Q2 | 2023

ECONOMIC NEWSLETTER

for the construction industry

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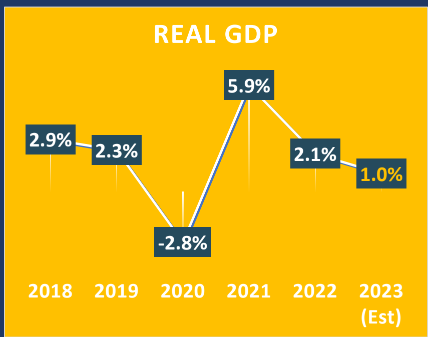
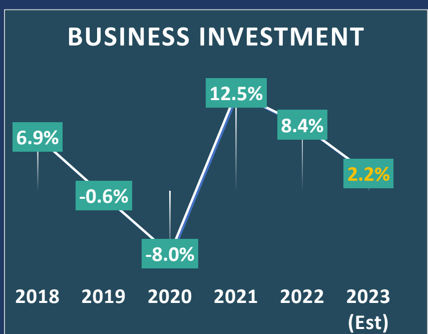
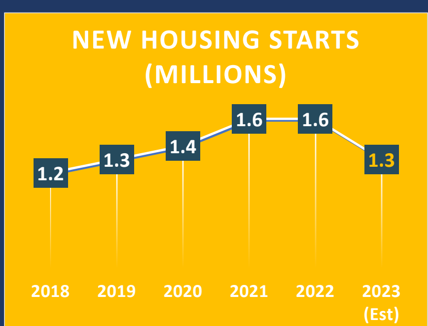
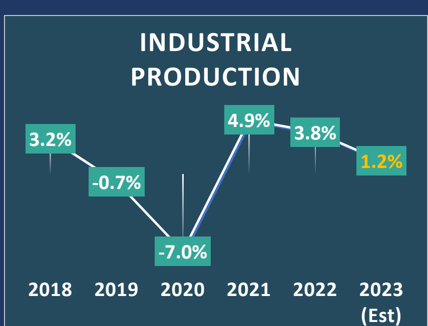
Quarterly Economic Report

Selected Indices









Executive Summary – Quarter 2 '23

Big Items

Real GDP: The revised numbers for the first quarter show a GDP gain of 2.0% and the latest GDPNow forecast from the Atlanta Fed is 2.3%. There has been consistent belief that recession was likely to start in the first two quarters of this year and instead there has been growth that is close to the 25-year average of 2.5%. The consumer and the overall service sector are driving a significant part of this expansion. There are still concerns regarding a slowdown in Q3 and Q4 but these are often stronger quarters than Q1 and Q2.

Raw Material Prices/Availability: Inventories of raw materials spanning copper, zinc, lead, aluminum, nickel, and other key primary metal inventories continue to be near multi-decade lows in global LME warehouses. The slowdown in the global economy has reduced the impact of this shortage but there is concern that inflation could easily accelerate and shortages/stockouts of key raw materials may still be a problem if global demand improves. Some key indexes that showcase overall raw material demand are surging. The Baltic Dry Index (which measures the cost and volume of raw materials moving in the global maritime sector) dropped considerably in June but has started to come back slightly in July. This suggests that raw material demand is starting to rise again.

Labor Situation / Labor Costs: the construction sector Employment Cost Index showed that overall labor costs continue to be at or near all-time highs and were rising at a 5.7% year-over-year rate based on the latest readings. Job openings in the construction sector also remained elevated, they were still at 366,000 through May of 2023. This was down significantly versus the peak hit last year when it hit 488,000. This was a significant drop in openings (driven by the drop in single-family construction), but labor costs have not yet started to materially adjust.

Manufacturing (Materials): Global PMI data from JP Morgan came in at 54 and was still in expansion (a reading above 50). The US has fallen deeper into contraction with a reading of 46.0. All of Europe and North America are now experiencing deteriorating PMIs. The gains have been in India and a few other Asian states; Canada is down but Mexico has been stable. The reduction in purchasing has been prompted to some degree by overloaded inventory levels across wholesale trade and manufacturing. This drop in manufacturing activity should help make some raw materials more available, but Federal spending in infrastructure and construction projects are tightening many segments of raw materials.

Risks

Recession Risk: Recession has arrived in Europe but thus far the US has escaped even a mild downturn (although some sectors are very close to recessionary conditions). Aerospace and automotive are still growing and retail has managed a recovery along with travel and hospitality.

Banking Risk: The "bank crisis" was significantly overblown. Of the 4,700 regional banks examined, only 100 warranted scrutiny and only ten were in trouble from not preparing for duration risk. The issues that affect banking right now are traditional ones and not unexpected. The real threat is that bank run crisis situations explode more quickly than in the past due to technology and social media. Bank runs take place in a matter of minutes as people can move their money quickly without any human interaction using just their cell phones. The banks are beginning to see more issues with car loans, but default rates are still within normal bounds – for now. There have been more business bankruptcies this year but the rate has not reached alarming levels. Most of these have been in the retail sector. Still, pressure will remain on capital projects where interest-bearing factors and flexible lending standards are crucial.

Macroeconomic Viewpoints

- Dr. Chris Kuehl

Making Sense of Some Contradictory Data – Economic conditions are some of the most perplexing to analyze in this cycle, and lately there has been a little something for the optimist and the pessimist. Why are there no real clear signals? Are we headed for a recession or not? Will inflation ease or will it get worse? The latest data from the Purchasing Managers' Index is not great – two straight months in contraction with a current reading of 46.4. On the other hand, the rate of durable goods orders has risen to levels not seen since last year and factory orders are up higher than any time in the last year. Retail sales are up 0.3% over last month and 1.6% above May of last year. These are actually pretty healthy numbers. The recession was predicted to start towards the end of last year but there was GDP growth of 2.6% in Q3 and 2.9% in Q4. The recession didn't start in Q1 of this year either (up 2.0% in the third iteration). The second quarter is expected to be close to 2.5%. Given the definition of a recession as two straight quarters of negative growth, the economy will not be in recession until the end of the year (and that assumes that numbers trend negative in third and fourth quarter).

The perplexing part is that the Fed has been doing what it can to address inflation with 500 basis points of rate increase in a year and a half. That should be enough to trigger at least a downturn, but thus far it hasn't, and inflation has remained stubbornly high. There is a theory making the rounds among economists that might partially explain this. The Fed (and other central banks) operate under the assumption that a "neutral" interest rate is 1.0%. That is the rate that is neither stimulating nor does it slow the economy. If the neutral rate is 1.0% the Fed has been pushing towards slowdown since last year but there is a sense that the neutral rate has changed and that it really should be seen as 2.0%. If that is the case the Fed has only been pushing hard on inflation since February of this year and thus still has a long way to go to affect inflation significantly.

There are several theories as to why the neutral rate should have changed but at the top of the list have been two factors – worker shortages and excess cash in the system. The fact that so many companies are struggling to find workers means that layoffs have been relatively rare. It means that people who lose their jobs find a new one almost immediately. It also means that people are confident enough about their job security to keep spending and that has supported retail. That same shortage has meant that wage hikes have been outpacing overall inflation for several months now. The rate of inflation has been around 4.5% as measured by Personal Consumption Expenditures, but wages have been rising by almost 7.0% in many sectors.

