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PACKAGING INDUSTRY UPDATE

INTRODUCTION

Harris Williams & Co. is pleased to present our packaging industry update for November 2016. This report provides commentary and analysis on current capital market trends and merger and acquisition dynamics within the global packaging industry.

We hope you find this edition helpful and encourage you to contact us directly if you would like to discuss our perspective on current industry trends or our relevant industry experience.

OUR PRACTICE

Harris Williams & Co. is a leading advisor to the packaging industry. Our significant experience covers a broad range of end markets, industries, and business models.

HW&Co. Deal Spotlight

TRICORBRAUN

a portfolio company of

chs|capital

has been acquired by

AEA

TricorBraun

Harris Williams & Co. advised TricorBraun Holdings, Inc. (TricorBraun), a portfolio company of CHS Capital, on its sale to AEA Investors. TricorBraun is a leading full-service provider of end-to-end outsourced rigid packaging solutions in North America, offering design and engineering, consumer and market insight, project management, logistics, and distribution services through over 40 locations globally.

900+ Suppliers

Provide superior customer access and valuable inventory / marketing support

- ✓ Customer access
- ✓ Capacity utilization
- ✓ Credit management
- ✓ Logistics management
- ✓ Market intelligence

13,000+ Customers

Provide customers with a one-stop solution

- ✓ Unmatched project management
- ✓ Design / development expertise
- ✓ Purchasing scope and scale
- ✓ Local presence
- ✓ Market intelligence

TRICORBRAUN

Extensive Product Offering



Plastic Bottles & Jars



Glass Containers



Sprayers, Dispensers, & Closures



Pails, Tubes, Drums, & Other

Attractive End Markets



Healthcare



Personal Care



Food & Beverage



Wine



Industrial Chemical



Household Chemical



Animal Health

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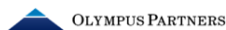
STRONG MOMENTUM ACROSS THE PACKAGING INDUSTRY



a portfolio company of

THE STERLING GROUP

has been acquired by



Provider of flexible packaging solutions, injection-molded fitments, and related filling equipment



a portfolio company of



has been acquired by



Manufacturer of coated and vacuum metallized paper products



a portfolio company of



has been acquired by



a portfolio company of



Manufacturer of flexible paper-based packaging solutions



a portfolio company of



and



has been acquired by



Manufacturer of solar control films and precision, high-performance coatings



a portfolio company of



has been acquired by



Manufacturer of paper-based protective packaging solutions



a portfolio company of



has been acquired by



Global provider of guiding, winding, slitting and tension control systems for web fed converting applications



a portfolio company of



has been acquired by



Producer of die cut merchandise bags and film substrates



STOLLE MACHINERY

a portfolio company of



CAPITAL PARTNERS

has been acquired by



Provider of equipment used in the production of beverage and food containers



has been acquired by



Provider of primary packaging labels and related equipment and services

WHAT WE'RE READING

LABEL AND PACKAGE PRINTING INDUSTRY PREDICTIONS FOR 2017

Labels & Labeling 11/14/2016

With 2016 moving into its closing stages, the label and package printing industry appears to be on the crest of a wave that promises to take it straight into a bumper 2017. The label and package printing industry looks ahead to what the next year will bring, with members of the supply chain explaining what they expect to be making the headlines over the next 12 months.

Read the full article [here](#).

REFRESH AND REVITALIZE

Packaging News 11/7/2016

Fast moving consumer goods companies face a major challenge – particularly in the personal care sector. In this competitive category they have to constantly innovate and keep their offer fresh. This means that in addition to coming up with brand new products, they also have to invest heavily in regular packaging refreshes. But pack redesigns are not without their problems. Do it well, you can reinvigorate a brand's sales. Get it wrong and it can be a brand killer.

Read the full article [here](#).

