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Market Outlook Construction Forum Summary

as of November 8, 2022

Presenters

- Blair Tennant, Principal, Vermeulens
- Richard Vermeulen, Senior Principal, Lead Economist, Vermeulens

Fiscal Watch, Vermeulens

- federal transfers lowered GDP growth by 3.1 percentage points
- a rise of 1.2 percentage points in federal and state tax collections
- a decline of 0.6 percentage points in Federal Impact Measures by federal, state, and local purchases
- fiscal policy reduced U.S. GDP growth by 4.9 percentage points at an annual rate in the second quarter of 2022
- GDP fell at an annual rate of 0.6% in the second quarter, according to the government's latest estimate
- the FIM turned negative in the second quarter of 2021 as fiscal support waned, and is expected to remain negative through the second quarter of 2024
- the Congressional Budget Office's most recent projections show the cumulative deficit from 2021 through 2030 totals nearly $13 trillion
- over the long term, interest rates are projected to rise further, and the amount of debt issued is projected to grow, causing net outlays for interest to increase to about 8 percent of GDP by 2050
- the Infrastructure Act and Inflation Reduction Act will add about $120B (0.5% of GDP) annually to various discretionary non-defense budgets
- the Infrastructure Act and Inflation Reduction Act could contribute to a 2.3% total increase to annual construction put in place over the next 8 to 10 years in predominantly non-residential and infrastructure

Market Update, Vermeulens

- long term average of PCE inflation is 1.7% whereas long term average for construction inflation is 3.6%
- unemployment rates are at their lowest and there has been an addition of 500k new jobs per month in 2021 to 2022
- S&P index indicates a 350% increase in commodities but currently experiencing a 22% decline
- residential construction has increased by 54% while nonresidential construction has increased by 9% since pre-pandemic
- increase of interest rates will slow down residential construction market
- nonresidential spending has experienced an increase in the last 2 years
- architectural billings will continue to increase in the next 12-18 months
- construction cost increase has been approximately 15-25% depending on the type and location of project
- 5% inflation for this year and the FED is targeting an additional 2% by the end of this year, historically construction inflation tends to be double
- historically after experiencing peak prices in construction costs, after 4-5 quarters the curve tends to flatten
- Vermeulens predicts that the second or third quarter of 2023 is when the construction costs will begin to plateau
- recommended to apply a 4-6% escalation for next year and developing add alternates to future projects

Round Table Q&A Discussion on the State of the Market

- bidding contingency is additional to the escalation applied
- to attract additional builders, it is important to evaluate the qualifying criteria and understand risks of all parties
- lack of supply in the market has caused an increase in prices
- stagflation not to be an issue as supply chain issues begin to resolve
- design fees are subjective and dependent on construction with varying fees

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Design and Construction Market Outlook Forum®

Richard Vermeulen, Sr Principal

James Vermeulen, Managing Principal

Blair Tennant, Principal

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Logistics

- interim questions and comments via chat
- slide deck, recording, summary notes; available on website
- 2023 forums will follow Quarter end. 2022 Q4 will be Feb 3, 2023

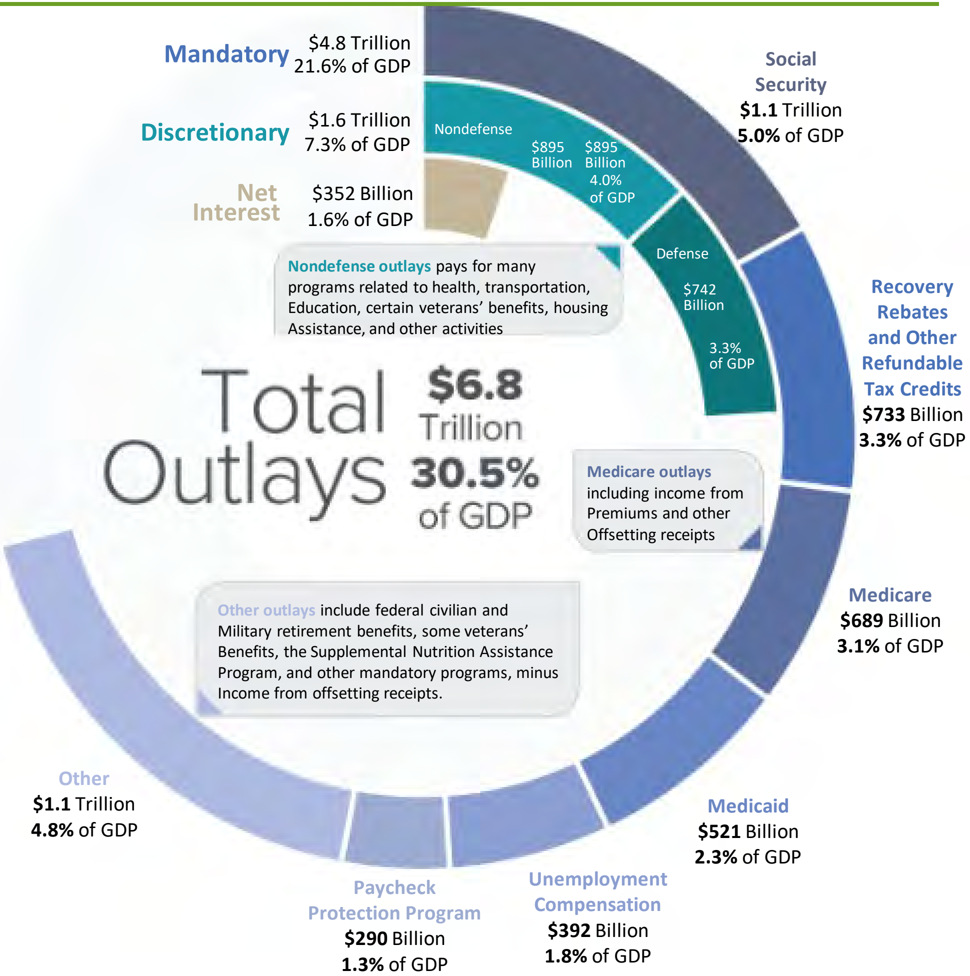
Agenda

- Fiscal Watch – Infrastructure and Inflation Act
- Vermeulens Market Update
- Round Table Discussion

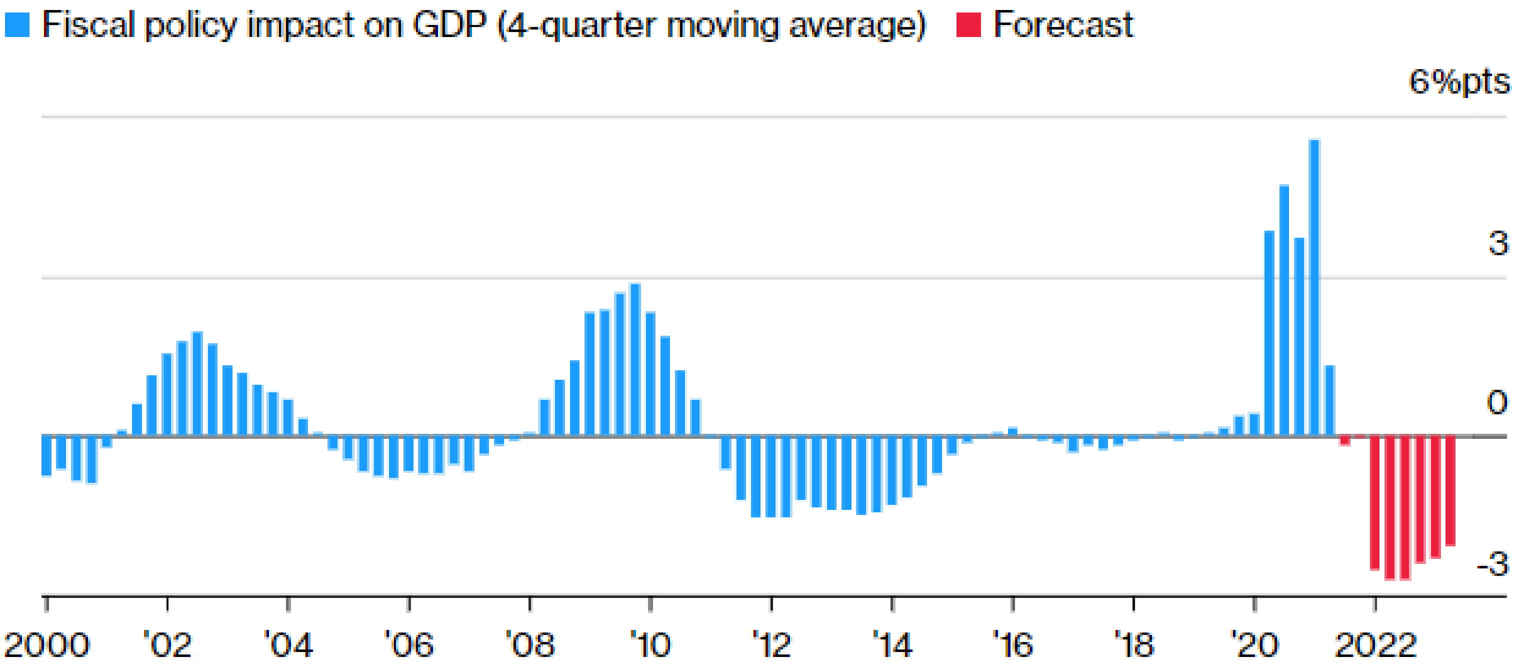
Fiscal Watch

Understanding Fiscal Measures and the Impact of the Inflation and Infrastructure Acts on Construction Volume

