



**COVID-19 Print Business
Indicators Research**
A Path Forward

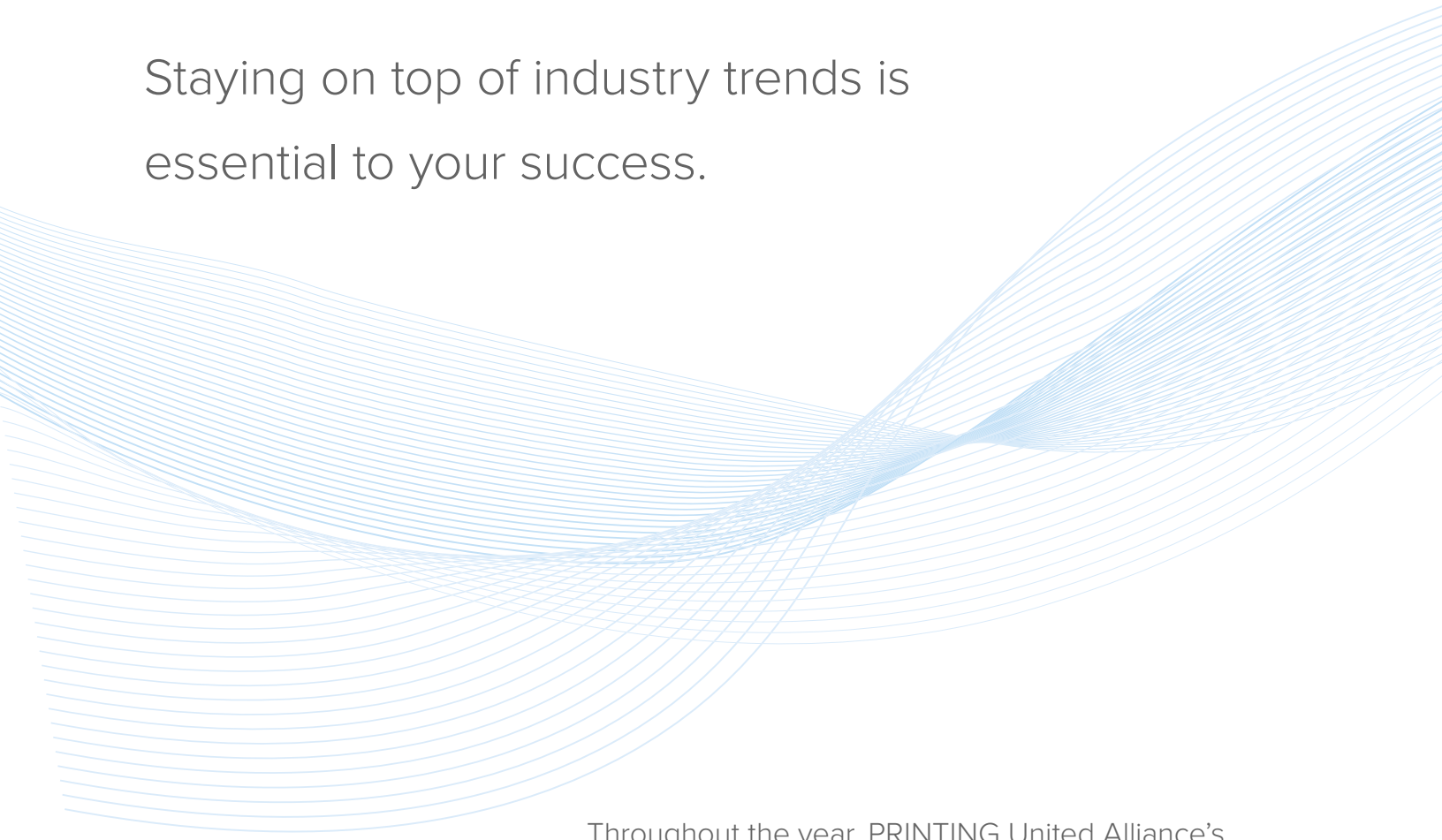


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Produced by the PRINTING United Alliance and NAPCO Research for its members.

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Throughout the year, PRINTING United Alliance's research team creates top-notch reports for the industry and works with consultancies to conduct commissioned research.

PRINTING United Alliance members get unlimited access to the resulting reports, featured here, that reflect the scope of the printing industry.

If you have any questions, please contact researchteam@printing.org or research@napco.com.

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Konica Minolta Business Solutions U.S.A., Inc. is committed to the success of its customers, the industry and the associations that support it. It is our honor to support Printing United Alliance’s industry-leading economic reports. By providing invaluable insights for industry leaders regarding the critical economic conditions, Konica Minolta is proud to continue to be a trusted advisor and an indispensable partner to help businesses prosper.

Konica Minolta Business Solutions U.S.A., Inc., a leader in industrial and commercial printing and packaging solutions, ignites print possibilities. It delivers the latest innovations in printing, applications and expertise through its comprehensive portfolio of production print offerings that provide businesses more creative avenues, agility and versatility to confidently capitalize on market opportunities. Together, the future of the print world can be transformed for the better.

Introduction

This is the fifth in a series of reports PRINTING United Alliance and NAPCO Research have created to examine the effects of the COVID-19 crisis on the printing industry, how printers are responding to the crisis, and how they can create a path forward.

The research is based on an industrywide survey that includes commercial printers, graphic and sign producers, apparel decorators, functional printers, and package printers/converters. (Participants are profiled in Section 1.)

Indicators tracked include percent change in sales over year-earlier levels, employment, prices, quote activity, work-on-hand, and confidence. Each survey also investigates critical issues such as where participants see opportunity post-COVID-19, what concerns them most, which capital investments they are planning, and which product markets they believe have the most growth potential.

Participant comments on current and expected business conditions put the numbers in context. An analysis of the American economy's likely course and what it would mean for the printing industry supplements the survey results.

For information about COVID-19 Printing Business Indicators Research, please contact our research team at: researchteam@printing.org or research@napco.com.

The COVID-19 Research Panel

Having a representative panel of regular participants in COVID-19 Print Business Indicators Research enhances our research capabilities and allows us to provide more accurate and reliable data. By having a large pool of consistent respondents, we are able to increase the comparability of the data from survey to survey and reduce the non-response bias that is often a major source of error in survey data.

Building a panel also supports our ability to cultivate relationships with participants. By opening a line of communication with panel members, we can gain additional insight that goes beyond the scope of the survey questions. These interactions allow us to create a more detailed report and provide us with information that helps develop future surveys.

When you join the panel, you will not be required to provide any additional information. You simply agree to participate regularly in the surveys used to create this report. By doing so, you will receive an enhanced version of the report that includes additional information that can better help your business navigate this challenging environment.

The latest version of the panel report contains additional information and insight, including sections on:

- An in-depth economic and industry update
- Insight on how record spending, debt, and monetary creation can impact the economy in the future
- Which economic indicators are the most important to watch as we move through recovery

It also includes must-dos that provide actionable steps to help you avoid falling behind during the recovery:

- Developing supply chains in the post-COVID-19 world
- Developing a post-COVID-19 business plan
- Preparing for five new human truths through social listening

To join the COVID-19 Print Business Indicators Panel, please [click here](#).

For a sample copy of a Panel report or for more information about the Panel, please contact David Wilaj, Economist, PRINTING United Alliance, dwilaj@printing.org, or Andy Paparozzi, Chief Economist, PRINTING United Alliance, apaparozzi@printing.org.

Resource Page

Knowing what's happening and what's likely ahead is helpful. The game changer, however, is knowing what to do right now to make what's happening and what's ahead an opportunity rather than a threat.

The resources below address the key issues raised by Print Business Indicators Survey participants and described in this report. All can be downloaded without charge.

- "Adapt Your Business to the New Reality," Michael G. Jacobides and Martin Reeves, *Harvard Business Review*, October 2020, hbr.org.
- "COVID-19: 5 new human truths that experiences need to address," Accenture, www.accenture.com.
- "Creating a Post-Covid Business Plan," Dev Patnaik, Michelle Loret de Mola, and Brady Bates, *Harvard Business Review*, January 2021, hbr.org.
- "What Is Social Listening? A Five-Minute Explainer," Bianca-Rose Mao, synthesio.com.
- "What Is Social Listening, Why It Matters, and 10 Tools to Make It Easier," Tony Tran, blog.hootsuite.com.
- "Employer Branding: Definition, Process, Strategy and Resources," Ben Slater, beamery.com/blog/employer-branding.
- "How to improve your employer brand," Rohma Abbas, www.linkedin.com/pulse/how-improve-your-employer-brand-rohma-abbas.
- "Global Supply Chains in a Post-Pandemic World," Will C. Shih, *Harvard Business Review*, September 2020, hbr.org
- "How Business Leaders Can Prepare for the Next Health Crisis," Robert Handfield, Daniel Joseph Finkenstadt, and Peter Guinto, *Harvard Business Review*, February 2021, hbr.org

Executive Summary

More than 300 printing companies from across the United States and Canada participated in the fifth PRINTING United Alliance/NAPCO Research COVID-19 Print Business Indicators Survey. Topics included percent change in full-year 2020 sales; expectations for first-quarter 2021 sales and production employment; current trends in quote activity and confidence; the product markets the companies surveyed believe have the most growth potential over the next one to two years; and the biggest challenges of the pandemic.

