

Supply-Chain Disruption: How it's affecting the printing industry, and what can we do?

PRINTING INDUSTRY PERFORMANCE & INSIGHTS

Providing regional printing association members
a printing industry outlook view and actionable knowledge.

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**MIDDLE
TENNESSEE**
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Given how supply chain and workforce shortages are affecting our industry, association leaders encouraged us to explore both topics in our October 2021 PIPI study. Addressing three topics (industry outlook, workforce shortages, and supply chain issues) made our survey long. Sorry! We will make future surveys much shorter! We are producing three reports from the October 2021 PIPI study. This report presents insights related to how supply-chain problems are affecting our industry and related effective tactics. We appreciate the participation and support of fifteen regional printing associations, which are listed at the end of our report.

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Key Takeaways

- In addition to paper, supply-chain disruptions are affecting the ability to acquire many other essential supplies.
- More than 50% of those who purchased equipment reported delays in delivering their new equipment.
- Sixty percent of respondents reported problems shipping products, but the proportion was much higher for large firms.
- The proportion of firms reporting problems shipping products was 56% or higher in each geographic region. However, the proportion of firms reporting shipping problems was much higher in the northeast.
- It appears larger companies are shifting delivery dates and losing more customers due to supply-chain issues.
- Regardless of revenue size or region, it appears printing firms have experienced an increase of about 20% in paper prices.
- We provide quotes from printing company leaders related to how they address a situation when a customer places an order, but since the job was quoted, the paper price increased.
- Higher-performing printing firms apply more supply-chain related tactics, and they apply them more extensively.
- Higher-performing printing firms are more proactive
- We provide 23 potential supply-chain tactics for consideration, and we share the extent to which higher-performing firms each tactic.

Introduction

In present media, coverage of supply-chain issues is prevalent. As Covid is waning and economies are expanding, international production and product

transportation are having a tough time catching up. An interesting “60 Minutes”¹ piece showed how the supply-chain disruptions originated in many areas, including ports, shipping terminals, truckers, warehouses, and retailers – and all these handlers are pointing fingers at each other, shifting blame. We hear that government is “studying” supply chain disruptions, but no specific actions or plans have surfaced.

Supply-chain disruptions are affecting the printing industry on many fronts, but the big issue is paper – its availability, rising prices, and shipping costs. In addition to supply-chain disruptions, major weather events (Texas cold snap and fires in the west) and high demand for other paper-related products (masks, bathroom tissue, and packaging) have affected print paper’s availability. Also, foreseeing a potential long-term downturn in print paper demand, some paper companies downsized a bit. However, mills may start expanding soon. For instance, Domtar will restart a paper machine at their Ashdown facility in January 2021, adding 185,000 tons of uncoated freesheet capacity.² In the context of paper supply inhibitors, some data suggest an increase in print demand (upsurge in printed book sales and marketing mail)³, which may prompt an increase in print paper demand, which may further exacerbate paper supply issues. Following this broad overview, we share insights from our October 2021 PIPI study relating to how supply-chain disruption is affecting the printing industry. Then we discuss tactics for responding to the current supply-chain problems that may be around for a while.

Supply-Chain Disruption’s Effects of on Our Industry

Before specifically discussing paper availability, we look at other areas in which supply-chain disruption is affecting the printing industry. We asked, “What supplies, other than paper, are you having trouble procuring?” and printing company leaders mentioned a plethora of items, including the following:

- Screen-printing ink
- Apparel
- Skids
- Sign materials
- UV ink and coating
- Equipment parts
- Press blankets and rollers
- Shrink film and stretch wrap
- Wire-o binding elements
- Corrugated boxes
- Toner

¹ <https://www.cbsnews.com/news/60-minutes-supply-chain-crisis-2021-11-11/>

² <https://newsroom.domtar.com/press-release/domtar-to-restart-paper-machine-at-ashdown-arkansas-mill-to-meet-customer-demand/>

