



COMPANY NOTE | EQUITY RESEARCH | February 25, 2019

## Consumer

# Jerash Holdings | JRSH - \$6.45 - NASDAQ | Buy

## **Initiation of Coverage**

Stock Data	
52-Week Low - High	\$4.77 - \$11.00
Shares Out. (mil)	11.33
Mkt. Cap.(mil)	\$73.4
3-Mo. Avg. Vol.	12,840
12-Mo.Price Target	\$10.00
Cash (mil)	\$30.4
Tot. Debt (mil)	\$0.0
Current Dividend (Annl. \$)	\$0.20

EPS \$			
Yr Mar	<b>—2018—</b>	—2019E—	—2020E—
		Curr	Curr
1Q	0.38A	0.14A	0.24E
2Q	0.60A	0.43A	0.51E
3Q	0.23A	0.14A	0.19E
4Q	(0.10)A	0.04E	0.06E
YEAR	1.08A	0.75E	1.00E
P/E	6.0x	8.6x	6.5x

EPS is Operating EPS

Revenue (\$ millions)								
Yr Mar	<b>—2018—</b>	—2019E—	—2020E—					
		Curr	Curr					
1Q	21.4A	18.4A	22.0E					
2Q	27.6A	33.5A	36.8E					
3Q	11.5A	18.7A	22.4E					
4Q	8.9A	12.4E	14.9E					
YEAR	69.3A	82.9E	96.1E					



# JRSH: A High-Quality Apparel Manufacturer Offered at a Discount

We are initiating at Buy with a \$10 target, as Jerash should continue to benefit from its duty-free shipping from Jordan and preferred partner status with leading global brands. Revenue is growing at a high-teens pace and we see further gains, driven by increasing demand, additional product lines, and capacity additions. Shares trade at a meaningful discount to peers that looks unwarranted given Jerash's top-line growth, the potential to diversify its customer/country concentrations, and its attractive 3.1% dividend yield.

- Preferred Partner for Leading Apparel Brands. Jerash produces high-quality technical garments for leading global apparel brands ranging from PVH to Columbia. Building on a foundation that began through duty-free shipping, Jerash has achieved preferred partner status with brands like The North Face due to its high standards for quality, sweatshop-free and socially-responsible workplace practices, and strong fulfillment capabilities.
- Competitive Advantage in Duty-Free Shipping. The company's Jordan-based manufacturing allows for duty-free shipping to the U.S. through an important existing FTA between the two countries, while Jerash's employment of Syrian refugees allows for duty-free shipping to the EU. This results in up to 30% or more in estimated savings on the cost of garments, and recent trade tensions between the U.S. and China are notably driving increased customer demand.
- Growing at a High-Teens Pace. Revenue is up at a 17% pace over the last three years and is guided to increase at least 18% this year, driven by additional customers, geographies, and product lines. Jerash recently announced new orders from a Fortune 500 retailer and is in talks with several others, while its recent tariff exemption with the EU is attracting interest from brands looking to capitalize on Jordan's proximity to the region. Our checks also indicate The North Face is expanding further into fleeces, while Jerash continues to diversify into more warm weather products to offset 1H capacity constraints on jacket production.
- Adding Capacity to Meet Demand. Jerash is building new factories and aggressively pursuing acquisitions that could add new capabilities or bring new customer relationships. Jerash recently announced plans to acquire a facility that could boost annual capacity by 23-28%, while a new sewing facility set to come online in mid-2019 should boost capacity by another 8%. Management is also evaluating potential expansion into Vietnam.
- Trading at an Attractive Valuation. Shares trade at a significant discount to garment manufacturing peers at just 3.1x FY20E EBITDA, a 6.5x P/E, and 1.4x book. We see this discount as unwarranted given the company's strong top-line growth, the potential to diversify its customer and country concentration, and its attractive 3.1% dividend yield. We also believe Jordan's geopolitical risk is more limited than feared.

#### INVESTMENT SUMMARY

Jerash produces high quality technical garments for leading global apparel brands ranging from The North Face and Columbia to PVH and Land's End. Building on a foundation that began through duty-free shipping from its manufacturing center in Jordan, the company has achieved preferred partner status with brands like The North Face due to its high standards for quality, responsible usage of raw materials, sweatshop-free and internationally-recognized, socially-responsible workplace practices, and strong fulfillment capabilities including 95% on-time deliveries.

The company's Jordan-based manufacturing allows for duty-free shipping to the U.S. through an important existing Free Trade Agreement (FTA) between the two countries, while Jerash's employment of Syrian refugees allows for duty-free shipping to the EU through its exemption under a recently-updated free-trade area agreement. Management estimates these agreements result in up to 30% (or more on some products) in estimated savings on the cost of garments and recent trade tensions between the U.S. and China are notably driving increased customer demand.

Revenue has grown at a 17% CAGR over the last three years and is guided to increase at least 18% in FY19 (March), driven by the addition of new customers, geographies, and product lines. While Jerash's current customers include The North Face (~79% of FY18 sales), Columbia (9%/sales), and Costco, among others, the company recently announced new orders from a Fortune 500 sporting goods retailer (likely Dick's) and is in talks with several others, seemingly including G-III and Walmart.

Jerash's tariff exemption under a recently-updated Free Trade Area agreement with the EU is beginning to attract increased interest from global brands looking to also capitalize on Jordan's proximity to the region, while Jerash continues to diversify into more warm weather products and our checks indicate The North Face is expanding further into fleeces. While Jerash is largely capacity constrained in its first half seasonal production of jackets (~48%/sales), the company continues to diversify its product offering to include crew necks, polos, pants and shorts, though we currently have limited visibility into the potential margin impacts resulting from this diversification. We estimate 2H capacity utilization of ~60% in FY18 and 85-90% in FY19 based on current revenue guidance—implying capacity to add nearly \$4.0 million in revenue from warm weather goods in 2H20, before the addition of further capacity.

To meet ongoing increases in demand, Jerash is building new factories and aggressively pursuing acquisition opportunities in Jordan and globally that could add new capabilities or bring new customer relationships. It is also seeking out joint ventures with nearby factories, continuing to rely on subcontracted local capacity, and adding new capabilities at existing facilities. The company recently added a multi-color screen printing workshop for higher-margin orders and expects to bring online in mid-2019 a 450 square meter sewing factory in close proximity to a Syrian refugee camp that should boost annual capacity by 500,000 pieces, or 8%. It also expects to complete a nearby government-subsidized 5,000 square meter facility in August 2019 that could boost annual capacity by 1.2 million units, or 18%, once Jerash is successful in hiring and training enough workers. Along these lines, the company recently announced the planned March acquisition of a facility nearby its existing factories in the Al Tajamouat Industrial City Qualified Industrial Zone (QIZ). This should boost existing annual capacity by another 23-28%. Jerash has already received orders for 800,000 pieces that should utilize 44-53% of this capacity, and management expects to hold gross margins in the historical mid-20% range as production ramps over the course of 2-3 quarters beginning in April. Still, we currently have limited visibility into the overall margin impacts resulting from ramping of all of the company's new facilities and related line utilization. Despite the recently-planned capacity additions, we believe the company is also evaluating expansion into Vietnam through a possible joint venture with a factory already producing garments for one of its key customers. Our conversations with that customer indicate its willingness to utilize Jerash outside of Jordan and apart from any duty-free benefits due to the company's high standards for quality and its ability to deliver on-time.

Shares trade at a significant discount to garment manufacturing peers at just 3.1x FY20E EBITDA, a 6.5x P/E, and 1.4x book value. We see this discount as unwarranted given the company's strong top-line growth, the potential to diversify its customer and country concentration, and its attractive 3.1% dividend yield. We also believe Jordan's geopolitical risk is more limited than feared, given Jordan's strategic importance to the U.S., its strong ties throughout the Middle East and elsewhere, and a peaceful populace that seems largely supportive of its monarchy. Our November 2018 visit to the country supported these views as well as a government highly supportive of foreign investment.

## JORDAN-BASED APPAREL MANUFACTURING

Founded in 2000 and headquartered in Rochester, New York, Jerash Holdings manufactures apparel for several well-known global brands and retailers, including V.F. Corporation's (VFC-NC) The North Face, Columbia (COLM-NC), Walmart (WMT-NC), Costco (COST-NC), Hanes (HBI-NC), Land's End (LE-NC), and PVH Corp. (PVH-NC), which owns brands such as Calvin Klein, Tommy Hilfiger, IZOD, and Speedo. The company produces and exports customized, ready-made sports and outerwear including jackets, polos, and t-shirts from fabric sewn at its facilities in The Hashemite Kingdom of Jordan.

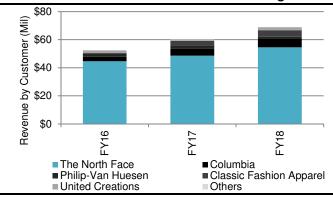
**Exhibit 1: Manufacturing Hub In Al Tajamouat QIZ** 

AL TAPAMORAT INCOMPRACE CITY

AL TAP

Source: ROTH Capital Partners Site Visit

**Exhibit 2: Customers Include Several Leading Brands** 



Source: Jerash SEC Filings & ROTH Capital Partners

Jerash's production facilities are comprised of one owned and two leased factory units (not including its recently-announced acquisition) and two warehouses all located in Al Tajamouat Industrial City, a QIZ in Amman, Jordan. These units house the company's cutting, sewing, embroidery, finishing, quality control, ironing, and packaging, as well as its trims and finished product warehousing and certain human resources, merchandising, accounting, and other administrative functions. The company employs roughly 2,700 full-time employees, including Jordanians, migrant workers from Bangladesh, Sri Lanka, India, Myanmar and Nepal, and increasingly Syrian refugees housed in United Nations camps in Jordan. The company also maintains an office for its subsidiary in Hong Kong where it employs sales and merchandising staff and supporting personnel. Some members of its senior management are based there, while others are in the U.S.

Jerash Holdings was organized in Delaware in January 2016 and completed its initial public offering at \$7.00 per share in May 2018. Its two wholly-owned subsidiaries and Variable Interest Entity include Jerash Garments & Fashions Manufacturing Company Ltd., Treasure Success International Limited, and Victory Apparel (Jordan) Manufacturing Company Limited. Jerash Garments was established by Jerash Holdings' President & CEO Choi Lin Hung in Jordan in 2000 and its principal activities are to house the company's management offices and trims and finished products warehouses, while operating its production lines and sewing, ironing, packing and quality control units. Treasure Success was established in Hong Kong in July 2016 its primary activities are to employ staff to support Jerash Garments and its subsidiaries. The company's VIE, Victory Apparel, was incorporated as an LLC in Jordan in 2005 and its results, assets and liabilities are consolidated into Jerash Garments. Jerash Garments is the sole user of Victory's land, building and equipment property and now owns it free and clear, even as Victory's equity interest is owned by President & CEO Choi Lin Hung and Lee Kian Tjiauw.

