

Printing Outlook 2021



A survey of printing and communications executives about their business outlook and the industry's print and service offerings.

WhatTheyTh!nk

Printing Outlook 2021

WhatTheyThink's Overview of the Current Economic State of the Industry

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INTRODUCTION: THE IDES OF MARCH

So, aside from that, Mrs. Lincoln, how did you like the play?

Over the course of all of our annual industry outlooks, be they the WhatTheyThink surveys which we started conducting regularly in 2015, or even going back to 1995 and the original TrendWatch surveys on which the WTT questionnaires are based, we have tracked changes—some small, some big, some seismic—in the industry, in technology, and in the culture at large. But they have always been changes that took time to manifest themselves, sometimes over the course of several months, usually over several years, and sometimes over the course of a decade. In our 25+ years’ experience analyzing the industry, at no point have such major changes taken place in—and we mean this quite literally—a *single week*. Some printers we have spoken with in 2020 could even pinpoint the exact day the universe changed: usually March 17. The period from March 16 to mid-to late April was a time of great confusion. Businesses across the economy shut down, travel ceased, events were cancelled in- and outside the industry, and print volumes plummeted—in some cases (again literally) overnight. Early on, many print businesses were forced to close if states didn’t deem them “essential services” and it took no small effort on the part of industry trade groups like PIA to lobby state governments to declare that printers were in fact essential.

Even so, many print businesses lost customers and volume in the primary vertical markets they served, especially if those verticals were events, travel, hospitality, and all the other activities that had become *verboden* as we tried to get the COVID pandemic under control—all, it turns out, to very little (if any) avail.

Anyway, you probably have your own story about 2020 and anyone reading this probably doesn’t need us to offer a blow-by-blow recap of the year. The thing is, as we have found both anecdotally and in our Fall 2020 Business Outlook Survey, some businesses actually did quite well during the pandemic. In some cases, it was because their client companies in the markets they served kept on with business as usual (or fairly close to it) while in others it was because a print business was able to turn on a dime¹ and start offering some of the new, in-demand products and services the pandemic engendered. Things like personal protection equipment (PPE), face masks, distancing and other safety signage, and other pandemic-specific graphics. In some of these cases, it was simply an extension of the kind of work they normally did, and others it was due to print companies learning how to make these new products. A lot of print businesses were very MacGuyver-esque in this period.² Others were not as successful, as we will see in the Business Conditions section of this report.

¹ The buzzword that was used to refer to this was “pivot,” a word which we shall avoid throughout this report, except in this footnote.

² We wrote a lot of stories over the course of 2020 about how print businesses coped, and Warren Werbit’s Wednesday “Printer to Printer” video series has been a great source of inspiration, hearing how a variety of print businesses made it through the worst of the pandemic (even though we may not have seen the worst of the pandemic). And some good stories of survival on both the commercial and inplant side were presented in our October [Divisional Graphics webinar](#).

So the week of March 16, 2020, marks the boundary between the Before Times and the Age of COVID, a time of quarantining, mask-wearing, social distancing, home schooling, work-from-home, Zoom fatigue, and great economic uncertainty. Imagine going back in time to December 2019 and trying to describe your life now to your 2019 self. Would you even believe yourself?

Be all that as it may, welcome to our *Printing Outlook 2021*. Preparing this report has been a little surreal; when we create these annual reports, we always start with the previous year's report as a template and, if one can be nostalgic for times that existed less than 12 months earlier, we found last year's *Printing Outlook 2020* report³ gushing about how 2019 was the best year the industry has had since the early 2000s, how shipments were rising, how excitement at shows like PRINTING United was unlike anything we had seen since 1997, and that we were in the midst of a "Printing Renaissance."

Yeah, well...

So, no two ways about it: 2020 was a difficult year, probably the worst we've ever seen. If there is any good news to be had, it's that, unlike the problems that have beset the industry in the past, the effects of 2020 are almost entirely reversible. What made the period from 2000 to 2018 so bad for the industry was the decreasing demand for print (or at least certain kinds of print), as electronic alternatives took more and more applications from the printed to the digital realm, as first broadband, then mobile, then social media, then the combination of all three quickly penetrated all sectors of society. What the industry learned in that period is how to transition to print products that were actually in demand—hence, a lot of investment in wide-format and display graphics, specialty printing, labels, some packaging, and other applications.

In the case of 2020, those print applications are still largely in demand—it's just that many or most of the businesses that buy them are shut down or have pandemic-induced budget crunches. Once events, for example, are allowed to take place again, print businesses that serve that vertical are going to be busier than ever. The real challenge for a lot of companies is surviving long enough to make it to that point.

We get the sense from this present survey that a lot of print businesses are simply hunkering down, waiting for the virus to go away or a vaccine to become widely available (which is starting to happen as we write this) and for their traditional markets to return. But throughout 2020, as we said, we found that the print businesses that prospered—the 19% in our survey that said that revenues had increased over 2019—were proactive in seeking out new opportunities and teaching themselves how to produce the products that were in demand throughout the pandemic. As we enter 2021, the in-demand product mix is going to continue to evolve, and businesses will need to stay on top of them. This is not really anything new, though.

In some sense, what we've been seeing is reminiscent of the famous sequence in the 1960 George Pal movie *The Time Machine*, where the protagonist is in his time machine hurtling into the future and through his laboratory window, he sees the fashions in the window of the department store across the street change from year to year, decade to

³ Prior to the COVID-19 update report we published in April 2020.

decade, in a matter of seconds. Likewise, we have been seeing a hyper-accelerated version of what always happens in markets: vertical markets change, some older products decline in demand, and newer products increase in demand. Evolving technologies or a changing culture are what usually drive these changes, not a pandemic, and they tend to take place over several years at least and not, you know, in a week. But that is changing, at least for now. Our contributor Preston Herrin has been writing about how print businesses need to be “agile,” and while agility was something print businesses always needed, it’s needed even more now. We’ll have more to say about this in Section 7.

As we always comment when there are economic slowdowns, hunkering in place is counterproductive. “Sheltering in place” is a good policy when it comes to public health and the pandemic, but not when it comes to evolving one’s business or keeping it afloat during a pandemic—or keeping from being eaten by the Morlocks.

How This Report Is Organized

Section 1 presents our Fall 2020 survey data about current (2020) and expected (2021) business conditions, specifically how print businesses fared *vis-à-vis* revenues, number of orders, and profits. You may want to start drinking now.

Section 2 presents our survey data on print businesses’ top challenges, opportunities, and planned investments.

One pandemic-era development in our industry and elsewhere was the rapid rise of the virtual trade event. We wanted to get a sense of whether virtual events were going to be a thing of the future, so Section 3 presents the results of our survey question asking about virtual event attendance history, plans, and attitudes. Has anyone attended them? Does anyone like them? Does anyone prefer them? What conditions need to be met before industry professionals will venture into a trade show hall again?

Section 4 presents the results of our survey question about print businesses’ hiring plans. Do they have any and, if so, for which positions?

Section 5 rounds up a variety of printing industry data—establishments, shipments, profits, employment, and so on.

Section 6 provides the latest general macroeconomic data. These data are important to put industry data into the proper macroeconomic context.

Section 7 offers what we see as the hot, cold, and lukewarm trends for 2021, as well as WhatTheyThink’s economic and printing industry forecast.

The survey methodology is detailed in Appendix A. Our—we admit, rather entertaining—explanation of survivor bias is presented in Appendix B.

For More Information

For more information on this report or other WhatTheyThink products and services, please visit www.whattheythink.com.

1. BUSINESS CONDITIONS

You pretty much know what to expect in this section. It's going to be bad, so let's just get through it as best we can.

In October and November 2020, WhatTheyThink's Business Outlook Survey asked print business executives and owners about:

- perceptions of 2020 business conditions compared to 2019
- expectations of 2021 business conditions compared to 2020

Specifically, we asked about:

- revenues
- number of orders
- profits

Revenues

2020 Revenues

In terms of revenues, more than one-fourth (28%) of print businesses surveyed said that revenues for 2020 had decreased more than 25% compared to 2019. A further 26% said that revenues had declined between 10% and 25%, 12% said revenues declined between 6% and 10%, and 4% said revenues had decreased between 1% and 5%. On the plus side, 10% said that revenues had stayed basically the same, and, for a happy 12%, revenues increased in 2020 compared to 2019.

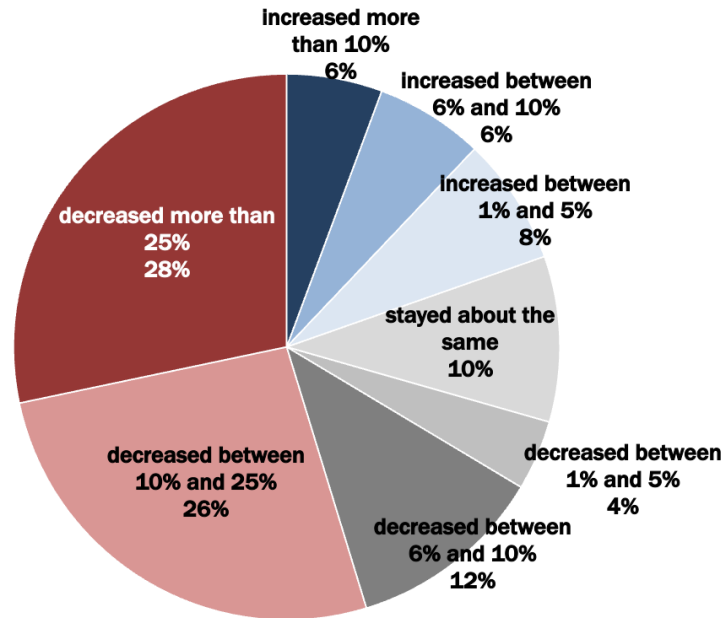
Normally, this is where we would compare 2020 vs. 2019 revenues to what respondents said last year about 2019 vs. 2018 revenues, but we'll forgo that this year because a) it would be kind of like comparing apples to aircraft engines and, b) it would be rubbing salt in the wound.

That said, we calculated an average change in revenues of -12.6% from 2019 to 2020, compared to +4.1% from 2018 to 2019.⁴ Because we can't help ourselves, we also adjusted the average change in revenues for inflation, backing -1.4% out of the average change in revenues,⁵ because why not make these numbers sound even worse? So, adjusted for inflation, revenues fell -14.0% from 2019 to 2020, compared to +2.2% from 2018 to 2019. Salt, meet wound.

⁴ The estimates were calculated using the mid-points of the percentage ranges, 12% for the "10% or more" range, and 30% for the "25% or more" ranges.

⁵ Based on current CPI (<https://www.bls.gov/news.release/pdf/cpi.pdf>).

In terms of your 2020 revenues at this location only, how do they compare to 2019?



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n=265

	1-9 employees	10-19 employees	20-49 employees	50+ employees
increased more than 10%	6%	0%	3%	11%
increased between 6% and 10%	5%	3%	8%	5%
increased between 1% and 5%	5%	3%	9%	9%
stayed about the same	8%	3%	6%	14%
decreased between 1% and 5%	0%	6%	5%	5%
decreased between 6% and 10%	14%	12%	5%	17%
decreased between 10% and 25%	17%	27%	31%	28%
decreased more than 25%	45%	45%	34%	12%
Average change	-16.2%	-19.1%	-14.6%	-7.9%
Average change adjusted for inflation	-17.6%	-20.5%	-16.0%	-9.3%

If we look at survey results by establishment size, we find that the businesses that weathered the COVID storm with the least significant impact on revenues were at the high end (50+ employees), with the mid-size (10-49 employees) and small (1-9 employees) shops having the worst time of it.

For 1-9-employee shops, 45% said that revenues had decreased 25% or more from 2019 to 2020 and 62% said they had decreased more than 10%. Only 16% saw an increase in revenues in 2020. The average revenue change for these folks was -16.2% before inflation.

For 10–19-employee shops, 45% also said that revenues decreased 25% or more, and 72% said they had decreased 10% or more. Only 6% saw an increase in revenues in 2020. The average revenue change for these establishments was -19.1% before inflation.

Among 20–49-employee shops, 34% said that revenues had decreased 25% or more, and 65% said revenues had decreased 10% or more. Still, 20% reported that revenues had increased in 2020, so that’s something. The average revenue change for these establishments was -14.6% before inflation.

For 50+-employee shops, “only” 12% said that revenues had decreased 25% or more, although 65% said they had decreased 10% or more. One-fourth (25%) said that revenues had increased in 2020. The average revenue change for these establishments was -7.9% before inflation.

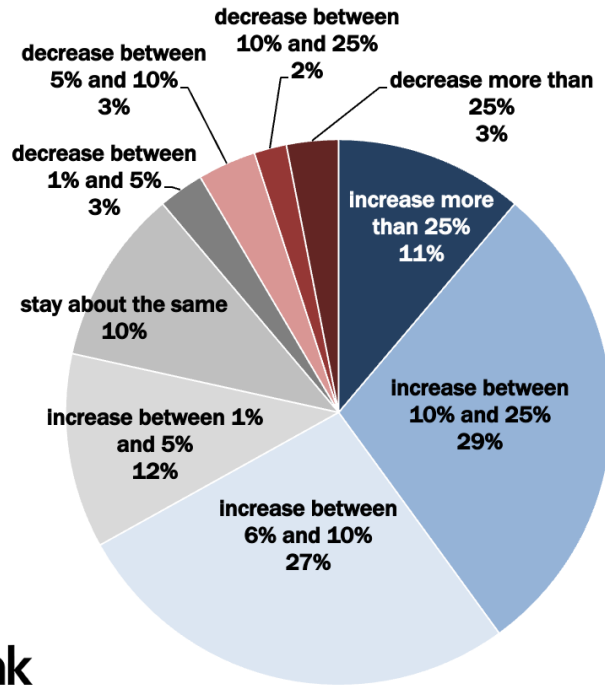
2021 Revenues

The general expectation, at least in Fall 2020 when our survey was in the field, is that business is going to rebound in 2021. The expectation isn’t that 2020’s losses will be completely recouped, but a fair chunk of lost revenues will come back.

Eleven percent of respondents expect revenues to increase by 25% or more in 2021 vs. 2020, 29% expect 2021 revenues to increase between 10% and 25%, and 27% expect revenues to increase between 5% and 10%. Only 11% expect revenues to decrease in 2021 over 2020—and we should hope not.

Overall, printing establishments expect a +9.1% change in revenues in 2021, or +7.7% if you adjust for inflation. That barely comes close to compensating for the losses in 2020 vs. 2019, but that’s the expectation.

How do you expect your 2021 revenues at this location to compare to 2020?



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n=260

	1-9 employees	10-19 employees	20-49 employees	50+ employees
increase more than 25%	16%	9%	8%	10%
increase between 10% and 25%	26%	39%	34%	25%
increase between 6% and 10%	33%	15%	27%	32%
increase between 1% and 5%	6%	24%	10%	9%
stay about the same	4%	6%	8%	14%
decrease between 1% and 5%	1%	3%	0%	5%
decrease between 6% and 10%	0%	0%	5%	6%
decrease between 10% and 25%	0%	3%	6%	0%
decrease more than 25%	13%	0%	2%	0%
Average change	8.1%	10.8%	8.7%	9.3%
Average change adjusted for inflation	6.7%	9.4%	7.3%	7.9%

For 1-9-employee shops, 16% expect revenues to increase 25% or more in 2021 compared to 2020, while 26% expect revenues to increase between 10% and 25% and 33% expect revenues to increase between 6% and 10%. These guys are the most pessimistic of the bunch: 13% expect revenues to decrease by 25% or more in 2021. Overall, these businesses expect an average pre-inflation revenue growth of +8.1% in 2021.

For 10–19-employee shops, 9% expect revenues to increase 25% or more in 2021 compared to 2020, while 39% expect revenues to increase between 10% and 25% and 15% expect revenues to increase between 6% and 10%. One-fourth (24%) are looking at a revenue increase between 1% and 5%. Only 6% expect revenues to decrease in 2021 compared to 2020. Overall, these businesses expect an average pre-inflation revenue growth of +10.8% in 2021.

For 20–49-employee shops, 8% expect revenues to increase 25% or more in 2021 compared to 2020, while 34% expect revenues to increase between 10% and 25% and 27% expect revenues to increase between 6% and 10%. Only 13% expect revenues to decrease in 2021 compared to 2020. Overall, these businesses expect an average pre-inflation revenue growth of +8.7% in 2021.

For 50+-employee shops, 10% expect revenues to increase 25% or more in 2021 compared to 2020, while 25% expect revenues to increase between 10% and 25% and 32% expect revenues to increase between 6% and 10%. Only 11% expect revenues to decrease in 2021 compared to 2020. Overall, these businesses expect an average pre-inflation revenue growth of +9.3% in 2021.

Jobs/Orders

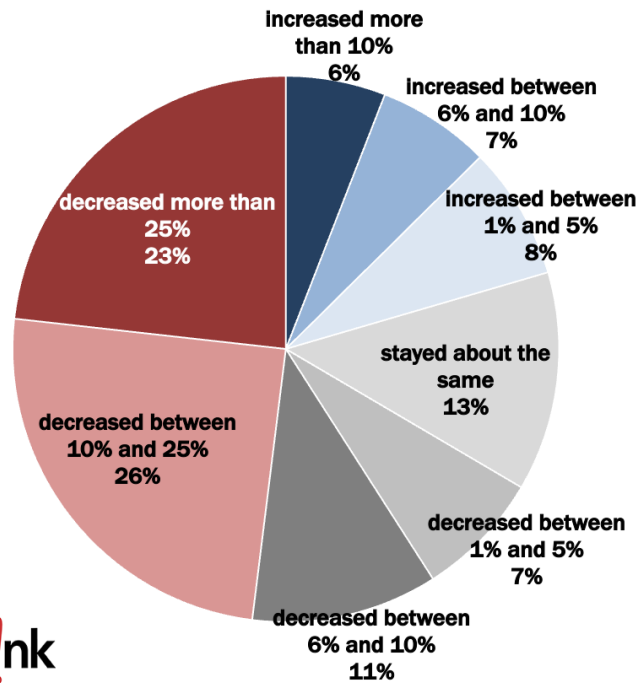
We always remark in these reports that there tends to be a bit of a disconnect between the number of jobs/orders and revenues. All of our usual talking points are kind of out the window, so these data points are really all about how these businesses fared during the first year of the pandemic.

2020 Jobs/Orders

In terms of jobs/orders, 23% of print businesses surveyed said that jobs for 2020 had decreased more than 25% compared to 2019. A further 26% said that jobs had declined between 10% and 25%, 11% said jobs declined between 6% and 10%, and 7% said jobs had decreased between 1% and 5%. Meanwhile, 13% said that the number of jobs had stayed basically the same, and for 21%, jobs increased in 2020 compared to 2019.

We calculated an average change in jobs of -10.8% from 2019 to 2020. Fortunately, we don't need to adjust jobs for inflation.

In terms of your 2020 jobs/orders at this location only, how do they compare to 2019?



WhatTheyTh!nk

n=254

	1-9 employees	10-19 employees	20-49 employees	50+ employees
increased more than 10%	5%	3%	7%	7%
increased between 6% and 10%	7%	3%	5%	7%
increased between 1% and 5%	0%	6%	8%	12%
stayed about the same	15%	0%	5%	19%
decreased between 1% and 5%	7%	9%	8%	8%
decreased between 6% and 10%	2%	9%	15%	14%
decreased between 10% and 25%	23%	36%	25%	25%
decreased more than 25%	40%	33%	28%	8%
Average change	-15.1%	-16.4%	-12.5%	-6.5%

For 1-9-employee shops, 40% said that jobs/orders had decreased 25% or more from 2019 to 2020, and a further 23% said jobs had decreased between 10% and 25%. Fifteen percent said that jobs had remained about the same, while 12% said jobs had increased in 2020 vs. 2019. The average job/order change for these businesses was -15.1%.

For 10-19-employee shops, 33% said that jobs/orders had decreased 25% or more from 2019 to 2020, and a further 36% said jobs had decreased between 10% and 25%. No one in this size category said that jobs had remained about the same, but 12% said jobs had increased in 2020 vs. 2019. The average job/order change for these businesses was -16.4%.

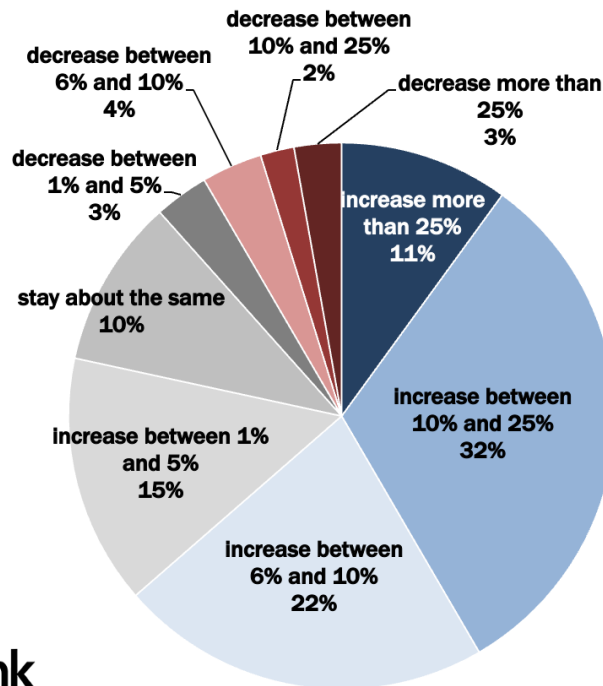
For 20–49-employee shops, 28% said that jobs/orders had decreased 25% or more from 2019 to 2020, and 25% said jobs had decreased between 10% and 25%, while another 14% said that jobs had decreased between 6% and 10%. A scant 5% said that jobs had remained about the same, while 20% said jobs had increased in 2020 vs. 2019. The average job/order change for these businesses was -12.5%.

And for 50+-employee shops, only 8% said that jobs/orders had decreased 25% or more from 2019 to 2020, but 25% said jobs had decreased between 10% and 25% and another 14% said that jobs had decreased between 6% and 10%. One-fifth (19%) said that jobs had remained about the same, while one-fourth (26%) said jobs had increased in 2020 vs. 2019. The average job/order change for these businesses was -6.5%.

2021 Jobs/Orders

As for anticipated 2021 jobs/orders, shops are anticipating a return of volume but, again, not at a level that will make up for jobs lost in 2020. Eleven percent of respondents expect jobs/orders to increase by 25% or more in 2021, while 32% expect jobs to increase between 10% and 25%, 22% expect jobs to increase between 6% and 10%, and 15% expect jobs to increase between 1% and 5%. Ten percent expect jobs to stay about the same, and 12% expect jobs to decrease in 2021. The average expected change in jobs/orders is +9.0%.

How do you expect your 2021 jobs/orders at this location to compare to 2020?



WhatTheyTh!nk
n=250

	1–9 employees	10–19 employees	20–49 employees	50+ employees
increase more than 25%	17%	6%	10%	6%
increase between 10% and 25%	25%	45%	39%	28%
increase between 6% and 10%	21%	12%	21%	28%
increase between 1% and 5%	17%	24%	8%	15%
stay about the same	7%	6%	11%	11%
decrease between 1% and 5%	0%	3%	3%	5%
decrease between 6% and 10%	0%	0%	3%	7%
decrease between 10% and 25%	3%	3%	2%	1%
decrease more than 25%	10%	0%	2%	0%
Average change	7.8%	10.6%	10.5%	8.2%

Among 1–9-employee shops, 17% expect jobs/orders to increase 25% or more, 25% expect them to increase between 10% and 25%, 21% expect them to increase between 6% and 10%, and 17% expect them to increase between 1% and 5%. Seven percent expect jobs to stay about the same in 2021, while 13% expect to see jobs decrease. The expected change in jobs/orders for these businesses is +7.8%.

Among 10–19-employee shops, 6% expect jobs/orders to increase 25% or more, 45% expect them to increase between 10% and 25%, 12% expect them to increase between 6% and 10%, and 24% expect them to increase between 1% and 5%. Six percent expect jobs to stay about the same in 2021, while only 6% expect to see jobs decrease. The expected change in jobs/orders for these businesses is +10.6%.

Among 20–49-employee, 10% expect jobs/orders to increase 25% or more, 39% expect them to increase between 10% and 25%, 21% expect them to increase between 6% and 10%, and 8% expect them to increase between 1% and 5%. Eleven percent expect jobs to stay about the same in 2021, while 10% expect to see jobs decrease. The expected change in jobs/orders for these businesses is +10.5%.

And among 50+-employee shops, 6% expect jobs/orders to increase 25% or more, 28% expect them to increase between 10% and 25%, a further 28% expect them to increase between 6% and 10%, and 15% expect them to increase between 1% and 5%. Eleven percent expect jobs to stay about the same in 2021, while 13% expect to see jobs decrease. The expected change in jobs/orders for these businesses is +8.2%.

Profitability

We usually take this opportunity to tell our “tale of two cities,” although in this survey we are talking about two different cities. There has traditionally been a profitability gap between large and small printers—and we’ll have more to say when we look at industry profits data in Section 5 (large printers don’t need a pandemic to be unprofitable), but large printers (those with more than \$25 million in assets) are seeing much less profitability than small printers (those with less than \$25 million in assets), driving down overall industry profitability. We are seeing some signs of this in our survey’s profits data. But, again, that takes a bit of a back seat to more pressing concerns, and the two cities we will be talking about in this report are the shops that flourished during the

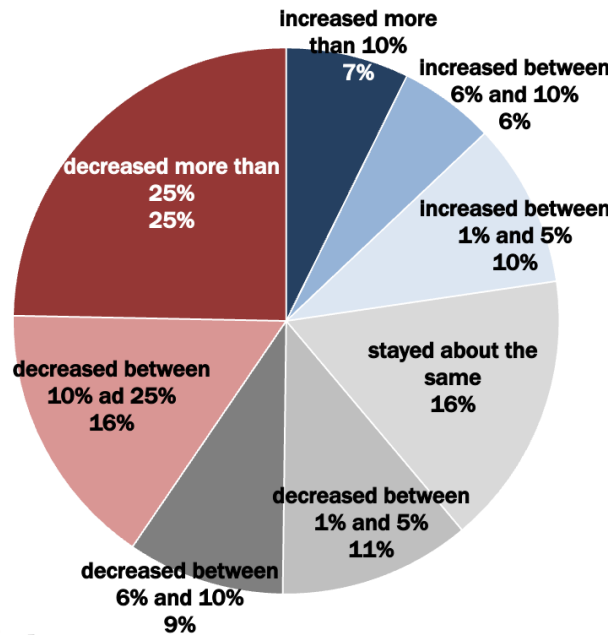
pandemic, and those that struggled. As we have been seeing throughout this section, the pandemic wasn't doom and gloom for everyone. What made the difference?

2020 Profits

According to survey respondents, profits in 2020 were—surprise!—down over 2019; one-fourth reported that profits decreased 25% or more from 2019, 16% reported that profits had decreased between 10% and 25%, 9% reported that profits had decreased between 6% and 10%, and 11% that profits had decreased between 1% and 5%. Sixteen percent said that profits had remained about the same, although 23% said that profits had increased over 2019. (Note that these data are not the *rates* of profitability, but are the change in the dollar value of total profits compared to the prior year.)

The average change in profits was -9.6 or, adjusted for inflation, -11.0%.

In terms of your 2020 profitability, how did it compare to 2019?



