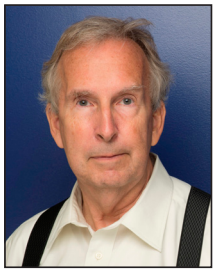
constructconnect

Fall 2022 (Published: August 2022)

U.S. Put-in-Place Construction Forecasts

Prepared by Alex Carrick, ConstructConnect® Chief Economist



Alex Carrick

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Quarterly U.S. Put-in-Place Forecast Report, Fall 2022

The economic cauldron is boiling over with weighty concerns including inflation that may be easing but remains rampant; military action in Ukraine that shows no signs of relenting; a coronavirus pandemic that won't quite go riding off into the sunset; scorching temperatures around the globe that are causing an inordinate number of rivers and lakes to dry up; and recessionary possibilities for many countries that are perhaps preparing to pounce.

To survive this coming winter without severe economic and lifestyle consequences from Russia's limiting of westbound energy exports, many countries in Europe will need a lucky break with the weather. If, instead, Mother Nature plays rough, instances of individual and corporate hardship will proliferate across the Atlantic and sink growth prospects.

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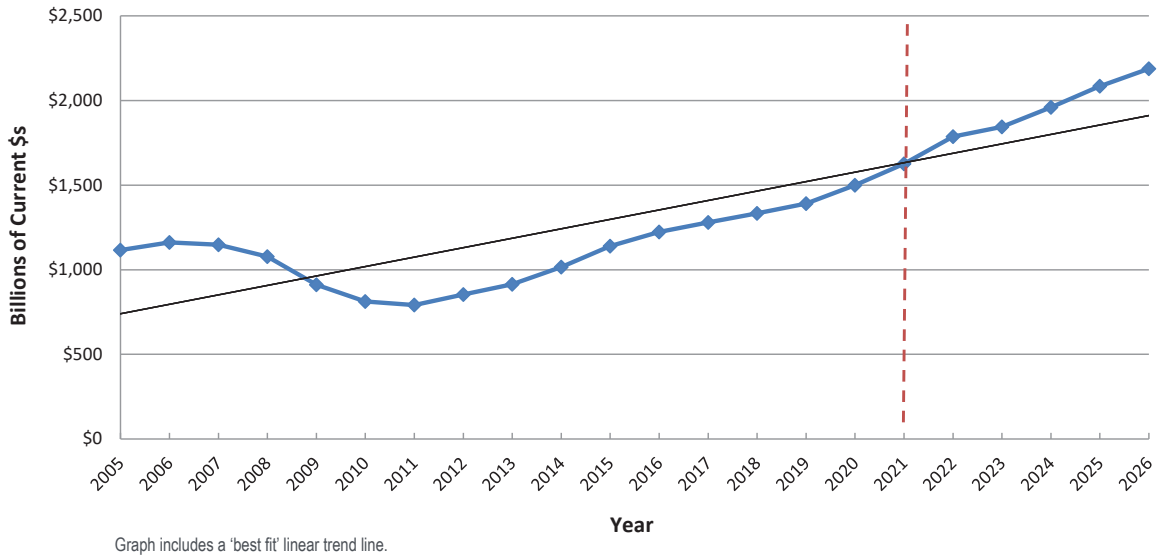
Graph 1: U.S. Grand Total Construction Spending Put-in-place (PIP) Investment



Graph includes a 'best fit' linear trend line.

Source of actuals: U.S. Census Bureau/Forecasts: Oxford Economics and ConstructConnect.
Chart: ConstructConnect.

'Starts' versus Put-in-place (PIP) Statistics

'Starts' compile the total estimated dollar value of all projects on which ground is broken in any given month. By way of contrast, put-in-place capital spending statistics are analogous to work-in-progress payments as the building of structures proceeds to completion.

