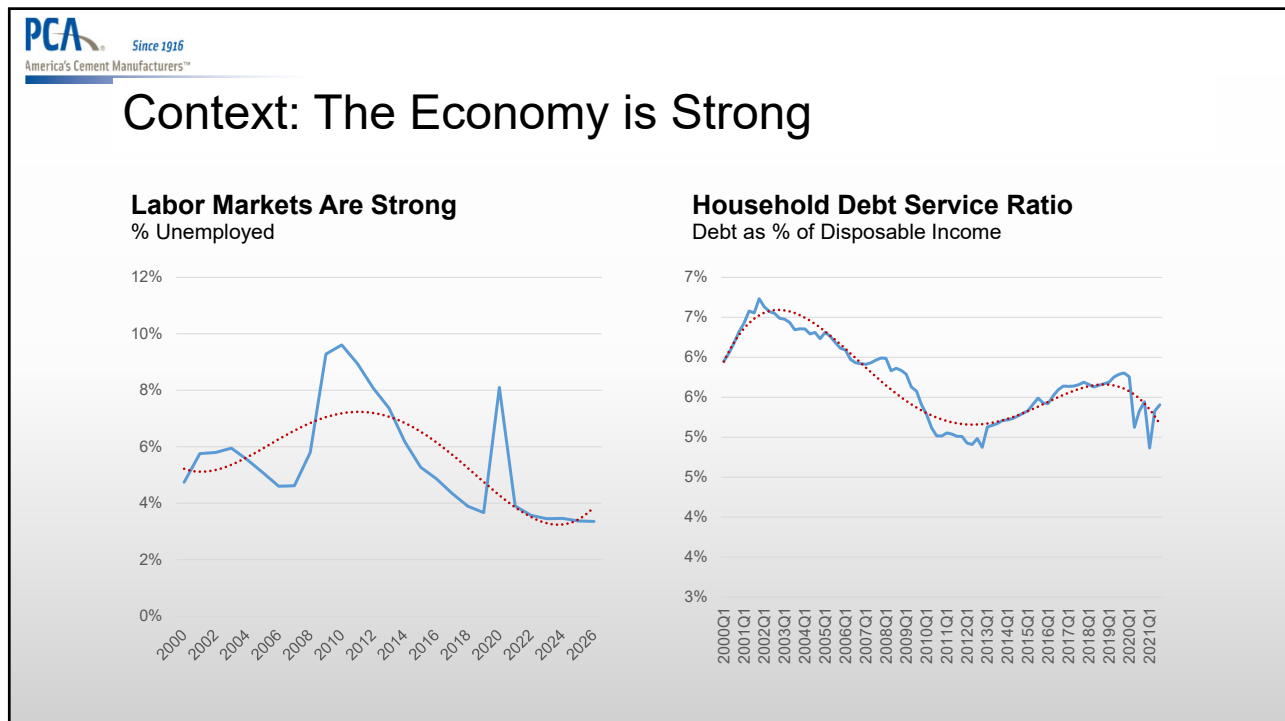


1



2

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America's Cement Manufacturers™

Key Focus for Economy, Construction, Cement Outlook

```

    graph LR
      Inflation --> RealWages[Real Wages]
      RealWages --> Spending
      Inflation --> PriceExpectations[Price Expectations]
      PriceExpectations --> InterestRates[Interest Rates]
      InterestRates --> PrivateSectorDemand[Private Sector Demand]
      PrivateSectorDemand --> CementConsumption[Cement Consumption]
  
```

The diagram illustrates a causal chain of economic factors. Inflation is circled in red and leads to Real Wages, which leads to Spending. Inflation also leads to Price Expectations, which leads to Interest Rates. Interest Rates leads to Private Sector Demand, which finally leads to Cement Consumption.


3

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US Economic Outlook: External Forecast Considerations

Russia-Ukraine War	Covid
<p>Key Assumptions:</p> <p>Will the War stay Within Ukraine Borders? How long will Supply disruptions persist? Is a Nuclear Option off the Table?</p> <ul style="list-style-type: none"> • Scenario Analysis <p>Potential Impacts:</p> <ul style="list-style-type: none"> • Inflation • Consumer Sentiment • Fed Policy. 	<p>Key Assumptions:</p> <p>Will disease Worsen or Improve? Will a New Variant Emerge?</p> <ul style="list-style-type: none"> • Institute of Health Metrics & Evaluation (IHME) Projections. <p>Potential Impacts:</p> <ul style="list-style-type: none"> • Consumer Sentiment & spending. • Labor Force Participation • Supply-Chain improvement.

4



Covid Impact

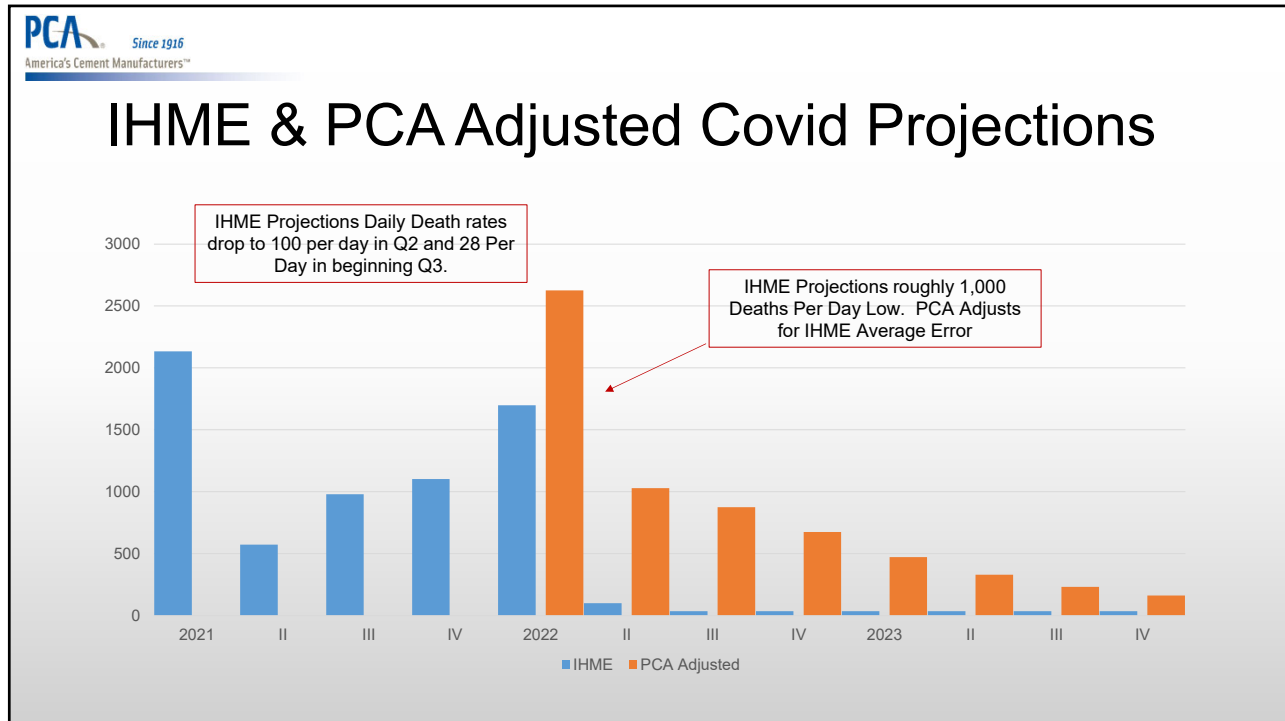
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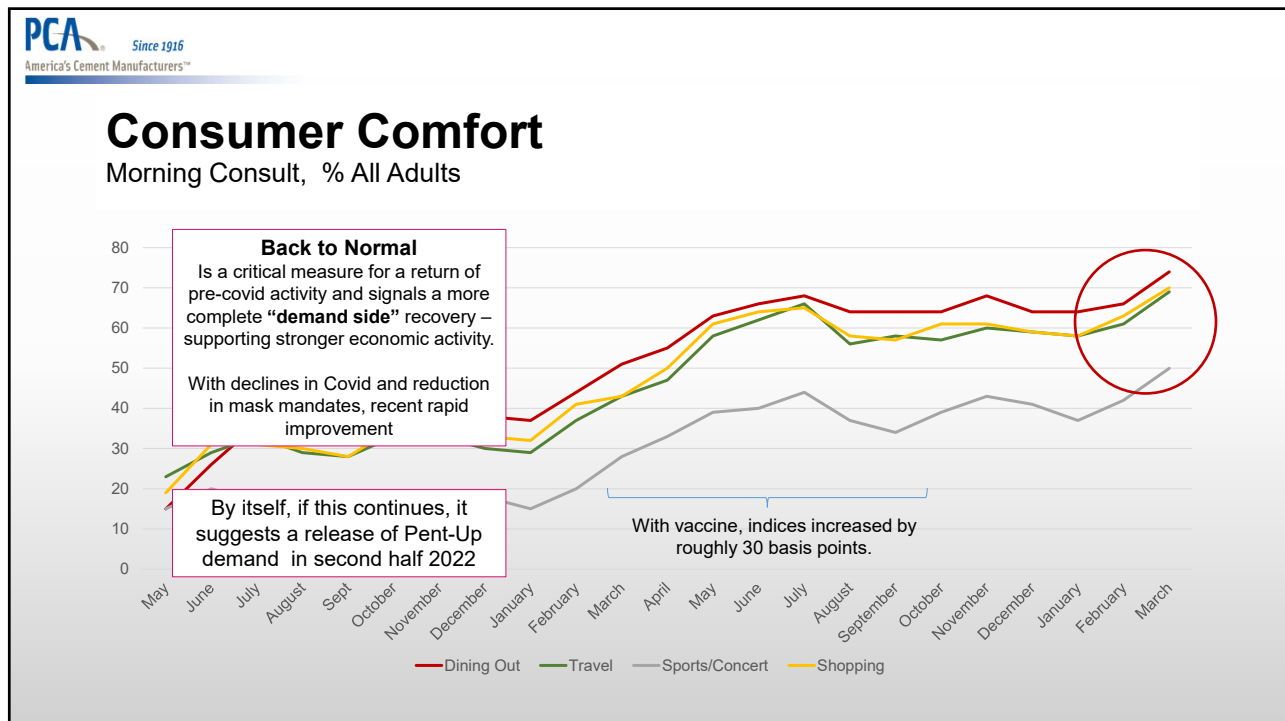
Covid Global Decline: Impacts

Demand Improvement	Supply-Side Improvement (Inflation)
Key Judgements:	Key Judgements:
<ul style="list-style-type: none">• Consumer in a strong position• Return to "normal"• Pent-Up Demand Release• Accelerated Consumer Spending in 2nd Half of 2022.	<ul style="list-style-type: none">• Labor Participation Rate Improves• Logistics Improve (US & Globally)• Inventory-Sales Ratio Improves
Potential Impacts:	Potential Impacts:
<ul style="list-style-type: none">• GDP Strengthens• Adds to Employment Requirements• Adds Mildly to Inflation.	<ul style="list-style-type: none">• Supply-Side Inflation Eases• Relieves Some Pressure on Fed to Raise Rates.

