

Construction Outlook 2025

Feb 2025

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Construction Outlook 2025, based on data from:

Actual Jobs data includes BLS Jobs to Jan 15th, issued 2-7-25

Forecast includes US Census 2024 year-end spending issued 2-3-25

Forecast includes Dodge Outlook 2025 and Dec construction starts issued 1-20-25

Purpose and Method of Analysis

This report presents the Construction Outlook results of analysis using currently available actual and predicted national construction data to determine the impact of recent construction market activity and cost inflation and to forecast future construction activity, jobs, and inflation.

This analysis is national level data.

All Adjusted Starts, Backlog, Cash Flow and Spending reported in the tables in this report are forecast from construction starts. The input data is new and forecast construction starts. Survey market share factors and cash flow curves applied are developed by Construction Analytics from historical actual starts and spending data. Actual Spending data is reported by U.S. Census. All jobs' data is from U.S. Census Bureau of Labor Statistics. Inflation indices are developed by Construction Analytics and inputs are from various named sources.

Summary of Analysis – Conclusions

This analysis does not take into consideration the inflation impact of a recession or significant new tariffs. Nor does it assume losing any portion of the workforce to deportation. These are all possible. Construction starts may be negatively affected, and if so, then construction spending will also be affected. All will lead to higher inflation.

SUMMARY STARTS – BACKLOG - SPENDING

Forecast for 2025 spending is \$2,272 billion, 5.5% higher than the 2024 forecast of \$2,154 billion.

There is strength in most markets, but Manufacturing is starting a downward slope in spending after three years of blockbuster performance.

Total construction starts for 2024 are up 5.3%. Residential starts increased 5.7%. Nonresidential Buildings starts gained 2.6% and Non-building Infrastructure starts are up 8.3%.

Total construction starts for 2025 are forecast to increase 3.8%. Residential starts are forecast to increase 6.1%. Nonresidential Buildings starts are expected to gain 2.5% and Non-building Infrastructure starts will be up only 1.6%.

Construction Backlog leading into 2025, in every sector, is at all-time high, in total up 53% from Jan 2020 and up 14% over the last two years. Over the last two years, Residential backlog is up only 3%. Nonresidential Buildings backlog is up 13% and Non-building Infrastructure backlog is up 20%.

Starting Backlog is the estimate to complete (in this analysis, it is current on Jan 1) for all projects currently under contract. This allows us to measure the impact on spending in the year from Backlog and from New Starts. Construction Analytics measures Backlog at the start of the year and growth vs backlog at the start of the previous year. This is much different than the ABC Construction Backlog Indicator, which measures the current month's backlog compared to the previous year's total revenue.

Residential spending is 45% SF, 15% MF and 40% Reno. Only 60% of the total is spending on new housing units. Only about 30% of Residential spending in 2025 comes from 2024 starts. Most spending (70%) in 2025 comes from projects that start in 2025. This is a result of short duration single-family and renovations projects. Residential starts are expected to increase 6.1% in 2025.

Nonresidential Buildings spending forecast for 2025 is most affected by declines in Manufacturing and Warehouse, and increases in Educational and Data Centers.

Without the expected spending declines in **Manufacturing**, Nonres Bldgs 2025 spending would be up 6%. While outward appearance may be that Nonres spending is declining, in large part it is due to mega spending on Manufacturing buildings (and Warehouse) tapering down upon completion, creating large, but normal, annual declines.

Manufacturing was responsible for 60% of all the Nonres Bldgs spending \$ growth in 2023 and 85% in 2024. It was also responsible for 33% of the Nonres Bldgs Backlog growth from 2020 to 2025.

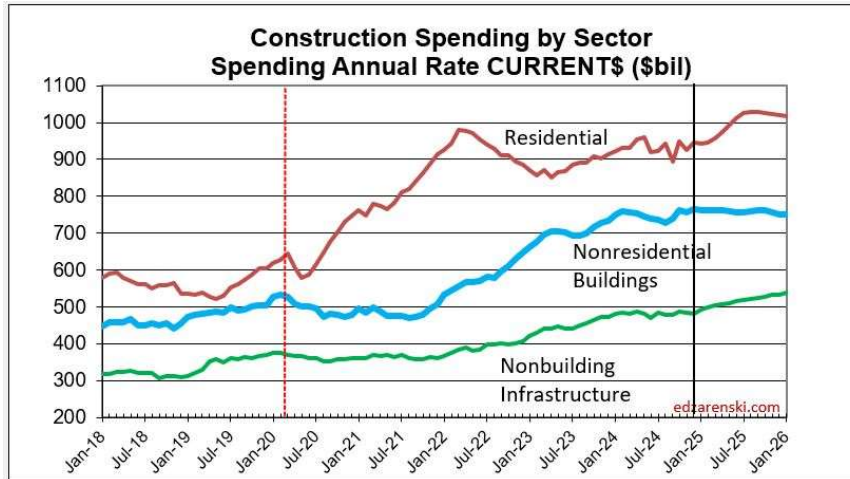
Educational starts are up 18% over the last 2 years. The rate of spending is increasing at 0.50% to 0.75%/month for 2025. My forecast is for 9% spending growth in 2025.

Data Centers SAAR rate of spending begins 2025 16% higher than the average for 2024. Starts are up 120% over the last 2 years. The rate of spending increased at an average 3% per month in 2024 and is forecast to increase at near 2%/month for 2025. My forecast is for 42% spending growth in 2025. In 2014-2015, Data Centers was less than 5% of total Office+DC construction spending. Today it is approaching 30%. Next year it will approach 40%.

Warehouse Bldgs SAAR rate of spending begins 2025 2.7% lower than the average for 2024. Starts are down 17% over the last 2 years. Spending in the 2nd half of 2024 is already down 13% from the 1st half of 2024. The rate of spending in 2025 drops at 0.25%/month. My forecast is for a 4% spending decline in 2025.

The **Non-Building Infrastructure** spending forecast for 2025 will be most affected by the fact that Power starts for the last 3 years range from 9% to 11%/yr., Highway new starts range from 8% to 11% and Public Works new starts range from 13% to 17%.

Highway starts have consistently been about \$100bil/yr, with slow growth. But actual starts were closer to \$500bil total for the last three years. This strong growth in starts is expected to continue at least into 2025, totaling near \$650bil for four years. A decline from the taper back to normal for Highway/Bridge may not show up at least for the next few years.



SUMMARY PROJECT COST ESCALATION – INFLATION

To properly adjust the total cost of construction over time you must use actual final cost indices, otherwise known as selling price indices.

General construction cost indices and Input price indices that don't track whole building final cost do not capture the full cost of inflation on construction projects.

Residential inflation indices are primarily single-family homes but would also be relevant for low-rise two-story to three-story building types.

A nonresidential buildings index would be representative of commercial construction or hi-rise residential construction, since hi-rise residential is quite similar too commercial construction, and in fact substantial portions of the building are constructed by firms classified as commercial constructors.

Since 2011, Nonres Bldgs inflation is 4.8%, Residential is 5.4% and Non-bldg is 4.3%.

30-year average inflation rate for residential and nonresidential buildings is 4.1%. But when excluding deflation in recession years 2008-2010, the nonresidential buildings long-term average is 4.7% and residential is 4.9%.

For Non-bldg Infrastructure the 30-year average is 3.6%. When excluding deflation in recession years 2008-2010, Non-bldg long-term average inflation is 3.9%.

SUMMARY VOLUME - JOBS

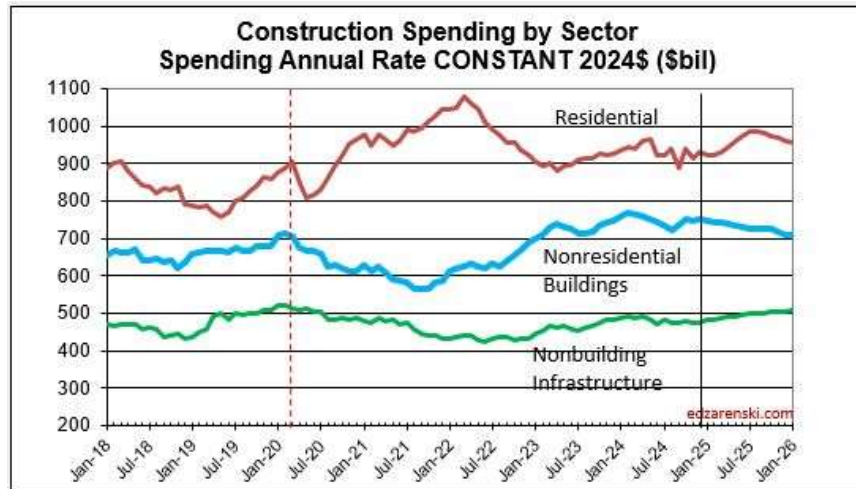
Since 2019, spending has increased 55%. Volume has increased only 10%. The difference is inflation.

Volume = spending minus inflation. Spending includes inflation. Inflation adds nothing to business volume. Construction Volume measures business growth and drives jobs demand.

Many construction firms judge business volume by the growth in revenue. An example shows how inflation falsely influences business growth. If firms are including in their accounting an increase in inflation dollars passing through their hands, they are not measuring growth in the volume of business. Nonresidential Buildings spending (revenues) increased 14% in 2022, but after adjusting for 12% inflation the actual volume of work was up only 2%.

Total volume for 2024 is up 3.1%. Residential +2.7%, Nonres Bldgs +3.3%, Non-bldg +3.5%.

Total volume forecast for 2025 is +1.3%. Residential +2.9%, Nonres Bldgs -1.9%, Non-bldg +3.0%.



Construction Jobs increased 204,000 jobs or 2.5% in 2024. There are currently 8,291,000 construction jobs reported by BLS. The largest annual increase post 2010 is 321,000 jobs (+4.6%) in 2018. The average jobs growth post 2010 is 200,000 jobs per year, or average jobs growth of 3%/yr.

When spending increases less than the rate of inflation, the real work volume is declining. The extent of volume declines impacts the jobs situation. Jobs are supported by growth in construction volume, spending minus inflation. Since 2016, spending has increased 77%, volume after inflation increased only 11% and jobs increased 22%. Volume and jobs should be moving together.

If jobs increase faster than volume, that adds to productivity losses and that adds to inflation.

Terms - Construction Starts > Cashflow > Backlog > Spending > Volume

New Construction Starts (construction starts referred to in this report is Dodge Data Starts) is excellent data for forecasting. The process to produce the market activity information needed is outlined here.

STARTS data captures only a share of the total market or a portion of all construction spending, on average about 60% of all construction. The actual share for each market varies from as low as 35% to as high as 80%. In this analysis every market is adjusted by its own individual market share factor. The factors have been shown to produce a reliable prediction of total future market activity. See Starts vs Spending table next page.

Construction starts data is needed to predict spending or the level of market activity. This provides insight into market costs and inflation. **To predict spending activity from new construction starts, the starts data must be spread over time using appropriate CASH FLOW curves.** On average about 20% of new nonresidential building construction starts get spent within the year started, 50% is spent the next year and 30% is spent in years three and four. The cash flow curves used in this model are market specific and can vary from the average. Applying a predicted duration for all starts depending on market type to produce a cash flow from starts data, the forecast pattern of spending is developed.

BACKLOG at the beginning of the year is how much remains to be completed for all the work in contract. Backlog or new starts within the year does not give an indication of spending within the year or next year. New starts within any given year could contribute to spending spread out over several years. Total cash flow in the year, or spending, could include cash flow from projects that started or entered backlog years ago.

Backlog increases if new starts during the year is greater than spending during the year. However, an increase in backlog does not necessarily indicate there will be an increase in market activity. An increase in backlog could represent a level rate of market activity, but for a longer duration.

Cash flow provides the best indicator of how much and when SPENDING will occur. Cash flow from all previous starts gives a prediction of how spending will change monthly from all projects in backlog. Cash flow totals of all jobs can vary from month to month, are not only driven by new jobs starting but also old jobs ending, and are heavily dependent on the type, size, and duration of jobs.

One of the best predictors of construction inflation is the level of activity in an area. When the activity level is low, contractors are all competing for a smaller amount of work and therefore they may reduce bids. When activity is high, there is a greater opportunity to bid on more work and bids can be higher. The level of activity has a direct impact on inflation. **Inflation helps differentiate between spending, or revenue, and volume of work. VOLUME is spending minus inflation.**

New Construction Starts

Dodge Construction Network (DNC) monthly newsletter of construction starts by sector provides the data from which the following is summarized.

