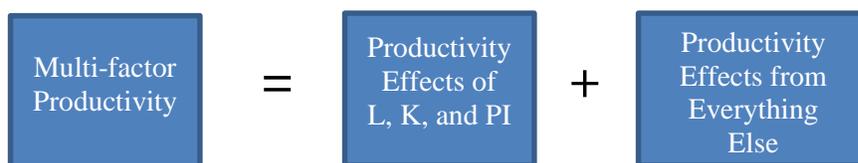


Multifactor Productivity: How Paper Ranks

By Patrick McCarthy

In the third week of February, the Bureau of Labor Statistics (BLS) released revised data on multi-factor productivity for 2013, the most recent period available. Multi-factor productivity (MFP) measures output per unit of a set of inputs that combine to produce the output. As such, MFP broadens the measure of factor productivity from one input to multiple inputs. For the manufacturing sector, MFP is the total value of production associated with labor (L), capital (K), and purchased intermediate (PI) inputs (energy, materials, purchased business services) so that changes in MFP reflect productivity changes in output not accounted for by these inputs. In particular, changes in MFP include important aspects of production that are often difficult to measure or capture, including technological progress, efficiency improvements, organizational and production innovations, and the productivity effects of human capital investments. In terms of a simple graph,



For the manufacturing sector, MFP fell at an annual rate of 0.7% in 2013, a steeper fall in comparison with a 0.2% annual decrease from the beginning of the great recession through 2013. The 2013 decrease in MFP contrasts with the 0.7% and 0.5% increases in labor and capital productivity in 2013, which highlights the importance that technical, organizational and other innovations have on a firm's productivity.

Productivity	2007-2013	2012-2013
Multi-factor productivity	-0.2	-0.7
Labor productivity	2.3	0.7
Output per unit of capital services	-1.2	0.5

Drilling down to the wood products and the nondurable goods sectors, we see below that the annual growth in multi-factor in 2013 was generally better in comparison with the previous five-year average.

With the exception of wood products and chemical products, two sectors in pulp and paper's supply chain, all other sectors had annual growth rate improvements in 2013 relative to 2007 – 2013. Paper products was in the middle of the group with a 2.1% annual growth in MFP compared with a strong 9.4% growth rate in apparels and a 3.3% negative growth rate for chemicals. When annual growth rates in MFP increase, firms are more profitable and firms can use these profits for further investments, price decrease (or smaller price increases), and increased compensation through higher wages or fringe benefits. For more information on the report, see <http://www.bls.gov/news.release/prod5.nr0.htm>

Multi-factor Productivity	2007- 2013	2012-2013
Wood products	0.3	-0.4
<u>Nondurable manufacturing</u>	-0.4	0.4
Food, beverage, and tobacco products	-0.4	-0.1
Textile mills and textile product mills	-0.3	3.0
Apparel, leather, and allied products	-5.6	9.4
Paper products	0.3	2.1
Printing and related support activities	1.5	3.3
Petroleum and coal products	0.5	3.0
Chemical products	-1.9	-3.3
Plastics and rubber products	0.6	-0.2

Trend Indicators from Industry Intelligence Inc.

Industry Intelligence Inc. has provided market intelligence to more than 600 companies worldwide since it began as Forestweb in 1999. Industry Intelligence delivers a daily report featuring news of the paper and forest products industries. For your subscription visit: <http://www.industryintel.com>

Below is a sampling of recent Industry Intelligence headlines, chosen to mirror significant trends and other interesting developments in and around the paper and forest products industries.

Domtar reports 68% reduction in particulate emissions at pulp mill in Kamloops, British Columbia, since 2009; US\$35M was invested during the six-year period on such projects as installing high-stack discharge cone in 2015, sawdust pulp line closed in 2013

Domtar bought the mill from Weyerhaeuser Co. in 2007.

Work already under way or planned for more than US\$200M in additional improvement projects to be completed at GP's Crossett, Arkansas, tissue, paper and paperboard mill; more than US\$250M in advanced papermaking technology installed at the mill in 2010

The mill employs about 1,250 people to make tissue, paper and paperboard products and byproduct chemicals. It started as the Crossett Lumber Company at the turn of the century.