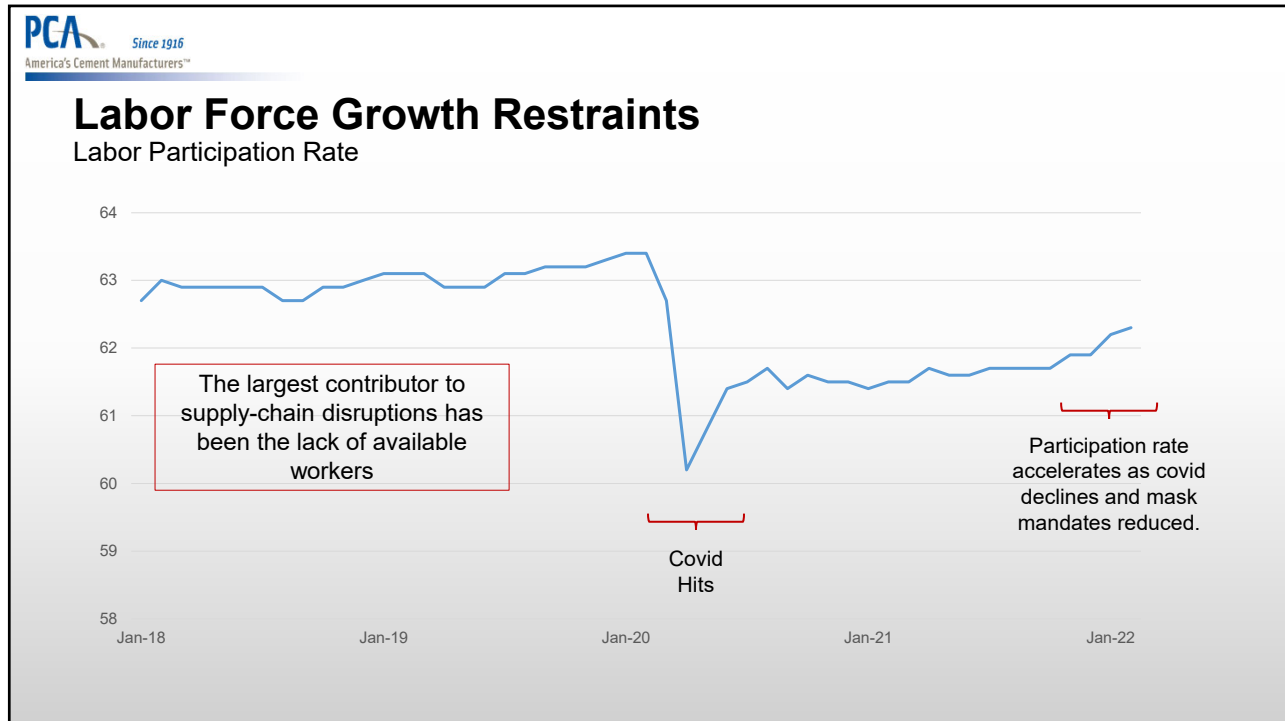
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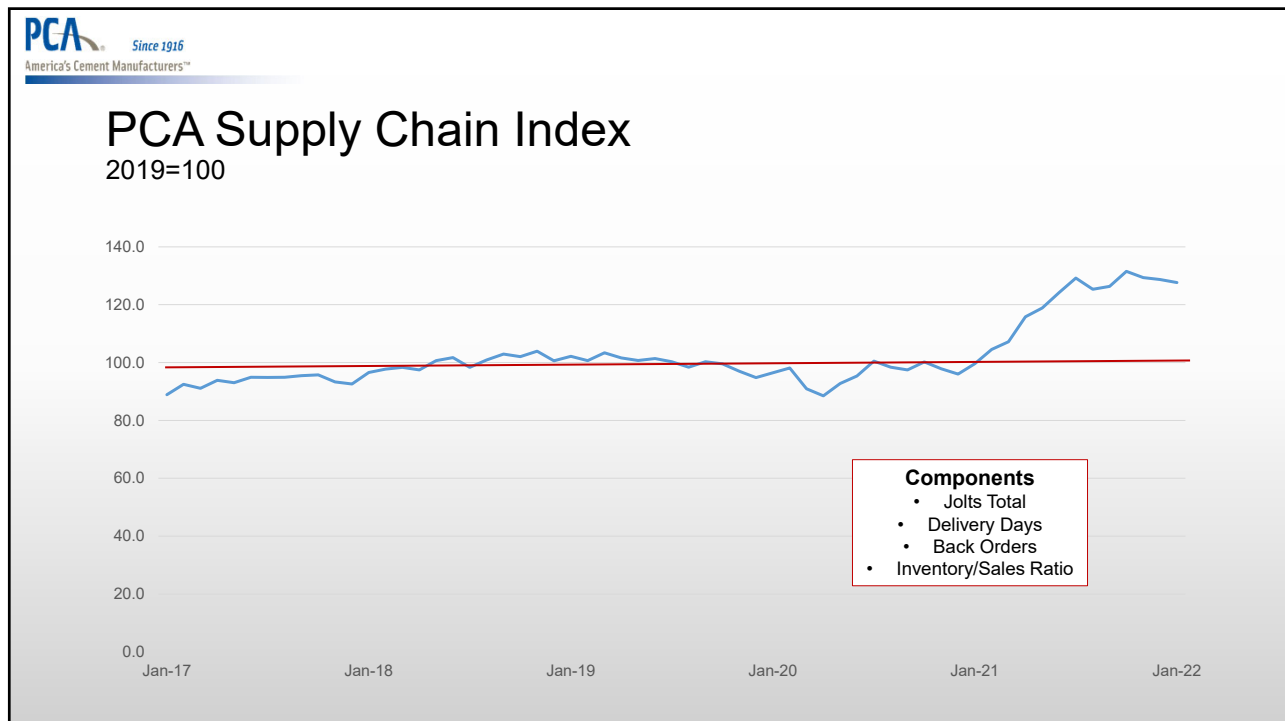
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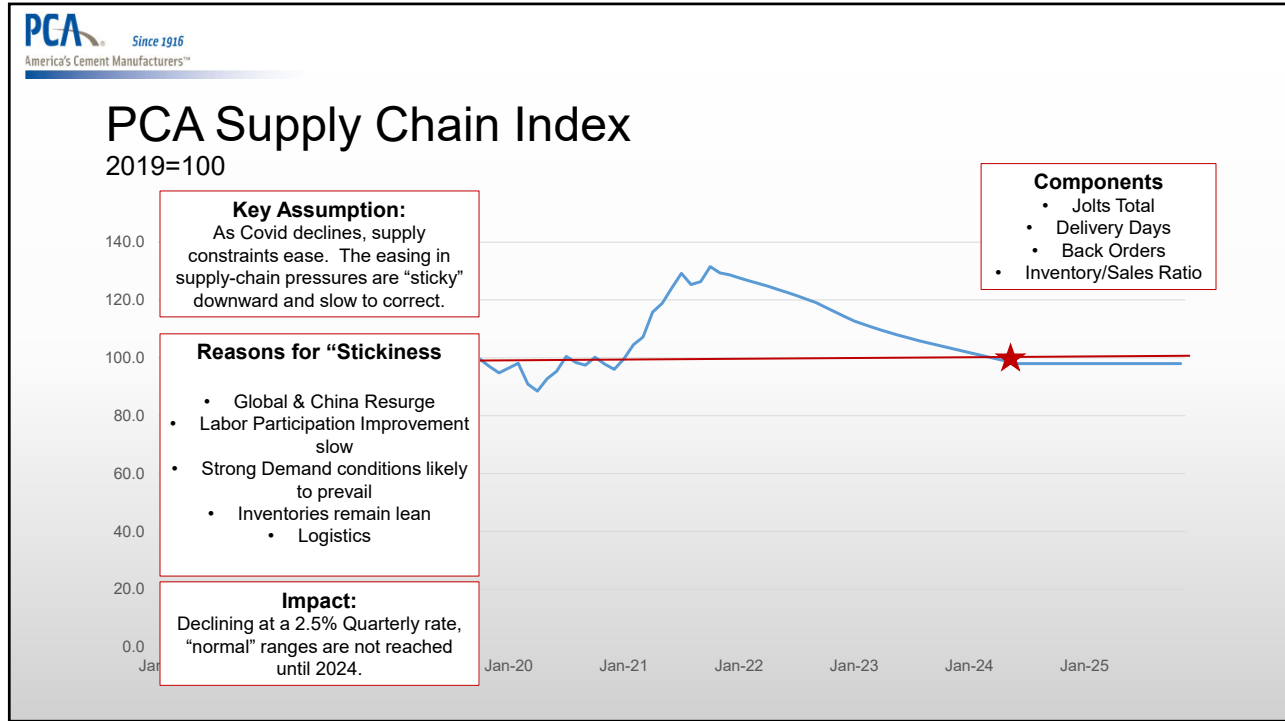
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Ukraine Impact

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Russia/Ukraine Contribution to World Production

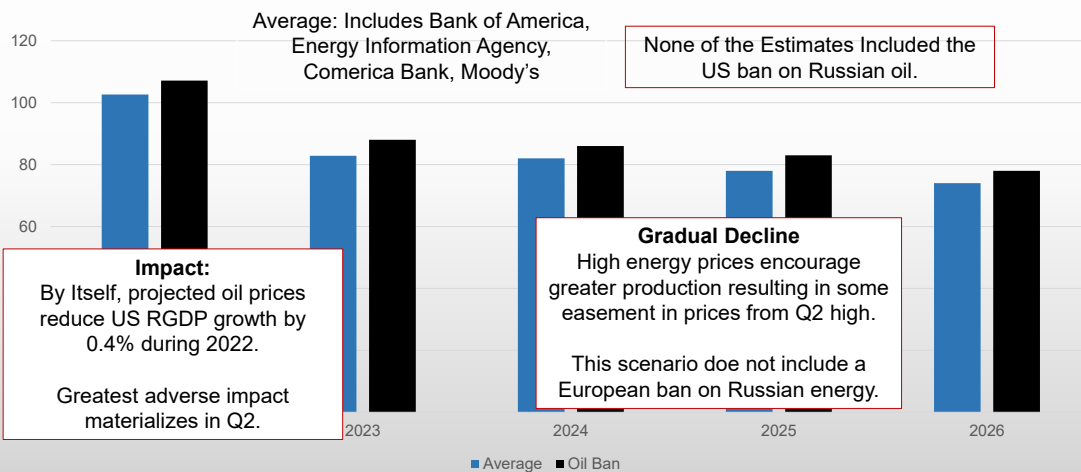
Commodity/Item:	Share, World Production:	Potential Impacts:
• Oil	• 12%	• Higher Global Oil Prices
• Titanium	• 13%	• ---
• Wheat	• 14%	• Impacts LDCs
• Natural Gas	• 17%	• European Focused Impacts
• Palladium	• 30%	• Catalytic Converters
• Helium	• 30%	• ---
• Neon	• 70%	• Required in Chip production

Russia contributes to the global supply chain. As trade in these materials are depressed, improvement in supply-chain is impaired.

13



Oil Price Assumptions WTI Dollars Per Barrel



14

Ukraine Assumptions: Baseline

Key Assumptions:

- Russia occupies Ukraine
- Ukraine resistance continues
- Oil WTI peaks at \$115 per barrel.
- Revoke Russia MFN Status
- Aggression constrained to Ukraine
- No cyberattacks
- No nuclear

Potential Impacts:

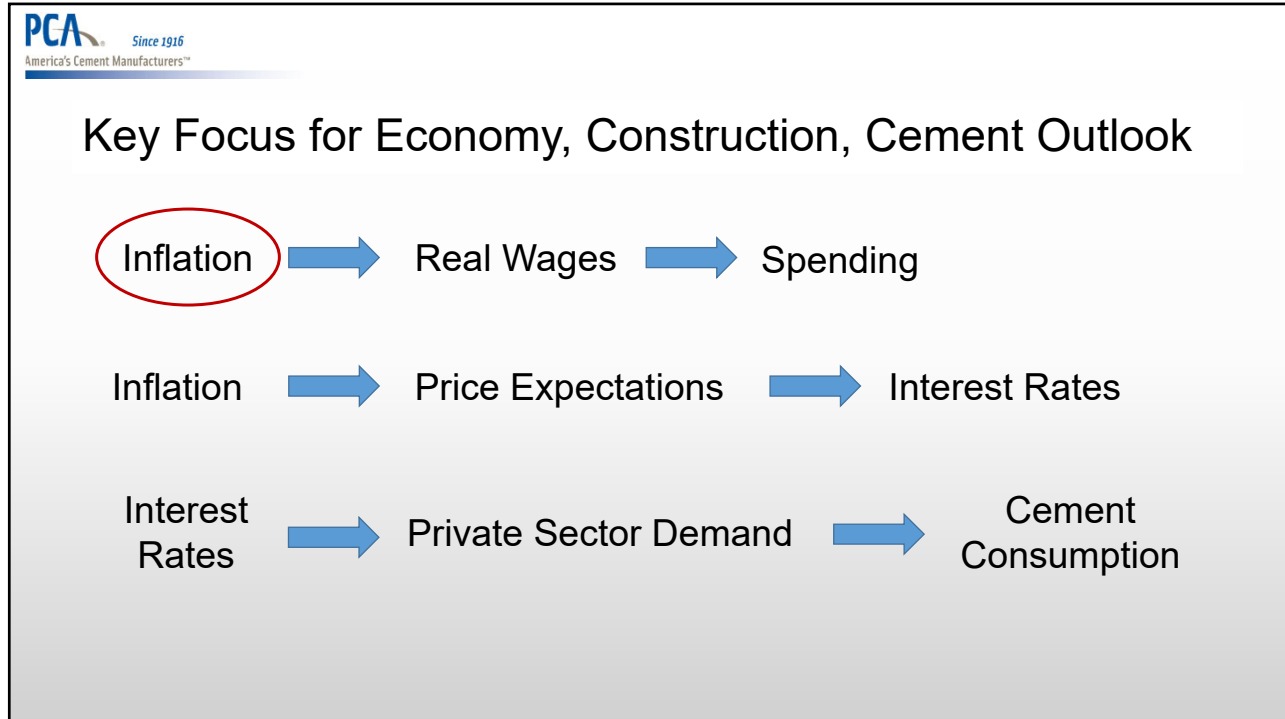
- Key commodities rise significantly
- Additional disruption to supply chain
- Inflation higher
- Real wage declines
- Slower global growth
- Sustained increases in interest rates
- Cement consumption growth slows

Growth Slowdown. No Recession

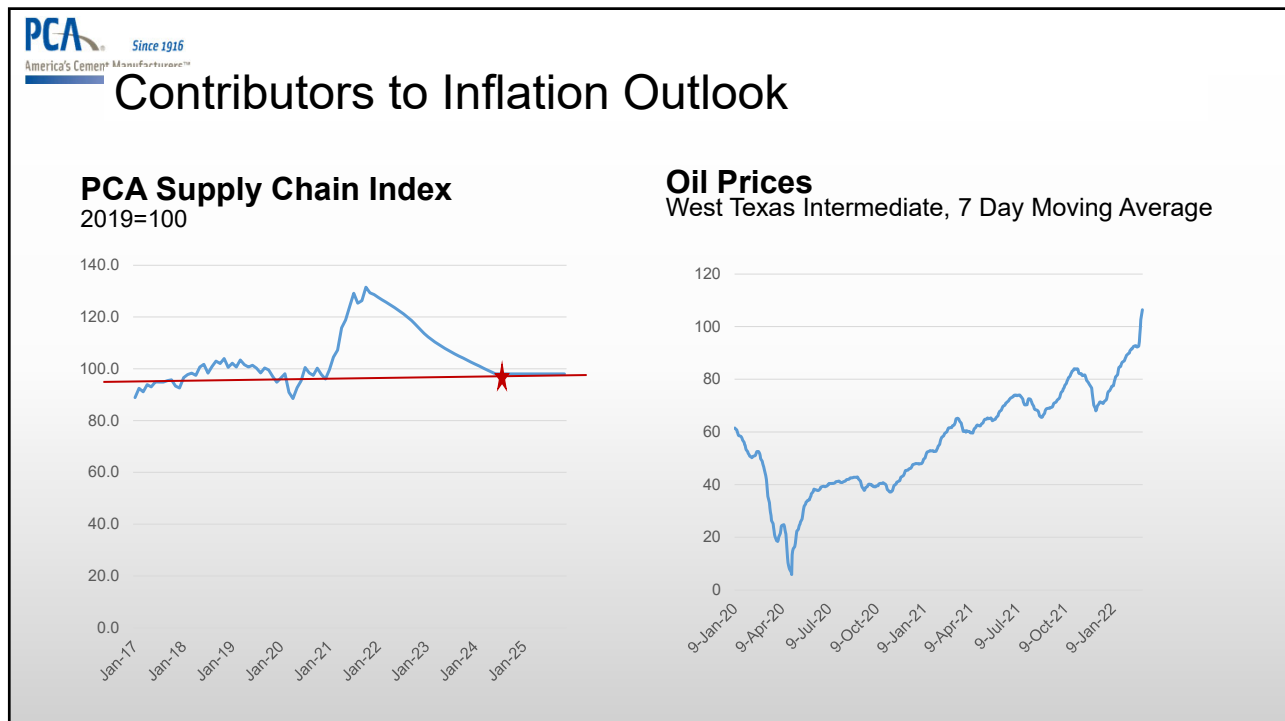
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Inflation