OVERCOMING THE PATENT CLIFF

Packaging Digest 11/4/2016

Over the last twenty years, demand for generic pharmaceuticals has tripled in the United States. As patents for branded drugs expire and generics enter the market, the pharmaceutical industry has become an increasingly competitive marketplace, placing an ever-greater importance on efficiency and cost savings in the manufacturing process, including product packaging especially.

Read the full article [here](#).

THE 'POUCH-IZATION' OF THE WORLD

Packaging Digest 9/23/2016

In a fast-paced world where convenience is currency, a continuing prominent trend in product packaging is the use of flexible plastic pouches. More consumers are choosing pouches over traditional glass, paper, and metal packaging, and even rigid plastics, as global market demand is projected to rise 6.2% annually to \$37.3 billion in 2018. Food is the largest and most developed market for pouch use due in great part to rising output and consumption rates worldwide. Pharma / medical and beverage are the second and third largest markets, respectively.

Read the full article [here](#).

PACKAGING GETS PERSONAL

Packaging Europe 9/19/2016

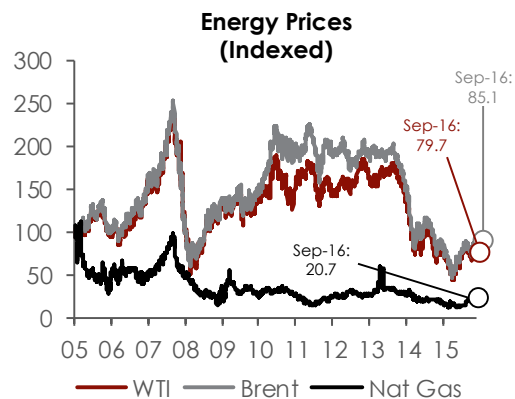
If there is one trend today on which the packaging industry is able to capitalize, personalization is undoubtedly it. No longer satisfied with generic, non-customized goods, consumers are opting in their masses for products which – at least a first glance – speak directly to them. Perhaps more significant, at least for sales executives, is the extent to which customers are willing to pay more for this premium.

Read the full article [here](#).

ECONOMIC UPDATE

ENERGY PRICES

- Global oil prices have fallen approximately 6% since September 2015 due to sustained oversupply, as well as reduced sanctions against Iran, resulting in an additional influx of oil supply globally; to this end, crude inventories remain at their highest level in more than 80 years.
- U.S. natural gas prices remain low, as futures traders mull over key indicators like warmer-than-expected weather in November across much of the U.S. and higher stored inventories, which have both crimped price growth.



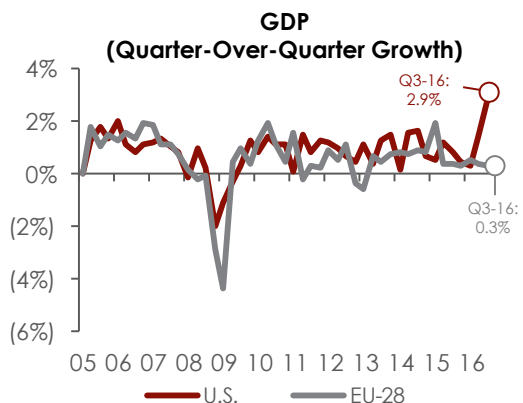
GDP

U.S.

- Real GDP increased at an annual rate of 2.9% in the third quarter of 2016.
- The increase in real GDP in the third quarter reflected positive contributions from personal consumption expenditures, exports, private inventory investment, and nonresidential fixed investment.

EU-28

- Seasonally adjusted GDP in the EU-28 for Q3 2016 rose by 0.3%, with 1.6% year over year growth.



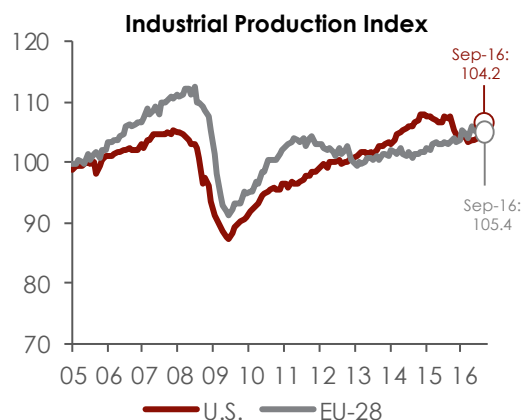
INDUSTRIAL PRODUCTION INDEX

U.S.