Key Findings

- Sales fell 15.4% on average in 2020 for companies surveyed. Sales fell for 77.8% of all respondents, 83.2% of commercial printers, 71.7% of graphic and sign producers, and 85.0% of apparel decorators.
- Nearly 58.0% of all respondents expect their 2021 first-quarter sales to be lower than year-earlier levels, while 27.3% expected sales to be higher. On average, sales are expected to be down 10.7%.
- The index of current indicators remains above 50.0, reaching 56.1 — up from 52.2 in November/December.
- The index of leading indicators continues to rise, reaching 61.9 — up from 53.1 in November/December. The advance is driven by significant increases in confidence and quote activity across the industry.
- Companies surveyed identified their biggest challenges faced throughout the pandemic. Among them, 75.9% mentioned constant uncertainty, while 72.2% faced a decrease in demand for their products. Many other issues were discussed, including increases in costs and supply chain disruptions, which will likely continue into the recovery phase.
- Printers continue to diversify beyond their primary segments and into other areas, with 77.2% of printers surveyed now operating in at least one secondary segment.
- Industry employment is down from the same period a year ago, as 63.1% of respondents say that their production employment decreased between January 1, 2020, and January 1, 2021. The average change: – 6.7%.

Section 1: Participant Profile

Number surveyed: 303

Company Size: 2020 Sales (all sources)

2020 Sales (M=millions)	Percent
\$500,000 or less	15.5%
\$500,000 to \$1,000,000	13.0%
\$1 Million to \$3 Million	23.7%
\$3 Million to \$5 Million	8.1%
\$5 Million to \$10 Million	14.8%
\$10 Million to \$20 Million	11.9%
\$20 Million to \$40 Million	8.5%
\$40 Million to \$60 Million	1.5%
\$60 Million to \$100 Million	0.7%
\$100 Million+	2.2%

Primary Printing Segment

Segment	Percent
Commercial printer	64.5%
Graphic and sign producer	17.7%
Apparel decorator	6.4%
Package printer/converter	4.5%
Functional printer	5.0%
Other	1.8%

Section 1: Participant Profile

Location

Location*	Percent
United States	93.7%
West	19.8%
Pacific	12.5%
Mountain	7.3%
Midwest	33.3%
Plains	12.2%
North Central	21.1%
South	19.5%
South Central	3.3%
Southeastern	16.2%
East	21.1%
South Mid-Atlantic	4.3%
North Mid-Atlantic	12.5%
New England	4.3%
Canada	6.3%

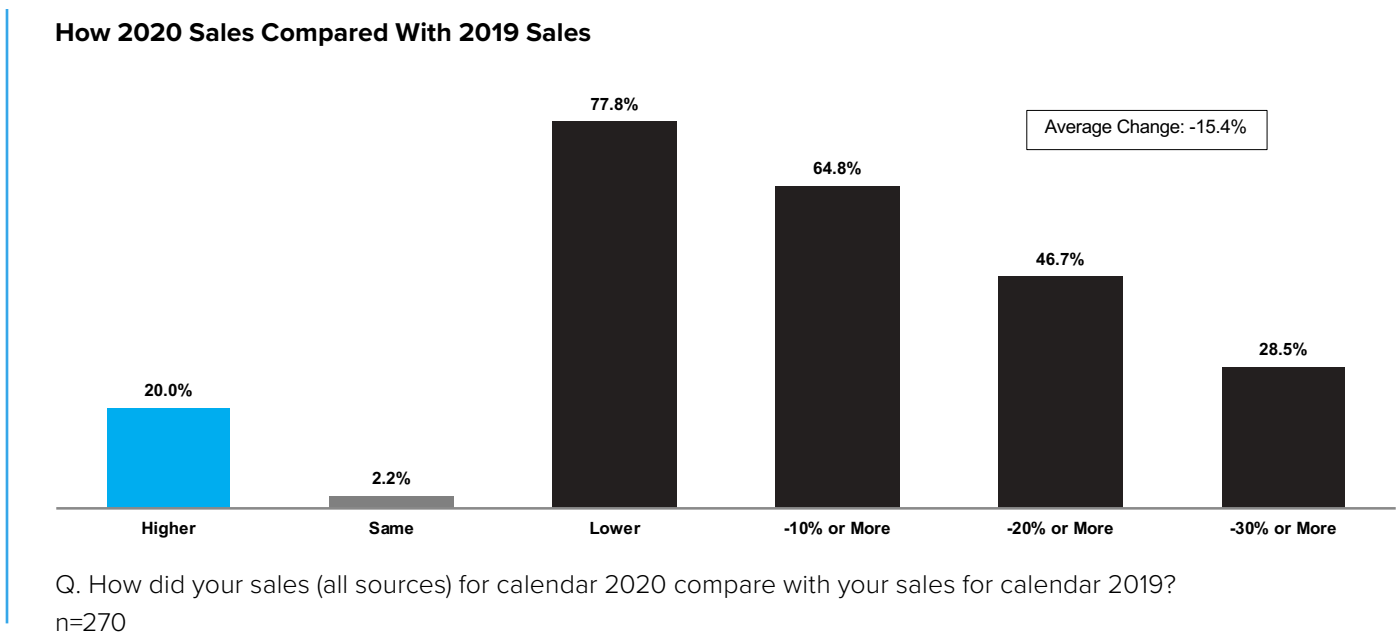
* **Pacific:** Alaska, California, Hawaii, Oregon, Washington. **Mountain:** Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming. **Plains:** Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota. **North Central:** Illinois, Indiana, Michigan, Ohio, Wisconsin. **South Central:** Arkansas, Louisiana, Oklahoma, Texas. **Southeast:** Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee. **South Mid-Atlantic:** Delaware, District of Columbia, Maryland, Virginia, West Virginia. **North Mid-Atlantic:** New Jersey, New York, Pennsylvania. **New England:** Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.

Section 2: What The Indicators Tell Us

The printing industry continued to contract during the first quarter of 2021, but all signs indicate that growth will begin by midyear and accelerate through year end. Expect the upturn to be robust. Do not expect it to be the rising tide that lifts all boats: Participation will be limited to companies best prepared to protect margins from cost inflation and labor shortages, to identify how client behavior is changing in the aftermath of COVID-19, and to adapt quickly to those changes.

Double-Digit Declines

Our final read on 2020 captures both the extraordinary economic damage caused by the COVID-19 crisis and success in overcoming it. Among all companies surveyed, sales fell 15.4%, on average, last year, with reports of contraction exceeding reports of growth by 77.8% to 20.0%. Nearly half (46.7%) report a decline of at least 20.0% and more than one-quarter (28.5%) report a decline of at least 30.0%.



Across the printing industry, markets disappeared as in-person trade shows, conference, corporate events, athletic events, school events, etc., were canceled and as clients were forced to either restrict their operations or shut down entirely. There were exceptions, particularly in package printing/converting, where opportunity arose — first from panic buying of consumer staples, then from production of COVID-19 test kits, and most recently from businesses rebuilding inventories in anticipation of economic recovery. (Inventory investment increased \$44.6 billion economywide last quarter, after declining \$376.1 billion the previous three quarters, according to the U.S. Bureau of Economic Analysis.)

Our samples are not yet large enough to measure exact sales change by segment, but they certainly capture the trend: Sales were down an average of 15.0% for graphic and sign producers, 17.1% for commercial printers, 22.4% for apparel decorators, and 8.9% for functional printers surveyed, decreasing for at least 70.6% in each of those segments. In contrast, sales were up 6.6%, on average, for packaging printers/converters surveyed, increasing for 57.1%, holding at year-earlier levels for 14.3%, and decreasing for 28.6%.

Section 2: What The Indicators Tell Us

How 2020 Sales Compared With 2019 Sales					
Primary Printing Segment	Number Change	Average Change	Higher	Same	Lower
All Companies Surveyed	270	-15.4%	20.0%	2.2%	77.8%
Graphic and sign production	46	-15.0%	23.9%	4.3%	71.7%
Apparel decoration	20	-22.4%	10.0%	5.0%	85.0%
Commercial printing	173	-17.1%	16.2%	0.6%	83.2%
Functional printing	17	-8.9%	29.4%	0.0%	70.6%
Package printing/converting	14	6.6%	57.1%	14.3%	28.6%

Q. How did your sales (all sources) for calendar 2020 compare with your sales for calendar 2019?
n=270

In every segment, companies created opportunity. Some moved into PPE production, social-distancing graphics, updates on health/safety guidelines, and related activities, while others moved into industries, such as recreational vehicles, home entertainment, and home education, that got a boost from the pandemic. All recognized early the seriousness of the pandemic and adjusted their businesses accordingly. One participant in our research “expanded into PPE markets and COVID-19 messaging, as well as special services that are designed to assist companies and schools in reopening,” while another “lost out on trade show and event graphics but easily made them up in social-distancing graphics and related.” The 20.0% of our survey group who grew last year increased sales 21.3%, on average. Take them out of the sample, and sales were down an average of 24.7% for all other participants, showing how deep the COVID-19 recession has really been for the majority of printers.