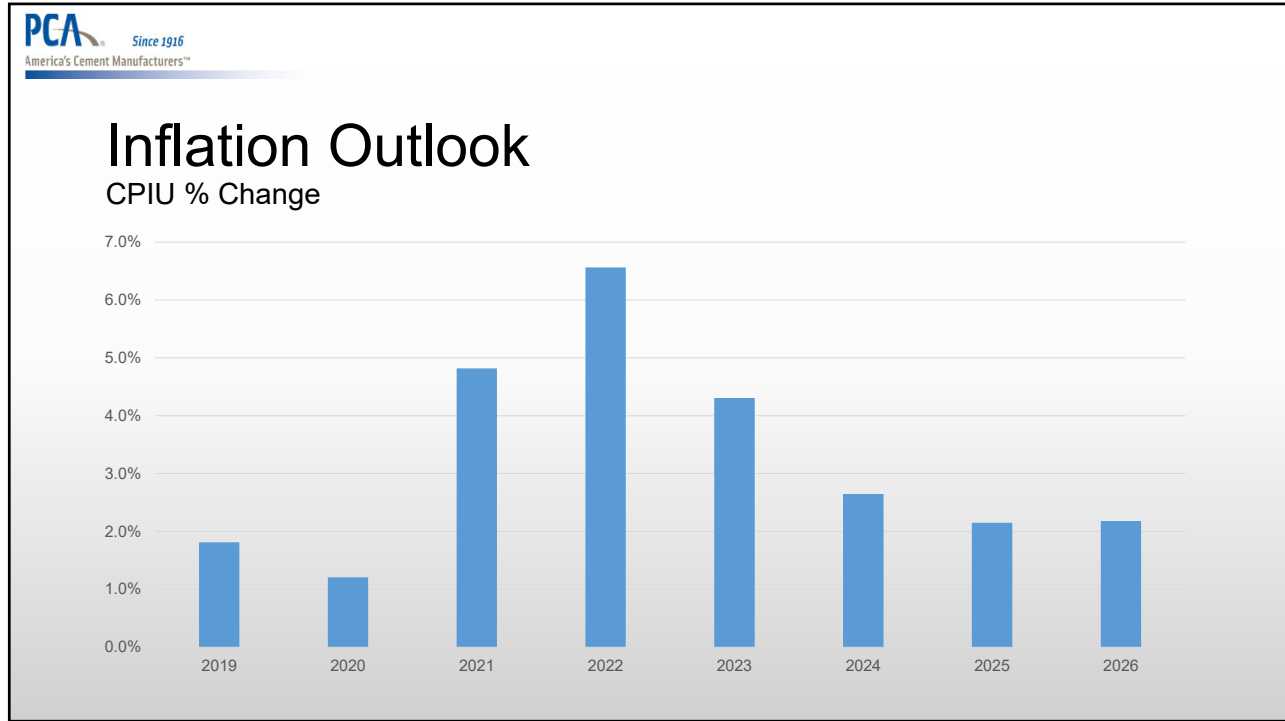
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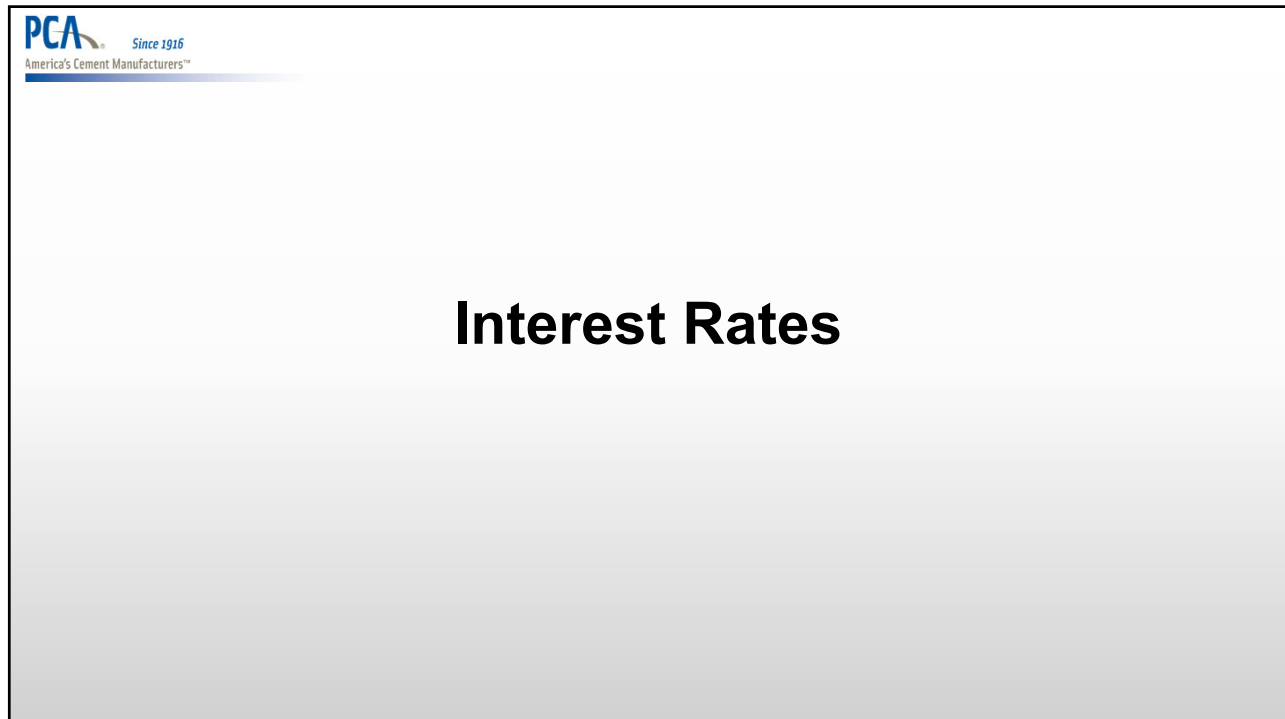
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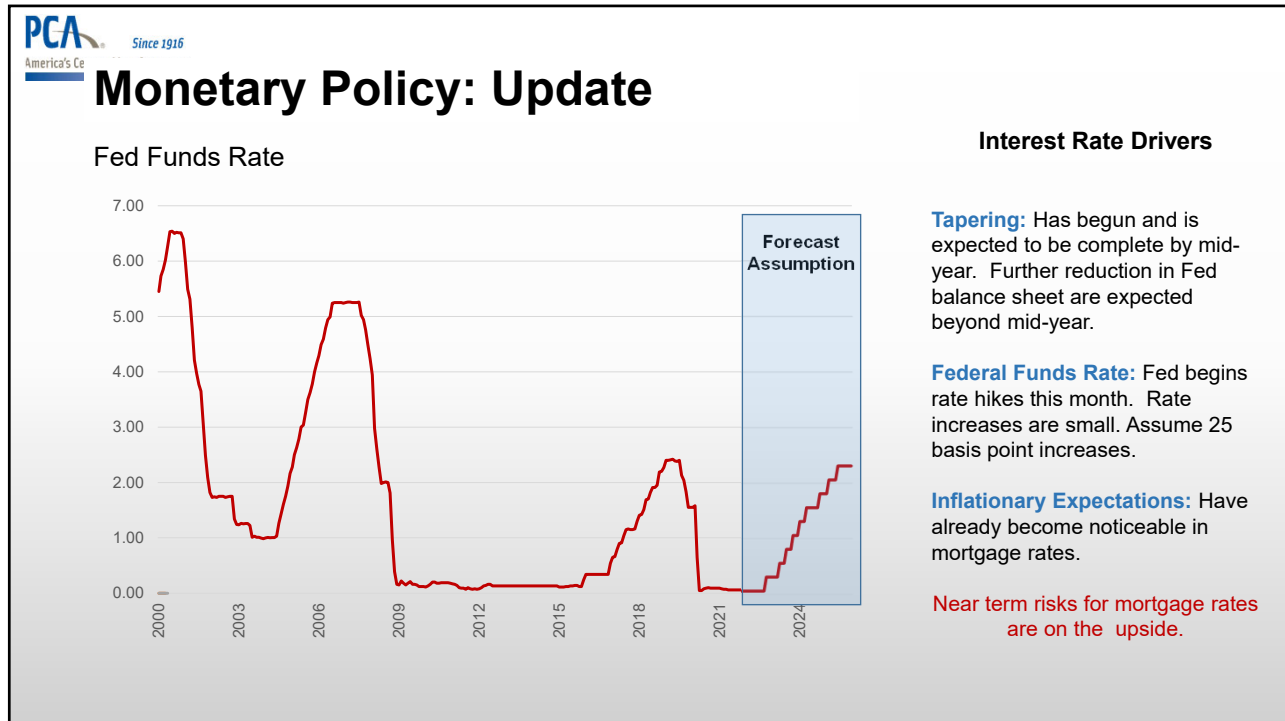
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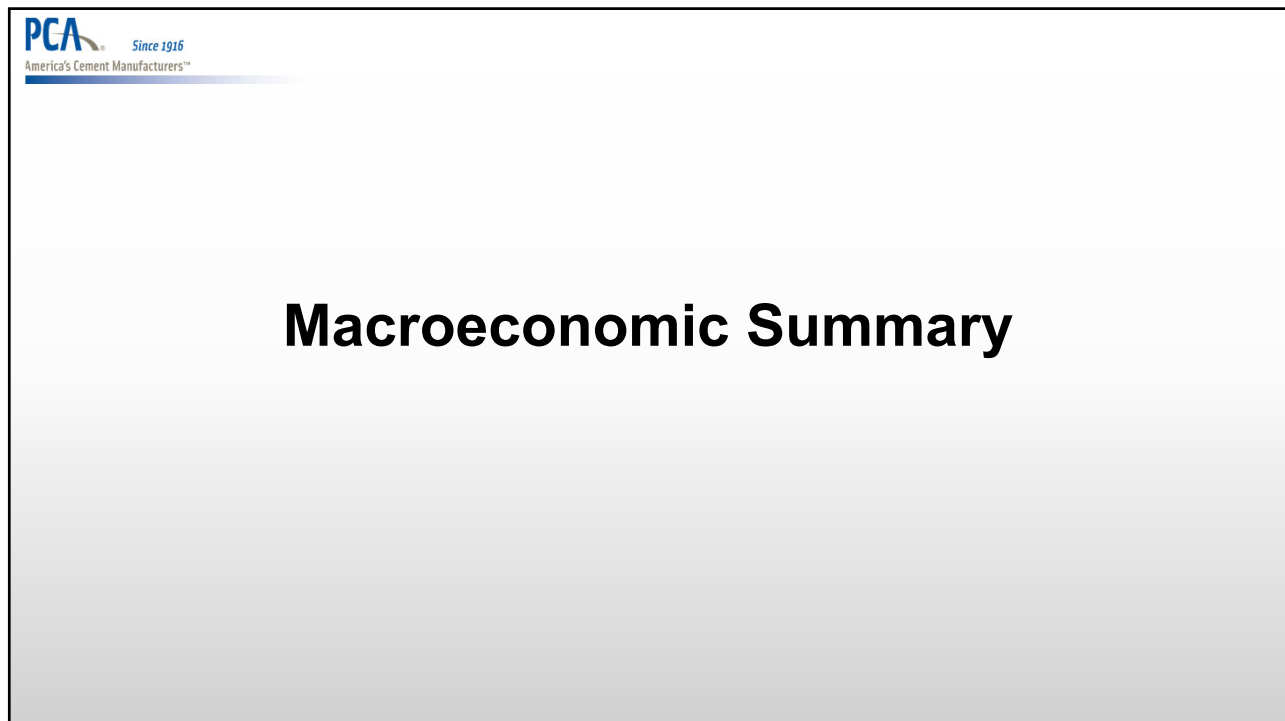
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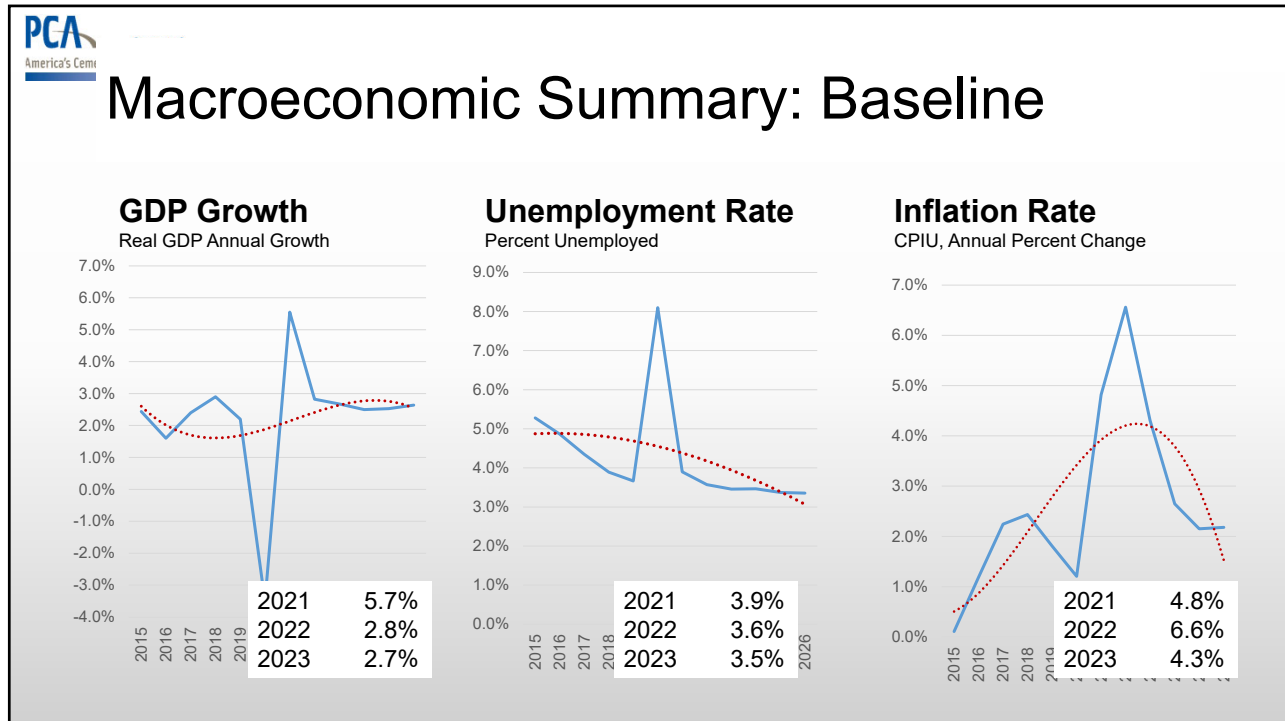
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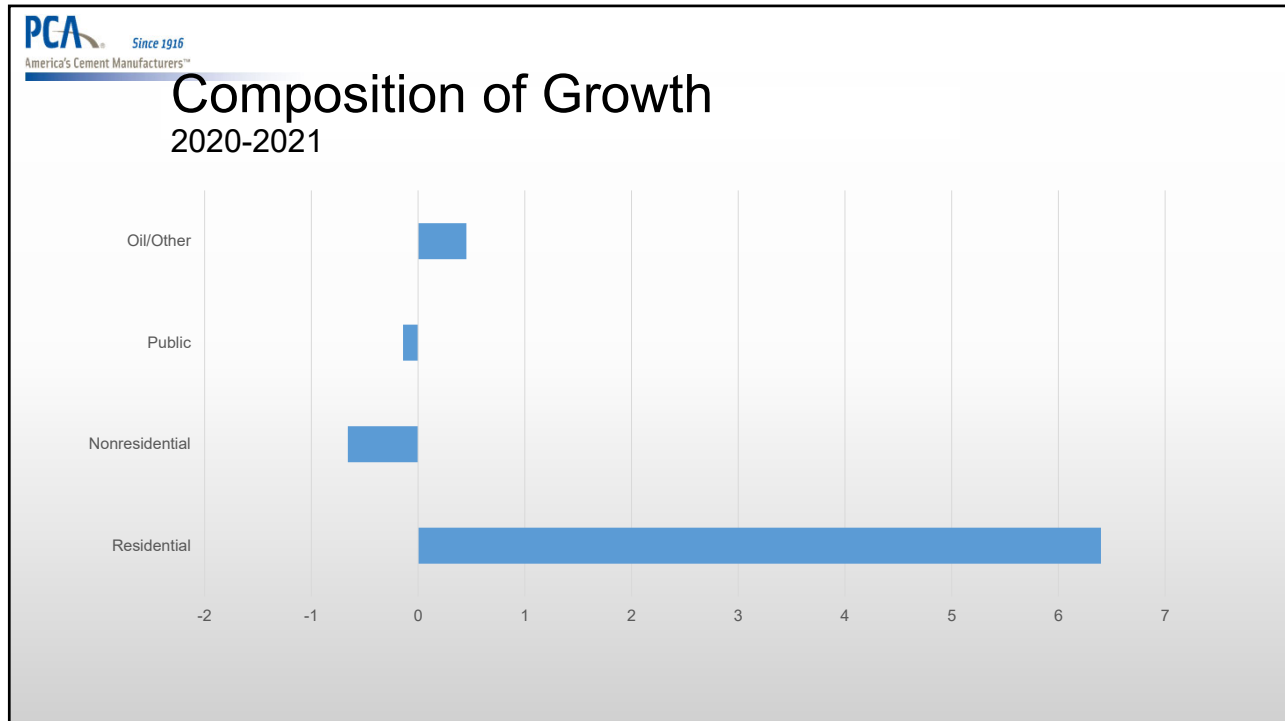
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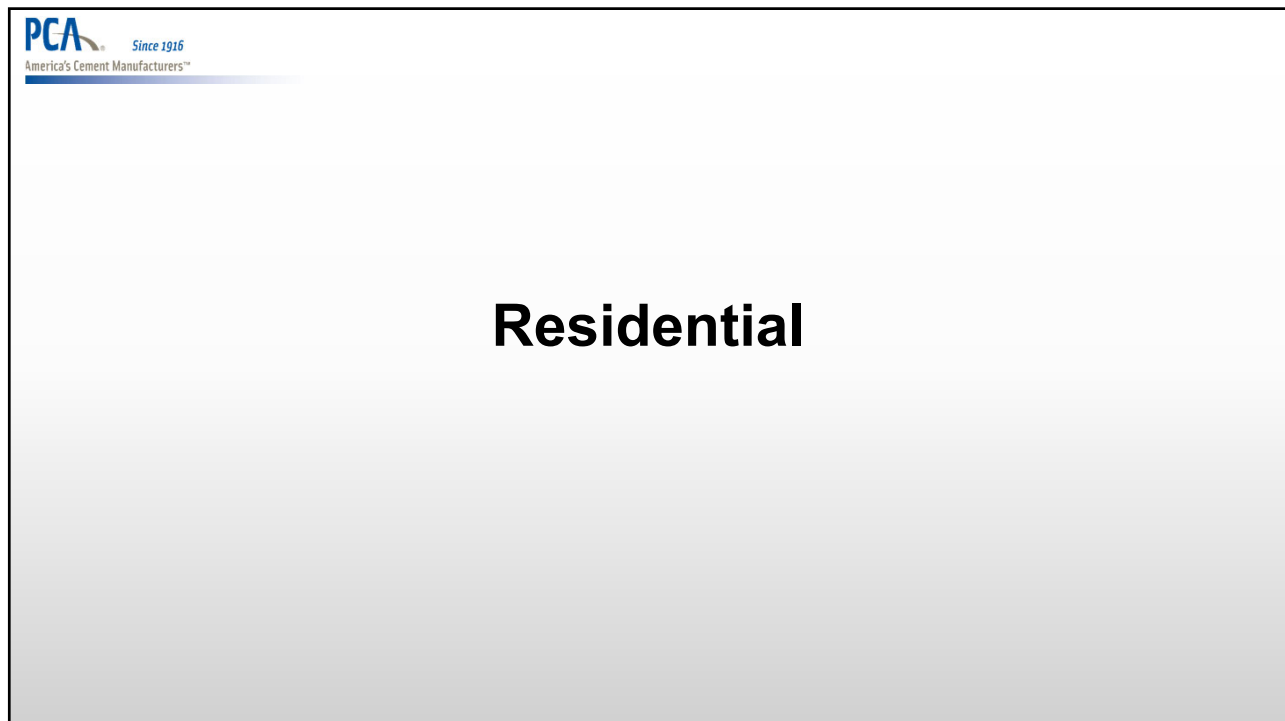
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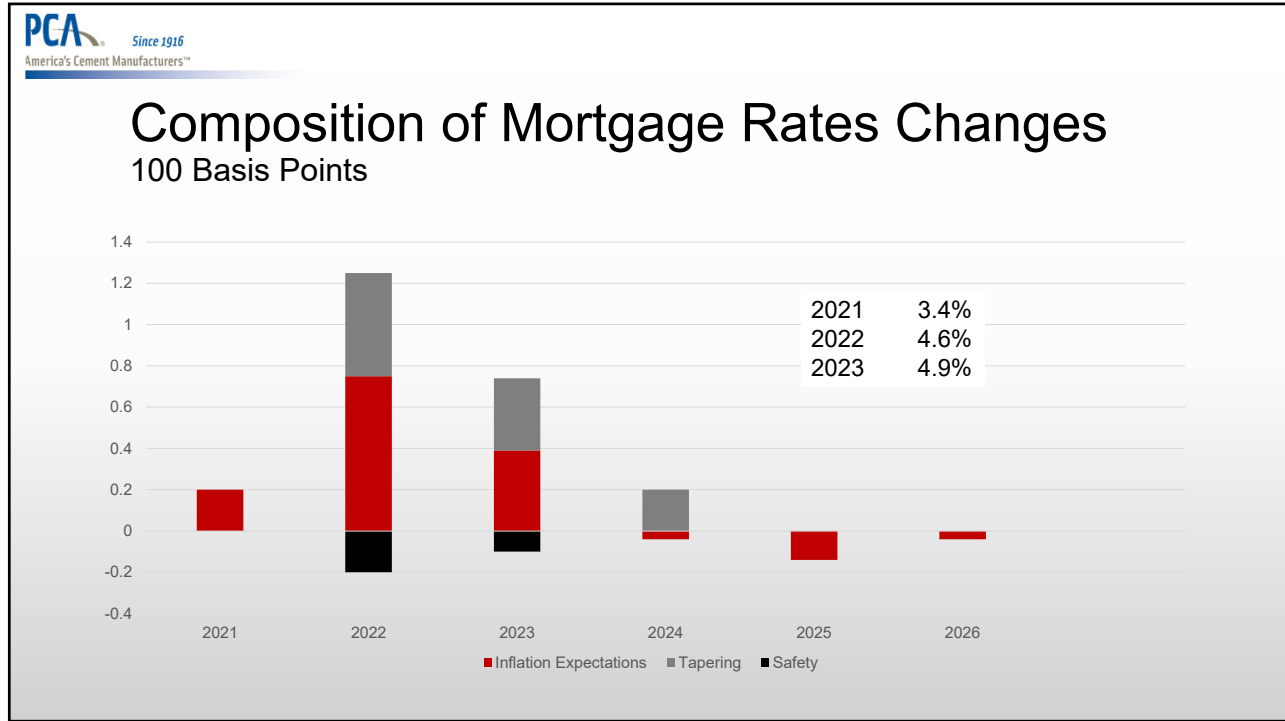
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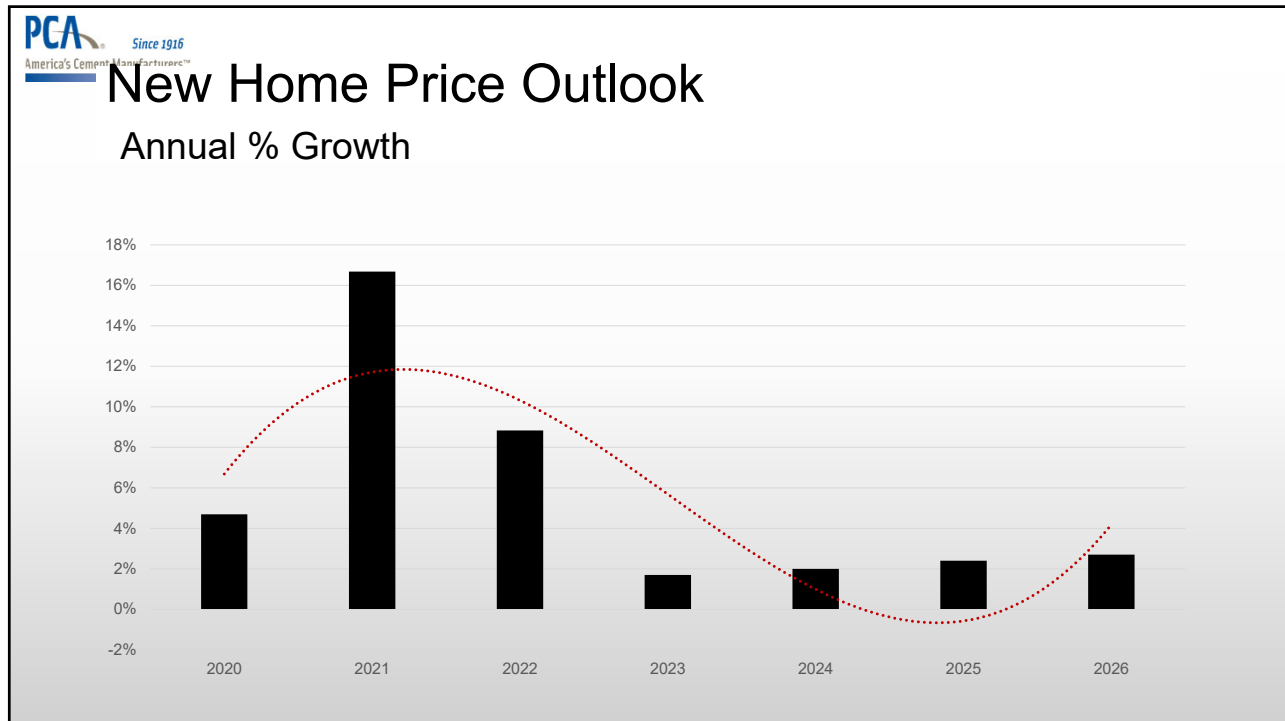
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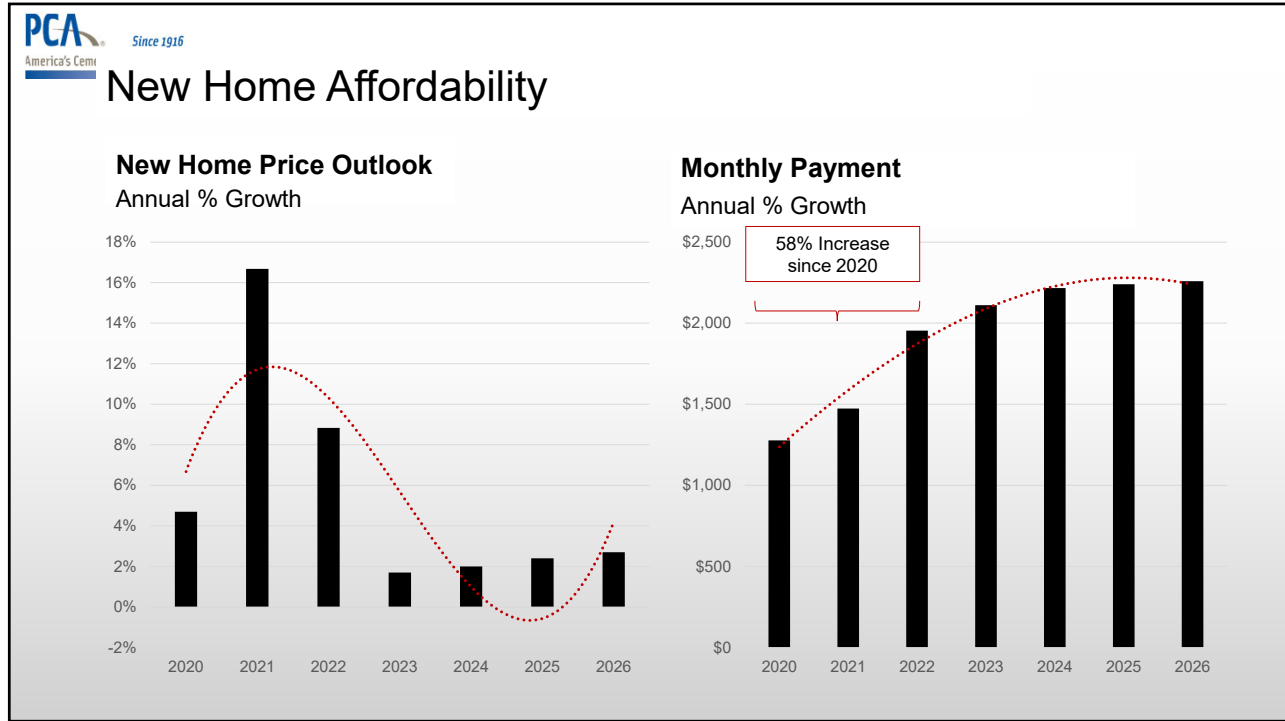
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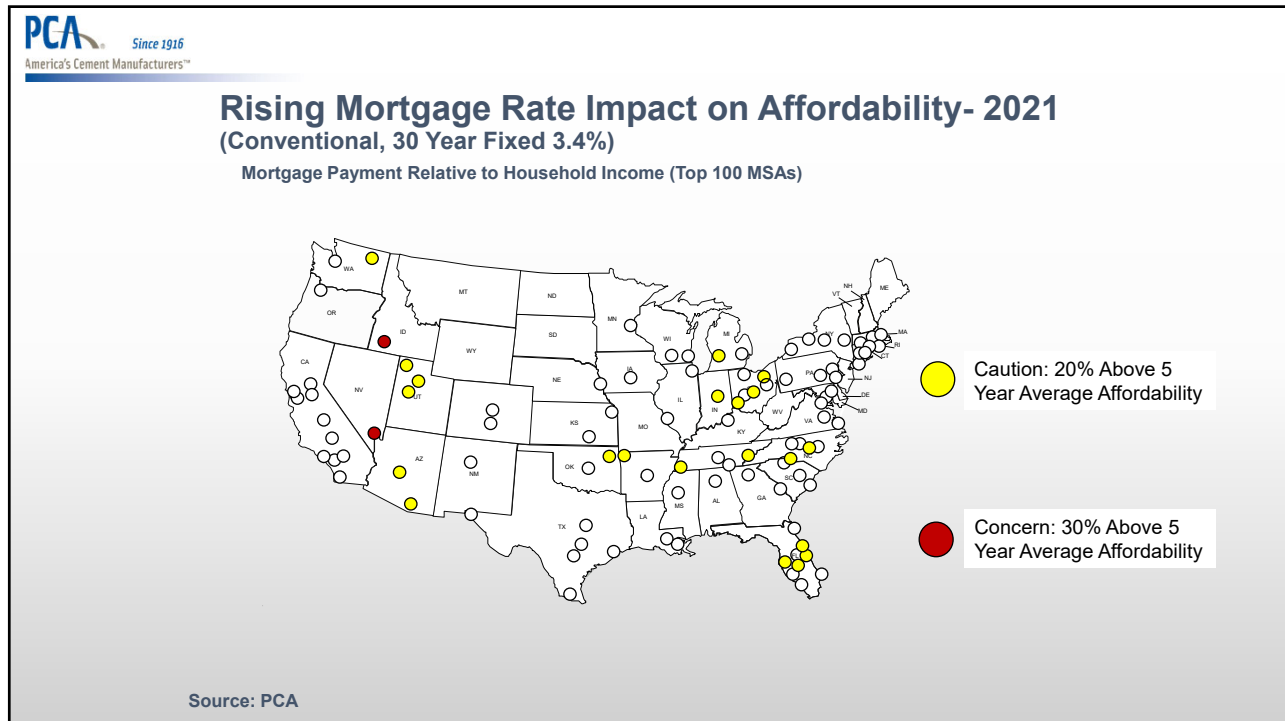