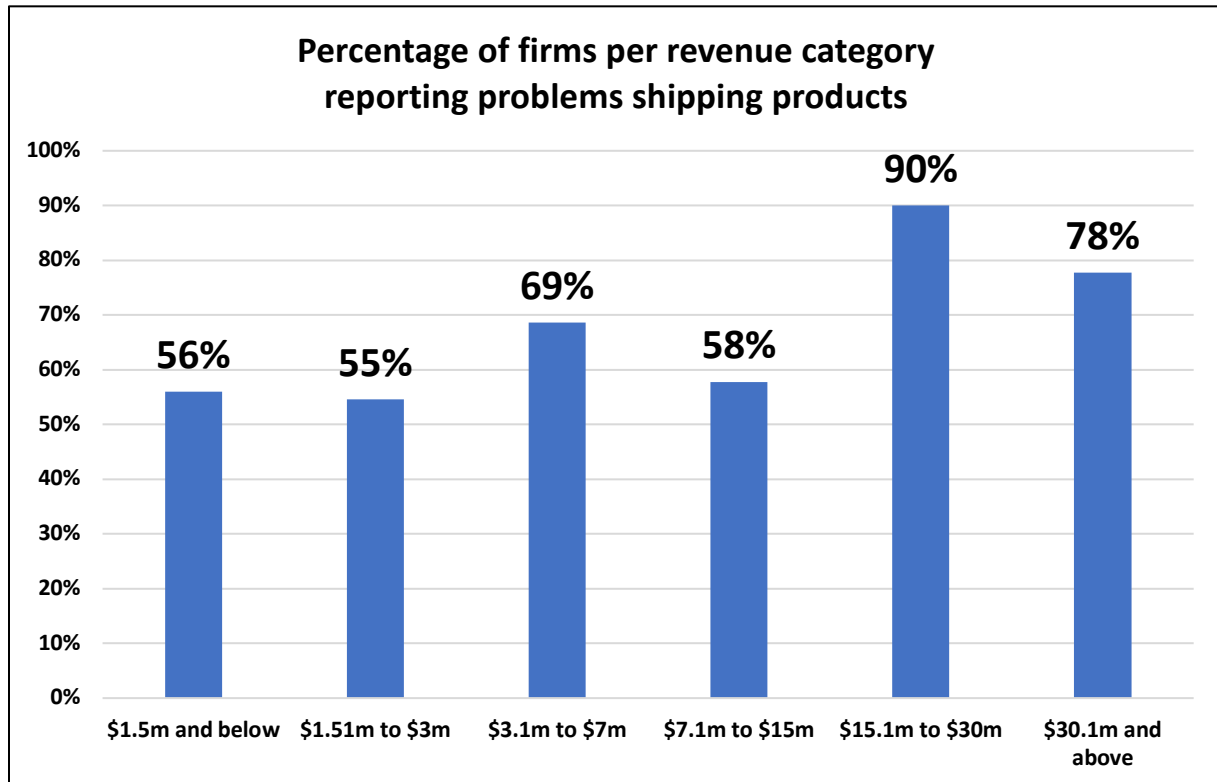
³ <https://www.piworld.com/article/paper-shortage-continues-throughout-printing-industry/>

- Plates
- Perfect-binder glue
- Ink
- And... toilet paper!!

One leader stated, “Most everything else we are able to get but lead times are much longer.”

