Navigating Facilities Planning and Construction in these Uncertain Times

VERMEULENS

THE TEXAS A&M UNIVERSITY SYSTEM

BYRNE CONSTRUCTION SERVICES

How Much?!?
How Long ?!?
Are you kidding?

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BYRNE CONSTRUCTION SERVICES

Vermeulens – History/Forecast
TAMUS FP&C - Owner Perspective
Byrne - Contractor Perspective
Questions

The A/E CA PE approved the CMAR CCO so tell the SPM to get the Sub-NTP going ASAP!

Beyond Estimation Market Outlook®

John McKeon, Sr Project Manager

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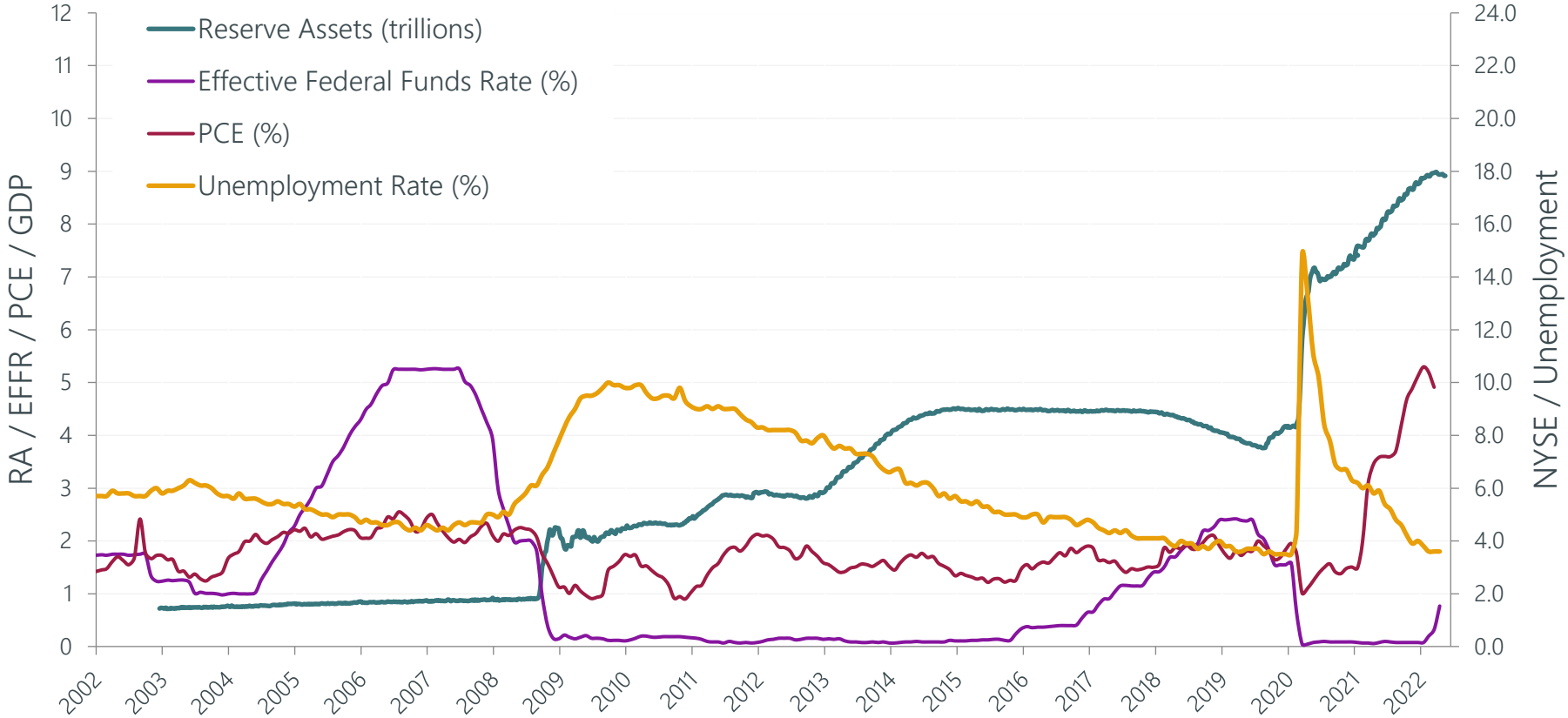
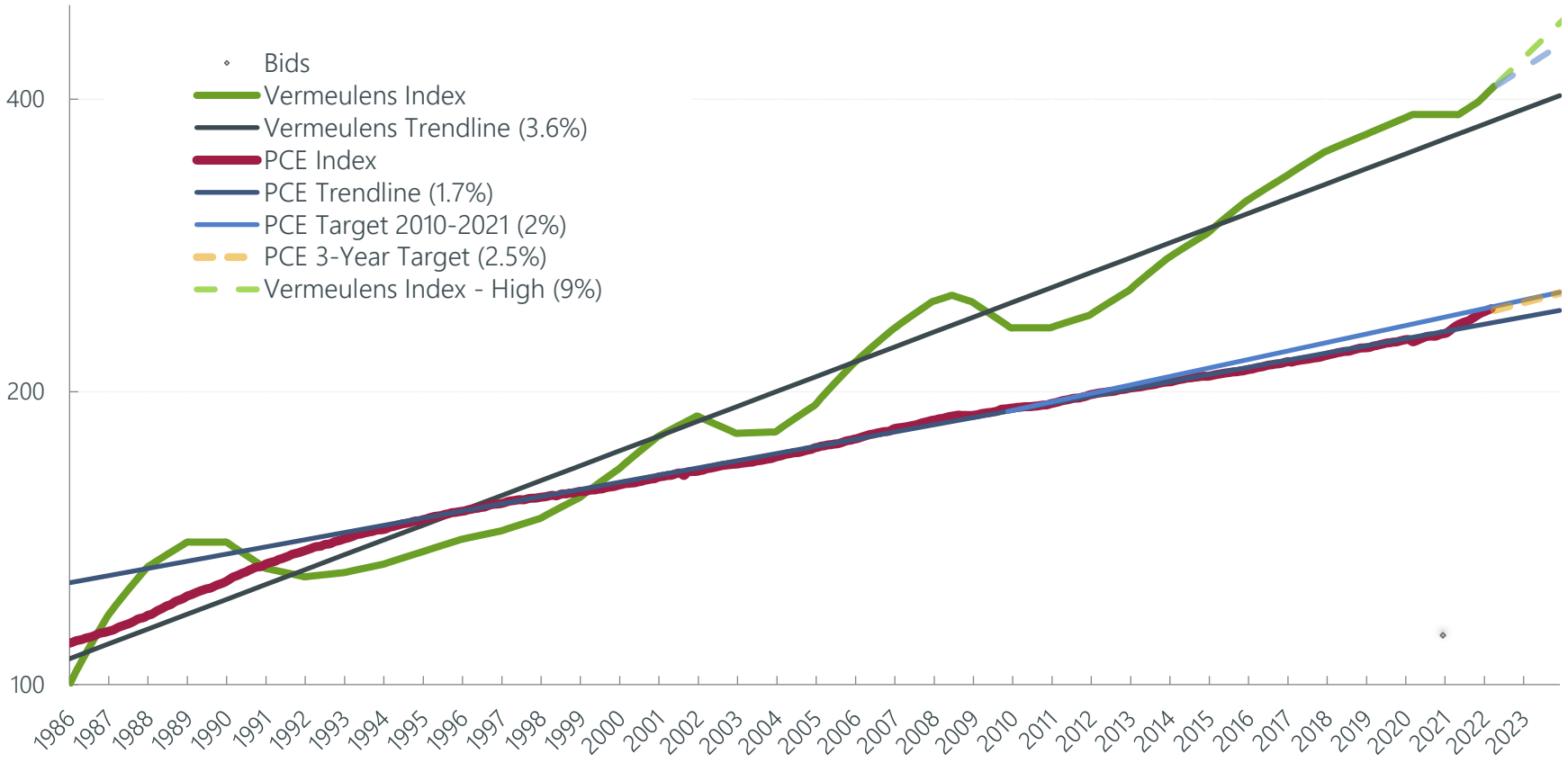
Where We Are...