In addition to the cash on hand from people getting paid better and hanging on to their jobs, there is the immense holdover in savings from the 2020 pandemic spend. There is still an estimated $3.5 trillion in excess savings in the system and the majority of this is in the hands of the upper 25% of income earners. The majority of that extra cash has found its way into investments such as venture funds, angel funds and the like. These make up the bulk of the so-called shadow banking system (non-bank financial intermediaries). These funds along with entities like insurance companies are still distributing money to the business community and that essentially undermines the Fed's effort to slow the economy through higher interest rates. On the one hand this cash has allowed expanded capital investment to continue at record levels but it also slows the process of dampening inflation and ensures the Fed will keep hiking rates. If the neutral rate is determined to be closer to 2.0% than 1.0% the potential exists for a Fed Funds Rate between 5.5% and 6.0%. That would take rates to highs not seen since 2000 when they were above 6.0% for several months. This would still be far less than the record highs in the 1980s (above 15%). Nonetheless, the marketplace will have to adjust to conditions that haven't been seen in more than two decades.

Regional MSA Construction Potential Index

The following section shows the Construction Potential Index developed by Armada in conjunction with Pioneer IQ for the largest Metropolitan Statistical Areas (MSAs) in the country. This index measures growth potential and construction spending per capita to create a construction potential index. The score itself is not as important as the index in relation to all other markets, which is important in understanding and the index incorporates both residential and nonresidential construction potential.

Rank	MSA	Construction Scoring System			Change in Gross Construction GDP	
		.40 Construction GDP Estimate Index	.60 Population Growth 2015-2020 Index	Construction Potential Score	Q2 2023 Q/Q Change in Gross Construction GDP	Q2 2023 Y/Y Change in Gross Construction GDP
1	Dallas-Fort Worth-Arlington, TX	41.6	8.8	2,194.0	1.5%	7.4%
2	Houston-The Woodlands-Sugar Land, TX	39.2	7.7	2,029.7	1.5%	7.4%
3	New York-Newark-Jersey City, NY-NJ-PA	77.8	-18.2	2,021.3	3.1%	3.4%
4	Chicago-Naperville-Elgin, IL-IN-WI	51.1	-1.7	1,939.7	0.7%	3.5%
5	Washington-Arlington-Alexandria, DC-VA-MD-WV	43.0	3.4	1,925.7	5.1%	3.9%
6	Los Angeles-Long Beach-Anaheim, CA	50.6	-2.4	1,884.5	0.3%	2.3%
7	Phoenix-Mesa-Scottsdale, AZ	25.2	7.0	1,429.4	0.8%	14.2%
8	Atlanta-Sandy Springs-Roswell, GA	26.3	5.8	1,402.0	2.0%	8.8%
9	San Francisco-Oakland-Hayward, CA	29.3	1.4	1,257.0	0.3%	2.3%
10	Miami-Fort Lauderdale-West Palm Beach, FL	25.2	2.9	1,181.2	0.8%	5.7%
11	Seattle-Tacoma-Bellevue, WA	21.7	4.6	1,143.7	1.5%	-3.0%
12	Boston-Cambridge-Newton, MA-NH	24.2	1.9	1,078.9	2.5%	2.3%
13	Minneapolis-St. Paul-Bloomington, MN-WI	22.5	2.2	1,030.6	2.0%	4.3%
14	Las Vegas-Henderson-Paradise, NV	19.0	2.9	932.2	2.1%	13.2%
15	Riverside-San Bernardino-Ontario, CA	18.4	3.0	918.0	0.3%	2.3%
16	Denver-Aurora-Lakewood, CO	18.6	2.9	916.4	-0.4%	2.9%
17	Baltimore-Columbia-Towson, MD	21.3	0.0	853.1	1.3%	1.2%
18	Austin-Round Rock, TX	13.6	4.3	800.2	1.5%	7.4%
19	Orlando-Kissimmee-Sanford, FL	13.6	4.2	793.6	0.8%	5.7%
20	Portland-Vancouver-Hillsboro, OR-WA	16.8	1.9	787.1	1.8%	1.7%
21	Tampa-St. Petersburg-Clearwater, FL	12.8	4.1	757.7	0.8%	5.7%
22	Salt Lake City, UT	15.1	1.2	675.9	1.2%	10.7%
23	Sacramento-Roseville-Arden-Arcade, CA	13.8	1.7	652.2	0.3%	2.3%
24	Nashville-Davidson-Murfreesboro-Franklin, TN	12.7	2.0	626.2	1.6%	14.5%
25	Indianapolis-Carmel-Anderson, IN	13.1	1.6	621.5	0.8%	8.4%
26	San Diego-Carlsbad, CA	14.0	0.7	603.9	0.3%	2.3%
27	Charlotte-Concord-Gastonia, NC-SC	8.9	4.0	592.7	1.0%	8.3%
28	Columbus, OH	10.8	1.9	545.8	2.0%	9.4%
29	Detroit-Warren-Dearborn, MI	13.3	0.2	540.8	4.0%	1.8%
30	St. Louis, MO-IL	13.7	-0.2	537.1	1.0%	0.3%
31	San Antonio-New Braunfels, TX	8.5	3.1	529.4	1.5%	7.4%
32	Raleigh, NC	9.8	2.2	525.1	1.0%	8.3%
33	San Jose-Sunnyvale-Santa Clara, CA	11.7	0.3	485.3	0.3%	2.3%
34	Kansas City, MO-KS	9.2	1.3	449.2	1.6%	4.0%
35	Cincinnati, OH-KY-IN	9.3	1.2	445.4	1.8%	9.1%
36	Jacksonville, FL	7.4	2.1	421.8	0.8%	5.7%
37	Baton Rouge, LA	8.9	0.5	382.0	3.9%	-10.3%
38	Provo-Orem, UT	6.6	1.2	335.6	1.2%	10.7%
39	Charleston-North Charleston, SC	6.2	1.1	314.1	1.3%	6.8%