THE FEDERAL BUDGET IN FISCAL YEAR **2021**

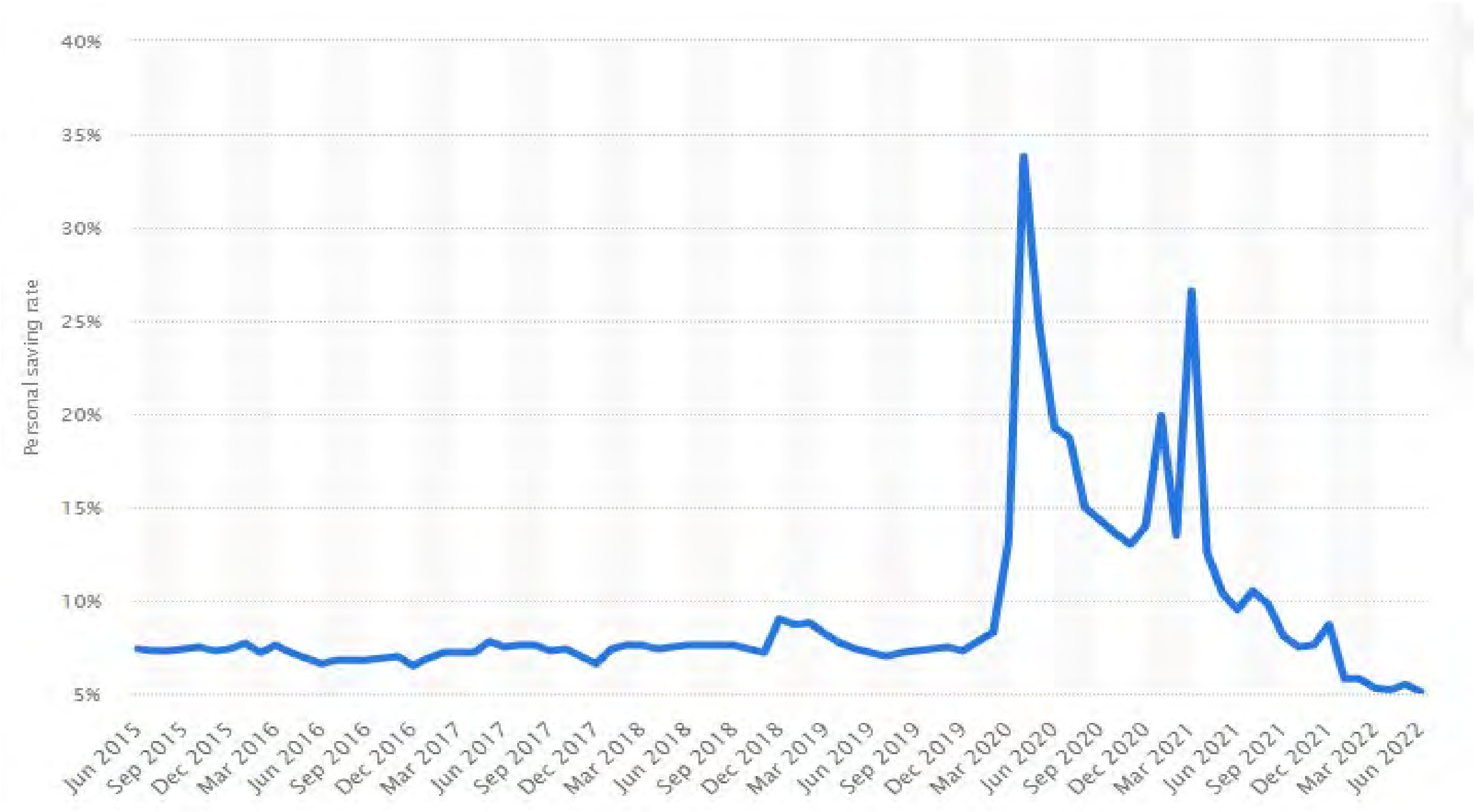


Short Fiscal Boost – Long Fiscal Drag



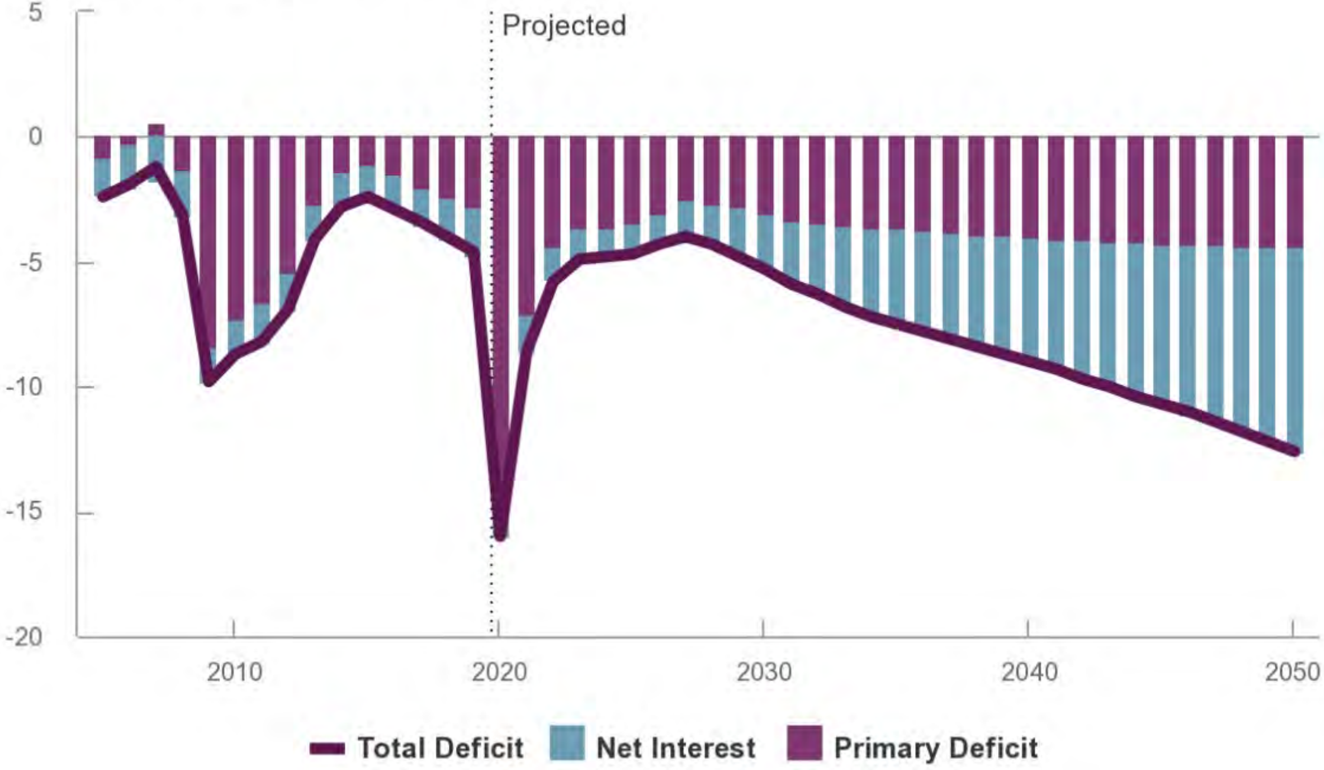
Source: Hutchins Center on Fiscal and Monetary Policy, Brookings Institution
Note: Figures include budgets of federal, state and local governments.

Savings Have Nowhere to Go

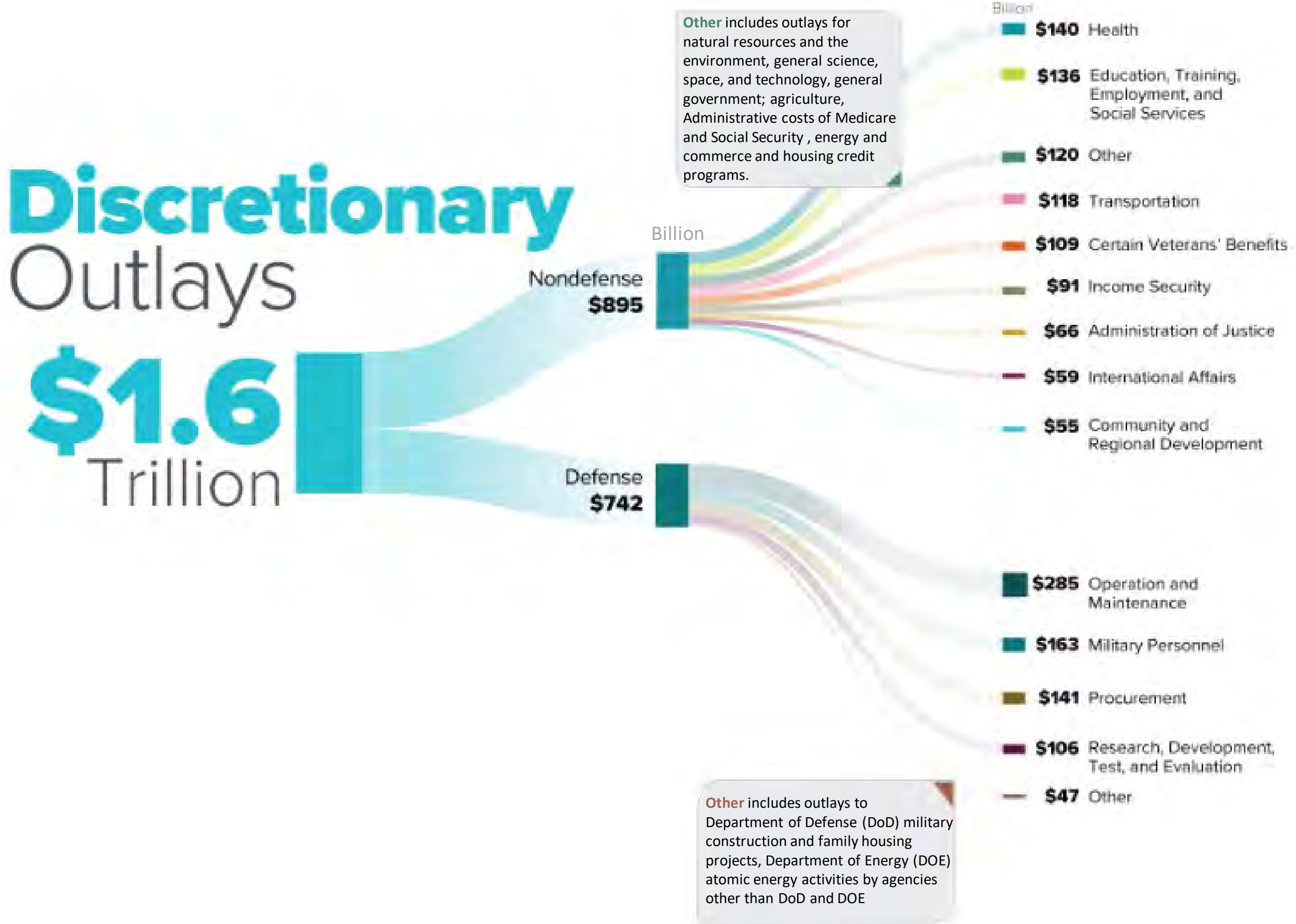


Total Deficits, Primary Deficits, and Net Interest

Percentage of Gross Domestic Product



Federal Discretionary Flows

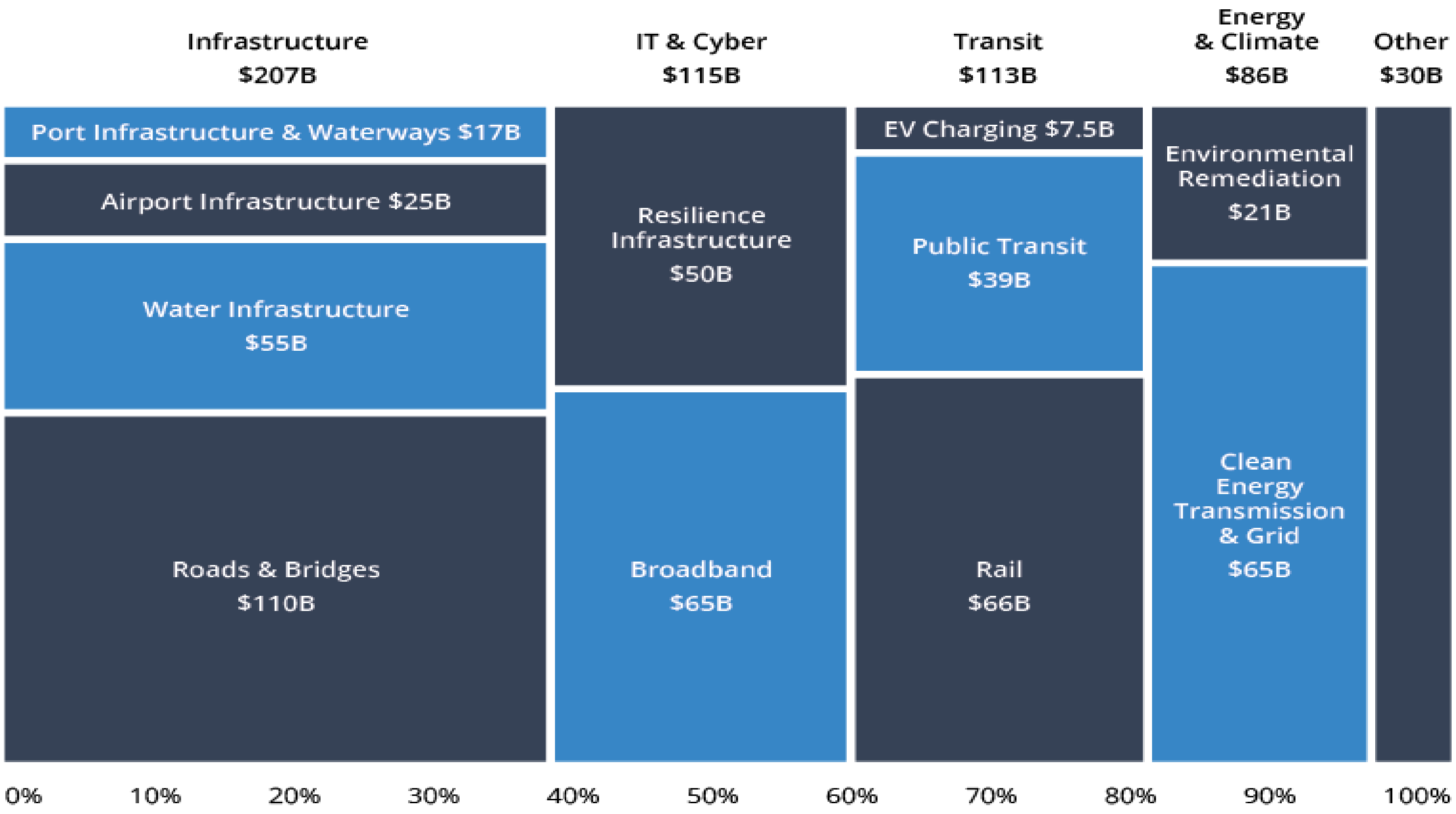


What's in the Inflation Reduction Act?