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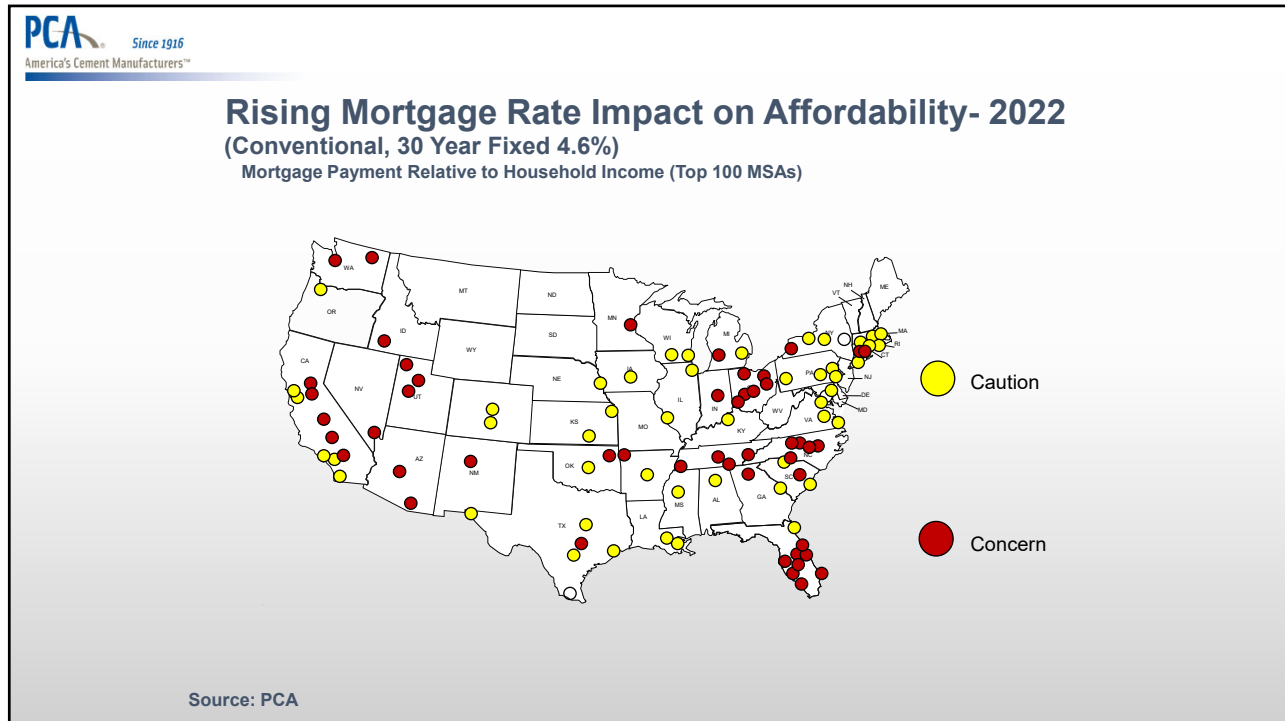
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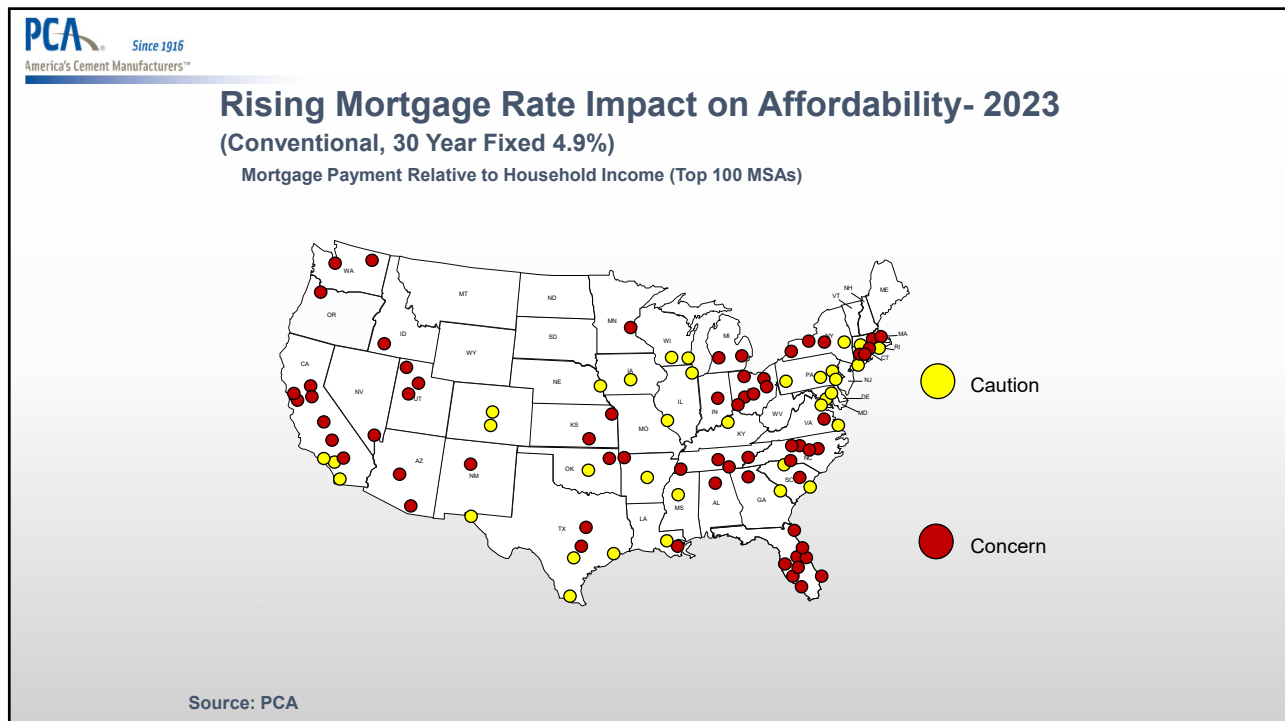
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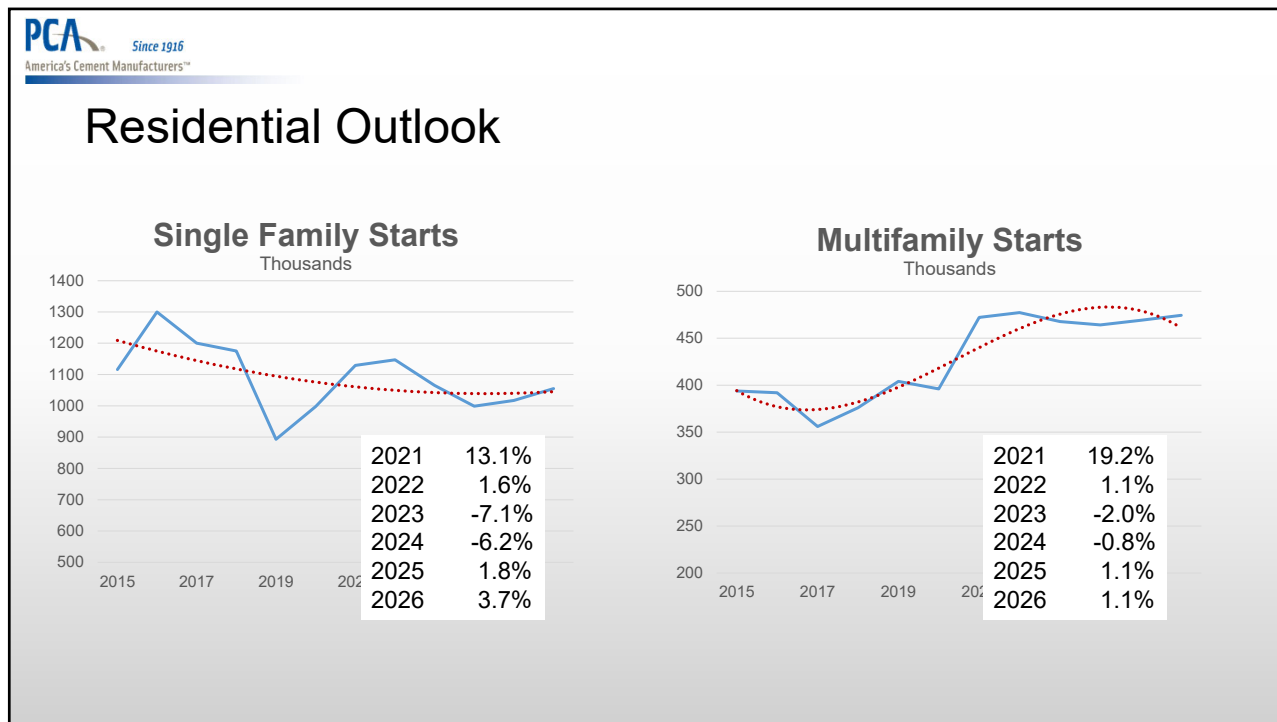
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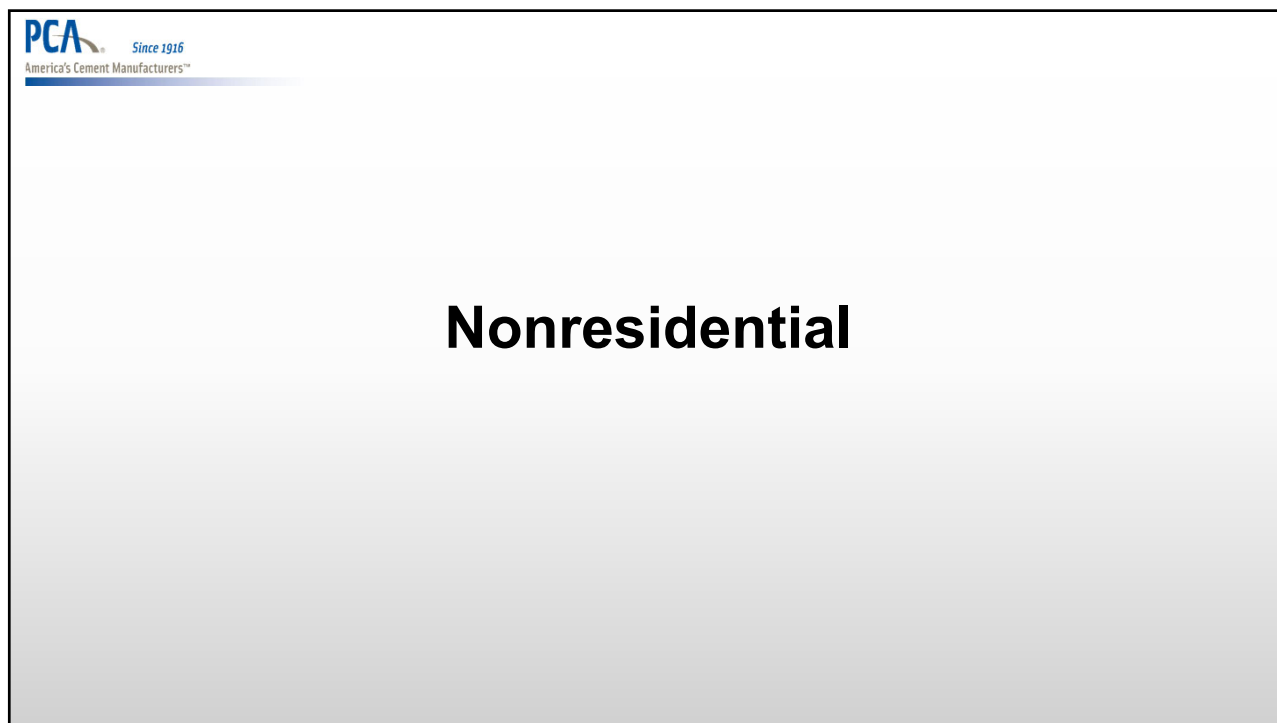
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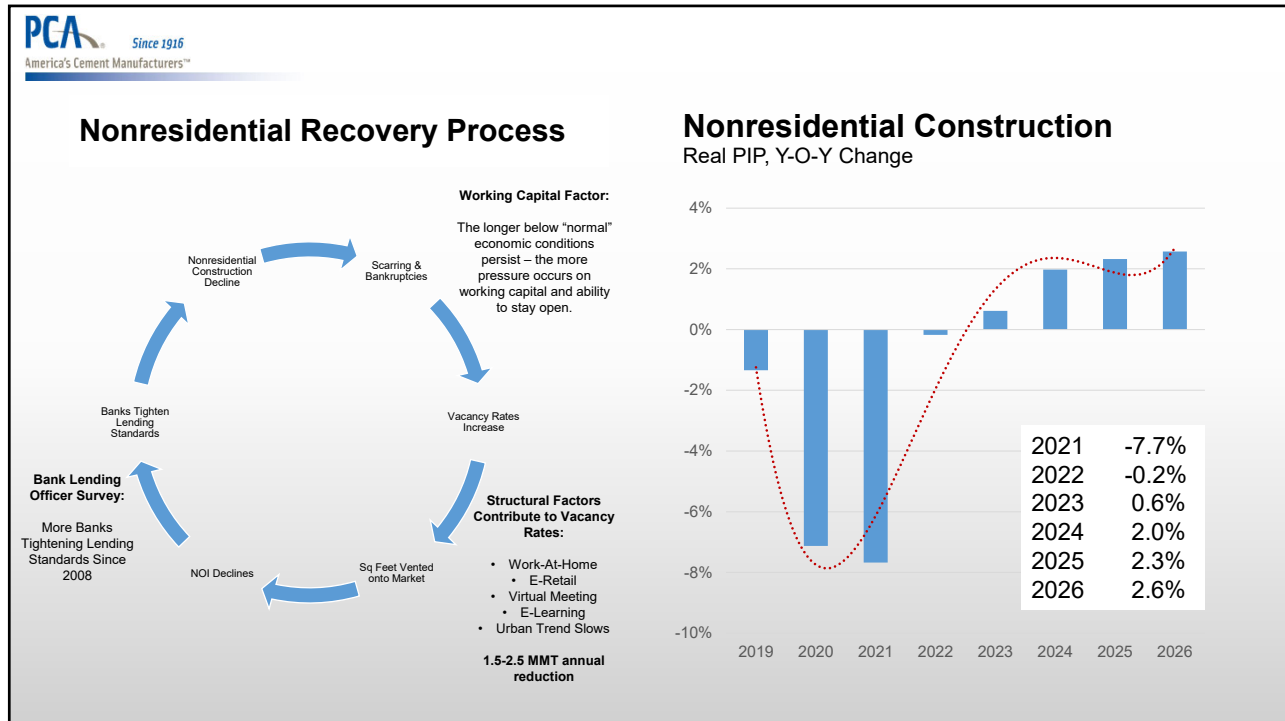
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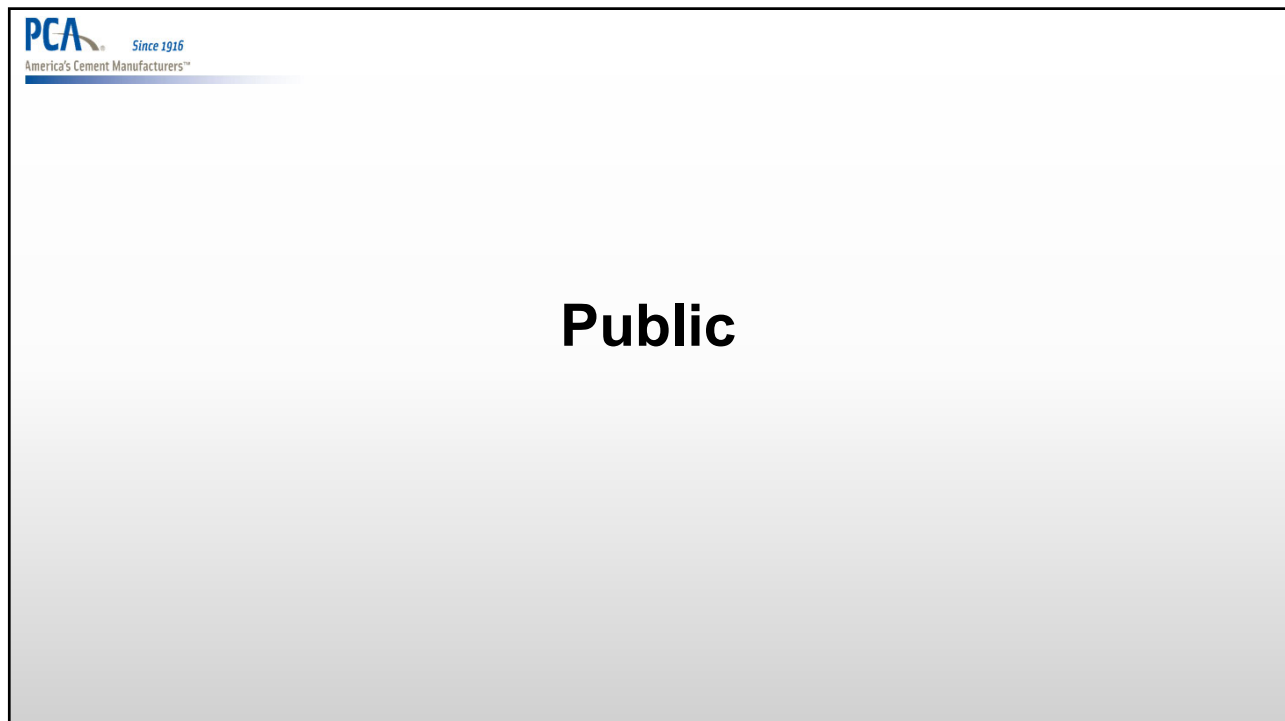
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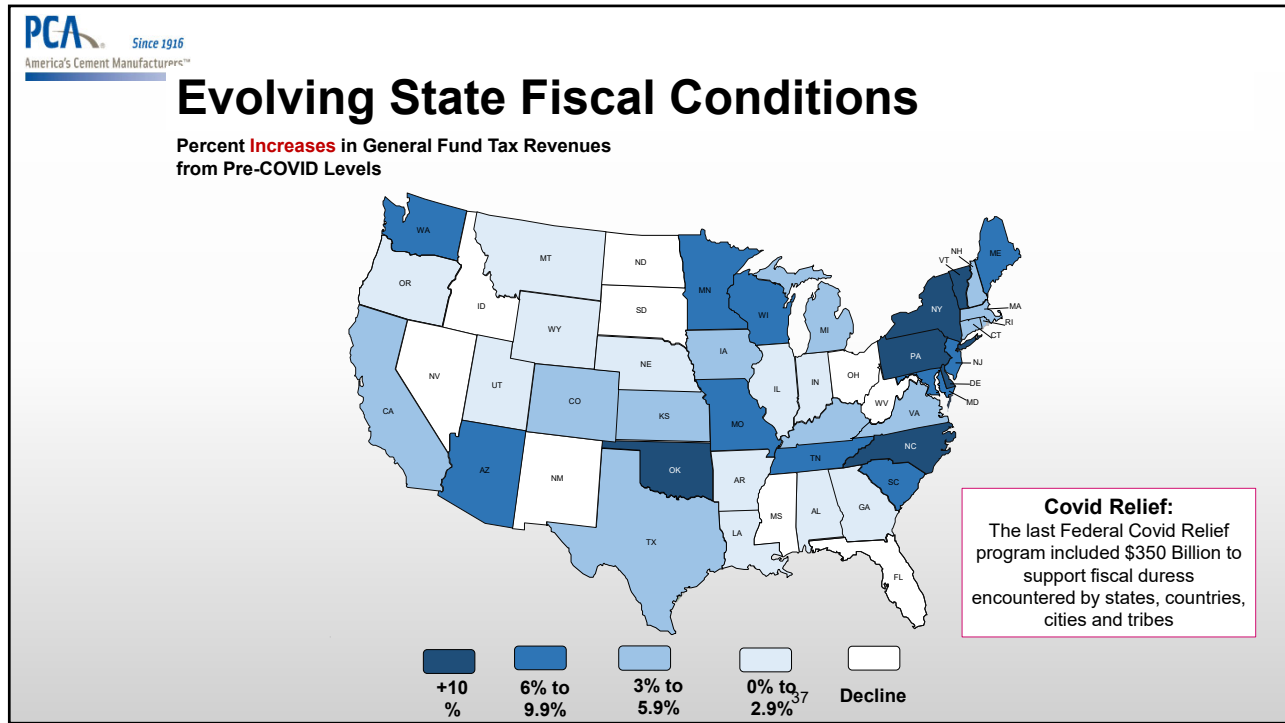
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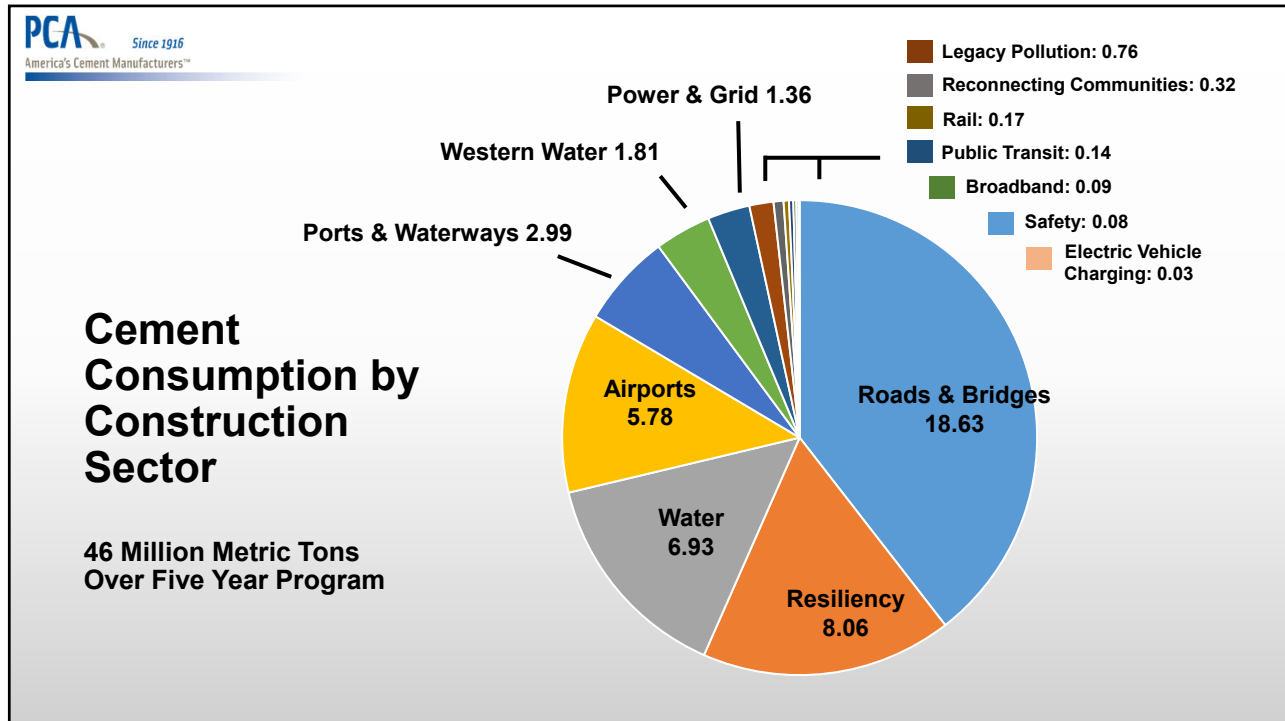
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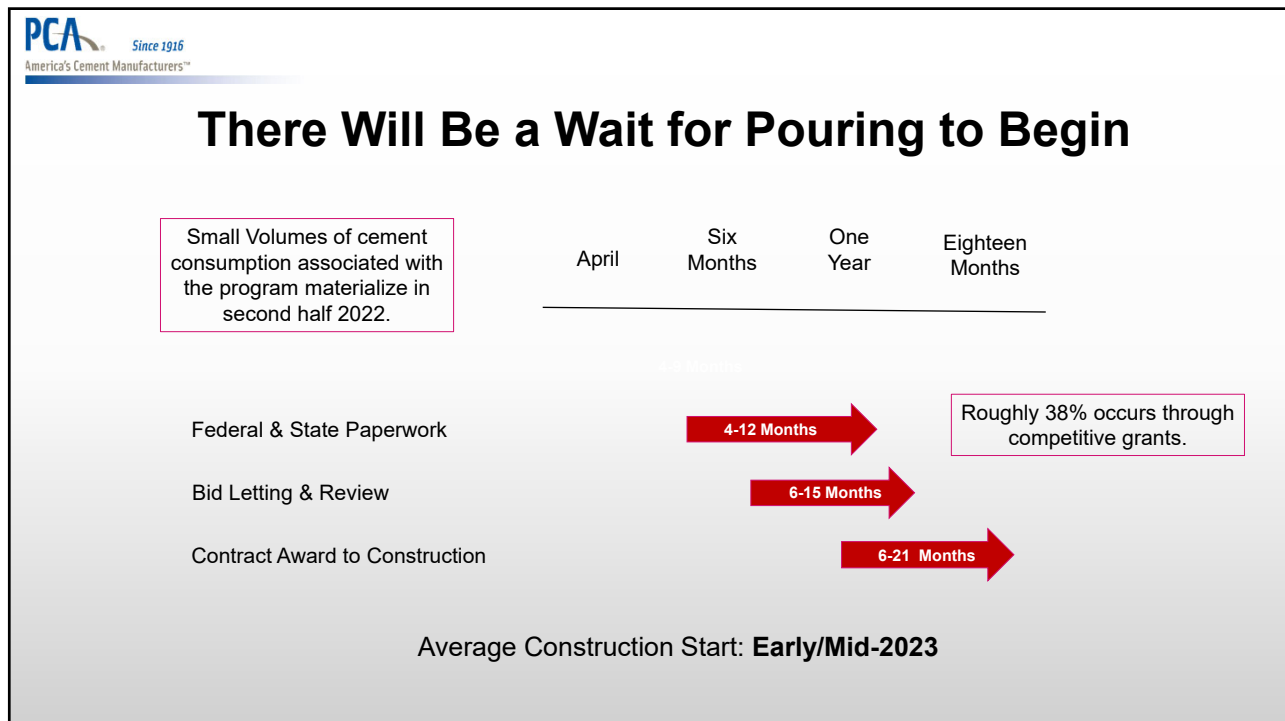
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Infrastructure