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n=247

	1–9 employees	10–19 employees	20–49 employees	50+ employees
increased more than 10%	6%	0%	8%	13%
increased between 6% and 10%	3%	9%	7%	4%
increased between 1% and 5%	7%	9%	8%	10%
stayed about the same	12%	12%	18%	14%
decreased between 1% and 5%	9%	12%	5%	16%
decreased between 6% and 10%	4%	9%	10%	13%
decreased between 10% and 25%	19%	12%	16%	17%
decreased more than 25%	39%	36%	28%	13%
Average change	-14.2%	-13.1%	-10.3%	-6.2%
Average change adjusted for inflation	-15.6%	-14.5%	-11.7%	-10.3%

For 1–9-employee shops, almost four out of 10 (39%) said that profits had decreased 25% or more from 2019 to 2020, while 19% said profits had decreased between 10% and 25%. Twelve percent said that profits stayed about the same, and 17% said profits had increased. The average pre-inflation-adjustment change in profits for these businesses was -14.2%.

For 10–19-employee shops, more than two-thirds (36%) said that profits had decreased 25% or more from 2019 to 2020, while 12% said profits had decreased between 10% and 25%. Twelve percent said that profits stayed about the same, and 18% said profits had increased. The average pre-inflation-adjustment change in profits for these businesses was -13.1%.

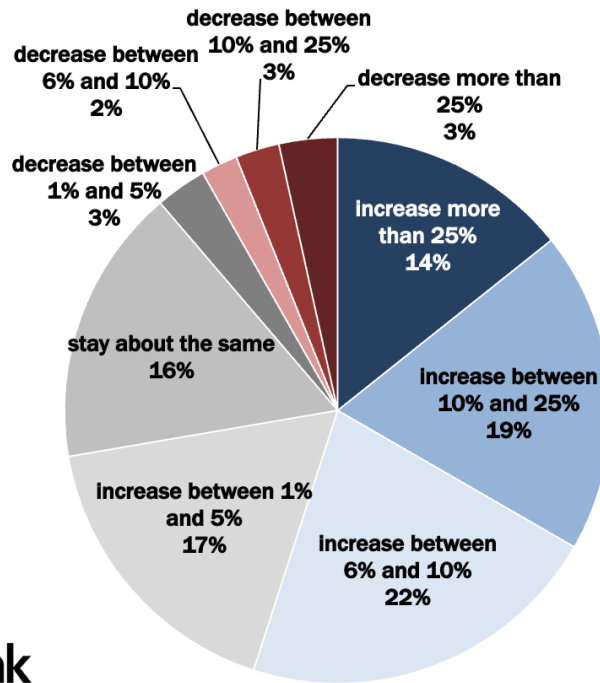
For 20–49-employee shops, 28% said that profits had decreased 25% or more from 2019 to 2020, while 16% said profits had decreased between 10% and 25%, and 10% said profits had decreased between 6% and 10%. Eighteen percent said that profits stayed about the same, while almost one-fourth (23%) said profits had increased. The average pre-inflation-adjustment change in profits for these businesses was -10.3%.

For 50+-employee shops, “only” 13% said that profits had decreased 25% or more from 2019 to 2020, 17% said profits had decreased between 10% and 25%, 13% said profits had decreased between 6% and 10%, and 16% said profits had decreased between 5% and 10%. Fourteen percent said that profits stayed about the same, while more than one-fourth (27%) said profits had increased. The average pre-inflation-adjustment change in profits for these businesses was -6.2%.

2021 Profits

Overall, 14% of respondents expect profits to increase 25% or more in 2021, 19% expect them to increase between 10% and 25%, 22% expect them to increase between 6% and 10%, and 17% expect profits to increase between 1% and 5%. Sixteen percent expect profits to stay about the same, while 11% expect profits to decrease in 2021. The average pre-inflation expected change in profits is +8.0% from 2020 to 2021.

How do you expect your 2021 profitability to compare to 2020?



WhatTheyTh!nk

n=231

	1-9 employees	10-19 employees	20-49 employees	50+ employees
increase more than 25%	16%	30%	10%	10%
increase between 10% and 25%	18%	15%	20%	22%
increase between 6% and 10%	21%	20%	28%	20%
increase between 1% and 5%	18%	5%	12%	22%
stay about the same	15%	10%	18%	16%
decrease between 1% and 5%	0%	10%	2%	5%
decrease between 6% and 10%	0%	0%	3%	4%
decrease between 10% and 25%	0%	10%	5%	1%
decrease more than 25%	14%	0%	2%	0%
Average change	5.8%	11.3%	7.3%	8.5%
Average change adjusted for inflation	4.4%	9.9%	5.9%	7.1%

Among 1-9-employee shops, 16% expect profits to increase 25% or more from 2020 to 2021, 18% expect them to increase between 10% and 25%, 21% expect them to increase between 6% and 10%, and 18% expect profits to increase between 1% and 5%. Fifteen percent expect profits to stay about the same, while 14% expect profits to decrease (and by 25% or more) in 2021. The average pre-inflation expected change in profits is +5.8% from 2020 to 2021.

Among 10–19-employee shops, 30% expect profits to increase 25% or more from 2020 to 2021, 15% expect them to increase between 10% and 25%, 20% expect them to increase between 6% and 10%, and 5% expect profits to increase between 1% and 5%. Ten percent expect profits to stay about the same, while 20% expect profits to decrease in 2021. The average pre-inflation expected change in profits is +11.3% from 2020 to 2021.

Among 20–49-employee shops, 10% expect profits to increase 25% or more from 2020 to 2021, 20% expect them to increase between 10% and 25%, 28% expect them to increase between 6% and 10%, and 12% expect profits to increase between 1% and 5%. Eighteen percent expect profits to stay about the same, while 12% expect profits to decrease in 2021. The average pre-inflation expected change in profits is +7.3% from 2020 to 2021.

Among 50+-employee shops, 10% expect profits to increase 25% or more from 2020 to 2021, 22% expect them to increase between 10% and 25%, 20% expect them to increase between 6% and 10%, and 22% expect profits to increase between 1% and 5%. Sixteen percent expect profits to stay about the same, while 10% expect profits to decrease in 2021. The average pre-inflation expected change in profits is +8.5% from 2020 to 2021.

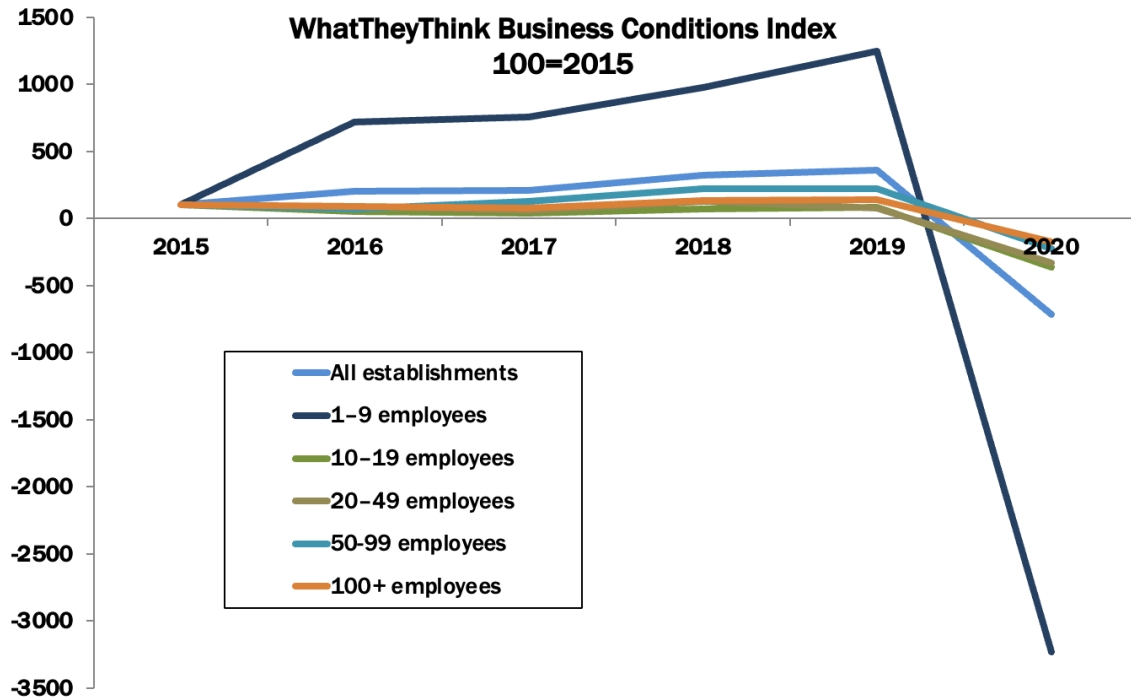
Business Conditions Summary

In the table below, we summarize our calculated average changes in revenues, jobs/orders, and profits by size category.

2020	All responses	1-9 employees	10-19 employees	20-49 employees	50+ employees
<i>Revenues</i>					
Average change	-12.6%	-16.2%	-19.1%	-14.6%	-7.9%
Average change adjusted for inflation	-14.0%	-17.6%	-20.5%	-16.0%	-9.3%
<i>Jobs/orders</i>					
Average change	-10.8%	-15.1%	-16.4%	-12.5%	-6.5%
<i>Profitability</i>					
Average change	-9.6%	-14.2%	-13.1%	-10.3%	-6.2%
Average change adjusted for inflation	-11.0%	-15.6%	-14.5%	-11.7%	-7.6%
2021	All responses	1-9 employees	10-19 employees	20-49 employees	50+ employees
<i>Revenues</i>					
Average change	9.1%	8.1%	10.8%	8.7%	9.3%
Average change adjusted for inflation	7.7%	6.7%	9.4%	7.3%	7.9%
<i>Jobs/orders</i>					
Average change	9.0%	7.8%	10.6%	10.5%	8.2%
<i>Profitability</i>					
Average change	8.0%	5.8%	11.3%	7.3%	8.5%
Average change adjusted for inflation	6.6%	4.4%	9.9%	5.9%	7.1%

The WhatTheyThink Business Conditions Index

We have been conducting these surveys long enough that we have enough data points to resurrect a metric that dates back to the old TrendWatch days: the Business Conditions Index (BCI), which fell substantially in 2020—especially for small print shops.



WhatTheyTh!nk

We indexed business conditions⁶ to 2015, the first year we began these regular surveys. Until 2020, 2015 was the gold standard for a pretty lousy year for the industry, so it had been easy to see improvement in the subsequent years. The “tale of two cities” looks pretty apparent, although the 1–9-employee firms appear to be a city unto themselves, leading the pack by far, at least in terms of revenues—and then plummeting even more dramatically in 2020.

In a normal year, smaller print businesses are able to transition to new products and technologies much more nimbly—or with more *agility*—than larger businesses and given that they are, for the most part, all-digital shops, helps them adapt to a changing product mix, as well as keep overhead low. And while all of these things were what helped many print businesses transition to new kind of products and services during the pandemic, smaller shops didn’t always have the resources to do so, and even a modest disruption in their shop volume and cashflow caused great hardship for these businesses. Again, in a normal year, changes don’t happen as rapidly as they did in 2020.

⁶ We used our revenues data to create this index.

Looking Ahead

At the moment, business conditions are pretty bad across the industry. Many businesses, though, did fairly well, and some even thrived. Those that were deemed essential businesses early on, and those that could transition to new products that were in great demand could keep themselves going, although for a lot of these businesses these materials were stopgap measures until normal volume reappeared. For those print businesses that have events, travel, tourism, and related verticals as primary customers, the pain was especially acute, as these markets were shut down for virtually all of 2020 and many see no sign of reopening in 2021 as the virus continues to set new infection rates. The PPP funding included in the CARES act in Spring 2020 helped a lot of print businesses (and their customers), and a second wave was passed in Winter 2020. The incoming Administration has plans to expand relief efforts to beleaguered businesses, which may also help go a long way to keeping businesses afloat until the pandemic is under control—which, to be honest, may not be for a while.

2. CHALLENGES, OPPORTUNITIES, AND INVESTMENTS

In this section, we take a look at what print businesses see as their top challenges and their biggest business and/or sales opportunities in the next 12 months, as well as what they're planning on buying to meet those challenges or pursue those opportunities.

These kinds of questions help qualify the data obtained in the business conditions part of the survey. After all, it's one thing to know what current and expected business conditions are, but quite another to understand *why* they are what they are. These questions' responses also help verify or refute business conditions data which, as you have probably seen, are not entirely objective measures of a company's performance.

Top Business Challenges

As you would expect, there are some new items topping the list of top challenges, items that had never existed before. And yet, in many respects, many of the top challenges remain the same as they've always been, which isn't necessarily a good thing. In both the Challenges and Opportunities sections, we see some familiar themes playing out the way they often play out when the industry finds itself in trouble. We saw these themes and trends during the Great Recession, and also during the mini-recession-ette of 2001. Anyway, first things first.

We added two items to our list of challenges and—surprise, surprise—they came in at number one and number two.

The new number one challenge this survey is “regaining business lost due to COVID,” selected by 55% of respondents, while number two is “keeping my employees safe from COVID,” selected by 40% of respondents.

Of course, we didn't need a survey to identify these as the two major challenges print businesses were going to be facing in 2021, but it's nice to quantify it. It may be a little surprising that “only” 55% selected “regaining business lost due to COVID,” but when we look at the employee size breakdowns, we'll get a better sense of who fared the worst, which echoes what we saw in the Business Conditions section.

If anyone was hoping for some semblance or normality, well, here it is: the number three challenge is the old chestnut “national economic conditions,” selected by 36% of respondents, up from 22% in last year's survey. With a pandemic-induced recession, this is also a logical challenge to be in the top three.

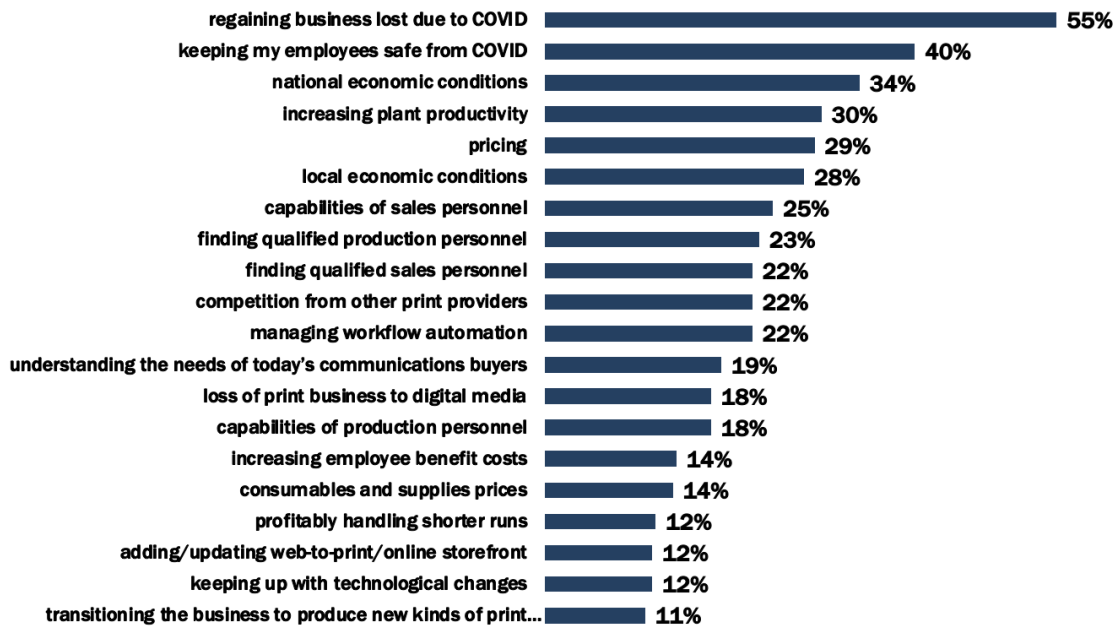
At number four is “increasing plant productivity,” selected by 30% of respondents. This is way up from 18% last year and is an all-time high for this challenge. With furloughed plant workers, layoffs in some cases, and work-from-home policies, how can print businesses still remain productive?

Rounding out the top five is “pricing,” selected by 29% of respondents, unchanged from last year, although it was the number one challenge last year. As we tend to remark, as printers move into new product and service areas, knowing how to price them—and price them competitively—is a challenge. The pandemic has only compounded pricing problems; not only are new product areas—safety signage, PPE, etc.—raising pricing issues, even pricing traditional print products is a challenge, as the budgets for printed

materials for marketing and promotion have been slashed in the wake of the recession. A typical phenomenon in economic downturns is a greater reliance of electronic media, and the current situation has been no exception. So how do printers price their products attractively?

Some of the more traditional challenges have been masked by the new COVID-related challenges, but remain: “capabilities of sales personnel”—a typical top five gripe—may be down at number seven, but at 25% is up two percentage points from last year. “Finding qualified sales personnel,” at 22%, is up from 15% last year, and “finding qualified production personnel,” at 23%, is up from 19% last year.

In the next 12 months, which of the following will be your biggest business challenges?



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Looking at the challenges by shop size can give us a little better handle on these concerns:

	1-9 employees	10-19 employees	20-49 employees	50+ employees
regaining business lost due to COVID	68%	76%	53%	51%
keeping my employees safe from COVID	30%	42%	41%	45%
transitioning the business to produce new kinds of print materials post-COVID (such as PPE, distancing signage, divisional graphics)	22%	12%	9%	7%
increasing plant productivity	29%	27%	36%	31%
managing workflow automation	11%	12%	33%	25%
competition from other print providers	27%	18%	29%	22%
capabilities of sales personnel	25%	18%	32%	28%
capabilities of production personnel	14%	15%	23%	20%
understanding the needs of today's communications buyers	21%	27%	24%	14%
consumables and supplies prices	14%	21%	15%	7%
national economic conditions	38%	45%	27%	38%
local economic conditions	44%	45%	29%	20%
financing costs of our equipment	3%	0%	8%	4%
finding capital for investments	4%	3%	6%	5%
need for employee training	2%	6%	5%	17%
finding qualified sales personnel	9%	21%	32%	27%
finding qualified production personnel	14%	6%	27%	32%
increasing employee benefit costs	20%	9%	20%	16%
profitably handling shorter runs	14%	9%	17%	10%
deciding whether to keep or discard our offset equipment	15%	21%	9%	6%
loss of print business to digital media	32%	27%	20%	12%
pricing	26%	33%	30%	32%
job tracking	6%	6%	5%	4%
print MIS implementation	6%	6%	12%	5%
migrating production to the cloud	0%	0%	3%	0%
migrating business functions to the cloud	0%	0%	3%	1%
migrating customer service and sales to the cloud	0%	3%	2%	1%
training employees to use cloud applications	1%	0%	6%	3%
keeping up with technological changes	15%	6%	15%	11%
making our facility/business more environmentally sustainable	0%	3%	2%	2%

	1–9 employees	10–19 employees	20–49 employees	50+ employees
owner/management retirement	8%	15%	12%	6%
retirement of key production personnel	7%	6%	11%	15%
selling our business	19%	6%	11%	3%
adding/updating web-to-print/online storefront	13%	15%	15%	9%
getting web-to-print to work on smartphones and other mobile devices	5%	3%	5%	1%
adding wide-format equipment/services	8%	6%	5%	3%
adding packaging printing equipment/services	0%	3%	6%	6%
transitioning jobs from offset to high-speed digital printing equipment	5%	12%	3%	5%
adding non-print media capabilities (web design, app development, social media management, etc.)	3%	6%	2%	1%
competing against digital media agencies	7%	9%	2%	0%
other	13%	3%	3%	2%

1–9 employees: The top three challenges are “regaining business lost due to COVID” (68%; compare that to 55% overall and you can see the extent to which the pandemic has impacted smaller shops), “local economic conditions” (44%, up from 28% last year), and “national economic conditions” (38%, up from 23%). The top challenges for small shops are entirely COVID- and recession-related.

Ditto 10–19 employees: The top challenges are “regaining business lost due to COVID” (76%, eight percentage points higher than 1-9-employee shops), “local economic conditions” and “national economic conditions” (both at 45%), and “keeping my employees safe from COVID” (42%).

20–49 employees: The top three challenges are “regaining business lost due to COVID” (53%), “keeping my employees safe from COVID” (41%), and “increasing plant productivity” (36%, up from 31% last year). This demographic group has traditionally had the biggest problems with staffing issues, which the pandemic has only exacerbated. This group is the most challenged by “finding qualified sales personnel” (32%), “capabilities of sales personnel” (also 32%), and “managing workflow automation (33%).

50+ employees: The top three challenges are the same items as those cited by the other demographic categories, but the numbers aren’t quite as high. By virtue of their size, these establishments can better weather declines in volume—although not forever. One-half (51%) of these establishments cited “regaining business lost due to COVID” as a challenge, followed by “keeping my employees safe from COVID” (45%), and “national economic conditions” (38%).

Business Opportunities

The list of top opportunities is understandable, but recalls trends and tendencies that Dr. Joe used to comment on back during various economic downturns. Specifically, top “opportunities” that are *reactive* rather than *proactive*, that involve passively waiting for something external to happen rather than actively taking steps to change one’s circumstances.

Take, for example, “improving economic conditions,” the top opportunity in this year’s survey, cited by one-half of respondents, the highest this opportunity has charted in many years. It’s one of those “rising tide lifts all boats” kinds of things and, yes, a recovery from the pandemic-induced recession will help bring volumes back, but the businesses that did well during the worst of the pandemic⁷ were those that took active steps to transition to new kinds of products and services.

Likewise, the number two opportunity is “national recovery from COVID-19,” cited by 48% of respondents. Again, yes, that will help, but sitting around waiting for the virus to go away is probably not an effective strategy.

At number three, way down at 30% (a three-year-low for this opportunity), is last year’s number one: “customers outsourcing more work to us.” There is always the danger that customers will be able to satisfy a substantial amount of their own printing needs in-house, whether that be “quick print” work or even some wide-format or other specialty printing. This is especially the case in the current environment, where businesses throughout the economy need to cut costs as much as possible. So the goal here is to convince potential print customers that they’ll save money in the long run by outsourcing work they might be considering doing in-house—this is especially the case when it comes to things like safety signage and other new applications that emerged in the wake of the virus. Look at how many of these graphics look cheesy and unprofessional; this is the opportunity for print businesses that can provide more professional-looking materials, especially as they become a more permanent part of the landscape.

Number four is “hiring new salespeople” at 21%, up from 15% last year. This had been a perennial top opportunity, and although it had been losing favor in recent surveys, it seems to be coming back. There has always been the sense that “if we had better sales guys—especially ones with books of business—we’d be golden.” Unfortunately, print sales works less and less like that anymore. The cliché these days is “the pandemic accelerated trends that were already in motion” and one of these trends was a shift to e-commerce—print included. So when we see “adding web-to-print/online storefront” way down at 7%, we despair.

Happily, number five is back to a more proactive opportunity: “helping customers integrate print and non-print marketing campaigns” is at 19%, down one point from 20% last year. This was the number four opportunity last survey, and number two the year before that.

The one new item we added—“producing post-COVID print materials”—we thought would come in higher, but it was only selected by 11% of respondents. (We note that

⁷ We may not have seen the worst of the pandemic.

12% of respondents saw revenues increase over 2019. Just sayin'...). True, much of these materials may not be compatible with a shop's stable of equipment, but if that's the case, maybe it's time to reevaluate your equipment line-up. After all, the key to success for any business in any industry is producing goods and services that the market demands. If post-COVID materials are what the market demands, then it behooves companies to offer them, especially as they are not going away any time soon.

In the next 12 months, which of the following represent your best new business opportunities?



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Looking at the opportunities by shop size can give us a little better idea of what’s going on:

	1-9 employees	10-19 employees	20-49 employees	50+ employees
improving economic conditions	73%	58%	52%	41%
national recovery from COVID-19	50%	73%	52%	40%
producing post-COVID print materials (such as PPE, distancing signage, divisional graphics)	14%	12%	11%	13%
customers outsourcing more work to us	49%	33%	29%	28%
increasing sales through print brokers	8%	12%	8%	6%
partnering with other print providers	29%	12%	9%	10%
helping clients get their websites to work on mobile devices	6%	3%	6%	1%
offering electronic/non-print services for customers (web design, app development, social media management, etc.)	6%	6%	11%	10%
offering interactive print technologies to customers (like QR codes, augmented reality)	13%	9%	11%	6%
helping customers integrate print and non-print marketing campaigns	26%	24%	26%	18%
using marketing automation for our business (like HubSpot, Eloqua, Marketo)	4%	9%	9%	5%
selling marketing automation services to our customers	7%	9%	9%	6%
adding additional offset printing equipment	0%	0%	2%	3%
adding digital printing equipment	8%	21%	14%	16%
customized, personalized, or variable-data printing jobs	17%	30%	17%	10%
disposing of offset equipment to concentrate on digital printing	4%	3%	9%	1%
broadening bindery/finishing equipment/services	11%	21%	3%	7%
adding “digital enhancement” finishing technologies (like Scodix, Highcon, MGI)	6%	6%	3%	1%
adding wide-format printing capabilities	16%	12%	8%	5%
adding textile/fabric printing capabilities	4%	3%	5%	1%
adding packaging printing capabilities	6%	12%	9%	13%
adding digital label/wrapper printing capabilities	0%	9%	6%	6%
adding specialty or industrial printing capabilities	0%	3%	9%	2%
adding vehicle graphics/wrapping capabilities	0%	6%	2%	0%

	1–9 employees	10–19 employees	20–49 employees	50+ employees
adding traditional signage fabrication/construction capabilities	1%	6%	2%	1%
adding dynamic digital signage (DDS) capabilities	0%	0%	0%	0%
broadening fulfillment, shipping, mailing capabilities	13%	9%	14%	12%
automating production	5%	15%	21%	21%
adding web-to-print/online storefront	10%	6%	12%	5%
print MIS implementation	4%	6%	5%	1%
getting more customers using smartphones and other mobile devices	7%	3%	0%	0%
migrating production to the cloud	0%	0%	3%	1%
migrating business functions to the cloud	1%	0%	5%	2%
migrating customer service and sales to the cloud	1%	0%	5%	2%
training employees to use cloud applications	0%	0%	3%	1%
acquiring another company	20%	21%	20%	22%
selling our company	14%	3%	9%	2%
becoming part of a print or sign franchise (like Alphagraphics, FASTSIGNS)	0%	0%	0%	0%
hiring new salespeople	14%	9%	27%	27%
video production services	1%	3%	0%	4%
other	5%	6%	3%	4%

1–9 employees: The top three opportunities are “improving economic conditions” (73%, the highest of the four demographic groups by far), “national recovery from COVID-19” (50%), and “customers outsourcing more work to us” (49%, up from 36%). Interestingly, “selling our company” spiked among this demographic group at 14%, double what last year’s survey said. No doubt many feel that this would be a good time to exit the market. Three out of 10 (29%) cited “partnering with other print providers”—only down slightly from 31% last year. Anecdotally, we did hear throughout last year that shops were partnering with others to offer complementary/supplementary products and services.

10–19 employees: The top three opportunities are “national recovery from COVID-19” (73%, the highest of the four demographic groups for this item), “improving economic conditions” (58%), and “customers outsourcing more work to us” (33%, down from 49% last year). This size category is the most likely to be seeing opportunities in expanding capabilities—“customized, personalized, or variable-data printing jobs” is at 30%, “broadening bindery/finishing equipment/services” is at 21%, and “adding digital printing equipment” is also at 21%. So there is some proactive strategizing going on.

20–49 employees: For this size category, there are no big surprises—“national recovery from COVID-19” and “improving economic conditions” are tied at 52%, but way down

the list is number two at 29% “customers outsourcing more work to us” and number three “hiring new salespeople” at 27%.