Starts data captures a share of the total market or only a portion of all construction projects that actually started, on average about 60% of all construction. The easiest way to understand this is to compare total annual construction starts to total annual spending. Total national starts in recent years, as reported by Dodge, range from about \$800 billion/year up to \$1,100 billion/year, while Census spending in this period ranges from \$1,300 billion/year to \$2,000 billion/year. From this simple comparison we can see that starts data captures a share of about 60% of the total market. The actual share for each market varies from as low as 35% to as high as 80%.

Construction Analytics Starts vs Spending \$ billions	2016	2017	2018	2019	2020	2021	2022	2023	2024
ALL CONSTRUCTION STARTS	722	782	810	850	796	933	1,111	1,076	1,150
% YR/YR GROWTH	8.7%	8.3%	3.6%	5.0%	-6.4%	17.1%	19.1%	-3.1%	6.8%
ALL CONSTRUCTION SPENDING	1,213	1,280	1,333	1,391	1,500	1,653	1,903	2,024	2,155
% YR/YR GROWTH	7.2%	5.5%	4.2%	4.3%	7.8%	10.3%	15.1%	6.4%	6.5%
RESIDENTIAL STARTS	297	307	330	331	351	426	417	368	392
% YR/YR GROWTH	9.8%	3.2%	7.7%	0.2%	6.2%	21.3%	-2.2%	-11.8%	6.7%
RESIDENTIAL SPENDING	486	546	564	553	644	809	933	878	930
% YR/YR GROWTH	10.8%	12.3%	3.3%	-1.9%	16.4%	25.6%	15.3%	-5.9%	6.0%

From 2017 through 2021, Dodge Nonres Bldgs new starts averaged \$300 billion/year. Then, in the 2nd half of 2022, starts averaged near \$500 billion/year. For years 2022, 2023 and 2024 starts averaged \$430 billion/year. Projects starting in 2nd half of 2023 or later could have midpoint of construction, point of peak spending, in 2024 or into 2025, some long duration projects even later. **The major spending impact from starts is at the midpoint of construction, sometimes one or two years after the project starts.**

Most Nonres Bldgs and Non-Bldg spending in 2025 comes from projects that started in 2023 and 2024.

Before using starts data to forecast spending, the Dodge starts were adjusted for market share. All discussion of starts from here on refers to Construction Analytics Adjusted Starts.

The table below, Forecast Starts Adjusted, is generated from modeling by Construction Analytics. Starts are adjusted for calculated share of market captured to generate starts needed to provide past and current spending, and to forecast future spending.

Construction Analytics	FORECAST STARTS ADJUSTED											
	Change		Change		Change		Change		Change			
NEW STARTS ONLY	Yr/Yr	Yr/Yr	Yr/Yr	Yr/Yr	Yr/Yr	Yr/Yr	Yr/Yr	Yr/Yr	Yr/Yr	Yr/Yr		
\$ in millions 000,000	2021	2022	2023	2024	2025	2026						
TOTAL ALL MARKETS	1,877,374	16.4%	2,074,555	10.5%	2,139,509	3.1%	2,252,635	5.3%	2,337,880	3.8%	2,358,279	0.9%
RESIDENTIAL	848,101	21.1%	915,879	-8.0%	895,456	-2.2%	946,607	5.7%	1,004,485	6.1%	1,089,663	8.5%
MANUFACTURING	152,095	37.2%	193,509	27.2%	206,264	6.6%	188,222	-8.7%	163,177	-13.3%	137,655	-15.6%
OFFICE w/o DATA CENTER	81,182	-0.5%	78,201	-3.7%	72,074	-7.8%	66,718	-7.4%	64,099	-3.9%	63,145	-1.5%
DATA CENTER	13,329	27.8%	19,330	45.0%	29,647	53.4%	42,662	43.9%	54,054	26.7%	62,535	15.7%
COMMRC/RTL w/o WRHSE	57,901	18.8%	65,063	12.4%	65,605	0.8%	64,839	-1.2%	66,648	2.8%	70,034	5.1%
WAREHOUSE	68,048	26.0%	71,221	4.7%	63,510	-10.8%	59,288	-6.6%	59,351	0.1%	61,129	3.0%
EDUCATIONAL	108,273	4.1%	120,060	10.9%	131,336	9.4%	142,130	8.2%	153,336	7.9%	160,849	4.9%
LODGING	20,493	-6.4%	23,334	13.9%	24,526	5.1%	27,992	14.1%	32,601	16.5%	37,139	13.9%
HEALTHCARE	58,569	12.2%	64,942	10.9%	70,849	9.1%	79,413	12.1%	87,728	10.5%	92,190	5.1%
AMUSEMENT/RECREATION	32,296	11.8%	36,813	14.0%	41,505	12.7%	46,096	11.1%	49,056	6.4%	49,476	0.9%
OTHER NONRES BLDGS	15,814	-6.3%	18,457	16.7%	23,565	27.7%	30,674	30.2%	36,325	18.4%	37,038	2.0%
TOAL NONRES BLD MRKTS	607,999	14.8%	690,929	13.6%	728,881	5.5%	748,035	2.6%	766,374	2.5%	771,192	0.6%
POWER	133,196	7.8%	147,276	10.6%	164,044	11.4%	179,368	9.3%	179,905	0.3%	144,595	-19.6%
HIGHWAY/BRIDGE	130,094	11.9%	144,587	11.1%	158,621	9.7%	171,664	8.2%	171,189	-0.3%	141,168	-17.5%
TRANSPORTATION	63,412	6.0%	66,880	5.5%	70,503	5.4%	72,641	3.0%	72,694	0.1%	66,288	-8.8%
ENVIRON PUB WORKS	69,714	15.8%	81,845	17.4%	93,666	14.4%	105,847	13.0%	114,258	7.9%	115,529	1.1%
COMMUNICATIONS	24,859	5.4%	27,160	9.3%	28,339	4.3%	28,473	0.5%	28,975	1.8%	29,844	3.0%
TOTAL NONBLDG MRKTS	421,275	9.9%	467,748	11.0%	515,172	10.1%	557,992	8.3%	567,021	1.6%	497,424	-12.3%

Source: includes Dodge Data & Analytics Starts thru DEC 2024

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Total construction starts for 2024 are up 5.3%. Residential starts increased 5.7%. Nonresidential Buildings starts gained 2.6% and Non-building Infrastructure starts are up 8.3%.

Total construction starts for 2025 are forecast to increase 3.8%. Residential starts are forecast to increase 6.1%. Nonresidential Buildings starts are expected to gain 2.5% and Non-building Infrastructure starts will be up only 1.6%.

Residential starts increased 5.7% in 2024. Only about 30% of the spending in 2025 comes from 2024 starts. Most of the spending (70%) in 2025 comes from projects that start in 2025. This is a result of short duration single-family and renovations projects. **Residential starts are expected to increase 6.1% in 2025.**

Nonresidential Buildings, starts fell 20% in the 1st half 2023 but still posted the 2nd highest 6-mo average ever. Some of these starts will still be adding to spending into 2025. Nonres Bldgs starts for 2024 gained only 2.6%, due to large declines of 7% to 8% in Manufacturing, Office w/o Data Center and Warehouse, and a moderate 1.2% decline in Commercial / Retail w/o Warehouse. Office w/o Data Center has fallen each of the last 5 years and is down 15% in the last 2 years. Manufacturing starts in

2025 are expected to drop -13%, Office w/o Data Center -4%. Robust growth in new starts in 2025 is expected from Data Centers, Lodging, Healthcare and Public Bldgs (80% of Other Nonres Bldgs). **The forecast for Nonres Bldgs new starts in 2025 is +2.5%.**

Non-building starts for the 6-mo period Mar-Aug 2023 posted the best 6 months on record, up 30% from the average of 2022. For 2024, Power, Highway/Bridge and Public Works have the strongest gains. These same three markets had the strongest gains in 2023. Power starts are up 22% in the last two years. Highway starts are up 19% in the last two years. Environmental Public Works are up 29% in the last two years and up 50% in the last three years. Total Non-building Starts for 2024 are up 8.3%. **Non-building starts for 2025 are forecast up only 1.6%.**

Data Center starts are up 300% since 2020, up 53% in 2023 and up 44% in 2024, and are expected to increase 27% in 2025. In 2014-2015, Data Centers was less than 5% of total Office+DC construction spending. Today it is approaching 30%. Next year it will approach 40%.

Warehouse starts have dropped 17% in the last two years. Warehouse spending will now slow after climbing 100%+ since 2019. In 2015, Warehouse was 25% of total Commercial spending. By 2022 it had climbed to 54%. In 2025, it will fall back to 45%. But spending will remain near the current level at least for the next three years. Warehouse starts will remain flat in 2025.

Manufacturing starts, the market with the largest \$ movement, fell 8.7% in 2024, but still gained 115% from 2019 to 2024. Manufacturing projects can have a moderately long average duration because some of these are multi-billion \$ projects and can have schedules that are 4 to 5 years, so some of these projects are still contributing a large volume of spending in 2025. However, as earlier projects begin to taper off, spending will begin to decline.

Manufacturing starts hovered near \$80bil/yr from 2014 through 2019. By 2023 new starts had increased to \$206bil/yr. Starts fell 9% in 2024 and are predicted to fall by \$20bil/yr to \$30bil/yr (10% to 15%) over the next three years. Spending is predicted to decline by approx. 10%/yr for the next three years.

Public Works project starts have increased on average 15%/yr for the last four years. Project starts are up 75% in the last four years. Spending is predicted to climb for the next three years.

Highway/Bridge starts from 2013 to 2019 averaged near \$100bil/yr. Since then, starts increased 60% and spending is up nearly 50%. Spending is predicted to climb for the next three years.

Starting Backlog

Starting backlog is the estimate to complete (in this analysis taken at Jan 1) for all projects currently under contract. The last time starting backlog decreased was 2011. **If new construction starts in the year are greater than construction spending in the year, then for the following year starting backlog increases.** It's when new starts don't replenish the amount of spending in the year that backlog declines.

Construction Analytics measures Backlog at the start of the year and growth vs backlog at the start of the previous year. This is much different than the ABC Construction Backlog Indicator, which measures the current month's backlog compared to the previous year's total revenue. If backlog growth in dollars is increasing at a steady rate, for example 4%, but lower than the rate of growth of previous year's revenue, let's say 6%, then backlog rate would go down. Measuring backlog to the previous year's revenue would decrease if revenues increased at a greater than average rate in the previous year. This does not measure a change in the rate of backlog growth.

80% of all nonresidential spending in any given year is from backlog and could be supported by projects that started last year or 3 to 4 years ago. Residential spending is far more dependent on new starts than backlog. **Only about 30% of residential spending every year comes from backlog and 70% from new starts.**

The table below, Forecast Starting Backlog, is model generated by Construction Analytics. Adjusted starts are spread over time to generate cash flow. Spending each year is subtracted from starting backlog and new starts are added to get starting backlog in the following year.