Federal Asset Monthly Purchase



Forecast


Bids
Vermeulens Index
Vermeulens Trendline (3.6%)
PCE Index
PCE Trendline (1.7%)
PCE Target 2010-2021 (2%)
PCE 3-Year Target (2.5%)
Vermeulens Index - High (9%)
400
200
100
1986
1987
1988
1989
1990
1991
1992
1993
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2001
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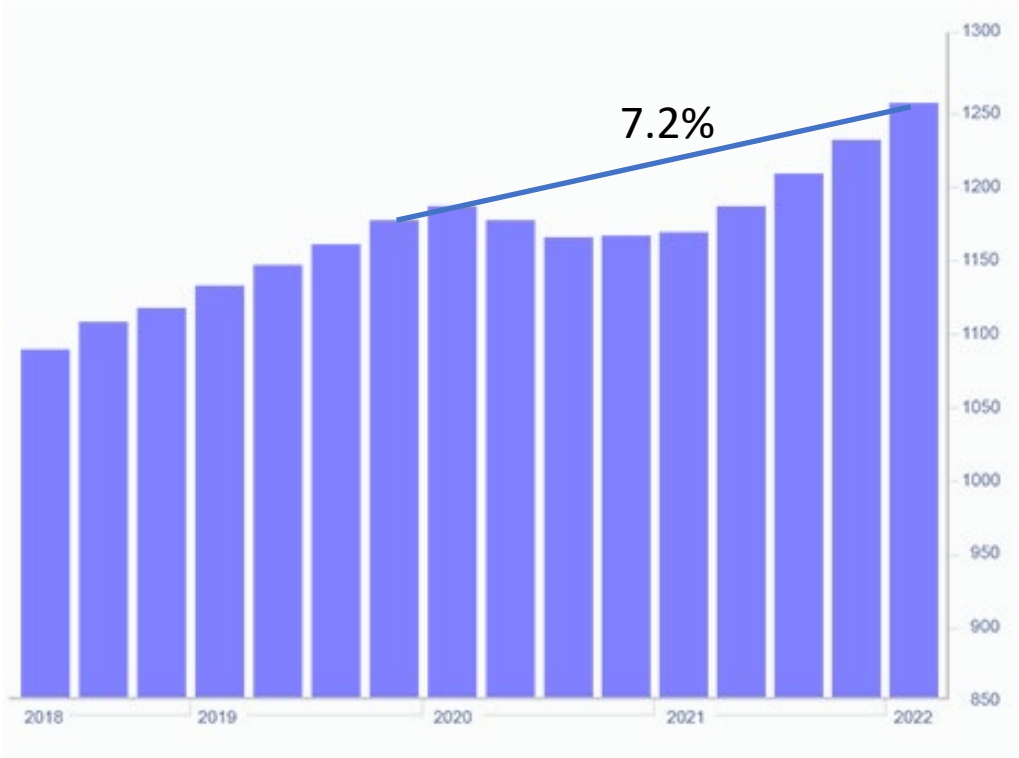
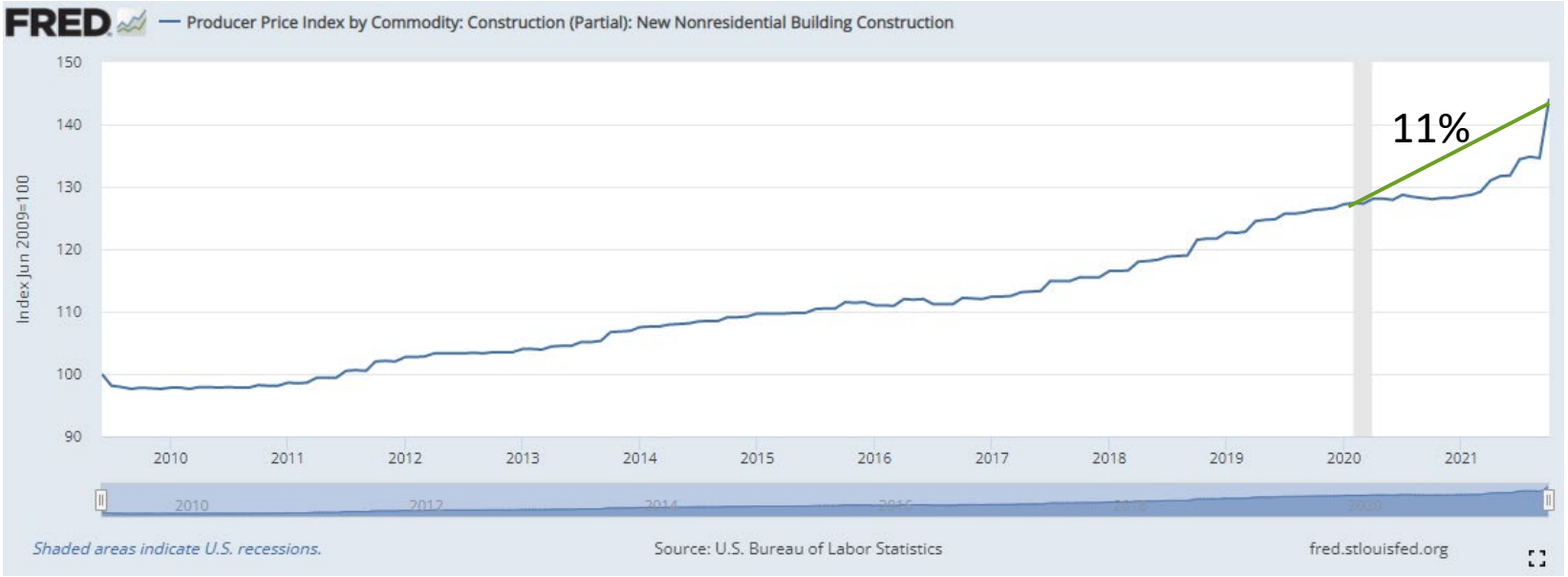
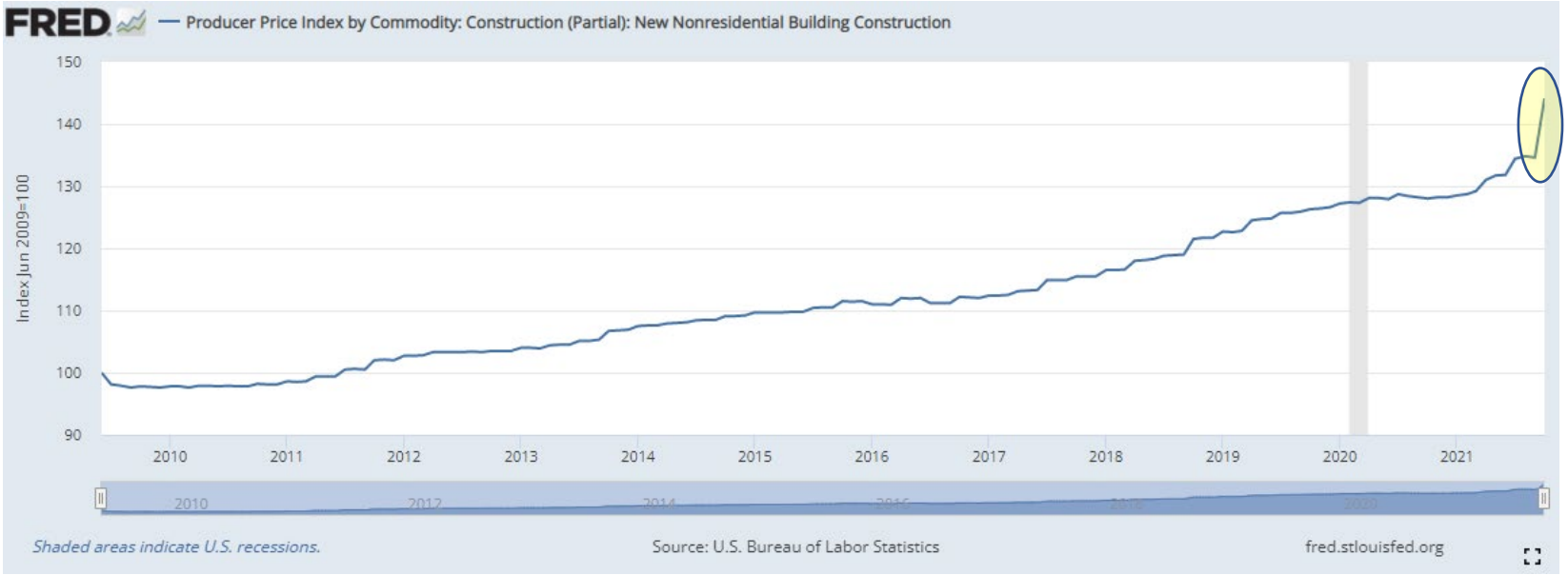
2022
2023



Turner

Quarter	Index	% Change
1st Quarter 2022	1255	2.03
4th Quarter 2021	1230	1.91
3rd Quarter 2021	1207	1.68
2nd Quarter 2021	1187	1.28
1st Quarter 2021	1172	0.09
4th Quarter 2020	1171	0.00
3rd Quarter 2020	1171	-0.51
2nd Quarter 2020	1177	-1.01