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40	Boise City, ID	5.8	1.4	312.4	2.4%	17.9%
41	Richmond, VA	6.5	0.4	282.9	1.8%	7.2%
42	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	5.8	0.6	268.6	2.3%	0.5%
43	Louisville-Jefferson County, KY-IN	7.1	-0.3	268.2	1.5%	8.7%
44	Grand Rapids-Wyoming, MI	5.6	0.7	266.4	4.0%	1.8%
45	North Port-Sarasota-Bradenton, FL	4.6	1.3	259.3	0.8%	5.7%
46	Reno, NV	5.8	0.5	258.6	2.1%	13.2%
47	Cape Coral-Fort Myers, FL	4.4	1.3	252.9	0.8%	5.7%
48	Des Moines-West Des Moines, IA	4.1	1.4	250.1	3.9%	14.7%
49	Ogden-Clearfield, UT	5.0	0.8	244.9	1.2%	10.7%
50	Milwaukee-Waukesha-West Allis, WI	5.9	0.0	236.7	1.0%	7.2%
51	Urban Honolulu, HI	6.5	-0.5	233.8	0.8%	-7.6%
52	Oklahoma City, OK	4.2	0.9	226.9	3.2%	5.2%
53	Greenville-Anderson-Mauldin, SC	4.4	0.9	226.7	1.3%	6.8%
54	Colorado Springs, CO	4.0	0.9	214.7	-0.4%	2.9%
55	New Orleans-Metairie, LA	5.1	0.1	212.5	3.9%	-10.3%
56	Omaha-Council Bluffs, NE-IA	4.1	0.6	204.0	3.9%	16.3%
57	Lakeland-Winter Haven, FL	2.4	1.4	181.8	0.8%	5.7%
58	Columbia, SC	3.7	0.5	180.8	1.3%	6.8%
59	Durham-Chapel Hill, NC	1.9	1.7	178.8	1.0%	8.3%
60	Myrtle Beach-Conway-North Myrtle Beach, SC-NC	2.3	1.2	166.6	1.1%	7.8%
61	Memphis, TN-MS-AR	4.0	0.0	164.0	2.2%	13.2%
62	Tulsa, OK	3.5	0.3	161.2	3.2%	5.2%
63	Tucson, AZ	2.9	0.7	159.1	0.8%	14.2%
64	Madison, WI	3.3	0.4	157.7	1.0%	7.2%
65	Fresno, CA	3.3	0.5	157.7	0.3%	2.3%
66	Birmingham-Hoover, AL	5.5	-1.0	157.3	1.6%	11.9%
67	Stockton-Lodi, CA	2.6	0.7	145.3	0.3%	2.3%
68	Greensboro-High Point, NC	3.0	0.4	142.4	1.0%	8.3%
69	Deltona-Daytona Beach-Ormond Beach, FL	2.3	0.8	142.0	0.8%	5.7%
70	Albany-Schenectady-Troy, NY	3.6	0.0	141.1	3.4%	6.8%
71	Lancaster, PA	3.2	0.2	140.0	3.4%	0.4%
72	Naples-Immokalee-Marco Island, FL	2.7	0.5	139.4	0.8%	5.7%
73	Albuquerque, NM	3.1	0.2	138.1	3.6%	7.3%
74	Palm Bay-Melbourne-Titusville, FL	2.4	0.6	132.7	0.8%	5.7%
75	Greeley, CO	2.2	0.7	131.8	-0.4%	2.9%
76	Fayetteville-Springdale-Rogers, AR-MO	2.7	0.4	130.5	2.3%	4.9%
77	Santa Rosa, CA	3.4	-0.1	128.7	0.3%	2.3%
78	Bridgeport-Stamford-Norwalk, CT	3.3	-0.1	128.3	1.1%	-1.2%
79	Rochester, NY	3.5	-0.2	128.1	3.4%	6.8%
80	Bakersfield, CA	2.6	0.3	122.7	0.3%	2.3%
81	Augusta-Richmond County, GA-SC	2.5	0.4	120.7	1.8%	8.2%
82	Knoxville, TN	2.8	0.1	119.4	1.6%	14.5%
83	Little Rock-North Little Rock-Conway, AR	2.5	0.2	112.1	3.3%	10.3%
84	Oxnard-Thousand Oaks-Ventura, CA	2.9	-0.1	111.9	0.3%	2.3%
85	Salisbury, MD-DE	2.1	0.4	107.6	1.2%	1.1%
86	Fort Collins, CO	2.0	0.4	107.2	-0.4%	2.9%
87	Lexington-Fayette, KY	2.2	0.3	105.7	3.0%	9.3%
88	Vallejo-Fairfield, CA	2.3	0.2	105.2	0.3%	2.3%
89	Huntsville, AL	1.8	0.5	103.0	3.9%	-10.3%
90	Spokane-Spokane Valley, WA	1.9	0.4	100.6	1.5%	-3.0%
91	Pensacola-Ferry Pass-Brent, FL	1.8	0.5	99.6	0.8%	5.7%
92	Corpus Christi, TX	3.1	-0.4	98.0	1.5%	7.4%
93	Port St. Lucie, FL	1.4	0.6	93.8	0.8%	5.7%
94	Wichita, KS	2.3	-0.1	88.3	0.8%	6.0%
95	Killeen-Temple, TX	1.3	0.6	85.4	1.5%	7.4%
96	Fargo, ND-MN	1.8	0.2	84.7	3.6%	4.7%
97	Anchorage, AK	2.2	-0.1	84.6	4.1%	12.8%
98	Kennewick-Richland, WA	1.5	0.4	83.8	1.5%	-3.0%
99	Savannah, GA	1.7	0.3	82.3	2.0%	8.8%

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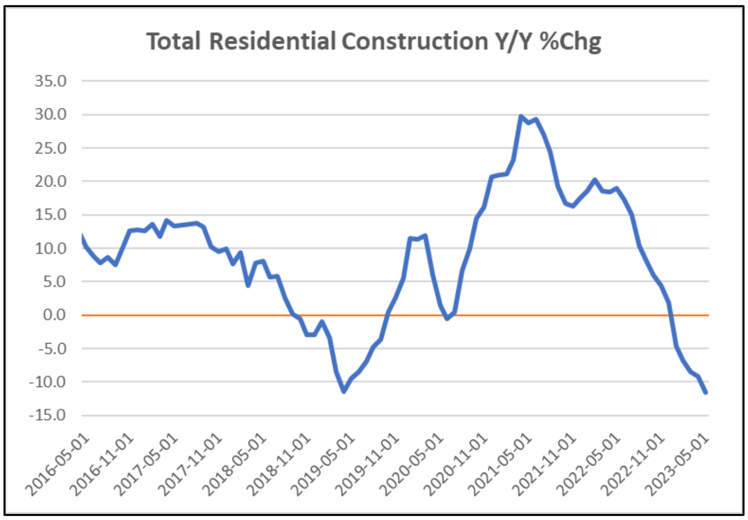
		.40 Construction GDP Estimate Index	.60 Population Growth 2015-2020 Index	Construction Potential Score	Q2 2023 Q/Q Change in Gross Construction GDP	Q2 2023 Y/Y Change in Gross Construction GDP
100	McAllen-Edinburg-Mission, TX	1.2	0.5	79.4	1.5%	7.4%
101	Modesto, CA	1.6	0.2	76.0	0.3%	2.3%
102	Sioux Falls, SD	1.3	0.3	71.0	0.7%	7.2%
103	Santa Maria-Santa Barbara, CA	1.6	0.0	66.3	0.3%	2.3%
104	Lafayette, LA	1.2	0.0	47.5	3.9%	-10.3%
105	Visalia-Porterville, CA	0.9	0.1	43.3	0.3%	2.3%

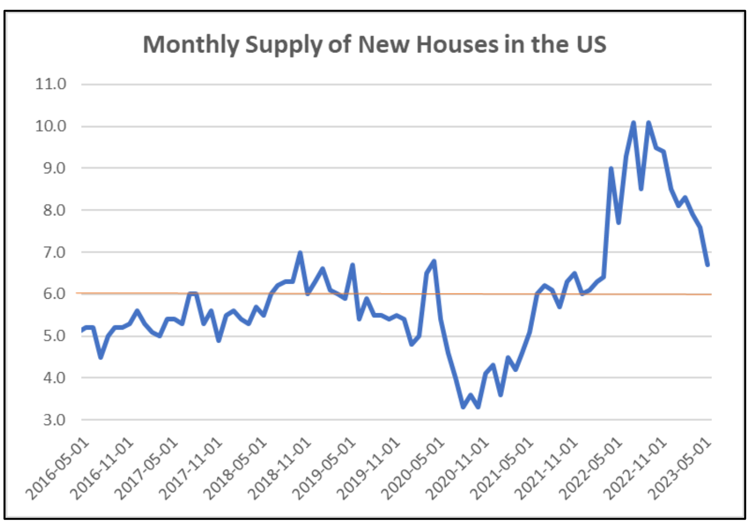
Residential Construction

The following section includes viewpoints on factors in the residential construction sector.