## A PREFERRED PARTNER FOR LEADING APPAREL BRANDS

Building on a foundation that began through duty-free shipping from its manufacturing center in Jordan, the company has achieved preferred partner status with brands like The North Face due to its high standards for quality, strong fulfillment capabilities including 95% on-time deliveries, responsible usage of raw materials, and sweatshop-free and internationally-recognized, socially-responsible workplace practices.

Jerash is certified for Intertek's Supplier Qualification Program (SQP)—suggesting strong risk management and controls and processes for managing product quality and safety—and approved in Walmart's Factory Capability & Capacity Audit (FCAA). Its facilities are also Customs-Trade Partnership Against Terrorism (C-TPAT) certified and passed a C-TPAT audit for Wal-Mart conducted by Bureau Veritas. Seemingly helped by the company's high rate of Jordanian employment, Jerash is certified by Jordan's Ministry of Labor for inclusion in Jordan Customs' Golden List program that facilitates international trade. The company is also audited annually by VF Corp.'s SAI-certified global supply chain and compliance auditors to ensure it meets key standards for social compliance and environmental concerns. As part of VF's supply chain, Jerash meets all applicable laws and regulations and employs procedures that minimize air emissions, waste, energy and water use, and other significant environmental risks. The company is recognized as Jordan's first company proactively hiring Syrian refugees—helped through its partnership with the U.N. Refugee Agency (UNHCR)—and we see opportunity for Jerash, VF's The North Face, and Jerash's other customers to better market this story to consumers.

Exhibit 3: Globally-Recognized Social Responsibility













Source: Organization Websites & ROTH Capital Partners

**Exhibit 4: Good Working Conditions** 



Source: ROTH Capital Partners Site Visit

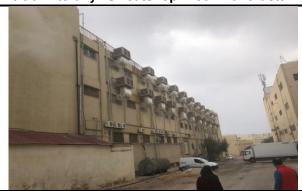
Jerash is globally recognized for its socially-responsible workplace practices, with compliance certifications from various international organizations, government agencies, and key customers. As part of audits and certifications from Worldwide Responsible Accredited Production (WRAP), Jordan's Ministry of Labor, and the Fair Labor Association (FLA)—the latter of which came through audit for PVH. Jerash adheres to basic human rights requirements including no child labor, no forced labor, no discrimination or harassment, no excessive hours, and fair and legal wages. The company also provides on-site healthcare, childcare, maternal and paternal leave, and housing in compliance with Better Work Jordan, an audit wing of International Labor Organization (ILO) and International Finance Corporation (IFC) for social & ethical compliance. All factories are staffed with at least one full-time physician and two nurses, while childcare is available with on-site providers and teachers. Employees are also provided with benefits like 14 days of paid time off (PTO) and paid maternity leave of up to 10 weeks, while work days are limited to eight hours with a maximum of three hours overtime. Factories run only one shift per day and transportation is readily available to and from refugee camps. Housing is available for those who need it, and provides sleeping, cooking, eating, and sanitary facilities and is limited to eight workers per room. Jerash goes beyond all this, however, by providing education for its female employees—including soft skills like how to handle money and in some cases funding high-cost personal medical bills.

**Exhibit 5: Efficient Production** 



Source: ROTH Capital Partners Site Visit

## Exhibit 6: Literally "Sweatshop-Free" Manufacturing



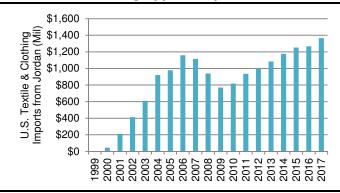
Source: ROTH Capital Partners Site Visit

#### COMPETITIVE ADVANTAGE IN DUTY-FREE SHIPPING

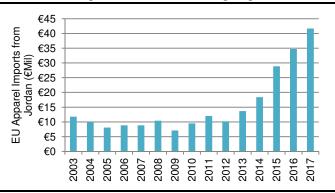
Jerash's Jordan-based manufacturing allows for duty-free shipping to the U.S. through an important existing Free Trade Agreement (FTA) between the two countries, while the company's employment of Syrian refugees allows for duty-free shipping to the European Union through its exemption under a recently-updated free-trade area agreement. These agreements result in up to 30% (or more on some products) in estimated savings on the cost of garments—an increasingly attractive proposition for brands amidst recent trade tensions between the U.S. and China.

The U.S.-Jordan FTA originated in 2009 and was fully-implemented in January 2010 to allow for the elimination of customs duties on originating goods from the other country. We see limited risk of dissolution, given Jordan's strategic importance to the U.S. within the region. The FTA follows the establishment of Qualified Industrial Zones (QIZs) by U.S. Congress in 1996 that allowed products to enter the United States duty-free if manufactured in Israel, Jordan, or the West Bank and Gaza. The FTA helped Jordan to expand economic activity outside these QIZs, while increasing local awareness on how to access trade benefits between the two countries. As part of the FTA, U.S. officials met with local government officials, labor unions, and worker rights advocates and visited local factories to improve labor conditions, especially for migrant workers in the apparel factories. The QIZs and FTA have significantly boosted economic ties between the two nations, as Jordan's exports to U.S. have grown at a 22.2% CAGR since 1996 (including high-single-digit growth in 2017), driven mainly by textiles. Jerash has similarly benefited from the QIZs and FTA, with revenue generally up at high-teens annualized pace over the last several years as it now looks to expand its own production outside the QIZs.

Exhibit 7: FTA Driving Apparel Exports To U.S.



**Exhibit 8: EU Agreement Also Driving Big Growth** 

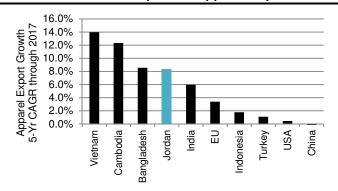


Source: World Bank World Integrated Trade Solution & ROTH Capital

Source: European Trade Commission & ROTH Capital Partners

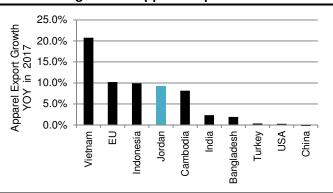
The EU and Jordan established a Free Trade Area in May 2002 and amended the agreement in July 2016 to simplify the rules of origin and extend duty-free shipping to Jordanian companies employing Syrian refugees in at least 15% of line production. The agreement was modified in December 2018 to extend through December 2030 and to all Jordanian manufacturers of covered goods once Jordan grants more than 60,000 active work permits to Syrian refugees. We believe it is quickly approaching this total, with more than 50,000 active permits having been issued as of October 2018 according to the UNHCR and 125,392 permits having been issued in total through November according to the Jordan Ministry of Labour Syrian Refugee Unit - Monthly Progress Report. Notably, Jerash Executive Manager Oryana Awaisheh was seemingly instrumental in driving and bringing attention to the hiring of Syrian refugees through work in helping to form the Jordan Compact that eventually led to the July 2016 amendment. Apart from her very strong relationships with Jordan government officials, in our view, she has presented at United Nations and World Bank forums to highlight Jerash's socially-responsible global employment practices and employment of Syrian refugees. Through her work, we believe Jerash now employs approximately 60 Syrian refugees (as of February 2019). As a result of the Free Trade Area Association Agreement and more recent amendments, overall exports to the EU from Jordan grew at a 3.6% CAGR from 2003 to 2017, with apparel exports up at a 9.4% CAGR—helped by 20%-plus growth in each of the last two years, according to data from the European Trade Commission.

**Exhibit 9: Jordan An Important Apparel Exporter** 



Source: World Trade Organization & ROTH Capital Partners

**Exhibit 10: Significant Apparel Export Growth In 2017** 



Source: World Trade Organization & ROTH Capital Partners

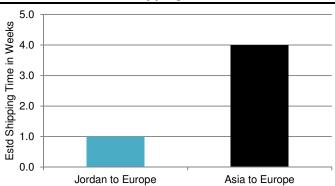
## **HIGH-TEENS TOP-LINE GROWTH**

Jerash's revenue has grown at a 17% CAGR over the last three years and is guided to increase at least 18% in FY19 (March), driven by the addition of new customers, geographies, and product lines. While Jerash's current customers include The North Face, Columbia, and Costco, among others, the company recently announced new orders from a Fortune 500 sporting goods retailer (likely Dick's Sporting Goods, or DKS—NC) and received orders for 800,000 pieces to help fill capacity added in a recent acquisition. It is also conducting pilot orders with Reebok and New Balance, and is in talks with several others seemingly including Nike (NKE-NC), G-III (GIII-NC), and Walmart. Notably, we believe Jerash already produces garments for Walmart on a subcontracted basis through an agreement with Classic Fashion Apparel Industry Ltd. (6.9% of Jerash sales in FY18). We believe management is sensitive to the notion of manufacturing for Walmart on a more widespread basis due to the potential for lower margins, though Jerash may look to grow with the retailer over time as it ramps up capacity.

**Exhibit 11: Strong Double-Digit Revenue Growth** 

\$120 \$100 \$80 \$60 \$40 \$20 \$0 FY15 FY16 FY17 FY18 FY19E FY20E

Exhibit 12: Reduced Shipping Time to EU

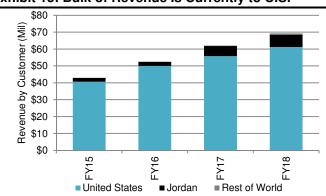


Source: Jerash SEC Filings & ROTH Capital Partners Estimates

Source: Channel Checks With Jerash Customers & ROTH Estimates

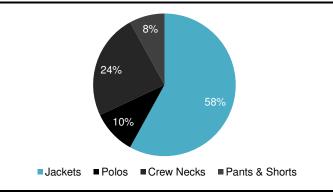
Jerash's tariff exemption under a recently-updated Free Trade Area agreement with the EU is beginning to attract increased interest from global brands looking to also capitalize on Jordan's proximity to the region, while management is in the early planning stages (evaluating costs, seeking technicians, evaluating possible customer set, etc.) for down jackets and our checks indicate The North Face is expanding further into fleeces. While Jerash is largely capacity constrained in its first half seasonal production of jackets (~48%/sales), the company continues to diversify its product offering to include warm weather products like crew necks, polos, pants and shorts. We estimate 2H capacity utilization of ~60% in FY18 that could exceed 85% in FY19 based on current revenue guidance—implying capacity to add nearly \$4.0 million in revenue from warm weather goods in 2H20, before the addition of additional capacity.