Consider a $60 million office tower for which ground is broken in June 2022. For the 'starts' series, the entire estimated value ($60 million) will be entered in June 2022. In PIP numbers, it will be captured as spending of approximately $15 million in 2022; $25 million in 2023; and the final $20 million in 2024.

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A first major crack in China's economy has appeared. The real estate development sector is in disarray, with many major companies on life support provided by Beijing. Homeowner protests and multitudinous vacant properties are not the images the country wants to project. China's usual response to a waning economic tide has been another jolt of infrastructure spending, but public assets per capita in China's major urban areas have become excessive.

Meanwhile, the U.S. government, somewhat distancing itself from the surface turmoil, has undertaken several major initiatives that, if allowed to stay in place under any future administration, will set the country on a new path. Recognizing a questionable reliance on foreign supply sources, the CHIPS Bill is intended to bring computer semi-conductor manufacturing back home.

Portions of both the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act include incentives and measures to greatly reduce harmful carbon emissions over the next decade plus. Also on board with this goal are the major auto assembly companies, which are firmly committing billions of dollars in capital spending towards electric vehicle production lines and battery plants.

A watershed moment has seemingly been reached. The move away from fossil fuels in favor of renewables has become tangible. This has tremendous implications for the specific commodities that will be in heightened demand (e.g., copper, nickel, aluminum, lithium), the kinds of jobs that will be readily available (e.g., in EV engineering), and the building products that will find a welcoming market (e.g., in charging stations, on solar paneled roofs, etc.)

Table 1: U.S. Construction Spending (put-in-place investment)

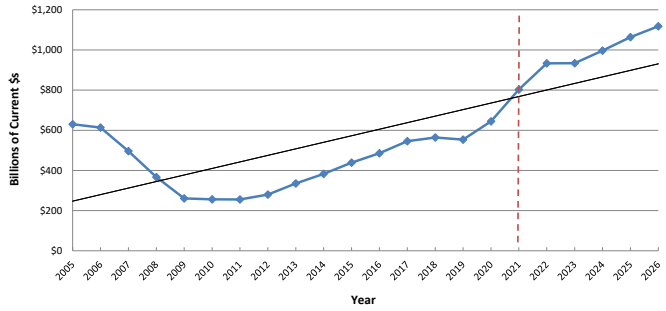
(billions of "current" $s)

