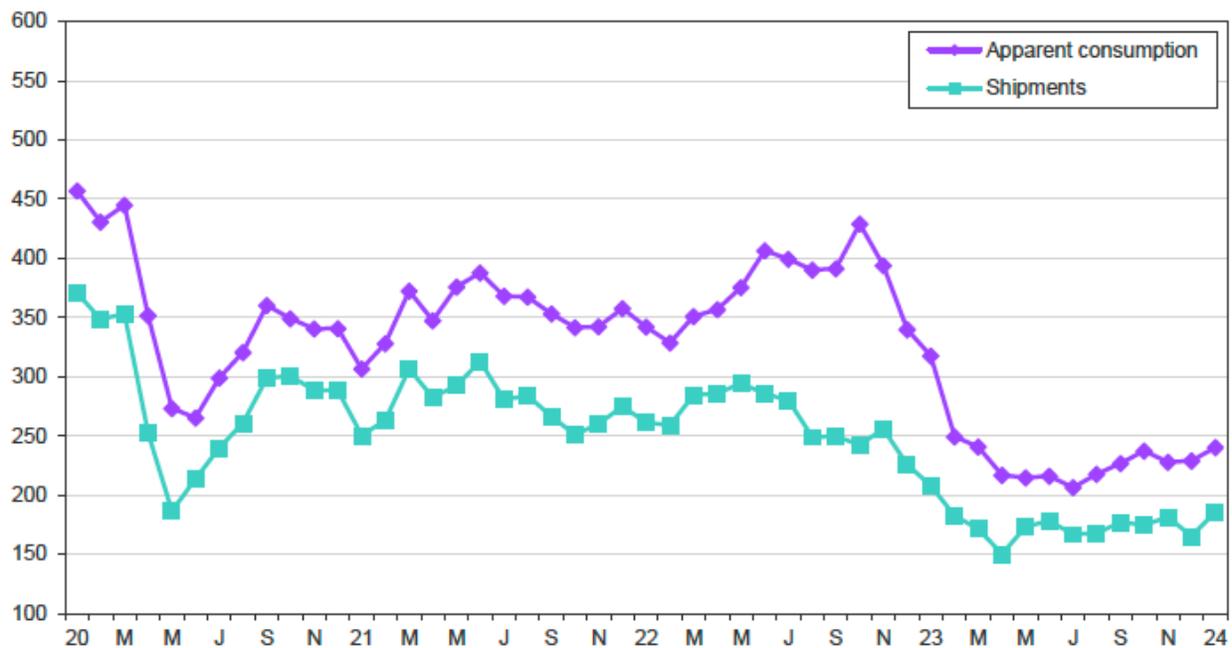


## Paper Update 2024

Recent discussions with paper distributors and mill representatives have uncovered some stunning information regarding demand and supply that will impact the printing industry today and in the foreseeable future. Since 2020, there has been a reduction in demand of 47%.

Below is a chart that graphically describes that drop in demand. The Blue line is shipments, the Purple is consumption. The reason that they do not align is due to print company inventories that was a byproduct of the Covid era when paper supplies were extremely limited and many companies that could, inventoried.