- Industrial production edged up 0.1% in September after falling 0.5% in August. For the third quarter as a whole, industrial production rose at an annual rate of 1.8% for its first quarterly increase since the third quarter of 2015.

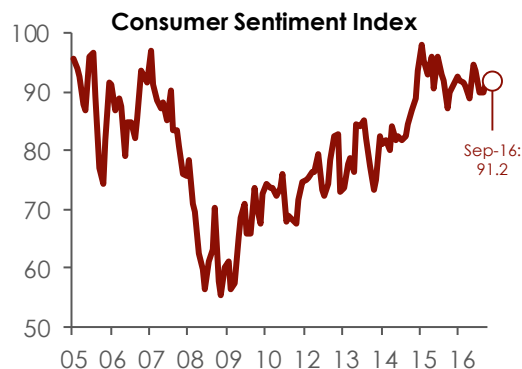
EU-28

- European industrial output fell 0.7% in September but rose 0.3% for the third quarter as a whole, driven largely by significant output growth in Estonia, Malta, Sweden, and Turkey during the period.



CONSUMER SENTIMENT

- The final reading of the University of Michigan's consumer sentiment for the United States increased to 91.2 in September of 2016 from a preliminary reading of 89.8 and a final of 89.8 in the previous month. It is the highest reading in three months and better than market expectations of 90.
- The gauge of current economic conditions declined less than estimated (final of 104.2 compared to a preliminary of 103.5 and a final of 107 in August).

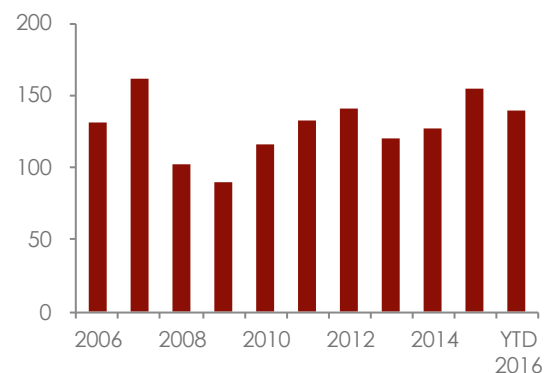


KEY THEMES

M&A ACTIVITY IN THE PACKAGING INDUSTRY

- M&A activity within the packaging space has been steady through 2016, highlighting the defensive nature of the industry.
 - 140 deals announced globally through Q3 2016 vs. 123 for the same period in 2015.
 - \$11.5 billion of deal value announced globally through Q3 2016 vs. \$6.1 billion for the same period in 2015 (excluding mega deals).
- Packaging industry M&A remains robust globally, with the majority of 2016 targets located in Western Europe (42%), North America (29%), and the Asia Pacific region (19%).

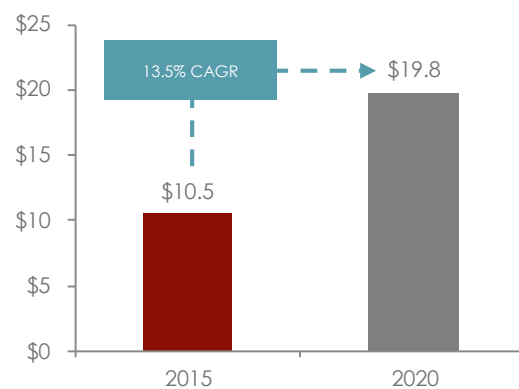
Global Packaging M&A Volume
(announced deals)



THE RISE OF DIGITAL PRINTING WITHIN THE PACKAGING INDUSTRY

- Between 2015 and 2020 the value of packaging materials printed on digital equipment is expected to nearly double, from \$10.5 billion in 2015 to more than \$19.8 billion by 2020.
- The packaging industry has traditionally relied upon analog printing equipment and technologies, such as offset printing, which is oriented to longer production runs.
- The increasing number of single-person households, which purchase smaller quantities and are willing to pay up for personalization, however, is quickly requiring shorter production runs and increasing the number of orders for packaging producers.
- Digital printing, which generally does not require setup or a minimum order size, allows packaging producers to efficiently respond to the demands of this growing demographic.