	Actuals		Forecasts				
Type of Construction:	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Grand Total	1,499.6	1,626.5	1,787.2	1,844.3	1,959.8	2,084.3	2,187.6
(year vs previous year)	7.8%	8.5%	9.9%	3.2%	6.3%	6.4%	5.0%
Total Residential	644.3	802.9	933.7	933.8	997.0	1,063.7	1,118.0
	16.4%	24.6%	16.3%	0.0%	6.8%	6.7%	5.1%
Total Non-residential	855.3	823.5	853.5	910.6	962.8	1,020.5	1,069.5
	2.1%	-3.7%	3.6%	6.7%	5.7%	6.0%	4.8%
Total Commercial/for Lease	211.0	199.4	205.5	208.4	219.8	237.6	251.7
	2.2%	-5.5%	3.0%	1.4%	5.5%	8.1%	5.9%
Lodging	28.5	18.2	17.1	19.3	22.5	26.8	30.7
	-14.9%	-36.0%	-6.5%	13.2%	16.4%	19.1%	14.5%
Office	92.8	86.6	85.8	86.7	89.5	94.5	99.0
	4.6%	-6.7%	-1.0%	1.1%	3.2%	5.6%	4.8%
Commercial (retail/warehouse)	89.7	94.6	102.6	102.4	107.8	116.3	122.0
	6.4%	5.4%	8.6%	-0.3%	5.3%	7.8%	4.9%
Total Institutional	208.7	187.2	187.2	189.5	198.5	209.3	217.7
	3.7%	-10.3%	0.0%	1.2%	4.7%	5.4%	4.0%
Health Care	48.6	48.5	50.7	51.0	53.1	57.2	61.0
	5.1%	-0.3%	4.7%	0.6%	4.1%	7.5%	6.7%
Educational	110.7	98.4	96.5	97.7	102.3	106.9	109.5
	1.6%	-11.1%	-1.9%	1.2%	4.7%	4.5%	2.5%
Religious	3.5	2.9	2.7	2.6	2.8	3.0	3.1
	-6.9%	-15.8%	-7.9%	-3.3%	7.7%	5.4%	4.0%
Public Safety	17.7	12.2	10.9	11.0	11.8	12.4	12.7
	47.1%	-31.2%	-10.0%	0.9%	6.6%	5.0%	2.7%
Amusement and Recreation	28.3	25.3	26.3	27.1	28.5	29.9	31.4
	-7.0%	-10.7%	4.1%	3.1%	5.1%	5.0%	5.0%
Total Engineering/Civil	360.2	358.0	359.0	387.5	417.2	444.1	466.7
(year vs previous year)	3.3%	-0.6%	0.3%	8.0%	7.7%	6.5%	5.1%
Transportation	60.7	56.7	55.4	59.1	64.1	68.9	71.9
	5.7%	-6.7%	-2.3%	6.6%	8.5%	7.6%	4.3%
Communication	23.9	24.7	24.2	25.7	27.9	30.0	31.9
	7.6%	3.4%	-2.1%	6.5%	8.2%	7.6%	6.3%
Power	118.2	120.8	119.9	136.9	147.7	159.0	170.0
	0.2%	2.3%	-0.8%	14.1%	8.0%	7.6%	6.9%
Highway and Street	102.3	100.7	100.1	104.8	113.1	119.5	124.6
	2.9%	-1.6%	-0.6%	4.7%	7.9%	5.7%	4.2%
Water Supply & Waste Disposal	46.1	47.2	50.5	52.0	54.7	56.6	58.1
	8.5%	2.3%	7.1%	2.8%	5.3%	3.4%	2.6%
Conservation and Development	8.9	7.9	8.9	9.1	9.7	10.1	10.3
	-3.3%	-11.4%	12.5%	2.1%	7.1%	4.0%	1.9%
Total Industrial/Manufacturing	75.4	78.9	101.8	125.1	127.3	129.6	133.5
	-6.9%	4.6%	29.1%	22.9%	1.8%	1.8%	3.0%

"Current" means not adjusted for inflation.

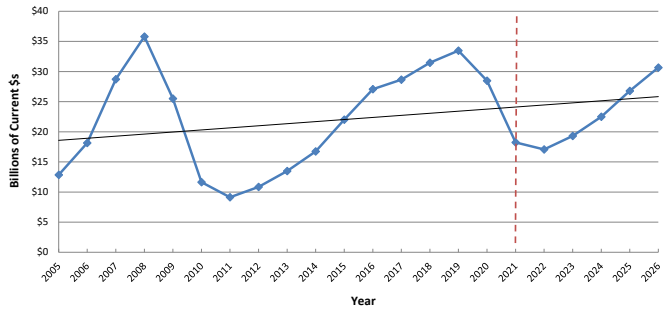
Source of actuals: U.S. Census Bureau/Forecasts: Oxford Economics and ConstructConnect/Table: ConstructConnect.

Graph 2: U.S. Construction Spending: Residential Put-in-place (PIP) Investment



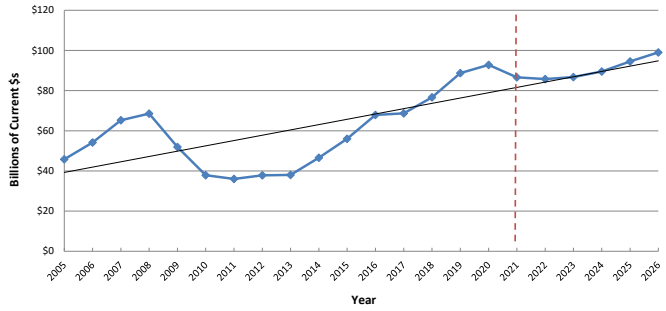
The bump in 2022 residential construction is a carryover from 2020 and 2021 when housing starts were stronger than expected. Ultra-low interest rates at the time helped. Now, rising rates are hurting affordability and groundbreakings on single-family homes are moderating. The multi-family market, though, where there are accompanying rent increases of +6.3% y/y, has picked up nicely. Tight unemployment and healthy income growth will promote renovation activity.