Thousand tons, seasonally adjusted

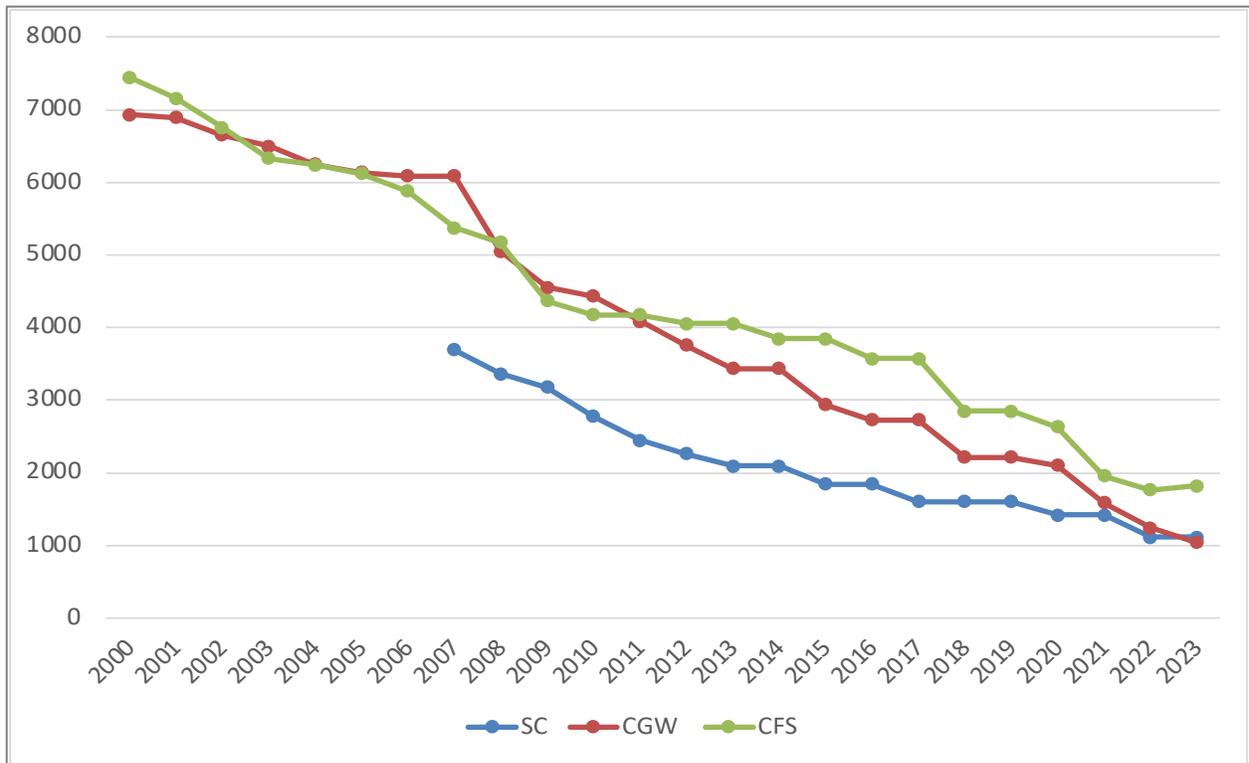


Data source: PPPC and AF&PA (shipments), US Commerce Department (trade) and Fastmarkets seasonal adjustments.

Data revised to include coated bristols.

The determination of the paper mills to balance supply and demand started much earlier than 2020. The chart below shows that the pursuit of balance began in the year 2000.

The chart below shows that since the turn of the century paper supply has declined by 75-85%. Commercial printers focus should be on the green line which is paper that commercial printers tend to use.



The trend to reduce supply is continuing. For example, Domtar’s Ashdown mill will be fully closed by May 2024 and that translates to a reduction in capacity of 216,000 tons a year or 900 Truckloads a Month! Adding that to other announced closing and reductions, the USA capacity will drop by an estimated 3,900 truckloads a month in 2024-25.

The overall picture is even more stunning as the reduction of European production is estimated to be about 17,000 truckloads a month. The hope that the European and Asian market will create an abundance of paper products seems not to be realistic. Those markets are also learning that oversupply is bad business.

There is little doubt that the mills domestically and internationally will do whatever it takes to achieve an equilibrium between supply and demand. It is good business practice, over supply is not sustainable, and the decisions by the mills will hopefully ensure that there is a paper supply chain in the future.

The chart below reflects announced shutdowns through 2025 as of Q1-2024.