FRED
Producer Price Index by Commodity: Construction (Partial): New Nonresidential Building Construction
Index Jun 2009=100
150
140
130
120
110
100
90
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
11%
Shaded areas indicate U.S. recessions.
Source: U.S. Bureau of Labor Statistics
fred.stlouisfed.org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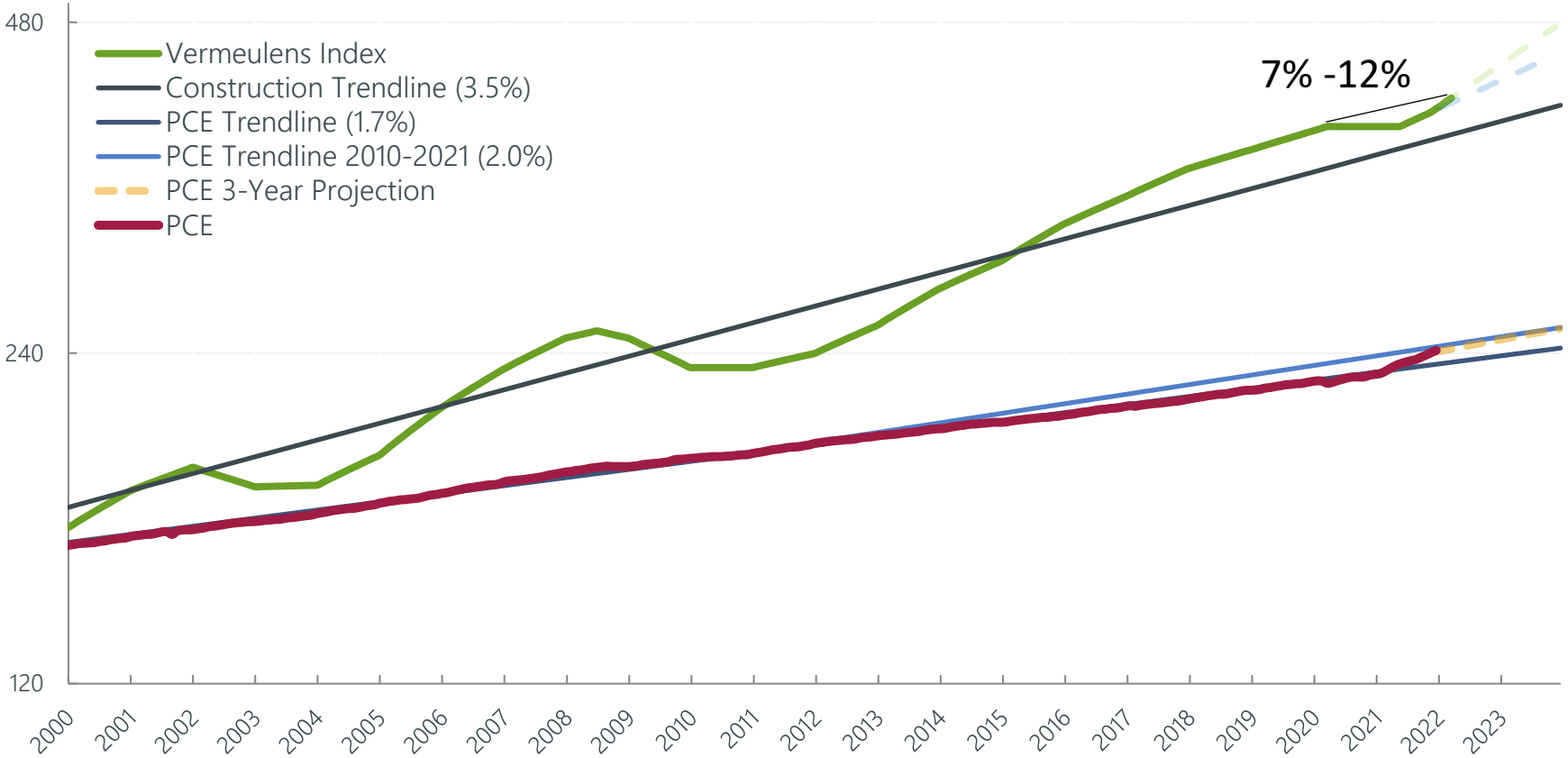
2017
2018
2019
2020
2021
Shaded areas indicate U.S. recessions.
Source: U.S. Bureau of Labor Statistics
fred.stlouisfed.org

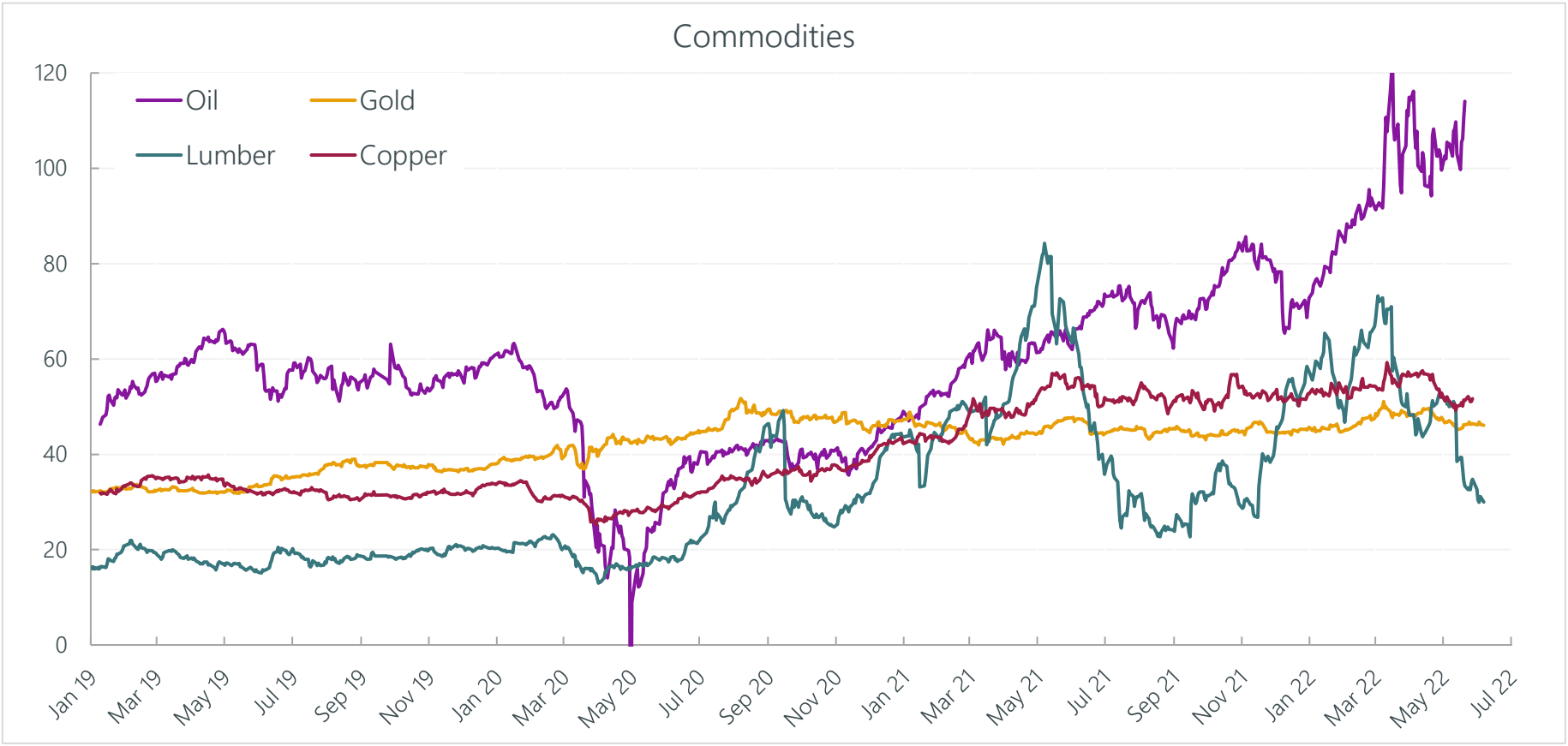
7.5%

Vermeulens Construction Cost Index



Code	Group	VCC	CM	CM-VCC	VCC	CM	CM-VCC
01	Allowances	$1,156,805	$2,422,380	$1,265,575	$2,651,790	$2,672,730	$20,940
02	Site Work	$2,636,810	$3,773,428	$1,136,618	$2,918,155	$2,882,279	($35,876)
03	Concrete	$5,840,270	$5,065,081	($775,190)	$5,065,361	$5,065,081	($280)
04	Masonry	$1,547,241	$1,767,385	$220,144	$1,615,526	$1,609,395	($6,130)
05	Metals	$17,945,452	$17,804,383	($141,069)	$15,675,089	$15,577,004	($98,085)
06	Wood/Plastic	$3,172,732	$3,831,671	$658,939	$3,694,276	$3,600,999	($93,277)
07	Thermal/Moisture Protection	$2,903,951	$3,046,873	$142,922	$3,099,398	$3,086,080	($13,319)
08	Doors/Windows	$17,219,666	$15,756,579	($1,463,087)	$15,214,307	$15,299,926	$85,619
09	Finishes	$9,635,770	$9,399,224	($236,546)	$10,135,975	$10,137,758	$1,782
10	Specialties	$1,335,983	$1,163,012	($172,971)	$1,410,825	$1,418,709	$7,884
11	Equipment	$1,127,700	$1,852,358	$724,658	$1,692,000	$1,693,414	$1,414
12	Furnishings	$784,846	$302,393	($482,453)	$559,342	$573,596	$14,255
13	Special Construction	$300,000	$148,575	($151,425)	$150,000	$148,575	($1,425)
14	Conveying Systems	$4,858,875	$7,212,645	$2,353,770	$5,963,888	$5,993,138	$29,250
15	Mechanical	$28,949,381	$35,232,816	$6,283,436	$29,127,187	$29,493,221	$366,034
16	Electrical	$15,451,608	$16,700,277	$1,248,669	$16,476,313	$16,451,613	($24,700)
17	Permits & Fees	$19,075,543	$20,452,111	$1,376,568	$20,043,336	$20,051,467	$8,130
18	Contingencies	$16,841,472	$14,102,030	($2,739,443)	$15,684,472	$15,697,176	$12,704
19	Enabling	$22,704,456	$22,704,458	$2	$22,704,458	$22,704,458	$0
20	Total Construction Costs	$173,488,558	$182,737,674	$9,249,116	$173,881,696	$174,156,616	$274,920

