



Company Outlook: Haldex AB

Yale School of Management

A smart workout to bet on

We recommend investors buy Haldex in anticipation of the SEK 125 tender offer closing by October 5, 2017.

If all goes well, there is a 12.2% annualized return to be had. If not, we believe past bids will prevent the stock from falling below SEK 90.00.

Nearly 9 months of delays have created the favorable odds we now find in this workout scenario.

Low volume makes this trade only available to smaller funds looking to invest < \$20 million in this trade. Larger purchases would move the price and eliminate the expected return.

Carter Page
+1 (224) 531-8380
carter.page@yale.edu

Ibukunoluwa Adereti
+1 (203) 684-4026
daniel.adereti@yale.edu

Recommendation: BUY

Please see the disclaimer at the back of this report for important information.

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Executive Summary

The Swedish company **Haldex AB**, one of the world's leading suppliers of brake products and air suspension systems for heavy vehicles (largely trucks and trailers), remains stuck in a post-takeover-battle limbo after German braking system manufacturer **Knorr-Bremse** beat out two other suitors for control of the company. The battle began on July 14, 2016 when Luxembourg-based **SAF-Holland** announced a SEK 94.42 a share tender offer for Haldex, whose shares had been trading at SEK 85.25 the day before. Three weeks later, German vehicle parts manufacturer **ZF Friedrichshafen** offered SEK 100.00 a share, and from there the race was on. Over the next two months, 4 more offers for Haldex would emerge with Knorr-Bremse ultimately placing the highest bid of SEK 125 and announcing 86.1% shareholder acceptance in December 2016.

Knorr-Bremse's victory came despite Haldex's Board urging shareholders to accept the lower, but safer, SEK 120.00 offer from ZF. Investors were warned that while the extra SEK 5 appeared tempting, the Knorr-Bremse deal still required anti-trust approval from both the US and EU, whereas ZF had already secured regulatory approval. The Board feared regulators would block the Knorr-Bremse acquisition. **Investors spurned the guidance, and reached for the extra SEK 5.**

Nearly 9 months later, it appears shareholders should have settled for SEK 120 in the pocket, rather SEK 125 in the bush. Haldex stock currently trades at SEK 119, Knorr-Bremse recently filed its third extension as it prepares to convince anti-trust authorities, and a deal that could have closed in October 2016 at SEK 120 looks now to be postponed until October 2017. The company meanwhile has seen earnings fall 40% as the uncertainty over its future has damaged sales, existing partnerships, and employee turnover.

When we analyze this merger-arbitrage opportunity (though we seriously question the use of arbitrage here), we cannot help but think of Howard Marks's words on the importance of "knowing what you don't know." **For this transaction, we know that we do not have any special insight into what a court in Brussels will decide on the fate of a Swedish company being acquired by a German conglomerate. Yet we do know that there are several factors that shift the odds in our favor, namely 1) the frustration of past buyers agitated by the continued delays, 2) the illiquidity of the target security, 3) the price floor that past offers have created, 4) the possibility of a future offer from ZF should Knorr-Bremse's bid fail, and 5) the high potential loss that short-term investors cannot handle.** While alone, each of these reasons is not enough to form a compelling thesis, together they push the odds enough in our favor that we see Haldex as a smart risk for long-term investors to take (with the added benefit of being largely uncorrelated with the rest of the portfolio).

We do not recommend investors blindly buy into this Haldex "workout" situation (to borrow Buffett terminology) on its own. Though the trade may be fine 80% of the time, 20% of the time there is a big loss to be had. In face of such uncertainty, we offset these small probabilities of large losses by a portfolio of workouts. Though we may have a bad year here and there with workouts, our capacity to tolerate these swings in value will over time generate excess returns if we select each workout security wisely.

Given this mindset, we argue that Haldex has enough desirable traits that reaching for the extra SEK 6 in this case (though others before have been burned) represents a smart risk for the diversified, long-term investor to take.

If all goes well, there is a 12.2% annualized return to be had. If not, we walk away knowing that if we put ourselves in enough of these smart situations, the returns will eventually follow. **While we do not know what will happen with this specific deal, we are confident that a diversified portfolio of Haldex-like situations will work out over time.**

Company Overview

Introduction. Haldex AB is one of the world's leading suppliers of brake products and air suspension systems for heavy vehicles (largely trucks and trailers). Based in Sweden, the company in 2016 had annual sales of SEK 4,374 million (\$496 million) and currently has a market capitalization of SEK 5,200 million (\$591 million). Approximately 87% of the company's sales are spread between North America (51%) and Europe (36%). Haldex estimates its brake adjusters capture 60% of global market share. For its air controls, the company leads in Europe but takes third in North America. Overall Haldex estimates that it has 15% global market share in commercial vehicle systems, with much larger shares in specific products segments and regions.

Key competitors are **Wabco Holdings Inc**, **Meritor**, and German conglomerate **Knorr-Bremse** (the leading competitor to Wabtec in producing rail braking systems and potential acquirer of Haldex).

Company Products. The company's sales were split between Foundation Brakes (where it has the dominant market position) and air controls. **Haldex's expertise in heavy duty vehicle braking makes it an attractive target as manufacturers work to develop autonomous commercial vehicles.**

Exhibit 1: Net Sales by Product

Amounts in millions SEK.

	2016	% Total	2015	% Total	Change
Foundation Brake	2,420.0	55%	2,712.0	57%	-11%
Air Controls	1,954.0	45%	2,065.0	43%	-6%
Total	4,374.0	100%	4,777.0	100%	-9%

Source: Haldex Q1 2017 Interim Report.

Exhibit 2: Net Sales by Customer Category

Amounts in millions SEK.

	2016	% Total	2015	% Total	Change
Truck (including buses)	1,006.0	23%	1,276.0	27%	-21%
Trailer	1,383.0	32%	1,380.0	29%	0%
Aftermarket	1,985.0	45%	2,121.0	44%	-7%
Total	4,374.0	100%	4,777.0	100%	-9%

Source: Haldex Q1 2017 Interim Report.

Customer Categories. Customers include manufacturers of heavy trucks, buses and trailers as well as workshops that use spare parts in the aftermarket. In 2016, 45% of sales came from these workshops that repair vehicles as manufacturing in the industry has slowed down.