Policy	Cost (-) / Savings (2022-2031)
Energy and Climate	
-$386 billion	
Clean Electricity Tax Credits	-$161 billion
Air Pollution, Hazardous Materials, Transportation & Infrastructure	-$40 billion
Individual Clean Energy Incentives	-$37 billion
Clean Manufacturing Tax Credits	-$37 billion
Clean Fuel and Vehicle Tax Credits	-$36 billion
Conservation, Rural Development, Forestry	-$35 billion
Building Efficiency, Electrification, Transmission, Industrial, DOE Grants & Loans	-$27 billion
Other Energy and Climate Spending	-$14 billion
Health Care	
-$98 billion	
Extension of Expanded ACA Subsidies (three years)	-$64 billion
Part D Re-Design, LIS Subsidies, Vaccine Coverage	-$34 billion
Total, Spending and Tax Breaks	
-$485 billion	

Policy	Cost (-) / Savings (2022-2031)
Heath Savings	
$322 billion	
Repeal Trump-Era Drug Rebate Rule	$122 billion
Drug Price Inflation Cap	$101 billion
Negotiation Certain Drug Prices	$99 billion
Revenue	
$468 billion (estimated)	
15 Percent Corporate Minimum Tax	$313 billion
IRS Tax Enforcement Funding	$124 billion
Closure of Carried Interest Loophole	$13 billion
Methane Fee, Superfund Fee, Other Revenue	$18 billion
Total, Savings and Revenue	
-$790 billion	

New Spending in Infrastructure and Jobs Act $550B



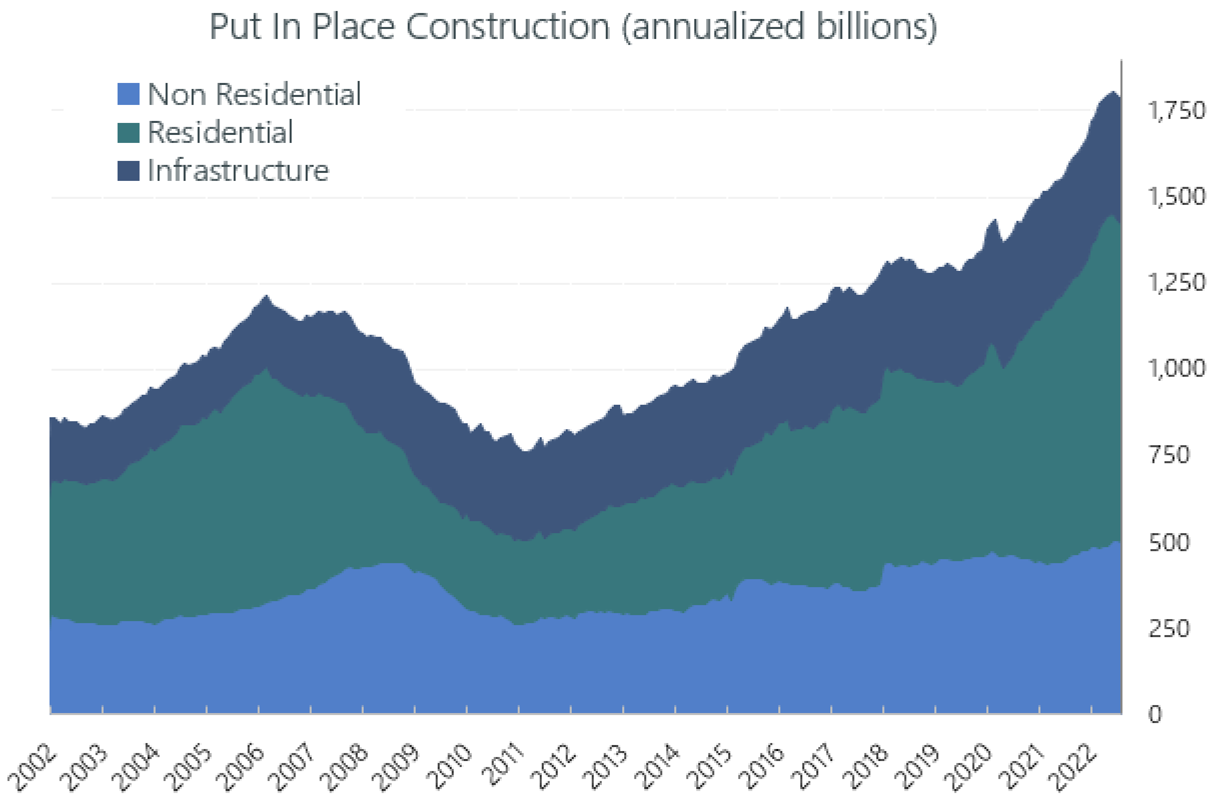
Source: White House Facts Sheet

Convert Both Acts into Annual Construction Volume

Inflation Act
500B/10 years = 50B/year
x 30% into construction x 75% de-escalation over 10 years x 70% into hard construction =
10B / year add to construction current $ volume

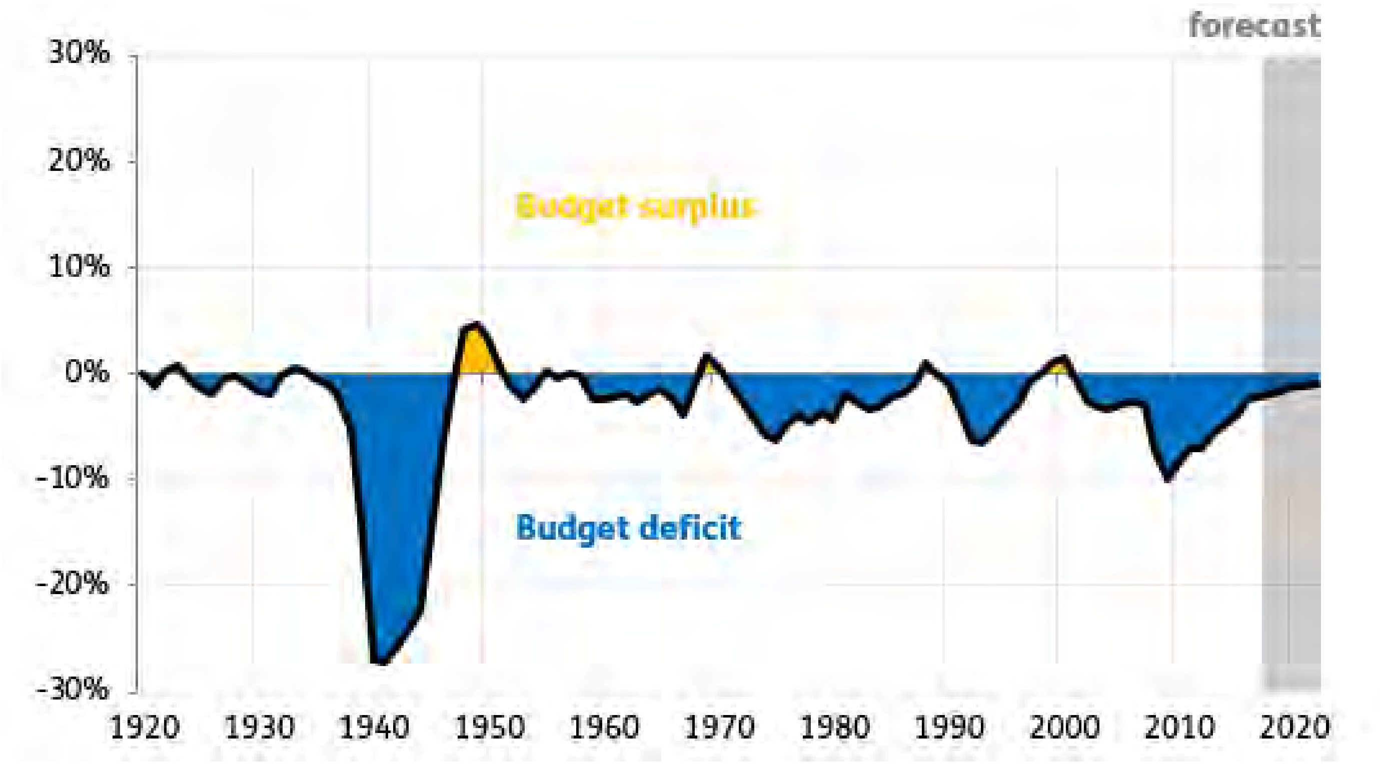
Infrastructure Act
550B / 8 years = 70B/year
x 80% into construction x 80% de-escalation over 8 years x 70% hard construction =
30B / year add to construction current $ volume

Total Relative Impact



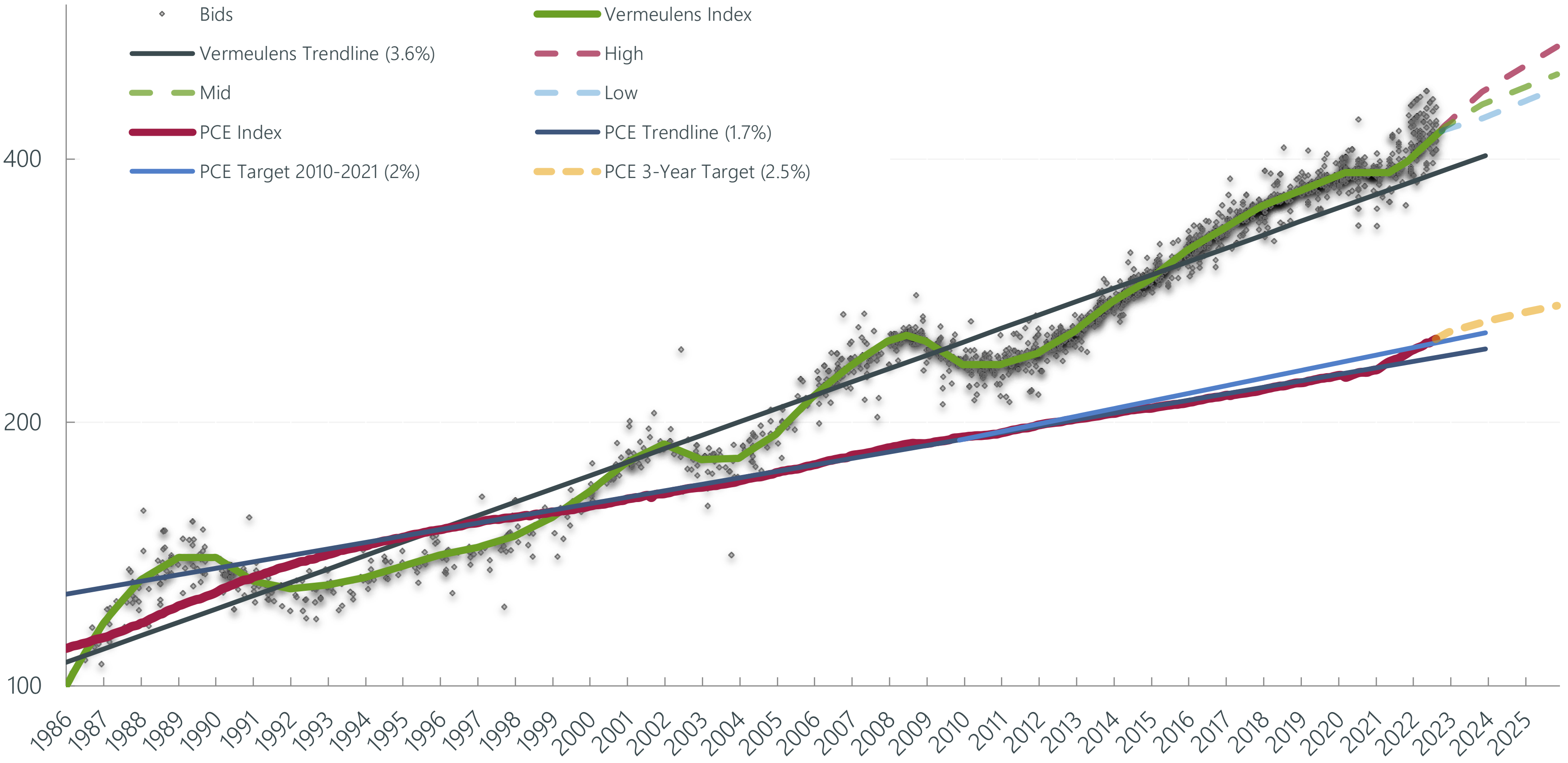
40B / 1,750B = 2.3% total increase to annual construction