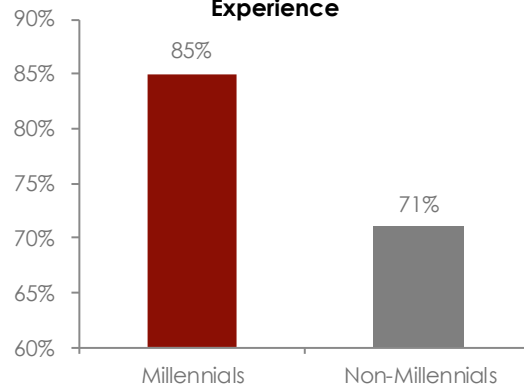
Global Value of Digitally-Printed Packaging Products (\$ in billions)



THE IMPACT OF MILLENNIALS ON THE PACKAGING INDUSTRY

- As of 2015, individuals aged 20 to 38 are categorized as millennials, a group that includes more than 79 million individuals and \$200 billion in buying power.
- Millennials are a consumer group with characteristics different from previous generations: they shop online, are connected to social media, make value-driven purchase decisions, and most notably for the packaging industry, consider packaging an integral part of the shopping experience.
- As such, millennials are quickly becoming the key target group for retailers and brand owners to win in order to ensure future sales growth and profitability, resulting in an anticipated shift away from traditional packaging to those alternatives that more directly embody millennial values, such as convenience and sustainability.

% of Consumers Considering Packaging to be Part of the Product and Brand Experience



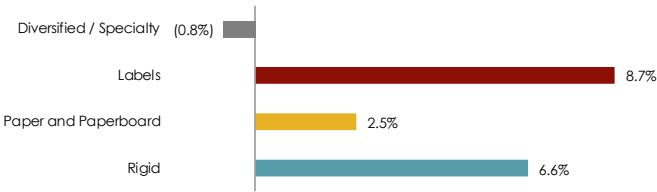
PUBLIC COMPARABLES

As of November 11, 2016 (\$ in millions, except per share amounts)