Graph 3: U.S. Construction Spending: Lodging Put-in-place (PIP) Investment



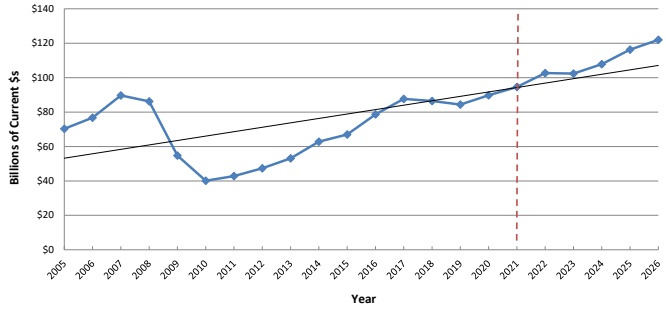
The average annual percent change of capital spending in the accommodation sector over the past couple of years has been deeply negative. The coronavirus halted travel and laid waste to bookings. Finally, circumstances are turning around. ConstructConnect's hotel/motel construction 'starts' are +31% through July 2022, and this will have a positive impact on the PIP numbers from 2023 on. Hotel projects have returned to large upcoming projects lists.

Graph 4: U.S. Construction Spending: Office Buildings Put-in-place (PIP) Investment



Boosted by a surge in high-tech jobs, supposedly requiring common workspaces, the five-year annual average increase in office building PIP construction from 2017 to 2021 was +5.3%. Over the next five year, 2022 to 2026 inclusive, the annual average growth rate is expected to be cut in half, to +2.7%. The work from home phenomenon, while gradually dissipating, is far from being played out. Besides, it's a means to retain quality older workers who especially hate commutes. In an office sub-category of their own are data centers for which no let-up in demand is likely.

Graph 5: U.S. Construction Spending: Retail, Warehouse, Restaurant Put-in-place (PIP) Investment

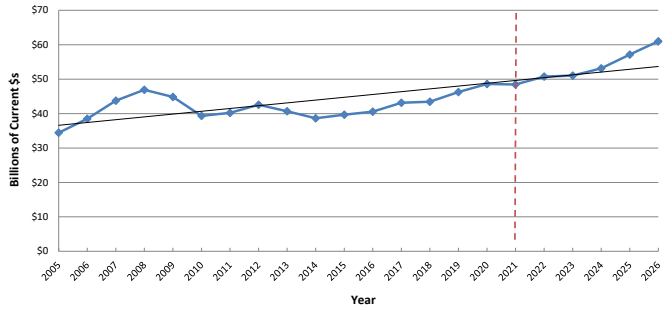


Total U.S. retail sales in July 2022 were +10% y/y; non-store retail sales were +20% y/y. Since the pandemic's kick-off, sales over the Internet have been way above their previous trend line, spawning a burst in the building of fulfilment centers. In 2020-21, personal visits to physical outlets plummeted. In 2022, though, there's been a reversal in fortune, with store construction starts swinging upwards again after bottoming out and warehouse starts taking a breather.

Graphs include a 'best fit' linear trend line.