Exhibit 3: Net Sales by Region

	2016	% Total	2015	% Total	Change
Europe	1,571.0	36%	1,573.0	33%	-1%
North America	2,238.0	51%	2,641.0	55%	-16%
Asia & Middle East	445.0	10%	430.0	9%	7%
South America	120.0	3%	133.0	3%	-7%
Total	4,374.0	100%	4,777.0	100%	-9%

Source: Haldex Q1 2017 Interim Report.

Sales by Region. Haldex's largest market is North America, representing 51% of sales in 2016. The company has been diversifying its geographic exposure through partnerships in Asia.

Public Offer Timeline

Overview. Starting on July 14, 2016, a bidding war broke out between Luxembourg-based **SAF-Holland**, German vehicle parts manufacturer **ZF Friedrichshafen**, and leading German rail and vehicle brake systems producer **Knorr-Bremse**. The Haldex board each time unanimously recommended the **ZF** offers of SEK 100, SEK 110, and SEK 120, citing the regulatory risks Knorr-Bremse's offer posed and ZF's better positioning for current Haldex employees. Investors spurned the Board's warning and accepted the Knorr-Bremse offer for SEK 125 instead.

Since December, the transaction has been stalled as Knorr-Bremse has extended the acceptance period three times as it prepares evidence to persuade anti-trust regulators in Europe and the United States.

Exhibit 4: Public Offer Timeline

Knorr-Bremse made its third extension of the tender offer acceptance period on April 25, 2017.

2016	
Jul 14	SAF-Holland offers SEK 94.42
Aug 4	ZF Friedrichshafen offers SEK 100.00
Aug 4	Board Unanimously recommends ZF offer of SEK 100.00
Aug 25	SAF-Holland withdraws offer
Sep 5	Knorr-Bremse offers SEK 110.00
Sep 14	ZF raises offer to SEK 110.00 and receives full anti-trust clearance
Sep 14	Board recommends ZF offer of SEK 110.00. Chairman and several other insiders sell holdings to ZF (representing 17.06% of shares)
Sep 16	Knorr-Bremse raises offer to SEK 125.00
Sep 16	ZF increases offer price to SEK 120.00
Sep 19	Haldex Board unanimously recommends ZF offer of SEK 120.00
Nov 30	ZF intends to tender entire holding into Knorr-Bremse offer
Dec 7	Knorr-Bremse offer reaches 86.1% acceptance. Extends acceptance period to Feb 28 for anti-trust approvals (1st extension)
2017	
Feb 9	Knorr-Bremse extends acceptance period to June 16 for anti-trust approvals (2nd extension)
Apr 19	Knorr-Bremse requests permission from Swedish Securities Council to extend acceptance period to Sep 26 for anti-trust approvals
Apr 25	Swedish Securities Council grants permission for Knorr-Bremse to extend acceptance period to Sep 26 (3rd extension)
Sep 26	<i>Current end of acceptance period (can be ended earlier if regulatory approval is reached earlier)</i>
Oct 5	Expected settlement date if acceptance period ends on Sep 26

Source: Haldex Investor Relations

In its most recent extension, Knorr-Bremse explained to the Swedish Securities Council that:

"The reason for the application is that Knorr-Bremse has made the assessment that the possibilities to obtain merger clearance on terms acceptable to Knorr-Bremse will be significantly enhanced should Knorr-Bremse have additional time to provide more thorough and detailed information to the authorities and prepare potential remedies." (Knorr-Bremse Press Release, April 25th).

If regulatory approval is received by the new deadline, Knorr-Bremse estimates settlement will take place by October 5, 2017. **This settlement would come almost a year later than the SEK 120 investors could have secured in October 2016 had they taken the ZF bid and not reached for the extra SEK 5.**

Haldex management has stated that it believes Haldex will remain in this uncertain takeover position for the next few months. **We do not see any further extensions by Knorr-Bremse as it has already been granted an extension beyond the Swedish maximum total acceptance period of 9 months. Thus we feel confident in a rather tight time horizon for this event-driven trade.**

When SAF-Holland decided to withdraw its offer, it held 3.6% of outstanding Haldex shares (excluding any tendered). By the end of 2016, Holland exited its position with a capital gain of € 5.7 million partially offset by costs associated with preparing the offer of € 5.1 million.

ZF, on the other hand, decided not to sell its position (currently 17.1% of the company) and remains the largest shareholder in Haldex, as ZF “ remains committed to the success of Haldex” (ZF Press Release, October 5, 2016). ZF did later agree on November 30 to tender its shares for the Knorr-Bremse offer. ZF’s decision to hold onto its shares in Haldex raises the possibility of another tender offer by ZF should the Knorr-Bremse acquisition fail on anti-trust grounds. ZF received full anti-trust clearance for the transaction on September 14.