North American paper mills experiencing poor quality and contamination when using recovered paper from communities with mixed-waste processing systems, subsequently causing recycling

of paper to be diminished, based on new ISRI survey of mill buyers

Reasons given for not purchasing mixed waste included contamination, odor and low quality.

Port of Everett in Washington decides to acquire K-C's former paper mill site on waterfront through negotiated sale or, if necessary, eminent domain; K-C issues statement of protest, saying action will impeded its efforts to market the property

According to the port's management, its option to use eminent domain to acquire the site is tied to its interests in restoring lost jobs and protecting the economic viability of the seaport and the adjacent Navy property. It was also noted that the Port of Everett is nearing capacity and ready to expand.

Kruger's Corner Brook mill in Newfoundland benefitting from weak Canadian dollar, but decline in newsprint prices, demand has offset the advantage, says company official, noting strategy is to remain competitive through cost cuts, quality enhancements

Lower oil prices also have helped the company, though mostly in terms of lower transport costs.

Managers at SCA tissue mill in South Glens Falls, New York, want to expand production capacity, plan to seek SCA corporate approval; problem facing mill is lack of trained local workers, say mill officials, noting they are recruiting from overseas

US Rep. Elise Stefanik, who recently toured the South Glens Falls mill, said "the number one complaint" she hears from businesses is the lack of skilled workers and she blames a "one-size-fits-all" educational system.

Global thermal paper market forecast to reach US\$4.77B by 2022, with volume in lottery and gaming uses up 4.5% CAGR over 2015-2022; growth

also driven by rising demand for asset tagging, certification labels for lab specimens and cold storage materials

Thermal paper is used in POS terminals that are employed in the retail, hospital and entertainment industries; it is compatible with various types of machines and exhibits clear and durable print.

Södra to invest SEK1B at pulp mill in Mörrum, Sweden, includes adding new evaporator, modernizing brown stock washing in dissolving pulp line; project is second stage of initiative at the mill, will boost mill's capacity by 45,000 tonnes/year

The mill manager noted that “dissolving pulp and paper pulp based on a renewable source are highly interesting from a climate perspective.”

Metsä Fibre's bio-product concept progressing with pulp mill construction under way in Äänekoski, Finland, now entering stage of first implementation decisions; aim is to incorporate new products, partnerships into pulp business, says CEO

The first step in implementing the bioproduct concept was the decision to implement bark gasification. The bark-derived product gas is produced for the mill's own use, whereby the mill becomes fully free of any fossil fuels.

Ikea replaces EPS foam packaging with fiber-based packaging for its flat packs, says new solutions are recyclable, more sustainable; prior to change, company's volume of EPS packaging equaled half the volume of the Empire State Building

In line with being a sustainable home furnishings company, IKEA has phased out packaging solutions using expanded polystyrene (EPS) foam and replaced them with recyclable fiber-based materials.

AF&PA Statistics

Since our last reporting of American Forest and Paper Association statistics releases, the Association has issued its January 2016 Kraft and Containerboard Reports.

Kraft: Shipments were 127.8 thousand short tons, 8.5 percent lower than in January 2015. Bleached kraft paper shipments decreased from 7.5 thousand short tons in December to 6.9, while unbleached shipments decreased from 122.4 to 120.9 thousand short tons. Total month-end inventories increased to 74.8 thousand short tons.

Containerboard: Production was 1 percent higher than in January 2015. The average daily production

was 5.3 percent higher than in December 2015. The containerboard operating rate for January increased to 95.2 percent.

Purchase the full reports by contacting Caroline Nealon, Statistics_Publications@afandpa.org or 202-463-2448.