How 2020 Sales Compared With 2019 Sales		
Group	Percent of Sample	Average Change
All Companies Surveyed	100.0%	-15.4%
Sales Increased	20.0%	21.3%
Sales Decreased or Unchanged	80.0%	-24.7%

Q. How did your sales (all sources) for calendar 2020 compare with your sales for calendar 2019?
n=270

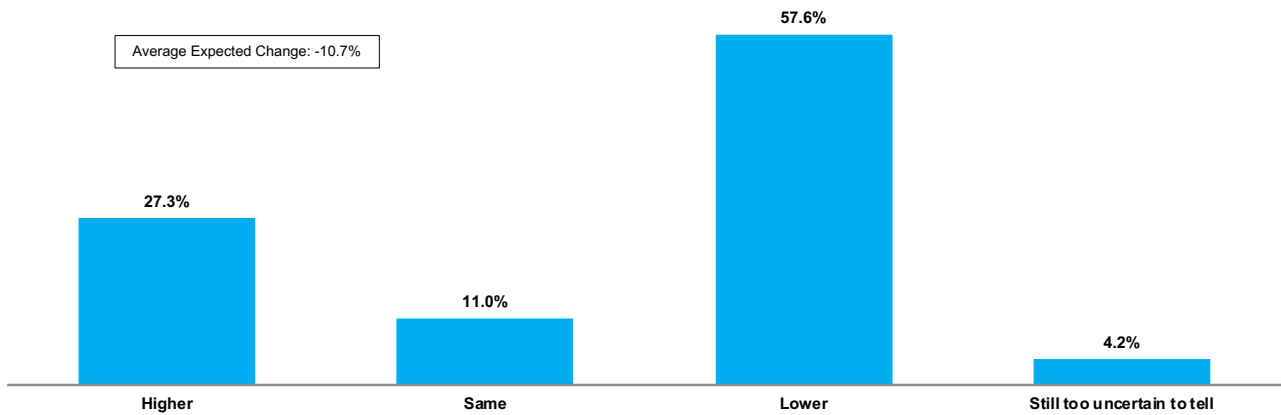
Section 2: What The Indicators Tell Us

Contraction Continues

We asked our research group how they expected their first-quarter 2021 sales to compare with first-quarter 2020 sales. Nearly 58.0% expect sales to be lower than a year ago — 52.7% by at least 10.0%, 38.6% by at least 20.0%, and 21.3% by at least 30.0% — while 27.3% expect sales to be higher, 11.0% the same, and 4.2% say business is still so uncertain they don't know what to expect. The average expected change: -10.7%.

Those numbers are not surprising because they compare pandemic results with pre-pandemic results. Remember, the lockdowns and other disruptions of COVID-19 didn't begin until mid-March 2020. Prior to that, the year was going well economically.

How 1st Quarter 2021 Sales Are Expected to Compared to 1st Quarter 2020 Sales



Q. How do you expect your first-quarter 2021 sales (all sources) to compare with you first-quarter 2020 sales?
Asked in early March 2021.

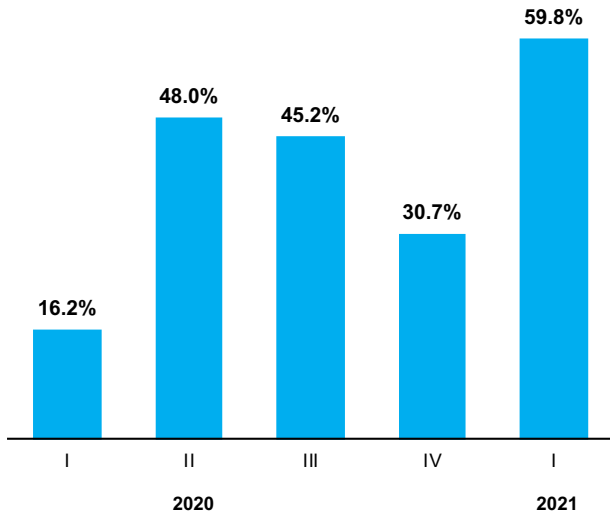
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Section 2: What The Indicators Tell Us

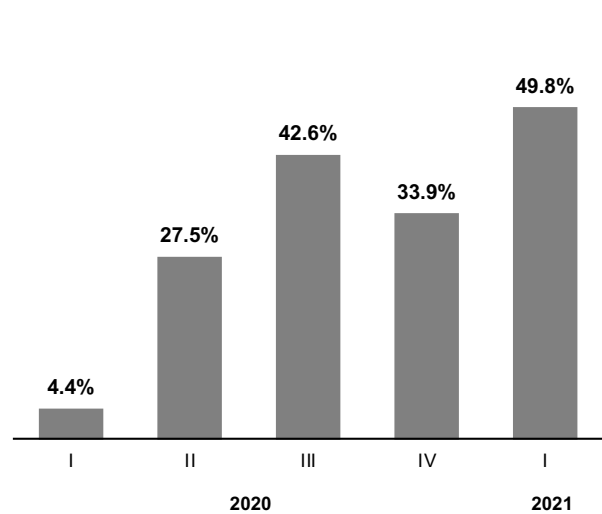
Leading Indicators Sharply Higher

The compelling question is what's ahead. The answer is growth, according to leading business indicators such as confidence and quote activity. Nearly 60.0% of companies surveyed expect business to improve during the month ahead, essentially double last quarter's 30.7%, while 49.8% report quote activity is increasing, up from 33.9% three months ago. Both are the highest readings since the start of the pandemic.

More companies expect business to improve during the month ahead ...



... and more report quote activity is increasing.



Q. How is business trending? Please indicate whether quote activity and confidence is increasing, not changing, or decreasing

n=275

Section 2: What The Indicators Tell Us

Progress in controlling COVID-19 is responsible for the gains. Herd immunity is not far off, and although that will not mean a quick return to normal, it should mean the rules will no longer change from month to month. As we will see in Section 3, unprecedented uncertainty — “constant changes in the rules,” and “those who are supposed to be in the know putting out constantly conflicting viewpoints” — topped our research group’s list of biggest pandemic challenges, surpassing even demand destruction and supply chain disruptions.

Economy, Printing Industry Outlooks Revised Up

Greater clarity, record liquidity from the Fed, and record spending by Washington have the American economy ready to take off. GDP will grow 5.9% this year — the fastest since 1984 — according to the consensus of economists surveyed by The Wall Street Journal. One month ago the consensus was projecting growth of 4.9% and three months ago growth of 3.6%. Don’t be surprised if the projections are revised even higher.

The economy’s vigor will give our industry a big boost. PRINTING United Alliance expects total industry sales (all sources) to increase 5.5%–6.5% in 2021, with growth beginning by midyear and accelerating through year end. Originally we expected growth of 2.5%–4.0%, but the economy’s prospects have brightened considerably since. If they continue to brighten, we’ll have to revise our forecast even higher. We estimate sales decreased 17.8% last year.

Recovery: Exclusive, Not Inclusive

That’s all good news. But it is important to remember that no company is guaranteed participation in the recovery. Business and consumer behavior will continue to change in the aftermath of COVID-19. The winners will figure out how behavior is changing, which changes are temporary, and which changes are structural — and they will do it before the competition.

They will also protect margins from cost inflation and labor shortages. Cost inflation is causing trouble already. Among companies we surveyed, 36.9% include rising substrate costs and 30.3% rising consumable costs among their biggest challenges. Thirty-eight percent (38.0%) increased prices last quarter, up from 16.5% the previous three months and the highest since the start of the pandemic. But the increases were rarely enough to protect margins: Just 27.2% report pre-tax profitability increased between January and March, while 37.7% report the opposite. Some of the pressure on prices will ease as the supply chain disruptions caused by COVID-19 ease. But with the money supply growing at a 25.8% rate — four times the 6.7% year-ago pace — is inflation really behind us?

Indicator	Current Trend	2021		2020		
		1st Qtr.	4th Qtr.	3rd Qtr.	2nd Qtr.	1st Qtr.
Prices	Increasing	38.0%	16.5%	15.7%	7.1%	4.4%
	Staying the Same	56.6%	74.3%	71.9%	74.6%	74.7%
	Decreasing	5.4%	9.2%	12.3%	18.3%	21.0%
Pre-Tax Profitability	Increasing	27.2%	25.2%	28.1%	13.6%	4.0%
	Staying the Same	35.1%	36.2%	28.1%	24.8%	15.2%
	Decreasing	37.7%	38.5%	43.8%	61.6%	80.8%

Q. How is business trending? Please indicate whether each of the above is increasing, not changing, or decreasing.
n=276

Section 2: What The Indicators Tell Us

Concerning labor shortages, recovery hasn't even started yet and we're already hearing comments such as these from our survey group: "We're trying to find anyone willing to work," and "We can't add employees faster than they retire or leave. Everyone says there are a lot of people looking for jobs, but we can't find them."

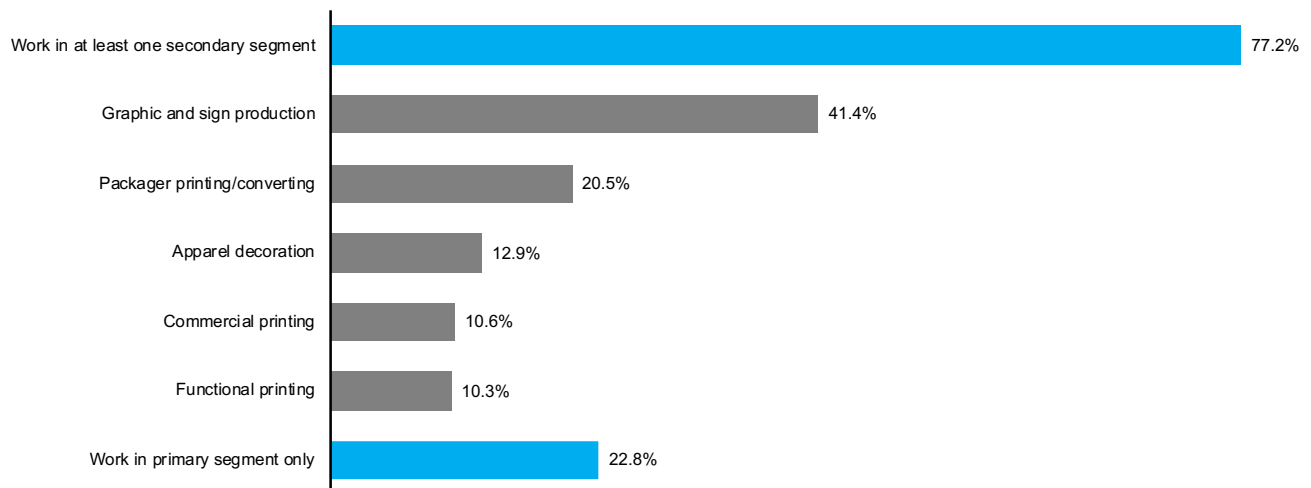
Everyone into Everyone Else's Business

And then there is convergence, or the melding of printing segments as companies diversify beyond their primary businesses. Convergence was redefining the printing industry prior to COVID-19 and will continue to redefine the industry post COVID-19. Among the companies we surveyed:

- 77.2% have diversified beyond their primary segment — 41.0% into one secondary segment and 34.7% into two or more — while 22.8% work strictly in their primary segment.
- 41.4% have diversified into graphic and sign production and 20.5% into package printing/converting. Smaller percentages have added apparel decoration (12.9%), commercial printing (10.6%), and functional printing (10.3%).
- 58.9% of the commercial printers have diversified into graphic and sign production, and 39.3% of graphic and sign producers have diversified into commercial printing, creating the highest convergence rate between any two segments studied.