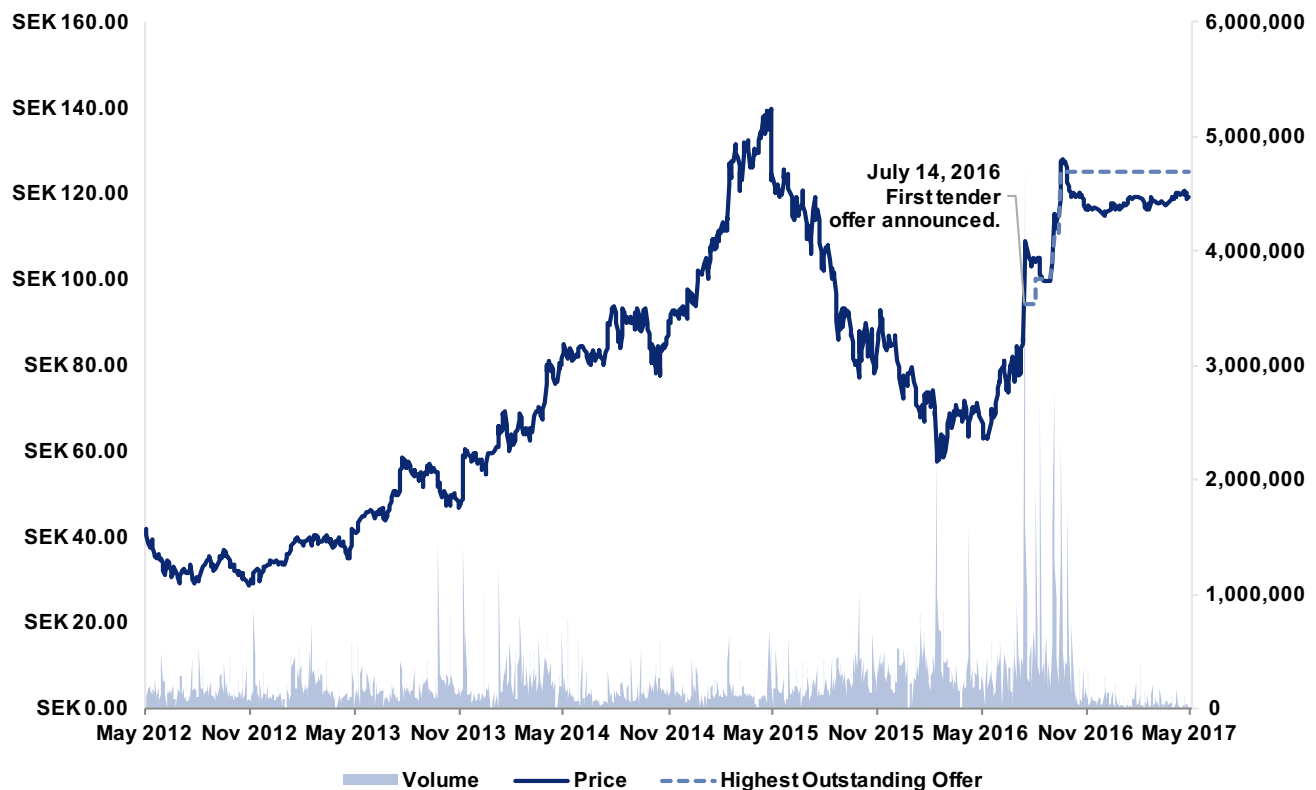
Stock Performance

Overview. Haldex stock is traded on the Stockholm Stock Exchange under the ticker "HLDX".

After dropping nearly 60% from its peak in April 2015, the company's shares began rebounding in the first half of 2016. After the initial offer of SEK 94.42 was announced on July 14, 2016, the stock rose on the expectation of another offer. The stock peaked at SEK 127.50 in mid-September before falling below the tender offer price of SEK 125.

Exhibit 5: HLDX Stock Price and Volume

Haldex shares jumped sharply following the first offer from lows as heavy vehicle manufacturing declined worldwide.



Performance since Initial Offer. Since the initial offer, HLDX has traded in a narrow band that has tracked the highest outstanding offer. **Noticeable declines occurred on February 9th and April 19th following Knorr-Bremse announcements of further transaction extensions.** As of May 1, 2017, the stock traded at SEK 119.00, representing a SEK 6 or 5.04% spread below the offer price.

Exhibit 6: HLDX Stock Price and Volume since Initial Offer

Since the initial offer, volume has steadily fallen and the stock has remained approximately 4.5% to 7.5% below the offer price of SEK 125.



Volume. Since the offer announcements, volume of the security has fallen significantly. Since December 1, 2017, volume has averaged approximately 60,000 shares traded each day. **Given the average share price of SEK 118.18 over this period, average volume in Krona amounts has been SEK 7.1 million (\$805 thousand) a day. Thus, this opportunity is only available to smaller funds where below \$20 million dollars represents a meaningful investment. Larger trades would move the stock price too much and eliminate the expected return.** This size constraint and the illiquidity of this opportunity are advantages for smaller funds to exploit.

Financial Analysis

Introduction. Given the bidding war that erupted over Haldex, it is clear that the company is worth more to potential acquirers than as a standalone company. While Haldex's financials continue to decline as the heavy duty market slows, the stock price has been almost entirely driven by the bids. Potential acquirers value the braking expertise that Haldex brings as they attempt to consolidate and develop autonomous technologies.

Income Statement

In 2016, revenues declined 8.4% and net income fell 53.4% as expenses did not fall commensurately. Selling expense actually increased. These declines are part of the larger market slowdown in heavy duty trucking due the commodities price slump. Interest expense has steadily declined as the company has been paying down its long-term debt.

Exhibit 7: Haldex Historical Income Statement

Amounts in millions SEK (except per share figures).

	2016	2015	2014	2013	2012	CAGR
Net Sales	4,374.0	4,777.0	4,380.0	3,920.0	3,933.0	2.7%
Cost of Sales	(3,155.0)	(3,418.0)	(3,142.0)	(2,827.0)	(2,904.0)	2.1%
Gross profit	1,219.0	1,359.0	1,238.0	1,093.0	1,029.0	4.3%
Selling expense	(480.0)	(431.0)	(383.0)	(376.0)	(389.0)	5.4%
Administrative expenses	(293.0)	(318.0)	(301.0)	(299.0)	(302.0)	-0.8%
Product development expenses	(177.0)	(193.0)	(173.0)	(164.0)	(145.0)	5.1%
Other operating income and expenses	(65.0)	(92.0)	(148.0)	(101.0)	(43.0)	10.9%
Total operating expenses	(1,015.0)	(1,034.0)	(1,005.0)	(940.0)	(879.0)	3.7%
Income from operations	204.0	325.0	233.0	153.0	150.0	8.0%
Interest expense, net	(18.0)	(26.0)	(25.0)	(34.0)	(16.0)	3.0%
Other financial items	(21.0)	(28.0)	(3.0)	(10.0)	(28.0)	-6.9%
Income from operations before income taxes	165.0	271.0	205.0	109.0	106.0	11.7%
Income tax expense	(74.0)	(80.0)	(98.0)	(72.0)	(57.0)	6.7%
Net Income	91.0	191.0	107.0	37.0	49.0	16.7%
Less: Net income attributable to noncontrolling interest	3.0	2.0	5.0	3.0	4.0	-6.9%
Net income attributable to Parent Company	88.0	189.0	102.0	34.0	45.0	18.3%
Weighted average diluted shares outstanding	44,204,000	44,204,000	44,204,000	44,206,000	44,216,000	
Diluted Earnings per Share	SEK 2.00	SEK 4.28	SEK 2.32	SEK 0.80	SEK 1.02	18.3%

Source: Haldex Annual Reports

Over the past four years, revenue has grown at 2.7% compounded annually and net income has grown at 18.3% a year. This earnings growth can be explained by the increasing gross margin from 26.2% in 2012 to 27.9% in the down year of 2016.