CONSTRUCTION OUTLOOK 2025

FORECAST STARTING BACKLOG												
Construction Analytics STARTING BACKLOG ONLY \$ in millions 000,000	Change		Change		Change		Change		Change		Change	
	2021	Yr/Yr	2022	Yr/Yr	2023	Yr/Yr	2024	Yr/Yr	2025	Yr/Yr	2026	Yr/Yr
TOTAL ALL MARKETS	1,330,961	7.2%	1,494,445	12.3%	1,669,199	11.7%	1,791,868	7.3%	1,904,402	6.3%	1,975,252	3.7%
RESIDENTIAL	222,208	18.8%	268,986	21.1%	291,744	8.5%	286,429	-1.8%	301,792	5.4%	320,195	6.1%
MANUFACTURING	140,798	19.3%	185,577	31.8%	239,956	29.3%	273,325	13.9%	270,090	-1.2%	245,068	-9.3%
OFFICE w/o DATA CENTER	92,890	0.9%	92,614	-0.3%	90,117	-2.7%	84,338	-6.4%	78,133	-7.4%	74,191	-5.0%
DATA CENTER	11,524	13.0%	14,253	23.7%	19,984	40.2%	30,183	51.0%	43,991	45.7%	57,524	30.8%
COMMRC/RTL w/o WRHSE	45,813	1.1%	53,033	15.8%	60,155	13.4%	61,881	2.9%	61,409	-0.8%	62,649	2.0%
WAREHOUSE	46,891	25.4%	59,134	26.1%	63,623	7.6%	58,316	-8.3%	53,993	-7.4%	53,406	-1.1%
EDUCATIONAL	111,461	-2.5%	113,875	2.2%	124,299	9.2%	136,361	9.7%	147,958	8.5%	159,751	8.0%
LODGING	18,150	-21.6%	16,430	-9.5%	18,192	10.7%	19,322	6.2%	21,814	12.9%	25,337	16.2%
HEALTHCARE	54,008	6.7%	59,976	11.1%	66,670	11.2%	73,005	9.5%	81,338	11.4%	90,138	10.8%
AMUSEMENT/RECREATION	31,374	0.4%	34,157	8.9%	38,658	13.2%	43,677	13.0%	48,700	11.5%	52,410	7.6%
OTHER NONRES BLDGS	16,311	-5.9%	15,142	-7.2%	16,959	12.0%	21,328	25.8%	27,676	29.8%	33,279	20.2%
TOAL NONRES BLD MRKTS	569,220	5.5%	644,192	13.2%	738,613	14.7%	801,737	8.5%	835,101	4.2%	853,754	2.2%
POWER	216,487	3.7%	228,793	5.7%	248,301	8.5%	274,250	10.5%	301,945	10.1%	316,612	4.9%
HIGHWAY/BRIDGE	163,159	7.2%	179,871	10.2%	199,881	11.1%	220,467	10.3%	240,124	8.9%	247,799	3.2%
TRANSPORTATION	75,225	1.0%	78,246	4.0%	82,349	5.2%	86,787	5.4%	90,120	3.8%	91,259	1.3%
ENVIRON PUB WORKS	62,162	8.1%	70,850	14.0%	82,832	16.9%	95,341	15.1%	108,103	13.4%	118,019	9.2%
COMMUNICATIONS	22,500	1.2%	23,508	4.5%	25,480	8.4%	26,857	5.4%	27,216	1.3%	27,615	1.5%
TOTAL NONBLDG MRKTS	539,533	4.7%	581,268	7.7%	638,842	9.9%	703,702	10.2%	767,509	9.1%	801,303	4.4%

Source: includes Dodge Data & Analytics Starts thru DEC 2024 edzarenski.com

Construction Backlog leading into 2025 in total is up 53% from Jan 2020. Even though several markets are down for the year, every sector (Res, Nonres, Non-bldg) is at all-time high. Since 2020, construction starts have been greater than construction spending, therefore backlog is increasing, but the spread is decreasing. From 2015 through 2019, new construction starts were steady at 4% greater than spending. In 2020, 2021 and 2022, starts exceeded spending by 8%. In 2023 it fell to 6% and in 2024 it was 5%. For 2025, starts are expected to exceed spending by only 3%, indicating the rate of backlog growth is slowing.

Reaching new highs in Backlog could mean not enough labor to support advancing growth so quickly. Future workload from new starts is piling up faster than the current workforce can complete. And the labor force has limitations to how fast it can grow. Nonresidential Bldgs and Non-building posted higher than average starts growth vs spending.

Residential new starts average only 2% greater than spending. Residential new starts in 2023 were lower than spending, so, in 2024, for the first time in 10 years, residential backlog decreased. Even then, residential backlog beginning 2025 is up 61% since 2020. However, these backlog numbers are not inflation adjusted. 45%, or about ¾'s of the 61% residential backlog growth over 5 years is inflation. Real residential backlog growth since 2020 is 16%.

Nonresidential Bldgs starting backlog for 2025 received a boost from all the starts in 2021, 2022 and 2023. Backlog is up 55% from 2020. After 36% inflation, real backlog growth over 5 years is 19%.

Non-building Infrastructure starting backlog was also boosted by strong starts in 2021- 2024. For 2025, backlog is up 49% from Jan 2020. After 38% inflation, real backlog growth over 5 years is 11%.

Manufacturing backlog increased 130% from 2020-2025, from \$117bil going into 2020 to \$270bil beginning 2025. Prior to tracking Data Centers separately, no other market has ever been close to that growth. But Manufacturing is six times the dollar value of Data Centers. Manufacturing was responsible for 60% of all the Nonres Bldgs spending \$ growth in 2023 and 85% in 2024. It was also responsible for 33% of the Nonres Bldgs Backlog growth from 2020 to 2025.

Nonres Bldgs has a total 3.7 million jobs and has never increased by more than 150,000 jobs in one year. Manufacturing is 30% of all Nonres Bldgs spending, so we can assume 30% of Nonres Bldgs jobs. That's 1.1 million jobs supporting just Manufacturing projects. So, Backlog of \$270bil, at 5000 jobs per billion per year, would need 1,350,000 jobs for a year. With a 1,100,000 jobs share of the workforce, \$270billion in backlog would provide support for 15 months. Of course, new starts add to support throughout the year, but the calculation of how long backlog would support that market segment is valuable.

Likewise, Highway/Bridge has 2025 starting backlog of \$240billion and represents 30% of Non-bldg Infrastructure spending, so may occupy 30% of Non-bldg jobs, or 345,000 jobs. But Non-bldg work requires fewer jobs, more like 3,000 jobs/bil/yr, so \$240 billion at 3000 jobs/billion/year would need 720,000 jobs for 1 year to complete. Therefore, with a pool of only 345,000 jobs supporting highway work, the backlog of \$240billion would provide support for 25 months.

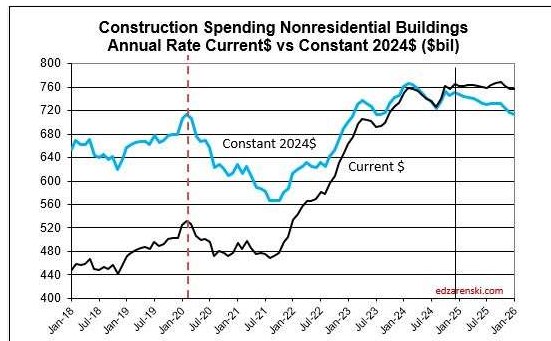
Backlog at the beginning of the year or new starts within the year does not give an indication of what direction spending will take within the year. Backlog is increasing if new starts during the year is greater than spending during the year. An increase in backlog could immediately increase the level of monthly spending activity, or it could maintain a level rate of market activity, but extended over a longer duration. In this case, there is some of both in the forecast. It takes several years for all the starts in a year to be completed. Cash flow shows the spending over time.

Current Rate of Spending

As we begin 2025, the current rate of spending (SAAR) for **Nonresidential Buildings** in Q4'23 is \$761bil, only 2% higher than the average for 2024 (\$746bil). If spending stays at the current level and no additional growth occurs, Nonresidential Bldgs spending will finish 2024 up 2%. Spending would need to have more monthly declines than increases to finish the year up less than 2%. The current forecast shows the monthly SAAR rates for Manufacturing, Warehouse and Office w/o DC are driving the downward pressure on overall spending.

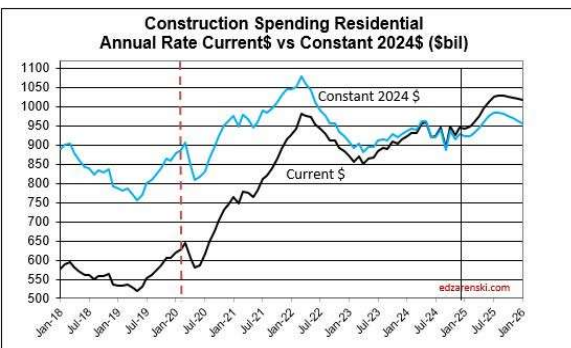
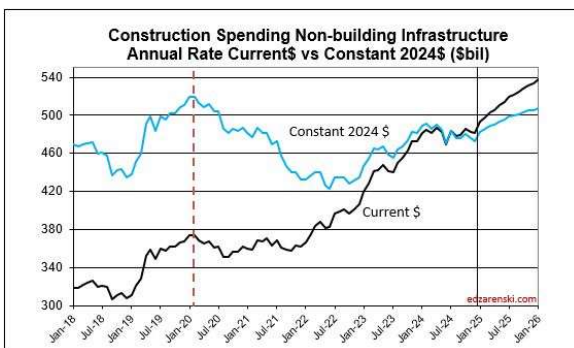
Last year at this time, leading into 2024, many of the Nonres Bldgs and Non-bldg line items showed Nov-Dec spending was already several points higher than the 2023 average. This year, many markets show small gains or a decline in the rate of spending from the 1st half of 2024 into the 2nd half. Some notable declines are Warehouse (-2.7%), Office w/o Data Centers (-3.6%) and Highway/Bridge (-2.9%). All begin 2025 down from the average in 2024.

However, Data Center spending is already up 16% in Oct-Nov-Dec vs the average of 2024, so begins 2025 on a high note, up 16% from 2024. Data Center spending increased 45% in 2023 and 56% in 2024. With spending increasing at an average 3%+ per month in 2024, and starting out at that pace in 2025, it's easy to predict Data Center spending may reach 40% growth for 2025.



Non-building Infrastructure current rate of spending is only 1% higher than the average for 2024, however the forecast is indicating steady growth of 1.5%/mo for all of 2025. Highway, Transportation and Public Utilities are all contributing to that growth in the spending rate.

Residential current rate of spending is a bit less than 2% above the 2024 average. Growth of 1%/mo will occur in the 1st half 2025, then reverse to a slight decline in the 2nd half.



2025 Construction Spending Forecast

In February of 2025, with the Dec 2024 data in hand, my forecast for 2025 spending is \$2,272 billion, 5.5% higher than my current 2024 forecast of \$2,154 billion. There is strength in most markets, but Manufacturing is starting a downward slope in spending after three years of blockbuster performance.

My construction spending forecast for 2025 Nonres Bldgs is only an annual gain of 2%. Low growth is driven by projects ending in Manufacturing and Warehouse. In the last 3 years, there were \$230bil Mnfg starts, most in 2022, \$130bil above normal, now some are ending. Without Manufacturing, Nonres Bldgs 2025 spending would be up 6%. While outward appearance may be that Nonres spending is declining, in large part it is due to mega spending on Manufacturing buildings (and Warehouse) tapering down upon completion, creating large annual declines, but normal.

See [The Manufacturing Spending Taper](#)

2025 Construction Spending \$2,272 billion +5.5% over 2024.

Nonresidential Buildings \$761 billion +2.0% over 2024.

Non-building Infrastructure \$514 billion +7.5% over 2024.

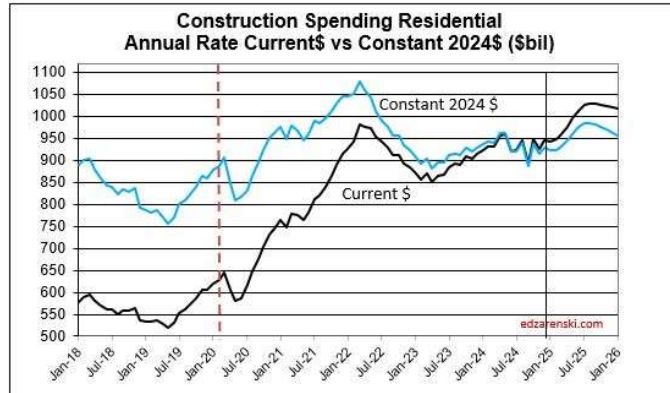
Residential Buildings \$997 billion +7.2% over 2024.

This forecast does not include a recession.

Starts lead to spending, but that spending is spread out over time. Starts represent a contract award. Spending takes the amount of that contract award and spreads it out by a cash flow curve over the duration of the job. An average spending curve for the sum of nonresidential buildings is 20:50:30 over three years. Only about 20% of new starts gets spent in the year started. 50% gets spent in the next year and 30% in YR3/4. An average spending curve for Non-building Infrastructure is more like 15:30:30:25. The effect of new starts does not show up in spending immediately.

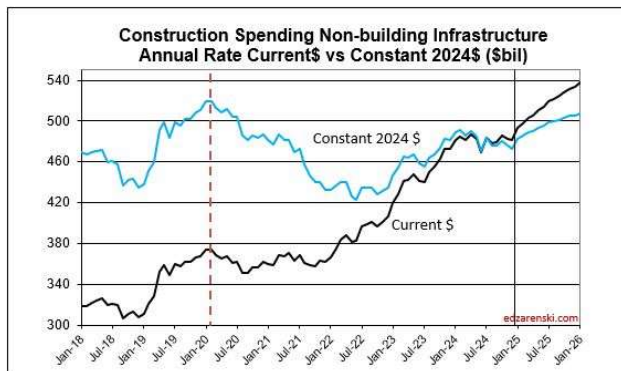
For example: If 2024 posts an additional \$100 billion in new starts for Infrastructure, only about \$15 billion of that would get put-in-place in 2024. The cash flow schedule for that \$100 bil of new starts would extend out over 3 to 5 years. Most of that \$100 billion would get spent in 2025 and 2026.