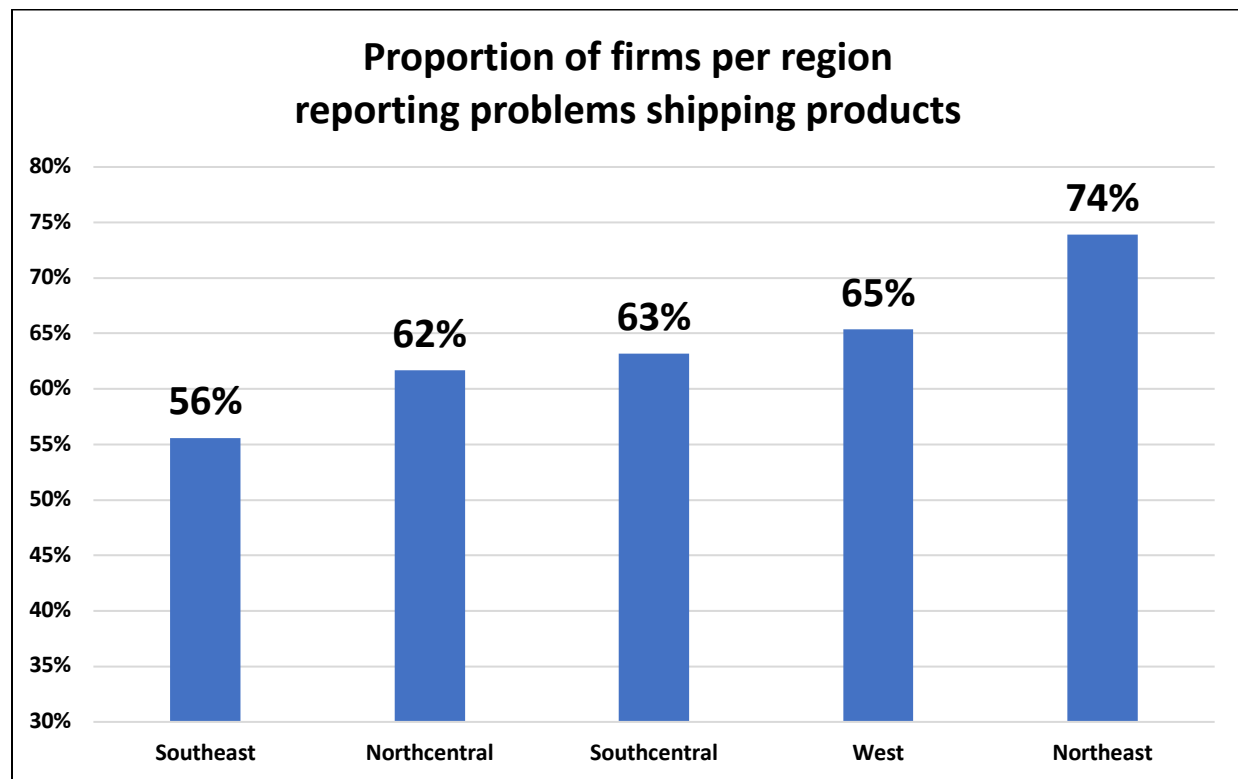
In our survey, 167 leaders answered the question, “Recently, have you experienced delays in shipments of equipment you have purchased?” Of the respondents, 83 (49.7%) reported they had purchased equipment. Of the 83 who had purchased equipment, 36 (43.4% of the 83) reported they experienced no delays in shipping or delivering equipment. Forty-seven (56.6% of the 83) reported equipment shipping or delivery delays. Reported delays ranged from one-to-eighteen months. If considering new equipment to expand or replace aging equipment, leaders might expedite that decision-making process.

Of the 169 leaders who responded to the question, “Has the pandemic affected your ability to ship products?” – a significant proportion (110 or 65% of the 169 respondents) reported the pandemic affected their ability to ship productions. The graph below illustrates the percentage of firms per revenue category having problems shipping products.



As anticipated, because of the volume of skids of printed products they ship, larger percentages of the two largest revenue categories reported problems shipping products. However, more than 50% of firms in all revenue categories reported problems shipping products. Regardless of size, but especially for large printing firms, leaders should explore shipping options and strategically plan their path forward. Don't wait until the job is ready to leave your building!

We next examined the percentage of firms per geographic region reporting problems shipping products. The states included in each region are listed at the end of the report.



More than 50% of firm leaders in every region reported problems in shipping products, indicating nationwide shipping challenges. Yet, that percentage was significantly higher in the northeast. Again, in the current environment, all printing company leaders should strategically plan their shipping, but that appears especially important if your shipping involves the northeast.