Fiscal Doom – Always in the Future



Market Update

Forecast


Bids
Vermeulens Index
Vermeulens Trendline (3.6%)
High
Mid
Low
PCE Index
PCE Trendline (1.7%)
PCE Target 2010-2021 (2%)
PCE 3-Year Target (2.5%)
400
200
100
1986
1987
1988
1989
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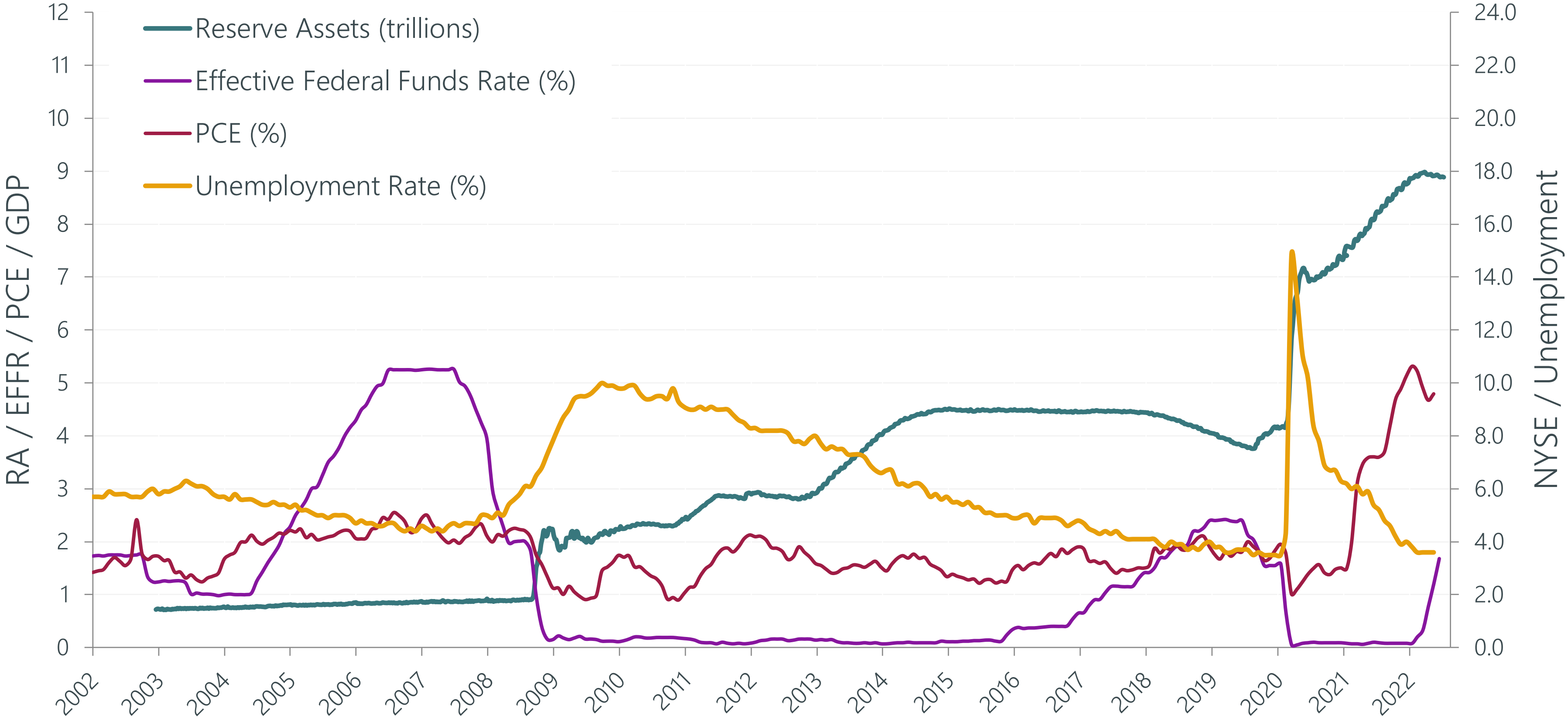
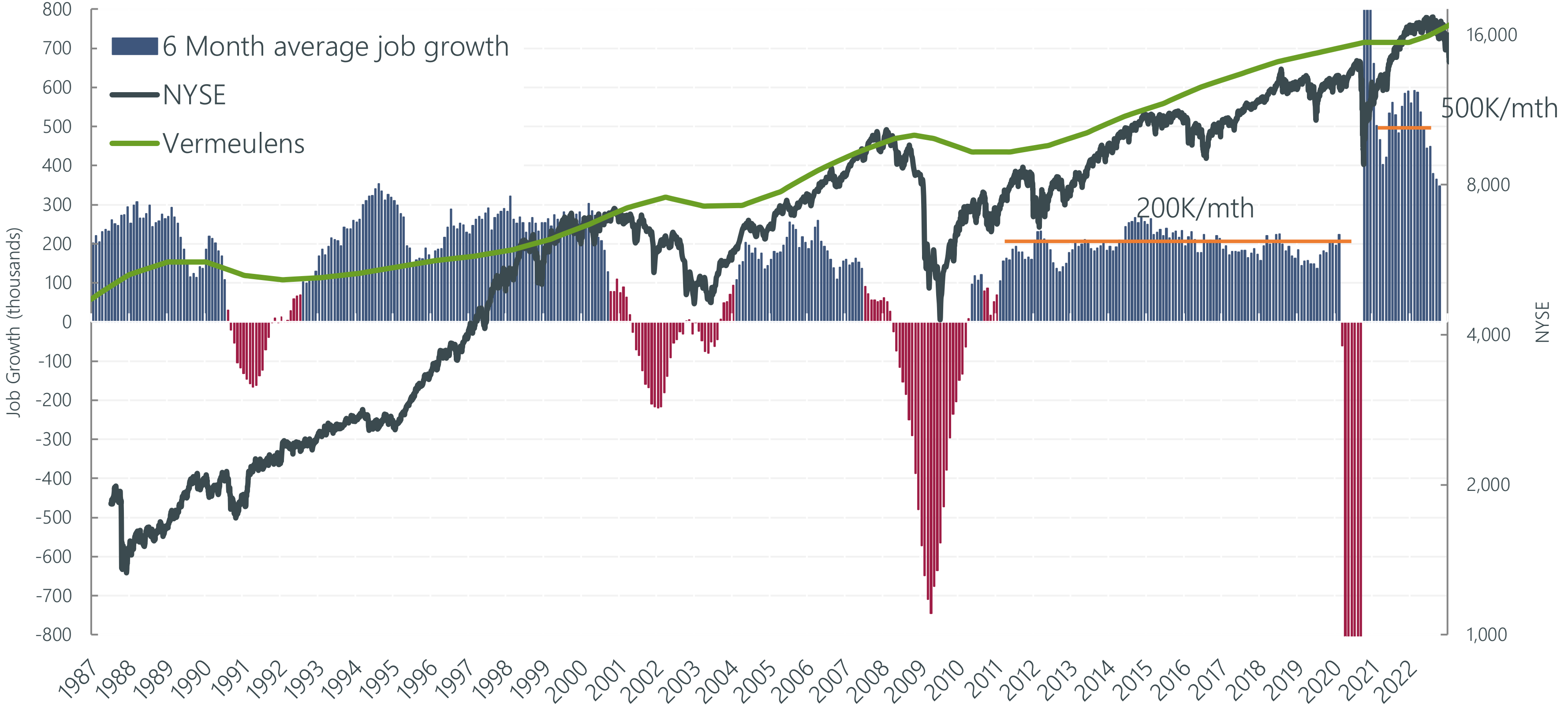
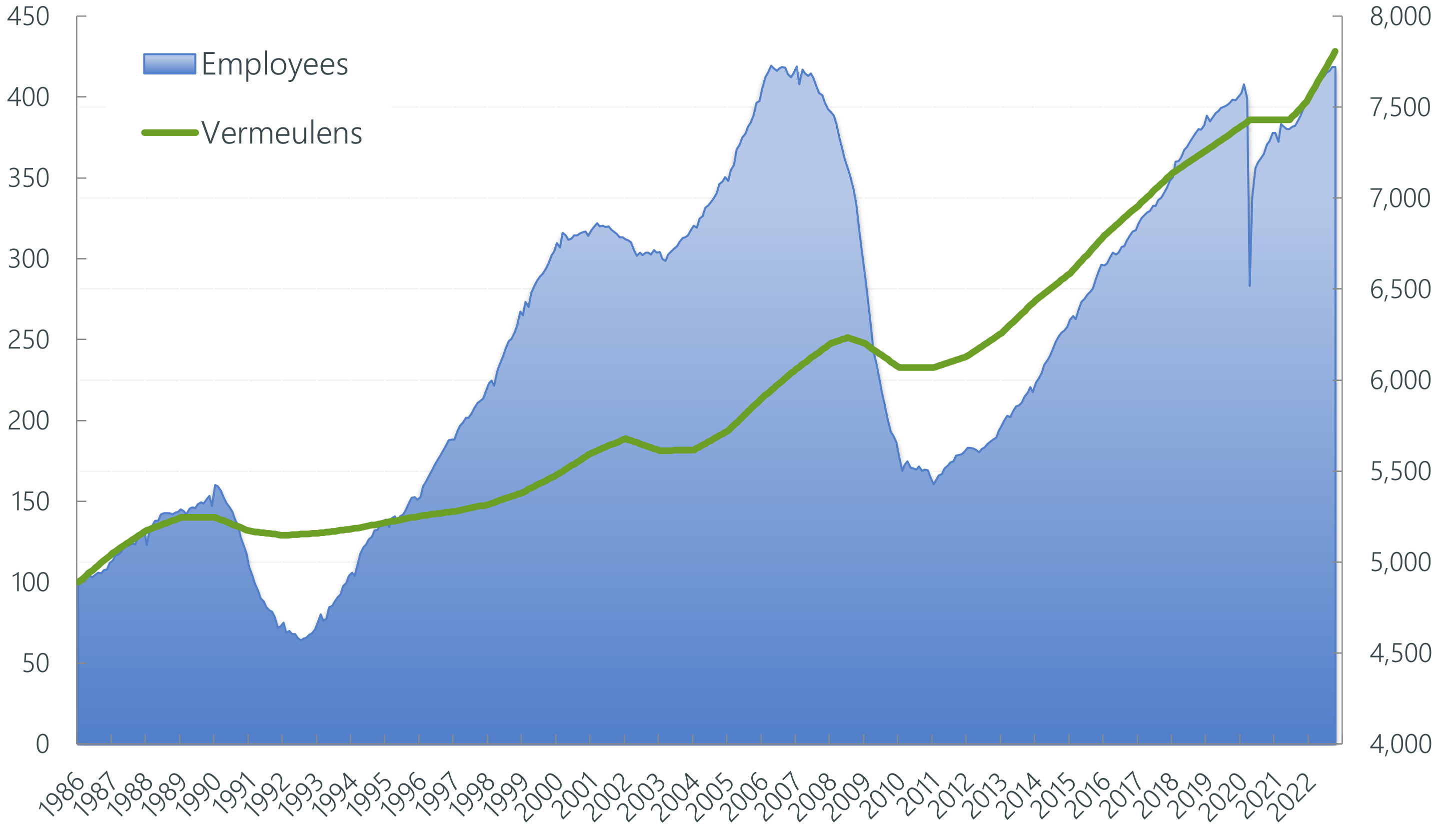
Federal Asset Monthly Purchase



US Job Growth



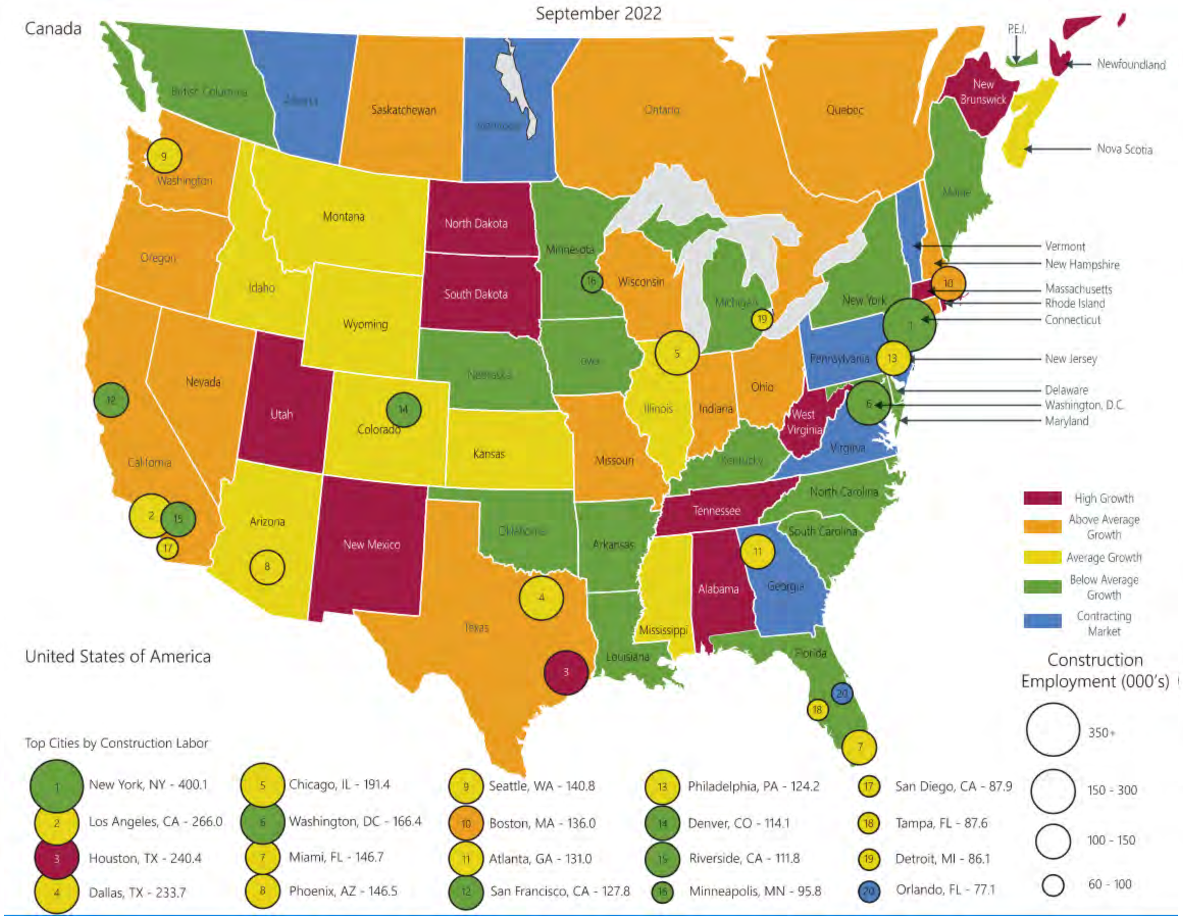
US Construction Employment (thousands)