Residential spending is 45% SF, 15% MF and 40% Reno. So, only 60% of the total is spending on new housing units. The other 40% is Renovations. Single family construction spending reached a post-2006 high in Q4'21 through Apr'22. From Apr'22 to the low point in May '23 spending dropped 25%. By year-end 2023 it had recovered most of that drop. It fell again in mid-2024, but has since recovered again to the year-end'23 level. Single Family spending is up 7% in 2024 over 2023. Multi-family in Q4'24 is down 10% from Q4'23. Renovations is up 15% from Q4'23 to Q4'24.



The **Non-Building Infrastructure** spending forecast for 2025 will be most affected by the fact that Power starts for the last 3 years range from 9% to 11%, Highway new starts range from 8% to 11% and Public Works new starts range from 13% to 17%. Starts have been greater than spending each of the last three years. Backlog increased 10% each in 2023 and 2024 and 9% in 2025. Power spending will increase \$13bil (8.5%) in 2025, supported by 22% growth in starts the last 2 years. Public Utilities (Sewage and Waste, Water Supply and Conservation-Rivers-Dams) will increase \$12bil (13%), with 30% growth in starts the last 2 years.

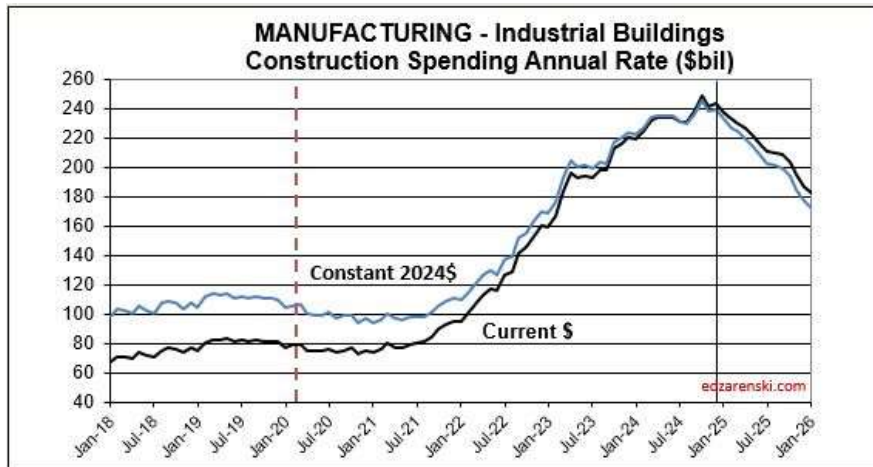
The **Nonresidential Buildings** spending forecast for 2025 is most affected by declines in Manufacturing and Warehouse, and increases in Educational and Data Centers. Starts in 2021 and 2022 increased at an average 14%/yr. But new starts in 2023 were only 5.5%, and in 2024 were only 2.6%. Starts in 2023, and especially 2024, have the most impact on 2025 spending. Backlog is increasing, but the rate of backlog growth has slowed from 15% in 2022 to 5% in 2024 and 2% in 2025. Although Data Center spending is expected to increase 42%, that is \$12bil. Educational spending will also increase \$12bil, even though that is only 9%.



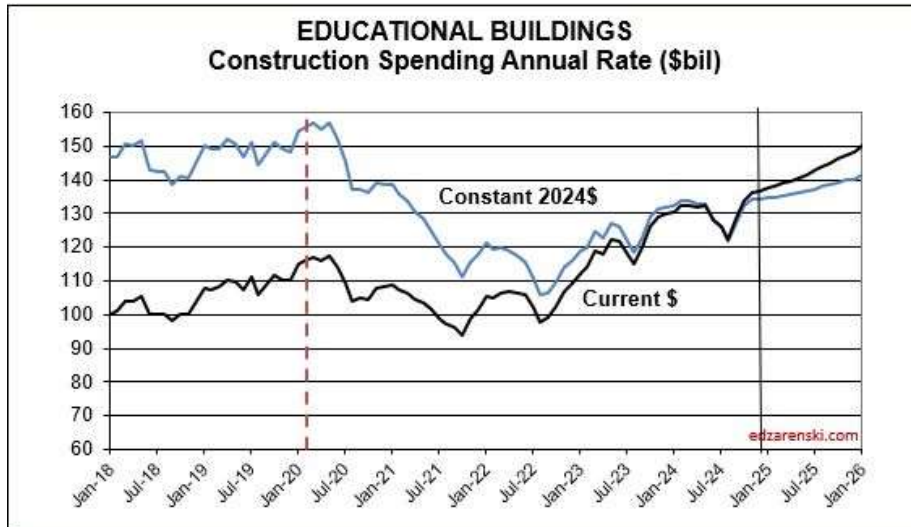
U.S. Total Construction Spending Summary										
\$ in billions % growth vs prior yr	Actual 2022		Actual 2023		Forecast 2024 as of DEC'24		Forecast 2025 as of DEC'24		Forecast 2026 as of DEC'24	
	Total Construction	1903	15.1%	2024	6.4%	2154	6.5%	2272	5.5%	2390
Residential	933	15.3%	878	-5.9%	930	5.9%	997	7.2%	1076	7.9%
Nonresidential Buildings	581	20.3%	699	20.4%	746	6.8%	761	2.0%	764	0.4%
Nonbuilding Infrastructure	389	7.6%	447	14.8%	478	7.1%	514	7.5%	550	7.0%
Educational	104.0	3.0%	120.2	15.6%	130.3	8.4%	142.5	9.3%	153.3	7.6%
Healthcare	58.1	15.4%	65.4	12.6%	68.6	4.9%	72.9	6.3%	82.5	13.1%
Amusement / Recreation	31.5	16.3%	36.2	14.8%	40.2	11.0%	45.5	13.3%	48.6	6.8%
Comm / Retail w/o Warehouse	59.5	31.3%	67.0	12.5%	65.7	-2.0%	65.3	-0.6%	66.4	1.8%
Warehouse	72.0	38.3%	74.7	3.8%	60.8	-18.6%	58.4	-4.0%	58.2	-0.4%
Lodging	20.2	6.1%	24.7	22.3%	23.4	-5.4%	25.6	9.5%	27.5	7.5%
Office w/o Data Center	82.8	3.6%	80.8	-2.4%	72.8	-9.9%	69.7	-4.3%	69.7	0.1%
Data Center	12.6	26.5%	18.2	44.7%	28.3	55.7%	40.3	42.2%	52.5	30.5%
Manufacturing	125.0	52.4%	193.6	54.9%	233.2	20.5%	213.3	-8.5%	174.7	-18.1%
Religious + Public Safety	14.9	-6.4%	18.2	22.1%	23.0	26.4%	27.6	19.8%	30.5	10.7%
Power	121.6	2.1%	134.0	10.2%	147.6	10.1%	160.1	8.5%	169.8	6.0%
Highway / Bridge / Street	115.7	11.9%	138.1	19.4%	143.7	4.1%	148.4	3.2%	159.8	7.7%
Transportation / Air / Rail	60.9	3.1%	65.2	7.1%	68.1	4.4%	74.1	8.7%	78.4	5.8%
Sewer / Water / Conservation	66.7	17.0%	81.6	22.4%	90.4	10.7%	102.2	13.1%	111.8	9.4%
Communication	24.4	5.5%	28.0	14.9%	28.6	2.1%	29.4	2.9%	30.3	3.0%
Forecast includes U.S. Census DEC 2024 year-to-date spending issued 2-3-25										
Actual Spending data includes revisions 2022-2023 issued 7-1-24										
Forecast includes Dodge Starts DEC 2024 2/3/2025										

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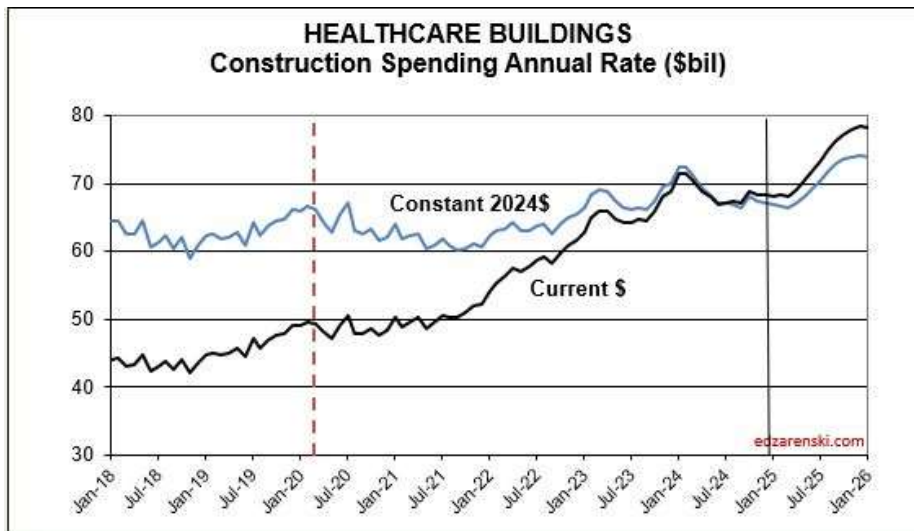
In three years, 2020-2022 **Manufacturing** new starts increased by over 200%. Now, even projects that started in late 2022 are more than 24 months into construction. Peak spending occurs at the midpoint of a project, so peak spending may already be behind us. The current rate of spending in constant\$, except for Oct., which jumped 2%, remained near flat for the last 8 months. Mnfg new starts peaked in late 2022 – early 2023, so some of these projects would now be in construction for anywhere from 24 to 30 months, well past the midpoint or peak spending. It appears that slowdown in the 2nd half of 2024 may be an indication that spending peaked. Although 2025 spending begins 4% higher than 2024 average, my model indicates the rate of spending drops 10% by midyear and by year-end is down 25% from current spending. I am forecasting 2025 spending average falls 8.5% below 2024.



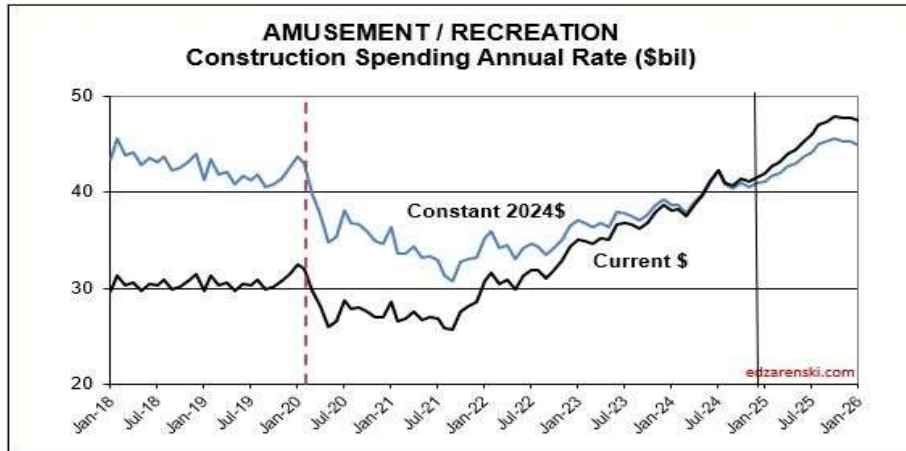
Educational SAAR rate of spending begins 2025 4.5% higher than the average for 2024. Starts are up 18% over the last 2 years. Spending finished 2024 3% higher than it started. The rate of spending is increasing at 0.50% to 0.75%/month for 2025. My forecast is for 9% spending growth in 2025.