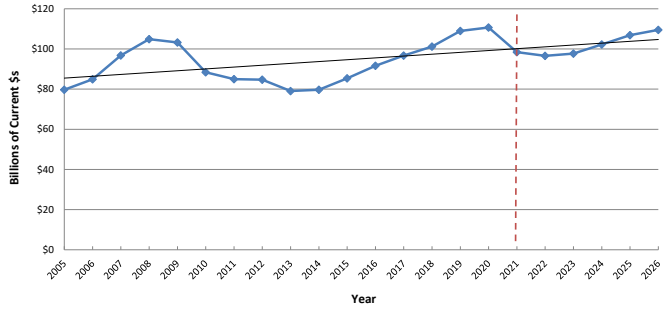
Source of actuals: U.S. Census Bureau/Forecasts: Oxford Economics and ConstructConnect/Charts: ConstructConnect.

Graph 6: U.S. Construction Spending: Health Care Put-in-place (PIP) Investment



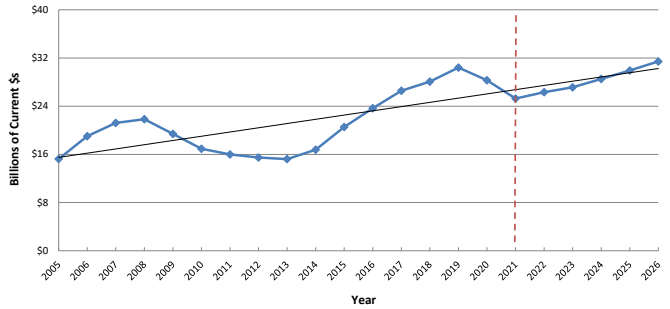
The 'actuals' record of the average annual increase in health care PIP spending over the past five years has been +3.7%. The projected figure for the five years from 2022 to 2026 is +4.7%. People without COVID have been avoiding hospitals, but a change is underway and normal attention to medical issues is making a comeback. Plus, the nation's population distribution is skewing older. The emergence and expansion of telehealth has been a huge boon, but it can only go so far. Big new medical centers are proceeding on university campuses and in city cores.

Graph 7: U.S. Construction Spending: Educational Put-in-place (PIP) Investment



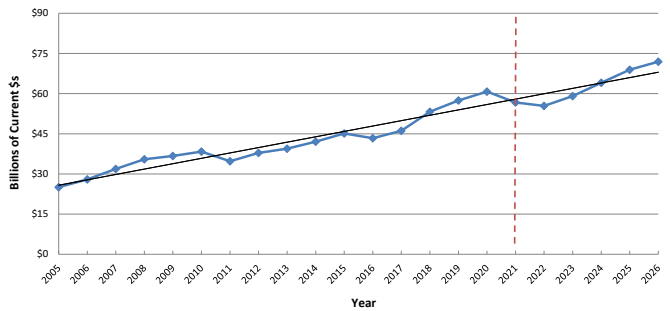
Capital spending on school construction hit a wall after 2020, when foreign student enrolments at the level of higher education fell off and the feeder stream of children entering lower grades diminished with the drop in domestic births and the decline in the arrival of immigrant families. These demographic influences, unless counterbalanced by such measures as student debt forgiveness ($10,000 to $20,000 depending on the type of loan) or free tuition, will lower the prospects for educational facility PIP spending to about +2.0% per year over the forecast period.

Graph 8: U.S. Construction Spending: Amusement and Recreation Put-in-place (PIP) Investment



A nasty fallout from the mask wearing days has been a reluctance by many individuals to mingle in large gatherings just yet. Cinema chains are being stretched financially as attendance continues to limp along. Nevertheless, actors, writers, musicians, and technicians are back at work increasing the output of streaming material and necessitating the building of more studio space. Several major league sports teams have billion-dollar stadiums that they're guiding down the pipeline. New casinos are back on the radar. America's affluence to spend remains in place.