Balance Sheet

Book value per share is SEK 30.58, representing a price-to-book value of 3.89. Intangibles represent 16.7% of total assets, with the vast majority pertaining to goodwill. The company's long-term debt to equity ratio has steadily declined as the book value has grown and nominal debt levels have decreased.

Exhibit 8: Haldex Historical Balance Sheet

Amounts in millions SEK (except per share figures).

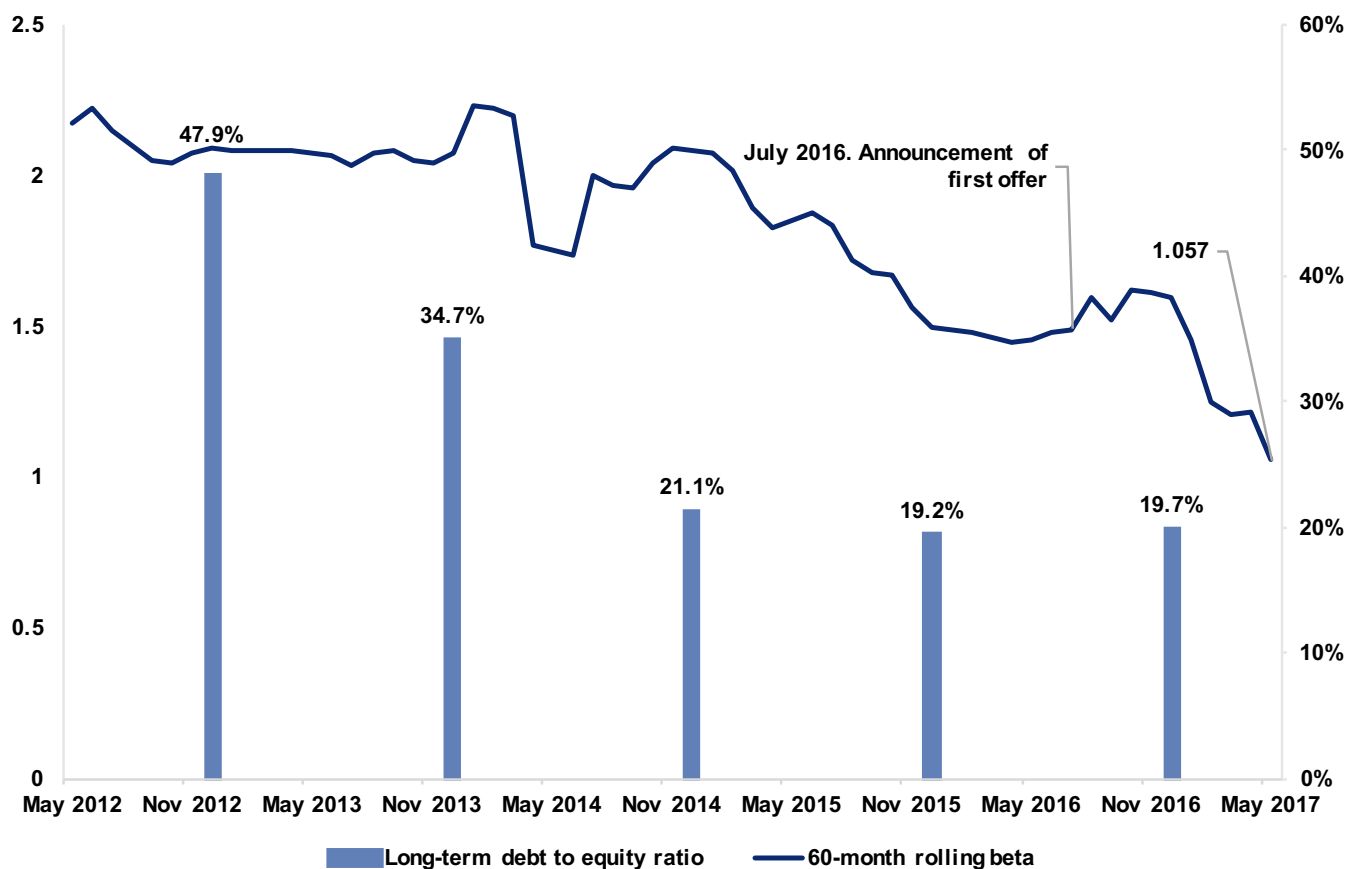
	2016	2015	2014	2013	2012	2011
ASSETS						
Cash and cash equivalents	297.0	304.0	437.0	323.0	346.0	395.0
Accounts receivable	603.0	545.0	587.0	477.0	449.0	561.0
Other current receivables	306.0	218.0	200.0	150.0	138.0	112.0
Inventories	524.0	571.0	544.0	480.0	456.0	503.0
Derivate instruments	21.0	40.0	20.0	9.0	25.0	11.0
Total current assets	1751.0	1678.0	1788.0	1439.0	1414.0	1582.0
Tangible assets	557.0	479.0	449.0	429.0	501.0	550.0
Financial assets	71.0	63.0	68.0	28.0	25.0	22.0
Deferred tax assets	166.0	153.0	165.0	140.0	109.0	145.0
Goodwill	422.0	418.0	408.0	354.0	354.0	371.0
Other intangibles	90.0	64.0	58.0	96.0	183.0	188.0
Total Assets	3057.0	2855.0	2936.0	2486.0	2586.0	2858.0
LIABILITIES						
Accounts payable	401.0	390.0	457.0	353.0	279.0	379.0
Current interest-bearing liabilities	79.0	3.0	15.0	11.0	10.0	3.0
Derivative instruments	32.0	29.0	38.0	10.0	11.0	10.0
Provisions	124.0	166.0	184.0	55.0	66.0	55.0
Other current liabilities	290.0	168.0	246.0	177.0	138.0	151.0
Total current liabilities	926.0	756.0	940.0	606.0	504.0	598.0
Non-current interest-bearing liabilities	270.0	270.0	270.0	400.0	595.0	675.0
Long-term debt to equity	19.7%	19.2%	21.1%	34.7%	47.9%	50.5%
Pensions and similar obligations	422.0	368.0	400.0	291.0	206.0	204.0
Deferred tax liabilities	30.0	16.0	12.0	12.0	16.0	17.0
Other non-current liabilities	35.0	38.0	36.0	25.0	23.0	28.0
Total Liabilities	1683.0	1448.0	1658.0	1334.0	1344.0	1522.0
SHAREHOLDERS' EQUITY						
Share capital	221	221	221	221	221	221
Share premium	491	491	491	491	491	491
Retained earnings	640	676	547	424	513	611
Equity attributable to shareholders of the Parent company	1352	1388	1259	1136	1226	1323
Attributable to non-controlling interests	22	19	19	16	16	13
Total Equity	1374	1407	1278	1152	1242	1336
Number of Common Shares Outstanding	44,215,970	44,215,970	44,215,970	44,215,970	44,215,971	44,215,972
Book Value per Share	SEK 30.58	SEK 31.39	SEK 28.47	SEK 25.69	SEK 27.73	SEK 29.92
Tangible Book Value per Share	SEK 19.00	SEK 20.49	SEK 17.93	SEK 15.51	SEK 15.58	SEK 17.28