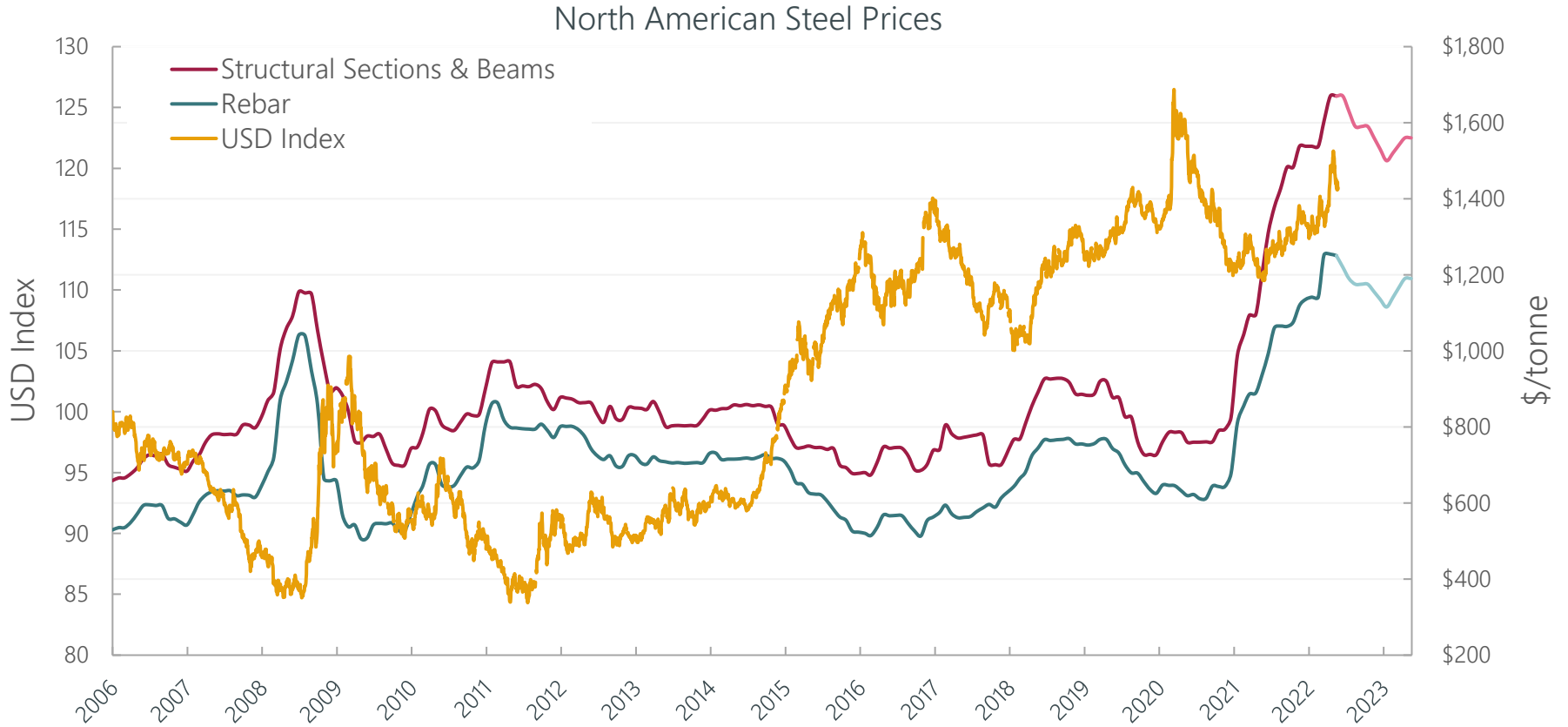
US Dollar Impact on Commodities



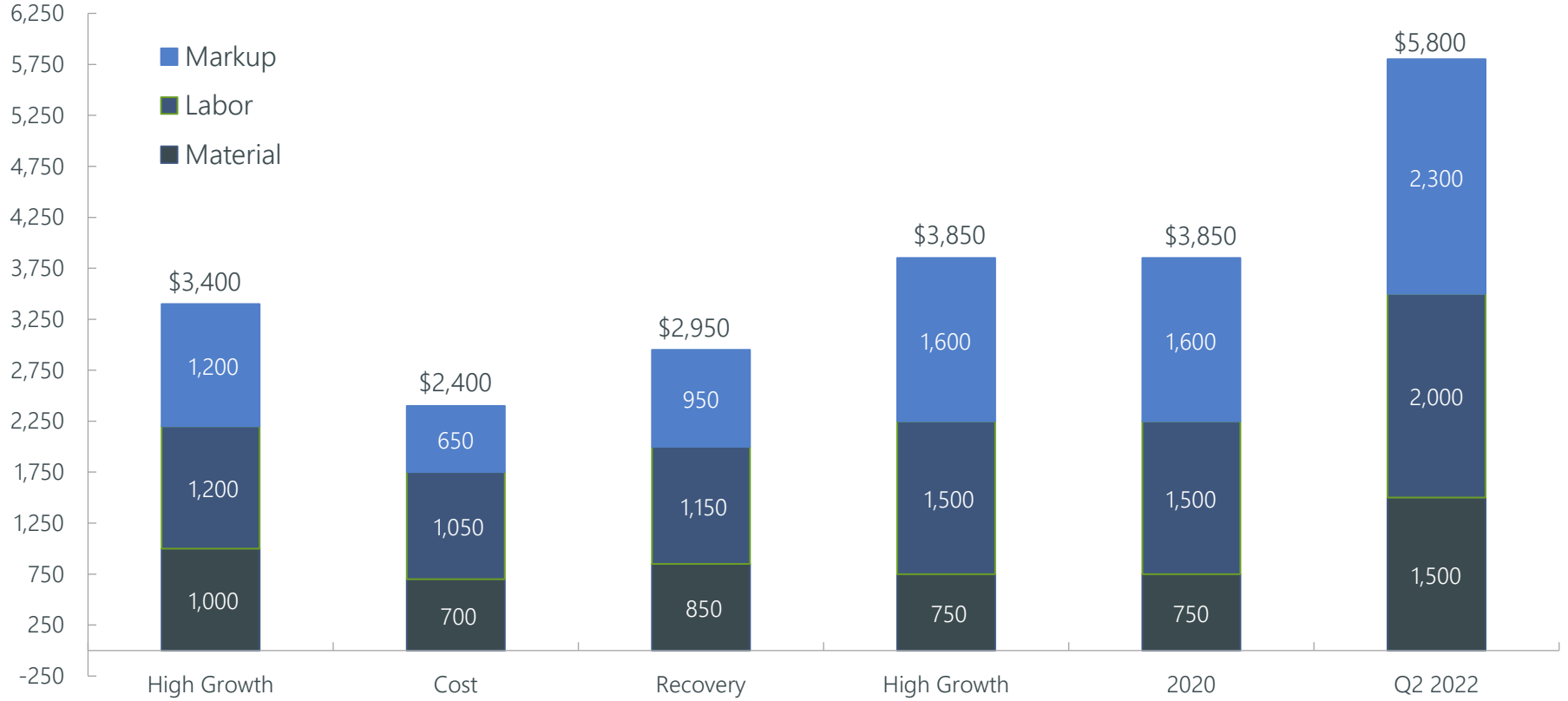
	Price Change	Est. Lead Time
→ Steel Mill Products & Steel Pipe	↑ 112%	8 – 12 months
→ Plastic Construction Materials	↑ 35%	3 – 4 months
→ Copper & Brass Fittings	↑ 25%	3 – 4 months
→ Gypsum Products	↑ 23%	2 – 4 months
→ Lumber & Plywood	↑ 21%	2 – 4 months
→ Insulation Materials	↑ 19%	10 – 12 months
→ Aluminum Mills	↑ 33%	2 – 4 months

Source: AGC and BLS - PPI

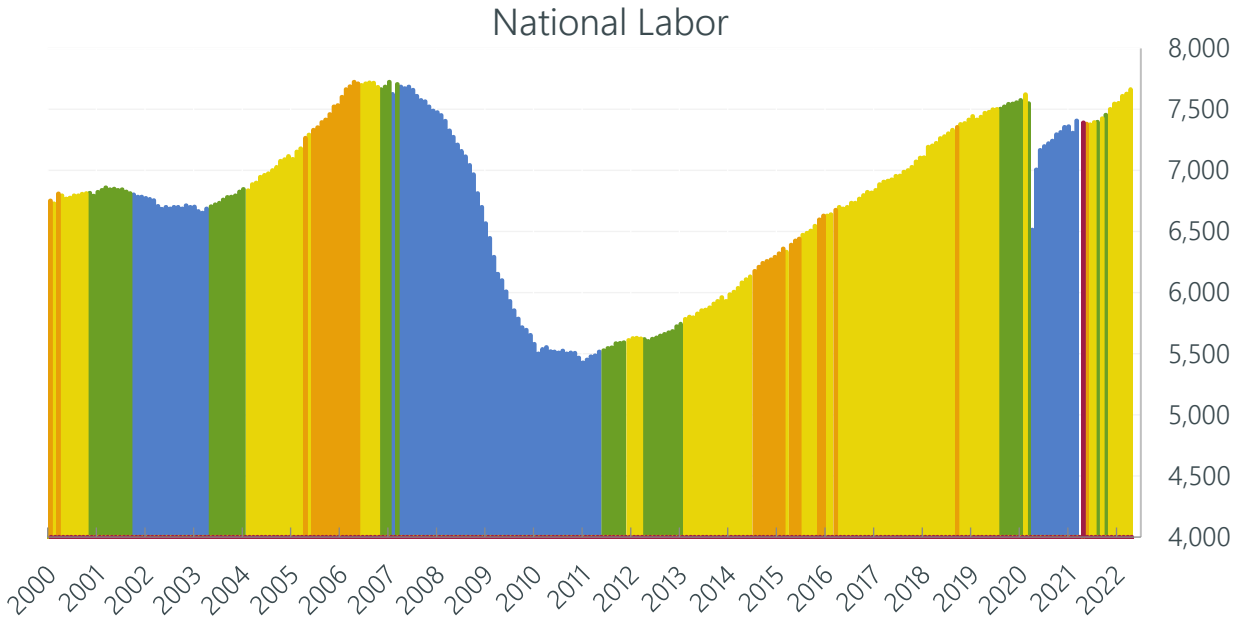
US Dollar Impact on Steel



Structural Steel Pricing



National Construction Labor (thousands)