## 2023–2025 P&W Capacity Reductions

Mill	Location	Uncoated Woodfree	Coated Woodfree	Coated Mechanical	Super Calendared	Uncoated Mechanical	Newsprint	Total	Date	Comment
Kubler & Niethammer	Kriedstein, Germany			101,300		25,300		126,600	Q1 2023	Whole mill closure March 2023
UPM	Schongau, Germany					187,000		187,000	Q1 2023	PM 6 closed March 2023
Evergreen Packaging	Canton, NC, USA	237,000						237,000	Q2 2023	Whole mill closure Summer 2023
ND Paper	Biron, WI, USA			225,000				225,000	Q2 2023	PM26 converted to packaging grades
Norske Skog	Golbey, France						260,000	260,000	Q2 2023	PM1 converted to recycled containerboard
Burgo	Duino, Italy			220,000				220,000	Q2 2023	Acquired by Mondi, converting PM3 to containerboard
UPM	Steyremuhl, Austria					85,000	352,700	437,700	Q2 2023	Acquired by Heinzl, converting mill to packaging
Lecta	Condat, France		210,000					210,000	Q4 2023	PM4 closed
Sappi	Stockstadt, Germany	113,000	113,000					226,000	Q1 2024	Whole mill closure, combined 220k CWF & UWF production
Sappi	Lanaken, Belgium		584,000					584,000	Q4 2023	Production stopped Dec23, full mill closure Q2 24
Stora Enso	Inkeroinen, Finland					275,500		275,500	Q4 2023	PM3 closed
Model Group	Eilenburg, Germany					251,000	59,000	310,000	Q4 2023	Acquired by Model Group 2021, converting to packaging
MM Group	Kwidzyn, Poland	200,000						200,000	Q4 2023	PM1 converted to packaging
UPM	Plattling, Germany			237,000	419,000			656,000	Q4 2023	Whole mill closure Q4 2023
Domtar	Ashdown, AR	216,000						216,000	Q2 2024	
Heinzl	Laakirchen, Austria				330,000			330,000	Q1 2025	PM 11 converted to fluting and testliner
Sappi	Skowhegan, ME		259,000					259,000	Q2 2025	
<b>Totals</b>		<b>766,000</b>	<b>1,166,000</b>	<b>783,300</b>	<b>749,000</b>	<b>823,800</b>	<b>671,700</b>	<b>4,959,800</b>		

Total Capacity Reduction = 4,959,800 short tons

Europe = 4,022,800 tons

USA = 937,000 tons

Source: RISI

While this is no surprise to industry veterans who recognize that print needs to compete for the communication dollar with a variety of media options, the chart below shows the drop in print demand. The green indicates where that media outperformed the projected reduction in demand, while the red indicated that the decrease exceeded the forecast. For our purposes, we should be focused on Catalogs mailed, and Commercial Print Index. 2024 figures as of Q-1 and the 2025 figures are an estimate.

## U.S. Economy and Print Indicators Forecast

Year over Year % Change

	2021	2022	2023	2024	2025
<b>GDP</b>	5.7%	2.1%	2.5%	2.1%	1.7%
<b>Consumer Spending</b>	7.9%	2.8%	2.3%	1.9%	1.6%
<b>Consumer Price Inflation</b>	4.7%	8.0%	4.1%	2.6%	2.2%
<b>Magazine Ad Pages</b>	-10.7%	-16.0%	-12.3%	-9.8%	-12.0%
<b>Catalogs Mailed</b>	-1.4%	-1.3%	-16.1%	-8.4%	-5.3%
<b>Commercial Print Index</b>	1.2%	3.3%	-5.4%	-1.7%	-1.3%