Source: Haldex Annual Reports

Rolling Beta. As one would expect, the rolling beta for the security has fallen significantly after the announcement of the first tender offer as the stock has traded in a narrow band. Yet the company's falling beta actually predates the offer as Haldex's long-term debt to equity ratio has steadily fallen over the past years.

Exhibit 9: HLDX 60-month Rolling Beta versus OMX Stockholm 30 Index

Since 2012, the rolling beta of Haldex has steadily decreased as management has decreased the long-term debt to equity ratio. Beta has fallen significantly following the first offer as the stock has traded in a narrow band below the offer price.



Source: Haldex Annual Reports and authors' calculations.

Acquirer Financials

Overview. We now turn to financials of the potential acquirers, Knorr-Bremse and ZF, who also are the two largest shareholders of Haldex. Despite Knorr-Bremse being crowned the acquisition victor in December, we believe there is still an opportunity for another ZF bid should the Knorr-Bremse deal be blocked on anti-trust grounds.

Despite both companies being private, each releases audited financial statements. Ironically, ZF, the company that was able to secure anti-trust approval in September 2016 is more than 6 times larger than Knorr-Bremse in terms of sales. This fact reinforces that while auto parts manufacturing as a whole is a low concentrated market, the worries from this deal concern Haldex's market share in specific product lines.

Both companies have enough cash on their balance sheets to complete the acquisition.

Knorr-Bremse

Knorr-Bremse is a privately owned German conglomerate that is a major player along with Wabtec in braking solutions for rail. The company also has its own auto braking segments that are considered to be current competitors of Haldex. Knorr-Bremse is controlled by German billionaire Heinze Hermann Thiele, who took over Knorr-Bremse in the 1980s.

Income Statement. Revenues fell 5.8% in 2016 and net income fell 32.8%. These results mirror Haldex's own financials as both companies operate in very similar lines of business.

Exhibit 10: Knorr-Bremse Income Statement

Amounts in millions EUR.

		2016	2015
Net Revenues	€	5,736.3	€ 6,089.6
Cost of Sales	€	(2,560.9)	€ (2,730.6)
Gross profit	€	3,175.5	€ 3,359.0
Personnel expenses	€	(1,196.6)	€ (1,213.2)
Depreciation and amortization on purchased intangibles and fixed assets	€	(179.5)	€ (198.9)
Other operating expenses	€	(967.4)	€ (969.6)
Financial results	€	(2.6)	€ (0.8)
Total operating expenses	€	(2,346.0)	€ (2,382.5)
Income from operations before income taxes	€	829.5	€ 976.6
Income tax expense	€	(279.8)	€ (331.8)
Net Income	€	549.7	€ 644.8
Less: Net income attributable to noncontrolling interests	€	(65.0)	€ 76.5
Net income attributable to Knorr-Bremse	€	484.7	€ 721.3

Source: Knorr-Bremse 2016 Annual Report

Balance Sheet.

Knorr-Bremse carries approximately € 81.5 million of shares of Haldex on its balance sheet under "Investments". Thus, were the deal to fall through and the share price fell to SEK 90.00, Knorr-Bremse would experience a € 20 million unrealized loss, or 4.1% of 2016 net income. This significant exposure demonstrates Knorr-Bremse's belief that the deal will go through. **As the second-largest shareholder of Haldex, Knorr-Bremse cannot walk away from the deal without feeling pain.**

Exhibit 11: Knorr-Bremse Balance Sheet

Amounts in millions EUR.

		2016	2015
ASSETS			
Cash and cash equivalents	€	1,720.1 €	1,360.1
Accounts receivable	€	961.4 €	939.8
Inventories	€	419.5 €	417.8
Other current assets	€	173.8 €	145.0
Total current assets	€	3,274.8 €	2,862.6
Fixed assets	€	901.0 €	782.1
Investments	€	97.4 €	80.1
Prepaid expenses	€	23.5 €	23.7
Deferred tax assets	€	62.2 €	76.7
Purchased intangibles	€	245.3 €	176.7
Total Assets	€	4,604.2 €	4,001.9
LIABILITIES			
Accounts payable	€	862.9 €	848.7
Pension plan accruals	€	242.9 €	240.6
Other accrued liabilities	€	1,010.0 €	999.8
Bonds	€	500.0 €	-
Long-term debt to equity		27.5%	0.0%
Deferred income	€	8.5 €	8.3
Other liabilities	€	161.2 €	168.7
Total Liabilities	€	2,785.4 €	2,266.2
SHAREHOLDERS' EQUITY			
Capital stock	€	67.6 €	67.6
Capital reserves	€	0.2 €	0.2
Retained earnings	€	877.6 €	835.1
Unappropriated consolidated net income	€	676.1 €	618.3
Non-controlling interests	€	197.3 €	214.7
Group equity	€	1,818.8 €	1,735.7

Source: Knorr-Bremse 2016 Annual Report.

ZF Friedrichshafen

ZF Friedrichshafen is a private German company owned by the Zeppelin-Foundation (93.8%), administered by the City of Friedrichshafen, and the Dr. Jürgen und Irmgard Ulderup Foundation (6.2%). The company produces many automotive components, and develops active and passive safety technology for vehicles.