Residential Construction Spending (PRRESCONS)

- Total residential construction in May (latest available), was slightly up from April by 2.2% (857,438 compared to 839,363) but still down from the peak in May of 2022 (969,943).
- **Outlook**: The fact is that home building has been solid for years and has only recently seen these declines. There is a major difference between the rate of single-family activity and multi-family. The number of starts has declined by 23% for single family but have risen by 23% for multi-family. Depending on what measure one chooses to use there is still a shortage of millions of homes (range is from 1.5 million to 7 million). The impact of high prices and higher mortgage rates has been apparent and these are the prime factors in the slowdown as the employment numbers still favor growth in housing. As long as people have their jobs, they are willing to go into debt and pay higher prices.



Monthly Supply of Homes (PRRESCONS)

- The monthly supply of homes came in at 6.7 months of inventory on hand in May (latest available), closer to the long-term average of 6% (which is a "balanced" market).
- **Outlook**: The factors which determine the monthly supply of homes will vary considerably as they range from builder confidence to the ability of existing homeowners to sell. There are far fewer "spec" homes being built as builders are struggling to obtain those construction loans. They will usually only build on a contract basis now. Existing home sales are down as these sellers are not confident in their ability to buy another home due to higher prices and more expensive mortgages. The trend in supply has been dropping sharply since August of last year.

Month	United States				
	Total	1 unit	2 units	3 to 4 units	5 units or more
Jun 2022	157.2	91.5	2.7	2.2	60.9
Jul 2022	134.4	75.6	2.4	1.8	54.6
Aug 2022	139.0	81.0	2.6	1.9	53.4
Sep 2022	129.6	70.8	2.6	1.6	54.6
Oct 2022	120.8	65.9	2.7	1.9	50.4
Nov 2022	102.5	55.6	2.5	1.4	43.0
Dec 2022	104.4	50.2	2.3	1.0	50.9
Jan 2023	101.0	53.1	2.5	1.3	44.1
Feb 2023	110.9	58.7	2.1	1.2	49.0
Mar 2023	131.3	79.4	3.1	1.7	47.2
Apr 2023	117.6	75.1	2.8	1.9	37.8
May 2023	139.6	88.9	3.3	1.5	45.8

Housing Permits (https://www.census.gov/construction/bps/)

- Housing Permits at a national level are indicative of what to expect in the coming months. Permits were up by 5.7% over April but had a 12.7% decrease versus 2022. Single family permits were actually up 4.8% over April despite pressure on the housing sector and multi-family permits were slightly weaker. All sectors were weaker year-over-year.
- **Looking Ahead**: Permit activity is generally volatile and sensitive to weather and other seasonal influences. Builders are finding it harder to get loans and are more reluctant to engage in speculative building. Buyers reacted to lower mortgage rates for a while but these started to come back up and interest in building flagged again.

The following section shows housing permits authorized by region for total, single-family, and multi-family.

Month	Northeast											
	Total	Y/Y	3-Month Moving Avg.	M/M	1 unit	Y/Y	3-Month Moving Avg.	M/M	5 unit	Y/Y	3-Month Moving Avg.	M/M
Jun 2022	15.2	12.6%	1.7%	39.4%	5.3	-17.2%	0.3%	-8.6%	9.9	39.4%	11.0%	94.1%
Jul 2022	13.0	14.0%	3.4%	-14.5%	5.4	3.8%	0.9%	1.9%	7.6	22.6%	13.0%	-23.2%
Aug 2022	11.4	-14.3%	4.2%	-12.3%	5.2	-14.8%	-3.5%	-3.7%	6.2	-13.9%	17.5%	-18.4%
Sep 2022	10.3	-1.0%	-12.1%	-9.6%	5.3	3.9%	0.0%	1.9%	5.0	-5.7%	-20.3%	-19.4%
Oct 2022	8.3	-21.0%	-13.8%	-19.4%	4.3	-21.8%	-6.9%	-18.9%	4.0	-20.0%	-19.3%	-20.0%
Nov 2022	9.8	-21.6%	-3.7%	18.1%	4.0	-20.0%	-8.0%	-7.0%	5.8	-22.7%	1.9%	45.0%
Dec 2022	10.6	-58.3%	2.3%	8.2%	3.9	-33.9%	-9.4%	-2.5%	6.7	-65.6%	13.5%	15.5%
Jan 2023	7.5	-27.2%	-1.0%	-29.2%	3.7	-19.6%	-4.9%	-5.1%	3.8	-33.3%	5.7%	-43.3%
Feb 2023	7.3	-36.0%	-7.9%	-2.7%	3.3	-28.3%	-6.1%	-10.8%	4.0	-41.2%	-7.5%	5.3%
Mar 2023	12.6	-20.8%	13.6%	72.6%	4.5	-15.1%	6.8%	36.4%	8.1	-23.6%	21.5%	102.5%
Apr 2023	8.5	-33.6%	12.5%	-32.5%	4.7	-11.3%	10.0%	4.4%	3.8	-49.3%	18.2%	-53.1%
May 2023	12.3	12.8%	28.3%	44.7%	5.5	-5.2%	19.3%	17.0%	6.8	33.3%	42.8%	78.9%

