

# Welcome

1



# Construction Spending Forecast

2

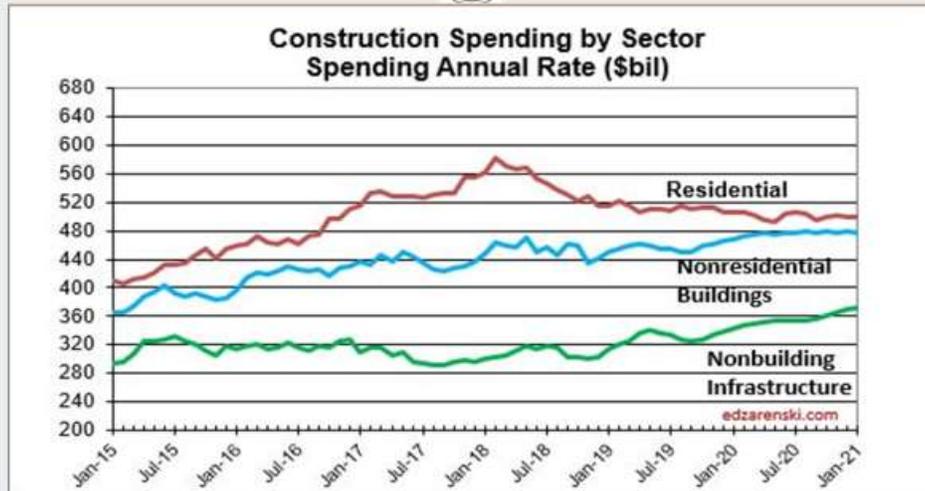
U.S. Total Construction Spending Summary								
\$ in billions	Actual 2018		Forecast 2019		Forecast 2020		Forecast 2021	
% growth vs prior yr								
<b>Total Construction</b>	<b>1307</b>	<b>3.3%</b>	<b>1296</b>	<b>-0.9%</b>	<b>1330</b>	<b>2.7%</b>	<b>1357</b>	<b>2.0%</b>
Residential	546	3%	511	-7%	499	-2%	497	-1%
Nonresidential Buildings	453	4%	456	1%	475	4%	477	0%
Nonbuilding Infrastructure	308	3%	330	7%	355	8%	383	8%
Educational	97.8	1%	98.0	0%	103.5	6%	106.5	3%
Healthcare	42.6	-1%	44.5	4%	49.7	12%	49.2	-1%
Amusement / Recreation	27.9	5%	28.8	3%	27.7	-4%	25.5	-8%
Commercial / Retail	95.4	9%	82.6	-13%	75.5	-9%	70.2	-7%
Lodging	31.5	10%	34.6	10%	35.7	3%	33.2	-7%
Office	74.5	8%	81.4	9%	95.1	17%	98.4	3%
Manufacturing	70.8	0%	73.2	3%	75.7	3%	81.8	8%
Other Nonres Bldgs	12.7	5%	12.6	-1%	12.6	0%	12.6	0%
Power	93.2	-3%	99.3	7%	97.4	-2%	97.1	0%
Highway / Bridge / Street	91.1	2%	100.5	10%	113.7	13%	122.3	8%
Transportation / Air / Rail	51.4	12%	54.2	5%	63.9	18%	79.9	25%
Sewer / Water / Conservation	47.5	7%	52.2	10%	58.2	12%	61.4	5%
Communication	24.6	4%	23.6	-4%	22.3	-6%	22.2	0%

Forecast includes U.S. Census Sept 2019 year-to-date spending as of 11-2-19  
 Forecast includes Dodge construction starts Sept data as of 10-16-19

2019 spending growth forecast at +0.9%, but Inflation is predicted to average 4%. Real Volume in 2019 declines by 3%. Major growth in Highway, Public Works, Transportation, Office.

## Construction Spending Forecast

3



Construction Analytics

edzarenski.com

Spending up 68% from 2011 low point to mid-2019. But inflation average 4% for last 6 years. Real volume growth since bottom is only 32%. Real Volume is still 15% below previous peak high in 2005. Volume is not growing as fast as spending (or Revenue) would indicate.