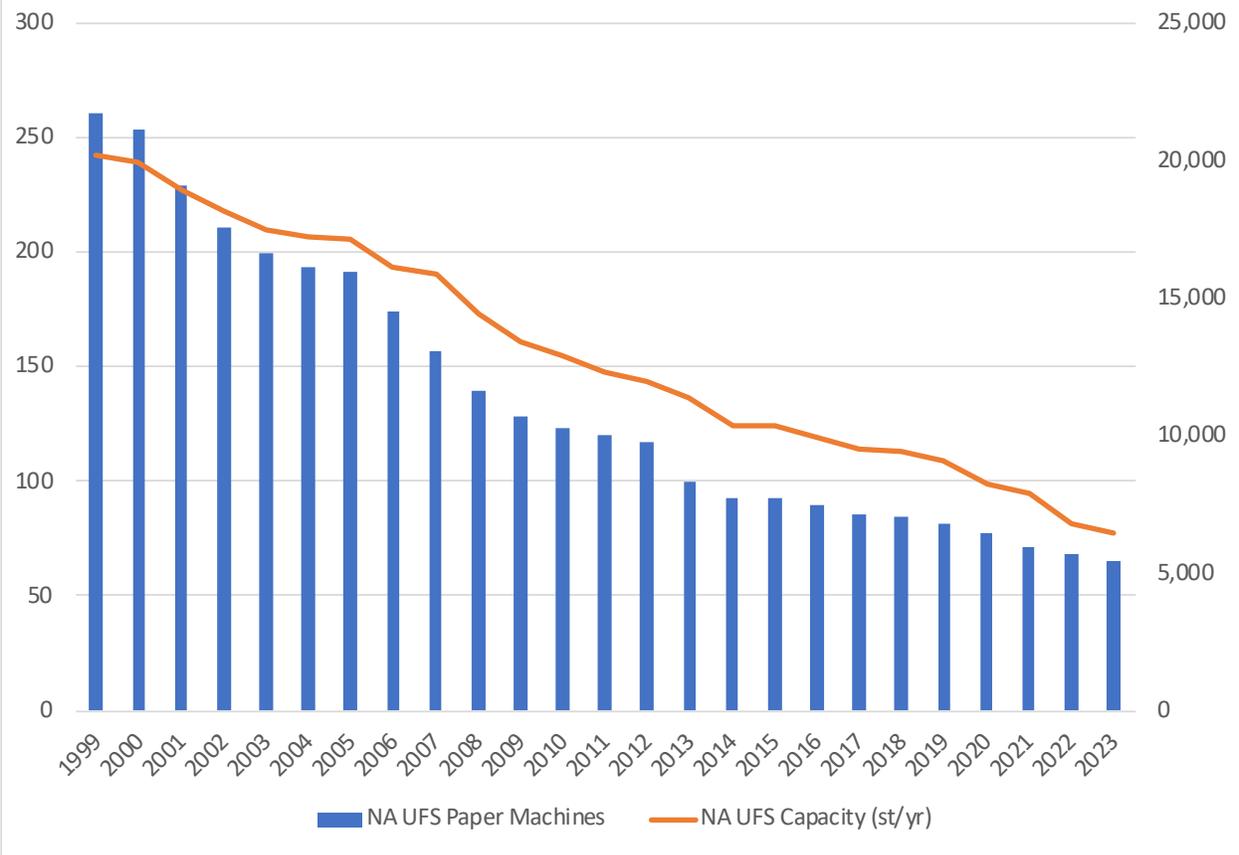
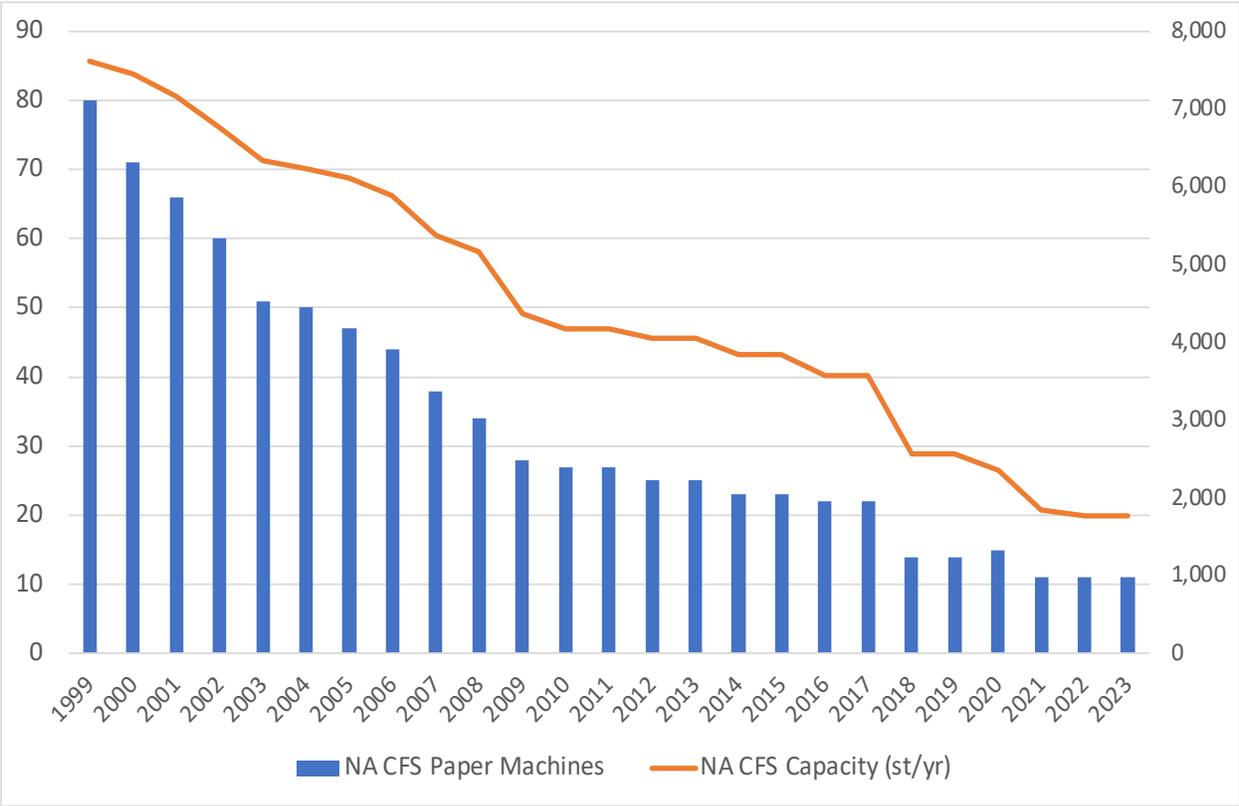
Sources: Consensus Economics, FOMC Members, IMF, CBO, RISI