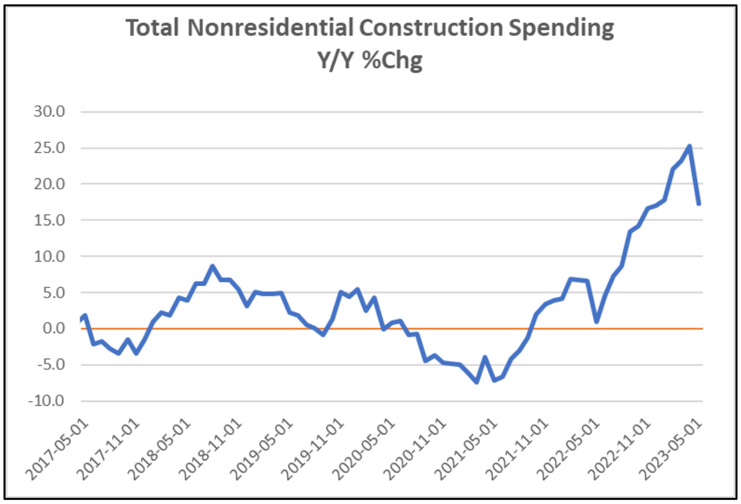
Month	Midwest											
	Total	Y/Y	3-Month Moving Avg.	M/M	1 unit	Y/Y	3-Month Moving Avg.	M/M	5 unit	Y/Y	3-Month Moving Avg.	M/M
Jun 2022	19.1	-6.4%	-3.6%	-14.0%	12.1	-11.0%	-0.4%	-6.9%	7.0	2.9%	-7.9%	-23.9%
Jul 2022	17.8	-4.8%	-8.5%	-6.8%	10.4	-11.1%	-6.7%	-14.0%	7.4	5.7%	-9.9%	5.7%
Aug 2022	19.9	-6.1%	-3.0%	11.8%	11.0	-8.3%	-5.1%	5.8%	8.9	-3.3%	0.7%	20.3%
Sep 2022	19.9	-4.3%	1.7%	0.0%	10.2	-15.7%	-5.2%	-7.3%	9.7	11.5%	11.7%	9.0%
Oct 2022	19.9	-11.9%	3.9%	0.0%	9.7	-18.5%	-2.1%	-4.9%	10.2	-4.7%	11.5%	5.2%
Nov 2022	15.6	-10.3%	-7.2%	-21.6%	7.3	-31.1%	-12.3%	-24.7%	8.3	22.1%	-1.5%	-18.6%
Dec 2022	11.5	-36.8%	-16.0%	-26.3%	5.5	-42.7%	-18.1%	-24.7%	6.0	-30.2%	-13.7%	-27.7%
Jan 2023	9.8	-32.4%	-20.9%	-14.8%	4.8	-39.2%	-20.7%	-12.7%	5.0	-24.2%	-21.0%	-16.7%
Feb 2023	10.6	-20.9%	-11.0%	8.2%	5.9	-28.9%	-4.8%	22.9%	4.7	-7.8%	-16.8%	-6.0%
Mar 2023	17.6	-18.5%	19.8%	66.0%	9.3	-24.4%	22.6%	57.6%	8.3	-10.8%	18.0%	76.6%
Apr 2023	15.2	-34.8%	20.2%	-13.6%	10.0	-22.5%	29.4%	7.5%	5.2	-50.0%	11.1%	-37.3%
May 2023	19.0	-14.4%	25.8%	25.0%	11.4	-12.3%	26.4%	14.0%	7.6	-17.4%	28.5%	46.2%

Month	South											
	Total	Y/Y	3-Month Moving Avg.	M/M	1 unit	Y/Y	3-Month Moving Avg.	M/M	5 unit	Y/Y	3-Month Moving Avg.	M/M
Jun 2022	82.9	-0.5%	-2.5%	2.1%	53.9	-11.9%	-5.5%	-2.5%	29.0	31.2%	4.5%	12.0%
Jul 2022	73.4	1.0%	-4.4%	-11.5%	43.9	-18.6%	-8.6%	-18.6%	29.5	56.9%	3.8%	1.7%
Aug 2022	75.7	-7.7%	-2.1%	3.1%	47.1	-11.6%	-4.6%	7.3%	28.6	-0.3%	3.5%	-3.1%
Sep 2022	68.8	-3.0%	-5.8%	-9.1%	41.2	-18.1%	-7.9%	-12.5%	27.6	34.0%	-1.6%	-3.5%
Oct 2022	67.6	-1.3%	-2.6%	-1.7%	39.2	-21.1%	-3.4%	-4.9%	28.4	51.1%	-1.2%	2.9%
Nov 2022	55.4	-17.7%	-9.6%	-18.0%	33.4	-28.3%	-10.7%	-14.8%	22.0	6.3%	-7.7%	-22.5%
Dec 2022	56.1	-21.8%	-6.2%	1.3%	30.7	-35.6%	-9.2%	-8.1%	25.4	5.8%	-1.4%	15.5%
Jan 2023	62.2	-17.7%	-2.0%	10.9%	34.4	-33.5%	-3.6%	12.1%	27.8	16.3%	0.8%	9.4%
Feb 2023	65.5	-9.5%	5.8%	5.3%	37.8	-29.5%	4.6%	9.9%	27.7	47.3%	8.2%	-0.4%
Mar 2023	71.8	-19.8%	8.6%	9.6%	49.0	-23.4%	17.2%	29.6%	22.8	-10.6%	-2.9%	-17.7%
Apr 2023	65.9	-22.0%	2.2%	-8.2%	45.3	-21.9%	10.7%	-7.6%	20.6	-22.3%	-9.2%	-9.6%
May 2023	76.0	-6.4%	5.6%	15.3%	52.6	-4.9%	12.7%	16.1%	23.4	-9.7%	-4.6%	13.6%

Month	West											
	Total	Y/Y	3-Month Moving Avg.	M/M	1 unit	Y/Y	3-Month Moving Avg.	M/M	5 unit	Y/Y	3-Month Moving Avg.	M/M
Jun 2022	40.0	7.2%	-0.9%	15.6%	20.2	-15.5%	-7.7%	-5.2%	19.8	47.8%	10.1%	48.9%
Jul 2022	30.2	-16.8%	-4.3%	-24.5%	15.9	-24.6%	-10.0%	-21.3%	14.3	-5.9%	5.6%	-27.8%
Aug 2022	32.0	-16.0%	-1.0%	6.0%	17.7	-20.3%	-5.0%	11.3%	14.3	-10.1%	7.0%	0.0%
Sep 2022	30.6	-5.8%	-7.6%	-4.4%	14.1	-29.1%	-10.1%	-20.3%	16.5	31.0%	-4.1%	15.4%
Oct 2022	25.0	-28.2%	-5.6%	-18.3%	12.6	-31.9%	-6.6%	-10.6%	12.4	-23.9%	-3.2%	-24.8%
Nov 2022	21.6	-37.6%	-12.1%	-13.6%	10.8	-40.7%	-15.1%	-14.3%	10.8	-34.1%	-7.5%	-12.9%
Dec 2022	26.3	-30.4%	-3.4%	21.8%	10.1	-44.2%	-10.5%	-6.5%	16.2	-17.8%	4.1%	50.0%
Jan 2023	21.5	-32.6%	-3.4%	-18.3%	10.2	-46.6%	-6.6%	1.0%	11.3	-11.7%	2.3%	-30.2%
Feb 2023	27.4	-19.9%	10.3%	27.4%	11.6	-43.7%	2.7%	13.7%	15.8	16.2%	19.9%	39.8%
Mar 2023	29.3	-30.2%	5.4%	6.9%	16.6	-35.7%	19.3%	43.1%	12.7	-21.6%	-3.3%	-19.6%
Apr 2023	28.0	-22.2%	10.0%	-4.4%	15.2	-31.2%	16.1%	-8.4%	12.8	-7.9%	7.0%	0.8%
May 2023	32.2	-6.9%	5.8%	15.0%	19.5	-8.5%	21.0%	28.3%	12.7	-4.5%	-6.5%	-0.8%

Housing and Interest Rate Forecast, 06/06/2023							
	2019	2020	2021	2022	2023	2024	2025
Housing Activity (000)							
Total Housing Starts	1,292	1,397	1,606	1,551	1,342	1,327	1,475
Single Family	889	1,003	1,132	1,004	859	928	1,053
Multifamily	403	394	474	547	483	399	423
New Single Family Sales	685	833	769	637	670	730	807
Existing Single-Family Home S	4,746	5,057	5,420	4,530	3,931	4,308	4,543
Interest Rates							
Federal Funds Rate	2.16%	0.36%	0.08%	1.68%	5.05%	4.83%	3.41%
Fixed Rate Mortgages	3.94%	3.11%	2.96%	5.34%	6.48%	6.01%	5.45%
Prime Rate	5.28%	3.54%	3.25%	4.85%	10.73%	10.85%	8.86%
For more forecast details, visit www.nahb.org.							