## Construction Forecast Cash Flow

4

**Starting Backlog + New Starts  
creates Cash Flow**

- **Nonres Bldgs Spending 70-75% from Starting Backlog**
- **NonBldg Infra Spending 75-80% from Starting Backlog**
- **Residential Spending 30% Bklg 70% from New Starts**
- **Cash Flow = Spending = Revenue**

Construction Analytics

edzarenski.com

For nonresidential work we have 70% to 80% of expected spending this year already in backlog as the year began. For new starts within the year, approximately 20% of the spending occurs in the year started, 50% in the next year, 25% in the third year. This means nonresidential spending growth in 2019 is still being affected by starts from 2016.

## Forecasting – Starts vs Spending

5

STARTS 2018+2019 BACKLOG 2020vs2018 SPENDING 2019 & 2020	2018 + 2019 Starts	2019 Forecast Spending	2020 vs 2018 Backlog	2020 Forecast Spending
RESIDENTIAL	3%	-6.5%	-3%	-2%
EDUCATIONAL	11%	0.3%	9%	6%
OFFICE	20%	9%	36%	17%
MANUFACTURING	-0.4%	3%	4%	3%
COMMERCIAL Rtl+Wrhse	-8%	-13%	-19%	-9%
HIGHWAY	5%	10%	17%	13%
TRANSPORTATION	-35%	5%	51%	18%
PUBLIC WORKS	23%	10%	27%	12%

Construction Analytics

edzarenski.com

Starts is not Spending. Starts must be adjusted for share of total market, then cash flowed over time to get spending. Need to look at a minimum of 3 to 4 years of starts to predict spending in the next year. Starts here is Dodge Data.

## Construction Inflation - Final Cost vs Inputs

6



Construction Analytics

edzarenski.com

Notice in this plot Input indices ENR and RSMeans for 2010 to 2017 increased only from 85 to 100, 17% growth. Final cost indices increased from 77 to 100, 30% growth. Not shown on this plot but neither RSMeans nor ENRBCI, both input indices, showed a decline during the great recession. All other indices showed a steep decline from 2008-2010.

## Construction Inflation - Tariffs

7

One-third of businesses report negative impacts due to trade policy  
Tariffs are doing more harm than good

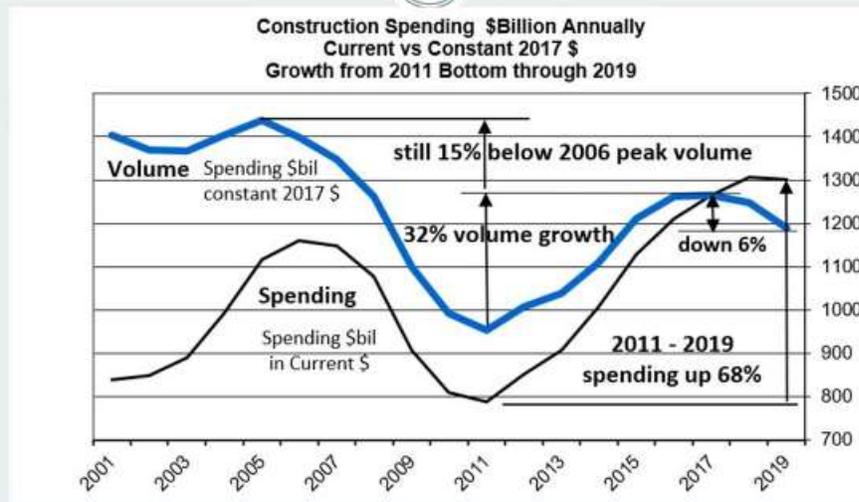
Vinyl flooring, cabinetry, appliances, FFE, electronic components, lighting fixtures, plumbing fixtures, HVAC components