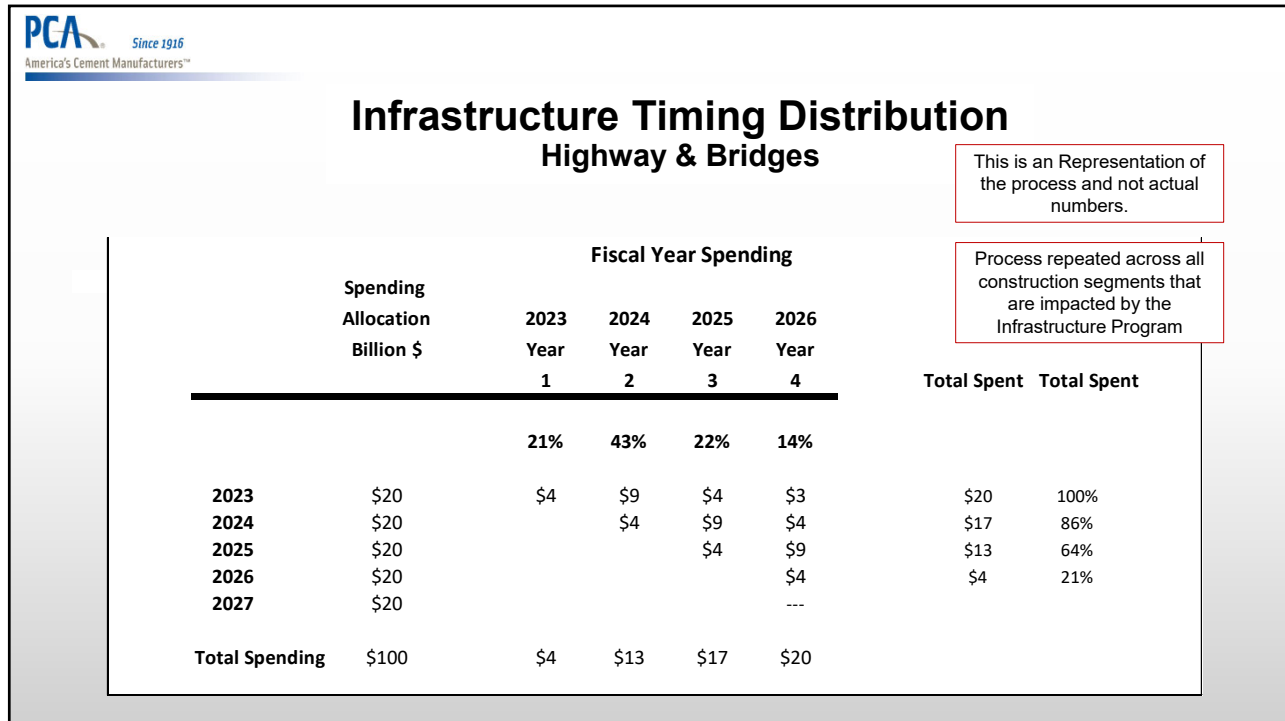
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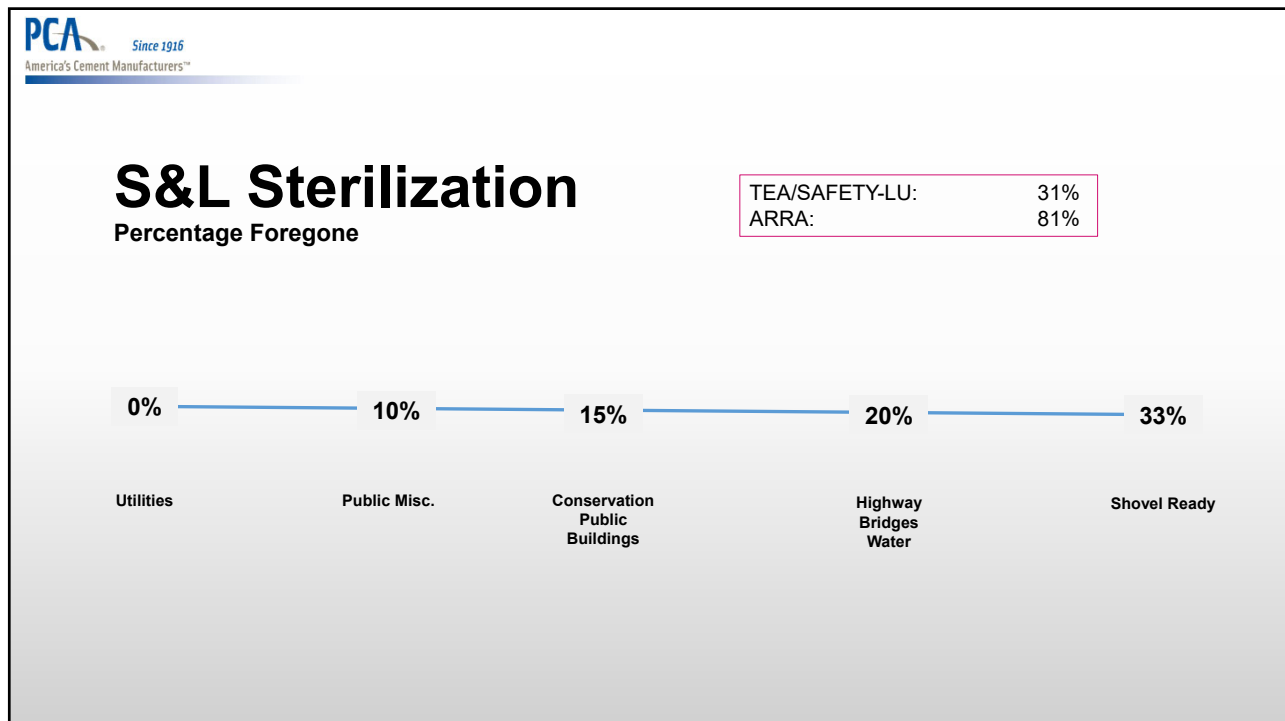
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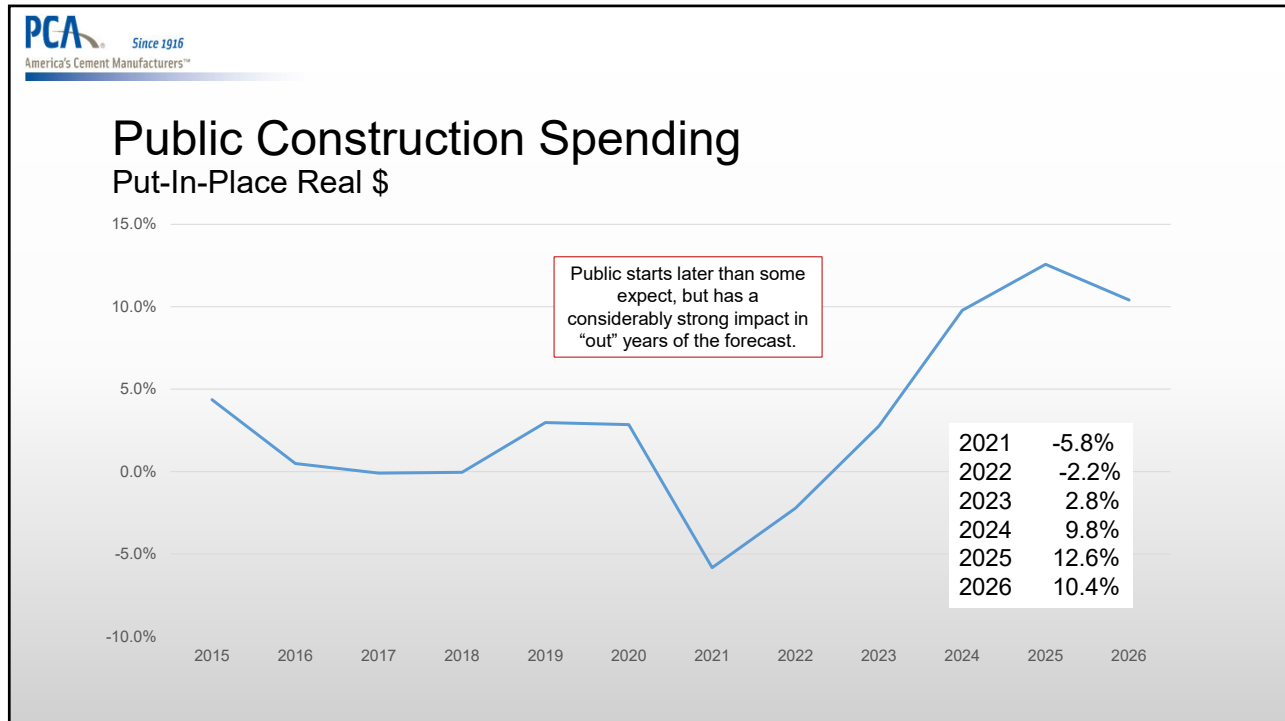
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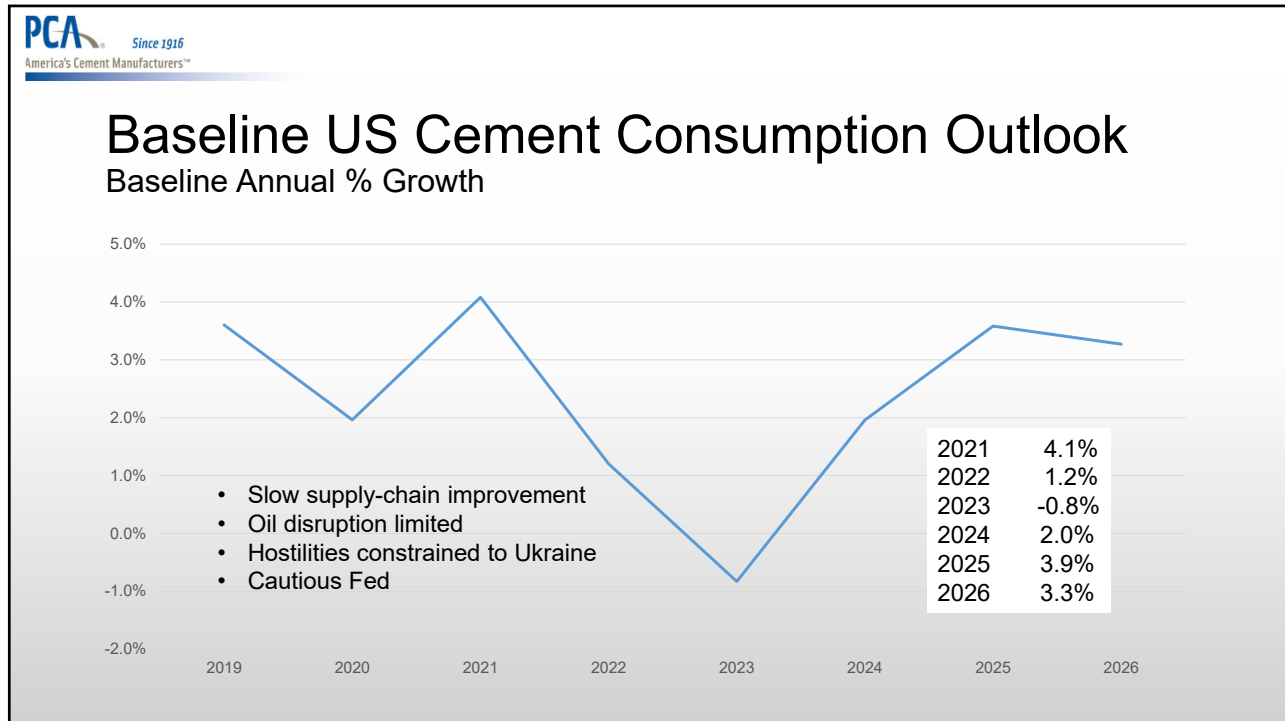
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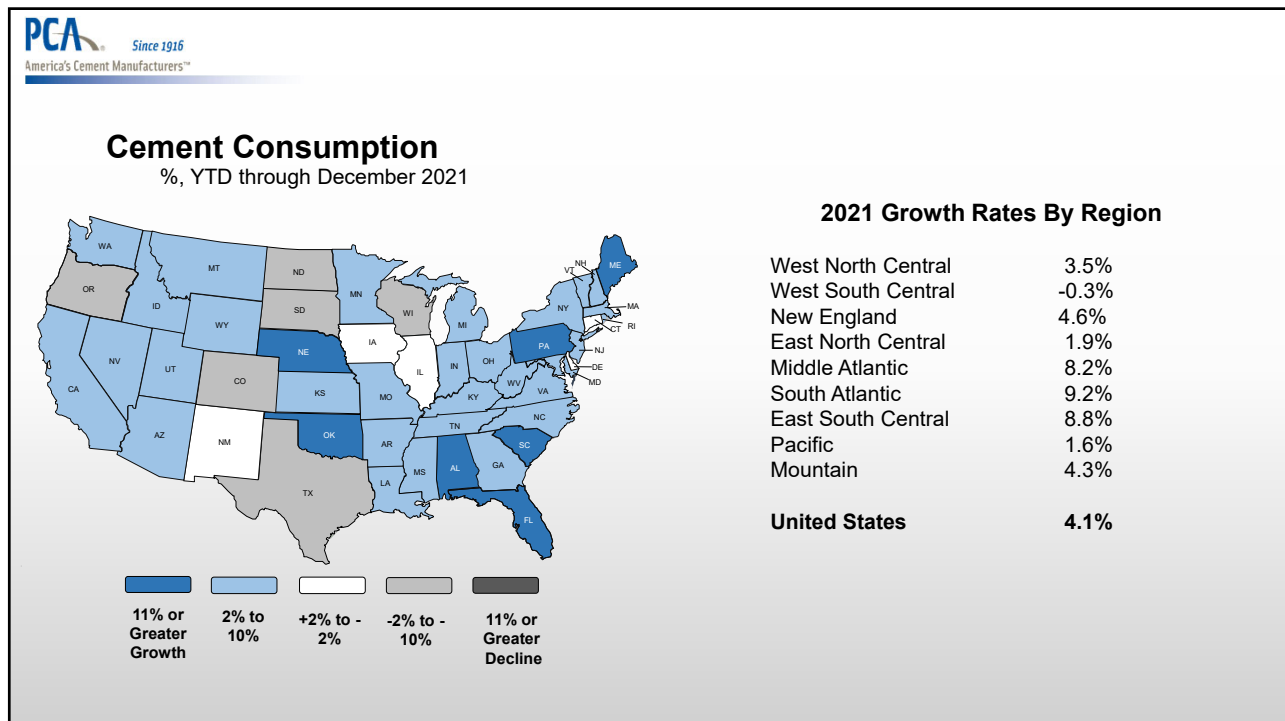
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Outlook