Convergence

Gray bars show percent of companies surveyed working in segment indicated as a secondary segment.



Q. In addition to your primary segment, which other segments do you work in?
n=302

Section 2: What The Indicators Tell Us

In terms of performance, there wasn't much difference last year between members of our research group who have diversified and those who haven't. For example, sales fell, on average, 15.2% for the former and 16.5% for the latter. That isn't surprising, given that the COVID-19 recession was truly industrywide. Our future surveys will track how the two groups perform during recovery. Is one generally growing faster than the other? Is one generally more profitable than the other? If so, why? And among companies that have diversified, which have diversified profitably and which haven't?

Product Market Potential

Finally, we asked our research group which printed products they expect to grow over the next one to two years. The tables below summarize responses for products rated by at least 20 companies. Notice, in particular:

- **Graphic and sign production.** Wall/architectural/building graphics, cited by 63.4%, ranked first by a wide margin. Vehicle wraps/graphics and labels/decals followed. Nearly half (49.0%) expect compliance/safety signage to grow and more than two-fifths (42.4%) expect floor graphics to grow for at least another year to support a gradual, safe transition out of COVID-19 restrictions.
- **Apparel decoration.** Majorities expect performance wear (57.6%) and T-shirts (55.8%) to grow over the next year or two. Additionally, 47.5% expect growth in sweatshirts/hoodies and 44.4% in hats/caps. Questions about how much longer face masks and covers will be required explain why just 27.3% expect continued growth for that market.
- **Commercial printing.** Targeted, personalized direct mail was cited most often as a growth market, followed by POP and marketing collateral to help clients promote both expanded hours of operation and the safety and sanitation of their facilities. In contrast, only small percentages expect traditional commercial printing markets such as documentation, manuals and directories, stationery, periodicals and catalogs, and statement/transaction printing to grow, explaining why 78.4% of commercial printers surveyed have diversified beyond commercial printing: 58.9% into graphic and sign production, 25.3% into package printing/converting, 13.2% into apparel decoration, and 9.5% into functional printing.
- **Package printing/converting.** The economic boom ahead will create trillions of dollars of products that have to be packaged, explaining why 69.6% of our survey group expect growth in flexible packaging, 68.3% in folding cartons, and 57.1% in corrugated packaging over the next 12 to 24 months.

Section 2: What The Indicators Tell Us

Percent of Companies Surveyed Expecting the Market Indicated to Grow over the Next One to Two Years

Graphic and Sign	Companies Ranking	% Expecting Growth
Wall/Architectural/Building Graphics	71	63.4%
Vehicle Wraps/Graphics	70	51.4%
Label/Decal	115	50.4%
Compliance/Safety Signage	98	49.0%
Window Graphics	115	47.8%
Fleet Graphics/Transit Graphics	68	47.1%
Retail Graphics/POP Displays	94	44.7%
Posters/Presentation Graphics	109	44.0%
Digital Displays	35	42.9%
Floor Graphics	118	42.4%
Dimensional Signage	57	42.1%
Banners/Soft Signage/Flags	141	41.1%
Directional Signage/Directories	69	39.1%
Fine Art/Art Reproduction/Photo	44	34.1%
Trade Show/Museum Displays	74	31.1%
Back-Lit Signs	73	21.9%
Pole Signs	59	16.9%

Apparel Decoration	Companies Ranking	% Expecting Growth
Performance Wear	33	57.6%
T-Shirts	43	55.8%
Sweatshirts/Hoodies	40	47.5%
Hats/Caps	36	44.4%
Blankets/Towels	21	38.1%
Outerwear	34	35.3%
Bags	32	28.1%
Face Mask/Face Covers	33	27.3%
Uniforms	20	25.0%
Performance Wear	33	57.6%

Section 2: What The Indicators Tell Us

Percent of Companies Surveyed Expecting the Market Indicated to Grow over the Next One to Two Years

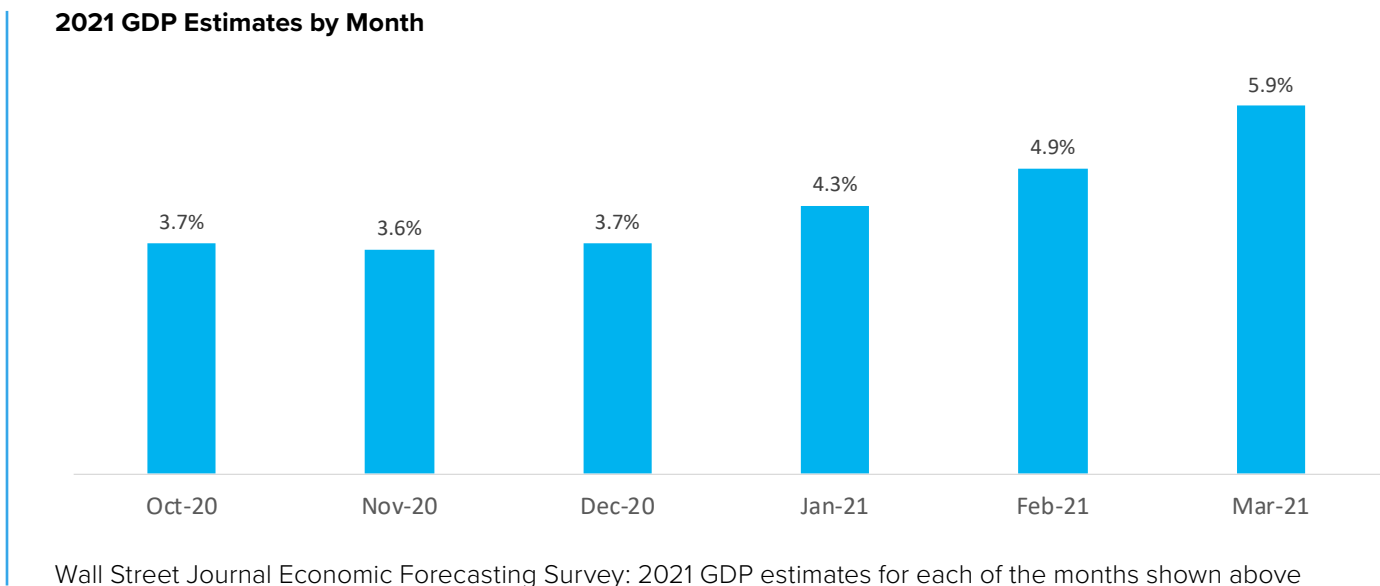
Commercial Printing	Companies Ranking	% Expecting Growth
Direct Mail	129	61.4%
POP/Displays	73	53.2%
Marketing Collateral	124	49.6%
Tags/Labels	73	46.7%
Promotional Products	77	46.2%
Books	68	29.4%
Financial	37	28.6%
Statement/Transactions	24	27.3%
Technical Docs/Manuals/Directories	87	21.2%
Business Cards/Envelopes/Letterhead	120	20.3%
Periodicals/Catalogs	69	17.8%

Package Printing/Converting	Companies Ranking	% Expecting Growth
Flexible Packaging	23	69.6%
Folding Cartons	41	68.3%
Corrugated	21	57.1%
Direct-to-Form/Containers	20	36.8%

Section 3: Economic Outlook And Challenges Faced By Printers

It comes as no surprise that optimism is continuing to climb as we work our way out of the crisis that has changed the way the world worked over the past year or so. Vaccines continue to get distributed to millions of folks weekly, most major restrictions have been lifted, and consumer demand continues to keep its foot on the pedal and will only accelerate as we move into the spring and summer months.

We knew that the economic recession would be short lived and followed by a swift recovery, but what was underestimated was the rate in which the resurgence would take place. In October 2020, analysts and economists surveyed for The Wall Street Journal's Economic Forecasting Survey thought that the economy would grow by about 3.7% in 2021, which would be the highest growth rate since 2005. It appears that this forecast was vastly understated, as the forecast has consistently risen in each of the following months — except for November, where uncertainty loomed as COVID-19 cases continued to rise and election season went into full swing. In the latest forecast, these same analysts have revised their calculation to 5.9%, a number that has not materialized since the mid-1980s.



Quarterly forecasts, of course, also reflect this rapid rate of growth, as the Economic Forecasting Survey also anticipates a growth rate of 4.9% in the first quarter, followed by 7.0%, 6.8%, and 5.0% in the second through fourth quarters respectively.

The end of COVID-19 and speedy recovery will not fix everything, however. Many challenges will linger from the pandemic, and other issues may spawn as we work our way through 2021 and perhaps into 2022.

In our latest survey, we asked printers what their greatest challenges were during the pandemic. The table below shows the percentage of respondents who indicated that they faced each of these listed challenges.