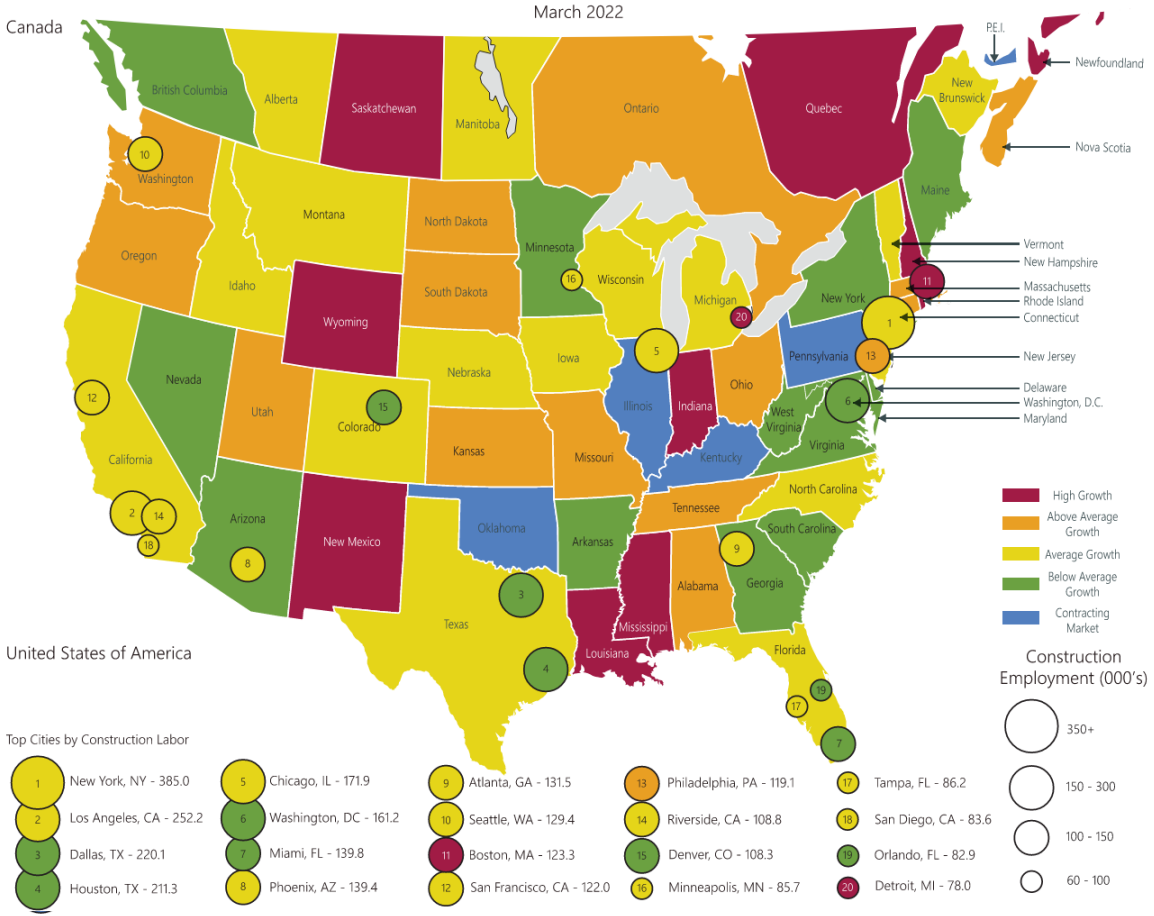
Year-Over-Year Growth

- High Growth
- Above Average Growth
- Average Growth
- Below Average Growth
- Contracting Market

Pandemic Impact

National
(+0.5%)

Year-Over-Year Construction Labor Growth

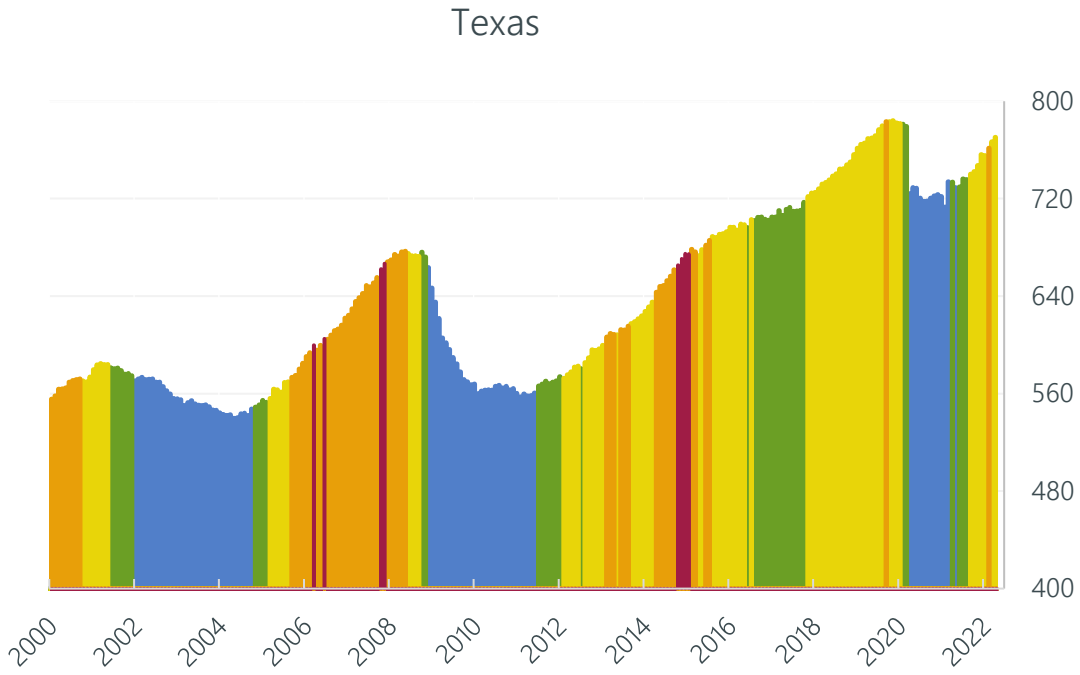


Year Over Year Growth – Statewide

April 2022 State Construction YOY Growth

Rank		Feb-10	Peak 2020	Apr-22	Job Delta	% Delta
1	California	568.6	910.2	902.7	-7.5	-0.8%
2	Texas	560.1	781.1	770.3	-10.8	-1.8%
3	Florida	353.9	577.4	592.9	15.5	2.7%
4	New York	307.1	409.6	381.9	-27.7	-6.8%
5	Pennsylvania	210.4	266.7	251.1	-15.6	-5.8%
6	North Carolina	176.1	234.3	238.3	4.0	1.7%
7	Ohio	167.9	232.7	237.6	4.9	2.1%
8	Washington	143.6	223.5	231.0	7.5	3.4%
9	Illinois	200.6	227.9	224.7	-3.2	-2.3%
10	Virginia	177.6	207.3	206.0	-1.3	-0.6%
11	Georgia	152.0	208.0	203.2	-4.8	-2.3%
12	Colorado	118.0	179.4	184.0	4.6	1.9%
13	Arizona	112.4	175.8	181.3	5.5	3.1%
14	Michigan	119.1	177.8	179.7	1.9	0.9%
15	Massachusetts	106.9	166.3	173.1	6.8	4.1%
16	Maryland	136.2	167.3	161.7	-5.6	-3.4%
17	Indiana	113.6	150.1	159.9	9.8	6.5%
18	New Jersey	130.8	164.0	159.6	-4.4	-2.7%
19	Tennessee	97.7	132.2	145.4	13.2	9.7%
20	Missouri	106.5	129.0	139.8	10.8	8.4%
21	Louisiana	120.9	137.3	134.5	-2.8	-10.2%
22	Wisconsin	95.9	127.2	131.3	4.1	3.2%
23	Utah	65.5	113.8	130.1	16.3	14.3%
24	Minnesota	87.3	128.1	127.6	-0.5	-2.2%
25	Oregon	68.2	112.3	117.9	5.6	5.0%

State Construction Labor (thousands)



Year-Over-Year Growth

- High Growth
- Above Average Growth
- Average Growth
- Below Average Growth
- Contracting Market

Pandemic Impact

Texas
(-1.8%)

National
(+0.5%)

Year Over Year Growth – Top Cities

April 2022 City Construction YOY Growth

Rank		Feb-10	Peak 2020	Apr-22	Job Delta	% Delta
1	New York	322.2	418.6	387.9	-30.7	-7.3%
2	Los Angeles	185.7	257.3	252.7	-4.6	-1.8%
3	Dallas/Fort Worth	167.4	228.7	221.5	-7.2	-3.1%
4	Houston	180.7	237.7	213.3	-24.4	-10.2%
5	Chicago	158.1	180.1	175.4	-4.7	-2.6%
6	Washington D.C.	146.2	165.5	161.9	-3.6	-2.2%
7	Miami	98.5	142.3	140.3	-2.0	-1.4%
8	Phoenix	91.5	135.6	140.0	4.4	3.2%
9	Atlanta	98.6	130.5	132.1	1.6	1.2%
10	Seattle	90.4	130.0	130.6	0.6	0.5%
11	Boston	79.9	122.9	125.5	2.6	2.1%
12	San Francisco	85.4	128.4	122.4	-6.0	-4.7%
13	Philadelphia	101.7	120.8	120.4	-0.4	-0.3%
14	Riverside	65.8	107.2	109.0	1.9	1.7%
15	Denver	74.6	112.3	109.0	-3.3	-3.0%
16	Minneapolis	58.6	87.4	87.6	0.2	0.2%
17	Tampa Bay	57.8	82.3	86.7	4.4	5.3%
18	San Diego	59.6	84.3	83.9	-0.4	-0.5%
19	Orlando	52.2	87.0	82.7	-4.3	-4.9%
20	Baltimore	70.4	81.8	80.2	-1.6	-1.9%
21	Detroit	51.2	76.7	79.7	3.0	3.9%
22	Portland	48.5	76.2	77.3	1.1	1.4%
23	Sacramento	42.5	70.4	76.1	5.7	8.1%
24	Austin	40.5	70.0	74.0	4.0	5.7%
25	Charlotte	49.9	69.0	71.1	2.1	3.0%