50+ employees: Likewise, number one and two are “improving economic conditions” (41%) and “national recovery from COVID-19” (40%), with number three way down at 28% “customers outsourcing more work to us.” Other opportunities for this size category include “acquiring another company” (22%), “automating production” (21%), and “hiring new salespeople” (27%).

Planned Investments

What are print businesses planning to buy in 2021? Well, not a great deal, or at least nothing that requires advanced planning and a formal investment process. It’s tempting to attribute this to the pandemic, but the trends this year don’t differ too much from the last few pre-COVID surveys.

The overwhelming response—selected by one-fourth (24%) of our respondents—was “we have no planned investments.” Interestingly, last year, before COVID, 32% said they had no planned investments for 2020.

As has been the case for the past few surveys, the number one actual item is “finishing/bindery equipment for digital production” (18%, up from 16% last year). Companies have spent the past decade or so broadening their digital equipment capabilities and they have since seen the need to add inline or nearline finishing.

The number two investment item is “workflow automation software,” selected by 11%, down from 14%.

The number three item is “finishing/bindery equipment for offset/analog production” at 9%, up from 7%. Even shops that still have offset equipment are seeing the need to up their finishing game—especially as new finishing solution feature greater degrees of automation.

They’re in single digits, but digital printing systems, both production inkjet and toner, round out the top five at 8% apiece.

Which of the following investment items have you budgeted for and plan to acquire in the next 12 months?



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Let's see who is specifically buying what:

	1-9 employees	10-19 employees	20-49 employees	50+ employees
COVID safety materials/equipment (like dividers, distancing graphics, PPE)	9%	3%	5%	9%
additional space/new location	2%	3%	8%	8%
color measurement equipment (densitometer, spectrophotometer)	0%	0%	2%	5%
color management software	0%	0%	2%	5%
computer-to-plate equipment	3%	0%	3%	6%
finishing/bindery equipment for offset/analog production	0%	3%	12%	12%
finishing/bindery equipment for digital production	14%	33%	17%	18%
cutting table for wide-format finishing	14%	9%	5%	3%
other finishing equipment for wide-format	17%	6%	3%	2%
laser cutting/etching equipment	2%	6%	2%	1%
toner-based color digital press (like HP Indigo, Xerox iGen)	4%	21%	11%	4%
high-speed production inkjet printing equipment (like HP)	0%	0%	8%	11%

	1–9 employees	10–19 employees	20–49 employees	50+ employees
PageWide, Canon Océ ProStream)				
sheetfed offset press	3%	0%	0%	7%
web offset press—new	0%	0%	0%	2%
rebuilding our web offset press	0%	0%	2%	1%
wide-format color printer (24 in.+)-solvent/eco-solvent (like Epson, Roland)	7%	6%	2%	2%
wide-format color printer (24 in.+)-latex rolled or flatbed (like HP Latex)	1%	3%	0%	3%
wide-format color printer (24 in.+)-flatbed UV (like EFI VUTEK, Canon Océ Arizona)	3%	6%	6%	7%
CNC routers and/or other signmaking equipment	3%	6%	3%	2%
digital label printing equipment	0%	3%	6%	4%
dye-sublimation printer (like Epson, Roland, Mimaki)	1%	3%	2%	1%
packaging press/printer—corrugated	0%	0%	2%	0%
packaging press/printer—folding carton	0%	0%	2%	1%
packaging press/printer—flexible packaging	0%	0%	2%	1%
3D printer	1%	3%	2%	1%
prepress RIP for our wide-format printers	1%	0%	3%	0%
prepress RIP for other devices	0%	3%	0%	3%
Management Information System (MIS)	0%	6%	11%	4%
Customer Relations Management (CRM) system	0%	6%	5%	5%
workflow automation software	6%	9%	11%	16%
we have no planned investments	49%	21%	24%	14%
other (please specify)	7%	0%	6%	7%

1–9 employees: The top response is “we have no planned investments” (49%), but 17% are looking at “finishing equipment for wide-format” (17%) and “cutting table for wide-format finishing” and “finishing/bindery equipment for digital production,” both selected by 14% of respondents.

10–19 employees: Although 21% said “we have no planned investments,” 33% are looking at “finishing/bindery equipment for digital production” and 21% at “toner-based color digital press (like HP Indigo, Xerox iGen).”

20–49 employees: One-fourth (24%) have no planned investments, but 17% are looking at “finishing/bindery equipment for digital production,” 12% at “finishing/bindery equipment for offset/analog production,” and 11% are looking at “toner-based color digital press (like HP Indigo, Xerox iGen),” “workflow automation software,” and “Management Information System (MIS).”

50+ employees: While 14% have no planned investments, 18% are looking to invest in “finishing/bindery equipment for digital production,” 16% in “workflow automation software,” and 12% in “finishing/bindery equipment for offset/analog production.”

Looking Forward

Not unexpectedly, the COVID crisis and resulting economic recession have put many shops’ investment plans on hold—to the extent that they would have had any at all. Back in April 2020, we conducted a special survey for the COVID update of our *Printing Outlook 2020* report, and we had asked what the impact of COVID was on investment plans. Four out of 10 (39%) had said that all their current investment plans had been suspended, 29% reported major or minor reductions in investment, 15% reported no change in their investment plans, and 12% said they hadn’t any investment plans to begin with.

Anecdotally, we have heard that a fair number of shops are taking this opportunity to upgrade software and infrastructure to support more remote working and increased automation to compensate for the difficulty in finding qualified production staff—and/or the desire to minimize the number of employees on premises at any given time.

3. IN-PERSON AND VIRTUAL EVENTS

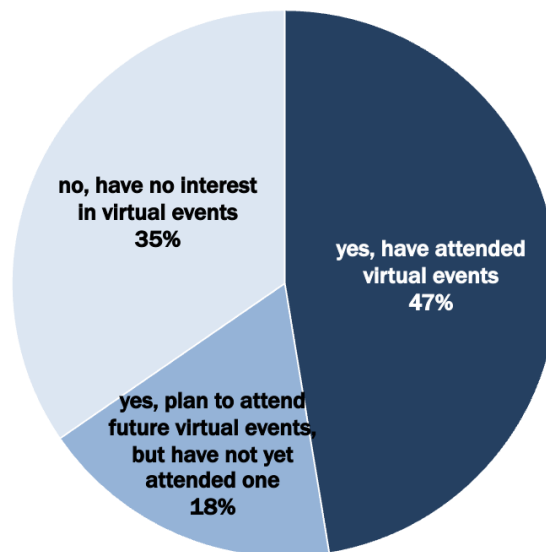
Perhaps the biggest impact that the COVID pandemic had was on events, and not just events in our own industry. Print businesses who primarily serve events, hospitality, travel, and related industries were among the most decimated when everything shut down in spring 2020—and remained shut down, even as of this writing in mid-January 2021. In terms of industry events, 2020 was supposed to have been a drupa year. That was kicked to 2021 and finally it was announced that drupa was going virtual, with the next in-person event scheduled for 2024 (hopefully). Other events last year also went virtual, most notably PRINTING United. Smaller, vendor-centric events also filled up calendars throughout the year, and virtual press events and/or user conferences became commonplace. Some of these were more successful than others, but there is no doubt that virtually everyone is jonesing for in-person events to return.

In our Fall 2020 survey, we asked a few questions about respondents’ attitudes toward virtual events and the extent to which they attended any.

Virtual Event Attendance

Just about one-half (47%) of respondents did attend at least one virtual event, and at least as of our survey 18% said they planned to, but hadn’t yet. Still, more than one-third (35%) have no interest in attending virtual events. That may not be bad news for virtual events; back in our Fall 2016 survey, we asked about planned attendance at industry events and 33% said they had no plans to attend any, so it’s entirely possible that about one-third of the industry (at least) prefers to avoid events entirely.

Have you attended, or do you plan to attend, any of the industry’s “virtual” events (like thiNK, PRINTING United Digital Experience, etc.)?



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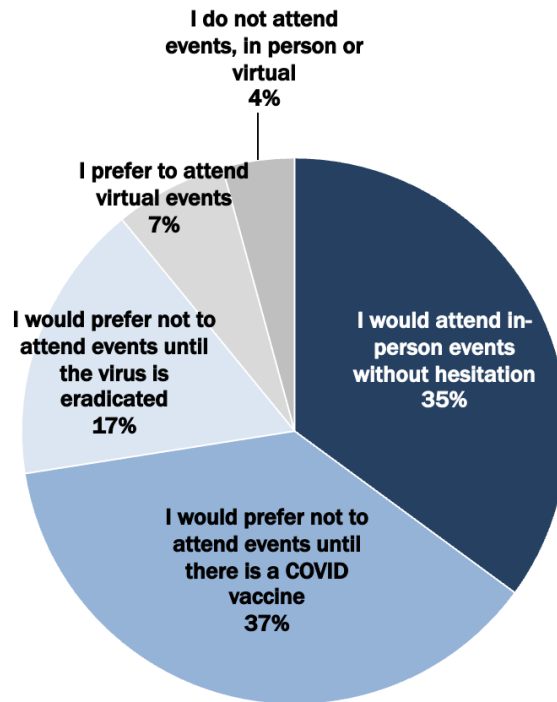
	1-9 employees	10-19 employees	20-49 employees	50+ employees
yes, have attended virtual events	51%	43%	43%	49%
yes, plan to attend future virtual events, but have not yet attended one	12%	20%	22%	18%
no, have no interest in virtual events	37%	37%	35%	33%

There are not any huge variations in virtual event attendance by employee size.

Virtual Event Plans

How stir crazy are print executives, and how skittish are they about traveling? More than one-third (35%) said that they would attend in-person events without hesitation, although about as many (37%) said they would rather wait until there is a COVID vaccine.⁸ Seventeen percent would prefer to wait until the virus is eradicated before returning to live events. Then there is 7% who actually prefer virtual events, and 4% who don't attend any events, be they in-person or virtual.

Thinking about the return to live events currently planned for 2021, what is your feeling regarding your attending events post-COVID?



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⁸ At least two COVID vaccines had been approved as our survey was in the field.

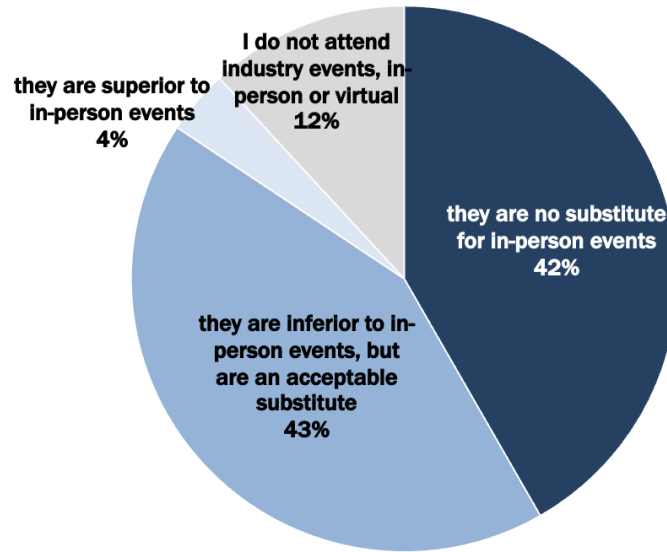
	1-9 employees	10-19 employees	20-49 employees	50+ employees
I would attend in-person events without hesitation	27%	40%	39%	35%
I would prefer not to attend events until there is a COVID vaccine	39%	37%	41%	35%
I would prefer not to attend events until the virus is eradicated	20%	17%	14%	17%
I prefer to attend virtual events	12%	0%	6%	7%
I do not attend events, in person or virtual	2%	7%	0%	7%

Small print businesses tend to be the most skittish, with only 27% willing to return to in-person events without hesitation. Having a vaccine takes the curse off events for most shop sizes, but the smallest are the most likely to wait until the virus is eradicated. They are also the most likely to prefer virtual events—probably more for cost than health reasons.

Opinion of Virtual Events

Virtual events are a fact of life, at least for the foreseeable future, but does anyone like them? Is there any danger of virtual events supplanting in-person events, even after the virus is gone? Not really: 42% of respondents don't think they are any substitute for in-person events, and a further 43% feel they are inferior but an acceptable substitute. Only 4% think virtual events are superior to in-person events. (*Chacun à son gout.*) And 12% don't attend any events.

What is your opinion of virtual industry events?



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	1-9 employees	10-19 employees	20-49 employees	50+ employees
they are no substitute for in-person events	39%	53%	41%	39%
they are inferior to in-person events, but are an acceptable substitute	46%	37%	43%	43%
they are superior to in-person events	5%	0%	4%	5%
I do not attend industry events, in-person or virtual	10%	10%	12%	14%

Small and large print businesses are the most accepting of virtual events.

Looking Forward

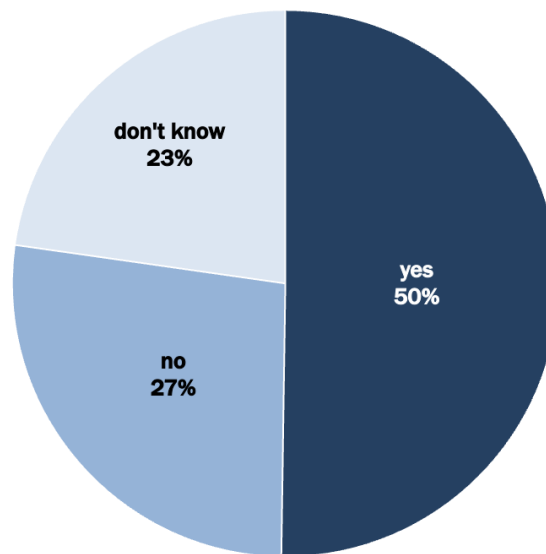
We have ourselves attended virtual events, and generally concur with our respondents: they are an acceptable substitute, certainly when it comes to panel discussions and educational sessions, which are very much like webinars. And they do allow print business employees who may never have been given the opportunity to go to an in-person event to get the lowdown on new technologies and trends. But when it comes to being able to see equipment in action, or evaluate print quality, or ask questions directly, or even meet up with old friends—they are no match. So there is no fear that in-person industry events will go away, although it may be a few years at least before attendance reaches pre-pandemic levels.

4. HIRING PLANS

One of the most discussed topics of the past few years, even before COVID, was that of staffing and the problems that print businesses have been having in attracting employees. Finding qualified employees has been one of the perennial challenges in recent years, and recent surveys have confirmed this.

COVID has made a tough situation even tougher. Early in the pandemic (April 2020), we conducted a quick survey for the COVID-19 update to our *Printing Outlook 2020* report and we found that half of respondents (52%) had suspended all hiring plans, 19% made no change in their hiring plans, and 15% had no hiring plans to begin with. That was an early, initial reaction, and the present survey indicates that hiring plans are largely back on track, with 50% of respondents saying they plan to hire in the next 12 months, up from 47% who said this in our pre-COVID Fall 2019 survey. Just over one-fourth (27%) said they have no hiring plans, down from 36% in Fall 2019, although 23% said they “don’t know,” which reflects a fair amount of uncertainty.

Are you considering hiring/adding staff in the next 12 months?



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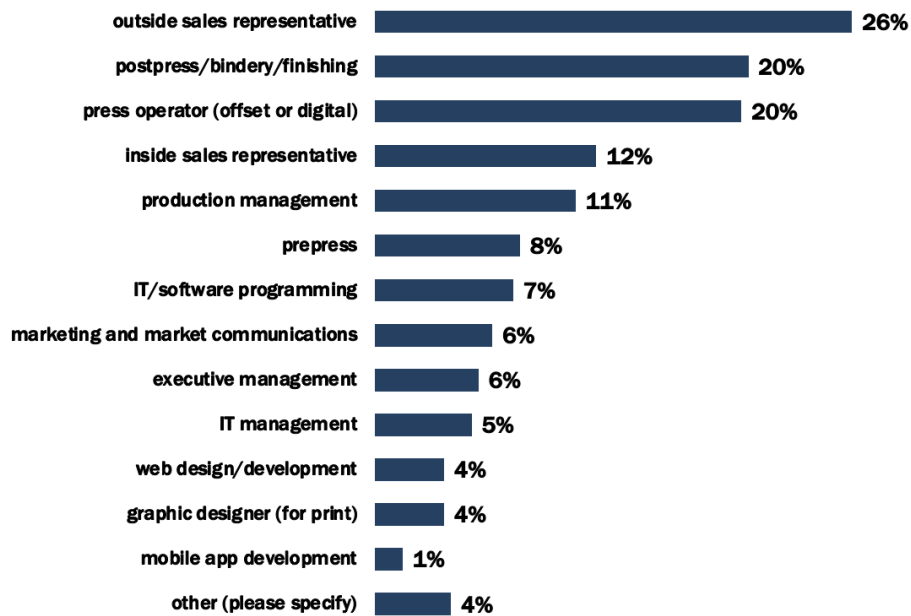
	1-9 employees	10-19 employees	20-49 employees	50+ employees
yes	24%	47%	55%	61%
no	46%	27%	20%	22%
don't know	29%	27%	25%	17%

Plans to hire increase with shop size—which is the usual pattern when we ask this question. Small and mid-size shops are the least likely to have solid hiring plans—and given their precarious position, that only makes sense.

Specific Positions

The COVID crisis hasn’t altered the types of positions for which print businesses are hiring. At the top of the list, as usual, is “outside sales representative” (26%, up from 22% in Fall 2019), followed by “postpress/bindery/finishing” (20%, up from 12%) and “press operator” (20%, up from 8%). “Inside sales representative” dropped from 17% to 12%.

If yes, for what positions are you looking to hire?



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	1–9 employees	10–19 employees	20–49 employees	50+ employees
executive management	0%	3%	6%	8%
inside sales representative	6%	12%	21%	9%
outside sales representative	10%	6%	36%	32%
marketing and market communications	2%	6%	8%	8%
prepress	6%	3%	11%	8%
production management	2%	3%	11%	17%
press operator (offset or digital)	4%	18%	18%	28%
postpress/bindery/finishing	10%	18%	17%	27%
IT management	0%	0%	6%	8%
IT/software programming	0%	9%	9%	9%
graphic designer (for print)	4%	3%	6%	3%
web design/development	2%	3%	3%	5%
mobile app development	0%	0%	2%	3%
other (please specify)	4%	9%	0%	5%

Different size establishments have different hiring/staff needs. This year, the top two positions shops for which shops are looking to hire, broken down by size classification, are:

1–9 employees: Outside sales representative (10%, down from 18%) and postpress/bindery/finishing (10%, unchanged from Fall 2019).

10–19 employees: Postpress/bindery/finishing (18%, up from 10%) and press operator (18%, up from 10%).

20–49 employees: Outside sales representative (36%, up from 32%) and inside sales representative (21%, up a tick from 20%).

50+ employees: Outside sales representative (32%, up from 31%) and press operator (offset or digital) (28%, down from 37%).

The skilled production employee crunch has only been exacerbated by the pandemic, as skilled employees are furloughed, laid off, or in some cases, take this opportunity to retire. There has been a long drive toward automation, but few plants have reached a point where they can dispense with skilled production staff entirely.

We have been anticipating for some time, but have yet to see it manifest itself, that software programming and other IT-related positions will start to become in-demand, especially as variable-data and other personalized printing becomes more important. These kinds of positions continue to be at the bottom of the list, but once the pandemic recedes and business returns, these may be the positions most in demand by print businesses.

5. GRAPHIC COMMUNICATIONS INDUSTRY ECONOMIC TRENDS

Let's pull back from our own survey and round up other industry data from our usual suspects (Bureau of the Census and other government sources). We will look at:

- Commercial printing establishments
- Printing industry shipments
- Printing industry employment

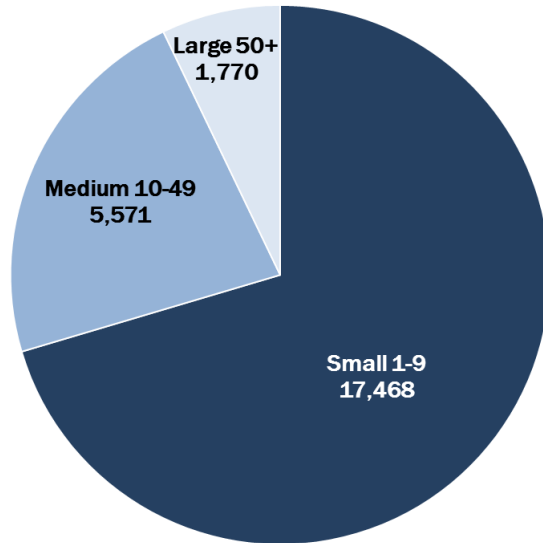
These are aggregate industry data, a combination of industry leaders, laggards, and everyone in between. When you see the trends, it's a baseline or an average. Always keep in mind that there are many profitable, healthy, and growing companies that are performing exceptionally well, and that underperforming businesses tend to drag down the average. Think of it as the opposite of survivor bias.

Printing Establishments

The composition of the printing industry—NAICS 323⁹—is predominantly small businesses; 70% of the 24,809 establishments counted in 2018 were those that had under 10 employees. Just under one-fourth (22%) are “medium” printers (10–49 employees), and only 7% are 50+employee plants. Those 7% are very important: they still represent a large portion of industry revenues, and about 70% of the industry's capital investment. The two charts below have been updated with 2018 *County Business Patterns* data, which was released in 2020, as well as estimates from our own forecasts.

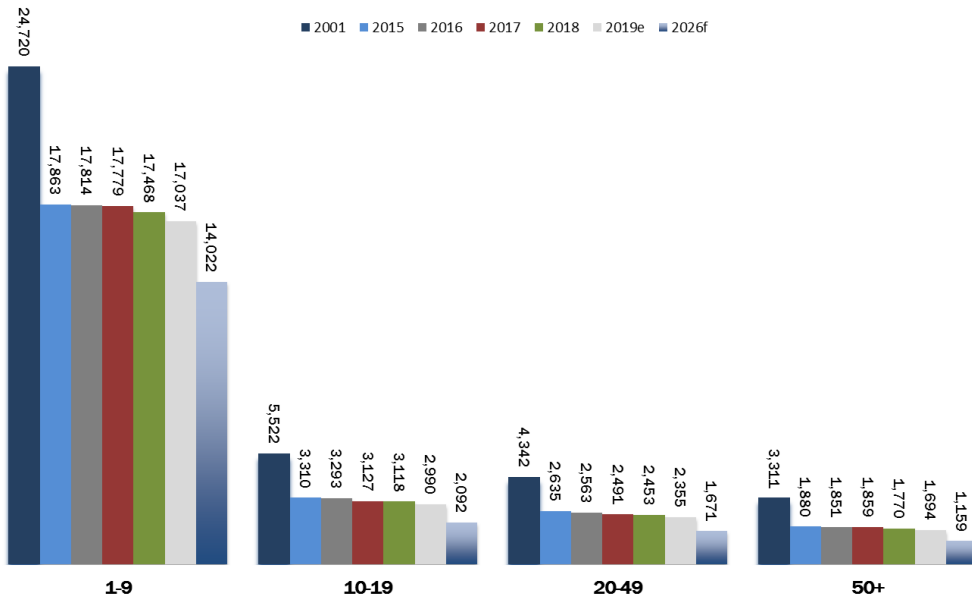
⁹ “The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy” (<http://www.census.gov/eos/www/naics/>). NAICS 323 is “Printing and Related Support Activities.”

US Commerical Printing Establishments by Number of Employees, 2018
 Total Establishments: 24,809



The historical chart below includes a 2026 forecast:

Change in US Commerical Printing Establishments by Number of Employees, 2001-2026



Between 2018 and 2026, we are looking to continue to consolidate the smaller end of the industry by about 3,400 establishments, while at the higher end, we're looking at a decline of another 600 or so establishments.

There is one other trend we usually mention in this space when we consider changes in numbers of printing establishments. We have been seeing a kind of printing industry diaspora. As we mentioned above, all the government data we have historically tracked is from NAICS 323—Printing and Related Activities. However, not all businesses that we would consider printing today—or, more importantly, what *those* businesses would consider printing—are classified in 323. Sign manufacturers, for example, are largely in NAICS 339. Sign lettering and painting are classified in NAICS 541. Manufacturing and printing advertising specialties are classified in the Manufacturing sector according to the products made. Manufacturing die-cut paperboard displays are classified in NAICS 322. Packaging converters are in 322. You get the picture.

We also did some playing around with Dun & Bradstreet data, looking up some of the print businesses we have profiled over the past couple of years, and while most are in 323, some threw us for a loop. One is classified in 517410 (Telecommunications Services), while another is 811111 (Consumer Services). We suspect these are outliers, but remember that it's the printers—and their tax accountants—who classify themselves and we doubt that the government goes out of its way to verify that the self-selected NAICS fits perfectly. Maybe if “Joe’s Printing” selected Automobile Manufacturing someone at the Census may throw a flag, but beyond that we doubt there is too much vetting going on. So our perennial question is, to what extent have print businesses left NAICS 323?¹⁰ This may sound incredibly wonky—and it is—but it is important when we look at things like value of printing shipments, profits, or even establishment counts. When we see poor shipments data, is that an accurate reflection of the state of the industry, or is that just because some of the better-performing businesses identify themselves elsewhere?

At the moment, the impact of the pandemic is playing havoc with our usual data series, but once things settle down, hopefully we can get a sense of how these dynamics are playing out.

M&As

We're still looking at an attrition of the printing industry, although another side effect of the pandemic was a slowdown in M&A activity. In August 2020, our M&A guru Mark Hahn of Graphic Arts Advisors offered his [annual round up of deal activity](#) and found that the 12 months ended August 2020 saw 14% fewer transactions than the previous 12-month period. “[D]eal activity started off 2020 with a bang, came to a screeching halt in March and April, and has now begun to trend back to normal,” Hahn wrote.

He identifies two particular hotspots: packaging is one...

The bright spot is clearly packaging, with buyers exhibiting very keen interest in labels, corrugated cartons and to some extent folding cartons. There has been

¹⁰ We had initially planned to make an investigation into this issue our project for 2020 but the universe had other plans.

continued participation in the market by well-funded private equity firms and large corporate buyers. Flexible packaging remains highly desirable for buyers, but fewer deals are getting done involving flexible packaging as the supply of target companies is limited compared to other packaging segments.

...and wide format another...

Activity is up in the wide format segment; however, we make note of an increase in the number of tuck-ins in the wide format business, indicative of overcapacity, something almost nonexistent not too long ago. Presumably, some of this activity is due to the decline of “brick and mortar” retail, greatly exacerbated by the Covid-19 shutdown. This double-whammy has created a challenging situation for the wide format shops that are focused on retail signage and display. There was a flurry of printing the ubiquitous floor stickers and window signs announcing and enforcing the new social distancing requirements, but that has likely run its course by now.

In the general commercial printing segment, M&As are in kind of a holding pattern. Of the 24 deals Hahn tracked in the 12 months ended August 2020, 12 were tuck-ins¹¹. One bit of good news is that bankruptcies were kept at bay, at least for now.

Despite the outbreak of Covid-19, the number of bankruptcies for the past twelve months decreased to 36 filings, down from 41 the prior year, which was down from 45 filing the year before that.

The CARES Act and PPP funds helped a lot of print businesses through the worst of the pandemic,¹² and, as we write this in mid-January, more help may be on the way.

Printing Shipments

In this space in January 2020 we wrote:

If you have been following our monthly tracking of printing shipments, you know that 2019 is shaping up to be best year for the industry in a long time. (And, as we saw earlier, our survey results bear this out as well.) It could be said that we’re experiencing something of a “Printing Renaissance.”