Exhibit 13: Bulk of Revenue Is Currently to U.S.



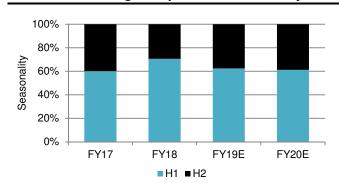
Source: Jerash SEC Filings & ROTH Capital Partners

**Exhibit 14: Jackets Currently Comprise Bulk of Sales** 



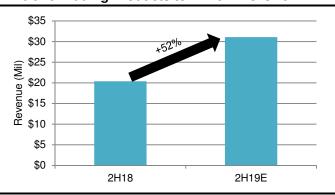
Source: Jerash Investor Presentation & ROTH Capital Partners

Exhibit 15: Looking to Improve 2H Seasonality



Source: Jerash SEC Filings & ROTH Capital Partners Estimates

**Exhibit 16: Adding Products to Drive 2H Growth** 



Source: Jerash SEC Filings & ROTH Capital Partners Estimates

## ADDING CAPACITY TO MEET DEMAND

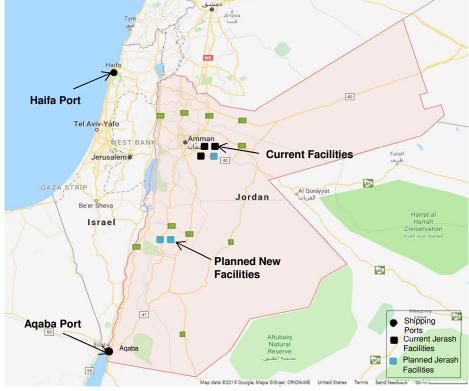
To meet ongoing increases in demand, Jerash is building new factories and aggressively pursuing acquisition opportunities in Jordan and globally that could add new capabilities or bring new customer relationships. It is also seeking out joint ventures with nearby factories, continuing to rely on subcontracted local capacity, and adding new capabilities at existing facilities. For example, the company recently added a multi-color screen printing workshop for higher-margin orders and expects to bring online in mid-2019 a \$230,000 450-square meter sewing factory in close proximity to a Syrian refugee camp in the Tafilah Governorate of Jordan that should boost annual capacity by 500,000 pieces or 8%.

The company also expects to complete a government-subsidized 5,000 square meter facility in August 2019 also located in the Tafilah Governorate that could boost annual capacity by 1.2 million units (~18%) once management is successful in hiring and training enough workers. Jerash guaranteed \$176,000 for this project and agreed to employ at least 500 workers for the first 12 months following its completion, while Jordan's Ministry of Labor is financing the building and its Employment and Training Department will support 50% of the workers' salaries, as well as transportation and social security costs in the first 12 months following project completion. Jerash will use the workshop without rent for the first three years of production, after which it plans to enter a lease agreement. Jerash would be required to pay \$353,000 to the Ministry of Labor and Employment and Training Department in the event it does not comply with terms of the agreement. While the ROI on this facility is likely very high given these significant subsidies, we see potential for lower gross margins near-term as new products only begin to ramp.

Jerash recently announced plans to acquire a facility nearby its existing factories in the Al Tajamouat Industrial City QIZ that should boost existing annual capacity by 1.5 to 1.8 million units or another 23% to 28%. The company has already received orders for 800,000 pieces that should utilize 44% to 53% of this capacity. Management will assume the lease from its prior owner—Al-Mutafaweq Co. for Garments Manufacturing, while paying for the facility in tranches—\$380,000 to be paid immediately and another \$600,000 to be paid once Jerash assumes control of associate housing facilities and a satellite sewing factory. The company has also asked the Jordanian government to guarantee contracts for workers starting before the deal's March closing. While the facility is currently running at ~50% capacity, management expects it to be fully utilized by 2H20—employing 800-1,000 workers in total.

Beyond that, we believe Jerash is also evaluating expansion into Vietnam through a possible joint venture with a factory already producing garments for one of its key customers. Our conversations with that customer indicate its willingness to utilize Jerash outside of Jordan and apart from any duty-free benefits due to the company's high standards for quality and its ability to deliver on-time.

Exhibit 17: Duty-Free Shipping from Manufacturing Facilities in The Kingdom of Jordan



Source: Google Maps & ROTH Capital Partners

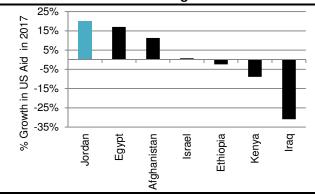
## LESS GEOPOLITICAL RISK THAN SOME MAY PERCEIVE

While Jerash is directly affected by political, security, and economic conditions in Jordan, we see these risks as more limited than investors may perceive. Jordan is strategically important to the U.S., has multiple FTAs and strong ties to countries throughout the Middle East and elsewhere, and is increasingly viewed by some as a potential hub for Iraq's and Syria's rebuilding efforts. Jordan is a top 4 recipient of U.S. foreign aid—most of which is economic in nature—and is one of few countries receiving increasing aid in 2017, according to our analysis of USAID data. The U.S. utilizes Jordan airspace and has a large embassy and important CIA office there. Meanwhile, U.S. corporations like Microsoft, Amazon, Expedia, and Cisco are taking advantage of Jordan's highly-educated workforce and \$USD-pegged currency to build out regional capabilities, including software development, customer service, and Internet Arabization. While Jordan's economic challenges like high levels of unemployment and growing debt continue, its King and ruling family seem to favor economic liberalization and institute initiatives to drive growth.

Exhibit 18: Jordan Receives Significant U.S. Aid

\$7,000 **E** \$6,000 US Aid Provided in 2017 \$5,000 \$4,000 \$3,000 \$2,000 \$1,000 \$0 Ethiopia Kenya Jordan rad srae Egypt Afghanistan ■ Economic ■ Military

Exhibit 19: One of Few Receiving Increased Aid

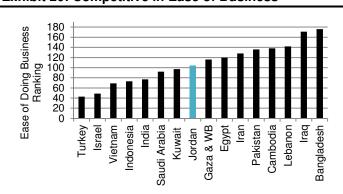


Source: USAID & ROTH Capital Partners

Source: USAID & ROTH Capital Partners

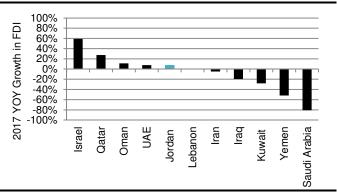
We visited Jordan in November 2018 and our meetings with various officials demonstrated a government very supportive of foreign investment. We also witnessed strong security protocols and felt safe traveling alone, despite the U.S. State Department's Level 2 Travel Advisory. While protests occur from time to time, our sense is they are mainly peaceful in nature, with only one reported death over the last decade. The most recent one arose in May 2018 and came in response to International Monetary Fund (IMF)-induced austerity measures (as was the case in a large April 1989 protest), but ended when King Abdullah II replaced the prime minister who then withdrew a proposed tax bill. Some media reports indicated late arrival of the Arab Spring, but we heard anecdotes of protestors bringing food to police and King Abdullah II circulating amidst the public and even showing pride in the protests. While further protests could arise from further austerity measures given Jordan's dependence on foreign aid, resource-poor nature, and high unemployment due to its young and overeducated workforce relative to its industries, we do not see civil unrest as a major risk to the fundamental outlook even if future protests weigh on investor perception and JRSH shares.

**Exhibit 20: Competitive in Ease of Business** 



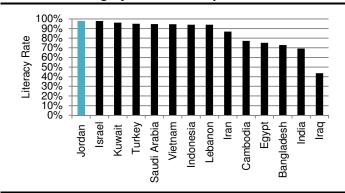
Source: World Bank & ROTH Capital Partners

**Exhibit 21: MSD Growth in Foreign Direct Investment** 



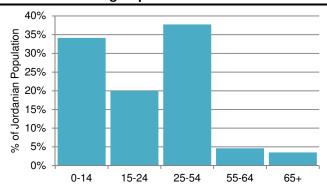
Source: U.N. Conference On Trade & Development and ROTH Capital

**Exhibit 22: A Highly-Educated Population** 



Source: UNESCO, Israel - CIA World Factbook & ROTH Capital Partners

**Exhibit 23: A Young Population** 

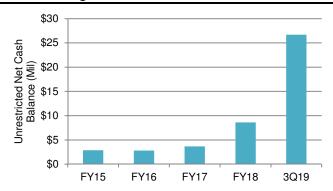


Source: CIA World Factbook & ROTH Capital Partners

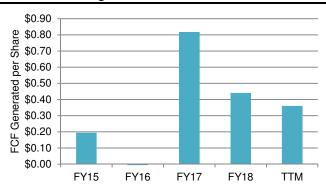
## STRONG BALANCE SHEET & CASH GENERATION

Following on its May 2, 2018 initial public offering of 1.43 million shares at \$7.00 that resulted in gross proceeds of approximately \$10.0 million, Jerash ended 3Q19 (December) with \$26.7 million (~\$2.35/share) in unrestricted net cash—comprised of \$30.4 million in overall cash & equivalents, net of \$3.7 million in restricted cash and ~\$20,000 drawn on the company's \$8.0 million credit facility, set at LIBOR+1.50% (or HIBOR+1.50% for drawings in Hong Kong dollars).

**Exhibit 24: Significant Net Cash Balance** 



**Exhibit 25: Strong Free Cash Flow Generation** 

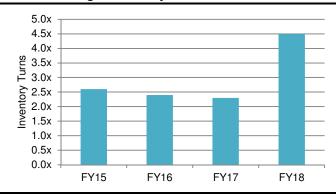


Source: Jerash SEC Filings & ROTH Capital Partners

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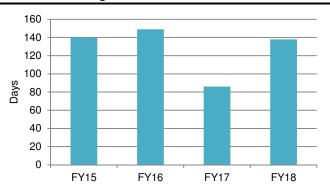
While Q2 often represents a seasonal peak in cash generation, the company's post-IPO pro forma unrestricted net cash balance has averaged roughly \$21.2 million (~\$1.85/share) over the last four quarters. Meanwhile, Jerash typically generates strong free cash flow (\$0.36/share TTM; \$0.44/share in FY18) on an annual basis, helped by high cash conversion—including inventory turns—and low levels of capex (averaging 1.0%/sales over FY17 & FY18). This should more than cover the company's recently-announced \$0.05/share quarterly dividend (translating to a 3.1% annual yield) and help to support acquisitions of smaller factories. Along these lines, the company's recently-announced acquisition of a factory in the Al Tajamouat Industrial City QIZ should cost just \$1.0 million in total (to be paid in tranches), while management has asked the Jordanian government to guarantee worker contracts prior to the deal's March closing. Jerash may, however, need to raise equity or take on additional debt to fund larger acquisitions.