To keep supply and demand in synch and to reduce their cost of operations, paper mills have significantly reduced the number of paper machines that make coated paper since 1999 which has translated into a 76% reduction of domestic supply. A portion of that was made up by Europe and Asia imports. The domestic mills that make a difference today are SAPPi and Billerud (the old Verso/Mead mill). They represent 87% of current domestic production.

In the uncoated marketplace, there has been a 68% reduction in paper machines with the major players being Domtar, Sylvamo and Pixelle. (IP is not making typical commercial

The first chart below shows the reduction in machines that make coated, and the next chart shows the reduction in uncoated paper machines since 1999.

The domestic coated machine in service has dropped from 80 at the turn of the century to 11 in operation in 2024. The domestic uncoated has seen a similar drop from 261 machines in 1999 to 57 machines currently.



The paper companies have learned their lesson that overproduction and diminished demand is unsustainable as a business model. They are committed to an equilibrium approach that will ensure that supply and demand remain in balance which will lead to stabilized supply and increase pricing in the long term. In fact, most of the major mills have already announced or imposed price increases for 2024. The bottom line is that prices will remain stable and increase over time and that availability might be difficult if there is a rise in demand.

What can the printer do in response?? Don't be a transactional buyer, try to establish a partnership with your merchant and ask that they pick two mills in both coated and uncoated to partner with your company. Pay your bills on time. Whether you are a large, small, or medium size printer, the rules are the same. If you have the means, think about inventorying paper since the current thinking is that pricing will not be reduced. If there is a need for allocation, the partner printers will win. It is a great time to deepen your relationship with your clients and encourage them to plan future projects with an eye to securing paper availability and locking in pricing. This is a win for your clients and for you as well!