Sigh. Anyway, monthly shipments for 2020 show a great start to the year, a crash in the spring, a quick rebound in the summer, and what may be a normal, seasonal decline in the fall and winter.

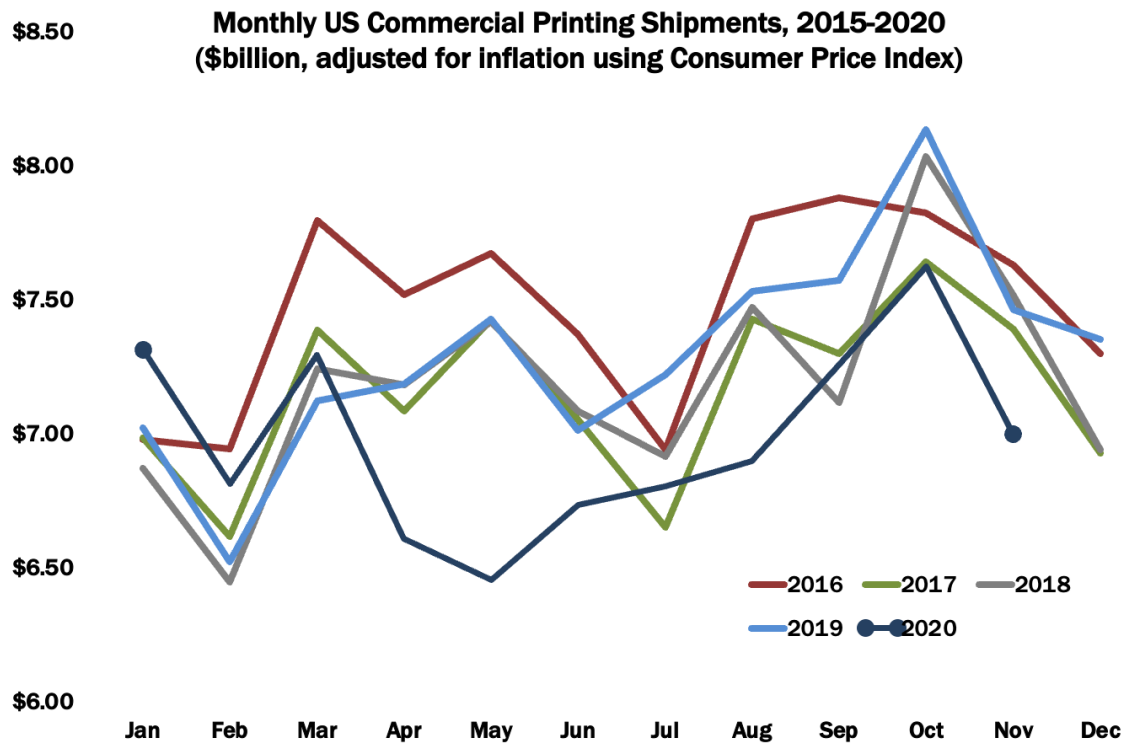
Monthly Shipments

We started off 2020 in January with a value of shipments of \$7.31 billion, saw the usual drop in February, and then a rise in March of \$7.29 billion. So far, so good. And then...April shipments plummeted to \$6.61 billion and May shipments saw a further drop to \$6.46 billion, the nadir of the year (hopefully). Summer and fall saw the industry climb out of the hole, much more quickly than we would have expected. By October, shipments had risen back up to \$7.62 billion—although November saw a big drop to \$7.0 billion, which could just be the usual November decline. If we have returned to our regular

¹¹ “The buyer folds the acquired customers into their existing production capacity, hires selected qualified employees, with special focus on those people that touch the customer, and maybe cherry-picks some of the equipment. The seller is left to close up shop, sell off the remaining equipment and wind down the business entity.”

¹² We may not have seen the worst of the pandemic.

seasonality, we should be in for another decline in December, followed by a rise in January.

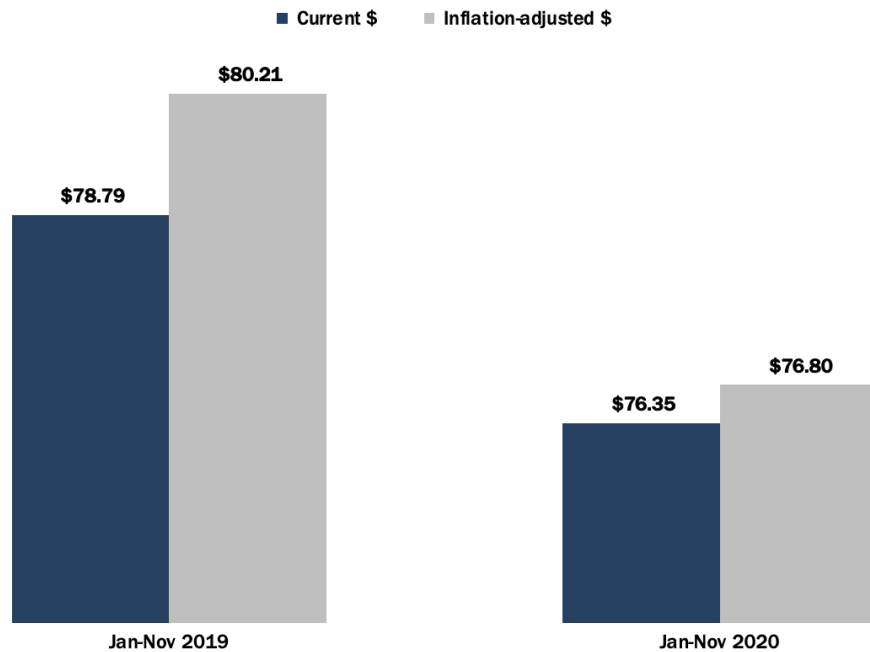


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Year-to-Date Shipments

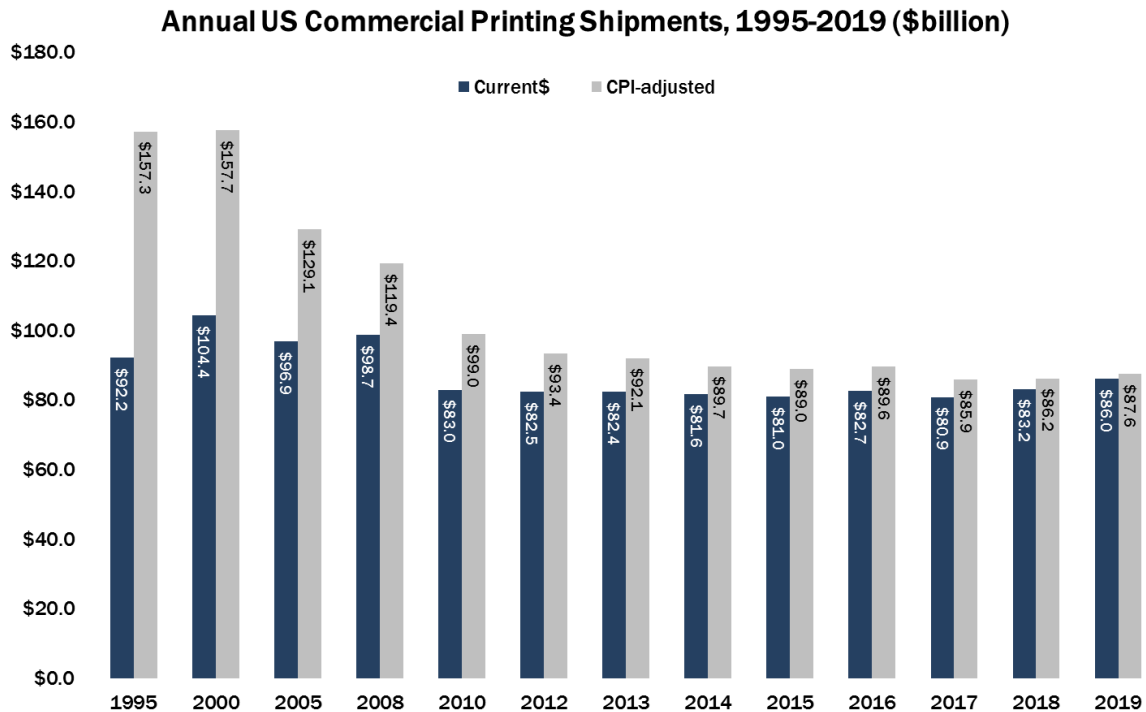
As a result, year-to-date shipments for 2020 lagged 2019, which we were expecting, but not by as much as we would have anticipated, especially if you had asked us last spring. January-to-November shipments for 2020 are at \$76.80 billion compared to 2019’s \$80.21. A new goal to aspire to in 2021 or, more likely, 2022: we had ended 2019 higher than 2018—or any recent year. Unless a Christmas miracle happened in December, we are expecting December shipments to come in around \$6.5 billion, giving us an \$83.3 billion year for 2020. If that is true, that will be the worst year ever for the industry—and for just about everyone, so we’re certainly not alone. But as we said in the Introduction, this is different from all the prior hard times the industry has experienced, because for once it’s nothing especially inherent about print or the printing industry that has caused the downturn. This is all (or most) eminently recoverable. It all depends on the virus and the economy in general.

**January–November 2019 and 2020
US Commercial Printing Shipments (\$ Billion)**



Annualized Shipments

Looking at annualized shipments for selected years since 1995, we can see where we’ve been. It was 20 years ago that the industry had a \$157.7 billion year (in inflation-adjusted dollars)—and just 10 years later, we were down to \$99 billion. The decline in shipments had been slowing and 2019 was a watershed year. Fortunately, 2020 is such an outlier that, unlike the past 20 years, the forces that dragged down shipments were unrelated to what we as an industry actually do. The industry lost so much of its value since 2000 because the Internet and electronic media drastically reduced the demand for printed materials (although the 2010 recession didn’t help). That is not the case now. As we have said, this was a cataclysmic event whose effects can be reversed. Maybe not immediately, but eventually.



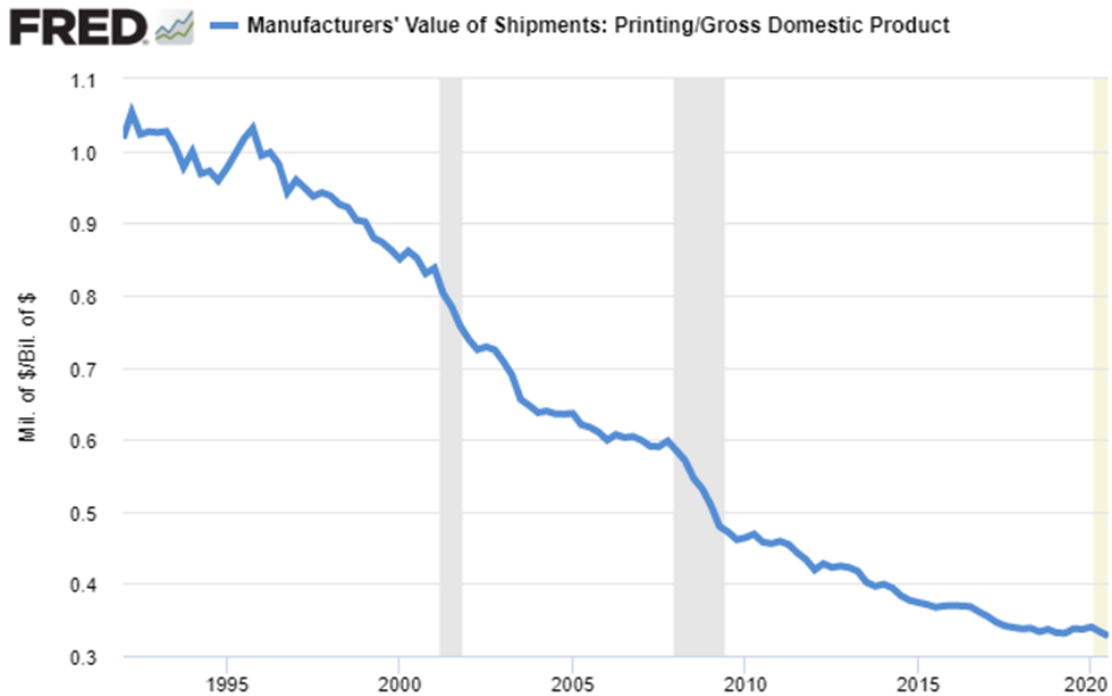
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If we look at printing shipments as a percentage of GDP, since 1997 (see the chart on the next page), the value of printing shipments went from around 1% of GDP all the way down to just over 0.3%. (These figures are not inflation-adjusted so as to avoid disagreements about which inflation adjustment to use; we’re just looking for an overall pattern.) We probably won’t be getting back to anywhere close to 1% again (and if we do it will only be because GDP tanked, which, as we saw in Q2 2020, is not out of the realm of possibility).

Looking beyond the current pandemic, we again warn that this chart is essentially the story of technology. Printing shipments as a percentage of GDP started to plummet when the Internet truly arrived circa 1996 and while we can blame the recession for some of the drop after 2008, and the pandemic for 2020, remember also that this was also the period that saw the advent of social media, the smartphone, and mobile media. Every major advancement in electronic media has disrupted print’s standing in the overall scheme of media.

We should be wary of the coming of 5G, which is happening, albeit more slowly than had been expected. “5G” stands for fifth-generation cellular wireless and will offer faster speed, lower latency and thus less lag, and the ability to connect a lot more devices at once. This will boost things like gaming, video streaming, and other high-bandwidth applications, all of which compete with print in various capacities.

Printing Shipments as a Percentage of Current-Dollar GDP, 1992–2019



Sources: U.S. Bureau of Economic Analysis, U.S. Census Bureau

Industry Profits

We've long been calling it "a tale of two cities"—large printers and small/mid-size printers and the profitability gap between them. The pandemic only interrupted this ongoing narrative temporarily, but in the latest (Q3 2020) profits report, we are back to normal, at least in terms of industry profits trends.

Shipments-wise, we had been having a pretty OK third quarter and that actually translated into a rise in profitability. Annualized profits for Q3 2020 rose from -\$1.92 billion to -\$1.19 billion. That's still *really* low, but at least it's headed back toward positive territory, although given shipments for November and likely December, we may see another drop in Q4 profits. This isn't all pandemic-related; Q4 2019 profits had plunged from Q3, and this was before almost anyone had ever heard the term "coronavirus." The pandemic only accentuated trends that were already well-established, and there is some comfort (cold though it may be) in seeing that the drop from Q1 to Q2 2020 simply was the continuation of a trend that had already been going on for a few quarters.

In Q3, we resume our "tale of two cities" saga. For large printers (those with more than \$25 million in assets), profits before taxes had been -1.71% of revenues, an improvement from Q2, where profits had been -6.95% of revenues. But for small printers, profits before taxes in Q3 were +8.81% of revenues, a vast improvement over Q2, where profits had been -1.70% of revenues. Q2 had interrupted our "tale of two cities" narrative a little—big printers did a little better profitwise, while small printers did a lot worse—but

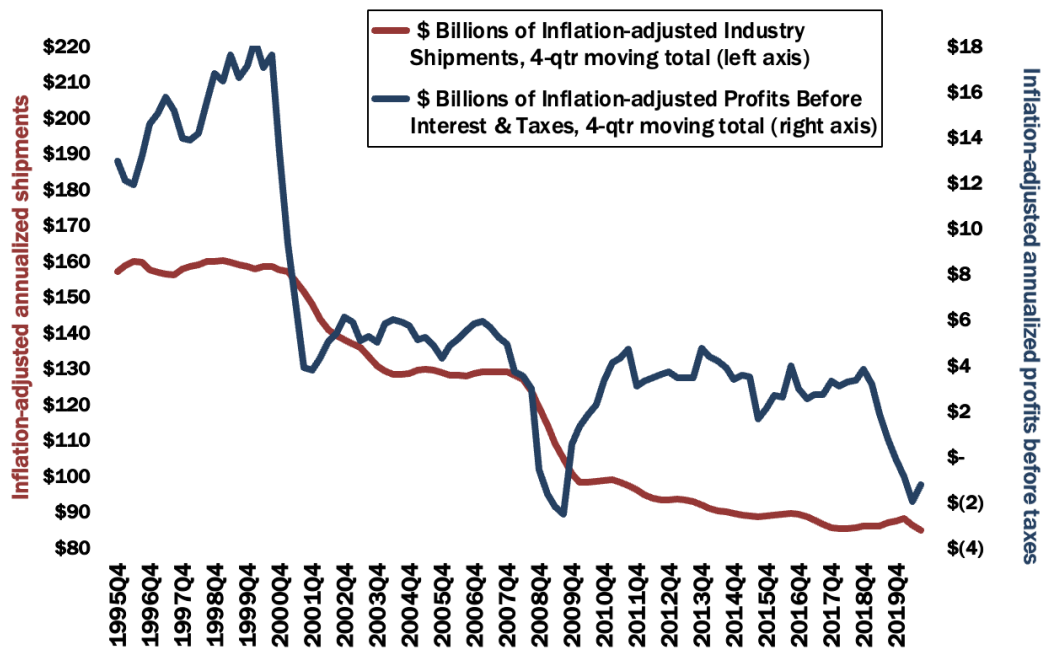
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Q3 sees a regression to the mean. For the industry on average, profits before taxes were +2.42% of revenues, and for the last six quarters, they've averaged -1.08% of revenues.

So back in Q2 we couldn't really blame the large printers for driving down overall industry profitability, but that was only a short reprieve. Interestingly, it may have been one positive side benefit of the pandemic. But, as with shipments, the impact of the pandemic on profits hasn't been insignificant, but has been a little muted; we had been expecting the Q2 report to be a lot worse, although the Q3 report was about what we had expected given what we had seen with shipments.

Printing Industry Shipments & Profits



Printing Profits by Assets, Q2 2019–Q3 2020

Net Income Before Taxes	2Q 2019	3Q 2019	4Q 2019	1Q 2020	2Q 2020	3Q 2020	Simple average, last six quarters
All commercial printers	0.30%	-1.02%	-0.18%	-2.86%	-5.16%	2.42%	-1.08%
<\$25 million in assets	0.80%	8.49%	3.15%	5.11%	-1.70%	8.81%	4.11%
>\$25 million in assets	0.04%	-6.66%	-1.99%	-7.96%	-6.95%	-1.71%	-4.21%

NOTES: Approximate breakpoint for \$25 million is 100 employees. Data are from the Department of Commerce Quarterly Financial Report released December, 2020. Data analysis ©2020, WhatTheyThink.

What's behind this tale of two cities? As always, there are a few factors, most dating pre-pandemic. Big printing companies are still writing down assets that don't match market

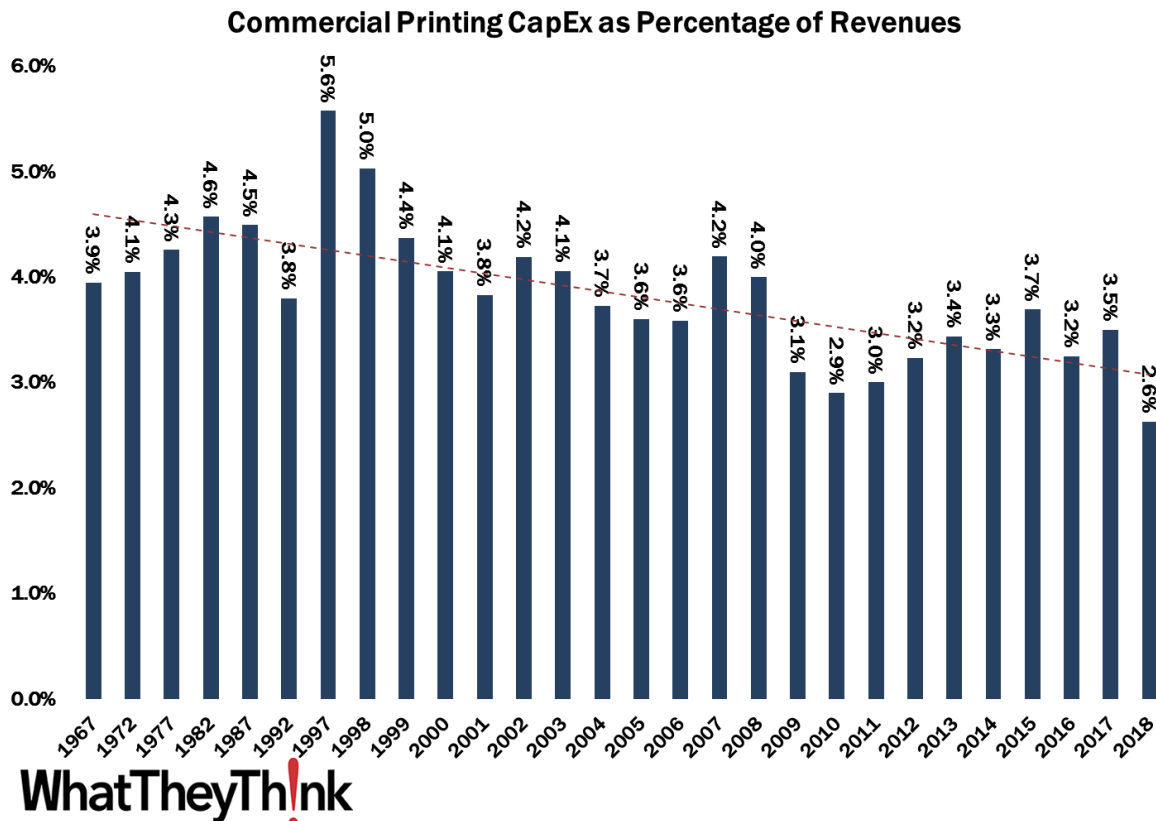


needs, while smaller companies have been able to be a little more agile and adopt digital printing, as well as absorb the volume of less successful companies that have closed.

Capital Expenditures

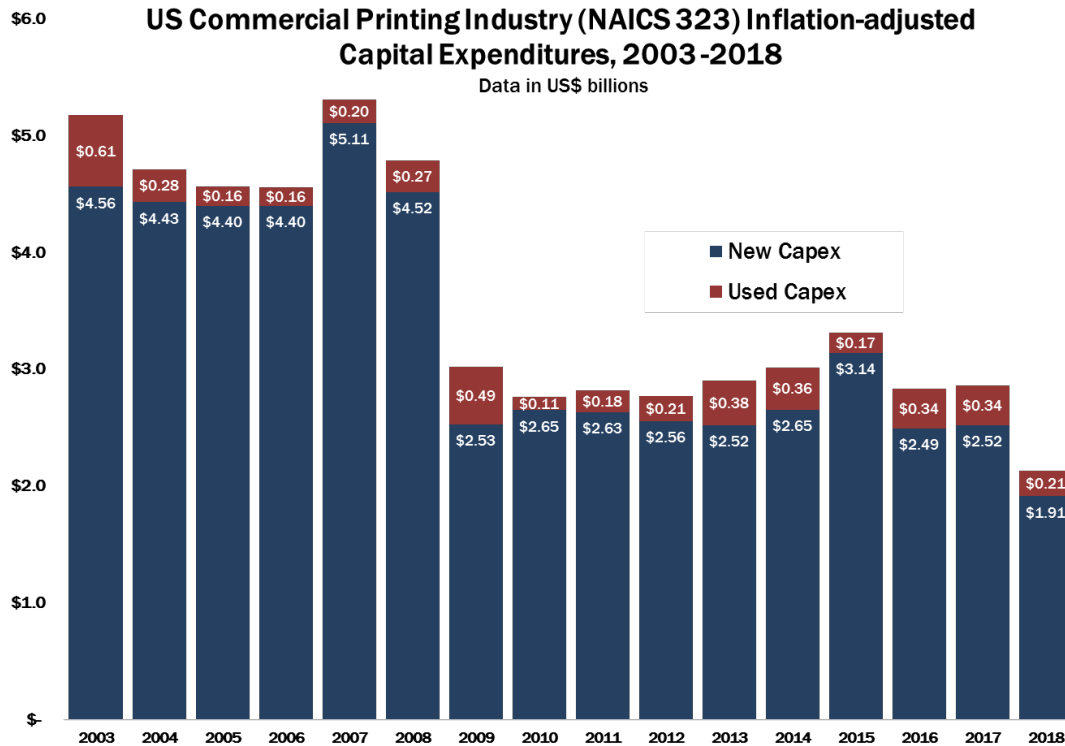
As we saw in Section 2, print businesses don't have many big investment plans; recall that number one on the Planned Investment list was "we have no planned investments." This had been the case even before COVID, but the pandemic largely put the kibosh on those major capital investments had been planned. What we can expect investment-wise for the near future is more software (especially updates), more infrastructure investment, especially to facilitate remote access and work-from-home, and more automation, with some modest investment in additional printing and, especially, binding and finishing capabilities.

According to the Census Bureau's *2018 Annual Capital Expenditures Survey*, about 2.6% of revenues are being spent on capital expenditures—which can also include things like moving or expanding their location (although that was less of a factor in the current survey). The big spike in 1997 and 1998 represents the effect of PRINT 97, where a slew of digital, Direct Imaging, and computer-to-plate systems was introduced. At PRINTING United 2019, people said it reminded them of PRINT 97, at least in terms of people being excited to be in, and investing in, the printing industry. We don't have 2019 data yet, but we expect that we will see a spike before the inevitable drop in 2020.



Source: U.S. Census Bureau, 2018 Annual Capital Expenditures Survey

The chart below looks at new vs. used capex, and while it confirms that capital expenditures in 2018 were down considerably, it also shows a dwindling interest in used equipment, the result of a shift to digital and the desire, when investing in digital equipment, to have the latest and greatest.



Graphic Arts Employment

Employment figures from this year have been pretty bad, as we would expect, although we had been seeing slight improvements in the fall as businesses reopen (etc.). August and September had seen graphic communications employment in a bit of a holding pattern, with only minimal changes. October 2020 employment had been up +0.8% from September, mostly production staff continuing to come back: production employment had been up +1.6% from September, while non-production employment had been down -0.8% from September to October. In November, we saw another holding pattern: all printing employment had been up +0.8% from October, production employment up +0.5%, and non-production printing employment up +1.5%. That’s not great, but at least there were no negative numbers.

In December, it was more of the same, really: all printing employment was up +0.7% from November, production employment up +0.1%, and non-production printing employment up +1.9%.

The publishing and creative markets, also seem to be in a bit of a stasis, which isn’t necessarily bad—although some of the recent trends are the opposite of what we usually

see. From October 2020 to November 2020 (publishing and creative market employment reports lag by a month), periodical publishing employment dropped -1.4%, newspaper publishing ticked up +0.7%, graphic design ticked down -0.3%, and ad agencies were essentially unchanged. What about PR, which not that long ago was the superstar of these employment reports? Down -2.4%. (And if you back PR out of agencies, ad agency employment grew +0.4% from October to November 2020.) Meanwhile, the traditional laggard of the whole lot—direct mail advertising—grew +1.1%. We are definitely in Bizarro World.

Employment in thousands of workers	November 2019	November 2020	Y/Y Change	December 2019	December 2020	Y/Y Change
Printing, all	423.4	371.1	-12.4%	421.2	373.6	-11.3%
Printing, production	281.9	252.7	-10.4%	281.9	253.0	-10.3%
Printing, less production	141.5	118.4	-16.3%	139.3	120.6	-13.4%
Publishing	767.7	743.1	-3.2%	765.9	744.6	-2.8%
Periodicals	81.9	69.9	-14.7%	80.6		
Newspapers	126.6	106.7	-15.7%	127.0		
Publishing, ex-newspaper	641.1	636.4	-0.7%	638.9		
Graphic design	61.9	57.5	-7.1%	62.0		
Public relations	60.8	60.2	-1.0%	60.6		
Ad agencies, includes PR	497.5	447.6	-10.0%	497.1	452.0	-9.1%
Ad agencies, less PR	436.7	387.4	-11.3%	436.5		
Agency (incl PR) + design	559.4	505.1	-9.7%	559.1		
Direct Mail Advertising	42.4	37.8	-10.8%	42.0		

Overall, the employment situation in the economy has been pretty bad, but we'll take a closer look at the general employment data in the next section.