Section 3: Economic Outlook And Challenges Faced By Printers

What have been your greatest challenges during the pandemic?	
Constant uncertainty/don't know what's next	75.9%
Decrease in demand for our products/services	72.2%
Supply disruptions/difficulty obtaining materials, consumables, substrates, etc.	47.7%
Government shutdowns of clients	46.2%
Shipping issues (rising costs, delivery delays, etc.)	43.6%
Increases in substrate prices	36.9%
Increases in consumable prices	30.3%
Cash flow shortages	28.2%
Employee shortages (illness or quarantine requirements)	27.8%
Other	11.6%

Q. What have been your greatest challenges during the pandemic?
n=241

The first and most consistently mentioned challenge (75.9%) highlights most business leaders' sentiment throughout the pandemic, and when we look back at 2020, it may be the word that most accurately describes how most felt during this time: Uncertain. Lack of a cohesive national shutdown plan left questions to be answered differently from state to state, and kept businesses on their toes, as they never knew what kinds of restrictions would affect their operations. This, coupled with a dynamic election season, pushed uncertainty to a level that has not been seen in years, perhaps even decades. Luckily, as virus concerns ease and vaccines continue to be distributed, uncertainty — at least in the form of leadership and restrictions — should become less of an issue.

Another challenge that was felt by many (72.2%) and likely will cease as we move into 2021 is the stunted demand for printed products that was felt by many segments within the industry. This demand will climb at varying paces for different industries, but those who were most affected — printers in the travel, hospitality, and event spaces — will likely be revived by the easing of restrictions as vaccinations continue, while others will enjoy the benefits of pent-up demand driven by consumer spending. Of course, it is not a guarantee that your business will flourish on the heels of the eradication of the coronavirus, and you must remain vigilant about the issues that your company must deal with both now and in the near future. There will be no free riders in the recovery, and those that prepare and execute in an effective and efficient manner will be the ones left standing when the dust settles.

Section 4: Supply Chains, Prices, And Inflation

While the challenges mentioned in the preceding section will likely diminish in the short run, a few others have the potential to cause continued headaches for the industry and for the economy as a whole.

During the pandemic, we learned just how vital the integrity of our supply chains was, and it turns out that many were not built to handle the situation they were thrust into. Nearly half (47.7%) of printers faced supply disruptions and had difficulty obtaining materials, substrates, and equipment. Of those that were able to procure materials, 43.6% said that they were forced to pay more to get goods shipped, faced major delays in getting these products, or both. In tandem with these problems, and expectedly so, 36.9% said that they were facing higher substrate prices from suppliers while 30.3% said the same of their consumables. Of course, these issues will not just disappear overnight once the virus is gone. In fact, some of these issues may be amplified by an accelerating economy, which some fear may overheat amidst increased demand.

So how do printers deal with these issues — in particular, an increase in expenses? There are a few options: They can cut costs and find alternative supplies, which will be near impossible in the current economic environment; they can depress their profit margins and retain current price levels; or they can pass along these excess costs to their end consumers by increasing prices. The most likely answer for businesses will come from a mixture of these solutions.

These challenges were reflected in results from our latest indicators research, as 38.0% of printers indicated that their prices were trending upward, while 56.5% said that they were not changing. While a majority indicate stagnant pricing, this 38.0% is up significantly from the 16.5% in November/December and the 15.9% in July/August. It is clear to see that printers are trying to pass along some of these additional costs to their clients, but if inflation does take hold of the economy, there is a chance that printers will not be able to increase prices enough to keep up with their own rising costs.

The Producer Price Index

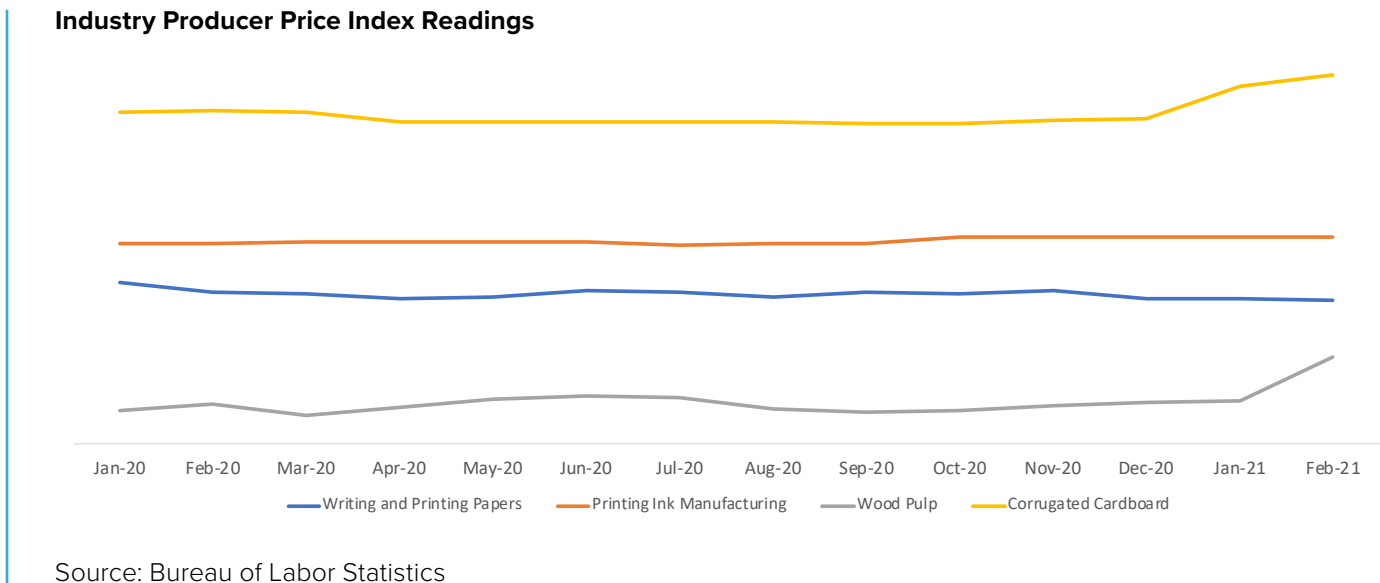
The Producer Price Index is published by the Bureau of Labor Statistics and represents the average movement in selling prices for domestic production over time for a variety of different products and industries.

The graph below shows how the Producer Price Indexes have changed since the beginning of 2020. While prices for writing and printing papers appear to have dropped throughout the pandemic, the wood pulp PPI can be used as a leading indicator for paper prices. At the beginning of 2021, prices for wood pulp increased sharply, and it is likely that this will translate to an increase in the price of paper as well. Printing Ink Manufacturing's PPI, although mostly steady, saw a slight increase in late 2020 and will likely remain elevated as inflationary concerns linger. Once again, the carbon black PPI can be used as a leading indicator for ink, and that movement will likely translate to higher ink prices in the near future. Those in the packaging industry will see, if they have not already, a sharp increase in the price of corrugated cardboard as well, as the PPI for this product increased by 7.3% since December.

Section 4: Supply Chains, Prices, And Inflation

Other PPI of note not included in the graph:

- Carbon Black: One of the main materials used to make printing ink
 - Increased by 9.3% since August
 - Leading indicator for the price of ink, which means that ink prices will follow suit and increase



Below, we take a more in-depth look at inflation and how it will affect both the industry and the economy as a whole.

Inflation

As the U.S. continues to move past the short but deep recession brought on by COVID-19, there are still some concerns in the air. One in particular may put a damper on the positives that should come with a swift recovery — and that is inflation.

Recently, the Fed indicated that it was not very concerned about inflation. Most of the higher readings were attributed to the fact that the events of the past year have subdued past numbers, and rising inflation, according to the Fed, will be temporary. On the other side of the coin, there are several reasons to believe that rising inflation will be more dramatic and longer lasting than anticipated.

Section 4: Supply Chains, Prices, And Inflation

Supply chain disruptions will be one of the root causes of inflationary pressures moving forward. These issues were already wreaking havoc on companies in just about every industry, and the problems have been exacerbated even more in the wake of the container ship, the Ever Given, causing shipping delays by getting stuck in the Suez Canal. After cutting production before the recession because of the predicted economic slump, manufacturers are still trying to catch up. Shipping prices continue to rise as well as raw material prices across an array of industries, and it does not appear that this will cease anytime soon, especially as pent-up demand will drive the need for even more production, which will continue to create a backlog in some industries. Someone will need to digest these additional costs as they keep being pushed onto the next step of the manufacturing process and eventually to the general consumer.

For printers, if you have not seen these rising prices yet, you likely will. At this point, you will have some decisions to make and questions to answer. Will you depress your profit margins to avoid pushing the higher costs on to your clients? If so, how long will you be able to do this before you must raise prices? How much can you raise your prices before your customers seek alternatives? What is your competition doing about their prices?

Obviously, it is still early. Some of these problems may prove to be temporary, and once we move along from hasty recovery to steady expansion, perhaps supply chains will get back on track. But until then, be aware that prices will increase, and you will need to find a way to adjust, or you will be left behind by your competition.

Quotes from Respondents Relating to Price Increases/Inflation

- “Raw material prices are increasing, and it will be difficult to pass those increases along to customers.”
- “We are increasing prices as needed to accommodate our labor expense.”
- “We are currently experiencing significant cost increases for most material and supply items.”
- “Many of my suppliers have already sent me notices of price increases for either this or next month.”
- “Freight costs and raw materials are increasing in price while business has yet to recover, and buyers realize they are in a buyers’ market as printers try to survive.”

Another potential cause of inflationary concerns is the ever-increasing money supply. Following several rounds of stimulus, some are concerned about its inability to increase the wealth of the nation or its citizens in the long-run and instead point to the likelihood that these injections of cash will instead lead to inflation. Of course, some inflation is welcomed, as the Fed aims for its 2% target rate, but as it inches above that number, we may begin to see an issue. Rumors of another stimulus have surfaced, so it will be important to keep an eye on the money supply and listen closely to what the Fed has to say as this will likely contribute to price increases moving forward.