Nonresidential Construction



Total Non-Residential Construction

(TLNRESCONS)

- Total Non-Residential Construction activity in May continued to show solid gains of 17.3% (1,057,935) – far more than a year ago (901,853) and was still gaining month over month.
- **Outlook**: Nonresidential construction continues to see solid expansion, but the emphasis areas have shifted somewhat. The aggressive expansion of warehouse and logistics facilities has slowed, but manufacturing, infrastructure, and commercial, and many other segments continue to expand. Development of retail space and office buildings remains very slow but there has been recent activity in the healthcare sector as well as lodging and entertainment. Conversions of inner core high-rise buildings into multi-use facilities is a trend that continues.

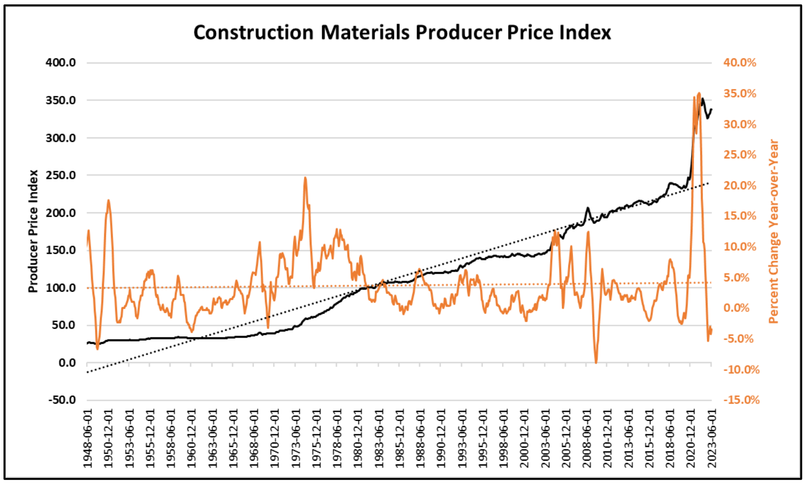
Value of Construction Put in Place in the United States, Seasonally Adjusted Annual Rate
(Millions of dollars. Details may not add to totals due to rounding.)

Type of Construction	May 2023	Apr 2023	May 2022	Percent change May 2023 from - Apr 2023	May 2022
Total Construction	**1,925,565**	**1,908,996**	**1,880,896**	**0.9**	**2.4**
Residential	867,630	849,444	979,044	2.1	-11.4
New single family	371,347	365,127	495,129	1.7	-25.0
New multifamily	127,655	127,722	106,054	-0.1	20.4
Nonresidential	1,057,935	1,059,553	901,853	-0.2	17.3
Manufacturing	194,301	192,396	110,185	1.0	76.3
Conservation	11,775	12,262	9,095	-4.0	29.5
Sewage and waste disposal	38,438	38,145	31,367	0.8	22.5
Lodging	23,040	23,138	19,060	-0.4	20.9
Water supply	25,810	25,105	22,280	2.8	15.8
Highway and street	125,264	125,906	109,845	-0.5	14.0
Health care	60,757	61,636	54,409	-1.4	11.7
Transportation	62,765	62,776	57,351	0.0	9.4
Public safety	12,562	12,082	11,634	4.0	8.0
Educational	109,156	109,377	101,690	-0.2	7.3
Power	115,671	116,172	109,063	-0.4	6.1
Office	95,919	95,622	90,630	0.3	5.8
Commercial	124,590	126,861	118,290	-1.8	5.3
Amusement and recreation	30,438	30,384	29,655	0.2	2.6
Communication	24,522	24,551	24,225	-0.1	1.2
Religious	2,930	3,139	3,074	-6.7	-4.7

Non-Residential Spending By Sector

(https://www.census.gov/construction/c30/c30index.html)

- The fastest growing non-residential construction sector was still coming out of the manufacturing complex. This has been motivated by two factors. The first is reshoring as almost 90% of sourcing managers report an effort to diversify. One trillion was spent on reshoring in 2022 and three times that is expected in 2023. The other factor is the expansion of robotics and automation as these machines often require different space.
- Lodging activity is accelerating with growth in the sector of more than 20% year-over-year on $23 billion in annualized spending. The services sector has resumed its traditional growth patterns, especially when it comes to travel and entertainment.
- Commercial also continues to be strong with growth of 5.3% year-over-year on $125 billion in annualized spending. All aspects of commercial are growing in some regions as suburban sprawl creates demand for retail and multi-use construction.
- Infrastructure development is expected to accelerate through the end of the year as the allocated Infrastructure Act money starts to flow (@$50B in incremental annualized spending).
- Health care spending has started to emerge from the pandemic doldrums as elective surgeries return. The drive in health care is decentralization and the demand is for smaller facilities located in communities closer to where people live – suburbs and exurbs. The larger hospital complexes have slowed somewhat although these have expanded in areas of high population growth.



Construction Materials Price Index

(WPUSI012011)

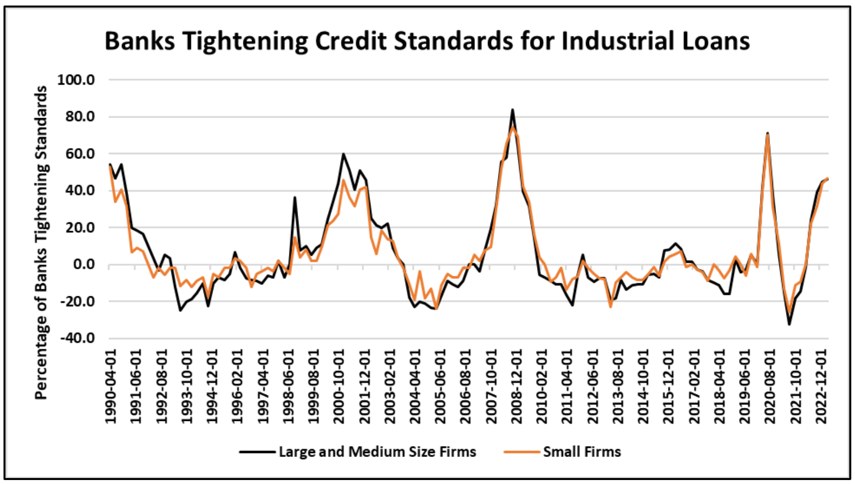
- The Producer Price Index for Construction Materials was 3.4% lower year-over-year in June (the latest available; down 4.3% last month). But prices are still near all-time highs.
- **Outlook**: Again, we are hearing that there are significant shortages of certain components, primarily in electrical equipment and certain fabricated steel products. In addition, new spending from the CHIPS Act is starting to exacerbate the situation, competition for those construction components is in much higher demand and supplies are still lower than they should be. Production challenges in China are also still a factor.