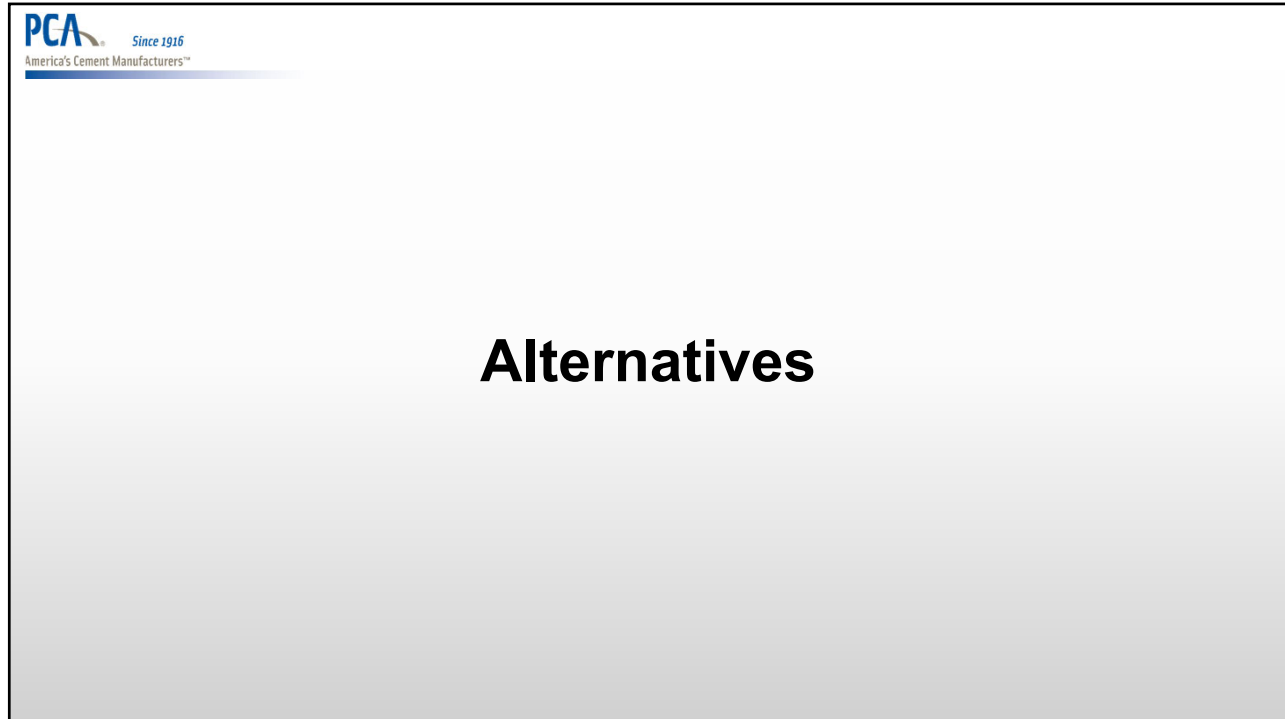
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PCA logo: Since 1916, America's Cement Manufacturers.

