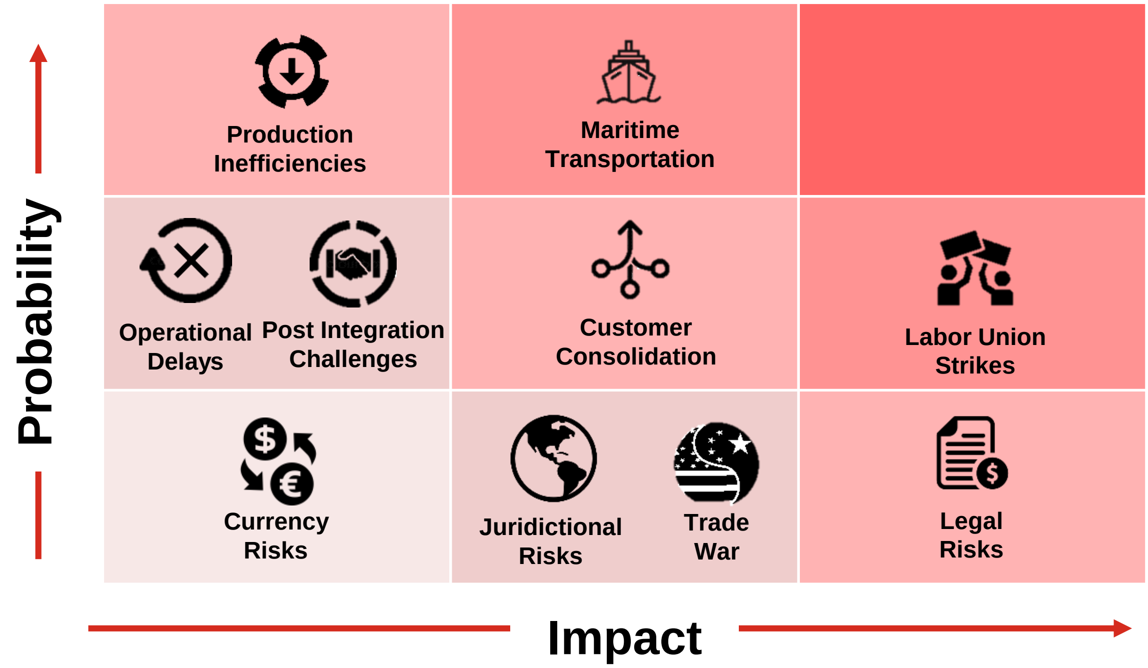
Pillar	Category	Weight	Grade	Commentary
Environmental	Resource use	11%	B+	Strong in its efforts to minimise the environmental impact of its supply chain and use of environmental criteria in material sourcing decisions. It has an appointed management team for environmental sustainability and uses renewable energy.
	Emissions	12%	A-	Cargotec performs particularly well in emissions – for example, waste generation and CO2-emissions per USDm of revenue are well below peer average.
	Innovation	11%	A-	Strong performance in environmental, eco-design and noise-reducing products and development of hybrid vehicles.
	Pillar total	**35%**	**A-**	
Social	Workforce	16%	C	Cargotec has procedures set in place for employee health and safety, diversity, career development. The salary gap between the CEO and average employee is below peer average. However, employee turnover and injury rate are relatively high.
	Human rights	4.5%	B-	Human rights issues are in line with peers with a human rights policy set in place.
	Community	8%	B+	Cargotec has a Code of Conduct set in place that addresses e.g. bribery, corruption and ethics issues. The company follows OECD guidelines for multinational companies.
	Product responsibility	7%	B+	Customer health and safety policy and quality management systems are set in place. The company is ISO 9000 certified. However, they do not use e.g. Six Sigma or Lean systems.
	Pillar total	**35.5%**	**B-**	
Governance	Management	19%	B	Cargotec has policies in place regarding nominations, compensation, board size, diversity and independence and the CEO is not a Board Member. They do not have a succession plan for top management.
	Shareholders	7%	D+	There is another share class with substantial voting rights, i.e. not all shareholders are treated equally.
	CSR strategy	4.5%	C	Cargotec uses external CRS auditing and reports its performance according to the GRI Index guidelines. However, the company does not have an appointed CST team.
	Pillar total	**30.5%**	**C+**	
Total score		**100%**	**B**	