Chinese quartz represents approximately 50% of U.S. market

Tariffs increase demand for a smaller supply of domestic products

## Construction Volume = Spending Inflation Adjusted

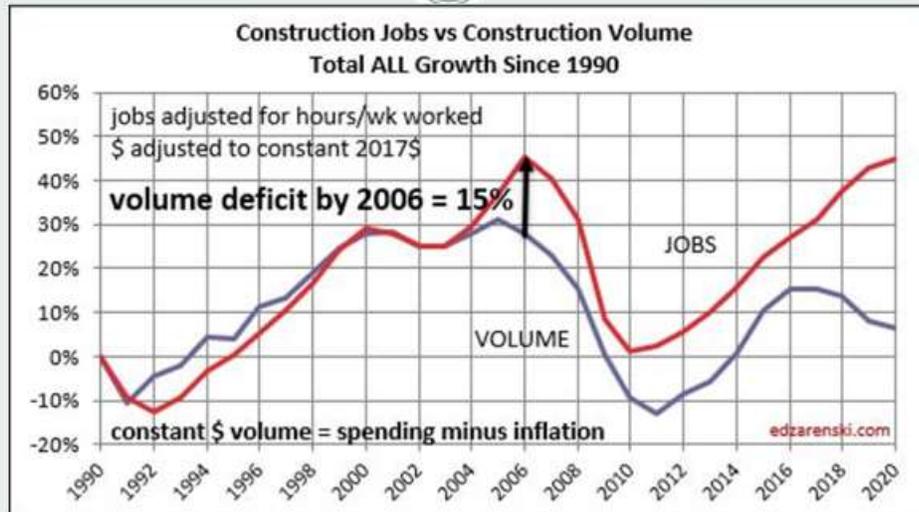
8



Spending up 68% from 2011 low point to mid 2019. But inflation average 4% for last 6 years. Real volume growth since bottom is only 32%. Real Volume is still 15% below previous peak high in 2005. Volume is not growing as fast as spending (or Revenue) would indicate.

## Forecasting Construction Data – Jobs

9



Construction Analytics

edzarenski.com

Construction added 1.6 million jobs in 6yrs 2013-2018, the fastest rate of jobs growth since 1995-2000. 29% growth in jobs but only 25% growth in real volume after inflation.

## Forecasting Construction Data – Jobs

10



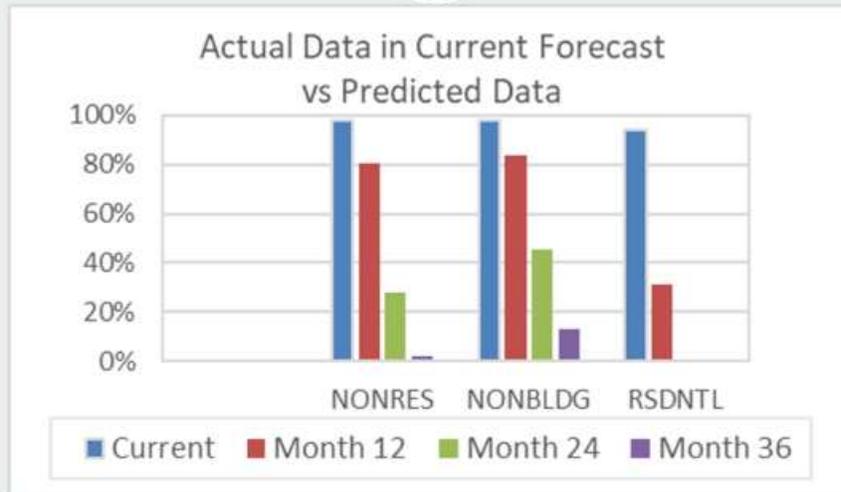
Construction Analytics

edzarenski.com

WHY do firms not see an imbalance in jobs vs volume growth? If construction volume in 2006 were modified UP by the difference then between volume and jobs, we see that jobs growth since 2006 has been in line with volume growth. It all occurred in 2004-2006.

## Construction Forecast Reliability

11



Construction Analytics

edzarenski.com

Amount of “actual” data in forecast drops off dramatically between 12-24 months.

## Thank You

12

Ed Zarenski  
Construction Analytics  
[edzarenski@gmail.com](mailto:edzarenski@gmail.com)  
@EdZarenski  
edzarenski.com

Construction Analytics

edzarenski.com