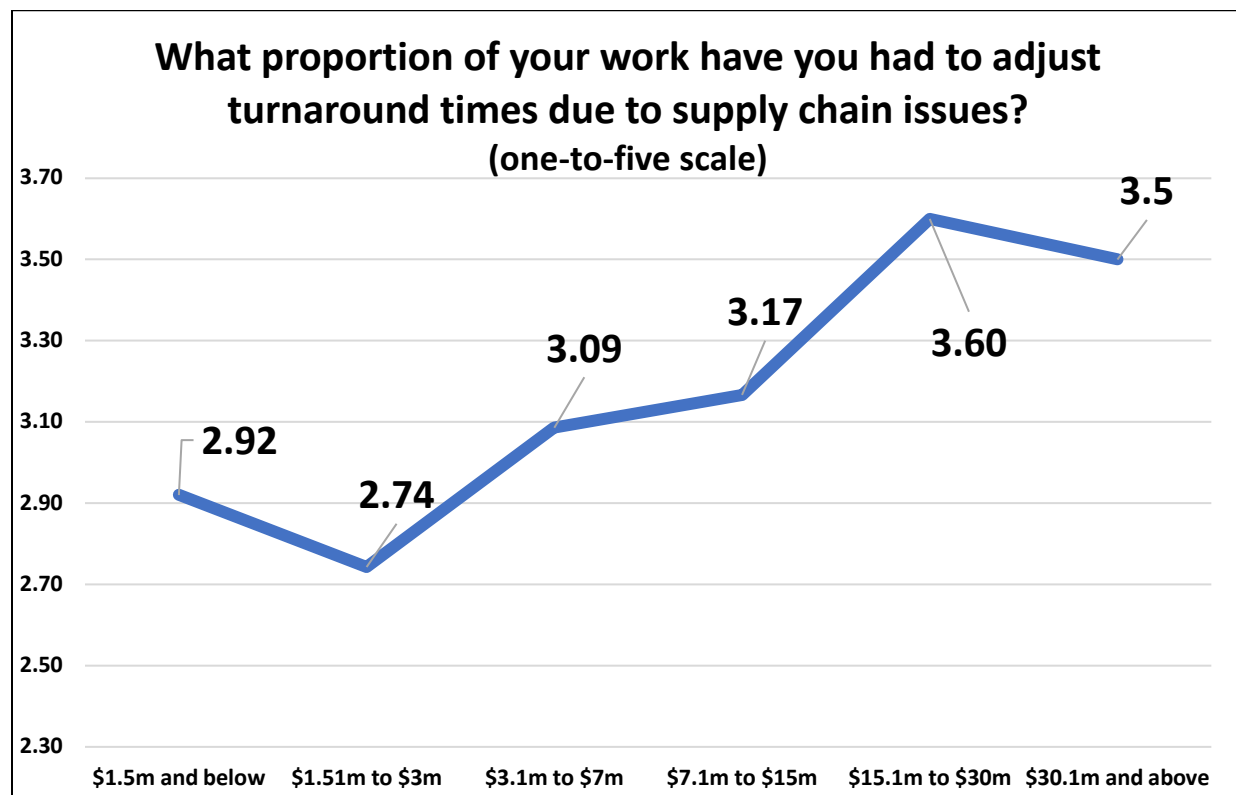
We allowed survey respondents to share comments related to how the pandemic affected their ability to ship products. In addition to shipping delays and higher shipping costs, leaders shared the following:

- "Shipping is hit and miss. No guaranty on anything anymore."

- “Truck lines are unpredictable and seem to not care if you use them or not... hard to get a firm delivery date from them.”
- “Longer lead times require additional planning.”
- “General turn time is getting impacted more and more each day.”
- “UPS/freight completely suck right now.”
- “Trucking is a disaster at this point in time.”
- “Getting shipments out has not been a problem but the cost continues to grow.”
- And one optimistic statement - “In the beginning, but not now.”

The comments indicate general dissatisfaction with shippers’ prices and response. Trucking companies are under pressure and, based on the above comments, seem to have a lower customer-service motivation. Company leaders should plan on continued unpredictability in shipping schedules and response times in the near future until pressure on the trucking industry subsides.

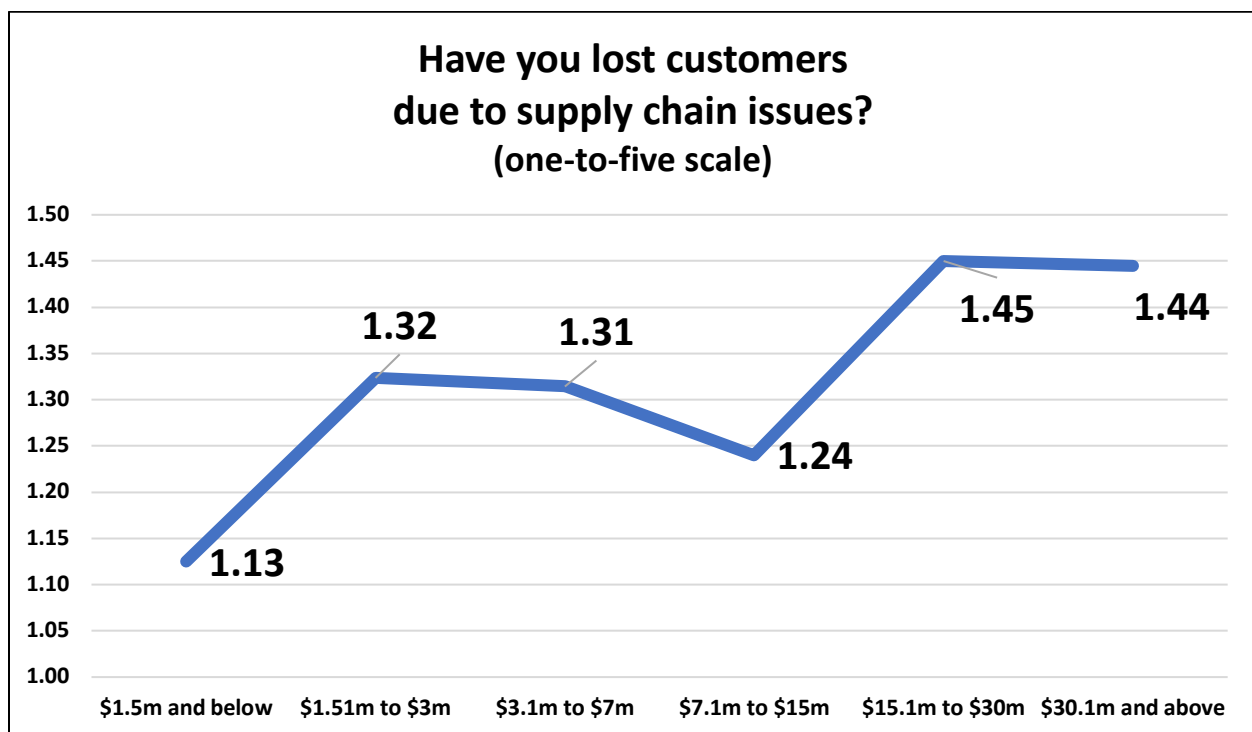
Applying a one-to-five scale (scale elements are listed below the following graph), we asked, “For what proportion of your work have you had to adjust turnaround times due to supply chain issues?” The average response from 167 leaders was 3.1, which is just a bit above “some jobs.” The graph below suggests that larger firms are shifting more delivery dates.