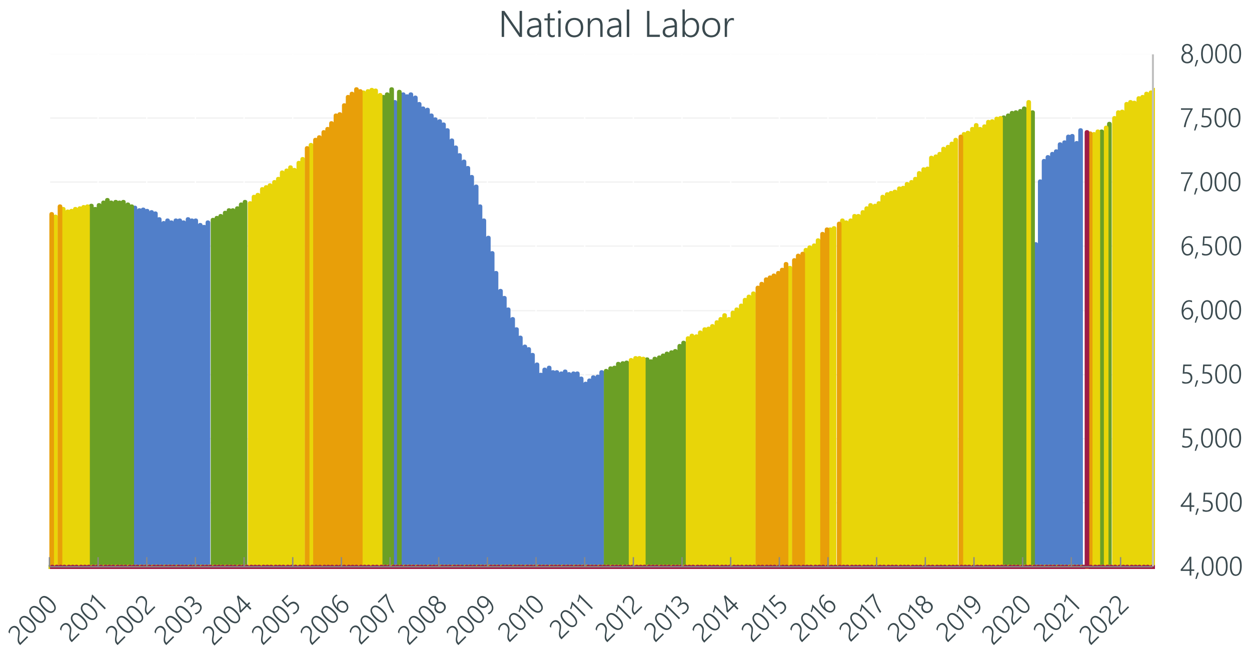
2010 – 2020
+2.1M (28%)

2020 – Current
+97K (+1.3%)

Year-Over-Year Construction Labor Growth



National Construction Labor (thousands)



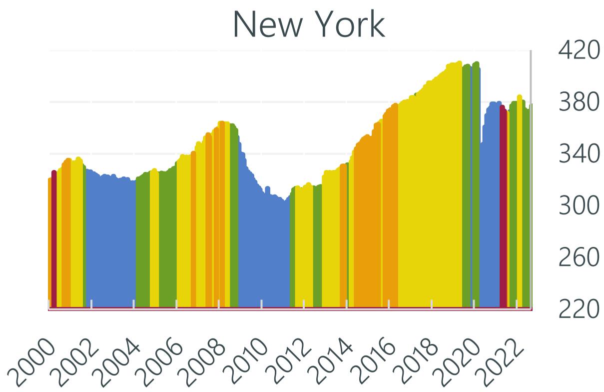
Year-Over-Year Growth

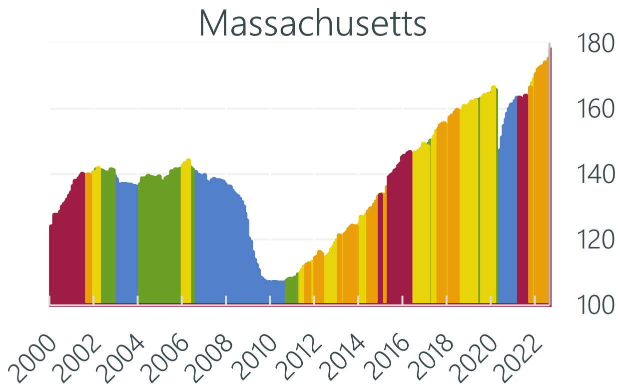
- High Growth
- Above Average Growth
- Average Growth
- Below Average Growth
- Contracting Market

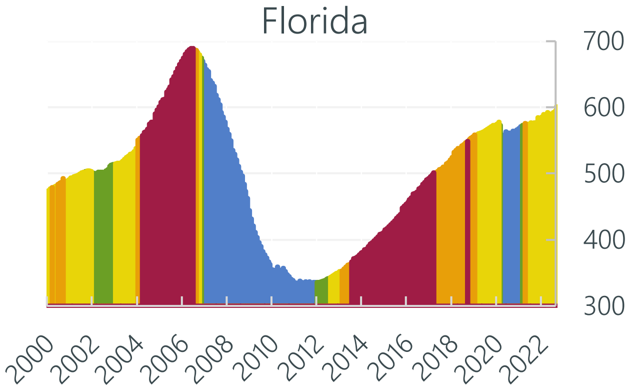
Pandemic Impact

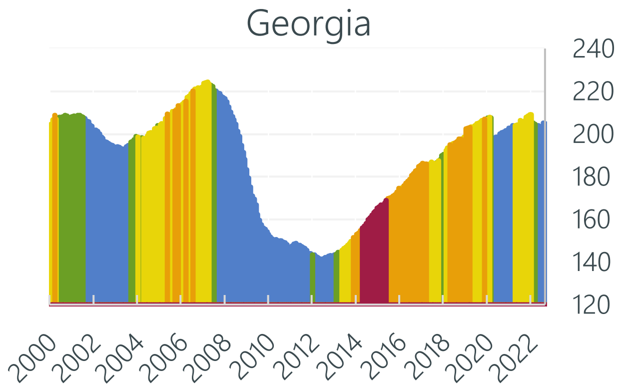
National
(+1.2%)

State Construction Labor (thousands)









Year-Over-Year Growth

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

Pandemic Impact

New York (-8.0%)

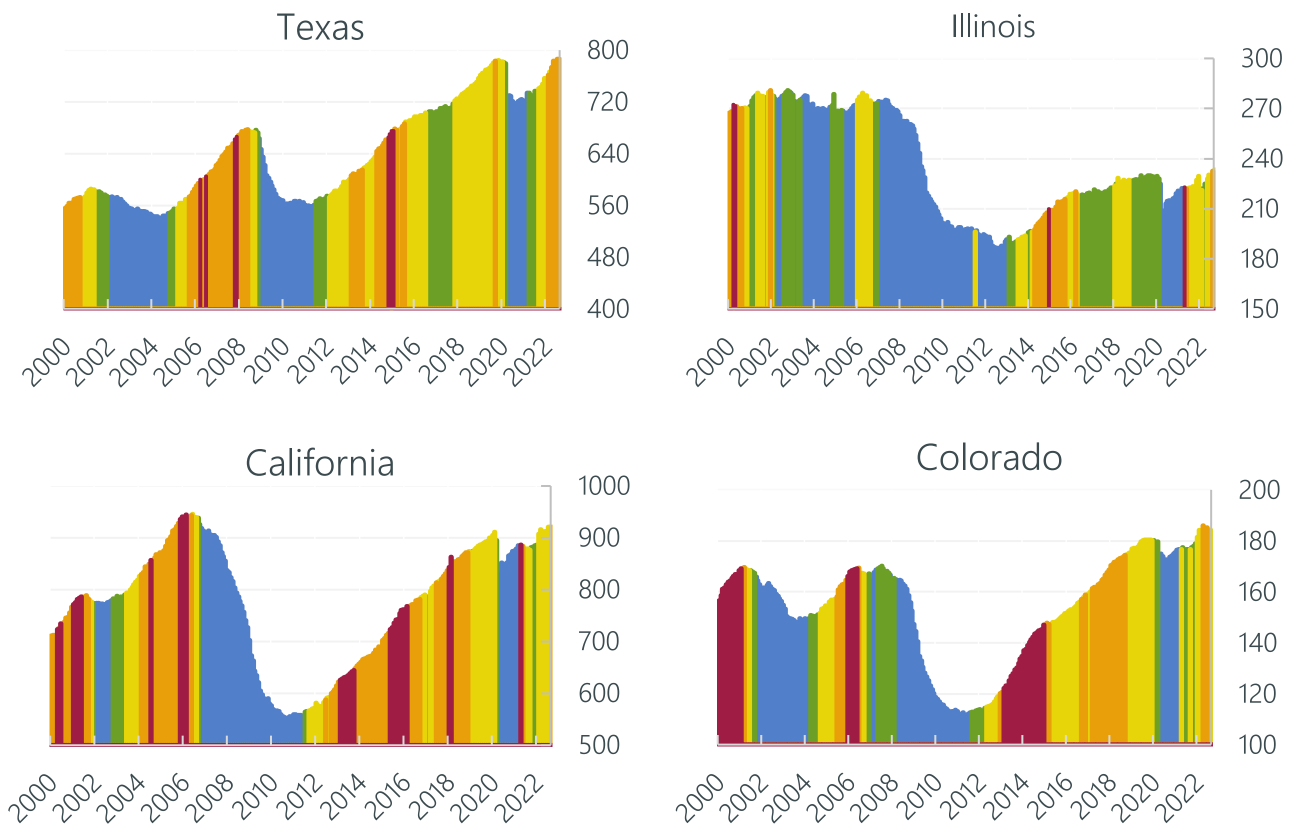
Massachusetts (+7.0%)

Georgia (-1.5%)

Florida (+4.1%)

National (+1.2%)

State Construction Labor (thousands)



Year-Over-Year Growth

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

Pandemic Impact

Texas
(-0.1%)
Illinois
(+1.2%)
California
(+1.1%)
Colorado
(+1.9%)
National
(+1.2%)

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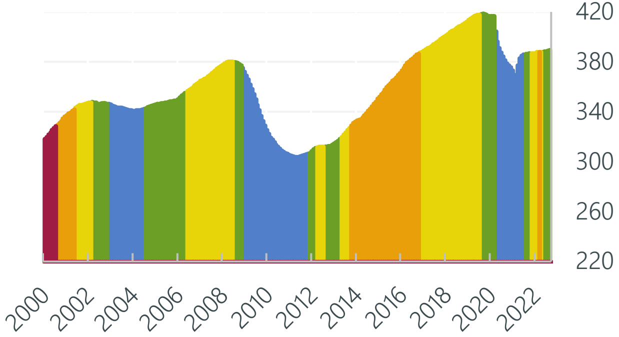
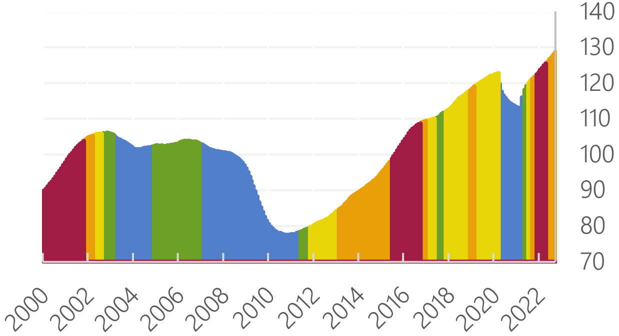
City Construction Labor (thousands)

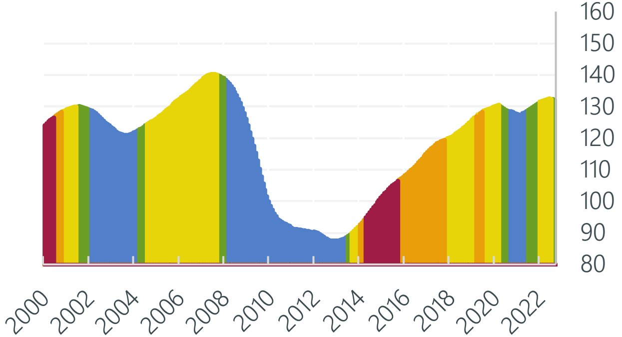
New York City



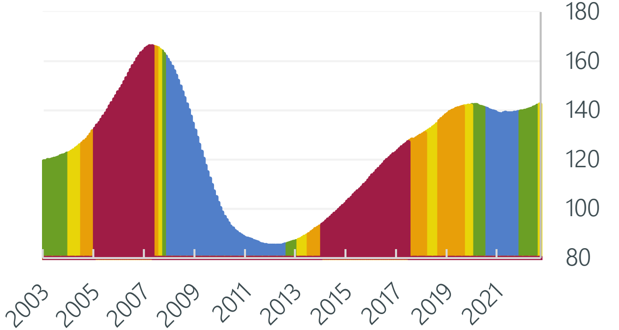
Boston



Atlanta



Miami



Year-Over-Year Growth

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

Pandemic Impact

New York City (-6.9%)
Boston (+6.5%)
Atlanta (-0.3%)
Miami (+2.1%)
National (+1.2%)