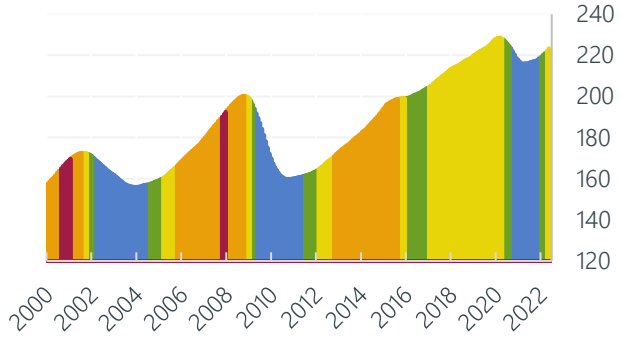
Year Over Year Growth – Top Cities

April 2022 City Construction YOY Growth

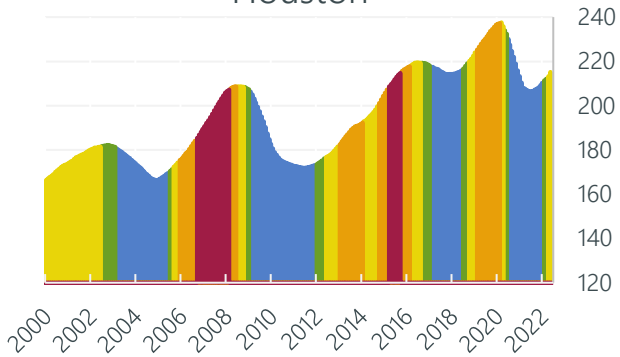
Rank		Feb-10	Peak 2020	Apr-22	Job Delta	% Delta
26	St. Louis	63.0	68.6	70.9	2.4	3.4%
27	Las Vegas	59.9	71.7	70.2	-1.6	-2.2%
28	Pittsburgh	56.8	75.2	68.2	-7.0	-9.3%
29	San Antonio	50.5	67.5	63.3	-4.2	-6.3%
30	Indianapolis	41.7	55.3	58.6	3.3	6.0%
31	Kansas City	41.4	53.5	56.0	2.6	4.8%
32	Salt Lake City	34.1	48.1	54.1	6.0	12.5%
33	Nashville	31.9	49.4	53.4	4.0	8.1%
34	San Jose	33.6	53.1	52.4	-0.7	-1.3%
35	Cincinnati	38.5	47.9	50.3	2.4	5.0%
36	Jacksonville	31.8	46.9	49.6	2.7	5.8%
37	Columbus	29.9	44.6	45.5	0.9	1.9%
38	Raleigh	29.1	41.5	44.4	2.9	7.0%
39	Richmond	33.8	40.5	40.9	0.4	1.1%
40	Oklahoma City	38.6	52.4	40.2	-12.3	-23.4%
41	Virginia Beach	37.7	39.3	39.3	0.0	-0.1%
42	Cleveland	32.7	39.1	38.5	-0.5	-1.4%
43	Milwaukee	28.6	33.6	34.1	0.4	1.3%
44	New Orleans	39.7	34.6	32.4	-2.2	-6.4%
45	Birmingham	28.9	32.5	30.7	-1.8	-5.5%
46	Louisville	28.2	30.0	29.3	-0.6	-2.1%
47	Providence	20.6	25.8	26.1	0.3	1.2%
48	Memphis	20.9	23.9	24.9	1.0	4.2%
49	Buffalo	19.0	21.3	21.2	-0.1	-0.2%
50	Hartford	17.8	20.2	20.5	0.3	1.6%

Local Construction Labor (thousands)

Dallas/Fort Worth



Houston



Year-Over-Year Growth

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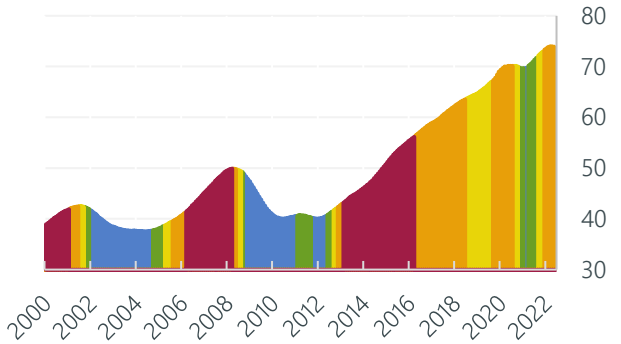
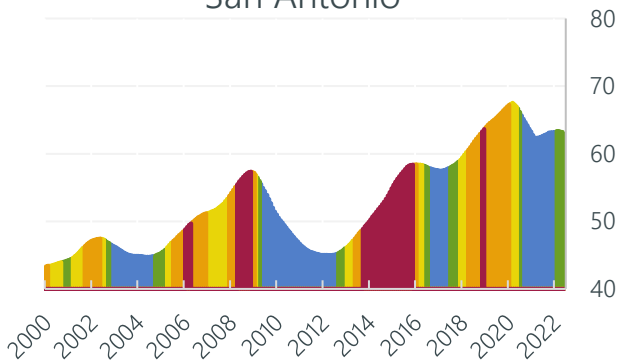
- Below Average Growth
- Contracting Market

Austin



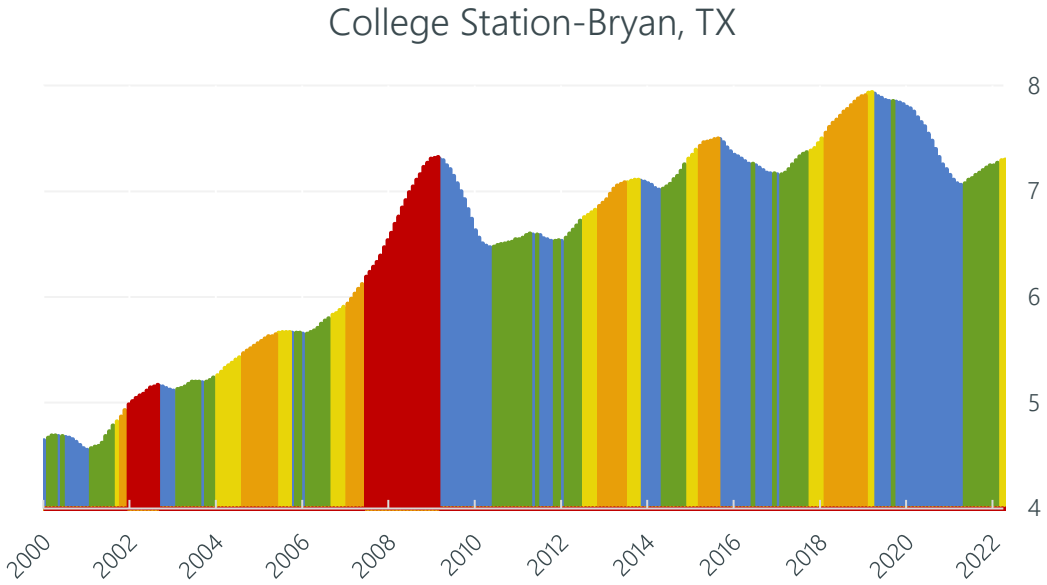
San Antonio



Pandemic Impact

Dallas
(-2.3%)
Houston
(-9.4%)
Austin
(+5.6%)
San Antonio
(-6.4%)
College Station-Bryan
(-8.1%)

National Construction Labor (thousands)



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Pandemic Impact

Dallas
(-2.3%)
Houston
(-9.4%)
Austin
(+5.6%)
San Antonio
(-6.4%)
College Station-Bryan
(-8.1%)

Escalation Forecast

- 2021 had high volatility – effectively 2 years of escalation has all occurred in 2021
- 2022 volatility remains high as we are building nationally at within 0.3% of all-time highs
- Supply chains continue to be stressed with construction demand soon to exceed all-time highs
- Carry 6% - 10% annual escalation to procurement in 2022, 2023, and beyond
- Carry 5% - 15% bidding contingency until volatility reduces to more normal levels
- Design add/deduct alternates in the 10% of construction cost range
- Continue design and get shovel ready
- Supply chain – preorder materials and warehouse close to site