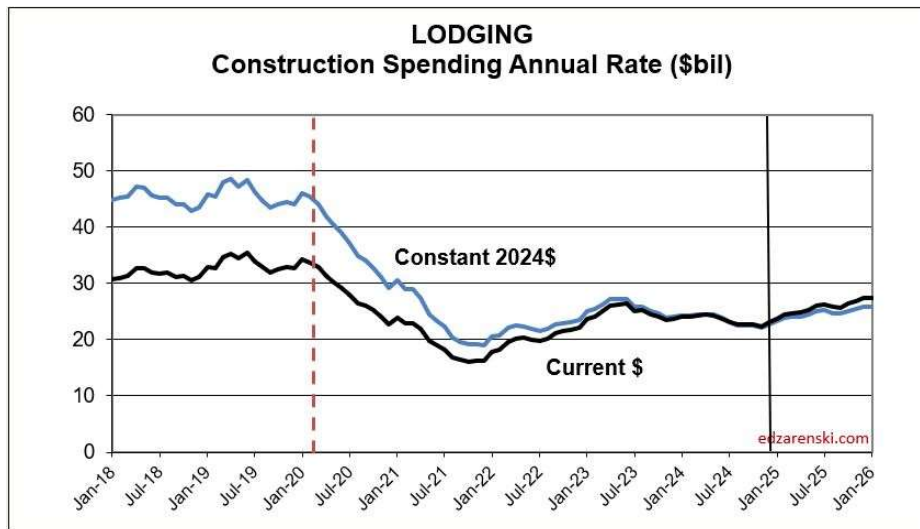
Healthcare SAAR rate of spending begins 2025 0.5% lower than the average for 2024. Starts are up 22% over the last 2 years. The rate of spending, increasing since June, is flat in Q1'25, then increases to an average of 1.5%/month for Q2 and Q3 before slowing. My forecast is for 6% spending growth in 2025.



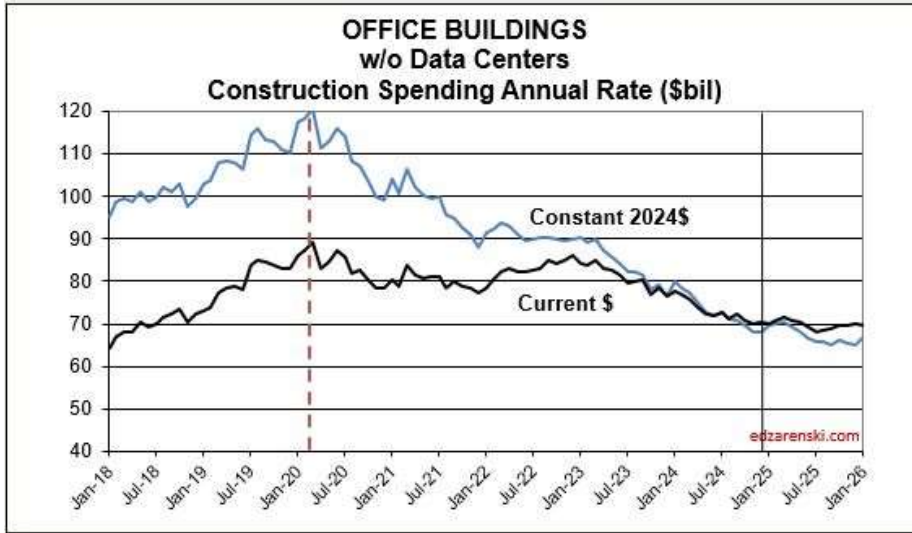
Amusement /Recreation SAAR rate of spending begins 2025 3.0% higher than the average for 2024. Starts are up 18% over the last 2 years. The rate of spending, up 9% from Q1'24 to Q4'24, increases to an average of 1.25%/month for 2025. My forecast is for 13% spending growth in 2025.



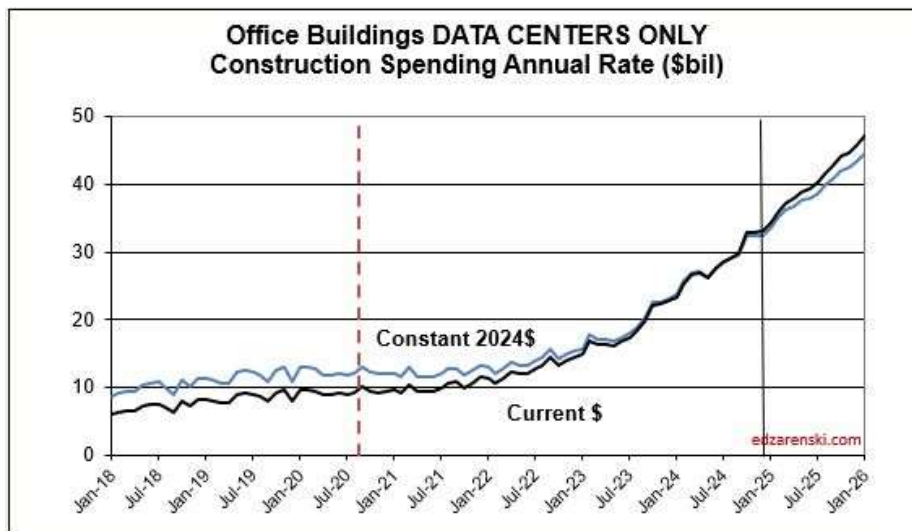
Lodging SAAR rate of spending begins 2025 3% lower than the average for 2024. Starts are up 14% in 2024 and 20% over the last 2 years. The rate of spending, lower in the 2nd half of 2024, increases at an average of 1.25%/month for 2025. My forecast is for 9.5% spending growth in 2025.



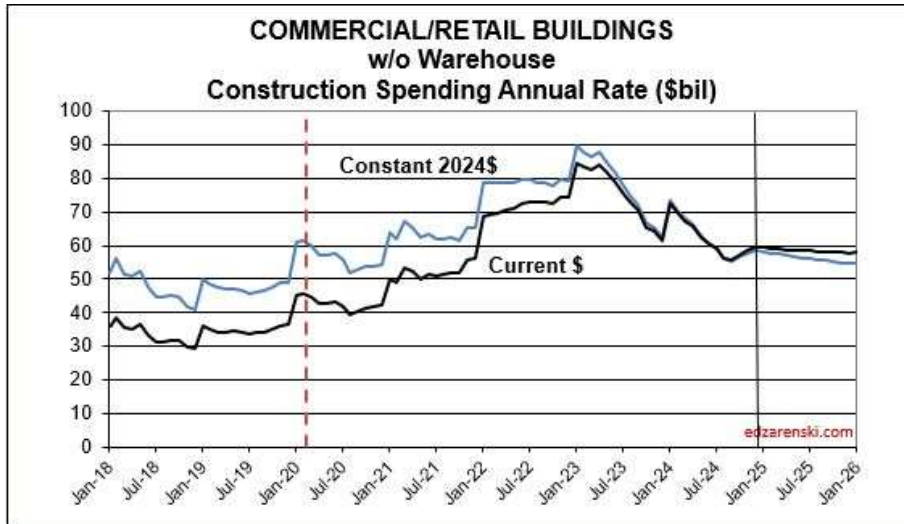
Office Bldgs w/o Data Centers SAAR rate of spending begins 2025 3.6% lower than the average for 2024. Starts are down 15% over the last 2 years. Spending in the 2nd half of 2024 is down 5% from the 1st half, in fact from Q1'24 to Q4'24, the rate of spending fell 10%. The rate of spending increases 0.5%/mo in Q1'25, but then falls at 0.50% to 0.75%/month for Q2 through Q4. My forecast is for a 4% spending decline in 2025.



Data Centers SAAR rate of spending begins 2025 16% higher than the average for 2024. Starts are up 120% over the last 2 years. From beginning to end of 2024 spending increased 20%. The rate of spending increases at near 2%/month for 2025. My forecast is for 42% spending growth in 2025.



Commercial / Retail Bldgs w/o Warehouse SAAR rate of spending begins 2025 only 1.5% higher than the average for 2024. Starts are down 0.5% over the last 2 years. In 2024, the rate of spending fell 3% over the year. The rate of spending begins 2025 with a slight drop then is flat for the rest of the year. My forecast is for a 1% drop in spending in 2025.

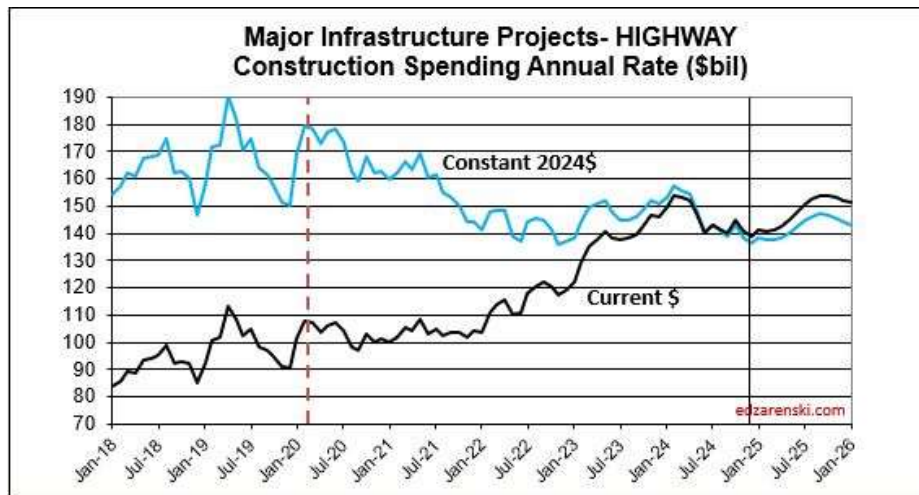


Warehouse Bldgs SAAR rate of spending begins 2025 2.7% lower than the average for 2024. Starts are down 17% over the last 2 years. Spending in the 2nd half of 2024 is already down 13% from the 1st half of 2024. The rate of spending in 2025 drops to 0.25%/month. My forecast is for a 4% spending decline in 2025.

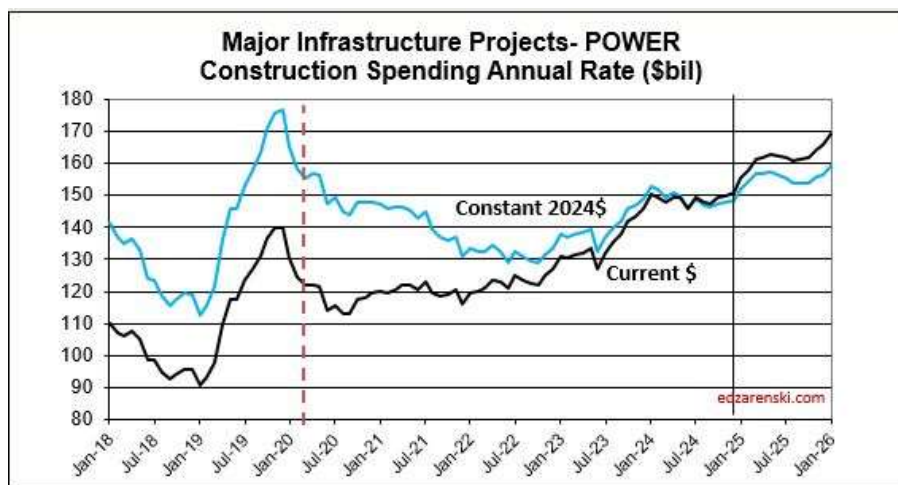


Highway SAAR rate of spending begins 2025 2.9% lower than the average for 2024. Spending fell 7% over the course of 2024, but still finished the year up 4%. Starts are up 18% over the last 2 years. Monthly spending is up and down, but averages 0.8%/mo for the year. My forecast is for 3% spending growth in 2025.

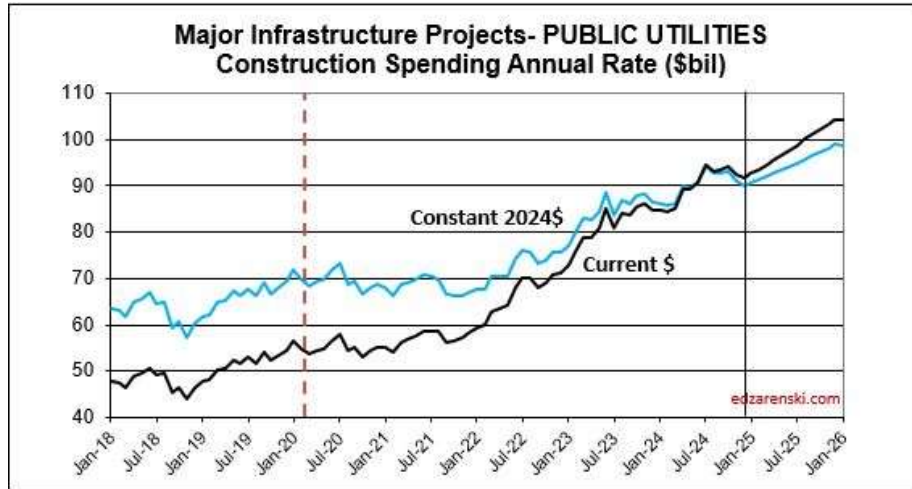
Normal Highway starts have consistently been about \$100bil/yr, with slow growth. But actual starts were closer to \$500bil total for the last three years. This strong growth in starts is expected to continue at least into 2025, totaling near \$650bil for four years. Again, consider that part of that is inflation, but the remainder is government investment growth. A decline from the taper back to normal for Highway/Bridge may not show up at least for the next few years. Once the taper begins it will have the same effect on Non-bldg Infrastructure spending that we will see from Manufacturing in Nonres Bldgs.