Section 4: Supply Chains, Prices, And Inflation

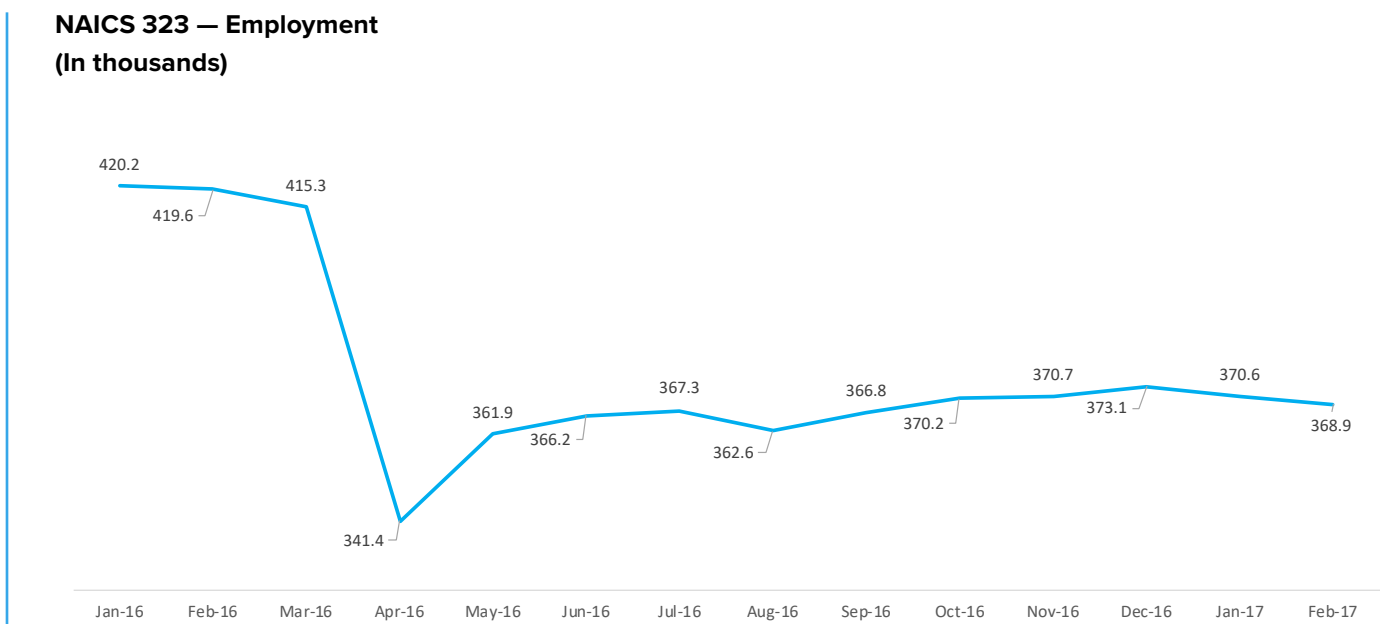
Employment

In the U.S, positive unemployment news continues to pour in as both initial unemployment claims and the unemployment rate continue to fall. ADP's latest employment report also indicated that 517,000 jobs have been added to non-farm private sector employment in the month of March, a number that is up 341.9% from the reading a month prior. Initial unemployment claims also topped out at 744,000 for the week ending April 3. Although it is up a bit from the previous week (722,615), it is still lower than what was seen mid-March and is significantly down from the high of nearly 6 million from the lowest point of the pandemic.

While these employment statistics certainly signal that the economy is continuing to rebound, these numbers have yet to translate to the printing industry, as is the case with many other manufacturing industries.

Of course, every industry will see employment numbers recover at varying paces, and it appears that print may be turning the corner. This is the first time that more respondents in the Print Business Indicator research have signaled increasing trends (21.1%) in employment rather than decreasing (16.7%) trends. Although this is the case, the vast majority continue to report that their employment is not changing (62.2%). These trends likely will not last for long, however, as print and many other manufacturing industries are desperate to bring in qualified employees. This was also one of the biggest challenges for printers throughout the pandemic, as 27.8% of respondents indicated that they faced employee shortages. During this time, many of these shortages were caused by illness or quarantine requirements, but as these things cease to be a factor, they will still face shortages, as it appears that a hot job market may be calling former workers elsewhere.

The graph below shows just how many workers were booted from commercial print throughout the pandemic, and although demand is still up (and steady) since employment hit bottom in April, there is still much work to be done. Many printers will need at least a portion of these workers to come back, but that will certainly be a challenge, and we are already beginning to see this.

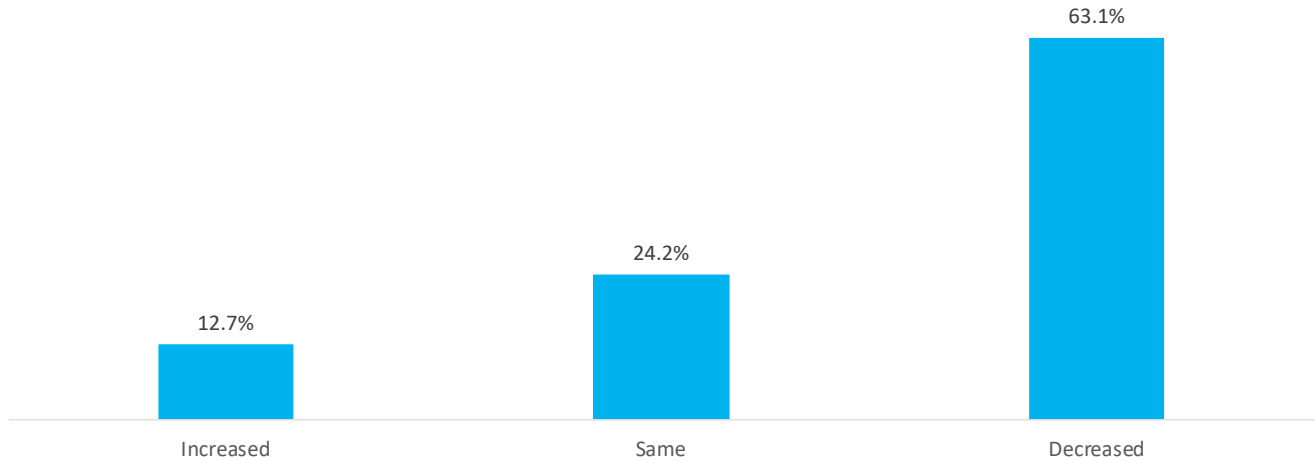


Source: Bureau of Labor Statistics

Section 4: Supply Chains, Prices, And Inflation

The graph below shows more evidence that if demand returns to pre-COVID-19, workers will need to be brought in to keep up. Among our respondents, 63.1% reduced their production workforce between January 1, 2020, and January 1, 2021, with the average respondent getting rid of 6.7% of their production workers. Only 12.7% saw it necessary to bring in production employees during this time frame, while nearly a quarter (24.2%) were able to keep employment steady.

Employment Change from Jan 1, 2020, to Jan 1, 2021

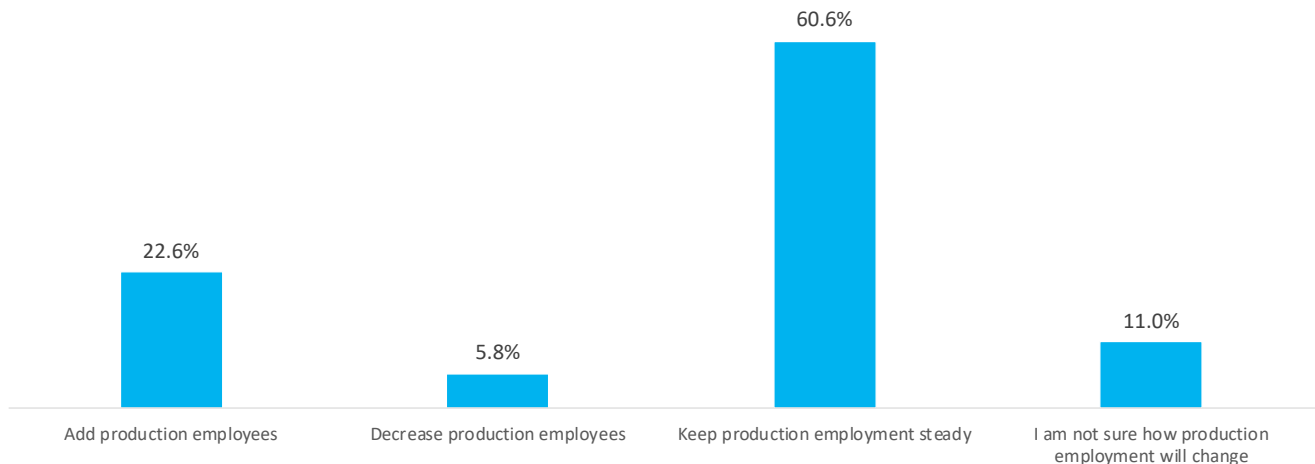


Q. How many production employees did you have on January 1, 2020, and January 1, 2021?

n=157

We also asked our respondents to comment on what their plans were in regard to production employment in the first quarter, and it appeared that many weren't rushing to bring in any new workers yet. Among printers, 60.6% said that they were going to keep production employment steady, likely waiting to see how demand for their products moves. Another 22.6% said that they were planning to add production employees during the first quarter, and 11.0% said that they were still unsure what they would do.