1 = None; 2 = One or two jobs; 3 = Some jobs; 4 = About half our jobs; 5 = Most of our jobs

Related, we asked leaders, “Have you lost customers due to supply chain issues?” (Scale elements are listed below the following graph). The average response was 1.3, which is between “No, we have not lost any customers due to supply chain issues” and “Yes, we lost one or two customers due to supply chain issues,” but closer to lost no customers. This suggests customer loss is not, as of yet, a big issue for printing companies. Leaders, given these results, if you are losing many customers due to supply-chain disruptions, don’t assume that’s happening to all printing firms!

As above with job delays, the graph below suggests larger firms are having more problems with customer loss due to supply-chain issues. The larger your firm, the more vital it is for you to strategically and proactively attack supply chain issues with your management team. Now is a good time to reengage with your customers and proactively address concerns and issues. Regardless of your firm’s size, you might share this report with your management team as benchmarks and a source for tactical ideas (the last section).



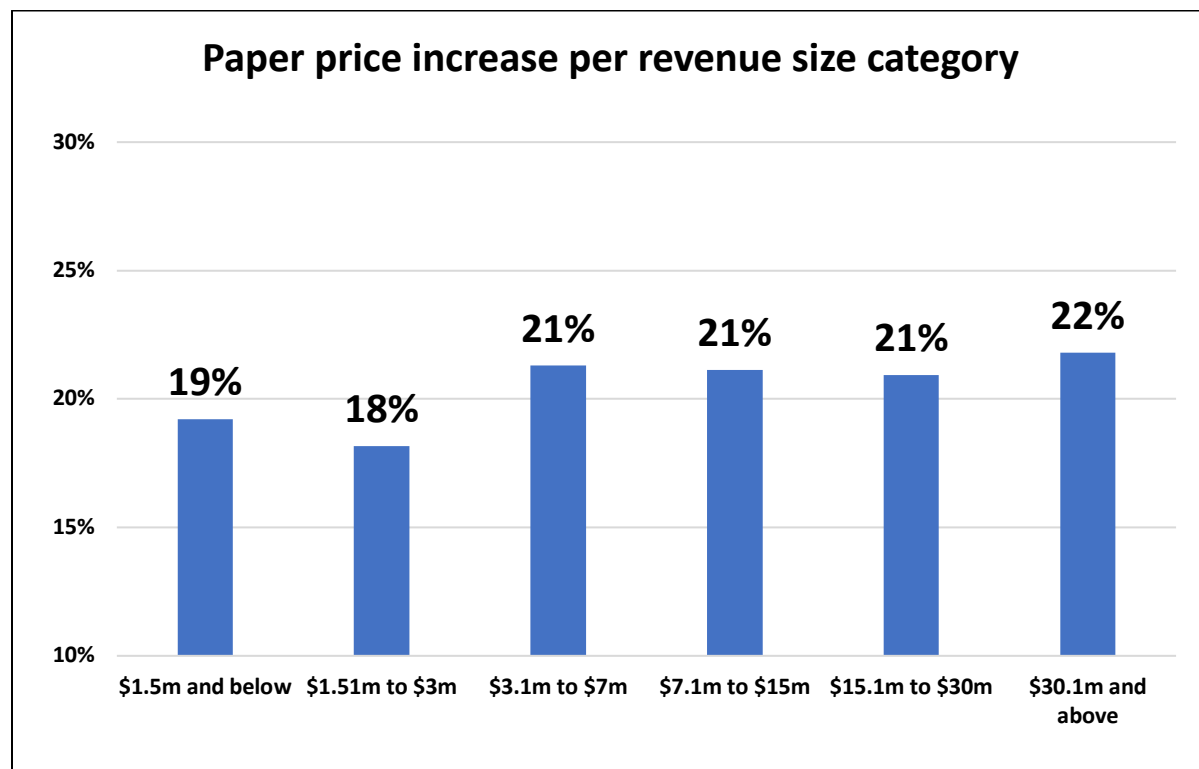
1 = No, we have not lost any customers due to supply chain issues; 2 = Yes, we lost one or two customers due to supply chain issues; 3 = Yes, we lost some customers due to supply chain issues; 4 = Yes, we lost about half our customers due to supply chain issues; 5 = Yes, we lost most of our customers due to supply chain issues.