Employees Per Establishment

More than in any other year, this year there is a vast disconnect in looking at some of our traditional data series, which are based on Bureau of the Census and/or *County Business Patterns* data. Normally, there being a two-year lag in the data is not a major problem; the trends that manifest themselves two years prior are still relevant—except after 2020, where 2018 might as well be the 19th century. Still, as we say repeatedly, the pandemic has largely amplified or accelerated trends that were already underway, so most of these data series are still worth looking at. Our regular tracking of employees per establishment, though, may be a bit of an anachronism.

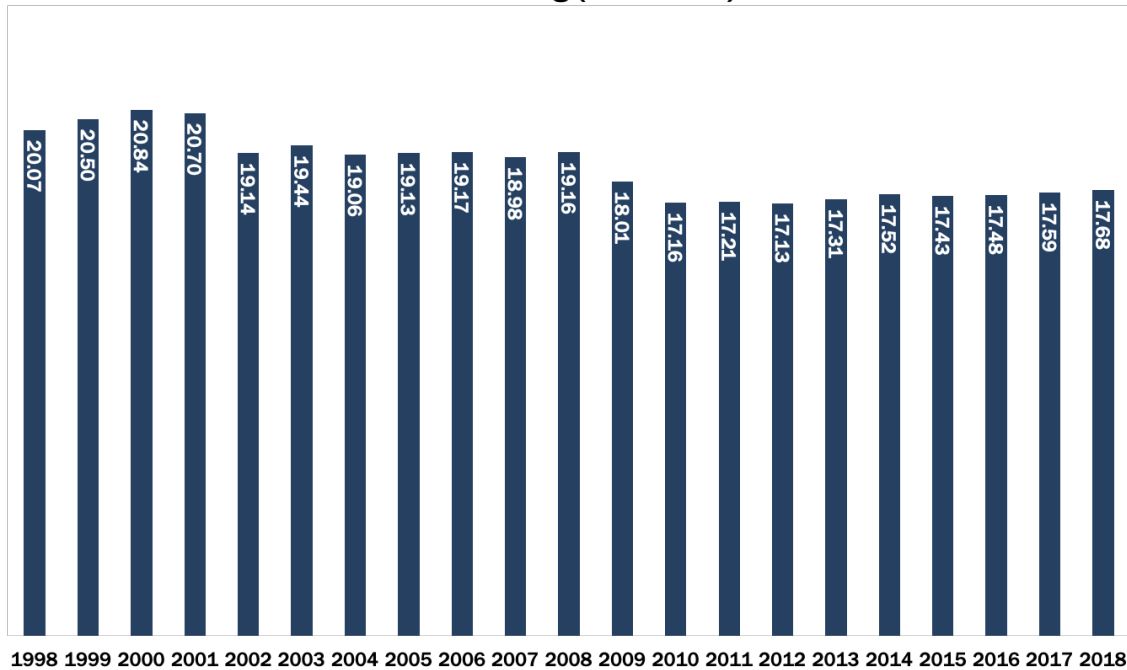
Here's our boilerplate text for this section. Every 10 years, there is a sharpish decline in the average number of employees per establishment, and then a period of relative stability. The story behind these periodic declines is one of technology and the gradual elimination of prepress functions as discrete stages of production. Shops still have one or two prepress experts, but they don't need strippers, separators, and platemakers like they used to. Computer-to-plate helped reduce the staff, and then digital printing continued that trend. We have also started to see the same kind of thing happening in postpress; not that it is being absorbed into the printing process (although for inline finishing, that can be the case), but rather it is increasingly being done in-house instead of outsourced to a

specialty finishing house. This is a reflection of the fast-turn nature of today's jobs. Who has time to send out finishing work any anymore? As we have seen in the investments and opportunities data, shops have been adding binding and finishing and, as we saw in recent surveys (and to a slight extent in the current one), need people to run this equipment. However, as finishing becomes more and more automated, fewer dedicated finishing staff are required—and, in fact, in highly digital shops, one employee can run the press and run the finishing equipment.

The pandemic has accelerated these employment trends and while the chart below—the most recent data for which is from 2018—shows a generally stable, if gradually increasing, number of employees per establishment, we expect our 10-year decline to kick in when get 2019 and especially 2020 data, only partially due to the pandemic, at least in terms of production employees.

Meanwhile, there has also been a shift in the *kinds* of employees print businesses are looking for. We saw in previous years' survey data that IT and programming employees were highly sought-after. That shifted two years ago to sales people and some production staff, and now in recent years to mostly sales people. As automation continues—and as production staff becomes harder to find—we may not see average number of employees per establishment go down, but the composition of those staffs will likely change from being production-centric to sales/marketing/business development- and IT-centric. But as web-to-print and e-commerce continue, shops may find that the nature of print sales is changing and even sales people may not be as in-demand as they currently are, especially if more and more work starts coming in via an online storefront. Sure, a lot of “boutique” printing work and complex projects may still come in through traditional sales routes, but more and more commodity print will come in via an online portal.

**Average Number of Employees per Establishment
US Commercial Printing (NAICS 323) 1998-2018**



Productivity

A traditional challenge for the industry has been “increasing productivity” and if we look at the BLS’s productivity data for NAICS 3231 (Printing and Related Activities), we see that productivity has indeed been on the rise in the industry, despite some recent choppiness. Productivity can also be somewhat of a gauge of automation, although not a 100% reliable one. If we look at the period from 2015 to 2017/2018, we saw productivity rise even as the average number of employees per establishment remained relatively stable.

There is a worry in the general economy that automation will displace workers, although [some economists](#) think that is an overblown worry. In the printing industry, as we have remarked, we have the opposite problem: we need automation because we can’t find humans, at least for production jobs.

Automation can have some negative effects; remember when “color separators” was an entire business class? It even had its own NAICS and everything. But the entire color separator business was eliminated by a single command in Photoshop. Trade typography also used to be a business class; now anyone can use InDesign or QuarkXPress (or even Word) for typesetting. But today, it may be a good thing, or at least a better one than it had been.



WhatTheyTh!nk

Source: Bureau of Labor Statistics

Automation changes the nature of the employees that are sought. As we just saw above, the erosion of prepress as a specific step in the production process changed the demand for prepress employees to press operators and/or binding and finishing employees. Automating these processes thus shifts the demand to things like sales and business development. Web-to-print doesn't as yet appear to have any impact on the demand for sales people in the industry, although we fully expect that to change, especially post-pandemic. And remember: there are some very successful print businesses that don't have *any* salespeople. They rely on highly effective search engine optimization (SEO) strategies to attract Googlers to a Web-to-print site, where customers may never have any actual interaction with an employee of the printing company. After all, this is the way people increasingly like to buy things, again, especially post-pandemic. This doesn't mean that those businesses don't have *any* employees; instead of salespeople they have programmers, Internet search experts, and customer service personnel for when there are questions or problems. This is a good thing; these are highly desirable jobs, especially on the part of younger people, and looking for software developers and search experts may help attract new blood to the industry, which it desperately needs.

Publishing and Advertising

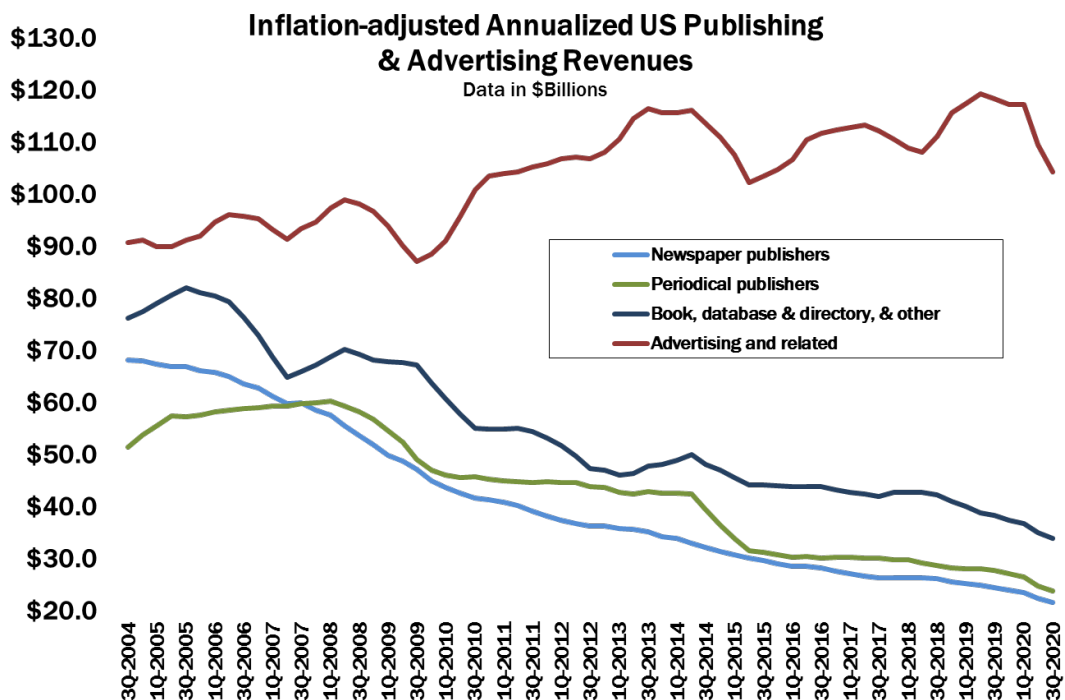
Publishing has generally been having a rough time during the pandemic. Newspapers and to a slightly lesser degree magazines have seen advertising dry up, as local businesses—newspapers' primary advertising base—have been closed or struggling. Only book

publishing has seen sales and revenues rise during the pandemic, although that is not reflected in the chart below.

“Publishers Weekly” reported in October that sales of books for the first three quarters of this year were up by more than 6% compared to 2019. A run of summer bestsellers, demand for parents for more children’s books and a surge in interest in books about social justice are just some of the reasons for the surge.¹³

And books about the former President have been a whole subset of the book publishing industry unto itself.

The figure below rounds up the latest revenue data for the various publishing segments as well as ad agencies. On an annualized basis, since 2004, newspaper publishing revenues have plummeted by almost \$50 billion. Periodical publishers aren’t in much better shape, and even advertising has taken a turn for the worse.



WhatTheyTh!nk

Advertising revenues have flattened out to some extent, and this was happening long before the pandemic. As revenues for the places that used to feature a lot of advertising—periodicals and newspapers—have dropped, that is reflective of perhaps not just a shift to non-print forms of advertising, but other kinds of marketing initiatives than what we think of as “advertising.” A lot of it is content marketing, a greater reliance on social media and other forms of digital marketing, smarter use and negotiation of cable and TV. Traditional TV audiences are smaller, people continue to cut the cord faster, and streaming is the “new cable”—and largely advertising-free, as people are willing to pay extra for commercial-free versions of streaming services like Hulu, Disney+, and the

¹³ See <https://abc7news.com/books-reading-book-sales-coronavirus/8640527/>.

other umpteen million other streaming services that have launched in the last couple of years. Especially during the pandemic, streaming movies and TV shows (oldies as well as streaming service originals) was one way to occupy oneself during lockdowns.

Although what we call TV today is in flux, the nature of advertising had been changing because things like content marketing, e-newsletters, mobile apps, and things like that can be done internally or with freelancers, and offer much more bang for much less buck. Also, PR firms/ reps are handling a lot of these initiatives, especially social media. And consumers are more and more leery of advertising that is conspicuously advertising, hence the growth of ad-free streaming services.

Looking Forward

Compared to recent years, 2020 was a crappy one for the industry, but at least we have a very clear idea of why. In the next section, we'll zoom out (if you're not sick of Zoom) and have a look at some macroeconomic data, to give us some context for the industry data. Then we'll look at current trends and our forecast.

6. MACROECONOMIC DATA

In this section, we zoom out to get a larger sense of the general economy. As we all know, 2020 was rough on virtually every part of the economy. So let’s document the atrocities.

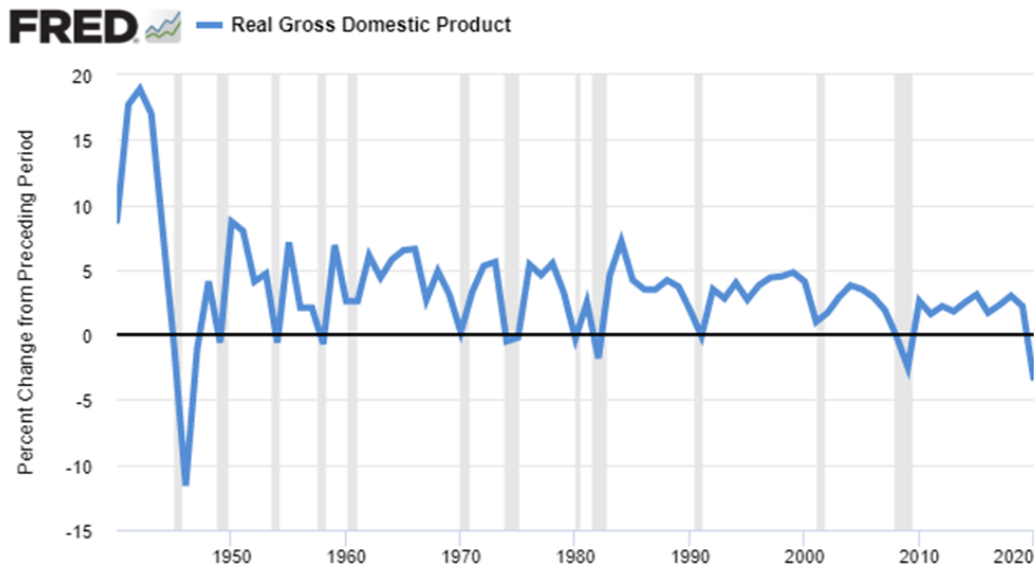
GDP

From the Bureau of Economic Analysis¹⁴:

Real gross domestic product (GDP) increased at an annual rate of 4.0 percent in the fourth quarter of 2020, according to the "advance" estimate released by the Bureau of Economic Analysis. In the third quarter, real GDP increased 33.4 percent.

For 2020 as a whole, real GDP decreased 3.5%, compared with an increase of 2.2% in 2019. “The decrease in real GDP in 2020 reflected decreases in PCE, exports, private inventory investment, nonresidential fixed investment, and state and local government that were partly offset by increases in federal government spending and residential fixed investment. Imports decreased.” Added [Calculated Risk](#), “**This was the worst year since 1946** (WWII drawdown). And other than WWII drawdown, this was the worst year since the Great Depression.”

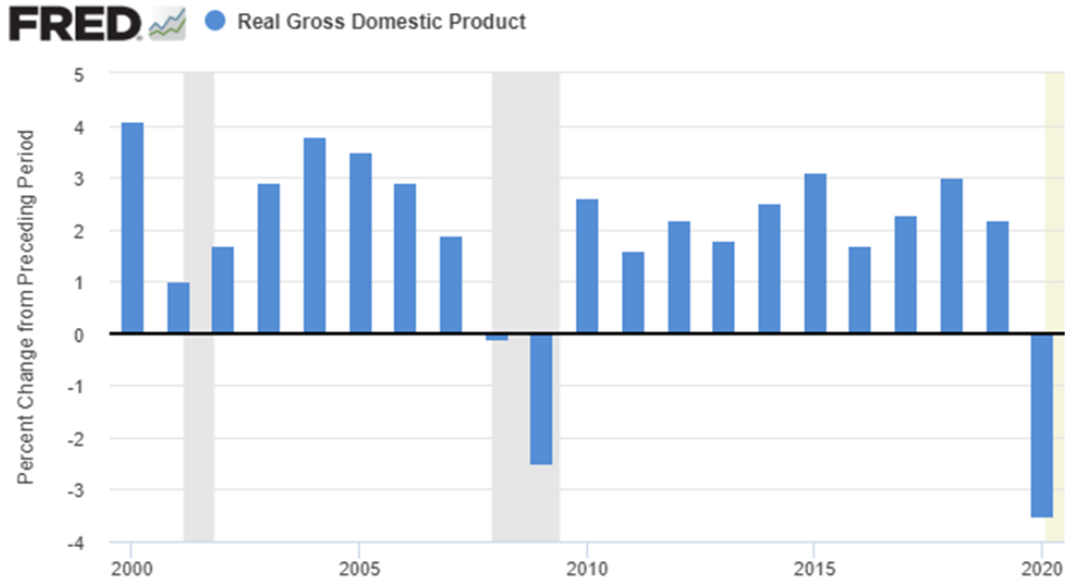
Real GDP % Change Y/Y, 1940–2020



Source: U.S. Bureau of Economic Analysis

Real GDP % Change Y/Y, 2000–2020

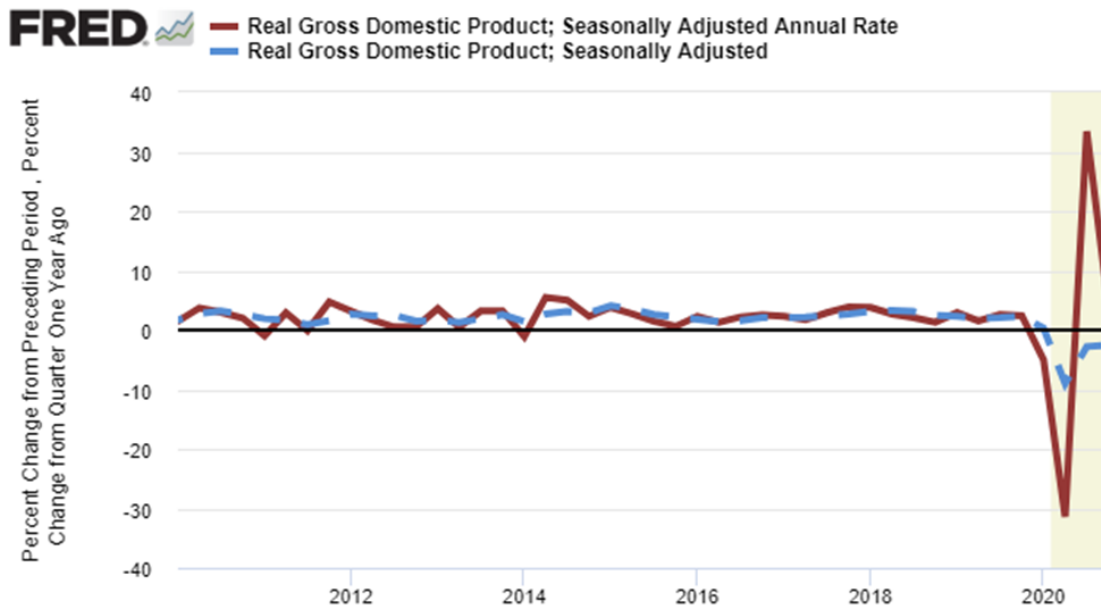
¹⁴ <https://www.bea.gov/news/2021/gross-domestic-product-4th-quarter-and-year-2020-advance-estimate>.



Source: U.S. Bureau of Economic Analysis

In the figure below, the blue line is the year-over-year GDP, while the red line is quarter-to-quarter; the former removes some of the data noise endemic to the latter.

Percent Year-over-Year (blue line) Change in Real GDP vs. Quarter-to-Quarter (red line), 2009–2020



Source: U.S. Bureau of Economic Analysis

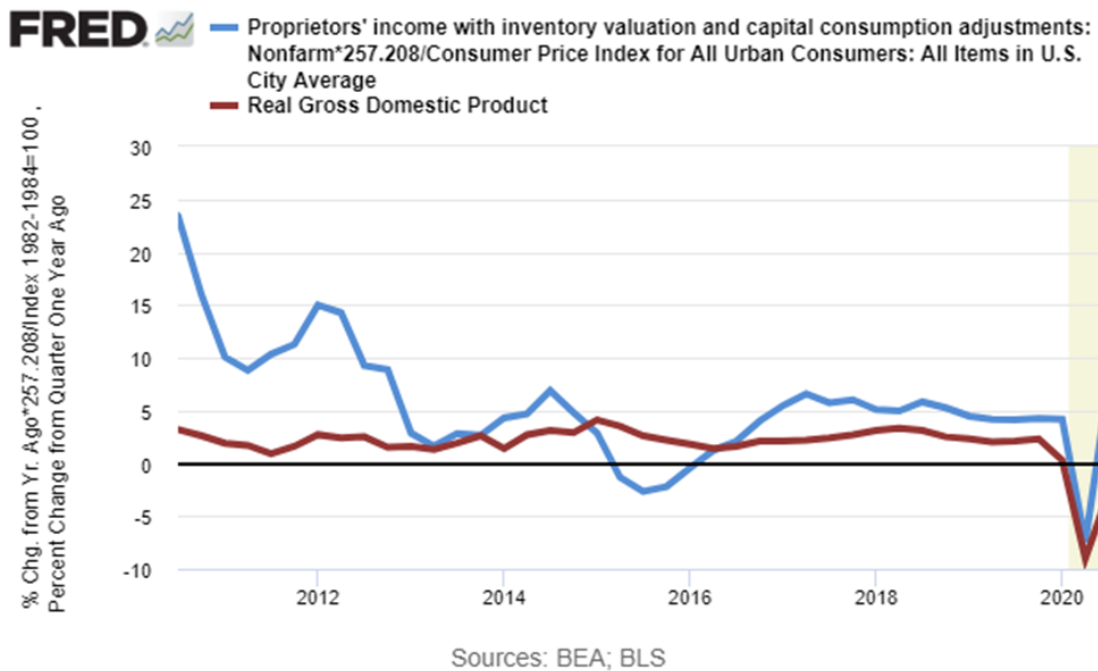
Proprietors' Income

The figure below shows the percentage change in proprietors' income for the past 10 years compared to current dollar GDP (the figure below that zooms in to look at the past six years.) Proprietors' income is often seen as a surrogate for small business, and it tends to be out of phase with GDP as large businesses outsource work to small businesses at the beginning of recoveries and then make those services the first to be cut in expectations of a downturn.

Proprietors came out of the onset of the pandemic pretty strong compared to GDP; yes, Q2 was a rough patch, but proprietors rebounded, including a lot of freelancers who generally were able to keep right on going through the pandemic. It also includes those working in construction and related services, which saw a bit of a slowdown during the worst of the pandemic,¹⁵ but were not as hard hit as other segments of the economy, like restaurants, retail, and others.

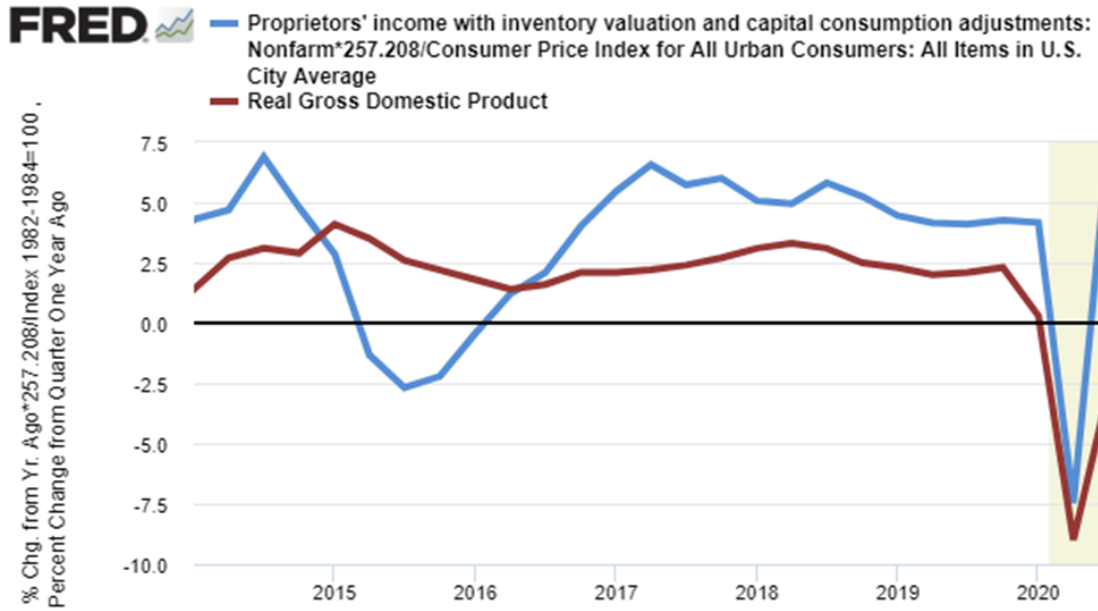
If we look at the more detailed six-year chart, we see more clearly that proprietors' income had been lagging GDP since 2014, took a sharp upward turn in 2016, plummeted along with everyone else in Q1 and Q2 2020, but now seems to be outpacing GDP.

Percent Change in Proprietors' Income vs. GDP (10 years), 2009–2020



¹⁵ We may not have seen the worst of the pandemic.

Percent Change in Proprietors' Income vs. GDP (6 years), 2013–2020

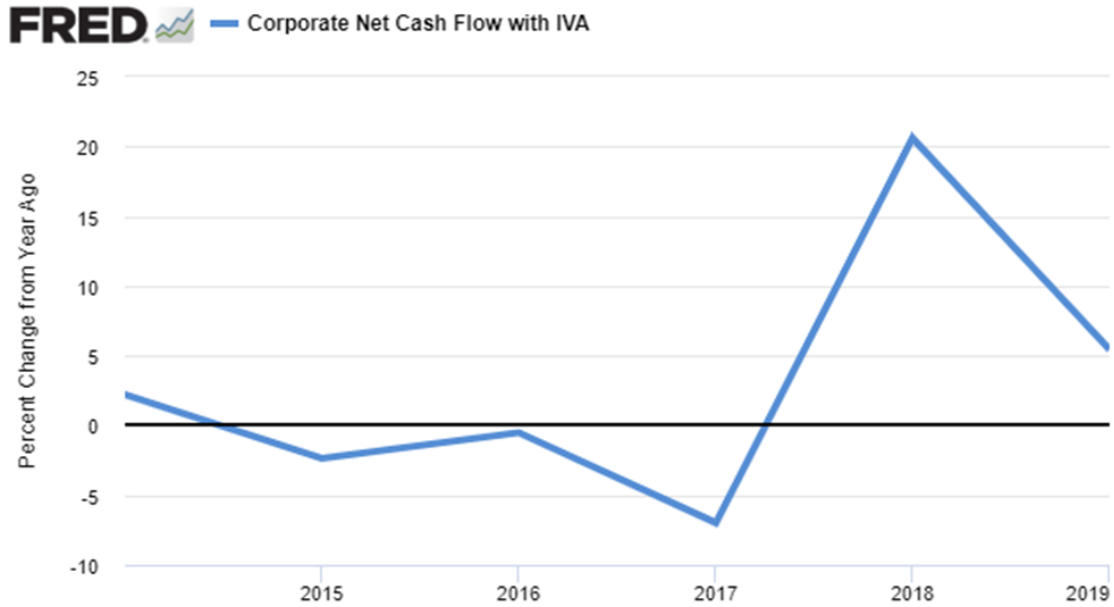


Sources: BEA; BLS

Corporate Cash Flow

Corporate cash flow growth has been inconsistent for the majority of the 2010s. It was down in 2017, but ticked up in 2018 substantially thanks to tax repatriation and the cut in the corporate tax rate. It crashed immediately thereafter and the pandemic has not helped.