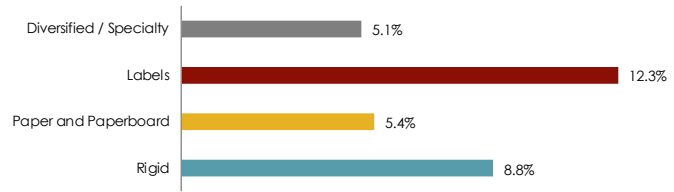
	Current Price	% of LTM High	Mkt Cap	TEV	3-Year Revenue CAGR	FY 2016E			Price / Earnings		TEV / EBITDA			Free Cash Flow	
						Revenue	EBITDA	Margin	FY 2016E	FY 2017P	LTM ¹	FY 2016E	FY 2017P	Conversion ²	Net Debt / EBITDA
Diversified / Specialty															
Amcor	\$10.72	84.9%	\$12,416	\$16,500	(1.1%)	\$9,421	\$1,409	15.0%	17.7x	16.1x	12.3x	11.7x	11.0x	74.0%	2.8x
Sealed Air Corporation	46.77	88.5%	9,041	13,528	(4.0%)	6,804	1,167	17.2%	18.0x	15.7x	11.8x	11.6x	10.9x	77.1%	3.8x
Berry Plastics Group	44.90	96.8%	5,465	11,310	11.8%	6,489	1,206	18.6%	19.1x	16.1x	10.8x	9.4x	9.0x	72.8%	5.4x
Sonoco Products Company	51.72	96.5%	5,164	6,209	(0.1%)	4,836	655	13.6%	18.9x	17.9x	9.5x	9.5x	9.4x	69.1%	1.4x
Bemis Company	48.05	88.7%	4,503	5,989	(7.0%)	4,040	599	14.8%	17.9x	16.3x	10.4x	10.0x	9.4x	65.2%	2.5x
Aptargroup	71.85	88.2%	4,504	5,134	(2.3%)	2,351	475	20.2%	23.1x	21.5x	10.9x	10.8x	10.4x	70.7%	1.0x
Huhtamaki Oyj	36.13	75.9%	3,893	4,574	0.1%	3,118	415	13.3%	17.9x	16.2x	11.6x	11.0x	10.1x	59.2%	2.0x
Greif	52.26	99.6%	2,787	4,137	(9.0%)	3,284	425	12.9%	21.3x	18.1x	9.8x	9.7x	8.9x	74.4%	2.4x
Winpak	33.79	85.1%	2,196	2,018	4.8%	822	190	23.1%	21.4x	19.9x	10.4x	10.6x	9.9x	66.2%	-1.0x
Median		88.5%	\$4,504	\$5,989	(1.1%)	\$4,040	\$599	15.0%	18.9x	16.3x	10.8x	10.6x	9.9x	70.7%	2.4x
Mean		89.4%	\$5,552	\$7,711	(0.8%)	\$4,574	\$727	16.5%	19.5x	17.5x	10.8x	10.5x	9.9x	69.9%	2.3x
Labels															
Avery Dennison Corporation	\$69.55	87.7%	\$6,189	\$7,394	(0.5%)	\$6,044	\$779	12.9%	17.5x	16.1x	9.9x	9.5x	9.0x	76.6%	1.5x
CCL Industries	168.21	84.7%	5,920	6,845	17.0%	2,939	583	19.8%	21.2x	19.0x	12.9x	11.7x	10.7x	65.7%	1.7x
Multi-Color Corporation	73.75	98.4%	1,249	1,722	9.6%	929	164	17.7%	20.5x	19.1x	11.2x	10.5x	10.0x	78.4%	3.0x
Median		87.7%	\$5,920	\$6,845	9.6%	\$2,939	\$583	17.7%	20.5x	19.0x	11.2x	10.5x	10.0x	76.6%	1.7x
Mean		90.3%	\$4,453	\$5,320	8.7%	\$3,304	\$509	16.8%	19.8x	18.1x	11.4x	10.6x	9.9x	73.6%	2.1x
Paper and Paperboard															