In our October 2021 PIPI – *Industry Outlook Report*, we shared that the last two quarters’ data suggest that larger printing companies are a bit more optimistic about future business than smaller firms. In that context, the findings presented above –

indicating larger printing firms are experiencing more delayed job delivery times and lost customers related to supply issues – are intriguing.

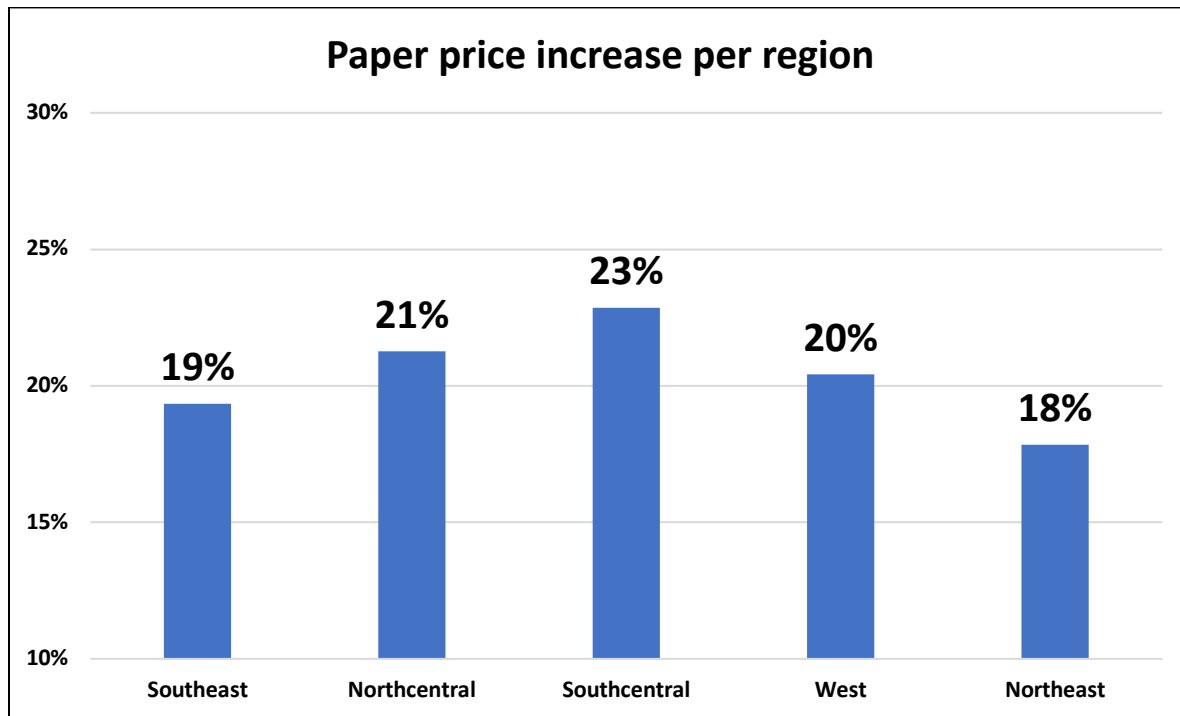
Of course, paper is a vital supply for the printing industry. We asked printing firm leaders to share what types of paper they were having trouble procuring, and they shared a broad plethora of examples, too many to share. Bottom line – practically all types of paper are more challenging to get now than before the pandemic.