Percent Change in Corporate Cash Flow, 2013–2020

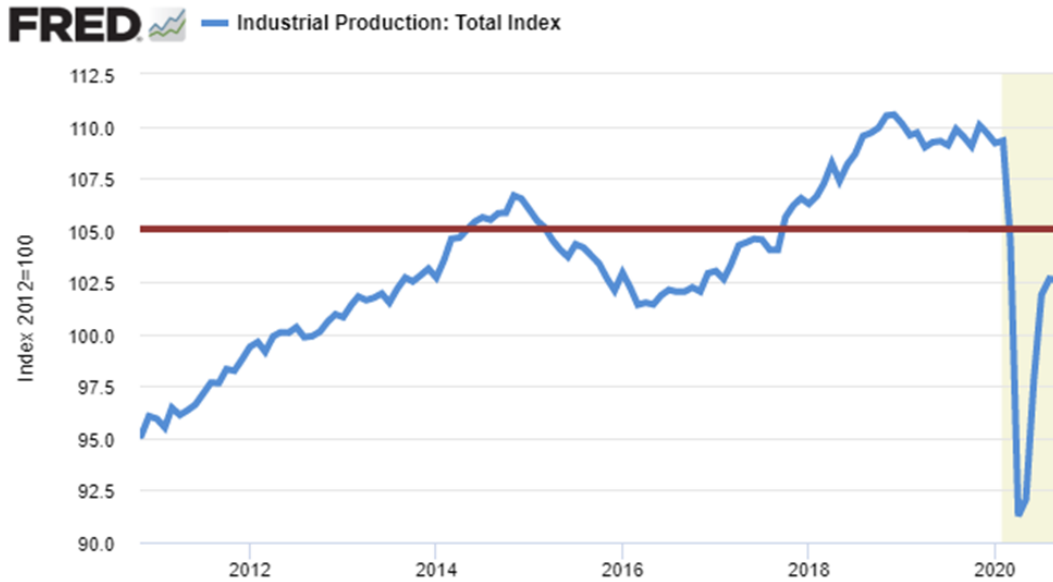


Source: U.S. Bureau of Economic Analysis

Industrial Production Index

If we look at the industrial production index, 2016 had been pretty terrible, 2017 and 2018 were better, and 2019 saw it above the recession line, which is pretty good. And then...you know... In Q3 2020, it started ticking back up again.

Percent Change in Industrial Production Index, 2009–2019

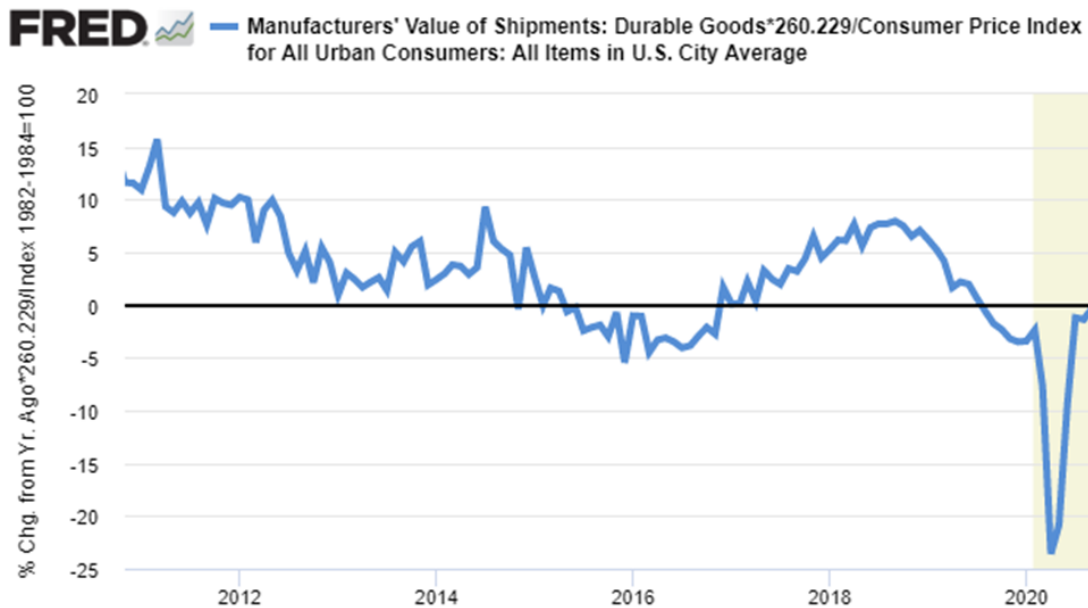


Source: Board of Governors of the Federal Reserve System (US)

Durable Goods

Durable goods—items like appliances, home and office furnishings, lawn and garden equipment, consumer electronics, toys, small tools, sporting goods, and other items that last for at least three years (per the official definition)—had been getting better since 2016. They had been on a downward trend even before the pandemic, but along with everyone else, fell off a cliff in early 2020. They have strongly rebounded, especially as everyone took the opportunity of the lockdown to mount home improvement projects, as well as improve their home technology infrastructures to support work-from-home and home schooling.¹⁶

CPI-Adjusted Durable Goods Orders (10 years), 2009–2020



Sources: U.S. Bureau of Labor Statistics; U.S. Census Bureau

¹⁶ Indeed, if you have tried buying a big new appliance like a refrigerator in recent months you know that finding one in stock or deliverable in a reasonable time period is quite the challenge.

Personal Income

Real Personal Income

Personal income is income that people get from wages and salaries, Social Security and other government benefits, dividends and interest, business ownership, and other sources.

This is one of the few indicators that increased during the early days of the pandemic, largely driven by CARES/PPP, extended unemployment benefits, and other disaster relief initiatives.¹⁷

Real Personal Income, 2009–2020



Source: U.S. Bureau of Economic Analysis

¹⁷ These kinds of government assistance initiatives are often referred to as “stimulus” packages, but in this case “disaster relief” is a perhaps more accurate term.

Disposable Personal Income

Disposable income is real personal income after taxes, and like personal income in general rose in the early days of the pandemic, only to drop again as the government disaster relief programs started to expire. As of this writing in mid-January, new disaster relief packages are being worked out, which will hopefully goose personal income and help people get through the winter and spring until the economy can more or less fully reopen and rebound, should a concerted vaccination program help get the pandemic somewhat under control.

Real Disposable Personal Income, 2009–2020



Source: U.S. Bureau of Economic Analysis

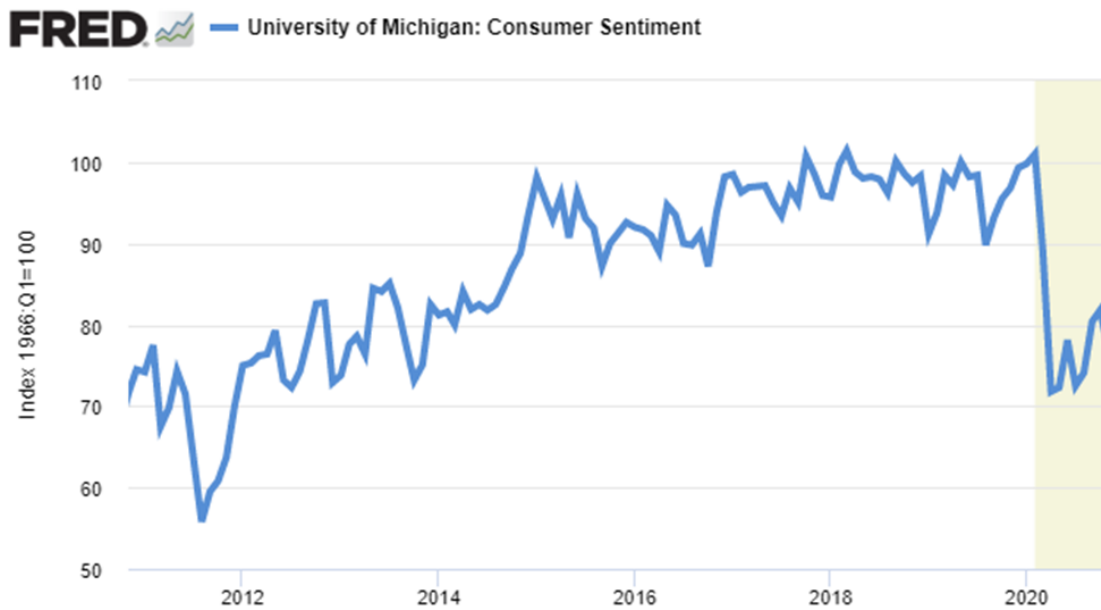
Consumer Confidence

Consumer confidence is a hard thing to figure, as it seems to ebb and flow independent of what other data points would suggest. Of course, most consumers don't pore over economic data and pretty much go on "gut" instincts. Usually, those instincts are a little mysterious—but in 2020, we have a pretty clear idea of where people's guts are.

Consumer Sentiment Index

Consumer sentiment had been pretty much a mixed bag even before the pandemic, but took a nosedive in early 2020. It's bounced around a bit above the low point of the Great Recession but it will be a long climb back to 2015/2016 levels, given the uncertainty of the virus, the uncertainty of the economy, and lockdowns and other safety measures.

Consumer Sentiment Index, 2009–2020

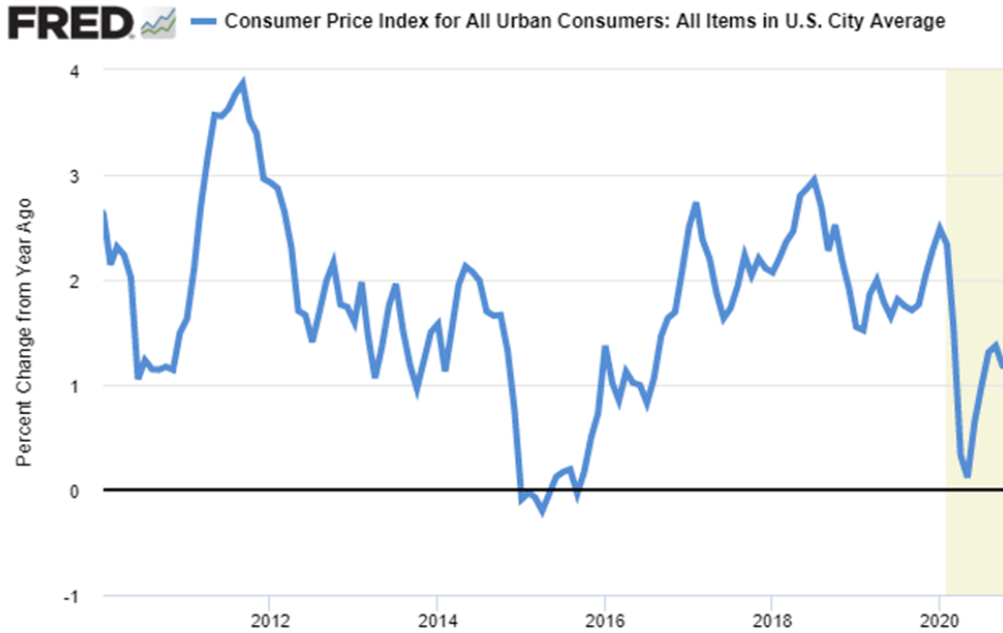


Source: University of Michigan

Consumer Price Index

The figure below shows the percent change in the Consumer Price Index from 2009 to 2020, and it has just come close to 2%. If there is one good thing about the pandemic, it has kept inflation pretty low; if you recall Section 2, where we adjusted revenues and profits for inflation, in January 2021 it was running about 1.4%.

Percent Change In CPI, 2009–2020

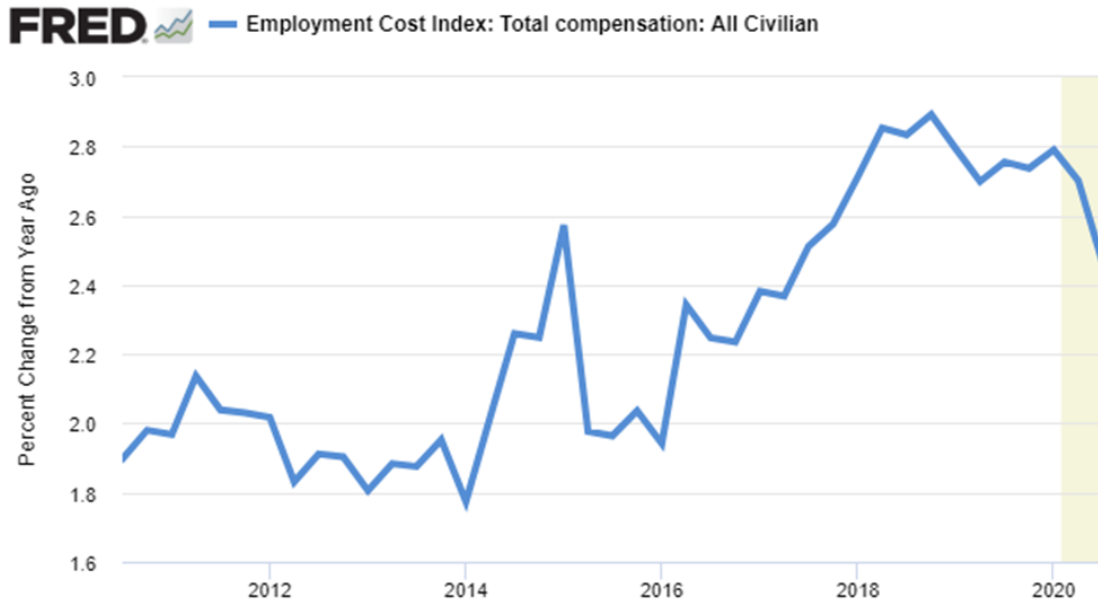


Source: U.S. Bureau of Labor Statistics

Employment Cost Index

The Employment Cost Index includes the total compensation for all civilian workers, and had been rising since about 2015, started to slow around 2015, was up and down in 2016, had been steadily rising in 2017, and appears to have peaked in 2018 before dropping again. This is an indicator we'd like to see rise (it's a sign of a potentially improving employment market), and we might have been in track to see that, but 2020 had other plans. (See the employment discussion below.)

Employment Cost Index, 2009–2020



Source: U.S. Bureau of Labor Statistics

Employment and Unemployment

Full-Time Employment

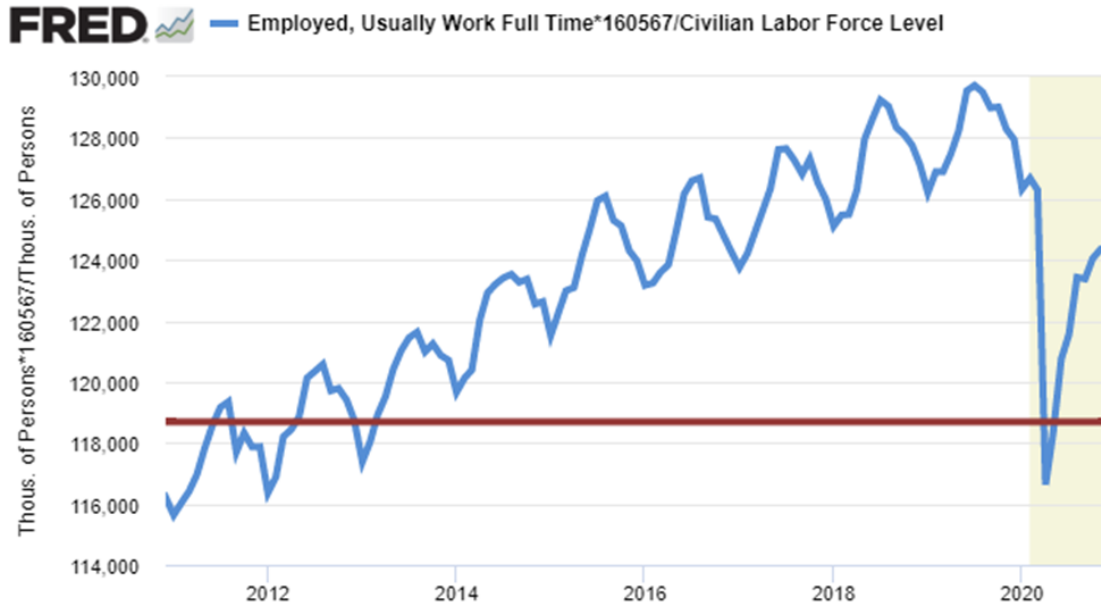
In general, the employment situation had been pretty good, until...you know. Overall, it's certainly better than it had been following the Great Recession, even if the headline unemployment rate has tended to understate unemployment because of lower-than-optimal labor force participation. Employment tanked in early 2020, but started to rebound as PPP funding and subsequent business reopenings in the summer allowed a lot of businesses to hire a fair amount of their workforce back. (For the record, the unemployment rate as of January 2021 is 6.7%; in January 2020, it was 3.5%.)

Number of Employed Full-Time, 2009–2020



Source: U.S. Bureau of Labor Statistics

Number of Employed Full-Time Adjusted for Size of the Labor Force, 2009–2020



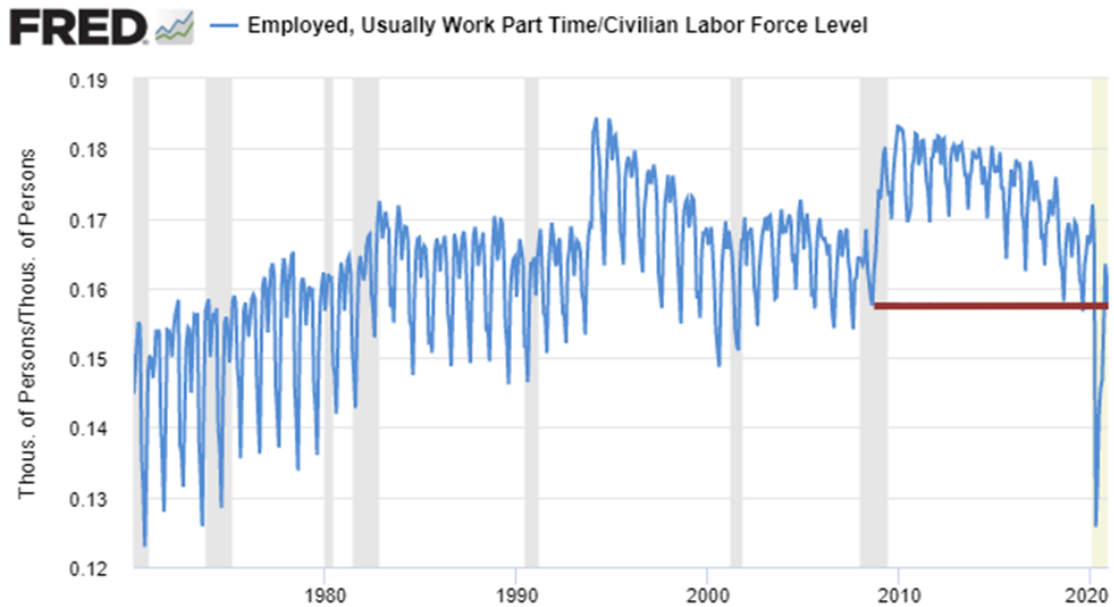
Source: U.S. Bureau of Labor Statistics

Part-Time Employment

We had been seeing a greater than usual percentage of part-timers. The reason for big jump around 1992/1993, by the way, was a redefinition of “part-time.” If you look at the late 1990s, you can see what an economic boom does: it reduces part-time employment in favor of full-time jobs. We had been slowly getting back to that point. The pandemic took almost as much of a toll on part-time employment as full-time.

Of course, we shouldn’t make the assumption that everyone who works part-time really wants a full-time job. Some do, sure, but some people choose to work part-time, either because they are raising a family (or home-schooling, in the case of the pandemic era), or because, thanks to the Affordable Care Act, they may not need a full-time job to get health care coverage. So we shouldn’t paint all part-time employees with the same brush.

Part-Time Employed as a Percentage of the Workforce, 1970–2020



Source: U.S. Bureau of Labor Statistics

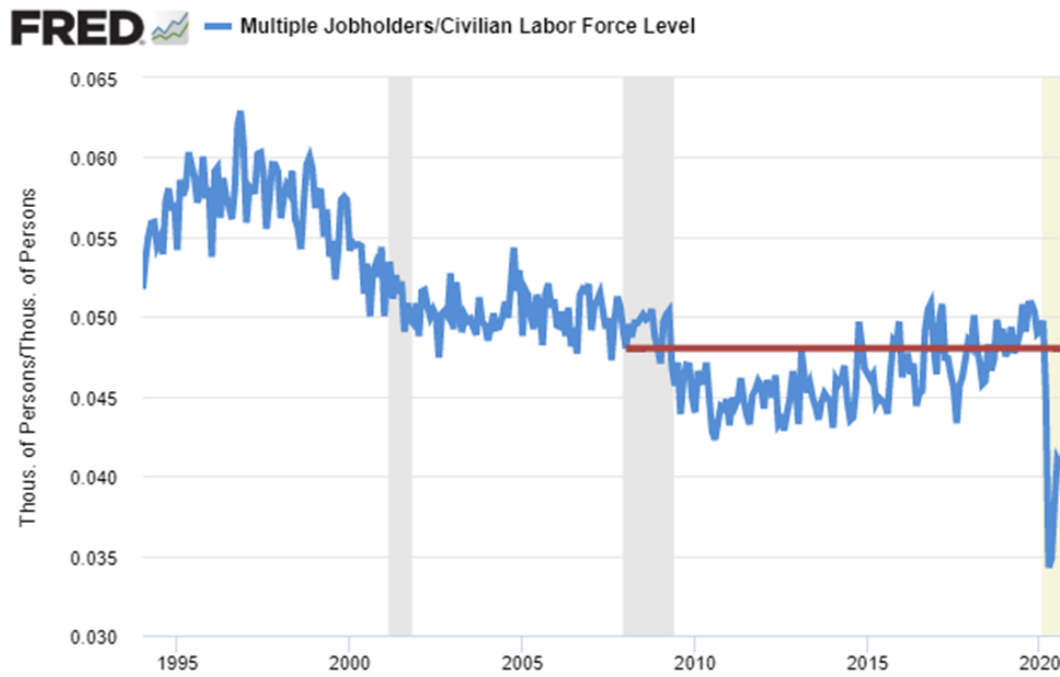
Multiple Jobholders

Multiple jobholders are typically an issue for the payroll employment data because the workers they tally can be double-counted. Payroll data count how many people are going to get W-2s (if you work more than one job, you get more than one W-2), whereas the household survey counts each worker once regardless of how many jobs they have.

Multiple jobholders had until recently been at a lower than usual level, but had been started to climb again, possibly because people needed multiple jobs in order to meet financial obligations for which a single job is inadequate. Look how high the number got just prior to the 1990s boom, during which it dropped. It's great when it's an employee's market, isn't it?

Multiple jobholders fell in early 2020 and have been slower to rebound than other kinds of employment.

Multiple Jobholders as a Percentage of the Workforce, 1994–2020



Source: U.S. Bureau of Labor Statistics

Unemployment Rate

This chart is pretty much the reverse of the employment chart we saw a few pages ago. In the last employment report at the time of this analysis (January 2021), the headline unemployment rate was 6.7%. It had peaked at 14.7% in April.

Unemployed as a Percentage of the Workforce, 2009–2020

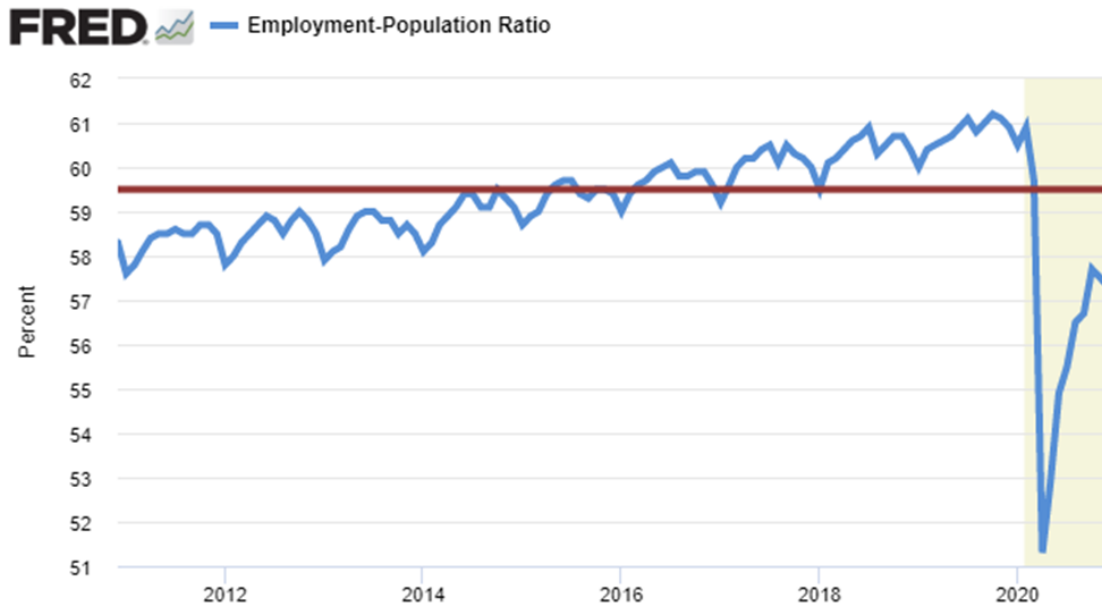


Source: U.S. Bureau of Labor Statistics

Employment-to-Population Ratio

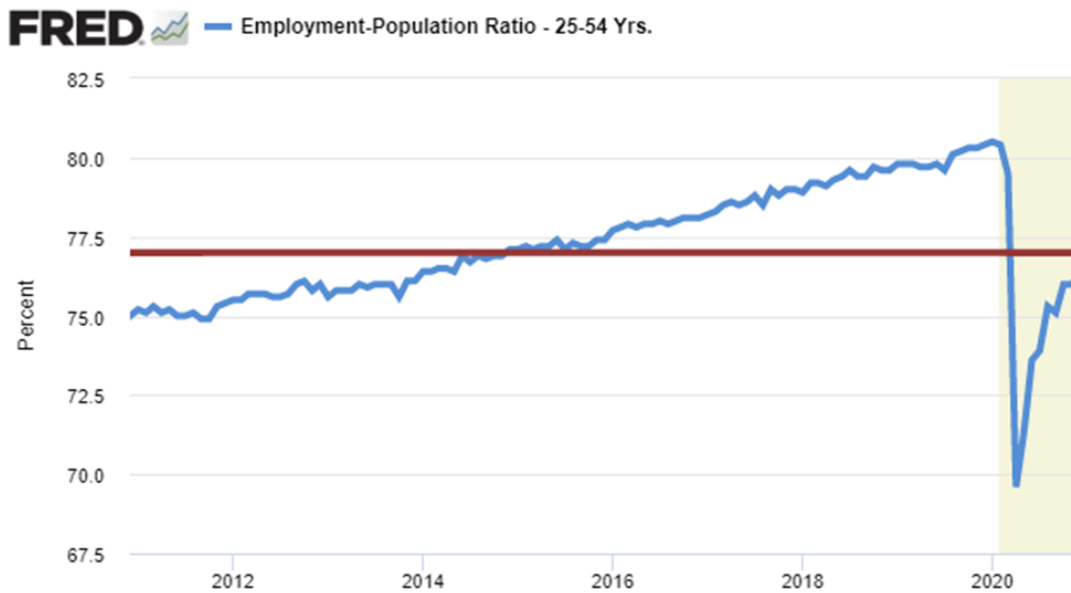
The employment-to-population ratio had been steadily improving, until... you know. The pandemic took a lot of people out of the workforce, which is why the improving headline unemployment rate is not quite as rosy as it seems. Sure, a lot of Boomers and maybe older Gen Xers took that opportunity to retire, but labor force participation among prime-age workers plummeted in early 2020 and is still quite a ways below its pre-pandemic level.