There is such high levels uncertainty these “scenarios” are offered as a measure of risk that can be attached to the baseline.

Ukraine Occupation Only (Baseline)	War Expands	Everything Works
<p>Key Assumptions:</p> <ul style="list-style-type: none"> • Russia occupies Ukraine • Ukraine resistance continues • Oil WTI peaks at \$115 per barrel. • Revoke Russia MFN Status • Aggression constrained to Ukraine • No cyberattacks • No nuclear <p>Potential Impacts:</p> <ul style="list-style-type: none"> • Key commodities rise significantly • Additional disruption to supply chain • Inflation higher • Real wage declines • Slower global growth • Sustained increases in interest rates • Cement consumption growth slows • Growth slowdown. No recession 	<p>Key Assumptions:</p> <ul style="list-style-type: none"> • NATO attacked resulting in a hot war • Cyberattacks disrupt US economy • Russian Oil Shunned • Inflation increases • Global growth recession ensues • US demand destruction materializes <p>Potential Impacts:</p> <ul style="list-style-type: none"> • Consumer Sentiment worsens versus baseline • Investment spending slows considerably • Cement consumption experiences moderate decline • Recession 	<p>Key Assumptions:</p> <ul style="list-style-type: none"> • Diplomatic Solution in Ukraine. • Covid drastically reduced mid-year. • Pent-up demand released late 2022 • Rapid Supply-Chain Improvement. • OPEC Plus adds to Global Oil Production • Labor Participation accelerates • Inflation eases faster than baseline • Fed less aggressive on Fed Funds <p>Potential Impacts:</p> <ul style="list-style-type: none"> • Stronger economic growth • Lower inflation • Slower increase in interest rates • Impact on private construction muted. • Stronger Cement Consumption • Growth Slows then accelerates.

