Global Newsprint Outlook
Will steep adjustments give way to moderation?

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- Special studies include single-client projects and *Global Woodfree Risk of Closure Study, North American Containerboard Conversion Study* and *Global Outlook for Cut Size Uncoated Freesheet Markets*

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World Newsprint Demand

Five straight years of accelerating demand declines culminate in an 8.6% drop in 2015, the worst performance since 2009; can global demand find some stability?
Newsprint Demand Now Declining Across the Globe

Thousand Tonnes, Percent per Year, 2016-2018

3-year total growth in tonnes (3-year average % change)

Global: -2,870 (-4.1%)
Global Demand Losses of 2014-2015 Exacerbated by Weak Emerging Markets

Annual Newsprint Demand Decline by Region, Millions of Tonnes
North American Newsprint Demand Decline Finally Easing from Double-Digit Pace in 2016

Loss of 230,000 tonnes per year in 2016-2018 compared to 430,000 tonnes per year in 2013-2015
Demand from Newspapers Rebounded After Inventory Drawdown in 3Q15

Demand from newspapers only down 6% year-to-date in 2016; commercial printing end uses account for about 25% of total newsprint demand
Is the North American Newsprint Demand Decline Really Slowing Down?

North American quarterly demand on pace with 6% negative trend in place since 2010
Minimal Change in Trends for Drivers of US Newsprint Demand

Consistent declines in advertising of 7-8% per year; circulation declines of around 6% per year

Year-over-Year Change in US Newspaper Advertising

Source: NAA, RISI, quarterly financial reports of public newspaper publishers.
Fewer Newspaper Publishers Successfully Balanced Costs and Revenues in 2015

Number of Publicly Traded Publishers with Profit or Loss

Source: Pew Research Center, publisher financial reports
European Demand Declines Also Gentle in 2016
Eventful year driving newspaper consumption in 2016; economic growth in 2017-2018 will be less stimulating than in North America
Currency Shifts Swing Global Newsprint Market Share Away from North America and to Europe

Offshore Exports of Newsprint

<table>
<thead>
<tr>
<th>Year</th>
<th>North America</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>+12%</td>
<td>-15%</td>
</tr>
<tr>
<td>2013</td>
<td>-7%</td>
<td>-6%</td>
</tr>
<tr>
<td>2014</td>
<td>-16%</td>
<td>+13%</td>
</tr>
<tr>
<td>2015</td>
<td>-12%</td>
<td>+6%</td>
</tr>
<tr>
<td>2016</td>
<td>-6%</td>
<td></td>
</tr>
</tbody>
</table>

Source: PPPC/EURO-GRAPH, 2016 estimated from first 7 months / 6 months
US Mills Have Also Lost Share in Home Market Due to Strong Currency

Exacerbating ongoing retreat of demand
North American Export Weakness Driven by Decreased competitiveness for US Mills

- Export Share of Canadian Newsprint Shipments
- Export Share of US Newsprint Shipments
Russian Newsprint Exports by Destination

Exports to India jump even as Russian exports to the rest of world fade

Source: GTA, 2016 estimated from first six months
Indian Newsprint Imports by Source
Largest source of demand growth in the world, about 60,000 tonnes per year; demand decline in 2014 driven by basis weight shift
Latin American Newsprint Demand Hampered by Maturing Larger Markets, Inconsistent Economic Growth

Average demand declines of 11% in 2013-2015
North American Newsprint Exports

Downward adjustment due to exchange rates in 2014-2016 will be followed by steadier retreat
North American and European Operating Rates Healthy in 2016, but Global Market Still Oversupplied
Demand Forecast and Announced Changes in World Capacity for 2016-2018

Conversions to tissue/packaging will spur 962,000 tonnes of 2017 reductions in North America and Europe

<table>
<thead>
<tr>
<th>Region</th>
<th>Capacity Reduction</th>
<th>Demand Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. America</td>
<td>-1,000</td>
<td>-1,500</td>
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<tr>
<td>Europe</td>
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<tr>
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<tr>
<td>Other</td>
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<td>-4,500</td>
</tr>
<tr>
<td>World</td>
<td>-5,000</td>
<td>-5,500</td>
</tr>
</tbody>
</table>
North American Newsprint Capacity Utilization Forecast
As US Prices Recover, Price Gap with Rest of World Widens

Strong US dollar and weak pricing in rest of the world dragging domestic prices down as producers repatriate low-margin exports.

![Graph showing US dollar and pricing trends from 2010 to 2016 for various regions: US East, India, Brazil, W. Europe, Hong Kong.](image-url)
Newsprint Delivered Cash Cost Margins for Domestic Markets and Exports to India

US Dollars per Tonne (Margin = Price Minus Delivered Cash Costs)

Weighted Average Export Price based on 45 gsm newsprint prices in Brazil, India and Europe
N. American and W. European Newsprint Variable Cost Profitability

Price increases and stable costs have allowed domestic profitability peak in 2016

Note: Variable costs include production costs and delivery to North America or Western Europe
Thank you for your attention!

For more information:

World Graphic Paper
5-Year Forecast
www.risi.com/worldgraphic

Global Cut Size Uncoated
Freesheet Study
www.risi.com/cutsize

China’s Influence on World
Graphic Paper Markets in the
Coming Decade
www.risi.com/chinagraphic