International Paper Company	\$45.66	91.5%	\$18,776	\$27,322	(10.3%)	\$20,999	\$3,498	16.7%	13.7x	11.5x	9.0x	7.8x	6.7x	54.4%	2.7x
WestRock	47.95	91.1%	12,059	17,904	14.1%	14,172	2,353	16.6%	16.8x	15.4x	7.7x	7.6x	7.5x	63.9%	2.3x
Mondi	19.09	80.5%	7,012	11,200	(5.5%)	7,253	1,470	20.3%	12.7x	12.1x	8.1x	7.6x	7.3x	53.7%	1.2x
Packaging Corporation of America	82.60	96.6%	7,783	10,125	16.1%	5,738	1,144	19.9%	17.2x	14.7x	9.0x	8.9x	7.8x	73.6%	2.1x
Smurfit Kappa Group	22.36	77.8%	5,285	8,771	(5.4%)	8,943	1,334	14.9%	10.2x	9.8x	6.4x	6.6x	6.6x	61.2%	2.4x
Graphic Packaging Holding Company	12.68	86.3%	4,027	6,272	(1.4%)	4,288	767	17.9%	17.1x	15.8x	8.3x	8.2x	7.9x	57.7%	2.9x
DS Smith	4.84	76.3%	4,586	6,241	(3.9%)	5,734	731	12.7%	12.4x	11.7x	8.4x	8.5x	8.2x	53.6%	2.2x
KapStone Paper and Packaging Corporation	19.38	77.8%	1,873	3,384	20.6%	3,064	385	12.6%	17.3x	12.5x	9.6x	8.8x	7.5x	62.4%	4.2x
P. H. Glatfelter Company	21.44	90.0%	934	1,274	(2.2%)	1,614	167	10.3%	14.7x	12.6x	8.4x	7.6x	6.9x	6.1%	2.2x
Median		86.3%	\$5,285	\$8,771	(2.2%)	\$5,738	\$1,144	16.6%	14.7x	12.5x	8.4x	7.8x	7.5x	57.7%	2.3x
Mean		85.3%	\$6,926	\$10,277	2.5%	\$7,978	\$1,316	15.8%	14.7x	12.9x	8.3x	8.0x	7.4x	54.1%	2.5x
Rigid															
Ball Corporation	\$75.97	92.4%	\$13,280	\$21,059	2.6%	\$9,135	\$1,385	15.2%	22.0x	17.8x	18.4x	15.2x	11.8x	50.4%	6.5x
Owens-Illinois	18.73	92.1%	3,038	8,472	(1.2%)	6,719	1,282	19.1%	8.1x	7.4x	6.8x	6.6x	6.3x	66.6%	4.3x
Silgan Holdings	51.31	91.8%	3,096	4,846	(0.7%)	3,629	469	12.9%	18.5x	15.8x	10.5x	10.3x	9.6x	45.5%	3.8x
RPC Group	11.81	91.0%	3,918	4,466	25.7%	3,298	488	14.8%	16.6x	14.5x	15.3x	9.1x	8.2x	46.2%	3.8x
Median		92.0%	\$3,507	\$6,659	0.9%	\$5,174	\$885	15.0%	17.5x	15.1x	12.9x	9.7x	8.9x	48.3%	4.0x
Mean		91.8%	\$5,833	\$9,711	6.6%	\$5,696	\$906	15.5%	16.3x	13.9x	12.8x	10.3x	9.0x	52.2%	4.6x
Overall Median		88.7%	\$4,586	\$6,272	(0.7%)	\$4,836	\$731	15.2%	17.7x	15.8x	9.9x	9.5x	9.0x	65.2%	2.4x
Overall Mean		88.4%	\$5,960	\$8,668	2.7%	\$5,826	\$942	16.1%	17.3x	15.3x	10.3x	9.6x	8.8x	61.8%	2.7x