Production Employee Change During the First Quarter of 2021



Q. During the first quarter of 2021, do you expect to...

n= 155

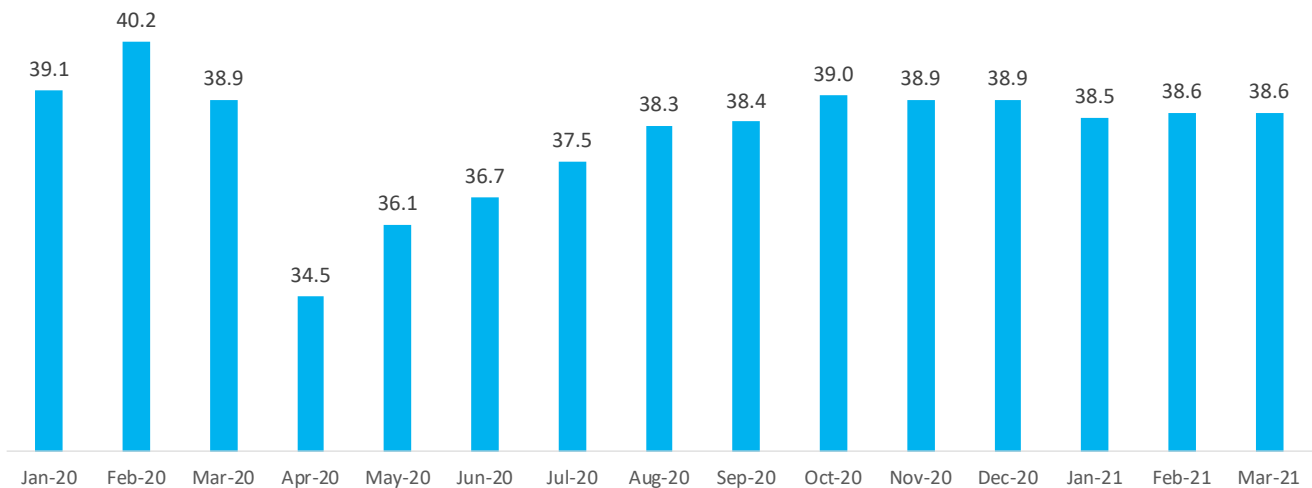
Section 4: Supply Chains, Prices, And Inflation

As demand for print products increases in unison with the economic recovery, finding enough qualified and experienced employees will be an issue. In order to bring in employees, recruiting, branding, and providing a solid work environment will be critical. You must become an employer of choice, as many of your former or potential new workers will have other choices, and they will choose the option that is best for them and their families. If you want to secure these employees and make sure that you keep up with increased demand, do everything in your power to make sure that you are the clear-cut choice.

Production Hours

While tracking industry employment is certainly important, it is equally important to understand the amount of hours these print employees are working each week. Prior to COVID-19, the average production and non-supervisory employee in commercial print was working just about 39 hours per week — around the weekly average for the past decade. Once the pandemic began, this number was adversely affected significantly, as these workers were on the production floor just over 35 hours a week. While four hours less a week may not seem like much, it heavily affected output, and it is also important to consider that this came along with a significant drop in the total number of employees. So, there were far fewer employees working far fewer hours, meaning that the industry was struggling (as can be seen in the historical data from this report). The good news is that since then, the number of hours worked per week has significantly recovered, to about 38.6 — which was the average for the whole year of 2019. This is a positive, but of course it must be taken with a grain of salt, as there are still fewer workers employed throughout the industry. So, while the weekly average hours have recovered, the weekly total number of hours worked is still far off from pre-COVID-19 norms.

Average Weekly Hours — Production and Nonsupervisory Employees



Source: Bureau of Labor Statistics

Section 4: Supply Chains, Prices, And Inflation

Quotes from Respondents Relating to Employment

Some told us about their plans moving forward:

- “We foresee adding production employees beginning / during the second quarter of this year.”
- “Will add staff as demand increases.”
- “After cutting hours for all employees last year, our hope is to bring everybody back to 40 per week and even allow overtime if necessary.”

Many others emphasized their struggle to bring in employees:

- “We cannot find employees — unemployment is low in our area.”
- “We can’t add employees faster than they retire or leave. Everyone says there are a lot of people looking for jobs, but we can’t find them.”
- “Trying to find anyone willing to work.”
- “Still struggling to find people to hire.”
- “We are increasing OT for current employees to eliminate the need for new hires. Find it too hard to find qualified individuals in our market.”
- “Recruiting (and retaining) is key to our growth.”

Section 5: An Introduction To The Print Market Atlas

How Printing Is Classified in NAICS

The North American Industry Classification System (NAICS) classifies business establishments by primary activity. NAICS defines 20 major sectors (agriculture, manufacturing, retail trade, finance and insurance, etc.), with each sector assigned a two-digit code. The sectors are then broken into 1,057 industries, with each assigned a three-, four-, five- or six-digit code. Each additional digit defines a more specific activity.

NAICS 323: Printing and Related Support Activities

Establishments with printing as their primary business are classified here. All printing process and all substrates — paper, plastics, metal, paperboard, corrugated, glass, wood, textiles, apparel, etc. — are included. Establishments that manufacture the substrates on which they print or own copyrights on what they print are not included. (The former are included in the associated manufacturing industry and the latter in the publishing industry.) For example, NAICS 323:

- Includes companies that print newspapers, books, magazines, catalogs, directories, etc., but excludes publishers “even if the receipts for printing exceed those for publishing.”
- Includes companies “printing on purchased packaging materials” but excludes companies that manufacture the packaging on which they print.
- Includes companies that print on “T-shirts, caps, jackets, towels, napkins,” etc., but excludes companies that print on gray goods. (Printing on gray goods, or unfinished fabric still in the color of the natural fiber, is considered “part of the process of finishing the fabric.”)
- Includes companies that print promotional products but excludes companies that manufacture the promotional products they print.

NAICS 323 Industry Detail

NAICS 323 is broken down into these industries:

- **32311: Printing.** Removes trade prepress and postpress establishments (related support activities) from 323.
- **323111: Commercial Printing Except Screen and Books.** All establishments in NAICS 323 except those with screen as their primary process or books as their primary product.
- **323113: Commercial Printing Screen.** All establishments in NAICS 323 with screen as their primary process.
- **323117: Book Printing.** All establishments in NAICS 323 with books as their primary product and that do not own copyrights on the books printed. (Establishments owning copyright are included in NAICS 5111: Newspaper, Periodical, Book, and Directory Publishers.)
- **323120: Support Activities for Printing.** Prepress and postpress trade establishments.

This year, we will release an updated version of the Print Market Atlas, which will include all of the data seen here plus much more, broken out into much greater detail, and will also include projections for 2019 and 2020 along with estimates for 2021. In the meantime, if you would like to see more detailed information about your state, region, county, or segment, please reach out to PRINTING United Alliance economist David Wilaj at dwilaj@printing.org.

Section 5: An Introduction To The Print Market Atlas

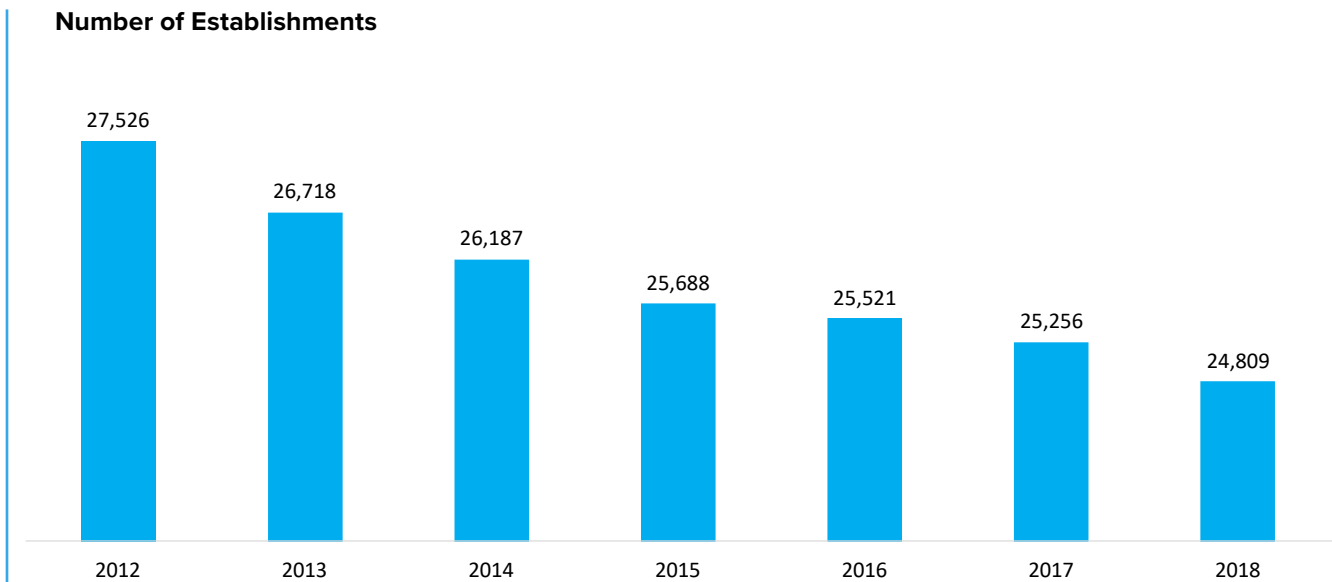
323 in the United States

The data below is taken from the U.S. County Business Patterns Survey, which tracks the number of establishments, the number of employees, and the annual payrolls for many different industries. The data is released on a lagging basis, so the latest data published by the Census Bureau is from 2018. All the data in this section comes from the U.S. Census Bureau’s County Business Patterns series.