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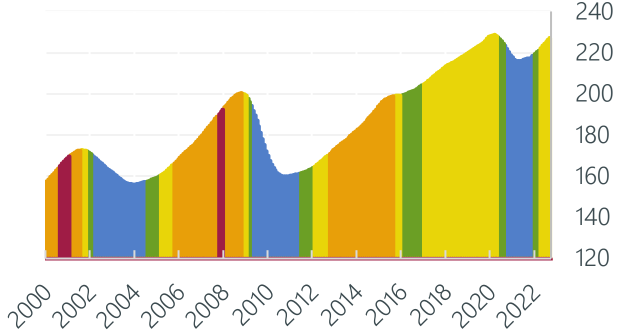
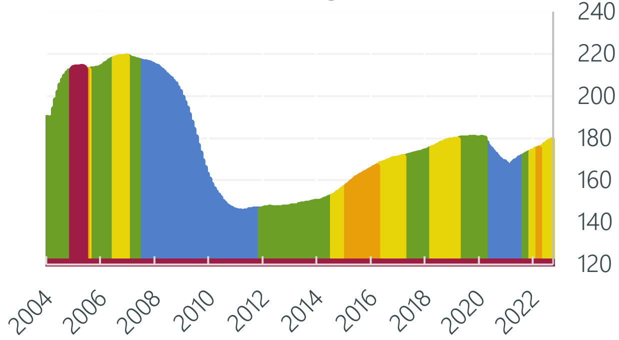
City Construction Labor (thousands)

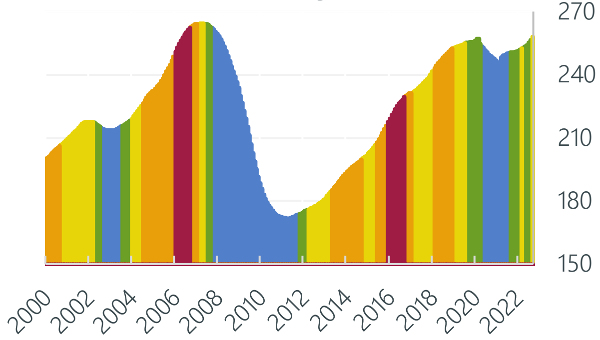
Dallas/Fort Worth



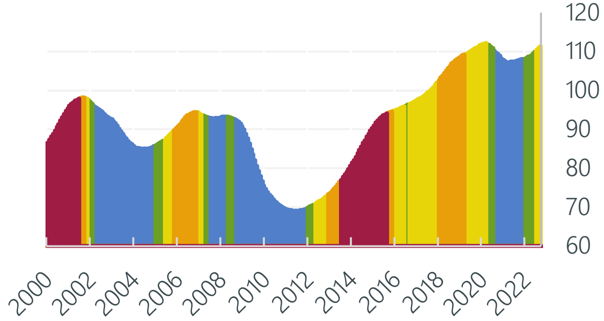
Chicago



Los Angeles



Denver

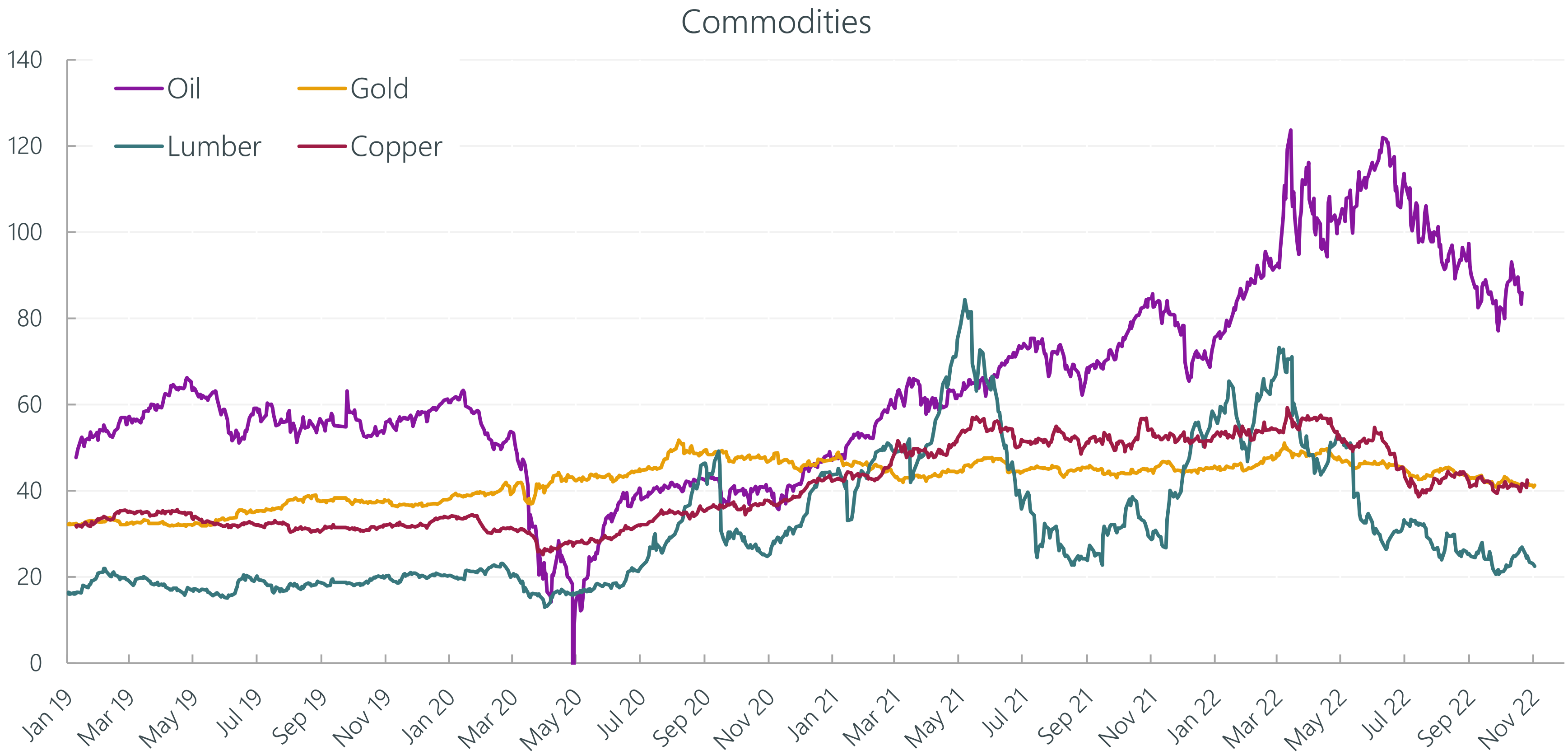


Year-Over-Year Growth

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

Pandemic Impact

Dallas (-0.4%)
Chicago (+0.2%)
Los Angeles (+2.0%)
Denver (-0.6%)
National (+1.2%)


Commodities
140
120
100
80
60
40
20
0
Oil
Gold
Lumber
Copper
Jan 19
Mar 19
May 19
Jul 19
Sep 19
Nov 19
Jan 20
Mar 20
May 20
Jul 20
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Nov 21
Jan 22
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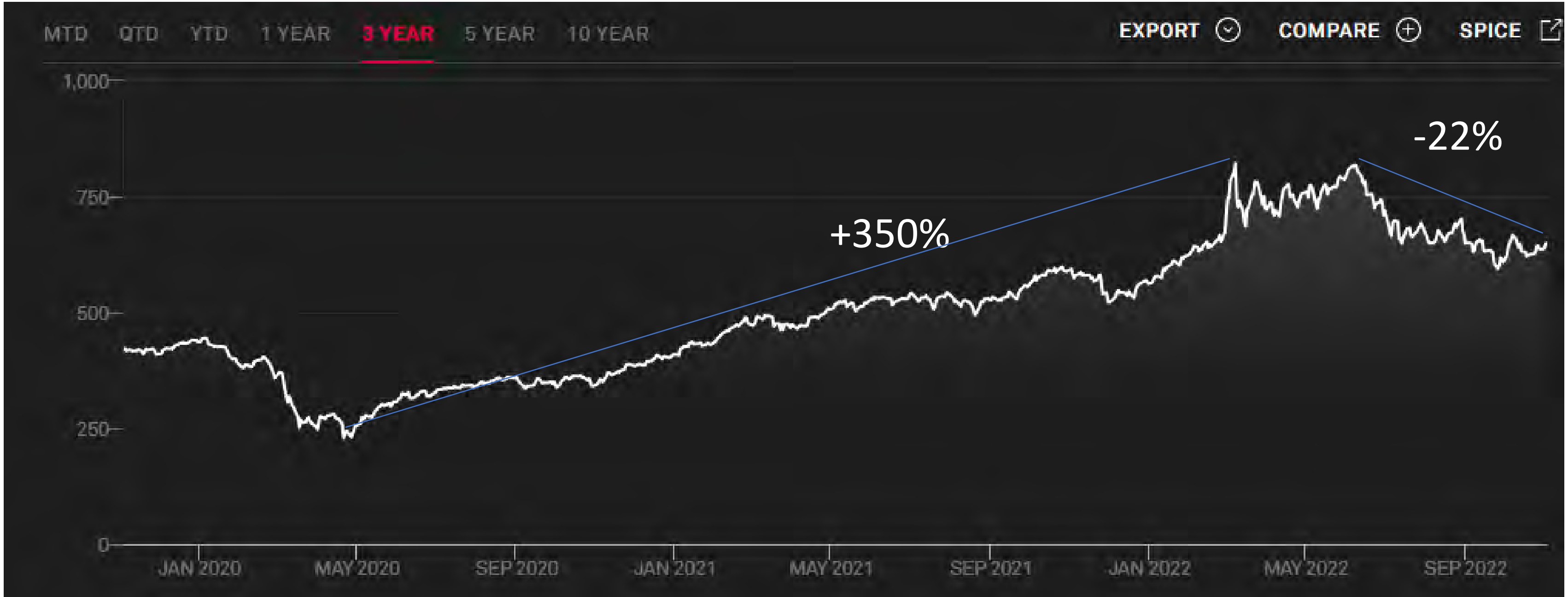
Jul 22
Sep 22
Nov 22

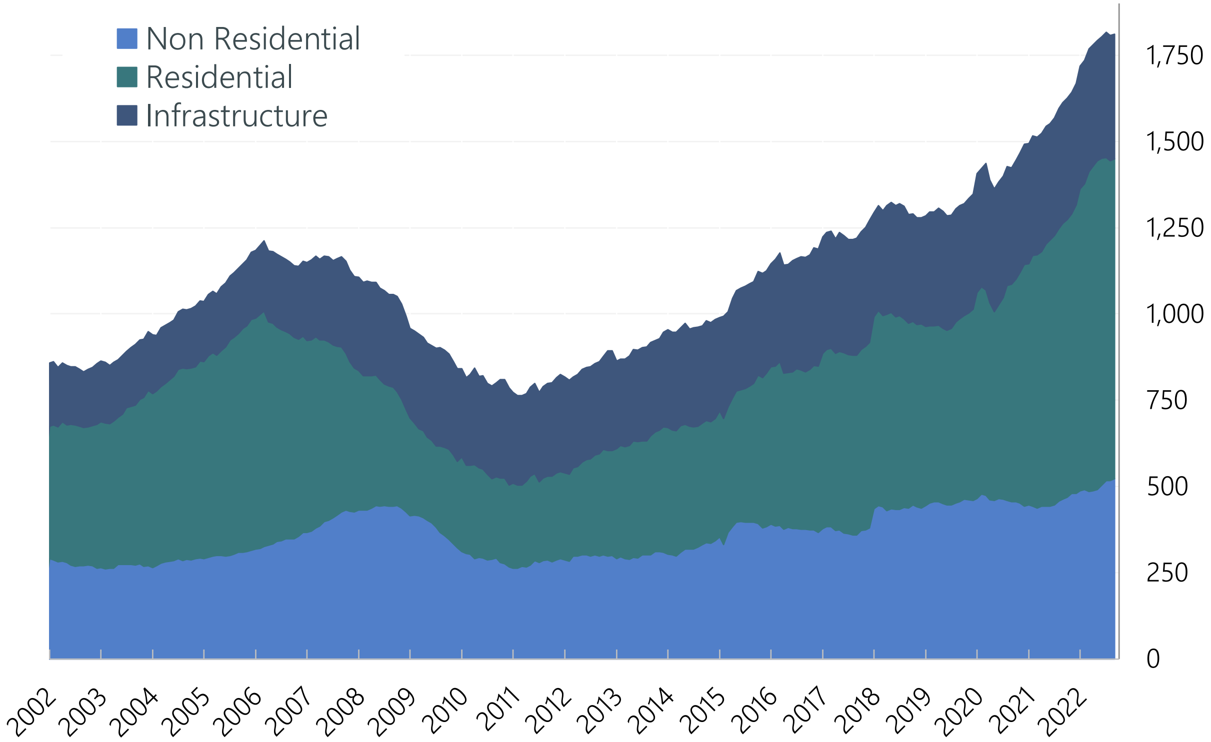
Commodity Index



S&P Dow Jones Indices assumed calculation of the S&P GSCI as of May 7, 2007. Prior to that date, the index was calculated by Goldman Sachs or its affiliates from 1991 forward. Spot returns only reflect prices levels of futures contracts included in the index. Spot returns are used as a calculation component of the excess returns that add rolling returns and total returns that also include collateral yield.