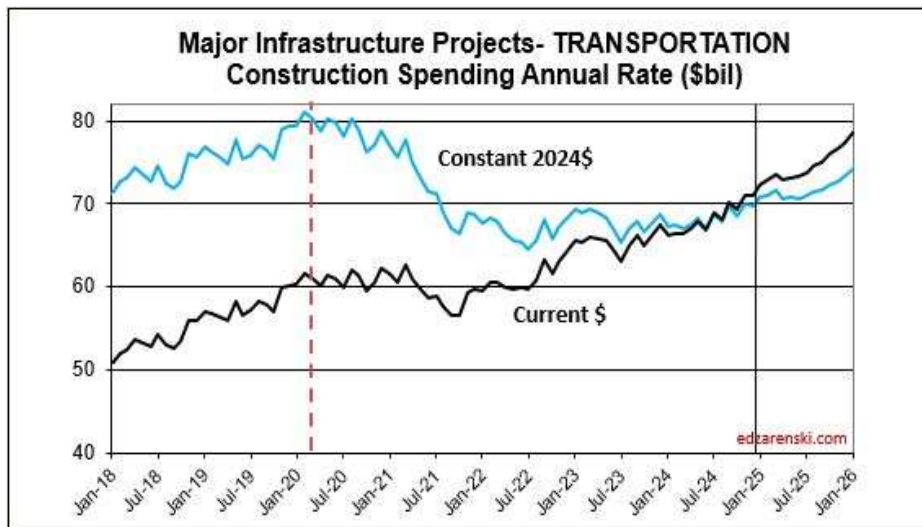
Power SAAR rate of spending begins 2025 2.0% higher than the average for 2024. Starts are up 22% over the last 2 years. 2024 spending finished level with where it started and begins 2025 up 2% over avg. 2024. The rate of spending begins strong at 2%/mo in Q1, then falls back to 0.3%/mo for the remainder of 2025. My forecast is for 8.5% spending growth in 2025.



Public Utilities SAAR rate of spending begins 2025 1.7% higher than the average for 2024. Starts are up 29% over the last 2 years. From Q1'24 to Q4'24, spending increased 9%. The rate of spending slows from 1.5%/mo at the beginning of 2025 to 1%/mo by year-end. Sewage/Waste and Water Supply provide the greatest \$ growth. My forecast is for 13% spending growth in 2025.



Transportation SAAR rate of spending begins 2025 4.0% higher than the average for 2024. Starts are up 9% over the last 2 years. Spending finished 2024 6% higher than it started. The 2025 rate of spending starts strong just above 1%/mo, but averages only 0.75%/mo for the entire year. My forecast is for 8.7% spending growth in 2025.



Inflation

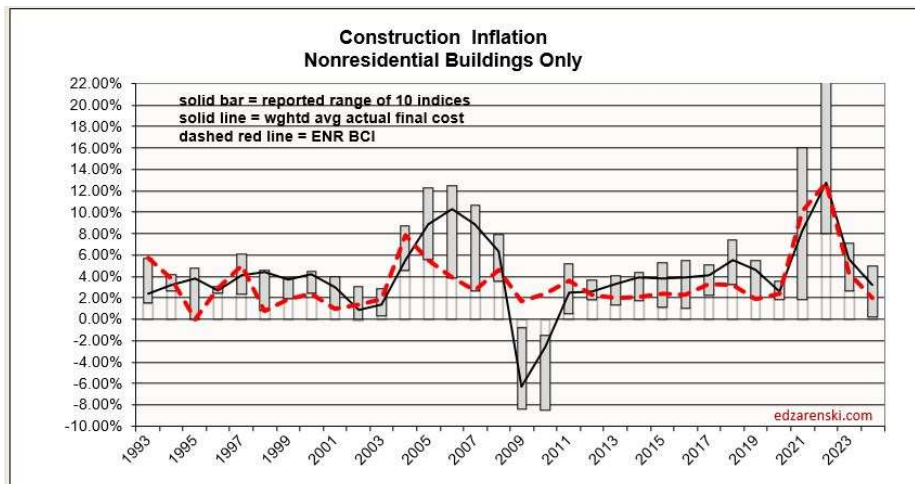
To properly adjust the cost of construction for inflation, use a Final Cost Inflation Index.

General construction cost indices, which do not address labor, productivity or margins and Input price indices, do not reflect whole building final cost and therefore do not capture the full cost of escalation in construction.

Final cost indices represent total actual cost to the owner and are usually higher than general indices. Producer Price Index (PPI) INPUTS to construction reflect costs at various stages of material production, may not represent the final cost of materials to the jobsite and do not include labor, productivity, or margins. That is why a PPI Inputs index +20% for a material could be only a +5% final cost. PPI Final Demand indices include all costs and do represent actual final cost.

Construction Analytics Nonres Building Cost Index is a weighted average of eight final cost indices.

The following **Construction Inflation plot (for Nonresidential Buildings only)** shows three elements: 1) a solid grey bar reflecting the max and min of the 10 indices I track in my weighted average inflation index, 2) a solid black line indicating the weighted average of those 10 indices, and 3) a dotted red line showing the Engineering News Record Building Cost Index (ENR BCI). Notice the ENR BCI is almost always the lowest, or one of the lowest, indices. ENR BCI, along with R S Means Index, unlike final cost indices, do not include margins or productivity changes and in the case of ENR BCI has limited materials and labor inputs.



Final cost indices represent total actual cost to the owner and are usually higher than general indices.

The solid black line (above) represents the Construction Analytics Building Cost Index for Nonresidential Bldgs and is a final cost index.

This short table shows the inflation rate for each year. It is useful to compare to last year, but you would need to mathematically do the compounding to move over several years. The plot below shows the cumulative inflation index, or the cumulative compounded effect of inflation for any two points in time.

CONSTRUCTION ANALYTICS INDEX	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
ESCALATION from Prev Year												
nonresidential bldgs	3.8%	3.9%	4.1%	5.6%	4.6%	2.6%	8.3%	12.8%	5.6%	3.2%	3.8%	3.8%
nonbuilding	-1.2%	-1.6%	2.1%	5.2%	3.9%	-0.7%	8.0%	17.3%	6.3%	3.5%	4.0%	3.5%
residential	2.9%	4.5%	5.3%	5.0%	3.6%	4.2%	13.7%	15.8%	2.5%	3.0%	4.1%	4.1%

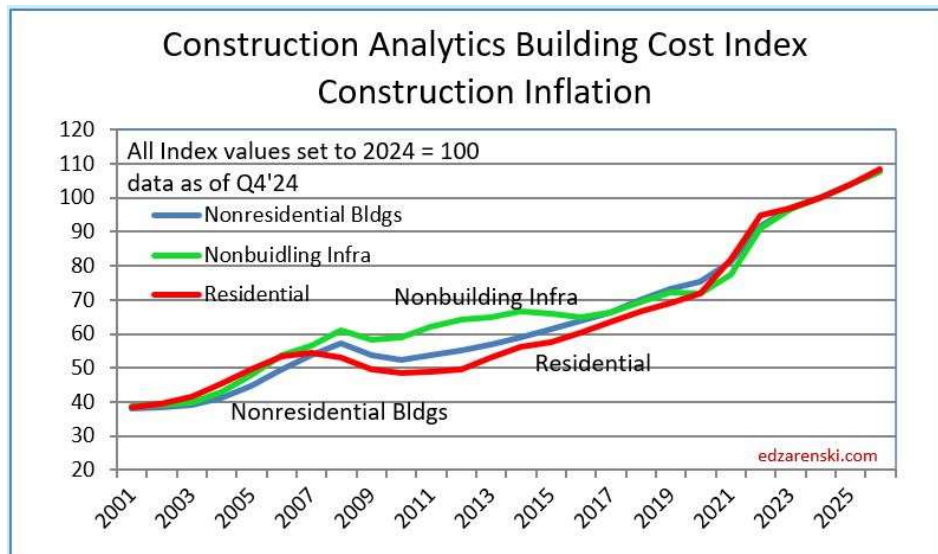
All data updated to Q4'2024 where available

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30-year average inflation rate for residential and nonresidential buildings is 4.1%. But when excluding deflation in recession years 2008-2010, for nonresidential buildings the long-term average is 4.7% and for residential is 4.9%. For Non-bldg Infrastructure the 30-year average is 3.6%. When excluding deflation in the recession years 2008-2010, Non-bldg long-term average inflation is 3.9%.

Since 2011, Nonres Bldgs inflation is 4.8%, Residential is 5.4% and Non-bldg is 4.3%.

Reference Inflation Data [Construction Inflation 2024](#)



Deflation is not likely. Only twice in 50 years have we experienced construction cost deflation, the recession years of 2009 and 2010. That was at a time when business volume dropped 33% and jobs fell 30%. During the two years of the pandemic recession, volume reached a low, down 8%, and jobs dropped a total of 14%. But we gained far more jobs than volume. That means it now takes more jobs to put-in-place volume of work. That increases inflation.

Typically, when work volume decreases, the bidding environment gets more competitive. We can always expect some margin decline when there are fewer nonresidential projects to bid on, which typically results in sharper pencils. However, when labor or materials shortages develop or productivity

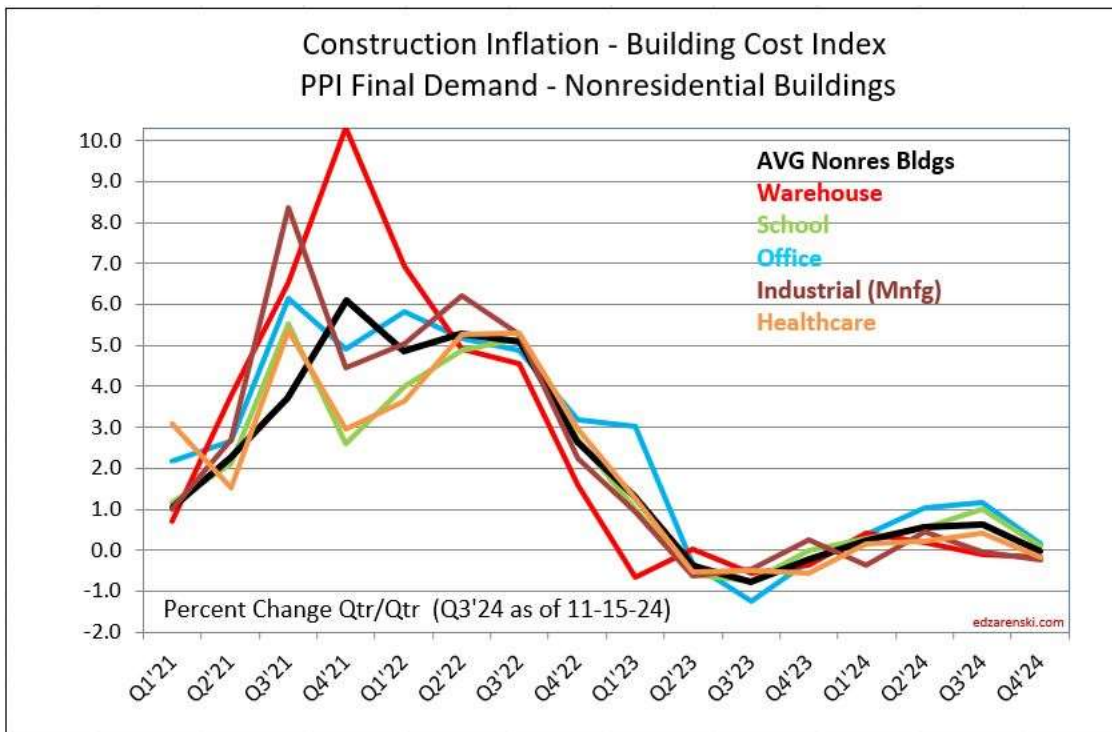
declines, which causes inflation to increase. We can also expect cost increases due to project time extensions or potential overtime to meet a fixed end-date.