Producer Price Index - Key Industry Products						
Category	PPI Code	Jun-23	May-23	M/M% Chg	Jun-22	Y/Y % Chg
Core Materials						
Cement	PCU32732032732	368.4	367.6	0.2%	329.3	11.9%
Copper	WPUSI019011	503.3	511.5	-1.6%	543.8	-7.5%
Lumber	WPU081	285.9	262.1	9.1%	318.5	-10.2%
Nickel	WPU102504	230.9	232.6	-0.8%	222.1	4.0%
Pipe, Valves and Fittings						
Metal valves, except fluid power	WPU114902	435.1	435.1	0.0%	405.4	7.3%
Gates, globes, angles and check valves	WPU114902011	165.9	165.9	0.0%	155.4	6.7%
Ball valves	WPU11490202	557.9	557.9	0.0%	536.4	4.0%
Butterfly valves (formerly W2421490203)	WPU11490203	303.1	303.1	0.0%	274.9	10.3%
Industrial plug valves	WPU11490204	317.1	317.1	0.0%	268.2	18.2%
Plumbing and heating valves (low pressure)	WPU11490205	393.4	393.4	0.0%	372.9	5.5%
Solenoid valves	WPU11490208	372.2	372.2	0.0%	372.2	0.0%
Other industrial valves, including nuclear	WPU11490209	405.5	405.5	0.0%	370.5	9.5%
Automatic valves	WPU11490211	248.9	248.9	0.0%	232.0	7.3%
Metal pipe fittings, flanges and unions	WPU11490301	483.0	483.0	0.0%	463.3	4.2%
Steel pipe and tube	WPU101706	406.8	428.3	-5.0%	508.7	-20.0%
Steel pipe and tube, alloy	WPU10170673	109.5	109.5	0.0%	109.5	0.0%
Steel pipe and tube, stainless	WPU10170674	149.6	151.3	-1.1%	169.5	-11.8%
Copper & copper-base alloy pipe and tube	WPU10250239	349.9	366.5	-4.5%	378.7	-7.6%
Plastic pipe	WPU07210603	199.5	202.0	-1.2%	216.3	-7.8%
Plastic pipe fittings and unions	WPU07210604	314.6	317.3	-0.9%	321.1	-2.0%
Plumbing Fixtures, Fittings and Trim	WPU105402	395.0	395.0	0.0%	383.8	2.9%
Bath and shower fittings	WPU10540211	286.7	286.7	0.0%	286.7	0.0%
Lavatory and sink fittings	WPU10540218	204.6	204.6	0.0%	192.3	6.4%
Enameled iron and metal sanitary ware	WPU1056	290.6	289.2	0.5%	289.2	0.5%
Steam and Hot Water Equipment	WPU1061	419.6	419.6	0.0%	380.1	10.4%
Cast iron heating boilers, radiators and convectors	WPU10610106	289.7	289.7	0.0%	261.1	11.0%
Domestic water heaters	WPU106601	570.6	570.6	0.0%	569.1	0.3%
Electric water heaters	WPU10660101	564.3	564.3	0.0%	563.9	0.1%
Non-electric water heaters	WPU10660114	347.7	347.7	0.0%	346.3	0.4%
Warehousing, Storage and Relates Services	WPU321	132.9	134.8	-1.4%	125.3	6.0%

Banking Credit and Finance

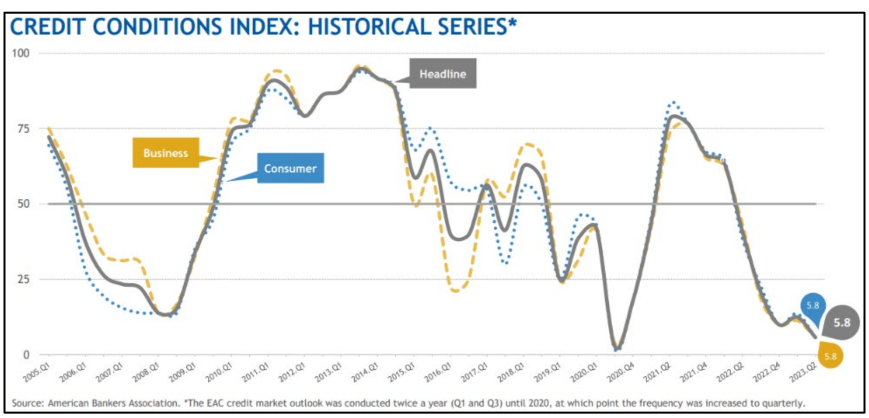
Overall Observations: There is a new wrinkle as far as predicting Fed rates. One of the more basic assumptions guiding policy decisions is that 1.0% is a “neutral” interest rate. That is a rate that is not impacting the economy – doesn’t stimulate growth and doesn’t affect inflation. There is now discussion over whether 1.0% is still the neutral rate and many are making a case for 2.5% as the “new” neutral. If that is the case the Fed didn’t really start impacting the economy with rate hikes until February of this year and it is possible the Fed could push rates to 5.5% or even 6.0% in the coming months.

Developer Insights: The sense among those in the construction field is that 2023 will still be a fairly profitable year as there are still many projects that are underway and will need to be completed. The prime issues that have been affecting the industry are the same as they have been for several years – labor shortage and an unreliable supply chain. The problems could start to manifest more in 2024 as many projects have been put on hold. The fear of recession has shifted to next year as compared to 2023.



Banks Tightening Conditions (DRTSCILM; DRTSCIS)

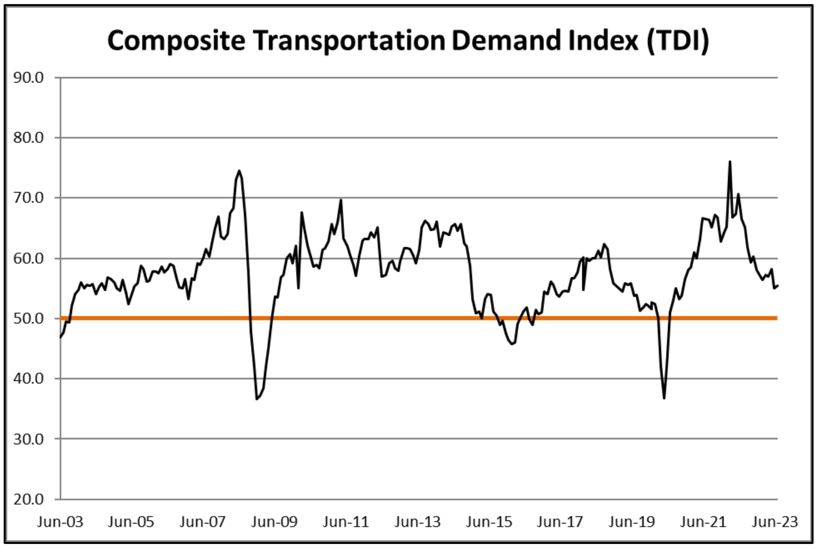
- The latest view of the number of banks tightening credit standards has now hit 46.0 for large and medium-sized commercial firms and 45.8% for smaller firms. This is arguably the fourth tightest lending environment going back into the early 1990’s, and all prior periods were in recession periods.
- **Outlook**: The speed of this tightening matches the speed of the Fed’s interest rate hikes. There has been a 500 basis point increase in a very short time and the banks have reacted. The only silver lining in all this is that higher rates have provided some mild flexibility for banks. The banks are asserting more interest in loans that can be more highly collateralized to some degree.