US Construction Volume

Put In Place Construction (annualized billions)



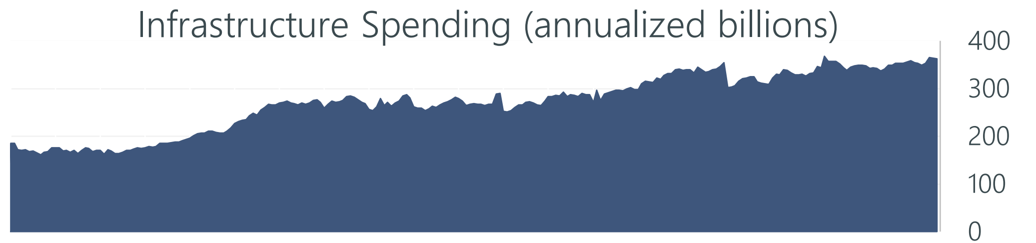
2011 to 2020

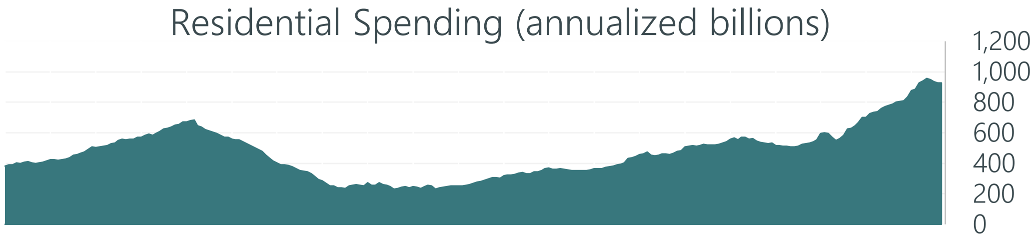
Total	+71%
Infra	+43%
Res	+119%
Non Res	+54%

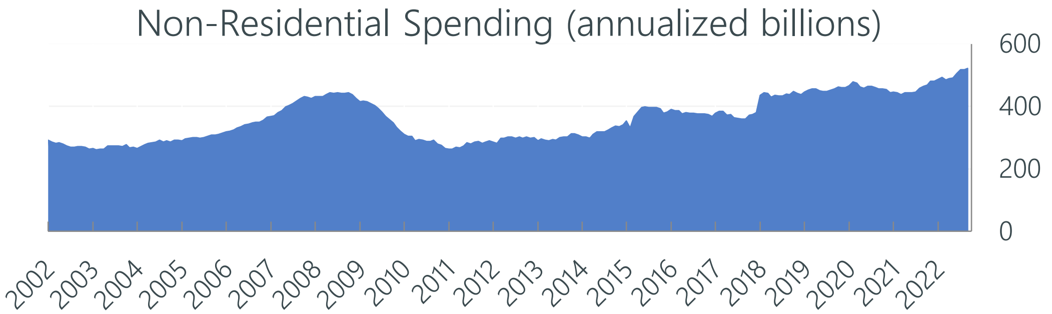
2020 to Current

Total	+26%
Infra	-1%
Res	+54%
Non Res	+9%

US Construction Volume







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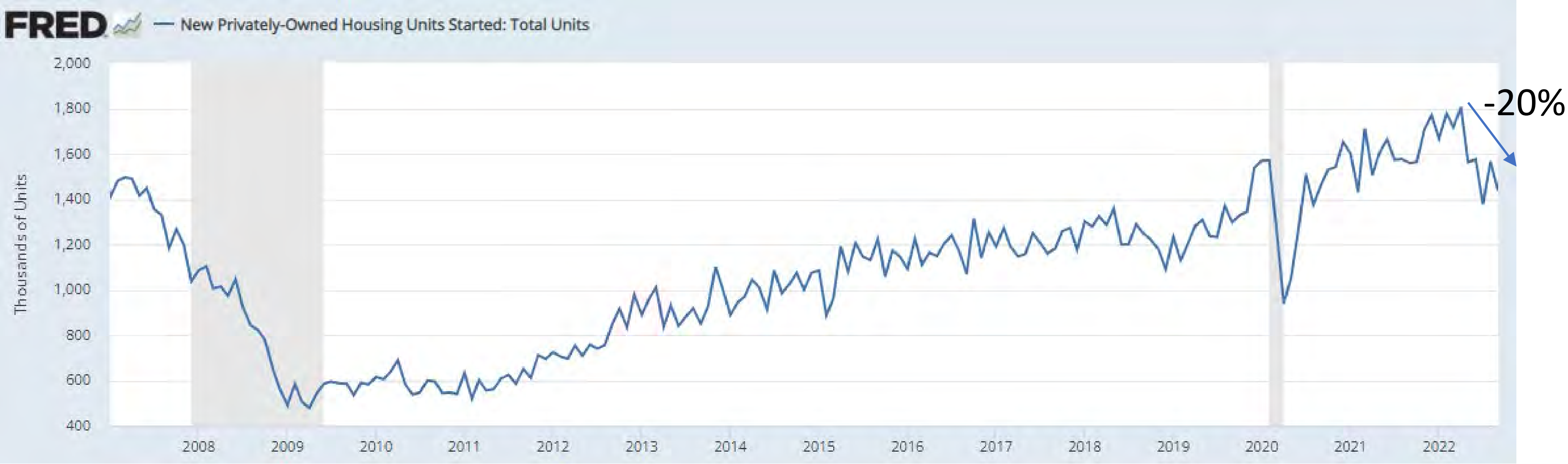
Non Res	+54%

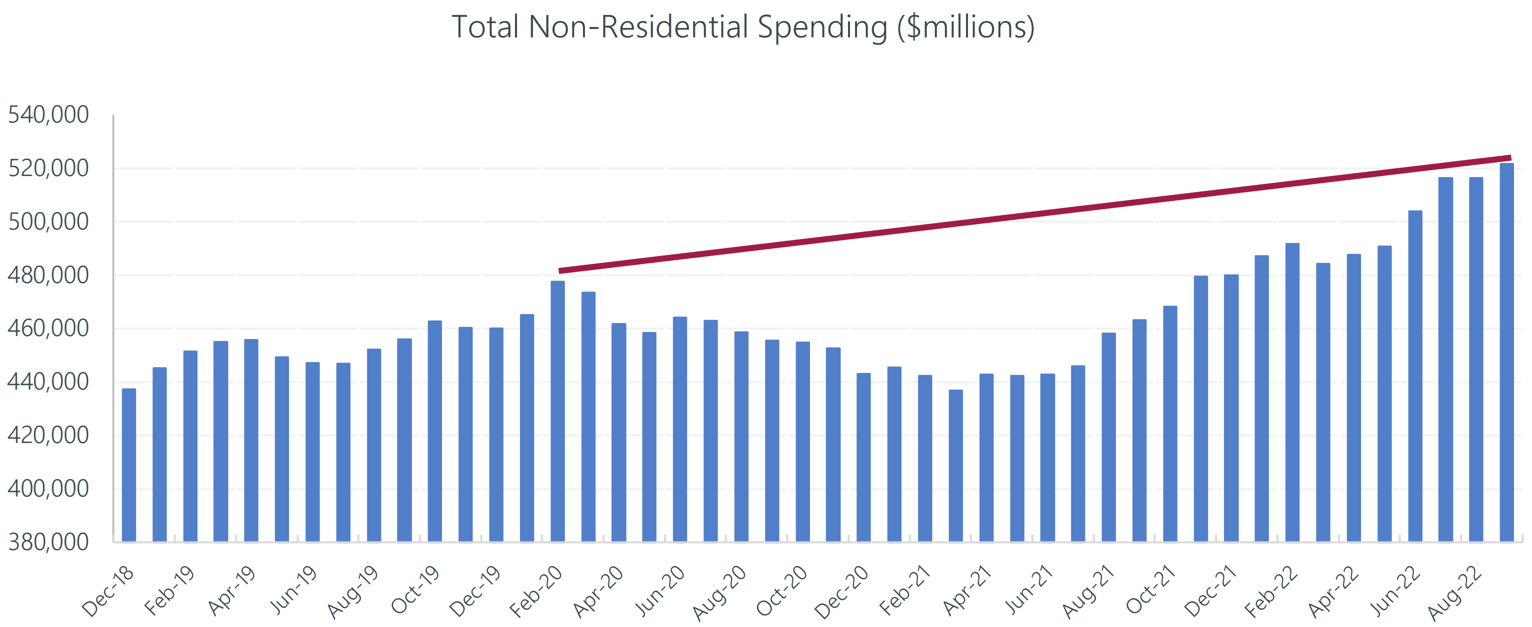
2020 to Current

Total	+26%
Infra	-1%
Res	+54%
Non Res	+9%

US Construction Volume – Residential



US Construction Volume – Non Residential

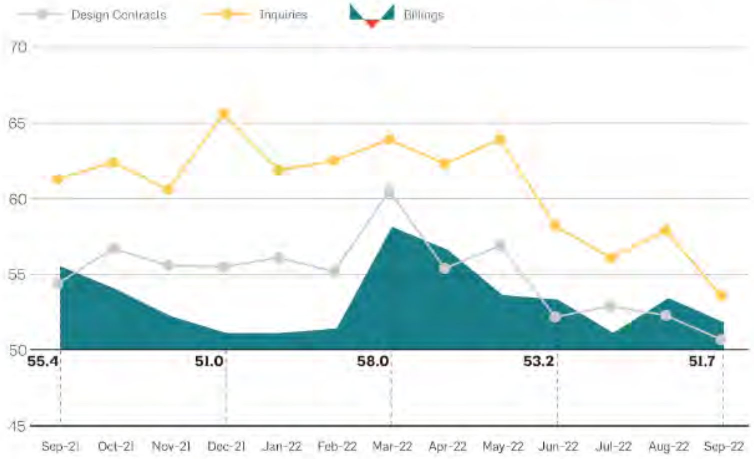


National

Billings growth slows in September

Graphs represent data from September 2021–September 2022.

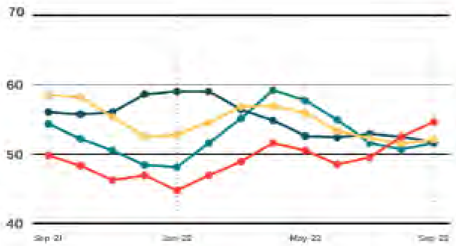
Above 50 | Below 50 | No change from previous period