One hundred fifty-five printing firm leaders shared the percentage of paper price increases their companies had experienced over the past year, and the average was 20.2%. Given that paper is a large element of many firms' cost structure, a 20.2% increase in paper cost is substantial. We explored the average increase in paper cost by printing firm revenue category (see the graph below). Among the revenue categories, there are some minor differences in paper price increases. However, the differences are pretty much insignificant. Therefore, regardless of revenue size, it appears printing firms have experienced an increase of about 20% in paper cost. These findings *counter* the premise that paper companies are taking advantage of smaller companies from a pricing standpoint.



In the graph below, we share the average paper increase per region. Yes, there are some differences in the graph among the regions. However, the differences are not

significant. We propose that printing companies have experienced an approximate increase of about 20% in paper prices regardless of region.



It appears 20% is a valuable benchmark for assessing the paper price increases experienced by printing firms. If your firm has experienced paper increases of more than 20%, you might strategically assess your paper purchasing protocol (e.g., do you seek multiple paper price quotes, do you have strong relationships with multiple paper companies, etc.). Furthermore, if your firm has experienced paper price increases of more than 20%, you might discuss these findings with your vendors.

Prompted by discussions with printing company leaders, in our survey, we included the following question, "If you have experienced situations where your firm quoted a job to a customer, but when the customer placed the order, the paper cost was higher than estimated, how did you address those circumstances?" Below are some quotes you might find interesting:

- "We just ate it."
- "So far we have absorbed the increase."
- "Honor the estimate, unless it was really old, 3+ months."
- "We were proactive and warned the customer to go ahead and place the order so we could order the supplies to keep the price from increasing."

- "... We were proactive and warned the customer to go ahead and place the order so we could order the supplies to keep the price from increasing."
 - "Raised the price."
 - "Depending on the situation, we either ate the additional cost, or gave the project back to the customer."
 - "... if the increase was significant, we went back to the customer."
 - "Asked the customer if they can share in the increase."
 - "Quoted rates are good for 30 days. We generally carry enough inventory that rates are not affected by announced increases."
 - "We absorbed the difference and honored our pricing."
 - "Only one instance where we had to eat the added cost to keep the customer intact with their retail pricing model. Otherwise, customers have been understanding and for the most part accepting of the unexpected price increases."
 - "We have a tag line on our quote letters indicating such changes will need to be addressed if paper is unavailable."
 - "For large jobs we are letting clients know that the estimate may only be good for 10 days. Smaller projects are not being effected."
 - "MY WORD IS GOOD, WE STAND BY THE QUOTE, UNLESS THE SPECIFICATIONS FOR THE JOB DRASTICALLY CHANGE."
- (Respondent capitalized)

Hopefully, these quotes will generate thoughts on how to address this potentially awkward customer situation.

Responding to the question, "When do you expect our industry's supply chain will return to normal?" most printing company leaders checked mid-to-to late 2022 or "who knows?" Given these supply chain trials, one might wonder if paper price increases or paper availability issues might negatively affect print demand. This situation may prompt printing firms to market their products more proactively and aggressively. More aggressive, proactive, and strategic marketing of printing products might form a positive outcome of the current supply-chain disruptions. Next, we explore what tactics high-performing printing firms are applying to address their supply-chain challenges.

Tactics for Addressing Supply-Chain Challenges

With help from professors in MTSU's supply chain program, which is well connected to the manufacturing and logistics sectors, we included survey questions inquiring about the use of various supply-chain tactics. To bring ideas to the table and ensure we covered all potential options, we brought a broad list of possibilities to the table, including 23 supply-chain tactics. Using a one-to-five scale (the scale elements are included under the table below), 140 printing firm leaders shared the extent they use

each of the 23 tactics. The average response among the top 19% higher performers was 2.82, and the average response among the lower-performing firm leaders was 2.60. This suggests higher-performing printing firms are applying more supply-chain tactics, and they are applying them more extensively than lower-performing print companies.