ABA Credit Conditions (ABA)

- The American Bankers Association’s Credit Conditions Index for business credit decreased by 6.7 points to 5.8 and is well below the midpoint 50 line. The respondents all believe this sub-50 reading will extend through the year and this constrains the available credit to levels not seen since the pandemic.
- **Outlook**: The outlook from the ABA is signaling extreme caution. Part of this is reaction is to the interest rate environment and concerns regarding the future of the economy but there is also the “bank crisis”. That concern fizzled to a degree, but the regulators have stepped up scrutiny and that forces even more caution for each institution. When asked, bankers have cited increased regulatory pressure as their greatest concern for the rest of 2023.

Supply Chain and Transportation Situation



	23-Jun	23-May	22-Jun	Y/Y Change %	M/M Change %
Composite	55.4	55.0	66.5	-16.7%	0.7%
Rail	53.4	53.4	63.8	-16.3%	0.0%
Trucking	55.5	55.1	67.0	-17.2%	0.7%
Air	61.0	60.6	66.5	-8.3%	0.7%
Maritime	59.6	58.3	64.7	-7.9%	2.2%

Transportation Demand Normalizing

- The Transportation Demand Index shows the current demand environment for freight services improved slightly and remains in the expansion zone with a reading of 55.4 as compared to 55.0 the month prior.
- **Outlook:** The logistics sector is approaching "normal" in terms of capacity and demand. This has been evident in trucking and maritime but a little less obvious in rail and air freight. The assertion is that demand is down to levels that have eroded the capacity crunch. Most of the 65,000 new trucking operations that formed in 2022 are now starting to shut down. The used truck market was blazing hot a year ago and now the dealers are facing a major glut and prices have collapsed with the exodus. But again, this is a return to "normal" growth rates seen prior to the pandemic instead of the hyper-growth over the past two years that led to an over-abundance of capacity.

Mode Demand Slowing

- Each mode of transportation continued showing signs of decelerating demand, which was also pulling pricing lower. A reading over 50 here shows an expanding market, a reading under 50 is contracting. Every mode still had indexes above normal; demand is stable. And all modes were up slightly in June but were much weaker off of the peaks hit over the past two years. Again, it feels more like a normalization process bringing prices and capacity back to pre-pandemic levels.

What we are Watching in Transportation Relative to Construction

- **Is the Supply Chain Still in Disarray?** **T**he New York Fed's Global Supply Chain Pressures Index shows conditions at their lowest in history (meaning that the global clog of freight is gone). The capacity issue is now more situational and has more to do with improper placement of resources. There has been less reliance on "blank sailing" and slow sailing but the shift in supply chains have put pressure on ports that are not used to the volumes they now encounter. China has over 70 ports that can handle the largest vessels and all of Asia combined only has 23. Europe has just 30. The challenge is now that 90% of parts for most manufacturing supply chains are available but that remaining 10% is crucial and leading to construction supply chain challenges.
- **West Coast Contract Negotiations Continue.** The negotiations with the International Longshore and Warehouse Union have hit tentative agreements stages, but ratification is still ongoing. But strikes at the Vancouver port is seen as a significant disruptor to inbound freight into the North American markets. The strike has prompted the engagement of federal mediators from Canada but progress has been slow. The key issue for the Canadians is automation. The unions have resisted any sort of technology that would threaten the jobs of the clerks that make up the majority of the union members. There has been some automation deployed in the west coast ports but compared to the rest of the world the levels are miniscule. Over 50% of the Asian ports are fully automated and this process indeed meant a reduction of the workforce by over 45%. The majority of these losses were in jobs related to tracking shipments.

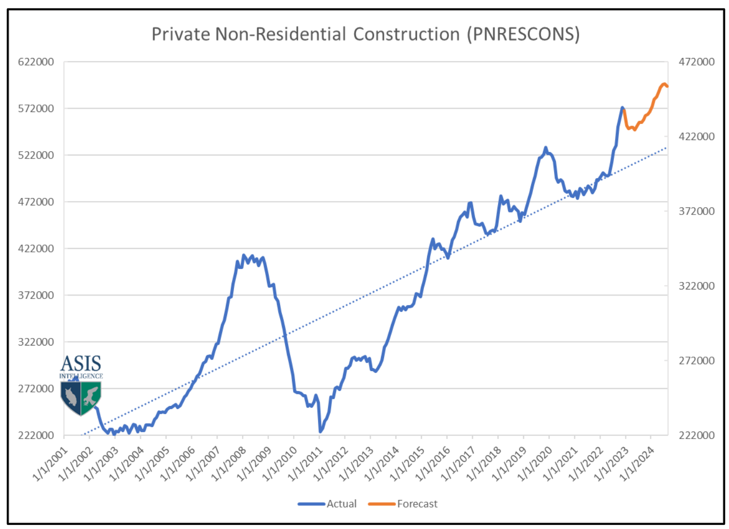
Construction Industry Outlook

	2023				2024				2019	2020	2021	2022	2023	2024	2025
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4							
Real GDP	1.1	2.0	-1.4	-1.9	-0.5	1.9	2.2	2.3	2.3	-2.8	5.9	2.1	0.7	0.7	1.8
Unemployment rate (%)	3.5	3.6	3.8	4.0	4.5	4.5	4.4	4.3	3.7	8.1	5.4	3.6	3.8	4.3	4.5
PCE Inflation (%Y/Y)	4.6	3.6	3.1	3.1	3.1	2.5	2.1	2.0	1.5	1.1	4.0	5.6	3.1	2.2	2.0
Core PCE Inflation (%Y/Y)	4.7	4.3	3.8	3.5	3.1	2.5	2.1	2.0	1.7	1.3	3.5	4.8	3.5	2.2	2.0
Fed Funds Rate	4.9	5.1	5.3	5.5	5.5	5.2	4.7	4.0	1.6	0.1	0.1	4.4	5.5	4.0	3.1

As would be expected the prime issue of concern has been the pace of interest rate hikes by the Federal Reserve as these affect the entire lending community. The brief pause at their last meeting was not a harbinger of things to come as the Fed minutes showed. There was opposition to even this pause. There is no longer any serious talk of lowering rates this year and in fact there are serious assumptions that rates will go up by at least another half point.

The US population will grow by 1.5 million people by the end of 2024, a rate of growth that is expected to allow the residential construction housing sector to keep pace but much depends on demographic trends. There is no consensus on the number of homes needed to accommodate this growth. Those that assert that the deficit is as high as 5 million are assuming that Gen-Z is similar to Boomers and Gen-X when it comes to home buying or even renting. That may not be the case. A poll of Gen-Z males found that fully a third of them have no desire to leave their parent's home until they are in their 30s. That reduces demand for single and multi-family housing. There has also been a dramatic decrease in demand for second homes as prices rise along with mortgage rates.

Non-residential markets are showing strength. The model at right shows that the predictive outlook continues to outpace the long-term growth trend. This model uses 18-20 different economic metrics modeled over 20 years to build the outlook and although this is a volatile industry, the model has performed well in the past.



Construction projects in manufacturing, infrastructure, and commercial nonresidential projects are leading the field and will continue to be strong. We still expect more than $2 trillion in reshoring projects to be conducted over the next 3-5 years on the back of $134 billion beinng spent last year (double the normal annual rate).

But we also expect health care to begin to launch certain projects as hospital systems come out from under operating cost pressures.

Data centers and mission critical projects will also be in high demand over the next 7-12 years. The US will be running at a processing power deficit relative to demand in three years and will have to add thousands of smaller, regional data handling centers to meet processing needs.