**Exhibit 26: High Inventory Turns** 



Source: Jerash SEC Filings & ROTH Capital Partners Estimates

Exhibit 27: Driving Reasonable Cash Conversion

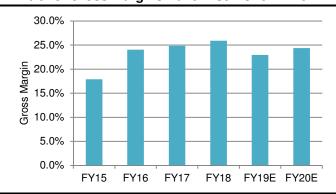


Source: Jerash SEC Filings & ROTH Capital Partners Estimates

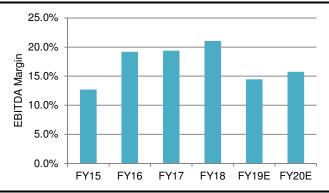
## **ESTIMATES & OUTLOOK**

We are modeling FY19 (March) EPS of \$0.75 on 20% revenue growth to \$82.9 million—in-line with guidance for at least \$82.0 million in revenue with gross margins in the mid-20% range and expenses slightly above a \$2.0 million quarterly run-rate. This assumes continued robust revenue growth of ~40% in Q4—driven by increased back-half seasonality through the addition of more warm weather products like crew necks, polos, pants, and shorts that typically carry lower margins as well as further local and sample runs (estimated at 23% of the Q4 mix) that also carry lower gross margins (estimated at ~16%). Our Q4 and full year estimates also reflect higher YOY expenses to reflect increased public company costs following Jerash's May 2, 2018 IPO. Notably, our FY19 EPS estimate does not adjust for GAAP taxes previously added back by the company in 1Q19 and 2Q19 for comparability purposes. We similarly do not adjust for projected GAAP taxes. However, our estimates reflect the recent moving of Jerash's corporate headquarters to Rochester, New York that should save more than \$600,000 in annual taxes (\$0.05/share) beginning in 4Q19. This should more than offset the loss of a Jordanian income tax exemption that results in a 5% income tax rate within Jordan also starting in 4QFY19 (CY19), as management now expects to pay a 15% tax rate overall going forward.

**Exhibit 28: Gross Margins Have Risen Over Time** 



**Exhibit 29: High EBITDA Margins** 



Source: Jerash SEC Filings & ROTH Capital Partners Estimates

Source: Jerash SEC Filings & ROTH Capital Partners Estimates

We are modeling FY20 EPS of \$1.00 on 16% revenue growth to \$96.1 million—helped by the mid-CY19 addition of a 450 square meter sewing factory that should boost annual capacity by 8%, the completion of a nearby government-subsidized 5,000 square meter facility in August 2019 that could boost annual capacity by 1.2 million units (~18%) once Jerash is successful in hiring and training enough workers, and the planned acquisition of a fourth facility in Al Tajamouat Industrial City that should boost capacity by another 23-28% beginning in April. Notably, our projection for 14% YOY revenue growth in 1H20 could prove conservative, given an expected 30% increase in unit orders from The North Face. Meanwhile, our projection for 2H20 revenue growth of \$6.2 million could also prove conservative, based on our current capacity utilization assumptions (~60% in 2H18 and 85-90% in 2H19) and the estimated potential to add nearly \$4.0 million in revenue from warm weather goods in 2H20 before the addition of further capacity through new facilities. Notably, we still have limited visibility into the company's overall gross margins going forward, given the potential for local, sample, and rushed orders to exceed our projections, our limited visibility into the margins on warm weather products and additional orders from customers like Dynamic and Walmart, and limited visibility into the impacts resulting from the ramping of new facilities and line utilization. Meanwhile, it appears the company's geographically dispersed management team may have limited visibility into some of these factors as well.

## RECENT RESULTS

On February 8, Jerash reported 3Q19 results that exceeded expectations despite significant growth in lower-margin items. Specifically, Jerash reported GAAP EPS of \$0.14 on 62% YOY revenue growth to \$18.7M, ahead of consensus of \$0.13 on revenue of \$16.0M. Notably, the company's reported non-GAAP EPS of \$0.09 excludes a \$0.05/share tax benefit. Gross margin fell 15.4 points YOY to 17.1% due to the addition of a special discount program to help further penetrate the pants market and drive increased 2H seasonality, increased FOB shipments to also help support Spring season line utilization, growth in local and sample orders, and a one-time rushed order to a top customer that yielded single-digit margins. Core expenses grew significantly YOY due to increased public company costs, but rose just 3% sequentially. Management raised FY19 revenue guidance slightly to at least \$82.0M from \$80.0M-\$82.0M previously, while lowering its full year gross margin guidance to 23-24%.

## TRADING AT AN ATTRACTIVE VALUATION

Shares trade at a significant discount to garment manufacturing peers at just 3.1x FY20E EBITDA, a 6.5x P/E, and 1.4x book value. We believe this discount is unwarranted given the company's strong top-line growth, the potential to diversify its customer and country concentration, and its attractive 3.1% dividend yield. We also believe geopolitical risk associated with the company's operations in Jordan is more limited than feared.

Exhibit 30: Trading At A Discount To Apparel Manufacturing Peers

	<u> </u>										
					2017 Calendar		2018	Calendar	2	019 Calenda	r
Company Name	Ticker Symbol	Rating	Price	Market Cap (Mil)	EV/ Sales	EV/ EBITDA	EV/ Sales	EV/ EBITDA	EV/ Sales	EV/ EBITDA	P/E
Gildan Activewear	GIL	NC	\$35.08	\$7,260	2.9x	13.5x	2.7x	13.2x	2.6x	12.5x	16.9x
Hanesbrands	HBI	NC	\$19.13	\$6,914	1.6x	10.1x	1.5x	9.7x	1.5x	9.5x	10.9x
G-III Apparel	GIII	NC	\$35.91	\$1,772	0.9x	11.9x	0.8x	9.0x	0.7x	8.1x	11.6x
Delta Galil	DELT.TA	NC	₪11,390	回2,902	0.6x	6.8x	0.6x	6.3x			
Superior Group	SGC	NC	\$17.95	\$275	1.5x	12.8x	1.1x	11.9x	1.0x	9.1x	12.0x
Centric Brands	CTRC	UR	\$3.87	\$226	0.7x	6.4x					
Delta Apparel	DLA	Neutral	\$24.45	\$170	0.8x	10.8x	0.7x	9.5x	0.7x	8.4x	14.6x
Lakeland Industries	<u>LAKE</u>	<u>Buy</u>	<u>\$11.06</u>	<u>\$90</u>	<u>0.8x</u>	<u>7.7x</u>	<u>0.8x</u>	<u>9.9x</u>	<u>0.7x</u>	<u>6.6x</u>	<u>11.6x</u>
Group Average					1.2x	10.0x	1.2x	9.9x	1.2x	9.0x	12.9x
Group Median					0.8x	10.4x	0.8x	9.7x	0.9x	8.8x	11.8x
Jerash Holdings	JRSH	Buy	\$6.45	\$73	0.6x	2.8x	0.5x	3.3x	0.5x	2.9x	6.6x

Source: Eikon Consensus for NC Companies & ROTH Estimates for Covered Companies; CTRC Estimated Pro Forma for GBG N.A. Merger. Priced after market on Feb 22, Delta Galil in Israeli Shekel

#### MANAGEMENT PROFILE

Jerash's management is comprised of a mix of experienced executives and strong local leadership. President & CEO "Sam" Choi and VP & Secretary "Kitty" Yang are based in Hong Kong and seem to handle most of the company's customer relationships. Yang's husband Eric Tang serves as Choi's representative in many respects and is officially employed as Administration Manager of the company's Treasure Success subsidiary, though he is not considered an executive officer of the company. CFO Rich Shaw and part-time Head of U.S. Operations Karl Brenza are based in New York and handle much of the dealings with U.S. investors, while local factory leadership and government relations in Amman are handled by General Manager Baiju Chellamma and Executive Manager Oryana Awaisheh. Insiders including Choi's British Virgin Islands-corporation Merlotte Enterprise Limited and Lee Kian Tjiauw own approximately 74.2% of shares.

## Lin Hung "Sam" Choi - Chairman, CEO, President & Treasurer

Sam Choi was appointed Chairman & CEO in March 2018, after serving as President, Treasurer, and director following the May 2017 merger of Global Trend Investment (GTI) into Jerash Holdings. He previously served as director of Jerash Garments beginning in 2012, general manager of Chinese Garments and Jerash Embroidery from 2015, and director of Treasure Success beginning in 2016. Jerash Garments was formed in 2000 and wholly-owned by GTI, which was owned by two individuals as well as Choi's Merlotte Enterprise Limited. Choi is currently the company's largest individual shareholder in Jerash (~38.0%/shares) through his whole ownership of Merlotte. Choi has more than 23 years of experience in the garment and textile industry and has served as director of Hong Kong Stock Exchange-listed Victory City International Holdings since 2001 and director of Jiangmen V-Apparel Manufacturing Ltd. since May 2010.

## Wei "Kitty" Yang – Vice President, Secretary & Director

Kitty joined Jerash Garments in 2014 as deputy general manager and was appointed to her current role upon its May 2017 merger with GTI. She previously served as deputy operations officer for Martino Holding Limited from 2010 to 2014, a partner at Eternity Travel Agency from 2008 to 2010, and human resources chief at Taiwan-listed Jordan Dragon Garment Co. Ltd. Yang is fluent in English, Arabic, and Chinese.

### Richard J. Shaw - Chief Financial Officer

Richard J. "Rich" Shaw was appointed full-time CFO in September 2018, after serving on a part-time basis beginning in May 2017. He has served as President of financial and business advisory services firm LogiCore Strategies since June 2014, CFO of BirchBioMed since March 2016, and CFO & Treasurer of online travel agency Tripborn since May 2016. Shaw previously served as COO of Roberts Office Furniture Concepts from 2013 to 2016, CFO of hotel ownership, development & management company High Peaks Hospitality from 2012 to 2013, and CFO of Harden Furniture from 2008 to 2012.