In addition, using a one-to-five scale⁴ we inquired as to the extent printing firms were proactively addressing the supply-chain disruption. The average response for higher-performing firms was 4.11, and the average for lower performers was 3.33. Consistent with the point made just above, it appears higher-performing firms are strategically and proactively seeking effective supply-chain tactics more than lower-performers. In today's environment, extensively seeking and applying supply-chain tactics is a strategic advantage, one leadership tactic all print firm leaders should consider. For each of the 23 supply-chain tactics included in our survey, respondents answered the question, "In addressing supply chain issues, do you apply the following tactics?" (using a one-to-five scale, see the scale elements below the table). The 23 tactics are listed in the table below, highest use at the top. In developing this table, we applied responses from higher-performing firm leaders. We provide some comments related to the tactics below.

Rank	Supply-Chain Tactics	Score
1	Proactively seek and identify backup providers for critical supplies.	4.04
2	Contact customers to plan potential future projects and order needed supplies.	3.93
3	Have scheduled meetings with major suppliers to discuss issues and plans.	3.63
4	Meet regularly with your management team to assess and discuss your supply chain, seeking continuous improvement.	3.59
5	Aggressively and continuously seek to reduce waste.	3.37
6	Continually assess each supplier's commitment to your firm.	3.33
7	Continually assess your trust in each supplier (the extent to which you are willing to share critical information with that supplier).	3.30
8	Reconsider previously non-preferred vendors.	3.26
9	Review your purchasing history, and let that history drive advance purchases.	3.19
10	Regularly assess your purchasing process.	3.07
11	Forecast sales monthly and let that forecast drive advance purchases.	3.04
12	Supplier recognition: show appreciation for a supplier's role in, and contribution to, your business.	3.04
13	Purchase paper for customers' future projects and invoice them in advance.	2.93

⁴ 1 = Completely reactive; 3 = A bit reactive and proactive; 5 = Very proactive.

14	Document and monitor the number of days your firm takes to pay each supplier's invoices.	2.93
15	Regularly assess paper in inventory not used and try to promote it to customers, maybe at a discount.	2.89
16	Continuously record and monitor supply chain issues' effect on turnaround times and lost jobs or customers.	2.63
17	Place ongoing orders (e.g., deliver 100,000 sheets of XXXX on the first of every month) without orders from customers.	2.48
18	Adjust payment terms to improve suppliers' service.	2.30
19	Measure and assess the financial ratios such as "days of inventory" or "inventory turnover ratio."	2.07
20	Determine and record criteria for choosing suppliers.	1.67
21	Team with other firms to purchase supplies together.	1.59
22	Develop a supplier scorecard that you use to assess each supplier.	1.59
23	Hire an outside professional to evaluate your supply chain practices.	1.00

1 = Not at all; 3 = Some; 5 = A lot!

The top item, *"Proactively seek and identify backup providers for critical supplies"* seems realistic and doable. However, "we tend to build "bonds" with specific suppliers that might prevent seeking other possibilities in our businesses. Bonds with suppliers can provide benefits – they did for us. However, given today's supply-chain environment, leaders must consider the cost-benefit nature of these bonds. The value of the bonds needs to be weighed against the risks of supplier performance in times of shortages or constrained transportation environments. We see *"Contact customers to plan potential future projects and order needed supplies"* as a potentially beneficial tactic, especially if upper management is engaged in the customer contact and if "We are exploring this for you" is conveyed to a customer. *"Have scheduled meetings with major suppliers to discuss issues and plans"* – meet outside the normal "order-placing chats" to discuss the big picture and how, working together, you can make things improve. *"Review your purchasing history, and let that history drive advance purchases"* – if history indicates you purchase a minimum of 10,000 sheets of 70# coated paper each month, consider placing an order for a supplier to deliver that paper each of the next three months. All of these tactics involve a transformation to a proactive procurement strategy.

Two items proposed by the MTSU supply-chain professors – *"Team with other firms to purchase supplies together"* and *"Hire an outside professional to evaluate your supply chain practices"* – did not appear to be tactics applied much in our industry. However, some printing firms use those two tactics, and leaders might consider them. Again, to expand your thinking, we wanted to provide a plethora of tactics. We could apply more comments, but we will stop here – the tactics listed are pretty self-explanatory.

Leaders, in responding proactively to the current supply-chain disruptions, we encourage you to strategically consider the 23 tactics with your leadership teams and decide what might fit your situation; then apply them well!

Summary

The current supply chain disruptions are affecting our industry. However, this environment provides printing company leaders to direct teams down an effective path and outperform competitors. Please email Dr. Ralph Williams with any questions or comments at ralph.williams@mtsu.edu

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