VERMEULENS

Beyond Estimation Market Outlook®

Thank you

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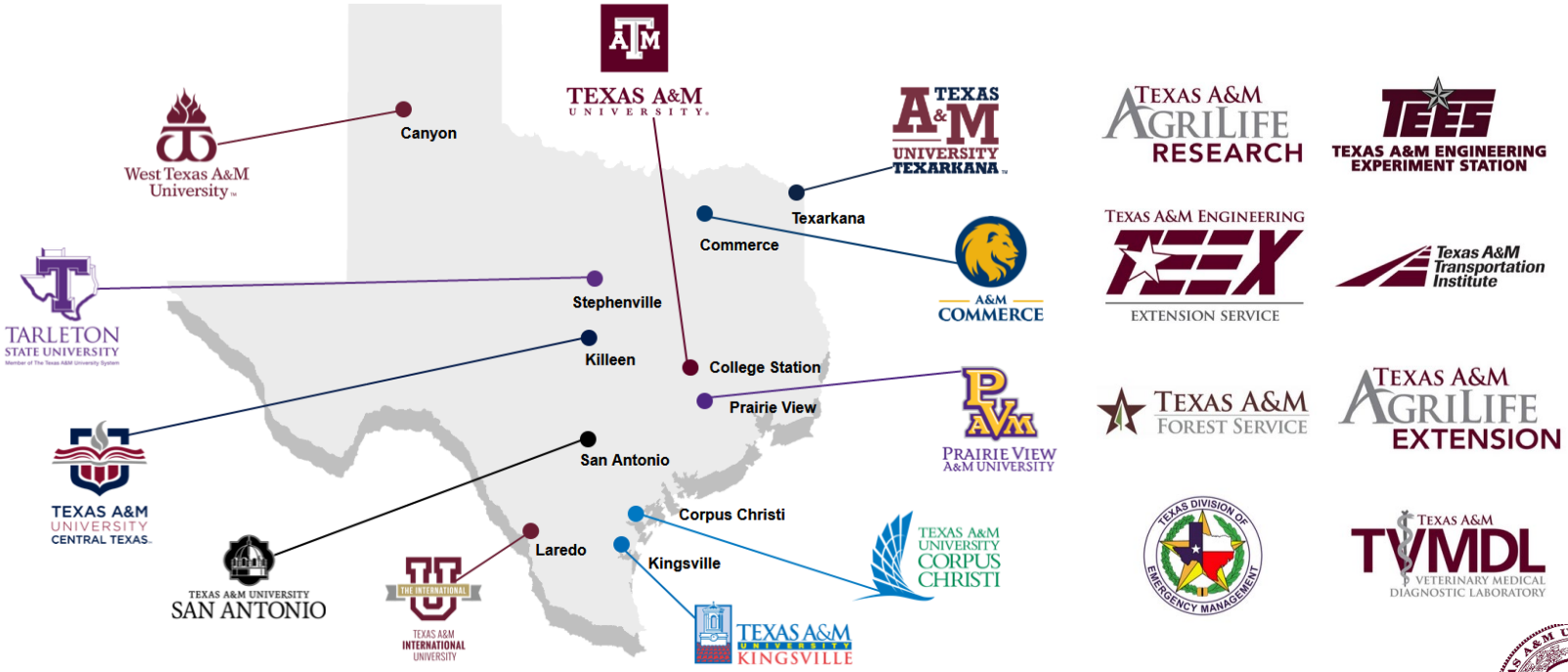
The Texas A&M University System

Office of Facilities Planning & Construction

Brett McCully, P.E.
Chief Facilities Officer

A&M System Universities and Agencies



Facilities Planning & Construction Responsibilities

- Capital Project (>$10M) implementation systemwide
- Permitting and code inspection of Public Private Partnership (P3) projects statewide
- Review/comment efforts to assist system members with Project Programming

Facilities Planning & Construction
Current Projects

Project Phase	Number of Projects	Value of Projects
Planning	29	$1,348,471,126
Design	11	$484,592,765
Construction	18	$655,798,718
Private	19	$1,169,538,300
Total	**77**	**$3,658,400,909**

Observations

"Never confuse price and cost"
Craig Whittemore

Observations

- General contractor prices increase when risk exposure increases.
- General contractor costs increase when construction duration increases.
- General contractor costs increase when subcontractor prices increase.

Observations

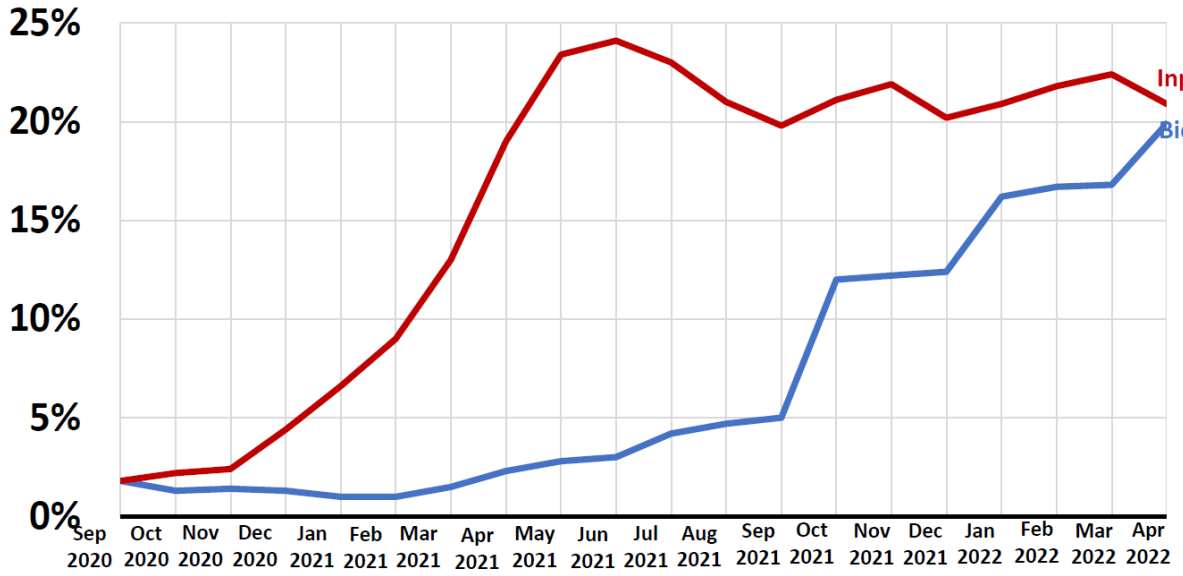
- Subcontractor costs increase when labor prices increase.
- Subcontractor costs increase when material prices increase.
- Subcontractor prices increases when the market bears it.

Observations

Costs vs. bid prices for new nonresidential construction

Year-over-year change in PPIs, Sep 2020-Apr 2022, not seasonally adjusted

AGC THE CONSTRUCTION ASSOCIATION

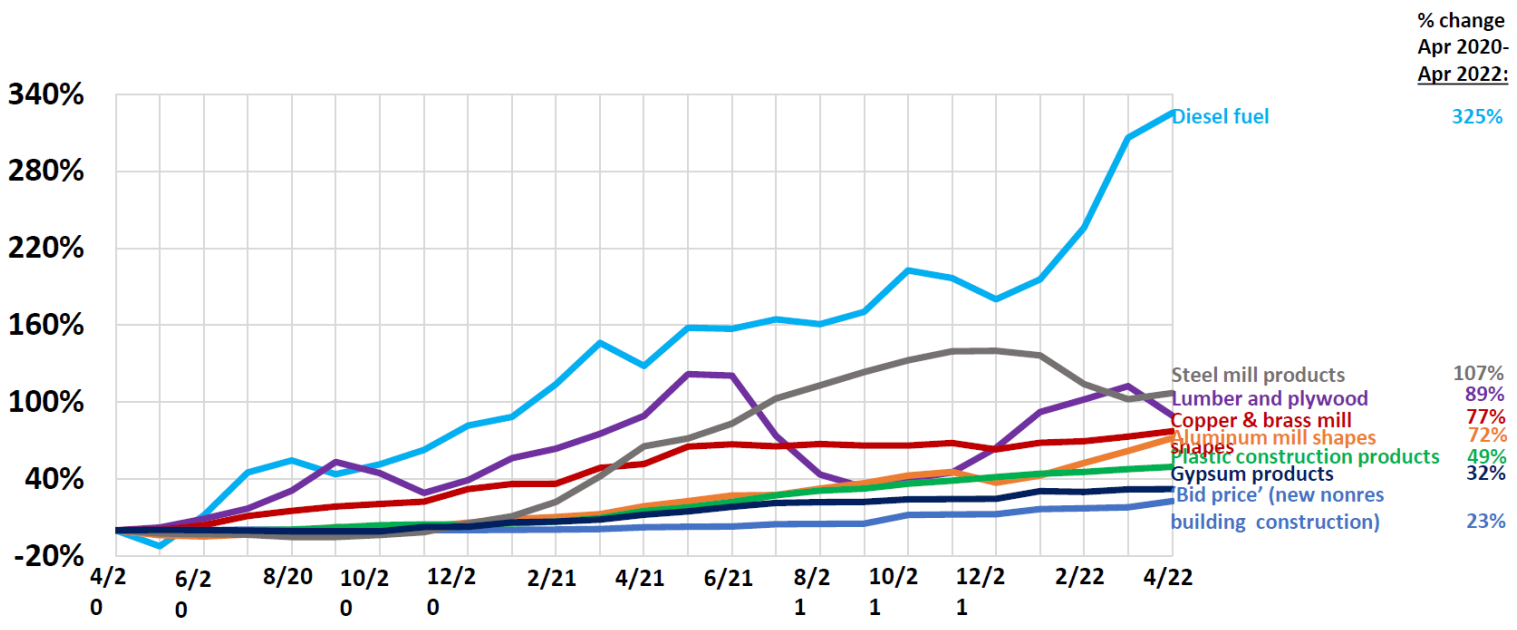


	12 months to: Sep 2020	Apr 2022
Inputs PPI:	1.8%	20.9%
Bid price PPI:	1.8%	19.9%

Observations

PPIs for construction bid prices and selected inputs

cumulative change in PPIs, April 2020-April 2022 (not seasonally adjusted)