Graph 9: U.S. Construction Spending: Transportation Put-in-place (PIP) Investment

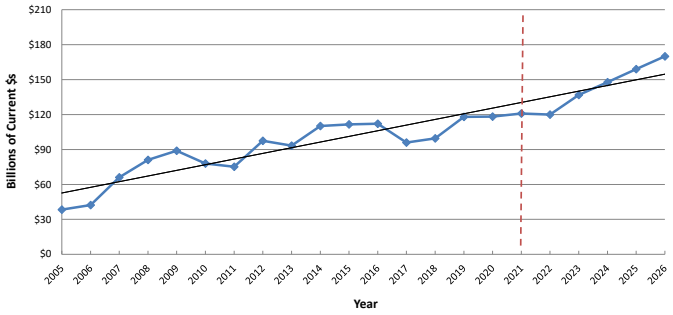


A pilot and flight attendant shortage and a failure to anticipate the massive uptick in demand for air travel once the bans came off has caused innumerable flight cancellations, tamping down the enthusiasm of some potential passengers. The full-throttled outlook for airport expansions that existed prior to the Spring of 2020 will return, with a delay of a year or two. Likewise for rapid transit expansion plans. Every major city has a 'blue' line or an 'orange' line that it wants to build new or extend, under the guise of going 'green', and when it can access the financing.

Graphs include a 'best fit' linear trend line.

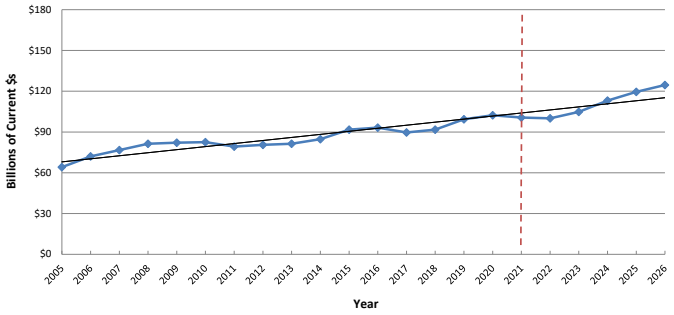
Source of actuals: U.S. Census Bureau/Forecasts: Oxford Economics and ConstructConnect/Charts: ConstructConnect.

Graph 10: U.S. Construction Spending: Power Put-in-place (PIP) Investment



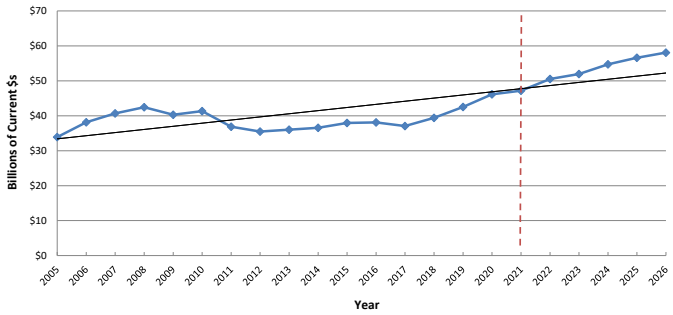
Meeting ambitious net zero emission goals will mean an expanded role for electricity. Additions to generation capacity must lean heavily towards renewables and that's where White House investment incentive programs are being directed. The desirable power compass points to wind, solar and geothermal sources, although nuclear in the form of small modular reactors is also receiving renewed attention. A matter to be resolved is that the planned roll out of 500,000 EV recharging stations may strain the power capacities of some smaller States.

Graph 11: U.S. Construction Spending: Highways and Streets Put-in-place (PIP) Investment