Producer Price Index (PPI) INPUTS to construction reflect costs at various stages of material production, do not represent the final cost of materials to the jobsite and do not include labor, productivity, or margins. Even with that, a PPI Inputs index +20% for a material could be only a +5% final cost. PPI Final Demand indices include all costs and do represent actual final cost.

We can't always tell what affect changes in the cost of construction materials will have on the final outcome of total construction inflation. The PPI materials index does not account for productivity or margins and varies on stage of input.

Jan'25 Inputs are up, +0.8% to Nonres, +1.2% to Residential and 1.2% to Highway, the largest increases since Jan'24. The largest Input item increases in January are Paving Mixtures (up 14.6%), Diesel Fuel (up 3.6%), Concrete Brick, Block & Pipe (up 2.2%), Copper & Brass Shapes (up 1.9%) and Flat Glass (up 1%). Steel Pipe & Tube is down 1.3%. Both Lumber/Plywood and Fabricated Structural Steel are down 0.5% or less.

The PPI Final Demand index (**for Nonresidential Bldgs only**) is one of several that does account for labor and margins, hence it is defined as a final cost index. In this plot, Jan'25 closes out Q4'24. Total growth in 2024 was only 0.4%.



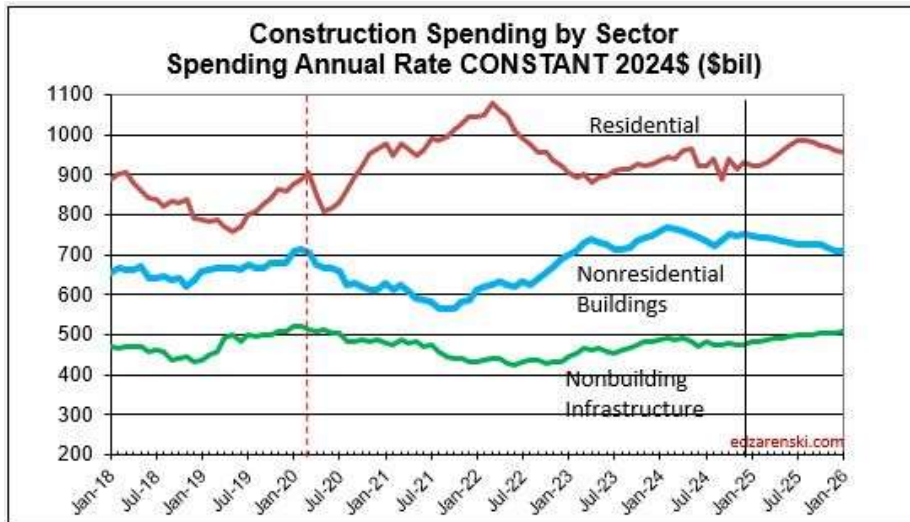
Current \$ Spending, Inflation and Constant \$ Volume

Volume = spending minus inflation. Spending includes inflation. Inflation adds nothing to volume.

Many construction firms judge their backlog growth by the remaining estimate to complete of all jobs under contract. The problem with that, for example, is that Nonresidential Buildings spending (revenues) increased 14% in 2022, but after adjusting for 12% inflation the actual volume of work was up only 2%. By this method, firms are including in their accounting an increase in inflation dollars passing through their hands. Spending includes inflation, which does not add to the volume of work.

Total volume for 2024 is up 3.1%. Residential +2.7%, Nonres Bldgs +3.3%, Non-bldg +3.5%.

Total volume forecast for 2025 is +1.3%. Residential +2.9%, Nonres Bldgs -1.9%, Non-bldg +3.0%.



Since 2019, spending has increased 55%. Volume has increased only 10%. The difference is inflation.

Inflation adjusted volume is spending minus inflation, or to be more accurate, spending divided by (1+inflation). Inflation adds nothing to volume growth. The following table shows spending, inflation, and volume (spending without inflation) for each year. Spending is current to the year stated. The values in the constant table are indexed to a constant value year, now using 2024. This shows business volume year to year, can be a lot different than spending would indicate. When inflation is positive, volume is always less than spending by the amount attributed to inflation.

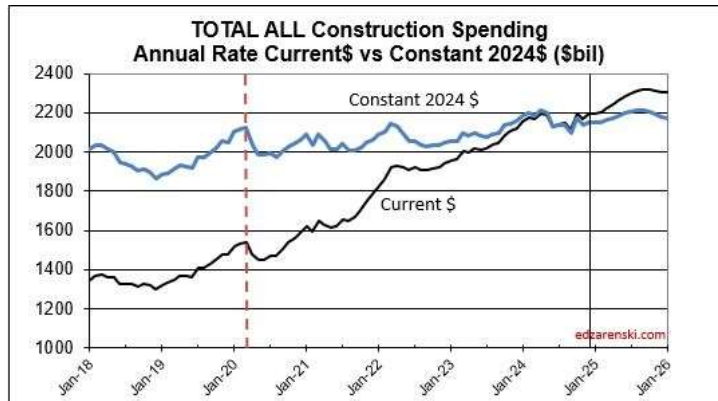
Caution: the following table, showing Constant \$, now shows Constant \$ with base year at 2024. So, all Constant\$ in this table are reported in 2024\$. Since Q1-2020 I have used the base year at 2019. This update changes the Constant\$ amount, but not the Constant\$ percent growth. Slight changes in prior years inflation resulted in some minor changes in Constant\$ growth.

CONSTRUCTION SPENDING	Current \$	2019	2020	2021	2022	2023	2024	2025	2026	2027
Nonresidential Buildings		488.9	495.2	482.8	580.7	699.1	746.4	761.0	764.1	790.3
% change year over year		8.0%	1.3%	-2.5%	20.3%	20.4%	6.8%	2.0%	0.4%	3.4%
Non-building heavy engr		348.7	360.2	361.7	389.2	447.0	478.5	514.3	550.1	571.0
		10.1%	3.3%	0.4%	7.6%	14.8%	7.1%	7.5%	7.0%	3.8%
Residential		553.4	644.3	809.0	932.8	877.6	929.6	997.0	1075.5	1172.1
		-1.9%	16.4%	25.6%	15.3%	-5.9%	5.9%	7.2%	7.9%	9.0%
SPENDING Current \$		1391	1500	1653	1903	2024	2154	2272	2390	2533
Spending Growth %		4.3%	7.8%	10.3%	15.1%	6.4%	6.5%	5.5%	5.2%	6.0%
CONSTRUCTION INFLATION INDEX		2019	2020	2021	2022	2023	2024	2025	2026	2027
INFLATION NONRES BLDGS		4.6%	2.6%	8.3%	12.8%	5.6%	3.2%	3.8%	3.8%	3.8%
INFLATION NONBLDG INFRA		3.9%	-0.7%	8.0%	17.3%	6.3%	3.4%	4.0%	3.5%	3.5%
INFLATION RESIDENTIAL		3.6%	4.2%	13.7%	15.8%	2.5%	3.0%	4.1%	4.1%	3.9%
Index - constant NONRES BLDGS		0.733	0.752	0.814	0.918	0.969	1.000	1.038	1.078	1.120
Index - constant NONBLDG INFRA		0.723	0.718	0.775	0.910	0.967	1.000	1.040	1.076	1.113
Index - constant RESIDENTIAL		0.690	0.719	0.818	0.947	0.971	1.000	1.041	1.084	1.126
CONSTANT TO 2024\$	= Annual Volume	2019	2020	2021	2022	2023	2024	2025	2026	2027
Nonresidential Buildings		669.2	657.5	591.7	637.3	725.0	748.6	734.2	709.5	706.4
% change year over year		3.2%	-1.7%	-10.0%	7.7%	13.8%	3.3%	-1.0%	-3.4%	-0.4%
Non-building heavy engr		486.2	499.9	463.6	432.8	464.7	481.2	495.8	512.4	514.2
		6.5%	2.82%	-7.3%	-6.6%	7.4%	3.5%	3.0%	3.4%	0.4%
Residential		804.5	881.0	985.7	1002.0	907.4	932.2	959.4	994.3	1042.7
		-5.6%	9.5%	11.9%	1.7%	-9.4%	2.7%	2.9%	3.6%	4.9%
SPENDING Constant \$		1960	2038	2041	2072	2097	2162	2189	2216	2263
Current Year Total Growth \$bil		2.7	78.5	2.5	31.2	25.0	65.0	27.2	27.0	47.0
Constant \$ growth %	= Annual Volume	0.1%	4.0%	0.1%	1.5%	1.2%	3.1%	1.3%	1.2%	2.1%
data includes Census spending 2-3-25							edzarenski.com			

Spending during the year is the value of business volume plus the inflation on that volume. When inflation is 12%, volume plus 12% = total spending. Revenue is measured by spending put-in-place during the year, which includes inflation. Therefore, Revenue does not measure volume growth.

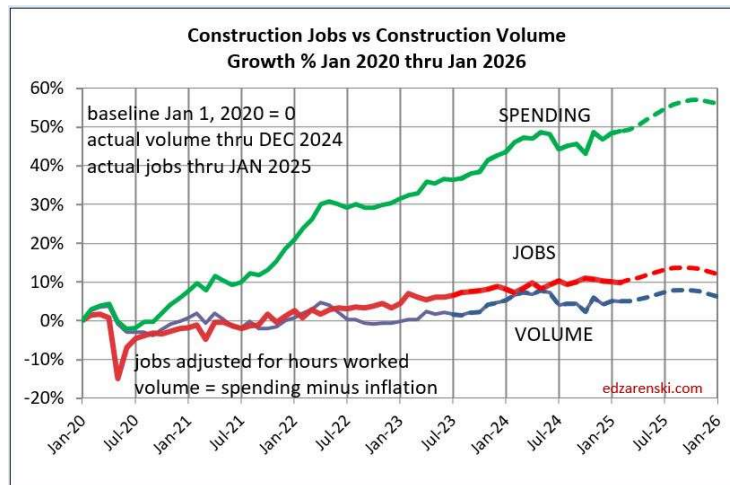
In 2022, Nonresidential buildings inflation was 12%, so business volume was 12% less than spending, or 12% less than revenue. Residential business volume was 15% less than spending.

Construction spending includes inflation, which adds nothing to the volume of work put-in-place. Construction Volume is a measure of business activity. It eliminates inflation as a variable and shows Constant\$ growth. As an example, 2021-22 posted some of the biggest spending increases we have seen in 20 years, up over 25% in two years. But, if you look at the bottom row in the table above, we see constant\$ growth, or volume, increased only 1.6% in those two years. The inflation rates for those years confirms that almost all of the spending increases were inflation, not added business volume. Construction volume, (spending minus inflation) will finish 2025 up 1.3%, but up only 12% since 2019.



When referencing Constant \$ growth, remember the dollars for all years are reported here as 2024\$. In this table, nominal spending is divided by the inflation INDEX for the year. You can also deduct the percent inflation from any individual year of spending to find inflation adjusted \$ for that year alone, however that method does not show cumulative change and would not allow comparing the adjusted dollars to any other year. A baseline year is necessary to compare dollars from any year to any other year.

Reference Inflation Data [Construction Inflation 2024](#)



Construction Jobs should not get compared to construction spending. Spending includes inflation, which adds nothing to business volume. Compare Jobs growth to Volume growth. If volume is declining, there is little to no support to increase jobs. And yet, we have seen historically that jobs increase at approximately 3.5%/yr, even when volume does not increase.

Jobs vs Volume

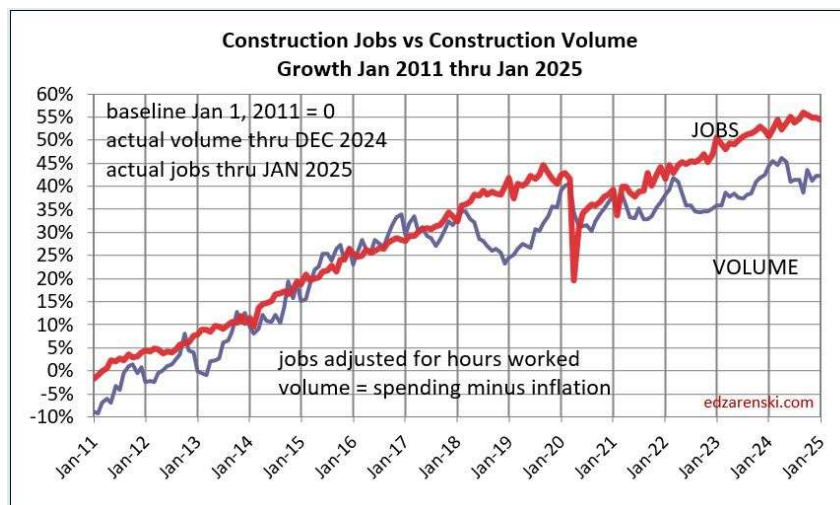
Construction Jobs increased 204,000 jobs or 2.5% in 2024. There are currently 8,291,000 construction jobs reported by BLS. The largest annual increase post 2010 is 321,000 jobs (+4.6%) in 2018. The average jobs growth post 2010 is 200,000 jobs per year.