PUBLIC MARKETS OVERVIEW

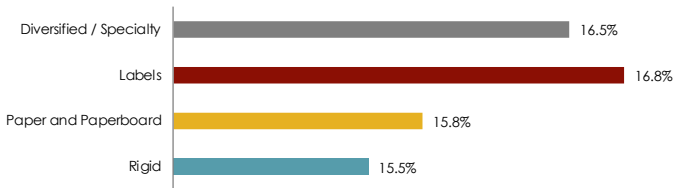
3-YEAR REVENUE CAGR (2013 – 2016E)



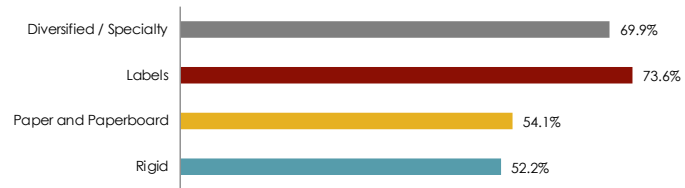
3-YEAR EBITDA CAGR (2013 – 2016E)



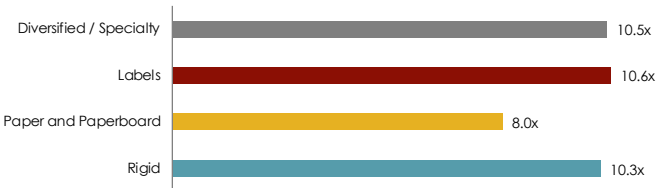
AVERAGE EBITDA MARGIN (2016E)



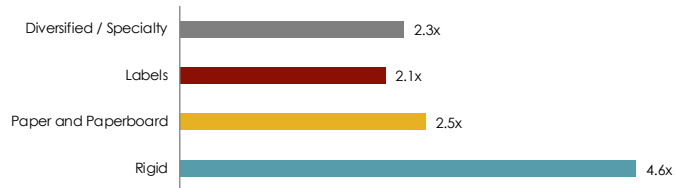
FREE CASH FLOW CONVERSION (2016E)



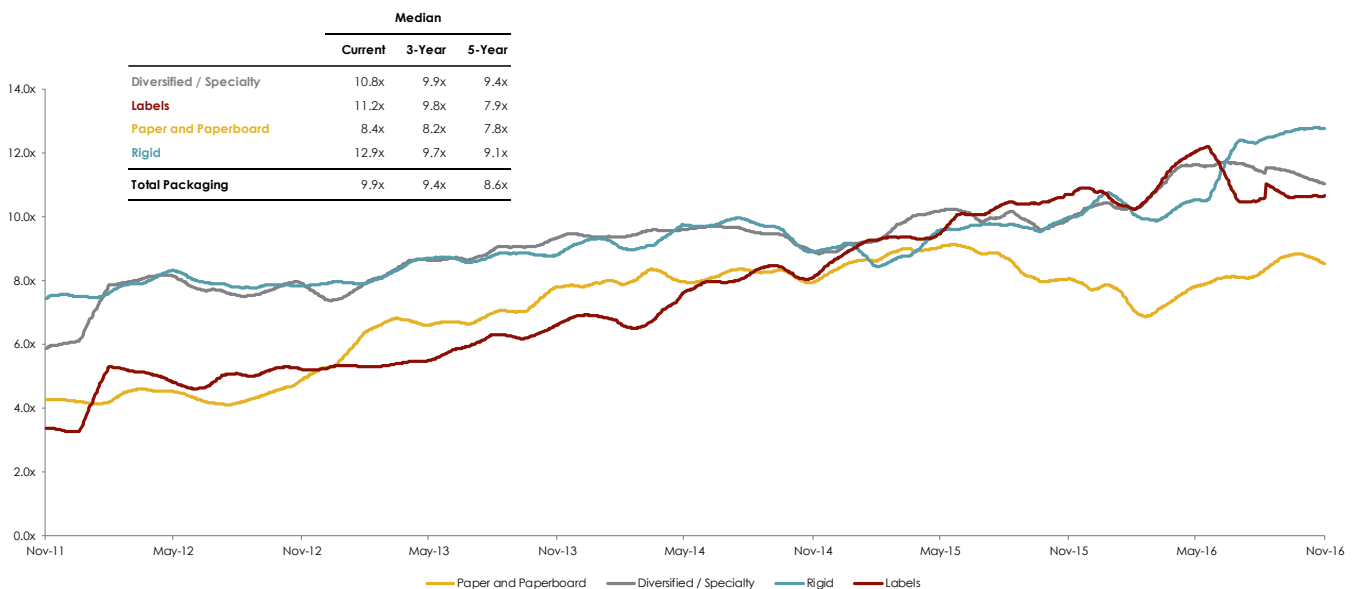
TOTAL ENTERPRISE VALUE / 2016E EBITDA



































NET DEBT / LTM EBITDA



PUBLIC COMPARABLES (30-DAY ROLLING AVERAGE OF MEDIAN TEV / LTM EBITDA)