Income Statement. Revenue for ZF actually increased in 2016 by 20.6%, reflecting its exposure to the larger consumer auto market beyond braking systems. Net income fell by 11.8%. Note that ZF is larger than Knorr-Bremse in terms of both revenue and earnings.

Exhibit 12: ZF Income Statement

Amounts in millions EUR.

	2016		2015	
Sales	€	35,166.0	€	29,154.0
Cost of Sales	€	(29,069.0)	€	(24,533.0)
Gross profit	€	6,097.0	€	4,621.0
Research and development costs	€	(1,948.0)	€	(1,390.0)
Selling expenses	€	(1,263.0)	€	(1,081.0)
General administrative expenses	€	(1,317.0)	€	(1,099.0)
Other expenses	€	(485.0)	€	(623.0)
Total operating expenses	€	(5,013.0)	€	(4,193.0)
Other income	€	530.0	€	653.0
Operating profit	€	1,614.0	€	1,081.0
Result from associates	€	48.0	€	532.0
Other net result from participants	€	16.0	€	(17.0)
Financial income	€	458.0	€	301.0
Financial expenses	€	(855.0)	€	(809.0)
Net profit before tax	€	1,281.0	€	1,088.0
Income tax expense	€	(357.0)	€	(69.0)
Net Income	€	924.0	€	1,019.0
Less: Net income attributable to noncontrolling interests	€	(65.0)	€	(45.0)
Net income attributable to ZF shareholders	€	859.0	€	974.0

Source: ZF 2016 Annual Report

Balance Sheet. ZF classifies its shares in Haldex as “Assets held for sale” as it has tendered its shares in the Knorr-Bremse offer. The decision not to sell the shares argues that ZF is confident the Knorr-Bremse offer will succeed. Otherwise, suppose the deal fails and the shares fall to SEK 90.00. In this case, the shares carried on ZF’s books would lose more than € 26 million in value, or about 3% of 2016 net income. **We therefore believe ZF believes the deal will succeed or plans to make another offer should Knorr-Bremse fail.**

Exhibit 13: ZF Balance Sheet

Amounts in millions EUR.

		2016	2015
ASSETS			
Cash and cash equivalents	€	1,627.0 €	1,495.0
Financial assets	€	94.0 €	66.0
Trade receivables	€	5,220.0 €	4,777.0
Other current assets	€	477.0 €	434.0
Income tax receivables	€	13.0 €	9.0
Inventories	€	2,864.0 €	2,879.0
Total current assets	€	10,295.0 €	9,660.0
Assets held for sale and disposal groups	€	108.0 €	657.0
Financial assets	€	764.0 €	1,809.0
Other assets	€	214.0 €	190.0
Associates	€	386.0 €	308.0
Property, plant and equipment	€	6,626.0 €	6,856.0
Intangible assets	€	9,893.0 €	10,179.0
Deferred taxes	€	842.0 €	673.0
Total Assets	€	29,128.0 €	30,332.0
LIABILITIES			
Financial liabilities	€	926.0 €	436.0
Trade payables	€	5,335.0 €	4,987.0
Other liabilities	€	1,843.0 €	1,754.0
Income tax provisions	€	488.0 €	402.0
Other provisions	€	725.0 €	580.0
Liabilities of disposal groups	€	- €	244.0
Total current liabilities	€	9,317.0 €	8,403.0
Financial liabilities	€	7,504.0 €	9,471.0
Long-term debt to equity		122.7%	161.9%
Trade payables	€	26.0 €	16.0
Other liabilities	€	434.0 €	444.0
Provisions for pensions	€	4,140.0 €	4,465.0
Other provisions	€	643.0 €	613.0
Deferred taxes	€	949.0 €	1,070.0
Total Liabilities	€	23,013.0 €	24,482.0
SHAREHOLDERS' EQUITY			
Subscribed capital	€	500.0 €	500.0
Capital reserve	€	386.0 €	386.0
Retained earnings	€	4,930.0 €	4,667.0
Equity attributable to shareholders of ZF	€	5,816.0 €	5,553.0
Non-controlling interests	€	299.0 €	297.0
Total Equity	€	6,115.0 €	5,850.0

Source: ZF 2016 Annual Report.

Stock Ownership

More than 32% of outstanding shares in Haldex are owned by the two potential acquirers ZF (17.1%) and Knorr-Bremse (14.9%). These shares are worth a combined SEK 1,682 million or \$191 million. Merger arbitrage trades carry the risk that the deal will fall through. **We are comforted in this tender offer situation that both potential acquirers cannot walk away from the deal without combined losses of over \$45 million if the share price were to fall to SEK 90.** ZF's decision to hold onto its shares and tender them rather than selling like SAF-Holland reveals ZF may intend to make another tender offer if the Knorr-Bremse deal is blocked.

Exhibit 14: Haldex Stock Ownership

Currency amounts in millions. As of December 31, 2016.

Shareholder	Number of Shares	% of votes and capital	Current Market Value USD	EUR	
ALEXANDRA MATHEUSSER (ZF)	7,542,481	17.1%	897.6 SEK\$	101.7 €	93.2
BPSS PAR/JOH BERENBERG GOSSLER&-CO (Knorr-Bremse)	6,595,039	14.9%	784.8 SEK\$	88.9 €	81.5
UBS AG LDN BRANCH A/C CLIENT, IPBr	3,831,953	8.7%	456.0 SEK\$	51.6 €	47.3
GOLDMAN SACHS INTERN. LTID, W8IMY	1,722,983	3.9%	205.0 SEK\$	23.2 €	21.3
CLEINTS ACCOUNT-DCS	1,388,449	3.1%	165.2 SEK\$	18.7 €	17.2
MORGAN STANLEY AND CO LLC, W9	1,260,316	2.8%	150.0 SEK\$	17.0 €	15.6
CBNY-DFA-INT SML CAP V	1,162,884	2.6%	138.4 SEK\$	15.7 €	14.4
FÖRSÄKRINGSAKTIEBOLAGET AVANZA PENSION	851,105	1.9%	101.3 SEK\$	11.5 €	10.5
AAGCS NV RE AACB NV RE EURO CCP	839,554	1.9%	99.9 SEK\$	11.3 €	10.4
CBNY-NORGES BANK	80,803	1.8%	9.6 SEK\$	1.1 €	1.0
Total, ten largest shareholders	25,275,567	58.7%	3,007.8 SEK\$	340.6 €	312.3
Others	18,208,698	41.3%	2,166.8 SEK\$	245.4 €	225.0
Haldex AB	11,705	0.0%	1.4 SEK\$	0.2 €	0.1
Total	43,495,970	100.0%	5,176.0 SEK\$	586.2 €	537.4

Market Price of \$119 SEK

1 SEK = 0.103820 EUR

1 SEK = 0.113255 USD

Source: Haldex 2016 Annual Report.