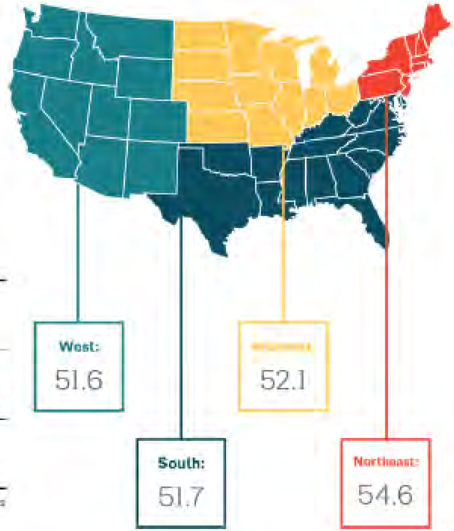


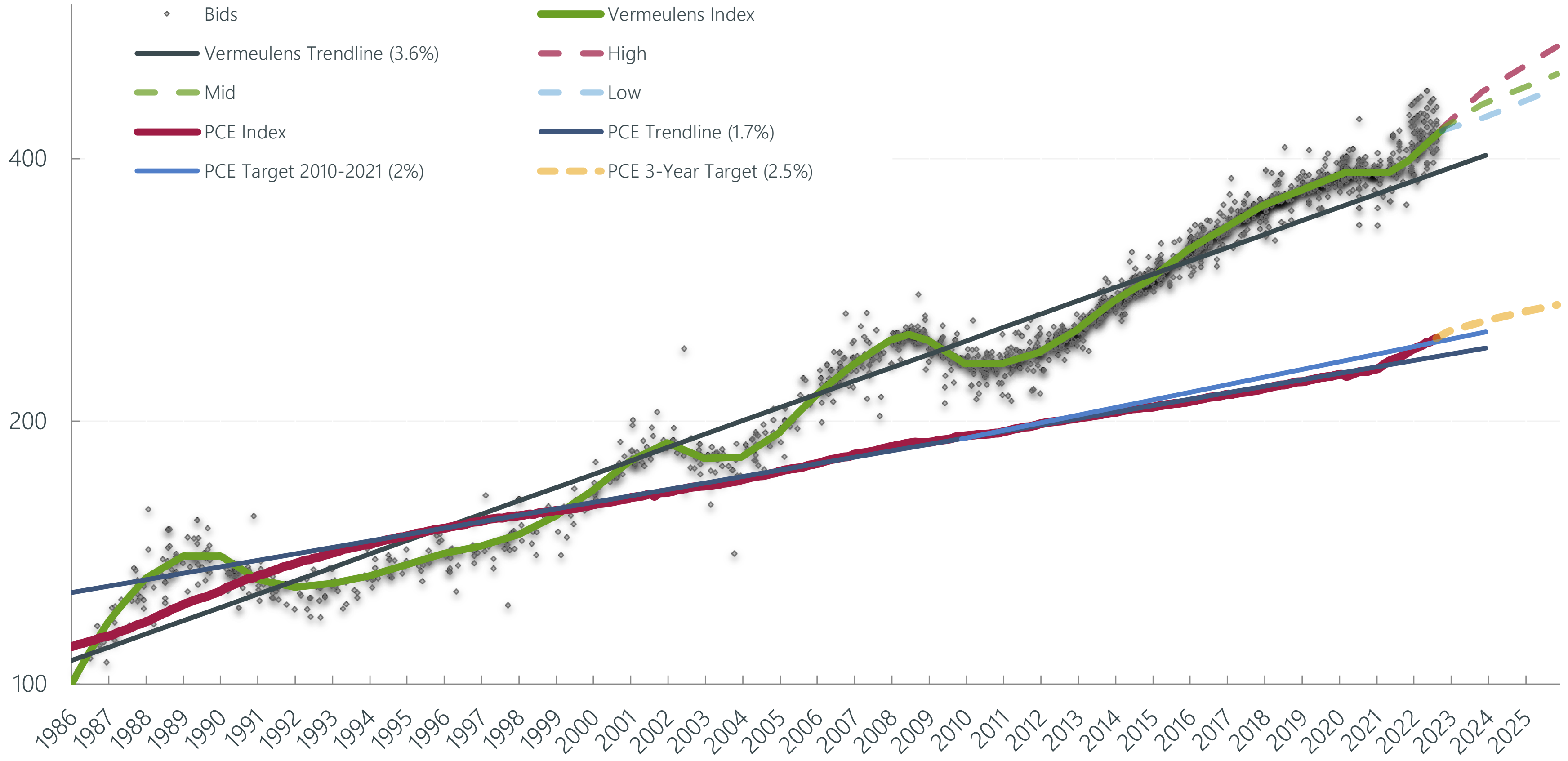
Regional

Business conditions remain strong across the country

Graphs represent data from September 2021–September 2022 across the four regions. 50 represents the diffusion center. A score of 50 equals no change from the previous month. Above 50 shows increase; Below 50 shows decrease. 3-month moving average.






Bids
Vermeulens Index
Vermeulens Trendline (3.6%)
High
Mid
Low
PCE Index
PCE Trendline (1.7%)
PCE Target 2010-2021 (2%)
PCE 3-Year Target (2.5%)
400
200
100
1986
1987
1988
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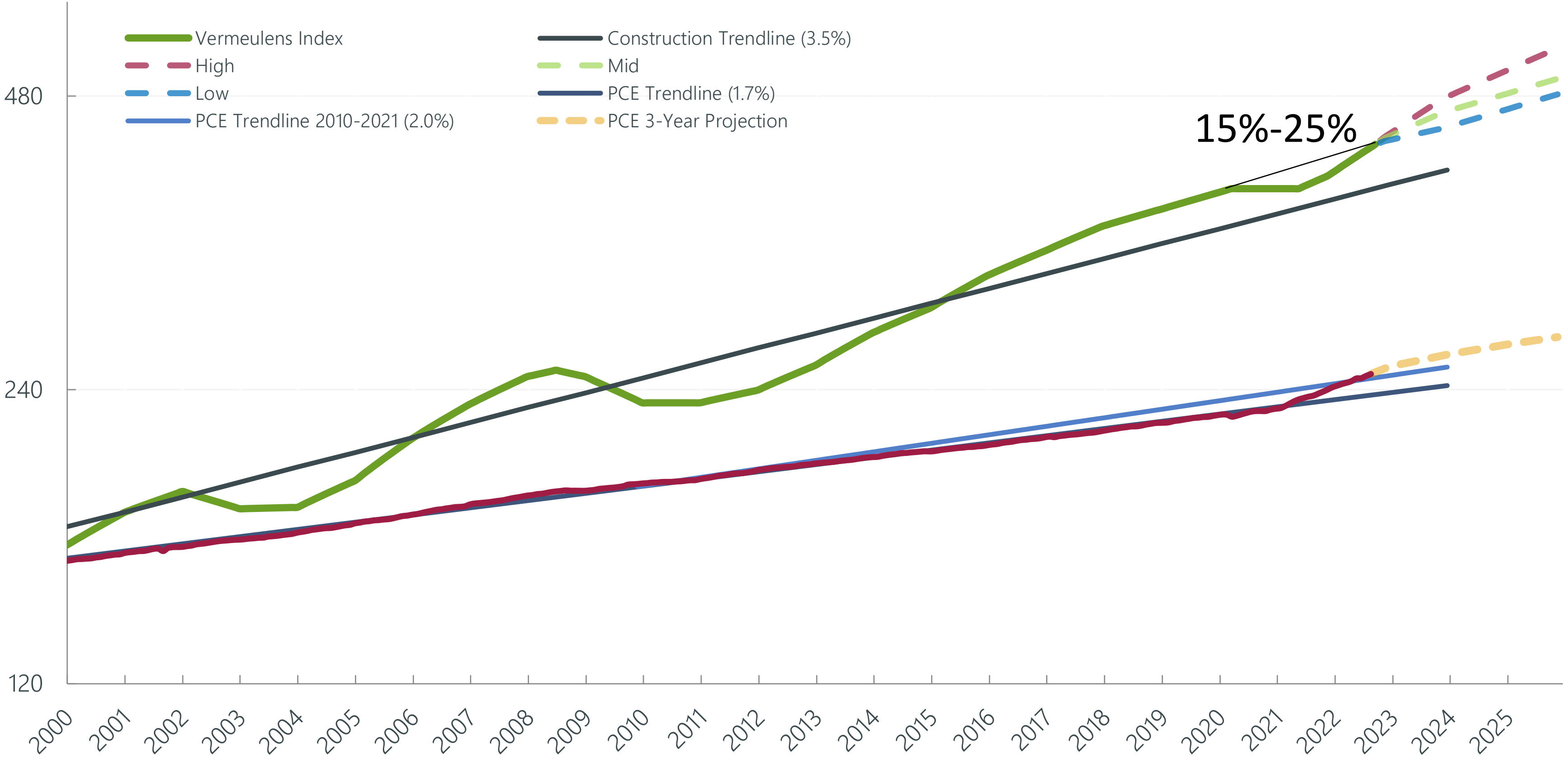
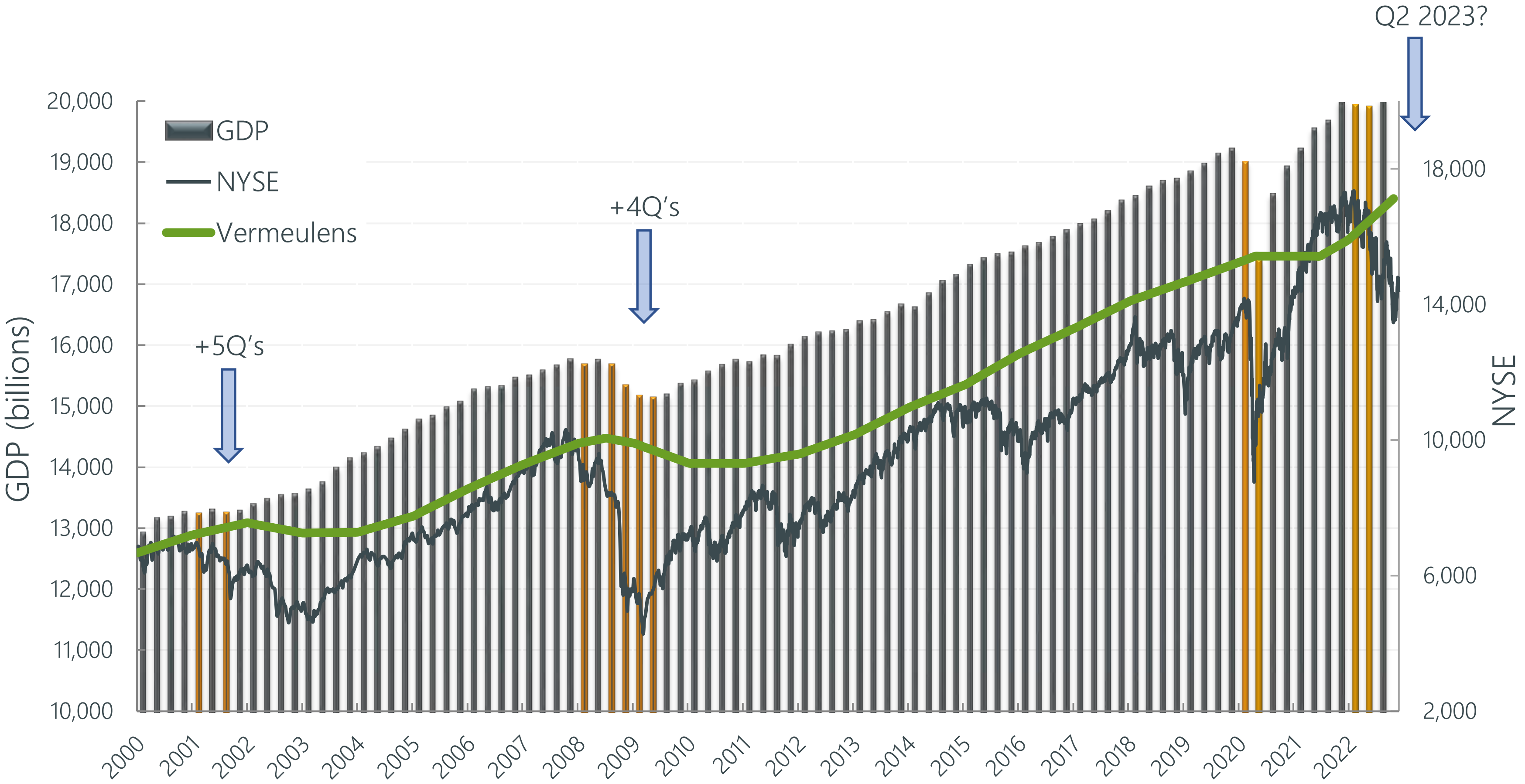
Vermeulens Construction Cost Index



GDP (billions) and NYSE



Pricing – "Fear Factor"

While inputs appear to be stabilizing, trade bid pricing continues to reflect layers of risk including supply chain, escalation, labor capacity, and a large pipeline. Trade partner sentiment has shifted somewhat from 'too busy' to 'have holes / looking', but we are waiting for broader pricing patterns to emerge.

Labor

Labor capacity challenges continue in our geographies and appear to be reflected in bid pricing.

Materials

While lead times have stabilized and even retracted for many materials, major MEP equipment continues to worsen, necessitating early procurement of trades or isolated equipment. Continued chip shortages, war, weather, and other global events are making it very difficult predict when it return to normal.

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2023 Escalation Forecast

We are forecasting 4-6% by the end of 2023, but there are many variables. We are expecting inputs to be more stable going forward. There's a large pipeline of work, but due in part to interest rates we expect a lower percentage of the pipeline to materialize, potentially facilitating less conservative pricing.

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Risk Management

Trying to draw the CMAR's back into a cooperative discussion about risk management

Clarify which risks the contractor should prepare for, which one the owner will bear, and at what levels.

Pricing at current levels and then having ongoing discussions about escalation, contractor contingency and owner contingency is starting to be heard.

Project scoping - Working out ways to quickly resolve the risk (accelerated buyouts) and then getting savings back into meaningful scope are also hot topics.

Bidder participation – Working out ways to eliminate the prequalification processes that CMAR's use to limit "potentially" unqualified bidders, to increase bidder participation without endangering finished quality.

2023 Economic Performance Scenarios	2023 Jobs Creation Economy	2023 Jobs Creation Construction
Modest Growth	+2 Million	+0.2 Million
Minimal Growth	+1 Million	+0.1 Million
Soft Landing	Zero	Zero
Minimal Recession	-1 Million	-0.1 Million
Mild Recession	-2 Million	-0.2 Million
Moderate Recession (eg .com Bomb)	-4 Million	-0.4 Million
Deep Recession (eg Financial Crisis)	-9 Million	-2.1 Million

Project Contingency and Escalation Recommendations

design contingency	
→ preliminary design	10% - 15%
→ schematic design	6% - 9%
→ design development documents	3% - 6%
→ contract documents	0% - 3%
→ design alternates	10% - 15%
construction contingency	3% - 5%
escalation, based on market outlook and local index	6% - 9%
bidding contingency	5% - 15%
project contingency (owner)	5% - 15%

- Carry a minimum annual escalation of 4% to procurement in 2022, and early 2023
- 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
- Continue to monitor Fed policies (interest rates) designed to reduce demand

Design and Construction Market Outlook®

Thank you!

Check out our website for the latest construction market information

vermeulens.com

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