Employment-to-Population Ratio, 2009–2020



Source: U.S. Bureau of Labor Statistics

Employment-to-Population Ratio for 25- to 54-Year-Old Workers, 2009–2020

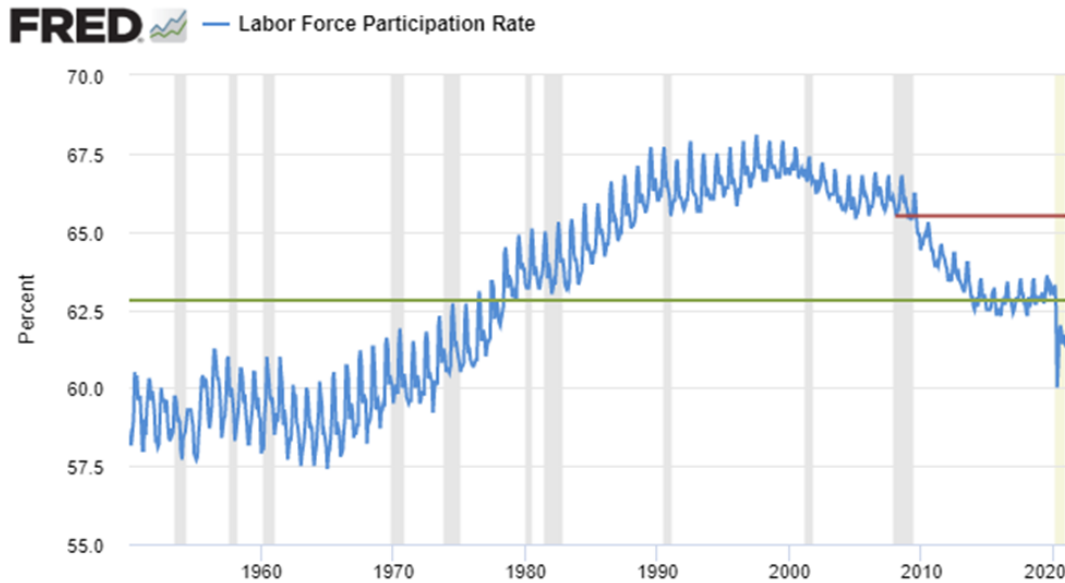


Source: U.S. Bureau of Labor Statistics

Labor Force Participation Rate

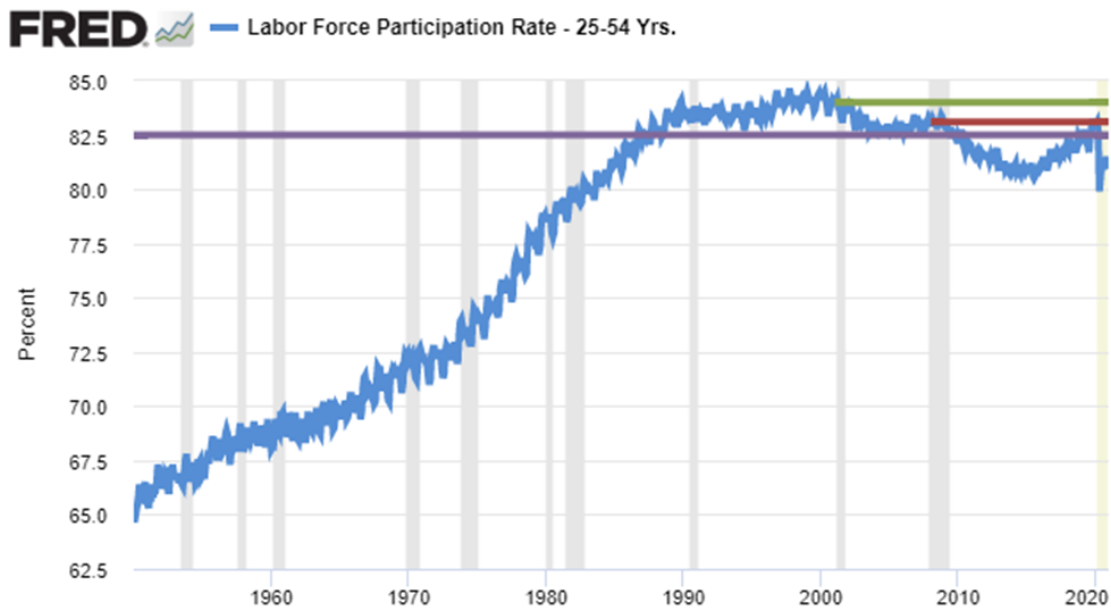
The labor force participation rate peaked in the late 1990s and started dropping between the two 2000s recessions, driven in so small part by Boomer retirement. The pandemic took quite a few folks out of the workforce who have yet to return.

Labor Force Participation Rate, 1950–2020



Source: U.S. Bureau of Labor Statistics

Labor Force Participation Rate for 25- to 54- Year-Old Workers, 1950–2020



Source: U.S. Bureau of Labor Statistics

© 2021

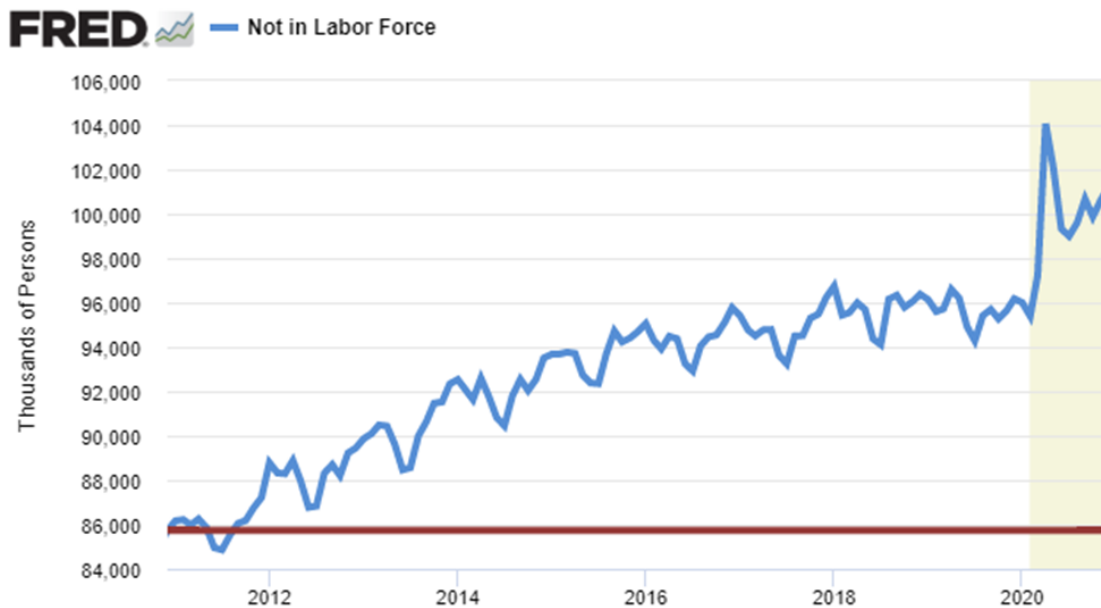
Not In Labor Force

“Not in labor force” has always been a choppy data series, but had stayed at an abnormally high level ever since the Great Recession. Some of this is due to retirees, but a lot of these folks should have been in the workforce even before the pandemic spike. (This has continued to rise even after the Q2 drop in employment.) Aggregate data don’t tell us anything about individual situations, at least in the pre-pandemic period. Maybe a particular industry has been declining (do we know of any industries like that?) or has died or is in the process of dying and it’s tougher to get work if that is someone’s particular field of expertise, or at least basic skill. Maybe there is a general skills mismatch. Maybe someone is a prisoner of geography, stuck in an economically depressed area (it’s not always easy for someone—especially if they have a family—to pull up stakes and relocate). And maybe available jobs pay far lower than what the market used to bear.

Post-pandemic, layoffs and furloughs saw a lot of people leave the workforce—perhaps for family reasons (with home schooling now a thing, for a lot of families perhaps it made sense for one parent to serve as full-time dad/mom) or perhaps for some of the reasons cited above, accelerated by the pandemic.

We will have to wait and see if 2021 does anything to help bring this number down—at least to the bad-but-less-bad level it was pre-pandemic.

Not in Labor Force, 2009–2019



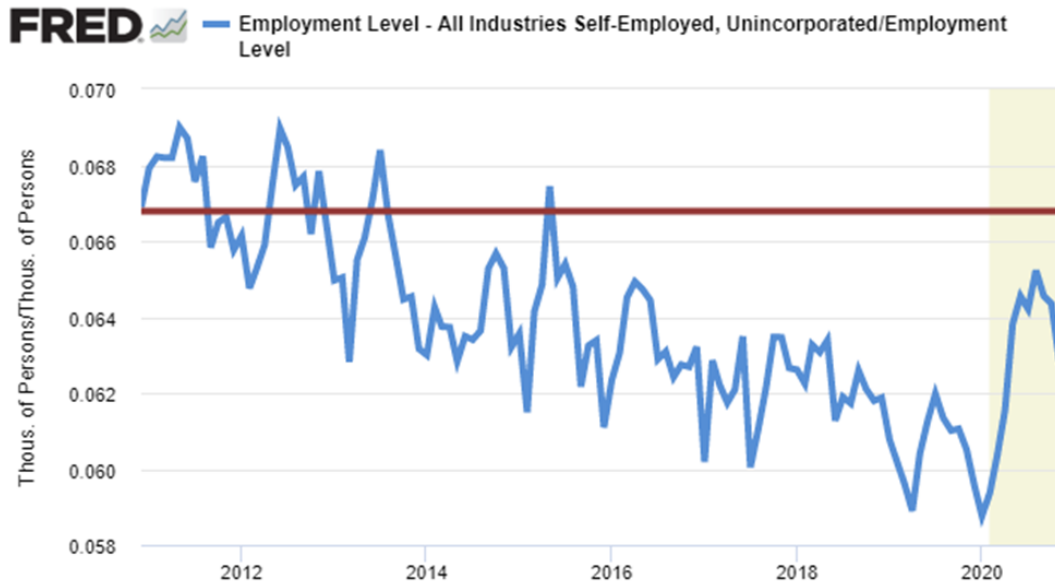
Source: U.S. Bureau of Labor Statistics

Self-Employment

Because we're in graphic communications, we automatically think of the self-employed as writers, designers, web developers, and other "information workers," but as it happens, a hefty chunk of the self-employed are construction workers, which is why there was such a drop-off after the Great Recession, which was preceded by the housing crash that took a toll on the construction industry for a time. Theoretically, you would see many of these workers come to the full-time or part-time workforce or be more entrepreneurial—which, admittedly, is not always possible, and not everyone is adept at being entrepreneurial. Then again, these data reflect self-employed but unincorporated, so it's entirely possible that some of them became S corporations or LLCs—especially as the 2016 tax law conferred tax advantages on being such a "pass-through" organization.

As we would expect, self-employment spiked in the early days of the pandemic, then started to come down again. It's possible the 1099 life was a stopgap measure until workers could return to full-time employment, even if that means work-from-home.

Self-Employed as a Percentage of the Workforce, 2009–2020



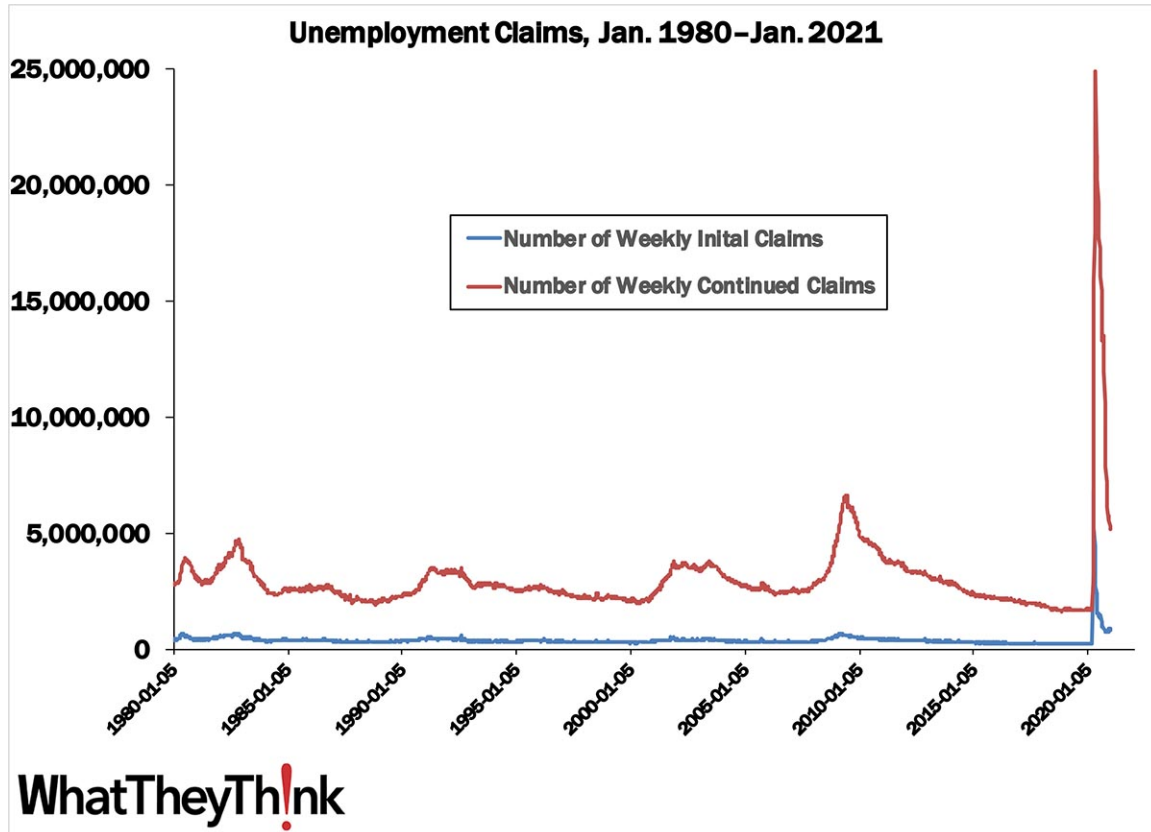
Source: U.S. Bureau of Labor Statistics

Unemployment Claims

One way we have been tracking the carnage throughout 2020 was via initial and continuing unemployment claims. Employment watchers were shocked, *shocked*, back in late March when the first pandemic era unemployment claims report came out and weekly initial claims shot from 282,000 the week of March 14 to 3,307,000 the following week—then doubled a week later. It wasn't until August that initial weekly unemployment claims dropped below 1 million, but they have still been high.

In January, [weekly initial unemployment claims](#) rose again:

In the week ending January 9, the advance figure for seasonally adjusted initial claims was 965,000, an increase of 181,000 from the previous week's revised level. The previous week's level was revised down by 3,000 from 787,000 to 784,000. The 4-week moving average was 834,250, an increase of 18,250 from the previous week's revised average.



This does not include initial claims for Pandemic Unemployment Assistance (PUA) that was up to 284,470 from 161,159 the previous week. And seasonally adjusted *continued* claims for the week ending January 2 (continued claims lag initial claims by one week) increased from 5,072,000 the previous week to 5,271,000. By comparison, at the nadir of the Great Recession, continued claims peaked at 6,635,000.

The Economic Landscape

So, yes, it's been bad, but not as bad as it could have been. As recessions go, it's not been a typical one: there is pent-up demand, just few places to spend it, or at least not as many as there used to be until a lot of the businesses reopen or operate at full capacity. And let's be fair: a *lot* of businesses have been struggling. A *lot* of businesses in our industry have been struggling. A *lot* of people have been laid off, and may not get rehired for some time. Unfortunately, if we had been more diligent about quarantining in the spring and summer, if we had been diligent about mask mandates and distancing, if we had for the sake of everyone forgone big parties and get togethers, at least for six months, this could have all been over last summer and we could be hosting, as some Asian and Antipodean countries have been, COVID-free parties.

Now that there is a vaccine (or more than one, actually), we are on the road to recovery. If the next round of PPP funding or whatever disaster relief comes out of the Biden Administration and Congress does as good, or better, a job as the first round, hopefully we can pull through winter and spring, and March 2021 won't be a reprise of March 2020.

With this Zoom backdrop, what does all this mean for the printing industry in 2021? Will the "Printing Renaissance" we wrote about at the end of 2019 pick up where it left off? What does a post-COVID printing industry look like? That's a topic for the next section.

7. INDUSTRY TRENDS AND FORECAST

There are two buzzwords we'd like to never see again: "pivot" and "new normal." Many stories and case studies written over the course of 2020 focused on how many print businesses were able to "pivot" to new applications that saw heightened demand during the pandemic. We don't necessarily dislike the term "pivot"; it just got a little overused and abused and the term makes it sound easier than the process of adding new applications actually is. Sure, if you're a sign shop, "pivoting" to distance signage is no big deal. But if you are a transactional or direct mail printer, it's a major shift, especially if you don't have the appropriate equipment or the skill set to make adhesive vinyl floor "distancing dots," let alone printed cloth masks. There is some degree of stigma attached to the term "pivot," as if everyone should have been able to turn on a dime and start producing something completely different, and if you couldn't, what's wrong with you? It's not even just our industry; look at, say, toilet paper. There were such shortages in the spring and summer because, hoarding aside, the major manufacturers were not able to easily "pivot" from making industrial size rolls of loo paper to the suddenly-more-in-demand consumer rolls. And that's essentially the same product!

So, yes, some print businesses were able to transition to new products, but not everyone was. Now, that does play into a larger discussion about "agility" and there is a lesson to be learned from all this. (See below.)

We also dislike the term "new normal," as this assumes that there was ever a) an old normal, or, if there was, b) that it was something we want to return to. Has anything ever been normal in the printing industry since, arguably, the 1980s? If you have seen some of the charts in Section 5, you know that the "old normal" for the printing industry has been a decline from \$150 billion years to \$90 billion years, declining establishments, and waning print volumes. In fact, the best year we had as an industry since the late 1990s was 2019 and it was as abnormal a year as you could ask for. Shipments were growing and everyone was happy!

2020 was, hopefully, an even more abnormal year, but in a different way. What should we look for in 2021?

Trends Affecting the Industry

To start...

The Elephant in the Room

First and foremost, what happens *vis-à-vis* the pandemic will affect whatever else happens in the economy at large and in the industry in particular. If March 2021 is a reprise of March 2020, we're in very big trouble. Shutdown and lockdown fatigue will become even more prevalent, more and more people will forgo common-sense health restrictions, infection rates will climb, the already over-burdened healthcare system will get even more overburdened, businesses will be forced to close again, the recovery will

be delayed another six to 12 months, and we'll be in no better shape economically next year at this time, which, to be frank, would suck.

On the plus side, there are vaccines, and once a substantial enough percentage of the population is vaccinated, safe reopening in full (or close to full) will be possible. When will that be? We would expect late spring, early to mid-summer at the latest if all goes well (a big if). That means events can start happening again, travel can start up again, and some of the traditional verticals that are many print businesses' bread and butter will be back and needing all sorts of printed materials, especially signage and other printed materials explaining whatever policies a venue has regarding distancing, handwashing/sanitizer use, proof of vaccination, and whatever other requirements emerge.

The K-Shaped Recovery

Throughout 2020, a common question that was asked was, "what letter recovery will it be"? For example, V-shaped? (The economy nosedives, then immediately pulls up again.) U-shaped? (The economy nosedives, stays flat for a bit, then rises again.)

If you look at the charts in Section 6, you'd be tempted to say "It's definitely V-shaped," but V may be the wrong letter to use, as different parts of the economy recovered at different rates. We may be looking at more of a K-shaped recovery. Wrote Barry Ritholtz at Bloomberg¹⁸:

This description of the economy fairly captures the two separate paths of the recovery. The line heading upward [the *arm* of the K, to use proper typographic terminology—Ed.] symbolizes those parts of the economy that have benefited from pandemic: Technology (Apple Inc., Alphabet Inc., Microsoft Corp.), general merchandise retailers (Target, Walmart), entertainment (Netflix Inc., Walt Disney Co., YouTube), Biotech and Pharmaceuticals (Moderna Inc., Johnson & Johnson & Johnson, Merck & Co., Pfizer Inc., AstraZeneca PLC) work from home firms (Slack Technologies Inc., Zoom Video Communications Inc.) and online retailers (Amazon.com Inc., Shopify Inc.).

And the tail of the K heading downward represents everyone else—the bars and restaurants struggling to reopen profitably, the retail chains and independent stores that were struggling before all this, events companies and venues, and many print businesses.

Until all (or at least most) parts of the economy can share in a healthy recovery, things are going to be tough in general, but tough on our industry in particular.

Flexibility/Agility

We mentioned at the start of this section that many print businesses were able to "pivot" to new print applications and we pointed out the bit of stigma associated with that idea—not everyone is capable of completely retooling their shop floor to produce new applications.

That said, the pandemic era has only accentuated something that Dr. Joe Webb had been saying for almost 20 years: print businesses need to put themselves in a position to be able to transition to new products as the market demands them. And many actually did—

¹⁸ <https://bloom.bg/34MMJ6z>.

hence the stellar growth in wide-format and other kinds of specialty printing over the past 10 years.

This idea is along the lines of what WhatTheyThink contributor Preston Herrin has referred to as “agility,” or the ability to respond to the kinds of quick, seismic changes we experienced last year. He [wrote](#):

The pandemic is reflective of past crises in that it demands the best of people, systems, and leadership. We have all witnessed the people who run toward a calamity rather than away from it. First responders and Good Samaritans run into dangerous situations with little regard for their personal safety. In reflection, they will say they are “well trained” or “wired that way.” What if you could “wire” and “train” your organization to respond to change and crisis with speed and agility reflective of the heroes charging into danger?

In a follow-up article in his series on agility, he [added](#),

Gone are the days of standing up a grand organizational design that functions for years. Enter the forever “beta phase” of ongoing enhancement and improvement. The current pandemic has amplified the contrast in reaction time, or agility vs. the status quo, more than any time in recent history. Now is the time to take action by embedding agility into your organizational design.

Agility is not an elusive concept, neither is it a disruptive, one-time effort. Rather, it is a quantifiable system of continuous evaluation of your fundamental business practices. The stepping-off point is an assessment of the core practices from which your business culture emanates. That is, the standards and structure under which your people operate utilizing formal and informal processes powered by rapidly changing technology tools (traditionally referred to as people, process, technology, and structure). This assessment process will reveal key competencies to replicate and inefficiencies to improve. Properly nurtured by leadership, this process becomes a transformative circular progression that, leaving no sacred cow untipped, improves the organization’s agility and effectiveness with each new cycle.

Basically, the idea is to forgo the status quo; “your processes and enabling technologies must empower a nimble response to changing conditions in the marketplace,” said Herrin. And his series in WhatTheyThink outlines the steps for changing the nature of the organization to be more agile.

Packaging

Packaging has been one of the bright spots of the industry, especially during the pandemic. Some new trends also emerged. [Wrote David Zwang](#) in January 2021, echoing what Preston Herrin was saying about agility:

For packaging, one of the lessons taught by 2020 was that responding quickly to changing market needs is critical. For consumers, that immediacy was addressed through online purchasing in place of in store, but what if the product isn’t there to order? FMCG (Fast Moving Consumer Goods) manufacturers and/or brands were caught backfooted as they needed to shift their production from supplying the wholesale sizes and volumes of commercial users to consumer retail sizes and brands as a result of the limiting or closing of many of the commercial establishments.

Consumer behavior changed virtually overnight, although these were also trends that started pre-pandemic. And it’s not just switching to e-commerce, or buying more frozen

foods rather than eating out, or preferring curbside pickup to indoor shopping, it's a whole changing relationship that consumers have with brands. Wrote [Zwang](#):

consumers also started to take a closer look at their existing brand loyalties. They are focusing on not just what they are buying, but who is making it, as well as how and where to ensure that it aligns with the consumers' own cultural beliefs. And this is not just a passing phenomenon, but a trend that impacts the largest growing consumer segment. McKinsey found that "Millennials are four times more likely than older consumers to say that they resist buying mass brands" if they don't align with their beliefs. But it's not just millennials that are taking a closer look and holding the brands accountable. In a recent Deloitte report, they identified that "Nearly nine in 10 consumers say the pandemic is an opportunity for large companies to hit 'reset' and focus on doing right by their workers, consumers, communities, and the environment."

For a lot of the younger generations, that often means buying local, from small, boutique brands rather than big national or international brands. This impacts packaging in several ways:

Since the shift from large global brands to smaller local/regional brands is increasing, so is the amount of disparate packaging required. Think more and shorter runs, similar to what happened in commercial print. This movement to small brands brings new opportunities for shorter label and packaging production runs. Smaller local/regional brands are usually more likely to engage local resources for their packaging. Global brands competing against local smaller brands will undoubtedly also have to adjust their current relationships with their global packaging resources to align with the supply chain management responsibilities at the local/regional level.

This opens up opportunities for smaller, local printers to start pursuing opportunities in packaging as well as labels.

Digital Textiles

As WhatTheyThink's textiles gurus Cary Sherburne and Debbie McKeegan wrote extensively throughout 2020, the pandemic has completely shaken up the world of textiles and fashion, laying bare some of the fashion industry's worst practices, such as its propensity for waste, pollution, and a variety of other environmental ills. But it has opened up substantial opportunities for the textile industry. Wrote [McKeegan](#):

over the last year we have witnessed a seismic shift and a historic sea change in our digital behaviors—an unprecedented change—forced in its raw essence by supply and demand. Fragmented supply and increased online demand have challenged the industry like never before, forcing many fashion businesses to reevaluate their supply chains. The fashion industry must now shake off its unsustainable legacy and re-equip to embrace change and once again deliver "positive fashion"—end the decades of overconsumption, reject fast fashion and its negative impacts, and switch to a sustainable footing where commerce thrives alongside the planet's resources.

Consumers are increasingly rethinking their relationship with fashion—and over the course of 2020, the phrase "all dressed up and nowhere to go" has never been more apt. 2021 and beyond are going to see an increased focus on environmental and climate change issues, and fashion is a very big part of that. A switch to digital production, and on-demand ordering of fashion are top ways that the industry is realigning itself in greener ways. This of course opens up new opportunities for print businesses that can

adopt digital textile printing, especially given the plethora of new equipment hitting the market from the likes of EFI Reggiani, Kornit, Epson, and others.

Wide Format and Display Graphics

Wide-format printing has been a hot trend for about 10 years or so, but in the past few surveys we had been tracking a slowdown in wide-format adoption, as those businesses that were going to expand into it already had. And that was a good move, because early on in the pandemic it was sign and display graphics producers that were most likely to be deemed essential businesses, printing safety signage, CDC guidelines, mask-wearing/temperature-taking policies, etc. Last spring, we saw the emergence *en masse* of distancing dots and other “keep away!” signage, as well as what we can call “celebratory signage”—lawn signs honoring graduates or birthday boys/girls, or other messages in lieu of a physical celebration. As businesses opened up (and continue to open up), we are seeing more Divisional Graphics™¹⁹ start to emerge, as plastic barriers become (most likely) permanent fixtures in retail and other public locations.