From 2012-2019, we added an annual average of 245,000 jobs/yr (+3.9%). From 2021-2024, we added 240,000 jobs/yr (3.1%). In 2024 we added only 204,000 jobs (2.5%). Since 2011, there have been only 3 years in which we added fewer than 200,000 jobs, 2012, 2020 and 2021. Also, since 2011, there have been only 3 years in which we added more than 300,000 jobs, 2015, 2018 and 2022. Seldom do jobs increase by 400,000 or by 5%/yr. Excluding down years, since 2012, average annual growth is 3.6%/yr.

January jobs report shows we added 4k jobs in Jan, but the unemployment rate went up from an average of 4.7% in Q4 2024 (5.2% in Dec), to 6.5% in Jan.

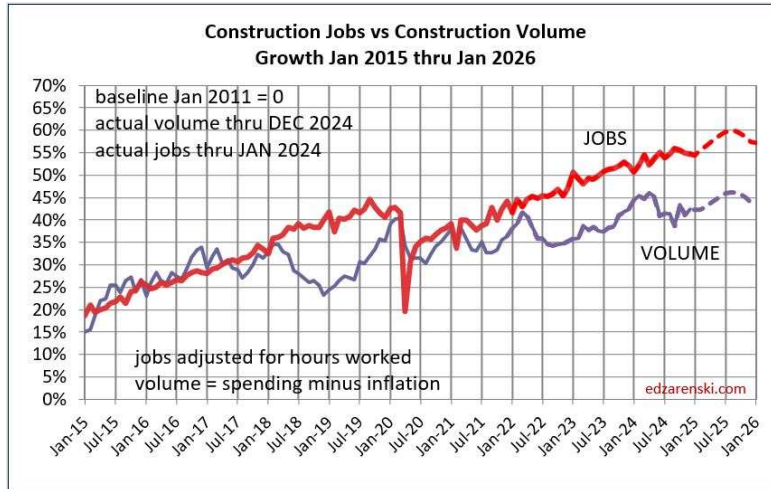
The unemployment rate in construction goes UP in the 1st qtr. every year, by at least 2% to 3% (data since 2011). Now, your first thought may be, if unemployment is increasing, that is probably because jobs are falling. Well, construction has ADDED jobs in the 1st qtr. every year since 2011 (excluding 2020), by an avg of nearly 30% of all jobs added annually. Construction unemployment is not going up in winter months because we lose jobs in winter. So how can the unemployment rate still go up? The numerator (jobs) is increasing. There is only one number left in the equation, the denominator (workforce). The result goes up because the entire workforce increases. In this case, the workforce is increasing by greater than the number of jobs added. So, when the unemployment rate increases in Q12025, do not assume it is because we are losing jobs.

The plot below shows how consistent jobs growth has been over the last 14 years. After the 2020 dip, the slope (annual rate of growth) of jobs growth is about the same as Jan2011-Jan2020. Jobs increase at about 3.5%/yr to 4%/yr., regardless of what volume is doing. In fact, since 2016, the last time volume increased by more than 4%, jobs are up 22%. Volume is up only 11%.

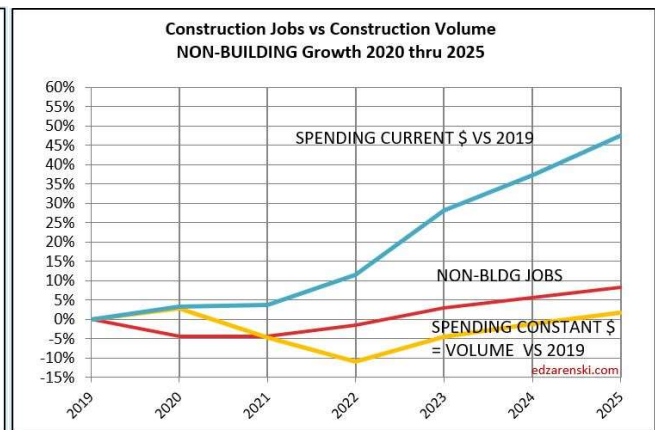
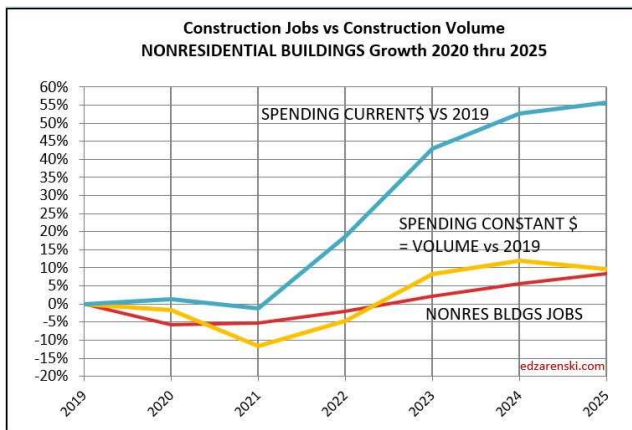


Since Jan 2011, average jobs growth is 3%/yr. Average volume of work growth since 2010 is 2.3%/yr. This plot above shows Jobs and Volume growth closely match from 2011 to 2018. With few exceptions for recession periods, this pattern can be seen throughout the historical data.

What is remarkable about the growth is this; since 2016, spending has increased 77%, volume after inflation increased only 11% and jobs increased 22%. Volume and jobs should be moving together.

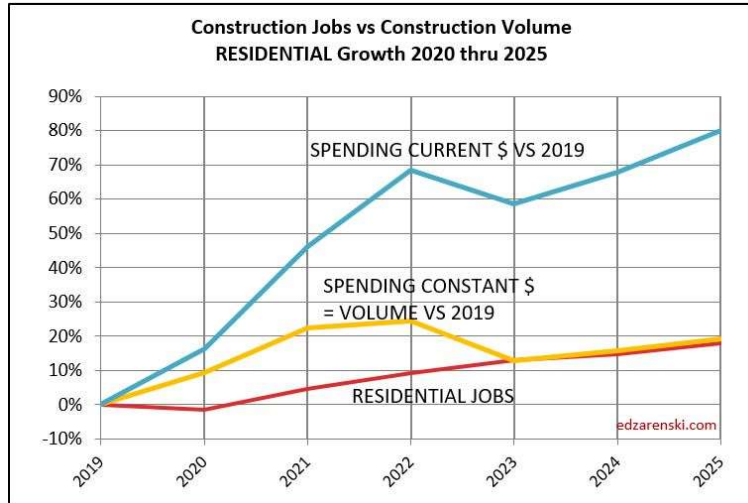


It takes about 5000 (Nonres) jobs to put-in-place \$1 billion of volume in one year. It could easily vary from 3000 to 5000, depending on the type of work. So, on average, an add of \$100 billion+ of Nonres Bldgs in one year would need 500,000 new jobs. Jobs should track volume, not spending growth. Volume = spending minus inflation. Normal construction jobs growth is about 250,000 jobs per year and maximum prior annual growth is about 400,000.



Non-building, over the next two years, could experience the same kind of growth spurt as Nonres Bldgs., a forecast increase in volume for the next two years without an equal increase in jobs. Volume, which was lower than jobs since 2021, is now increasing faster than jobs. Non-bldg volume is forecast up 6% to 8%/year the next 3 years. Jobs increase at an avg. 3.5%/year.

Residential volume has exceeded residential jobs all the way back to 2011. The recent decline in volume brings the two even, only if the jobs hold the pace.



For as long as I can remember, the construction industry has been complaining of jobs shortages. And yet, as shown in the data mentioned above, jobs have increased greater than volume of work. With an exception for recession years, (2007-2010 and 2020), jobs increase at a rate of 2.5% to 3% per year. The greatest disparity between jobs and volume occurred in late 2022, when jobs growth had already resumed normal pace, but volume of work was still reeling from the effects of new construction starts that were canceled dating back to late 2020 and early 2021. Recent volume growth at a much faster rate than jobs growth is now closing the gap.

For the 4yr period 2021 through 2024, jobs are up 13%, but volume of work put-in-place is up only 6%.

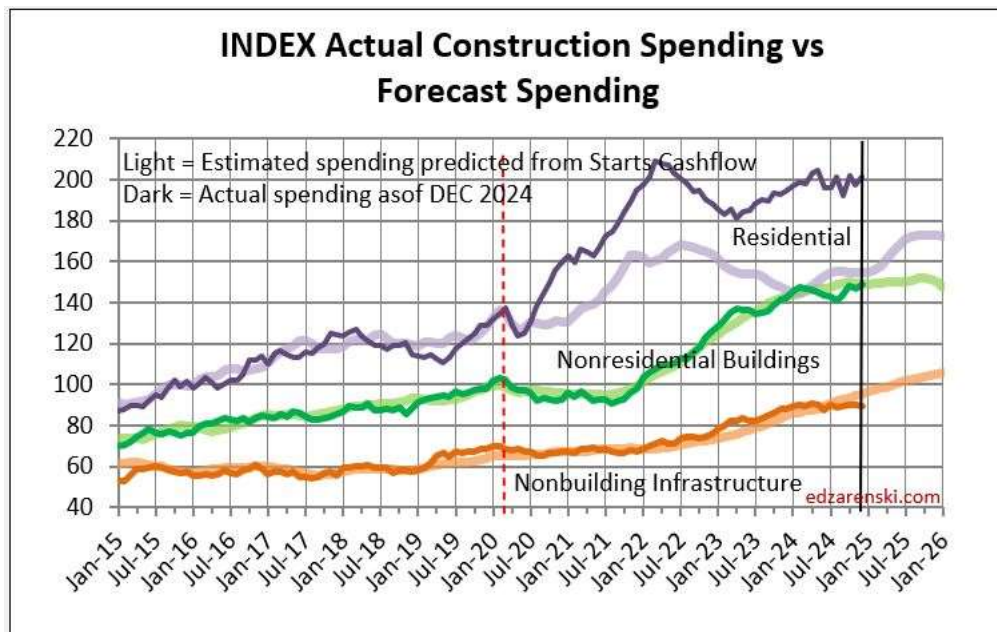
Don't be surprised if 2025 construction jobs growth slows a bit. Jobs are slightly ahead of volume growth, particularly in the Non-building Infrastructure sector. Since 2019, both Jobs and Volume increased 10%. But that includes 2020, when volume increased 4% but jobs fell by 250k, or 3%.

When jobs increase without an equal increase in the volume of work, productivity declines. This recent increase in volume and the projected increase in volume in 2025, several points stronger than jobs, will offset some of the disparity which has been negative for a long time.



A Check on Measuring Methodology

And finally, here is one of the markers I use to check my forecast modeling, my forecast performance tracking index. The light plot line is my forecast predicted from my modeling. The dark plot line is actual construction spending. Even after any separation in the indices, the plots should move at the same slope. Almost without fail, the forecast model, estimated spending from cashflow, predicts the changes in direction of actual spending. The nonresidential buildings plots (and the residential plot prior to 2020) are remarkably close, providing an indication the method of analysis employed, cash flow of all construction starts to get spending forecast, is reasonably accurate.



Note the divergence of residential in Jul-Dec 2020. Actual residential spending finished much higher than predicted. Even the cash flow from an all-time high in new residential starts does not predict spending to increase so rapidly. But residential project spending was fully back to prior levels by August 2020, within 3 months from the May 2020 bottom. In 3 months, the actual spending pushed 15% higher than starts predicted. A part of the spending was the resumption of delayed projects, but another big part was renovations, which surged, and reno is 40% of all residential spending.

Links to Articles and Data

[The U.S. Census Single-Family House Construction Index](#)

Reference Link to Web [Dodge Construction News](#)

Reference Article by AGC [Explanation of PPI Indices](#)

SEE ALSO these linked related articles on my blog Construction Analytics

[The Manufacturing Spending Taper](#)

[Construction Inflation 2025](#)

[Compare 10 Construction Spending Forecasts for Nonres Bldgs](#)

[Reliability of Predicted Forecast](#)