Source: Cargotec, Thomson Reuters, team analysis

Notes: [1] Stock ownership as of December 31, 2017, B shares

Appendix 36 Risk Matrix

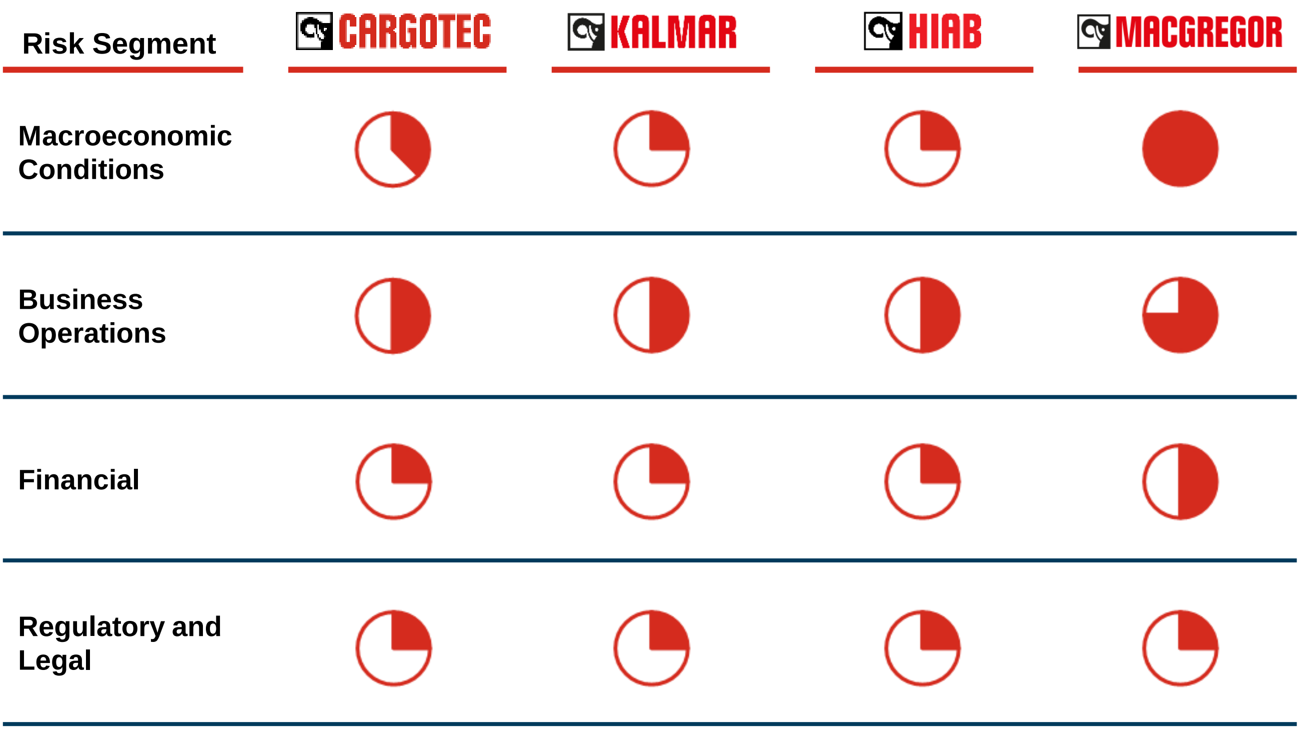
To strengthen our risk analysis, a risk matrix was composed to further evaluate the probabilities and impacts of risks, if realized. The team has analyzed the risks and developed a probability-impact matrix to better understand risk drivers impacting Cargotec.



Source: Cargotec, team analysis

Appendix 37 Risk Decomposition per Business Area

Down below, four most important risk segments have been analyzed per Business Area basis. The analysis was constructed to further understand how various risks impact Kalmar, Hiab and MacGregor individually.



Source: Cargotec, team analysis

Disclosures:

Ownership and material conflicts of interest:
The author(s), or a member of their household, of this report does not hold a financial interest in the securities of this company.
The author(s), or a member of their household, of this report does not know of the existence of any conflicts of interest that might bias the content or publication of this report.
Receipt of compensation:
Compensation of the author(s) of this report is not based on investment banking revenue.
Position as a officer or director:
The author(s), or a member of their household, does not serve as an officer, director or advisory board member of the subject company.
Market making:
The author(s) does not act as a market maker in the subject company's securities.
Disclaimer:
The information set forth herein has been obtained or derived from sources generally available to the public and believed by the author(s) to be reliable, but the author(s) does not make any representation or warranty, express or implied, as to its accuracy or completeness. The information is not intended to be used as the basis of any investment decisions by any person or entity. This information does not constitute investment advice, nor is it an offer or a solicitation of an offer to buy or sell any security. This report should not be considered to be a recommendation by any individual affiliated with CFA Society Finland, CFA Institute or the CFA Institute Research Challenge with regard to this company's stock.

CFA Institute

CFA Institute Research Challenge