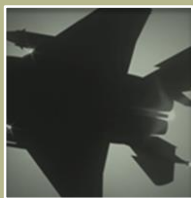
SELECT M&A ACTIVITY

Date	Target	Target Business Description	Acquirer
Pending	Burrows Paper Corporation 	Burrows Paper Corporation's packaging operations are being acquired by NOVOLEX; its paper operations are being acquired by Twin Rivers Paper	NOVOLEX / Twin Rivers Paper 
Pending	ProAmpac 	ProAmpac provides flexible packaging services, including adhesive lamination, extrusion coating and lamination, film extrusion, and metalizing, among others	The Pritzker Group 
Pending	Hoffmaster Group 	Hoffmaster Group manufactures disposable tableware products, including napkins, placemats, towels, cups and plates	Wellspring Capital Management 
Pending	Mactac Americas 	Mactac Americas manufactures and distributes specialized pressure sensitive materials	LINTEC 
Pending	Anchor Glass Container Corp. 	Anchor Glass Container Corp. manufactures glass beer, beverage, liquor, food and custom mold making products and services	CVC Capital Partners / BA Glass 
Nov-16	TricorBraun 	TricorBraun is a value-added distributor of rigid packaging solutions	AEA Investors 
Oct-16	Vitex Packaging Group 	Vitex Packaging Group offers packaging solutions to the medical, food, and beverage contract manufacturing markets	ProAmpac 
Oct-16	Konrad Hornschuch 	Konrad Hornschuch designs and manufactures functional films, wall, floor, and table coverings	Benecke-Kaliko 
Oct-16	Bruni Glass 	Bruni Glass manufactures and supplies glass vases and packaging bottle containers	Berlin Packaging 
Sep-16	Clondalkin Group 	Clondalkin Group produces flexible and specialty packaging to a variety of end markets, including food, beverage, and healthcare	Egeria Capital Management 
Aug-16	AEP Industries 	AEP is a manufacturer of plastic packaging films for the consumer, industrial, and agricultural end markets in North America	Berry Plastics Group 
Aug-16	Fort Dearborn Company 	Fort Dearborn is a supplier of high-impact prime labels for the consumer goods industry	Advent International 
Jul-16	Mullinix Packages, Inc. 	Mullinix is a provider of plastic packaging solutions to food processors and the foodservice industry	Sabert Corporation 
Jul-16	TimBar Corp. 	TimBar provides solutions to customers in the retail, industrial packaging and display, and fulfillment markets, with a focus on multi-color graphics and technical innovation	Packaging Corp. of America 
Jun-16	Weyerhaeuser Liquid Pack. Board Business 	Weyerhaeuser's Liquid Packaging Board business manufactures substrate used to create brick and gable top cartons	Nippon Paper Industries Co., Ltd. 
Jun-16	BWAY Corp. 	BWAY Corp. manufactures and sells rigid plastic and metal packaging and container solutions	Stone Canyon Industries, LLC 
Jun-16	British Polythene Industries Plc 	British Polythene Industries Plc is a manufacturer of polythene film, bags and sacks in Europe	RPC Group Plc 
May-16	Tri-Wall Holdings Ltd. 	Tri-Wall is a provider of heavy-duty corrugated packaging solutions in China, Japan, Southeast Asia, and Europe	Rengo Co., Ltd. 
May-16	Sonoco Paper France SA 	Sonoco Paper France SA is a manufacturer of core board used mainly in tubes and cores for the hygiene market	Mutares AG 

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Harris Williams & Co. has a broad range of industry expertise, which creates powerful opportunities. Our clients benefit from our deep-sector experience, integrated industry intelligence and collaboration across the firm, and our commitment to learning what makes them unique. For more information, visit our website.

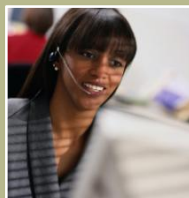
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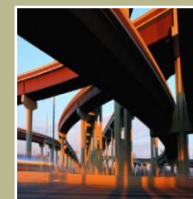
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Packaging Europe

Packaging News

Packaging World

University of Michigan

US Energy Information Administration

Wall Street Journal

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