Paper Quotes

“Our action plan aims at incorporating new bioproducts and partnerships into our developing and competitive pulp business in phases,” – *Ilkka Härmälä, CEO of Metsä Fibre U.S.*

“Consumers are increasingly seeking brands that demonstrate corporate social responsibility and are holding them accountable by demanding that concrete, meaningful actions be taken to implement sound environmental practices,” – *Paul Ciccone, vice president of research and development, Monadnock Paper Mills, upon receiving Frost & Sullivan's 2016 Sustainability Leadership Award for its Envi Card Stock*

Statistics Corner: Paper and Board Production Indices

Figure 1 below compares paper and paperboard production levels from January 2004 through December 2015. In 2004, paper production exceeded that of paperboard by a wide margin. As previously documented in this newsletter (Feb. 2015) the 2008 recession saw a steep decline in both grades. Following that, board production rebounded to pre-recession levels, but paper languished, eventually falling to mid-recession levels.■

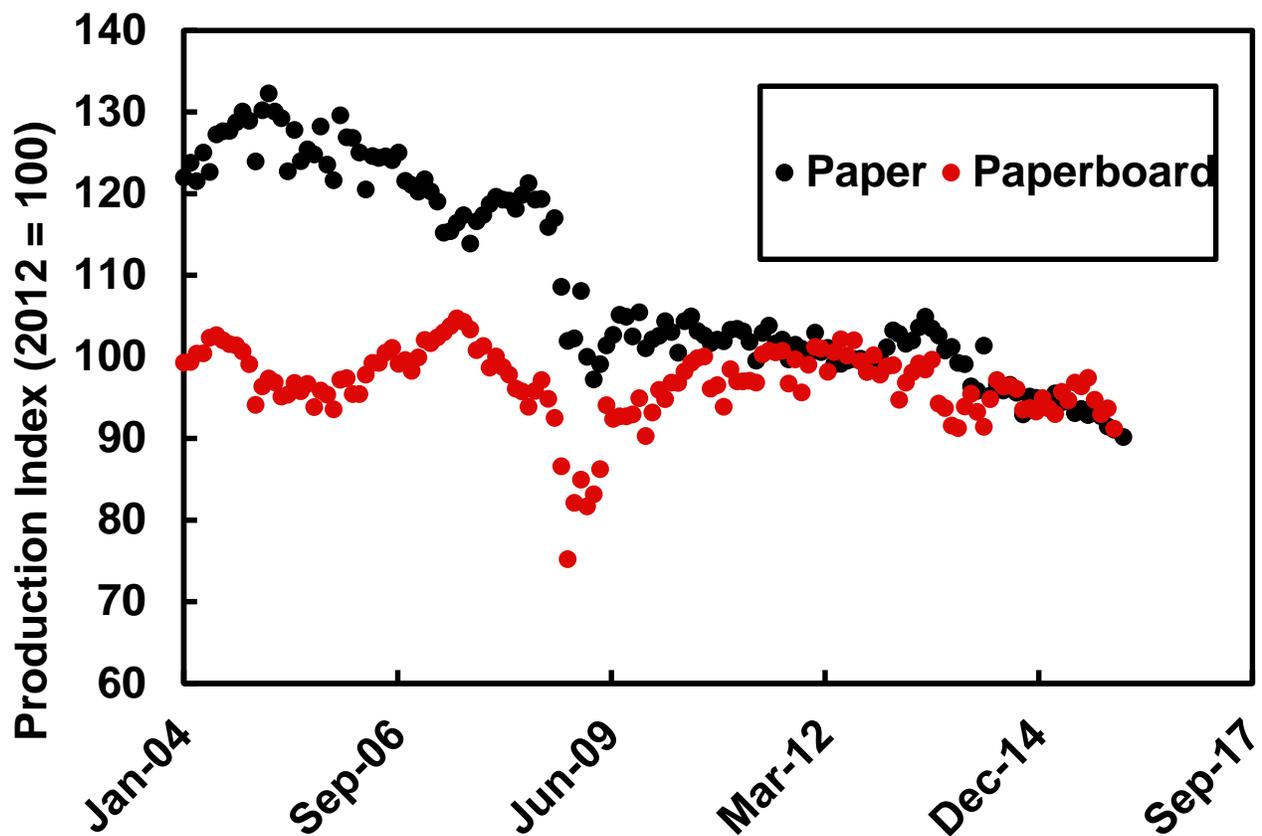


Figure 1. Paper and Paperboard Production Indices (2012 = 100)

Source: Federal Reserve Board