## Ng Tsze Lun - Head of Marketing

Ng Tsze Lun has been responsible for sales and marketing of Jerash Garments since 2012. He has more than 30 years of experience in trade and manufacturing within the garment industry and owns 8.7% of Jerash shares.

## Baiju Chellamma – General Manager

Baiju Chellamma has served as General Manager of Jerash Garments since 2008. He previously served as factory manager for Classic Fashion Apparel Industry in Egypt and factory manager for Bin Jabr Group Ltd. in Abu Dhabi. Chellamma's operational expertise is seemingly instrumental in Jerash's 95% on time delivery rate and high product quality.

#### Oryana Awaisheh – Executive Manager

Oryana Awaisheh is Executive Manager of Jerash's Jordanian facilities. Formerly a teacher, she has helped to institute many of the company's globally-recognized socially-responsible workplace practices, while helping to offer the teaching of soft skills to workers and driving the company's employment of Syrian refugees—even speaking on the subject at key U.N. and World Bank forums. Helped by her strong relationships with government officials, Awaisheh helped to form the Jordan Compact that eventually led to a Free Trade Area agreement amendment allowing for duty-free shipping to the EU.

## **VALUATION**

We are initiating with a \$10 price target, which assumes an ~8.0x P/E multiple plus estimated post-IPO pro forma average annual cash of \$1.85/share.

Impediments to our price target include unforeseen changes in Free Trade Agreements, the inability to employ enough Syrian refugees to qualify for duty-free shipping to the E.U., the loss of top customers, the inability to add sufficient additional capacity, perceived geopolitical risks related to operating in Jordan, and the departure of key members of management.

## **RISKS**

- The company benefits from duty-free shipping to the U.S. through an existing Free Trade Agreement and duty-free shipping to the E.U. through an agreement requiring the employment of Syrian refugees. Changes to these agreements or the inability to hire enough Syrian workers could weigh on revenue and profitability.
- The company's top customer The North Face accounts for approximately 80% of revenue. A significant decline in orders from or loss of this customer could result in significantly lower revenue and profitability and impact the company's financial condition.
- Jerash's main manufacturing facilities are located in Jordan. This results geopolitical risk ranging from potential governmental interference to protests and uprisings that could interfere with business operations.
- Jerash may need to incur additional debt or issue equity to finance its capacity addition plans. Equity issuance could result in potential dilution, while the inability to obtain capital could weigh on revenue growth.
- Operating results fluctuate, with a significant amount of winter product-related revenue recognized during the first half of the company's fiscal year. Unfavorable changes in weather could impact demand for winter season apparel and negatively affect operating results.
- The company is exposed to potential foreign currency risk. While the Jordanian Dinar (JOD) is pegged to the USD, any E.U. transactions would be subject to foreign currency risk and changes in exchange rates that could negatively impact results.
- The company's C-suite executives are based across multiple geographies, seemingly somewhat reducing management's visibility into underlying trends at the company's manufacturing facilities in Jordan. We believe this presents risk that the company may fall short of internal forecasts, particularly those related to gross margin.

## COMPANY DESCRIPTION

Building on a foundation that began through duty-free shipping from its manufacturing center in The Hashemite Kingdom of Jordan, Jerash Holdings produces and exports customized, ready-made sports and outerwear including jackets, polos, and t-shirts for several well-known global apparel brands and retailers. The company employs nearly 3,000 employees and its facilities produce more than 6.5 million pieces annually. Jerash was founded in 2000, completed its initial public offering in May 2018, and is headquartered in Rochester, New York.

## MENTIONED COMPANIES

Centric Brands, Inc. (CTRC - Under Review)

Delta Apparel, Inc. (DLA - Neutral - \$26.00)

Lakeland Industries, Inc. (LAKE - Buy - \$15.00)