All of these kinds of pandemic-related graphics were important elements in the “pivot” we had been referring to, and while the wave in demand for these kinds of materials has largely crested, as more businesses start to reopen—and as events and travel are allowed to restart—there will be a renewed need for signage and other display graphics outlining distancing and mask-wearing policies, vaccination requirements, and whatever other policies need to be communicated, usually on a venue-by-venue basis. And remember that these kinds of materials can also tie into small-format print—direct mail campaigns from events companies or holiday destinations describing the policies that will be implemented when travel resumes.

The International Sign Association (ISA) has been holding [quarterly economic webinars](#), tracking the demand for both print and electronic signage. From WhatTheyThink’s [report on the Q3 webinar](#):

IHS Markit...looked at the end use markets, which reflects the “demand” side of the supply-and-demand equation—these are industries/markets that buy signage, be it digital or static (that is, printed/constructed). In terms of electronic/digital signage... “Uncertainty remains,” said [Leslie Levesque, Associate Director of IHS Markit], “but there is interest in incorporating digital signage into best practices.” For example, adding temperature-taking capabilities to establishments’ digital signage as they reopen. However, she said, “that hasn’t translated into much demand yet.” She doesn’t expect to see that transpiring until next year [2021].

The signage industry is also often at the mercy of trends in real estate and construction:

“there is still a lot of construction happening and still a need for architectural signage,” said Levesque, especially in health care facilities. But, she added, “we have not seen the bulk of it yet.”

So we expect a lot of signage and display activity—both print and electronic—to happen in 2021, although more likely in the latter half of the year.

¹⁹ The term was trademarked by EFI.

Interactive Print

It took a pandemic, but QR codes finally became cool! For those dining and other retail establishments that were open (at least during the warm months when outdoor dining was feasible), there was a shift toward either disposable printed menus and/or scannable menus via QR codes or other means. For example, SpeedPro launched [InfoLnkX](#):

Based on near-field communication (NFC), SpeedPro's InfoLnkX comprises a programmable chip attached to a restaurant's interior or exterior graphics that can allow patrons to access the restaurant's menu right from their phones—without having to handle germy multi-use menus or generate excess waste via single-use menus.

These types of interactive print mechanisms can be used for many different applications, and while they had been slow to catch on pre-pandemic, they are proving to be useful for touchless applications. There are opportunities for print businesses to help their customers use these kinds of technologies effectively.

The Only Trend That Matters

Ultimately: Demand for Print

We said this last year, and it bears repeating: there really is no trend more important than the fundamental demand for print in the marketplace. It doesn't matter whether digital or analog printing predominates, it doesn't matter how productive our workflows are, it doesn't matter if we have the greatest sales people in the world—if there is no demand for what we as an industry produce, business will be bad and we will lose establishments.

After all, this was the force that dominated the industry for the 20 years pre-pandemic, whittling down the industry to a third the size it was 20 years ago. The good news is that, over the past couple of years, demand for print has been on the rise—and that remains true in the Age of COVID. We just have to be especially aware of what *kinds* of print are in demand, which we hope we have identified sufficiently.

Industry Shipments Forecast

The limits of forecasting have never been made more plain. We always caution in these reports that any forecast can only ever predict the past, as it extrapolates existing data, although different forecast models do the extrapolating in different ways. Back in December 2019 when we did an initial forecast of 2020, neither the human analysts or forecasting software could have foreseen the pandemic. Granted, these sorts of cataclysmic events don't happen often (mercifully), but it's not unusual for more minor events to occur which can play havoc with forecasting attempts. As a result, our forecast below is a general roadmap based on existing trends, so be forewarned that it can go awry at any moment.

If you are familiar with our past forecast reports, you know we use three basic forecasting models to analyze time series—namely, printing shipments:

- Exponential Smoothing
- Curve

- Box Jenkins

We also average the three forecasts to see if the “hive mind” of the forecasting software exceeds the sum of its parts, and it doesn’t really.

An obvious question is, “Well, if you have been doing these forecasts for so long, which of those models has been the most accurate?” Ah, if it were only that simple! If we look at historical shipments data and compare what ultimately came to pass with what the forecasts predicted, none has hit the mark with any consistency. Often, there were major changes in one particular year to which the forecasting model attached too much importance and which was not duplicated. Once a forecast model gets hold of an idea, it has a hard time letting go of it—but then a lot of humans do that, too.

Exponential Smoothing and Box Jenkins look to be the most accurate for 2020, but we find them too bearish in the long run, as they don’t anticipate a sharp recovery from the pandemic-based economic downturn.

Our own WTT forecasting model is more judgment-based, adding a human²⁰ perspective based on what we know about the industry, technology, and culture as opposed to what the “robotic” models know just from looking at past data and assuming that the past will repeat itself more or less aggressively.

We do have to be careful. Our initial 2020 forecast was based on 2019 and, as it turned out, ended up being far too rosy. In April 2020, we did a revised 2020 forecast and it was far too bleak (believe it or not). This time, we’re splitting the difference.

We are forecasting a recovery-based increase for 2021, but ultimately return to our regularly scheduled declines in printing shipments through 2030, with some years seeing steeper declines than others.

NAICS 323 Forecast Value of Shipments, 2020–2030
(2020 \$US million)

	Exponential Smoothing	Curve	Box Jenkins	Average	WTT Forecast
2020	\$83,681	\$72,117	\$83,642	\$79,813	\$83,600
2021	\$78,079	\$67,911	\$80,591	\$75,527	\$85,100
2022	\$72,477	\$63,642	\$79,283	\$71,801	\$83,500
2023	\$66,874	\$59,312	\$78,414	\$68,200	\$82,500
2024	\$61,272	\$54,919	\$77,699	\$64,630	\$82,200
2025	\$55,670	\$50,464	\$77,110	\$61,081	\$81,300
2026	\$50,068	\$45,947	\$76,626	\$57,547	\$79,500
2027	\$44,465	\$41,367	\$76,227	\$54,020	\$78,300
2028	\$38,863	\$36,725	\$75,898	\$50,496	\$77,800
2029	\$33,261	\$32,021	\$75,628	\$46,970	\$76,500
2030	\$27,659	\$27,255	\$75,405	\$43,440	\$75,900

²⁰ Well, analyst.

Remember though, these are aggregate numbers, and there are going to be print businesses that far outperform the average (and those that far under-perform it). Data are not destiny, and it is fully within our own means to change our own destiny—part of it is that “agility” we mentioned earlier.

Inflation Multipliers

Finally, here is our CPI multiplier table. It is helpful to look at your own business metrics and adjust for inflation so you know whether you’re *really* making any money.

CPI multiplier table

Year	Multiplier
2014	1.109
2015	1.101
2016	1.079
2017	1.057
2018	1.037
2019	1.014
2020	1.000

The Last Word

2020 was a rough year for the industry, made even worse because it had come after 2019, which was probably one of the best for the industry in a long time. One positive aspect to all this was that businesses were in such a strong position going into the pandemic year that they were able to weather it better than if it had happened three or five years earlier—or even if it had come right on the heels of the Great Recession. As we write this, there is a lot of uncertainty about what will happen with the pandemic and the economy, but we are cautiously optimistic that 2021 is going to be a rebounding year, with a full return to something akin to normality in early 2022.

In the meantime, as always, WhatTheyThink looks forward to continuing to provide cutting-edge research, analysis, and commentary on these dynamic markets.

APPENDIX A. METHODOLOGY AND QUESTIONNAIRE

The number of respondents to the Fall 2020 Business Outlook Survey was 265 WhatTheyThink printing executives. These were gathered from a total of 278 respondents. The excluded questionnaires were from individuals in other industries that were not the survey target, only answered one or two questions, or were duplicates. Respondents were gathered from WhatTheyThink's and *Printing News*'s commercial printing subscribers, recruited through social media (Twitter, LinkedIn), and special appeals through the WTT newsletter.

Questionnaire

2021 Business Outlook Survey—Share Your Story!

2020 sucked. We know that. Our job now is to quantify how much it sucked and how you're planning to retool in 2021.

So WhatTheyThink is conducting its annual survey of printing executives about how their business fared in 2020, and what their outlook and plans for 2021 are. COVID-19 obviously had a major impact on the printing industry, and knowing how some print businesses were impacted, both negatively and positively, can help others in their attempts to rebound.

This short survey will only take 5-7 minutes to complete.

To thank you for your assistance we will send you the executive summary of this project and you will be entered to win one of 10 premium memberships to WhatTheyThink or one of 5 \$50 Amazon gift cards. Please enter your email address in the last question of the survey to receive the thank you items.

Thank you for your consideration and your help!

— Richard Romano

Privacy Notice

Your responses will be kept confidential. We will not release your name or answers to anyone; your responses will be combined with all of the others in survey totals. This is strictly a research project. Responses will not be used to create sales leads for advertisers or dealers. We're only interested in how much 2020 sucked.

1) What is the primary business at this location? (Choose only the one that is the highest portion of 2020 sales.)

quick printing
 book printing
 commercial multicolor sheetfed or web offset printing
 commercial toner and/or inkjet digital color printing

screen printing
non-offset/non-screen commercial printing (gravure, letterpress, flexo, etc.)
specialty printing and promotional items (envelopes, business cards, stationery, greeting cards, novelties, etc.)
wide-format printing
sign fabrication/construction
prepress services
binding and finishing services
inplant printing department, corporate, government, education, or non-profit
newspaper publisher/printer, daily and non-daily newspapers
business forms/systems dealer
business forms printing
folding carton printing
other packaging (label & wrapper, flexible packaging, etc.)
print management company (like innerworkings)
independent print broker/distributor
other, please specify _____

2) Are you part of a franchise, either print or sign (like Alphagraphics, FASTSIGNS)

yes
no

3) What kinds of products are printed at this location? (please click all that apply)

direct mail
brochures
marketing collateral materials (envelopes, business cards, etc.)
transactional materials
business forms
directories
books
magazines/catalogs
newspapers
wide-format/display graphics
signage
textiles for garments/apparel
packaging (corrugated, folding carton/ flexible)
labels
specialty printing and promotional items
3D printing
other, please specify _____

4) Where is this business located?

USA
Canada
Mexico or Central or South America
Europe
Asia
Africa
Australia/Oceania

5) How many employees are at this specific location?

1-4
5-9
10-19
20-49
50-99
100-249
250-499
500+

6) In terms of your 2020 revenues at this location only, how do they compare to 2019?

increased more than 10%
increased between 6% and 10%
increased between 1% and 5%
stayed about the same
decreased between 1% and 5%
decreased between 6% and 10%
decreased between 10% and 25%
decreased more than 25%

7) How do you expect your 2021 revenues at this location to compare to 2020?

increase more than 25%
increase between 10% and 25%
increase between 6% and 10%
increase between 1% and 5%
stay about the same
decrease between 1% and 5%
decrease between 6% and 10%
decrease more than 10%
decrease between 10% and 25%
decrease more than 25%

8) In terms of your 2020 jobs/orders at this location only, how do they compare to 2019?

increased more than 10%
increased between 6% and 10%
increased between 1% and 5%
stayed about the same
decreased between 1% and 5%
decreased between 6% and 10%
decreased more than 10%
decreased between 10% and 25%
decreased more than 25%

9) How do you expect your 2021 jobs/orders at this location to compare to 2020?

increase more than 25%
increase between 10% and 25%
increase between 6% and 10%
increase between 1% and 5%
stay about the same
decrease between 1% and 5%
decrease between 6% and 10%
decrease more than 10%
decrease between 10% and 25%
decrease more than 25%

10) In terms of your 2020 profitability, how did it compare to 2019?

increased more than 10%
increased between 6% and 10%
increased between 1% and 5%
stayed about the same
decreased between 1% and 5%
decreased between 6% and 10%
decreased between 10% and 25%
decreased more than 25%

11) How do you expect your 2021 profitability to compare to 2020?

increase more than 25%
increase between 10% and 25%
increase between 6% and 10%
increase between 1% and 5%
stay about the same

- decrease between 1% and 5%
- decrease between 6% and 10%
- decrease between 11% and 25%
- decrease more than 25%

12) In the next 12 months, which of the following will be your biggest business challenges? (please click all that apply)

- regaining business lost due to COVID
- keeping my employees safe from COVID
- transitioning the business to produce new kinds of print materials post-COVID (such as PPE, distancing signage, divisional graphics)
- increasing plant productivity
- managing workflow automation
- competition from other print providers
- capabilities of sales personnel
- capabilities of production personnel
- understanding the needs of today's communications buyers
- consumables and supplies prices
- national economic conditions
- local economic conditions
- financing costs of our equipment
- finding capital for investments
- need for employee training
- finding qualified sales personnel
- finding qualified production personnel
- increasing employee benefit costs
- profitably handling shorter runs
- deciding whether to keep or discard our offset equipment
- loss of print business to digital media
- pricing
- job tracking
- print MIS implementation
- migrating production to the cloud
- migrating business functions to the cloud
- migrating customer service and sales to the cloud
- training employees to use cloud applications
- keeping up with technological changes
- making our facility/business more environmentally sustainable
- owner/management retirement
- retirement of key production personnel
- selling our business
- adding/updating web-to-print/online storefront
- getting web-to-print to work on smartphones and other mobile devices
- adding wide-format equipment/services

adding packaging printing equipment/services
 transitioning jobs from offset to high-speed digital printing equipment
 adding non-print media capabilities (web design, app development, social media management, etc.)
 competing against digital media agencies
 other, please specify _____

13) In the next 12 months, which of the following represent your best new business opportunities? (please click all that apply)

improving economic conditions
 national recovery from COVID-19
 producing post-COVID print materials (such as PPE, distancing signage, divisional graphics)
 customers outsourcing more work to us
 increasing sales through print brokers
 partnering with other print providers
 helping clients get their websites to work on mobile devices
 offering electronic/non-print services for customers (web design, app development, social media management, etc.)
 offering interactive print technologies to customers (like QR codes, augmented reality)
 helping customers integrate print and non-print marketing campaigns
 using marketing automation for our business (like HubSpot, Eloqua, Marketo)
 selling marketing automation services to our customers
 adding additional offset printing equipment
 adding digital printing equipment
 customized, personalized, or variable-data printing jobs
 disposing of offset equipment to concentrate on digital printing
 broadening bindery/finishing equipment/services
 adding “digital enhancement” finishing technologies (like Scodix, Highcon, MGI)
 adding wide-format printing capabilities
 adding textile/fabric printing capabilities
 adding packaging printing capabilities
 adding digital label/wrapper printing capabilities
 adding specialty or industrial printing capabilities
 adding vehicle graphics/wrapping capabilities
 adding traditional signage fabrication/construction capabilities
 adding dynamic digital signage (DDS) capabilities
 broadening fulfillment, shipping, mailing capabilities
 automating production
 adding web-to-print/online storefront
 print MIS implementation
 getting more customers using smartphones and other mobile devices
 migrating production to the cloud
 migrating business functions to the cloud

migrating customer service and sales to the cloud
 training employees to use cloud applications
 acquiring another company
 selling our company
 becoming part of a print or sign franchise (like Alphagraphics, FASTSIGNS)
 hiring new salespeople
 video production services
 other, please specify _____

14) Which of the following investment items have you budgeted for and plan to acquire in the next 12 months? (please click all that apply)

COVID safety materials/equipment (like dividers, distancing graphics, PPE)
 additional space/new location
 color measurement equipment (densitometer, spectrophotometer)
 color management software
 computer-to-plate equipment
 finishing/bindery equipment for offset/analog production
 finishing/bindery equipment for digital production
 cutting table for wide-format finishing
 other finishing equipment for wide-format
 laser cutting/etching equipment
 toner-based color digital press (like HP Indigo, Xerox iGen)
 high-speed production inkjet printing equipment (like HP PageWide, Canon Océ ColorStream/ImageStream)
 sheetfed offset press
 web offset press—new
 rebuilding our web offset press
 wide-format color printer (24 in.+)—solvent/eco-solvent (like Epson, Roland)
 wide-format color printer (24 in.+)—latex rollfed or flatbed (like HP Latex)
 wide-format color printer (24 in.+)—flatbed UV (like EFI VUTEk, Canon Océ Arizona)
 CNC routers and/or other signmaking equipment
 digital label printing equipment
 dye-sublimation printer (like Epson, Roland, Mimaki)
 packaging press/printer—corrugated
 packaging press/printer—folding carton
 packaging press/printer—flexible packaging
 3D printer
 prepress RIP for our wide-format printers
 prepress RIP for other devices
 Management Information System (MIS)
 Customer Relations Management (CRM) system
 workflow automation software
 personal protection equipment (PPE)
 we have no planned investments

other, please specify _____

15) Have you attended, or do you plan to attend, any of the industry’s “virtual” events (like thINK, PRINTING United Digital Experience, etc.)?

- yes, have attended virtual events
- yes, plan to attend future virtual events but have not attended one yet
- no, have no interest in virtual events

16) If yes to the previous question, what is your opinion of virtual industry events?

- they are no substitute for in-person events
- they are inferior to in-person events, but are an acceptable substitute
- they are superior to in-person events
- I do not attend industry events, in-person or virtual

17) Thinking about the return to live events planned for 2021, what is your feeling regarding your attending events post-COVID?

- I would attend in-person events without hesitation
- I would prefer not to attend events until there is a COVID vaccine
- I would prefer not to attend events until the virus is eradicated
- I prefer to attend virtual events
- I do not attend industry events, in-person or virtual

18) Are you considering hiring/adding staff in the next 12 months?

- yes
- no
- don’t know

19) If yes, for what positions are you looking to hire? (please check all that apply)

- executive management
- inside sales representative
- outside sales representative
- marketing and market communications
- prepress
- production management
- press operator (offset or digital)
- postpress/bindery/finishing
- IT management
- IT/software programming
- graphic designer (for print)
- web design/development
- mobile app development
- other, please specify _____

20) If you would like to be placed into a drawing for one of 10 premium WhatTheyThink memberships or one of 5 \$50 Amazon gift cards, please enter your e-mail address below:

Enter e-mail address _____

Thank you very much!

APPENDIX B. SURVIVOR BIAS

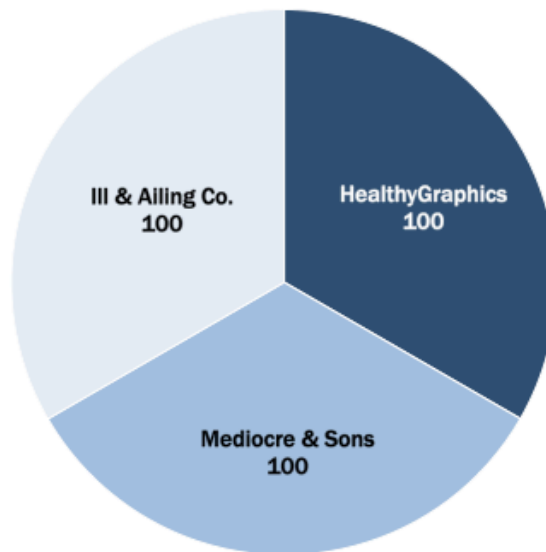
In our survey results, what we refer to as “survivor bias” plays a very important role, as it has in past surveys, and affects the interpretation of survey data. When an industry is growing, this type of bias is not an important statistical issue. But, as you know, the industry has *not* been growing—quite the opposite—so we need to bear survivor bias in mind, because it stems from the fact that really unhealthy print businesses have exited the industry (and thus have not taken our survey), and the ones that survived are naturally healthier than the ones who went—or are going—out of business. After all, businesses that are *really* ailing tend to disregard survey participation requests, since they’re too busy trying to stay in business to bother answering a questionnaire.

Survivor bias is nothing unusual, nor is it unique to the printing industry; it’s almost always what happens in markets.²¹ But how they perceive the remaining print landscape may not be a true reflection of the overall market.

Here’s what we mean.

Say you have a given print market with three printers. One is doing really well (HealthyGraphics), one is doing OK but not great (“Mediocre & Sons Printing”), and one is doing very badly (“Ill & Ailing Co.”). Assume at the outset that in their region, the overall market for print is 300 print buyers, at this point in time, they each serve 100 customers:

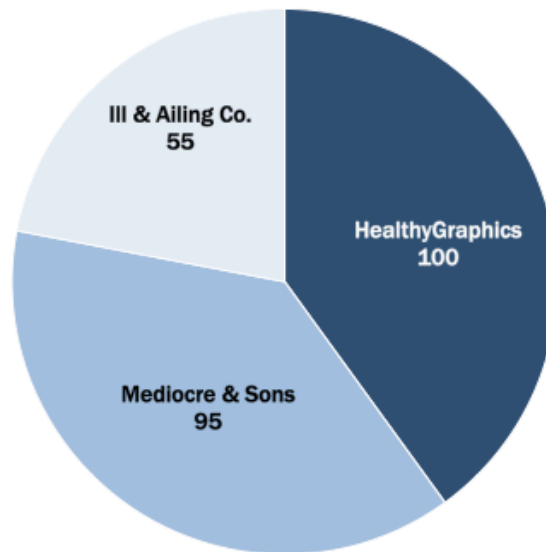
The initial market—My Three Printers
Market=300 customers



²¹ It’s also common in medical and health research, where the term “survivor” is used a bit more literally.

These three printers plug away merrily for a period of time. Now, say there is some sort of upheaval—50 of those customers are gone. Some may have moved away, some may have had their marketing budgets cut and thus stopped printing things, relying instead on digital or social media, and some may have gone out of business or been acquired. In a word, the market for print shrinks. When the smoke clears, there are only 250 customers spread among these three shops. The healthy printer keeps all its original customers, the mediocre printer loses a little bit, and the sick printer loses the most:

Upheaval! The market changes
Market=250 customers



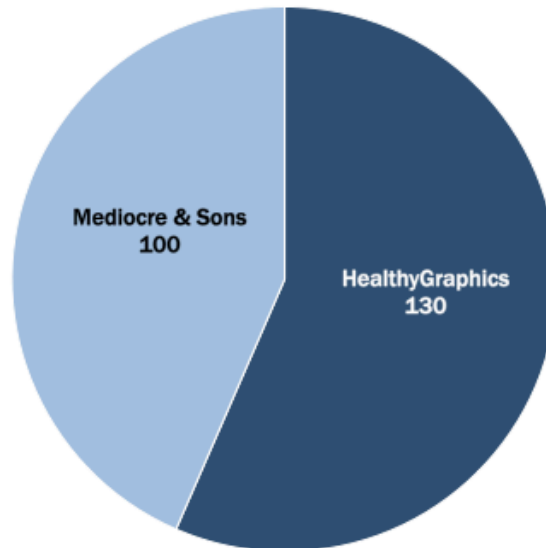
WhatTheyTh!nk

How does each of these printers describe the prevailing economy?

- HealthyGraphics: “Business isn’t growing strongly, but we’re holding steady.” (What they say on our survey: “Business conditions have stayed about the same.”)
- Mediocre & Sons: “Business is tough, but we’ve only lost 5% of our business.” (What they say on our survey: “Business decreased up to 5%.”)
- Ill & Ailing Co.: “We’re in a recession. Things are terrible. We have to go out and sell harder.” (What they say on our survey: “Business decreased more than 10%.”)

Things go on like that for a bit and ultimately Harold Ill and Dennis Ailing of Ill & Ailing decide to pack it in, and the company exits the market (so it goes). As a result, both the healthy printer and the mediocre printer each pick up some of the volume from the I&A’s customers. However, at the same time, another 20 of print customers have themselves left the market, or at least the print market:

**And then there were two...the printing landscape changes
Market=230 customers**



WhatTheyTh!nk

How do the printers now describe the prevailing market?

- HealthyGraphics: “Business is great! We’re up 30%.” (What they say on our survey: “Business increased more than 10%.”)
- Mediocre & Sons: “Hey, business is pretty good! We were down 10%, now we’re up *more than 10%* from where we were since we went from 90 to 100 accounts. This is because we’re smart. We’re terrific executives. Next year will be even better.” (What they say on our survey: “Business increased more than 10%.”)
- Ill & Ailing: “I played a round of golf this morning, and Dennis is going sailing later today. Retirement is great!” (What they say on our survey: Nothing.)

When things are good, you’re a genius. When things are bad, it’s the economy. Right? However, neither of these things was the case in this example. Because look at what happened to the overall market for print:

The effects of survivor bias on market perception

	Time Period 1	Time Period 2	Time Period 3		
Market size/change (number of accounts)	300	250	-17%	230	-8%
Healthy printer	100	100	0%	130	+30%
Mediocre printer	100	95	-5%	100	+11%
Sick printer	100	55	-45%	-	-
What the market survey says	"All printers are doing the same"	"We did a survey and only one out of three printers said business was holding steady."		"Printers are doing great; survey respondents said that business is up 10%+!"	
What really happened	Flat market	Market shrank by -17%		Market shrank by -8%	

Even when aggregate business conditions were up, the print market still declined. So the survivor bias phenomenon leads to a false assessment of aggregate business conditions that ends up being reflected in the way participants in industry surveys answer questions about business performance. When we ask whether business increased in the past year, both the healthy printer and the mediocre printer would say, “yes,” skewing the results in a positive direction because the sick printer is lolling in the Florida sun and isn’t around any longer to select any of the “business is declining” survey options. None of these respondents were lying: they were reporting about their individual business, which is what they’re supposed to do.

Now, you might say, “Well so what? If the industry is left with healthy printers, isn’t that a good thing? Isn’t that what usually happens in a dynamic market?” If it were the case that the *only* variable in this example was the health of the printers, then yes, it would be a good thing. But that’s *not* the only variable. The more important variable is the number of print customers—the overall market for print. In our theoretical example, that kept declining, an effect that the relative health of the remaining printers masked. If that keeps declining, then the mediocre printer will become the sick printer, and the healthy printer a mediocre printer. Lather, rinse, repeat, and the next time there is a survey, the shops that are left are still in the roughly the same position as our example and will say the same basic things. It’s just that the numbers will be smaller. At some point, you may just have the healthy printer who has all the print business in the area. So he’ll be doing quite well. For a while...

Now, this is not to say that survey results are useless; if they were, we wouldn’t keep doing them. It’s only during times of consolidation that this becomes an issue. Over the years, we’ve done surveys where respondents were quite frank about how bad their business conditions were, and we’ve seen survey results that we felt accurately did reflect an industry that was in better shape than it had been previously.

Survey data need to be looked at in the context of what we know about the market both in terms of broader statistics like changes in monthly printing shipments and other general economic data, as well as anecdotal evidence gleaned from talking with printers and printers’ suppliers and vendors. Other data in the survey also help shed a light on business conditions data.

So think of this: industry-wide government data give us a “top-down” view of the marketplace. Survey data give us a “bottom-up” perspective. The job of the researcher is to reconcile the two truthful perspectives with analysis that reveals the dynamics of the industry.

There are telltale signs of survivor bias lurking in the data if you know where to look for them. It comes down to interpreting data that you know just can’t be true, or at least don’t tell the whole story. There is a bit of that in Section 4 of this report.

So keep this idea in mind as you read through the data in this report. You will see generally upbeat numbers for many respondents in the business conditions segment of the survey, even though industry shipments have taken a very bad turn since Fall 2016. Surveys are for winners, it seems. Printers having trouble staying afloat have to keep paddling; they don’t have time for surveys.

That’s the end of our lecture. Except perhaps for this comment: if you’re a printer who has been a survivor, stay vigilant. When business is great, everyone thinks they’re a genius. When business is bad, you really need to be one to adapt and reposition.