General Strategies

- Utilize Construction Manager-at-Risk delivery method
- Reduce general and subcontractor risk magnitude
- Reduce general and subcontractor risk duration

General Strategies

- Maximize supply and materials choices
- Maximize subcontract bidders
- Shorten cash-flow lag to subcontractors
- Develop and manage appropriate contingencies for identified risks

Design Phase Strategies

- Keep design options open as long as possible.
  - Use 90/10 rule (or equivalent)
  - Avoid best value, sole source or proprietary equipment and systems. Use 3x specs instead (basis of design, approved alternative & substitutes allowed)
  - Keep evaluating construction options
    - Steel or concrete structural systems
    - TPO/PVC/SPF/BIT roofing systems
    - Insulation systems

Bidding Phase Strategies

- Market project to subcontractors
- Avoid subcontractor prequalification
- Release bid evaluation criteria with RFP
- Publicly bid subcontracts
- Use material provision alternatives

Construction Phase Strategies

- Reduce time period between GMP and NTP
- Buy out work ASAP
- Award multiple subcontractors within trade
- Early purchase materials/supplies
- Provide adequate project storage
- Acceleration payments for early subs

Contingency Strategies

- Clarify expectations on budget vs. cost delta (aka buyout savings/overrun)
- Avoid overlaps between Contractor Contingency vs Owner Contingency
- Align ‘design contingency’ with contract language
- Limit duration of escalation estimates and accessibility

General Contractor's Perspective

Tony Battle, President

ABOUT TONY

- Fightin' Texas Aggie Class of 2000
- BS in Construction Science
- 22 years Industry Experience; Joined Byrne in 2005
- English by birth, Texan by the grace of God
- Completed numerous award winning projects including:
- The Soto Office Building | San Antonio, Texas
- "Das Rec" Recreation Center | New Braunfels, Texas
- Seguin Public Library | Seguin, Texas
- Lila Cockrell Theater | San Antonio, Texas
- Volunteer work includes Catholic Charities, For Better & For Ever, SMWBE Mentorship, Business Empowerment, Boys & Girls Club

ABOUT BYRNE

- **Founded in 1923; 99 years experience as a Texas-based Construction Manager**
- **South Texas Region headquartered in San Antonio**
- **A legacy of quality in high profile projects**
- **$404 Million in Annual Contract Volume**
- **105 Employees**
- **Veteran-Owned**
- **Largest Hispanic-Owned contractor in Texas**
- **Project Mix:**
  - **85% Negotiated**
  - **15% Competitive Bid**

HIGHER EDUCATION EXPERIENCE

BYRNE CONSTRUCTION SERVICES • EXCELLENCE • QUALITY • SERVICE

TAMUSA ACADEMIC & ADMIN BUILDING II

Cost:	$40.5 million
Sq. Ft.:	145,510
Method:	Negotiated CMR with GMP including Preconstruction
Scope:	New academic classroom building including classrooms, conference space, teaching laboratories, faculty offices, library with stacks and suite for the College of Business Administration

CHALLENGES

- Material shortages due to COVID
- Labor shortages due to COVID and other factors
- Brick delay - 6 months
- Window material delay
- Roofing material delay

SUCCESSES

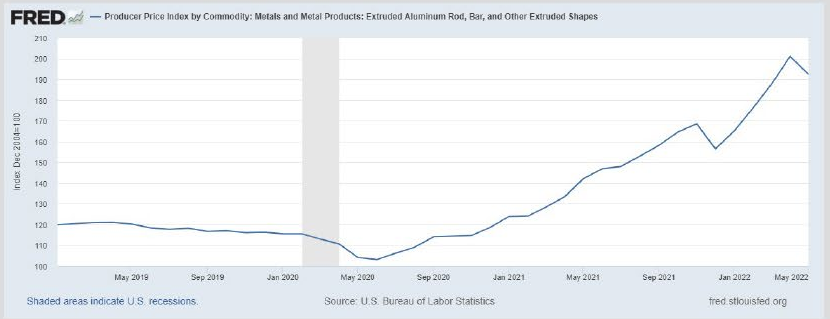
- Early bid packages
- Constructability reviews
- Established GMP contracts with MEP contractors
- Collaboration of team to mitigate further delays (RFI response, Submittal response)
- Switching roof insulation to EPS

MARKET VOLATILITY

Structural Steel Pricing

Concrete Pricing

Extruded Aluminum Pricing



MARKET VOLATILITY

Glass Product Pricing

Impending Glass Product Increase

Vitro Architectural Glass

Vitro Architectural Glass
400 Guys Run Road
Cheswick, PA 15024 USA
Telephone (412) 820-4966
Fax (412) 826-2299
mseeton@vitro.com

Mark Seeton
Vice President - Sales

June 16, 2022

To Our Valued Customers:

Vitro Architectural Glass remains committed to continued cost containment efforts and sustained investment in our North American operations and new product development in order to provide quality goods and services today and in the years to come, yet we are experiencing unprecedented, global inflationary pressures. Despite cost mitigation programs and recovery efforts, the increases we are enduring in our primary raw materials, logistics, electricity, and labor costs require the need to increase prices on the following flat glass products:

Float Glass Products

Clear float (all thicknesses)	40%
Starphire® Ultra-Clear™ Glass	20%
Acuity™ Low Iron Glass	20%
Tinted float glass	40%
Tempered Glass	40%

Coated Glass Products

Solarban® Coated Glass	15%
Platia® Mirror Glass	25%
Pavia® Acid-Etched Glass	25%
Clarvista® Glass	15%
Sungate® Coated Glass	15%
Solarcool® and Vistacool® Coated Glass	15%

The price increase for Tinted Glass and Clear Glass will be phased in with the following schedule: On **June 27, 2022**, a 25% price increase will be applied with the remaining percentage applied on **August 1, 2022**.

All other products will be increased on June 27, 2022.

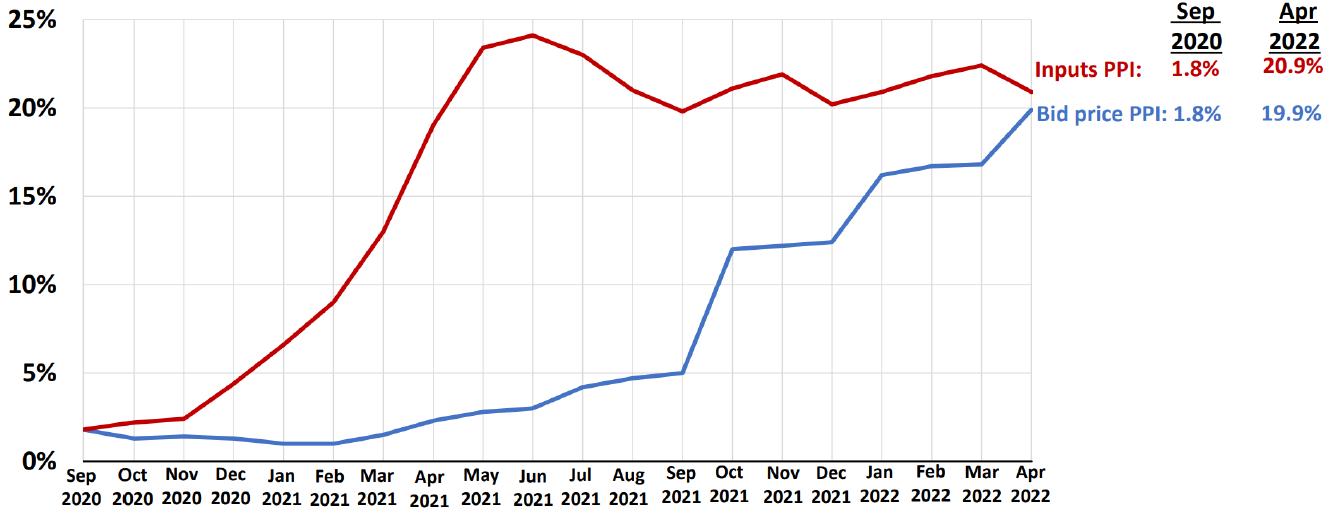
We continue to ask for your patience regarding deliveries as carrier scarcity and driver and labor shortages prevent us from servicing with our customary standards. We commit to redouble the efforts to service our current customer base and fulfill our backlog.

MARKET VOLATILITY: RATE OF INCREASE

Costs vs. bid prices for new nonresidential construction

Year-over-year change in PPIs, Sep 2020-Apr 2022, not seasonally adjusted

AGC THE CONSTRUCTION ASSOCIATION



	12 months to: Sep 2020	Apr 2022
Inputs PPI:	1.8%	20.9%
Bid price PPI:	1.8%	19.9%

1 | Source: Bureau of Labor Statistics, producer price indexes, www.bls.gov/ppi

CRYSTAL BALL

Crystal Ball on Material Pricing

- Concrete may become an issue due to rationing
- Steel will continue to be impacted, but at a lower rate of increase
- Roofing materials may become more available (Amazon has pulled back construction)

Overall Trends

- Levelling-out will not be a parallel track (wood has already decreased, but glass will still increase)
- Pricing should level-out but we do not see it decreasing
- Residential demand will slow; Commercial slows after Residential (18-24 months)

Mitigating Risk

- Early procurement / Get in the queue
- GMP contracts with subcontractors
- Delivery methods CMR, progressive Design/Build. Any method that locks in pricing early in design.
- Federal Government is entertaining progressive D/B and Cost Plus.

Questions?