(\$ millions, except per share data) Fiscal Year End in March															OTH Capita dking( 949	@roth.com 9.720.7167
INCOME STATEMENT Net Sales	<b>FY17A</b> 62.04	1Q18A 21.35	2Q18A 27.55	3Q18A 11.54	<b>4Q18A</b> 8.85	FY18A 69.30	1Q19A 18.36	2Q19A 33.46	3Q19A 18.68	<b>4Q19E</b> 12.39	<b>FY19E</b> 82.90	1Q20E 22.04	<b>2Q20E</b> 36.81	3Q20E 22.41	<b>4Q20E</b> 14.87	<b>FY20E</b> 96.13
Cost of Goods Sold (COGS) Gross Profit	46.64 15.40	16.50 4.85	20.33 7.21	7.79 3.75	6.72 2.13	51.34 17.95	13.70 4.66	25.12 8.35	15.48 3.20	9.57 2.83	63.86 19.03	16.39 5.64	27.50 9.31	17.32 5.09	11.47 3.41	72.68 23.45
SG&A Expenses Operating Profit EBITDA (Adjusted)	4.71 10.70 12.02	1.30 3.43 3.83	1.46 5.76 6.06	1.56 2.19 2.51	1.69 0.45 2.19	6.00 11.83 14.59	1.98 (0.52) 3.05	2.10 6.06 6.62	2.17 1.03 1.40	2.24 0.58 0.93	8.49 7.14 12.00	2.51 3.13 3.57	2.50 6.81 7.23	2.56 2.53 2.99	2.56 0.85 1.35	10.13 13.32 15.14
Interest Expense Pre-Tax Income	0.00 10.65	0.00 3.43	0.00 5.75	0.00 2.21	0.00 0.42	0.00 11.80	0.00 (0.52)	0.00 6.05	0.04 1.05	0.04 0.58	0.09 7.16	0.04 3.17	0.04 6.81	0.04 2.53	0.04 0.85	0.17 13.36
Income Tax Expense (Benefit) Net Income Attributable to Common Shareholders	0.00 10.65	0.00 3.43	0.00 5.75	0.00 2.21	1.40 (0.98)	1.40 10.40	0.37 (0.89)	1.46 4.59	(0.58) 1.63	0.09 0.50	1.34 5.82	0.48 2.70	1.02 5.79	0.38 2.15	0.13 0.72	2.00 11.36
Reported EPS Operating EPS	\$1.21 \$1.21	\$0.37 \$0.38	\$0.61 \$0.60	\$0.22 \$0.23	(\$0.10) (\$0.10)	\$1.07 \$1.08	(\$0.08) \$0.14	\$0.41 \$0.43	\$0.14 \$0.14	\$0.04 \$0.04	\$0.52 \$0.75	\$0.24 \$0.24	\$0.51 \$0.51	\$0.19 \$0.19	\$0.06 \$0.06	\$1.00 \$1.00
Avg FD Common Shares	8.8	9.3	9.6	9.7	9.7	9.7	10.8	11.1	11.4	11.4	11.2	11.4	11.4	11.4	11.4	11.4
Dividends per share									\$0.05	\$0.05	\$0.10	\$0.05	\$0.05	\$0.05	\$0.05	\$0.20
SEGMENT INFORMATION Not Revenue By Country United States Jordan Other Countries	90% 10% 0%	99% 0% 1%	92% 8% 0%	74% 22% 5%	72% 28% 0%	88% 10% 1%	97% 1% 2%	83% 15% 2%	81% 18% 0%							
Net Revenue By Customer VF Corporation	78%					79%	91%	78%	82%							
Columbia Others Total	8% 14% 100%					9% 13% 100%	8% 1% 100%	7% 15% 100%	0% 18% 100%							
Seasonality	100%	31%	40%	17%	13%	100%	22%	40%	23%	15%	100%	23%	38%	23%	15%	100%
PROFITABILITY RATIOS Gross Margin	24.8%	22.7%	26.2%	32.5%	24.1%	25.9%	25.4%	24.9%	17.1%	22.8%	23.0%	25.6%	25.3%	22.7%	22.9%	24.4%
Operating Expense Ratio Operating Margin	7.6% 17.2%	6.1% 16.1%	5.3% 20.9%	13.5% 19.0%	19.0% 5.1%	8.7% 17.1%	10.8% -2.9%	6.3% 18.1%	11.6% 5.5%	18.1% 4.7%	10.2% 8.6%	11.4% 14.2%	6.8% 18.5%	11.4% 11.3%	17.2% 5.7%	10.5% 13.9%
EBITDA Margin Pre-Tax Margin	19.4% 17.2%	18.0% 16.1%	22.0% 20.9%	21.7% 19.1%	24.7% 4.7%	21.1% 17.0%	16.6% -2.8%	19.8% 18.1%	7.5% 5.6%	7.5% 4.7%	14.5% 8.6%	16.2% 14.4%	19.6% 18.5%	13.4% 11.3%	9.1% 5.7%	15.8% 13.9%
Profit Margin Effective Tax Rate	17.2%	16.1%	20.9%	19.1%	-11.1% 337.1%	15.0% 11.9%	-4.8% -70.5%	13.7%	8.7% -55.2%	4.0% 15.0%	7.0% 18.7%	12.2% 15.0%	15.7% 15.0%	9.6% 15.0%	4.8% 15.0%	11.8%
GROWTH RATES (INC STMT)	(Y-to-Y)	(Y-to-Y)	(Y-to-Y)	(Y-to-Y)	(Y-to-Y)	(Y-to-Y)		(Y-to-Y)	(Y-to-Y)	(Y-to-Y)	(Y-to-Y)	(Y-to-Y)		(Y-to-Y)	(Y-to-Y)	(Y-to-Y)
Net Sales Gross Profit	18% 22%	15% 28%	46% 93%	-8% 0%	-27% -48%	12% 17%	-14% -4%	21% 16%	62% -15%	40% 32%	20% 6%	20% 21%	10% 12%	20% 59%	20% 21%	16% 23%
Operating Profit EBITDA	18% 19%	21% 20%	111% 97%	-8% -8%	-84% -27%	11% 21%	-115% -20%	5% 9%	-53% -44%	30% -57%	-40% -18%	-696% 17%	12% 9%	147% 114%	46% 45%	87% 26%
Pre-Tax Income Core EPS	18% 18%	21% 18%	111% 94%	-8% -16%	-85% -133%	11% -11%	-115% -62%	5% -29%	-53% -37%	40% -143%	-39% -30%	-711% 65%	13% 19%	142% 32%	46% 46%	87% 32%
BALANCE SHEET	FY17A	1Q18A	2Q18A	3Q18A	4Q18A	FY18A	1Q19A	2Q19A	3Q19A	4Q19E	FY19E	1Q20E	2Q20E	3Q20E	4Q20E	FY20E
Cash & Cash Equivalents Accounts Receivable	3	1 18	5 13	14 7	9 5	9 5	13 13	27 16	27 13	17 7	17 7	10 16	29 17	30 13	20 9	20 9
Accounts Receivable - related party Inventories Total Current Assets	3 19 30	1 16 37	6 5 30	0 7 32	0 20 37	0 20 37	0 20 50	0 9 52	0 12 54	29 56	0 29 56	0 24 52	0 10 58	0 15 60	0 34 65	34 65
Property & Equipment Total Long-Term Assets Total Assets	3	3	3	3	3	3	3	3	3	3	3		4		4	4
	34	40	7 <b>37</b>	6 <b>39</b>	6 <b>43</b>	6 <b>43</b>	7 <b>57</b>	7 <b>59</b>	6 <b>60</b>	7 <b>62</b>	7 <b>62</b>	3 7 <b>59</b>	7 <b>65</b>	4 8 <b>68</b>	8 <b>73</b>	73
Accounts Payable Credit Facilities	10 0	12 0	37 2 0	6 <b>39</b> 1 1	6 <b>43</b> 5 1	6 <b>43</b> 5 1	<b>57</b> 1 7	59 2 2	<b>60</b> 5 0	7 0	<b>7</b> 0	7 59 1 0	7 <b>65</b> 2 0	8 <b>68</b> 3 0	8	8
Credit Facilities Total Current Liabilities		12 0 14	2 0 4	6 39 1 1 4	6 <b>43</b> 5 1 8	6 <b>43</b> 5 1 8	1 7 10	59 2 2 8	5 0 8	7 <b>62</b> 7 0 10		7 59 1 0 5	7 <b>65</b> 2 0 5	8 68 3 0 6		8 73 8 0 11
Credit Facilities	10 0	12 0	37 2 0	6 <b>39</b> 1 1	6 43 5 1 8 0 1	6 43 5 1 8 0 1	<b>57</b> 1 7	59 2 2	<b>60</b> 5 0	7 0	<b>7</b> 0	7 59 1 0	7 <b>65</b> 2 0	8 <b>68</b> 3 0	8	8
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities	10 0 12 0	12 0 14 0	2 0 4	6 39 1 1 4 0 0	6 43 5 1 8 0 1 9	6 43 5 1 8 0 1 9	57 1 7 10 0 2	59 2 2 8 0 2	5 0 8 0 2	7 0 10 0 2	7 0 10 0 2	7 59 1 0 5	7 65 2 0 5	8 68 3 0 6	8 0 11 0 2	8 0 11 0 2
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Stockholder's Equity BALANCE SHEET RATIOS	10 0 12 0 0 12 22	12 0 14 0 0 0 14 27	37 2 0 4 0 0 4 33	6 39 1 1 4 0 0 4 35	5 1 8 0 1 9	5 1 8 0 1 9	57 1 7 10 0 2 12 45	59 2 2 8 0 2 9	60 5 0 8 0 2 9	7 0 10 0 2 <b>12</b> 51	7 0 10 0 2 12 51	7 59 1 0 5 0 2 6	7 65 2 0 5 0 2 7	8 68 3 0 6 0 2 8 60	8 0 11 0 2 13 60	8 0 11 0 2 13
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSOs) Days Payables Outstanding (DPOs)	10 0 12 0 0 12 22 150 32 80	12 0 14 0 0 14 27	37 2 0 4 0 0 4 33 24 63 11	6 39 1 1 4 4 0 0 0 4 35 5 5 5 17	5 1 8 0 1 9 34 272 54 64	5 1 8 0 1 9 34 144 28 34	57 1 7 10 0 2 12 45	59 2 2 2 8 0 2 9 50	5 0 8 0 2 9 51 72 65 27	7 0 10 0 2 12 51 272 53 64	7 0 10 2 12 51 165 32 39	7 599 1 0 5 0 2 6 533	7 65 2 0 5 0 2 7 58 32 43 6	8 68 3 0 6 6 0 2 8 60 79 54 17	8 0 11 0 2 13 60 272 53 64	8 0 111 0 2 13 60 172 33 41
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSOs) Days Payables Outstanding (DPOs) Cash Conversion Cycle	10 0 12 0 0 12 22 150 32	12 0 14 0 0 0 14 27	37 2 0 4 0 0 0 4 33	6 39 1 1 4 0 0 4 35	5 1 8 0 1 <b>9</b> 34 272 54	5 1 8 0 1 9 34	57 1 7 10 0 2 12 45	59 2 2 8 0 2 9 50	5 0 8 0 2 9 51	7 0 10 0 2 12 51	7 0 10 0 2 <b>12</b> 51	7 59 1 0 5 0 2 6 53	7 65 2 0 5 0 2 7 58	8 68 3 0 6 0 2 8 60 79 54	8 0 11 0 2 13 60	8 0 111 0 2 13 60 172 33
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Portion Total Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSOs) Days Payables Outstanding (DPOs) Cash Conversion Cycle  DuPont Analysis (ROE Deconstruction) Return on Sales (Profit Margin) Asset Turnover (Sales / Assets)	10 0 12 0 12 22 22 150 32 80 102	12 0 14 0 0 14 27 86 80 68 98	37 2 0 4 0 0 4 33 24 63 11 77 20.9% 295%	6 39 1 1 1 4 4 0 0 4 35 55 17 117 19.1% 118%	55 1 8 0 1 9 34 272 54 64 262	5 1 8 0 1 9 34 144 28 34 138	57 1 7 10 0 2 12 45 133 666 8 191 -4.8% 129%	59 2 2 8 0 2 9 50 32 43 6 69 13.7% 226%	60 5 0 8 0 2 9 51 72 65 27 109 8.7%	7 0 10 0 2 12 51 272 53 64 261	7 0 10 2 12 51 165 32 39 159 7.0% 133%	7 599 1 0 5 5 0 0 2 2 6 6 53 133 666 8 191 12.2% 155%	7 655 2 0 0 5 0 2 7 58 32 43 6 69 15.7% 226%	8 68 3 0 6 6 0 2 2 8 60 79 54 17 116 9.6% 131%	8 0 0 111 0 2 2 133 60 272 53 64 261 4.8% 82%	8 8 0 0 111 0 0 2 133 60 172 33 41 165 11.8% 132%
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSCs) Days Payables Outstanding (DPOs) Cash Conversion Cycle  DuPont Analysis (ROE Deconstruction) Return on Sales (Profit Margin)	10 0 12 0 0 12 22 150 32 80 102	12 0 14 0 0 14 27 86 80 68 98	37 2 0 4 0 0 4 33 24 63 11 77	6 39 1 1 4 0 0 4 35 79 55 17 117	55 1 8 0 1 9 34 272 54 64 262	5 1 8 0 1 9 34 144 28 34 138	57 1 7 10 0 2 12 45 133 66 8 191	59 2 2 8 0 2 9 50 32 43 69	60 5 0 8 0 2 9 51 72 65 27 109	7 0 10 0 2 12 51 272 53 64 261	7 0 10 0 2 12 51 165 32 39 159	7 599 1 0 0 2 6 6 533 666 8 191 12.2%	7 65 2 0 5 0 2 7 58 32 43 69	8 68 3 0 6 0 2 2 8 60 79 54 17 116 9.6%	8 0 0 11 0 2 13 60 272 53 64 261 4.8%	8 8 0 0 111 0 0 2 133 600 172 333 411 165
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSCs) Days Payables Outstanding (DPOs) Cash Conversion Cycle  DuPont Analysis (ROE Deconstruction) Return on Sales (Profit Margin) Asset Turnover (Sales / Assets) Financial Leverage (Assets / Equity) Return On Equity  GROWTH RATES (BAL SHT)	10 0 12 0 0 12 22 150 32 80 102 17.2% 183%	12 0 14 0 0 14 27 86 80 68 98	37 2 0 4 0 0 0 4 33 24 63 11 77 20.9% 295% 113% 69.5%	6 39 1 1 1 4 0 0 0 4 35 17 117 19.1% 111%	5 1 8 0 1 9 34 272 54 64 262 -11.1% 83% -11.7%	55 11 88 00 11 99 344 1444 28 34 138 15.0% 160% 127% 30.5%	57 1 7 10 0 2 2 12 45 133 66 8 191 -4.8% 129% -7.9%	59 2 2 8 0 2 9 50 32 43 69 13.7% 226% 118% 36.6%	50 8 0 2 9 51 72 65 27 109 8.7% 123% 118% 12.7%	7700100022122512251227253642614.0%	7 0 10 10 2 12 12 51 165 32 2 39 159 7.0% 133% 11.5%	7 59 1 0 0 5 5 0 2 2 6 53 133 666 8 191 12.2% 150% 20.4%	7 65 2 0 0 5 5 0 2 2 7 58 32 43 6 6 69 115.7% 226% 111% 39.5%	8 68 3 0 0 6 0 2 2 8 60 79 54 17 116 9.6% 131% 14.3%	8 8 0 111 0 2 2 133 60 272 53 64 261 4.8% 82% 121%	8 8 0 111 0 2 131 13 600 172 333 411 165 11.8% 132% 121%
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSOs) Days Payables Outstanding (DPOs) Cash Conversion Cycle  DuPont Analysis (ROE Deconstruction) Return on Sales (Profit Margin) Asset Turnover (Sales / Assets) Financial Leverage (Assets / Equity) Return On Equity Return On Equity	10 0 12 0 0 12 22 150 32 80 102 17.2% 183%	12 0 14 0 0 14 27 86 80 68 98	37 2 0 4 0 0 0 4 33 24 63 11 77 20.9% 295% 113%	6 39 1 1 1 4 4 0 0 0 4 4 35 17 117 19.1% 118% 1111% 25.0%	5 1 8 0 1 9 34 272 54 64 262 -11.1% 83% 127%	5 1 1 8 0 1 9 34 144 28 34 138 15.0% 160% 127%	57 1 7 10 0 2 12 45 133 66 8 191 -4.8% 129%	59 2 2 8 0 2 9 50 32 43 6 69 13.7% 226% 118%	60 5 0 8 0 2 9 51 72 65 27 109 8.7% 123%	7 0 10 0 2 12 51 272 53 64 261 4.0% 81%	7 0 10 0 2 12 51 165 32 39 159 7.0% 133%	7 59 1 0 5 0 2 6 6 53 133 66 6 8 191 12.2% 150% 112%	7 655 2 0 5 5 0 2 7 7 58 32 43 6 69 15.7% 226% 111%	8 68 3 0 6 6 0 2 2 8 60 79 54 17 116 9.6% 113%	8 8 0 111 0 2 2 133 600 272 533 644 261 4.8% 82% 121%	8 8 0 111 0 2 2 133 600 1172 33 411 1655 11.8% 132% 121% 19.0%