From the data, we can get a snapshot of what the industry looked like in 2018:

- **Number of Establishments:** 24,809
- **Number of Employees:** 438,516
- **Annual Payroll:** \$21,051,467,000

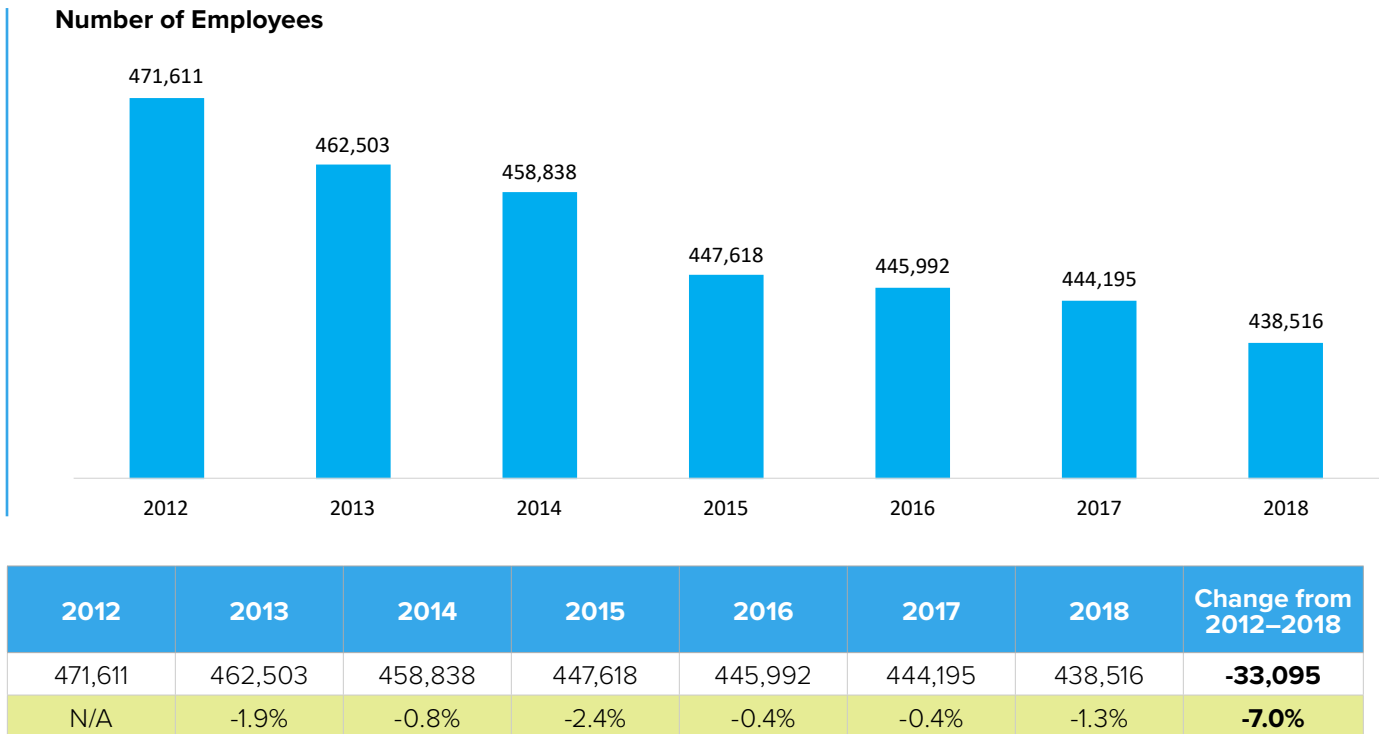
It is easy to see that over time, the number of establishments has been steadily decreasing, and the decline will only be made worse by businesses forced to shut down during the COVID-19 pandemic.



2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
27,526	26,718	26,187	25,688	25,521	25,256	24,809	-2,717
N/A	-2.9%	-2.0%	-1.9%	-0.7%	-1.0%	-1.8%	-9.9%

Section 5: An Introduction To The Print Market Atlas

The same can be said for the number of employees who work in 323:



The *County Business Patterns* also break out the data by company size for an even more in-depth look at the industry:

323 data Breakdown by Establishment Size (2018)

Size (By Employee Count)	Number of Establishments	Number of Employees	Annual Payroll (\$1,000s)
Less than 5	12,617	24,406	\$884,510
5 to 9	4,851	31,777	\$1,120,633
10 to 19	3,118	42,402	\$1,719,671
20 to 49	2,453	76,599	\$3,537,757
50 to 99	927	65,075	\$3,351,836
100 to 249	618	92,801	\$4,926,201
250 to 499	166	57,758	\$3,215,798
500 to 999	51	34,748	\$1,788,338
More than 1,000	8	12,950	\$506,723

Section 5: An Introduction To The Print Market Atlas

323 by Region

Below is data on the number of establishments for each region:

Pacific — Alaska, California, Hawaii, Oregon, Washington:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
4,424	4,323	4,220	4,176	4,097	4,098	4,052	-372
N/A	-2.28%	-2.38%	-1.04%	-1.89%	0.02%	-1.12%	-8.4%

Mountain — Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
1,734	1,703	1,682	1,646	1,665	1,648	1,631	-103
N/A	-1.79%	-1.23%	-2.14%	1.15%	-1.02%	-1.03%	-5.9%

Plains — Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
2,305	2,245	2,208	2,187	2,140	2,114	2,056	-249
N/A	-2.60%	-1.65%	-0.95%	-2.15%	-1.21%	-2.74%	-10.8%

North Central — Illinois, Indiana, Michigan, Ohio, Wisconsin:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
4,902	4,726	4,589	4,483	4,471	4,419	4,283	-619
N/A	-3.59%	-2.90%	-2.31%	-0.27%	-1.16%	-3.08%	-12.6%

South Central — Arkansas, Louisiana, Oklahoma, Texas:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
2,596	2,536	2,503	2,484	2,457	2,445	2,458	-138
N/A	-2.31%	-1.30%	-0.76%	-1.09%	-0.49%	0.53%	-5.3%

Section 5: An Introduction To The Print Market Atlas

Southeast — Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
4,978	4,834	4,771	4,707	4,751	4,673	4,650	-328
N/A	-2.89%	-1.30%	-1.34%	0.93%	-1.64%	-0.49%	-6.6%

South Mid-Atlantic — Delaware, District of Columbia, Maryland, Virginia, West Virginia:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
1,208	1,150	1,133	1,085	1,066	1,048	1,011	-197
N/A	-4.80%	-1.48%	-4.24%	-1.75%	-1.69%	-3.53%	-16.3%

North Mid-Atlantic — New Jersey, New York, Pennsylvania:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
3,898	3,772	3,687	3,575	3,528	3,505	3,398	-500
N/A	-3.23%	-2.25%	-3.04%	-1.31%	-0.65%	-3.05%	-12.8%

New England — Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont:

2012	2013	2014	2015	2016	2017	2018	Change from 2012–2018
1,481	1,429	1,394	1,345	1,346	1,306	1,270	-211
N/A	-3.51%	-2.45%	-3.52%	0.07%	-2.97%	-2.76%	-14.2%

Section 6: Appendix (Segment Data)

Commercial Printers

What have been your greatest challenges during the pandemic?	
Constant uncertainty/don't know what's next	76.3%
Decrease in demand for our products/services	80.9%
Supply disruptions/difficulty obtaining materials, consumables, substrates, etc.	38.2%
Government shutdowns of clients	52.6%
Shipping issues (rising costs, delivery delays, etc.)	43.4%
Increases in substrate prices	36.2%
Cash flow shortages	30.3%
Employee shortages (illness or quarantine requirements)	24.3%
Increases consumable prices	30.3%
Other	13.2%

Q. What have been your greatest challenges during the pandemic?
n=152

Graphic and Sign Producers

What have been your greatest challenges during the pandemic?	
Constant uncertainty/don't know what's next	77.6%
Decrease in demand for our products/services	71.4%
Supply disruptions/difficulty obtaining materials, consumables, substrates, etc.	57.1%
Government shutdowns of clients	53.1%
Shipping issues (rising costs, delivery delays, etc.)	44.9%
Increases in substrate prices	53.1%
Cash flow shortages	24.5%
Employee shortages (illness or quarantine requirements)	30.6%
Increases consumable prices	34.7%
Other	12.2%

Q. What have been your greatest challenges during the pandemic?
n=48

Section 6: Appendix (Segment Data)

Apparel Decorators

What have been your greatest challenges during the pandemic?	
Constant uncertainty/don't know what's next	100.0%
Decrease in demand for our products/services	70.0%
Supply disruptions/difficulty obtaining materials, consumables, substrates, etc.	75.0%
Government shutdowns of clients	35.0%
Shipping issues (rising costs, delivery delays, etc.)	35.0%
Increases in substrate prices	10.0%
Cash flow shortages	45.0%
Employee shortages (illness or quarantine requirements)	20.0%
Increases consumable prices	15.0%
Other	15.0%

Q. What have been your greatest challenges during the pandemic?
 n=20

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PRINTING United Alliance research provides first-hand accounts, analysis, and ongoing monitoring of critical industry trends influencing the printing industry, future trends, and the underlying factors influencing change. PRINTING United Alliance Research is now part of an expanded research team that includes NAPCO Research experts, survey and analysis capabilities, and additional audience reach.

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WHO WE ARE



PRINTING United Alliance is the new entity borne of the merger between Specialty Graphic Imaging Association (SGIA) and Printing Industries of America (PIA). In a milestone in the printing industry, SGIA and PIA officially combined in 2020 to create the largest, most comprehensive member-based printing and graphic arts association in the United States.

Members will soon have unparalleled access to preeminent education, training, workshops, events, research, government and legislative representation, safety and environmental sustainability guidance, as well as resources from the leading media company in the industry – NAPCO Media. For PRINTING United Alliance membership inquiries, visit sgia.org.

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