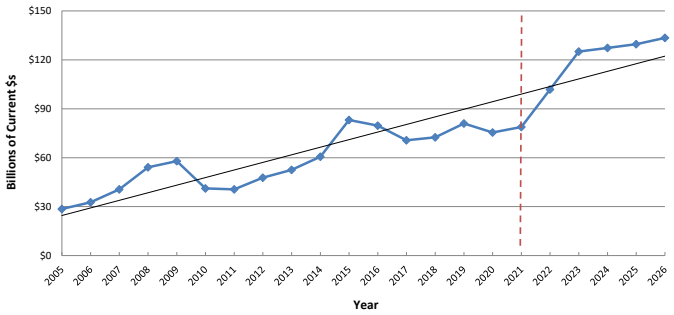
Don't be alarmed by the flatness in roadwork PIP spending in 2022. July 2022's ytd dollar volume of highway and street 'starts' is ahead by a quarter. There's gathering momentum, especially with the backing of the IIJA, under which the money is just now beginning to flow. Also included here is bridge work, which will largely focus on repairs, and tunnels, including the NY-NJ Hudson River project. Signaling systems for a new world of transportation are a must. How big is the change? Consider that NASCAR is planning an EV series of races for 2023.

Graph 12: U.S. Construction Spending: Water Supply, plus Sewage & Waste Disposal Put-in-place (PIP) Investment



In recent years, the pace of PIP spending on water supply and waste disposal systems has improved to an average +4.5% annually, with a similar performance projected out to 2026. Among other measures, public funds are being allocated to fix municipal lead pipe contamination problems. Increasingly important are 'resiliency' undertakings (e.g., stormwater takeaway systems) to return the likes of arterial routes and subways to service after severe weather events. The billions of dollars being spent now to mitigate the impacts of climate change are about saving trillions of dollars in disaster relief later.

Graph 13: U.S. Construction Spending: Manufacturing Put-in-place (PIP) Investment



The biggest story in the construction 'starts' statistics so far in 2022 has been the preponderance of mega-sized projects (i.e., of a billion dollars or more each), mainly in the industrial or manufacturing area. Especially notable have been LNG exporting facilities, computer chipmaking plants and battery plants. The dollar expenditures will extend over several years. Many more such projects are set to leave drawing boards. There's a huge natural gas pricing differential favoring North America versus Europe and Japan. Germany, as one example, is seeking to line up contracts with N.A. producers for natural gas and hydrogen. A good flow of auto plant work, carbon capture and storage facilities, hydrogen-releasing plants, etc. is assured.

CURRENT VS CONSTANT DOLLARS

Only recently has the 'constant' versus 'current' dollar value of construction question become significant once again, after lying largely dormant for many years. The reason is because there have been large spikes in the costs of many building material inputs; plus, wages have been on a steep ascent as well. There are indications from Producer Price Index (PPI) readings that the worst of the material price advances may be over. Nevertheless, it's important to understand how the 'real' or inflation-adjusted value of construction is derived.

A price index or deflator is used to convert current dollars to constant dollars. A base period is chosen for a certain price level, and it is assigned the value of 100.0. Then if prices increase by +5% over the next year, the index in year two moves to 1.05 x 100.0 = 105.0.

If prices rise by +4% in the third year, the index will shift up to 1.04 x 105.0 = 109.2. If prices change by -4% instead, the index value in the third year will become 0.96 x 105.0 = 100.8.

Market volumes divided by an appropriate price index or deflator will yield dollars that are termed 'constant' (i.e., in the sense that they've had inflation removed) relative to the chosen base period. (In the next paragraph, the price index adopted by Oxford Economics uses 2015 equal to 100.0)

The PIP construction dollar volumes set out in this report, as calculated by Oxford Economics and ConstructConnect, are in 'current' dollars. The estimates of the year-over-previous-year pricing impacts, as provided by Oxford Economics, are +2.9% in 2020; +3.8% in 2021; and +13.4% in 2022. In 2023 and 2024, the increments retreat close to zero, +0.8% and +0.6% respectively. 2025 and 2026 will see normal price advance years of +2.7% and +2.5%.

From 2021 to 2022, the Grand Total construction current dollar volume increase of +9.9% is pitted against a deflator increase of +13.4%. Therefore, the Grand Total constant dollar or 'real' change is negative, -3.2%. The 'real' percentage change turns positive again from 2023 on.