Credit Facilities  Long-Term Portion Of Debt  Total Lung-Term Liabilities  Total Liabilities  Total Liabilities  Total Stockholder's Equity  BALANCE SHEET RATIOS  Days of Inventory  Days Sales Outstanding (DSOs)  Days Payables Outstanding (DPOs)  Cash Conversion Oycle  DuPont Analysis (ROE Deconstruction)  Return on Sales (Profit Margin)  Asset Turnover (Sales / Assets)  Financial Leverage (Assets / Equity)  Return On Equity  GROWTH RATES (BAL SHT)  Accounts Receivable  Inventories  Accounts Payable  CASH FLOW STATEMENT	100 0 12 0 0 12 12 150 32 80 102 17.2% 183% 154% 48.4% 16.0% 3633.5%	12 0 14 0 0 14 27 86 86 88 98 16.1% 212% 51.9%	37 2 0 0 4 0 0 0 4 33 33 24 63 11 77 20.9% 295% 113% 69.5%	6 39 1 1 1 4 4 0 0 0 4 4 35 17 117 19.1% 118% 111% 25.0% -73.6% 3018A	55 11 8 0 11 9 34 272 54 64 262 -11.1% 83% -11.7% -11.7%	5 1 8 0 1 9 34 144 28 8 34 138 15.0% 160% 127% 30.5% 6.0% -53.4%	57 1 7 10 0 2 12 45 133 66 8 191 -4.8% 129% 127% -7.9% -26.7% 28.5% 90.7%	59 2 2 8 8 0 2 9 9 50 32 43 6 69 13.7% 226% 118% 36.6% 61.5% 22.0% 61.5% 22.0% 22.0%	60 5 0 8 0 2 9 51 72 65 27 109 8.7% 123% 118% 12.7% 94.5% 80.3% 212.0%	7 0 10 0 2 2 12 51 272 53 64 261 4.0% 81% 4.0% 42.4% 42.4%	7 0 10 0 2 2 12 51 165 32 39 159 7.0% 133% 11.5% 40.0% 42.4%	7 59 1 0 0 5 5 0 0 2 6 6 53 133 66 8 8 191 12.2% 15.0% 11.2% 20.4% 19.6% 19.6% 19.6%	7 65 2 0 5 5 0 2 7 7 58 32 43 6 69 15.7% 226% 111% 39.5% 9.5%	8 68 3 0 6 6 0 2 2 8 60 0 17 9 54 17 116 131% 14.3% -0.2% 23.3% -28.7%	8 8 0 111 0 0 2 133 60 272 53 64 261 4.8% 82% 121% 4.8% 18.5% 18.5%	11.00 22 133 600 1772 333 411 1655 11.8% 19.0% 18.5% 18.5%
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSOs) Days Payables Outstanding (DPOs) Cash Conversion Cycle  DuPont Analysis (ROE Deconstruction) Return on Sales (Profit Margin) Asset Turnover (Sales / Assets) Financial Leverage (Assets / Equity) Return On Equity  GROWTH RATES (BAL SHT) Accounts Receivable Inventionies Accounts Payable	10 0 0 12 0 0 0 12 2 22 150 32 80 102 17.2% 48.4% 48.4%	12 0 14 0 0 14 27 86 80 68 98 16.1% 212% 51.9%	37 2 0 0 4 0 0 0 4 33 24 63 111 77 20.9% 113% 69.5%	6 39 1 1 4 0 0 4 35 79 55 17 117 19.1% 118% 25.0%	5 1 8 0 1 9 34 272 54 64 262 -11.1% 83% 127% -11.7% 6.0% -53.4%	55 11 8 0 1 1 9 34 144 28 34 138 15.0% 160% 127% 30.5% 89.0% 6.0% -53.4%	57 1 7 10 0 2 12 45 133 66 8 8 191 -4.8% 127% -7.9%	59 2 2 8 0 2 9 50 32 43 6 6 9 13.7% 226% 61.5% -26.5%	60 5 0 8 0 2 9 51 72 65 27 109 8.7% 123% 118% 12.7%	7 0 10 0 2 12 51 272 53 64 261 4.0% 40.0% 42.4% 42.4%	7 0 10 0 2 2 12 51 165 32 39 159 1.5% 123% 123% 40.0% 42.4% 42.4%	7 59 1 0 0 5 5 0 0 2 2 6 6 53 191 12.2% 150% 112% 20.4% 20.4%	7 65 2 0 5 0 2 7 7 58 32 43 6 69 15.7% 226% 111% 39.5% 9.5%	8 68 3 0 6 6 0 2 2 8 60 79 54 17 116 9.6% 113% 14.3% -0.2% 23.3% -28.7%	88 0 0 111 0 2 2 133 600 272 533 644 261 4.8% 82% 121% 4.8% 18.5% 18.5%	8 8 0 11 1
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Portion Of Debt Total Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSOs) Days Payables Outstanding (DPOs) Cash Conversion Cycle  DuPont Analysis (ROE Deconstruction) Return on Sales (Profit Margin) Asset Turnover (Sales / Assets) Financial Leverage (Assets / Equity) Return On Equity  GROWTH RATES (BAL SHT) Accounts Receivable Inventories Accounts Receivable Inventories Accounts Payable  CASH FLOW STATEMENT Net Income Depreciation & Amortization Changes in Operating Assets & Liabilities	100 00 12	12 0 14 0 0 0 14 27 86 80 68 98 152% 51.9%	37 2 0 4 0 0 4 33 24 63 111 77 20.9% 295% 113% 69.5% 7.4% -86.2% -86.2% 5.75 0.30 (0.10)	6 39 1 1 1 4 0 0 0 4 4 35 79 55 17 117 111% 111% 25.0% 22.9% 19.6% 3018A 2.21 0.31 6.45	5 5 1 8 8 0 0 1 9 34 272 54 64 262 -11.1% 89.0% 6.0% 6.0% 0.32 (4.85)	55 11 8 0 0 11 9 9 34 144 28 34 138 15.0% 160% 6.0% 6.0% 6.0% 53.4% 10.40 1.22 (6.57)	57 1 7 10 0 2 12 12 45 133 66 8 8 191 -4.8% 129% -7.9% -26.7% 28.5% -90.7% (0.89) 0.32 (12.75)	59 2 2 8 0 2 9 50 32 43 6 69 13.7% 226% 118% 36.6% 22.0% 61.5% -2019A 4.59 0.33 14.03	60 5 0 8 0 2 9 51 72 65 27 109 8.7% 123% 118% 12.7% 94.5% 80.3% 212.0% 3019A	7 0 10 10 0 2 12 12 51 53 64 261 4.0% 123% 4.0% 42.4% 42.4% 42.4% 40.9% (8.77) 0.31 (8.77)	7 0 10 10 0 2 12 12 51 165 32 39 159 159 15% 123% 123% 12.5% 40.0% 42.4% 42.4% 47.1% 12.7 (6.74)	7 59 1 0 0 2 6 6 53 191 12.2% 112% 20.4% 19.6% 1	7 65 2 0 0 5 0 0 2 7 7 58 32 43 6 69 15.7% 2268 111% 39.5% 10.0% 9.5% 9.5% 9.5% 9.5%	8 68 3 0 6 6 0 2 8 60 79 54 17 116 9.6% 131% 14.3% -0.2% 23.3% -2.5 0.42 0.16	8 8 0 111 0 0 2 133 60 272 533 64 261 121% 4.8% 121% 4.8% 121% 18.5% 18.5% 10.72 0.46 (10.12)	8 8 8 0 0 1111 0 0 1111 1111 1111 1111
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DPOs) Cash Conversion Cycle  DUPONT Analysis (ROE Deconstruction) Return on Sales (Profit Margin) Asset Turnover (Sales / Assets) Financial Leverage (Assets / Equity) Return On Equity GROWTH RATES (BAL SHT) Accounts Receivable Inventiones Accounts Payable  CASH FLOW STATEMENT Net Income Depreciation & Amortization Changes in Operating Assets & Liabilities Cash Flows From Operating Activities Purchase Of Property And Equipment	10 0 0 12 0 0 0 12 12 150 32 80 102 17.2% 48.4% 48.4% 16.0% 3633.5% FY17A 10.65 1.32 (4.29) 7.68 (0.49)	12 0 14 0 0 0 14 27 86 80 68 98 16.1% 212% 51.9% 1018A 3.43 0.29 (8.08) (4.25) (0.18)	20 0 4 0 0 0 4 33 3 11 77 20.9% 295% 113% 69.5% 69.5% 5.5 5.30 (0.10) 5.96 (0.49)	6 39 1 1 1 4 4 0 0 0 4 4 35 5 55 17 117 117 118% 25.0% -22.9% -19.6% -73.6% 3018	5 1 8 8 0 0 1 9 34 4 262 272 272 66 0 % 6	55 11 8 0 1 1 9 34 144 28 34 138 15.0% 160% 30.5% 89.0% 6.0% -53.4% 10.40 1.22 (6.57) 5.16 (0.88)	57 1 7 10 0 2 12 12 45 133 66 8 191 -4.8% 129% -26.7% 28.5% -90.7% 1019A (0.89) 0.32 (12.75) (10.11) (0.48)	59 2 2 8 0 2 9 50 32 43 6 69 13.7% 226% 118% -26.5% 22.0% 61.5% -26.5% 231 4.59 0.33 14.03 18.97	60 5 0 8 0 2 9 51 72 65 27 109 8.7% 123% 1123% 12.7% 94.5% 80.3% 212.0% 30.31 0.31 0.31 0.269 (0.01)	7 0 10 2 2 12 51 272 53 64 261 4.0% 41.4% 42.4% 40.0% 42.4% 40.0% 47.77 (7.97) (0.75)	7 0 10 0 2 12 12 51 165 32 39 159 7.0% 133% 11.5% 40.0% 42.4% 42.4% FY19E 5.82 1.27 (6.74) 3.57 (1.47)	7 59 1 0 0 5 5 0 0 2 2 6 6 53 191 12.2% 125% 20.4% 19.6% 19.	7 65 2 0 0 5 0 0 2 7 58 32 43 6 69 15.7% 226% 111% 39.5% 9.5% 9.5% 9.5% 9.5%	8 68 3 3 0 6 6 0 2 2 8 60 79 54 17 116 9.6% 131% 14.3% 14.3% 22.8.7% 302E 2.15 0.42 0.16 2.73 (0.75)	8 8 0 111 0 2 2 13 60 2 2 72 2 13 64 261 1 21% 4.8% 18.5% 18.5% 18.5% (0.10.12) 0.72 0.46 (0.10.12) (0.50)	8 8 8 0 0 111 0 0 111 0 111 0 111 111 11
Credit Facilities  Long-Term Portion Of Debt  Total Lung-Term Liabilities  Total Liabilities  Total Liabilities  Total Stockholder's Equity  BALANCE SHEET RATIOS  Days of Inventory  Days Sales Outstanding (DSOs)  Days Payables Outstanding (DPOs)  Cash Conversion Oycle  DuPont Analysis (ROE Deconstruction)  Return on Sales (Profit Margin)  Asset Turnover (Sales / Assets)  Financial Leverage (Assets / Equity)  Return On Equity  GROWTH RATES (BAL SHT)  Accounts Receivable  Inventories  Accounts Payable  CASH FLOW STATEMENT  Net Income  Depreciation & Amortization  Changes in Operating Assets & Liabilities  Cash Flows From Operating Activities  Purchase Of Property And Equipment  Cash Flows From Investing Activities  Cash Flows From Investing Activities  Cash Flows From Financing Activities	10 0 0 12 0 0 0 12 12 150 32 80 102 17.2% 48.4% 48.4% 16.0% 3633.5% 17.32 (4.29) 7.68 (0.49) (0.83) (6.00)	12 0 14 0 0 0 14 27 86 80 68 98 16.1% 212% 152% 51.9% 10.18 A 3.43 0.29 (8.08) (4.25) (0.18) 0.15 1.90 (0.01)	37 2 0 4 0 0 4 33 24 63 11 77 20.9% 295% 113% 69.5% -64.7%  2018A 5.75 0.30 (0.10) 5.96 (0.49) (0.49) 0.91	6 39 1 1 4 0 0 4 35 79 55 57 117 19.1% 118% 25.0% -22.9% -73.6% -73.6% -22.9% (0.06) (0.06) (0.06)	5 1 8 0 0 1 9 34 272 272 54 64 262 -11.1% 89.0% 6.0% -53.4% 40.18 1 (0.98) (0.15) (0.15) 0.03 0.01	5 1 8 0 1 1 9 9 34 1 144 28 34 138 15.0% 160% 5.3.4% 17% 30.5% 17.2% (6.57) 5.16 (0.88) (0.54) 3.45 (0.00)	57 1 7 10 0 2 12 15 133 66 8 191 14.8% 129% 127% -7.9% 28.5% -90.7% 10119 (0.89) 0.32 (12.75) (10.11) (0.48) (0.48) 15.01 (0.01)	59 2 2 2 8 0 2 9 50 32 43 6 69 13.7% 226% 118% 36.6% 22.0% 61.5% -26.5%  2019A 4.59 0.33 14.03 18.97 (0.23) (0.23) (0.20) 0.03	60 5 0 8 0 2 9 51 72 65 27 109 8.7% 123% 118% 12.7% 30.3% 212.0% 30.31 0.76 2.69 (0.01) (0.01) (0.05)	7 0 10 10 2 2 12 12 51 272 53 64 261 4.0% 41.4% 42.4% 40.0% 42.4% 40.0% (6.77) (7.97) (0.75) (0.75) (0.57)	7 0 10 0 2 12 12 51 165 32 39 159 159 1.5% 123% 42.4% 42.4% 42.4% 1.15% 1.27 (6.74) 3.57 (1.47) (1.14) (0.03)	7 59 1 0 0 5 5 0 0 0 5 5 3 133 66 8 8 191 12.2% 112% 20.4% 19.6% 19.6% 19.6% (9.02) (5.97) (0.50) (0.50) (0.56) 0.00	7 65 2 0 0 5 5 7 7 58 32 43 6 69 15.7% 226% 111% 39.5% 9.5% 9.5% 200E 5.79 0.37 13.52 19.68 (0.75) (0.75) (0.57) 0.00	8 68 3 3 0 6 6 0 2 2 8 60 0 79 54 17 116 9.6% 131% 14.3% 23.3% -28.7% 3020E 2.15 0.42 0.16 2.73 (0.75) (0.75) (0.57) 0.00	8 8 0 111 0 2 2 13 60 2 2 72 2 53 64 2 661 4.8% 82% 4.8% 18.5% 18.5% 18.5% (0.50) (0.50) (0.50) (0.50)	8 8 8 0 111
Credit Facilities Total Current Liabilities Long-Term Portion Of Debt Total Long-Term Portion Of Debt Total Long-Term Liabilities Total Liabilities Total Stockholder's Equity  BALANCE SHEET RATIOS Days of Inventory Days Sales Outstanding (DSOs) Days Payables Outstanding (DPOs) Cash Conversion Cycle  DuPont Analysis (ROE Deconstruction) Return on Sales (Profit Margin) Asset Turnover (Sales / Assets) Financial Leverage (Assets / Equity) Return On Equity  GROWTH RATES (BAL SHT) Accounts Receivable Inventories Accounts Receivable Inventories Accounts Payable  CASH FLOW STATEMENT Net Income Depreciation & Amortization Changes in Operating Assets & Liabilities Cash Flows From Operating Activities Purchase Of Property And Equipment Cash Flows From Investing Activities Cash Flows From Investing Activities	10 0 0 0 12 2 2 2 150 32 80 102 17.2% 183% 154% 48.4% 16.0% 3633.5% FY176 (0.49) (0.83) (6.00)	12 0 14 0 0 0 14 27 86 80 68 98 16.1% 51.9% 51.9% 152% 6.08) (4.25) (0.18) 0.15	37 2 0 4 0 0 4 33 24 63 11 77 20.9% 295% 113% 69.5% 7.4% -86.2% -86.2% -60.10) 5.96 (0.49) (0.49)	6 39 1 1 4 0 0 4 35 79 55 17 117 19.1% 111% 25.0% -22.9% -19.6% -73.6% 3Q18A 2.21 0.31 6.45 8.97 (0.06) (0.06)	5 1 8 0 0 1 1 9 9 34 64 64 262 -11.1% 8 89.0% 6.0% 53.4% 6.0% (0.98) 0.32 (4.85) (5.51) (0.15) 0.03	5 1 8 0 1 1 9 34 144 28 34 138 15.0% 127% 30.5% 89.0% 6.0% -53.4% FY184 (0.54) 3.45	57 1 7 10 0 2 12 12 45 133 666 8 191 1-4.8% 129% 127% -7.9% -26.7% 28.5% 90.32 (12.75) (10.11) (0.48) (0.48) 15.01	59 2 2 8 0 2 9 50 32 43 69 13.7% 226% 118% 36.6% 22.0% 61.5% -2.0% 61.5% -0.33 14.03 18.97 (0.23) (0.23)	60 5 0 8 0 2 9 51 72 65 27 109 8.7% 123% 118% 12.7% 80.3% 212.0% 3019A 1.63 0.31 0.76 2.69 (0.01) (0.01) (0.01)	7 0 10 10 0 2 12 12 51 53 64 261 4.0% 42.4% 42.4% 42.4% 47.9% (8.77) (7.97) (0.75) (0.75) (0.57)	7 0 10 10 2 12 12 51 165 32 39 159 159 1.5% 40.0% 42.4% 42.4% 42.4% 1.5% 1.27 (6.74) 3.57 (1.47) (1.14)	7 59 1 0 0 5 1 0 0 2 6 6 8 8 191 1 12.2% 15.2% 112% 20.4% 19.6% 19.6% 19.6% (9.02) (5.97) (0.50) (0.56)	7 65 2 0 0 5 0 0 2 7 58 32 43 6 69 15.7% 226% 111% 39.5% 111% 39.5% 115% 2020E 15.79 0.37 1.352 19.68 (0.75) (0.75) (0.57)	8 68 3 3 0 6 6 0 2 8 60 79 54 17 116 9.6% 1313% 14.3% -0.2% 23.3% -28.7% 3Q20E 2.15 0.42 0.16 2.73 (0.75) (0.57)	8 8 0 111 0 2 2 13 60 2 2 72 2 53 64 2 61 1 21% 4.8% 18.5% 18.5% 18.5% (0.50) (0.50) (0.57)	8 8 0 0 111 0 0 2 2 131 3 132 141 165 141 182 182 182 182 182 182 182 182 182 18