Under Swedish securities law, ZF would be free to drop the price of its new bid (and it most likely would as Knorr-Bremse would no longer be in the market) since the six month timeframe would expire by October 2017.

- “A bid cannot be made on less favourable terms than the highest price paid by the bidder for target shares during the six-month period before the announcement of the bid or during the bidding process.” (Thompson Reuters Practical Law, Sweden).

If the Knorr-Bremse deal were to fall through, we do not see the stock falling below SEK 90.00 since both SAF-Holland and ZF were prepared to pay more than that price before being outbid by Knorr-Bremse. Thus, we feel confident in a SEK 90.00 price floor (24.4% downside) should the deal fall through.

Anti-Trust Discussion

As we discussed earlier, we place great weight on Howard Marks's advice of "knowing what you don't know." **The clear unknown in this trade is the outcome of the both the US and EU anti-trust rulings.**

Though we do analyze past acquisitions in this space, we recognize that there is only so much analysis can do in this case. **Knorr-Bremse's ability to persuade American and European authorities remains an unknown that cannot be eliminated in this trade.** This uncertainty is why the opportunity to earn excess annualized returns presents itself.

In face of an uncertainty that cannot be eliminated, we analyze what we can about the uncertainty, but focus our analysis and recommendation on factors and biases that we can clearly identify. We recognize the frustration of past traders caught trying to reach for an extra SEK 5. We quantify the low volume that makes this trade available only to smaller funds. We see the price floor that past bids have created around the security. And we argue ZF's decision to hold onto its Haldex shares reflects the intention to bid again if the Knorr-Bremse deal falls through.

In our analysis of past acquisitions by Knorr-Bremse, we could not find a single past deal that had failed for anti-trust reasons. In 2016, Knorr-Bremse successfully completed 6 acquisitions. Evidenced by the over \$315 million of goodwill carried on the combined balance sheets of Knorr-Bremse and Haldex, both companies have had successful pasts acquiring companies.

The most recent large-scale acquisition in this space was the \$1,800 million acquisition of Faiveley Transport by Wabtec (December 1, 2016). In this case, the Department of Justice forced Wabtec divest Faiveley's North American rail braking business in order for the acquisition to proceed. We would expect Knorr-Bremse to walk away from the deal if it were required to divest Haldex's braking business since Haldex's expertise in braking is driving the acquisition to begin with. **We are comforted that the SEK 5,527 million (\$627 million) Haldex deal is only a third of the size of the Wabtec-Faiveley deal.**

Our approach reflects our belief that we do not have any special insight into what a court in Brussels will decide on the fate of a Swedish company being acquired by a German conglomerate. Rather we assume the market has an adequate bearing of the chances of the deal succeeding, and then identify separate reasons for why the market is underpricing the security (even if the market-implied probability of success is in fact true).

Trade Analysis

Discussion of downside. Based on our analysis of past bids and the shares carried on each potential acquirer's balance sheet, we feel that a price floor of SEK 90.00 is a conservative estimate. Supposing the market was risk-neutral (expected value of the stock is equal to the market price), this lower node would give a 17% market-implied probability of the deal failing. We believe this estimate to be unduly pessimistic as the market participants are surely risk averse.

Nevertheless, we calculate the annualized return if the deal closed on October 5th (Knorr-Bremse's current guidance) to be 12.2%. Factoring in the 17% implied probability of the deal failing and the price dropping to SEK 90.00, we arrive at an expected annualized return of 4.88%. If we use a 10% probability of the deal failing, we arrive at an expected annualized return of 7.64%. For 5% probability, the expected annualized return is 10.38%.

Exhibit 15: Calculation of Annualized Return

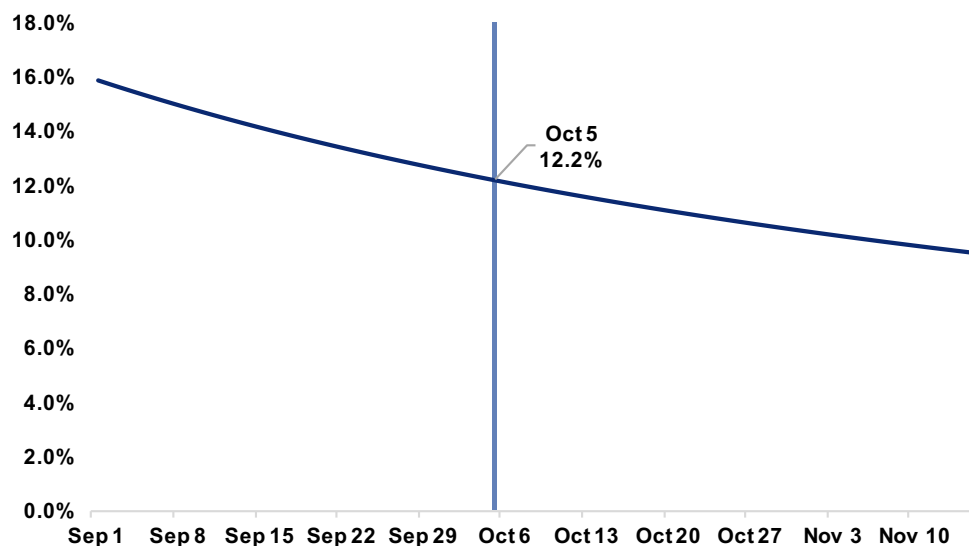
Assuming purchase price of SEK 119 and shares are purchased on May 2.