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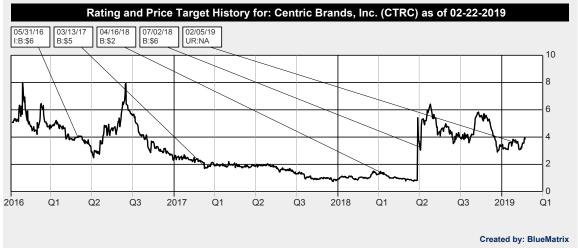
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Each box on the Rating and Price Target History chart above represents a date on which an analyst made a change to a rating or price target, except for the first box, which may only represent the first note written during the past three years. Distribution Ratings/IB Services shows the number of companies in each rating category from which Roth or an affiliate received compensation for investment banking services in the past 12 month.

#### Distribution of IB Services Firmwide

IB Serv./Past 12 Mos. as of 02/25/19

Rating	Count	Percent	Count	Percent
Buy [B]	265	76.37	141	53.21
Neutral [N]	52	14.99	32	61.54
Sell [S]	3	0.86	1	33.33
Under Review [UR]	27	7.78	12	44.44

Our rating system attempts to incorporate industry, company and/or overall market risk and volatility. Consequently, at any given point in time, our investment rating on a stock and its implied price movement may not correspond to the stated 12month price target.

Ratings System Definitions - ROTH employs a rating system based on the following:

Buy: A rating, which at the time it is instituted and or reiterated, that indicates an expectation of a total return of at least 10% over the next 12 months.

Neutral: A rating, which at the time it is instituted and or reiterated, that indicates an expectation of a total return between negative 10% and 10% over the next 12 months.

**Sell:** A rating, which at the time it is instituted and or reiterated, that indicates an expectation that the price will depreciate by more than 10% over the next 12 months.

**Under Review [UR]:** A rating, which at the time it is instituted and or reiterated, indicates the temporary removal of the prior rating, price target and estimates for the security. Prior rating, price target and estimates should no longer be relied upon for UR-rated securities.

Not Covered [NC]: ROTH does not publish research or have an opinion about this security.

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