Current price	SEK	119.00
Offer price	SEK	125.00
Spread	SEK	6.00
Purchase date		May 2

Expected close	Total Return	Annualized return
Oct 5	5.0%	12.2%

Exhibit 16: Annualized Return Curve at SEK 119

Assuming purchase price of SEK 119 and shares are purchased on May 2.



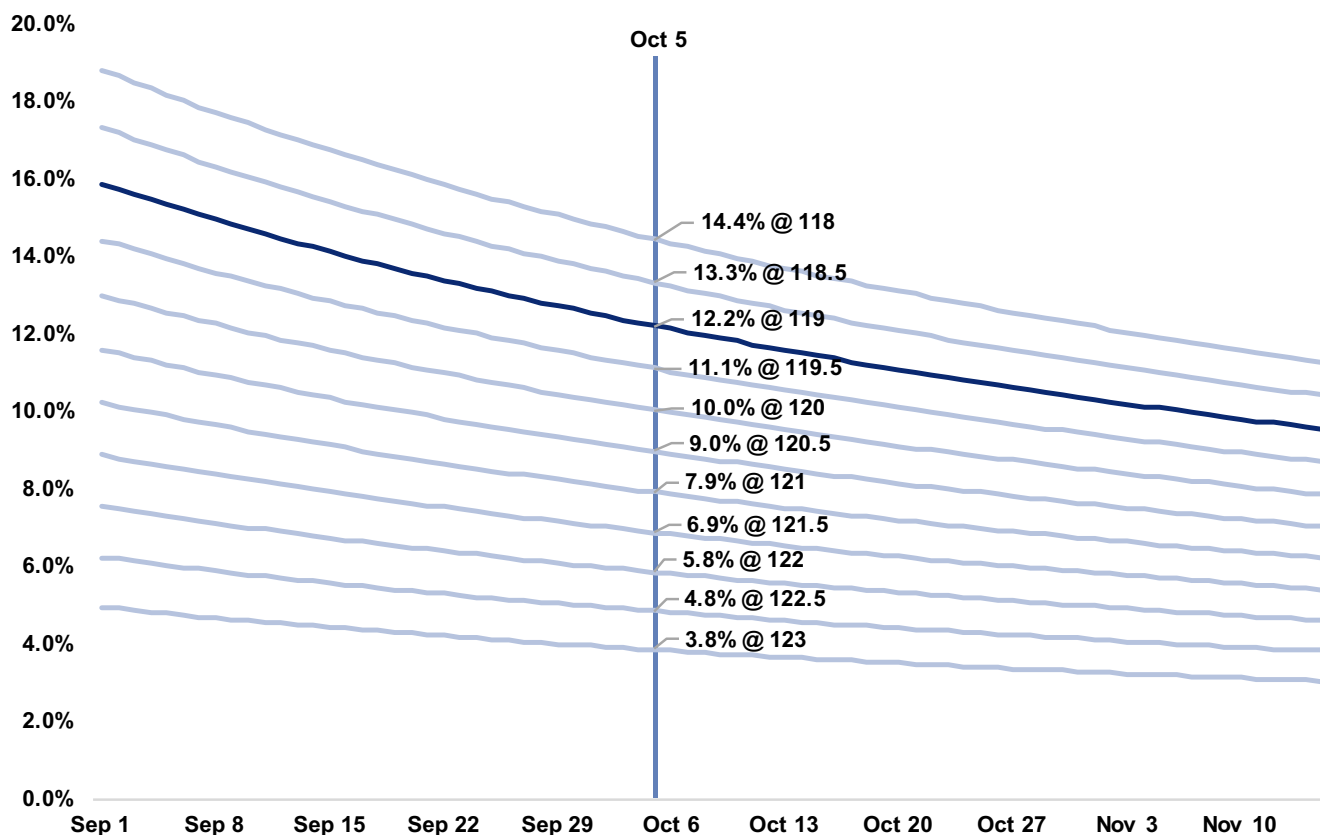
Past Mispricing of Duration. Our assumptions surrounding market prices may at first appear contradictory. We first assume that the market has adequately weighed the probability of the deal failing, but then also contend that other dynamics have created a mispricing. Furthermore, we argue the very same market participants mistakenly reached for the extra SEK 5, when they should have accepted the lower, but safer, ZF offer and walked away in October 2016 with SEK 120.

Our arguments rely on the belief that what led to the past and current mispricing were unrealistic expectations as to the duration of the deal. Investors did not price in that Knorr-Bremse would extend the deal three times (requiring special permission from the Swedish Securities Council to do so).

We feel that investors are now overly pessimistic about the duration of the deal after having had their money tied up for nearly nine months earning a negligible return in Haldex. We are confident that the deal will either succeed or fail within the next five months, and do not see any more extensions as Knorr-Bremse has already petitioned the Swedish Securities Council beyond the legal limit. This view is in line with the management of Haldex, and thus we feel comfortable using the expected close date of October 5th. Were to deal to close earlier, that would be unexpected upside for our trade.

Exhibit 17: Annualized Return Curves at Different Purchase Prices

Assuming shares are purchased on May 2.



Conclusion

For this transaction, we know that we do not have any special insight into what a court in Brussels will decide on the fate of a Swedish company being acquired by a German conglomerate. Yet we do know that there are several factors that shift the odds in our favor, namely 1) the frustration of past buyers agitated by the continued delays, 2) the illiquidity of the target security, 3) the price floor that past offers have created, 4) the possibility of a future offer from ZF should Knorr-Bremse's bid fail, and 5) the high potential loss that short-term investors cannot handle. While alone, each of these reasons is not enough to form a compelling thesis, together they push the odds enough in our favor that we see Haldex as a smart risk for long-term investors to take (with the added benefit of being largely uncorrelated with the rest of the portfolio).

We do not recommend investors blindly buy into this Haldex "workout" situation on its own. Haldex should be owned as part of a larger portfolio of workouts to diversify against large one-time losses if a single deal falls through.

If all goes well, there is a 12.2% annualized return to be had. If not, we walk away knowing that if we put ourselves in enough of these smart situations, the returns will eventually follow. While we do not know what will happen with this specific deal, we are confident that a diversified portfolio of Haldex-like situations will work out over time. We therefore recommend investors buy Haldex in anticipation of the SEK 125 tender offer closing by October 5, 2017.

Important Disclaimer

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