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Scenario: War Expands

War scenario assumes hostilities start with economic warfare (cyberattacks) followed by "hot war" initiated by Russian attack on a NATO country. Cyber attacks assumed third to begin third quarter 2022, "Hot War" fourth quarter 2022. Prolonged war. No Nuclear.

- **Cyberattacks** begin 2nd half of 2022. Attacks double from existing levels. Reduces economic growth by -0.1% in 2022 and -0.3% in 2023.
- **Russian Oil Shunned.** Oil Prices rise to \$200 per barrel. Direct impact reduces GDP growth -0.86% in 2022 and -1.4% in 2023.
- **Inflation rate boosted** 150 BP over baseline in 2022 and 200 BP in 2023. Interest rates rise similarly.
- **Consumer spending retreats** due to oil, interest rates, and sentiment. Gasoline Prices exceed \$9 per gallon. Consumer Sentiment drops 35% within six months of hostilities. Reduces GDP growth by -1.2% in 2022 and -1.6% in 2023.

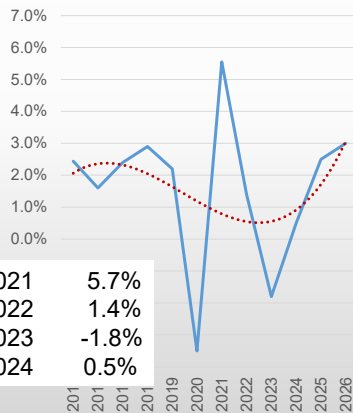
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Scenario: War Expands

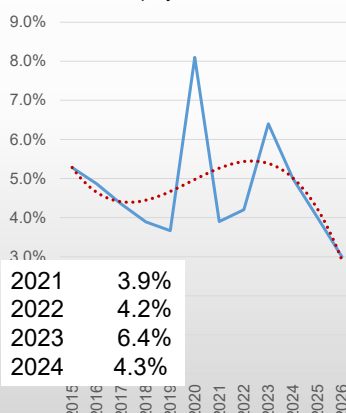
GDP Growth

Real GDP Annual Growth



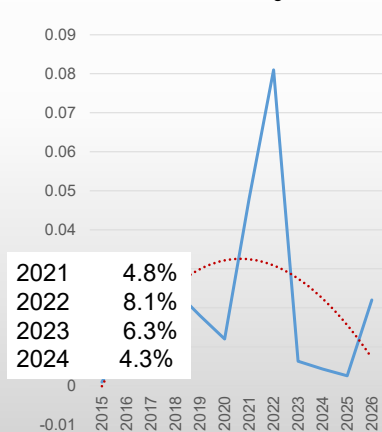
Unemployment Rate

Percent Unemployed



Inflation Rate

CPIU, Annual Percent Change



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Scenario: Everything Works

Everything works scenario assumes a quick diplomatic solution to Russia-Ukraine hostilities, an improvement in inflation and interest rates rise at a slower pace.

- **Covid retreats.** IHME projections are correct and covid virtually disappears by mid-year. Improvement for US and Globally.
- **Supply chain improvements accelerate** due to improvement in covid. Inflation declines and US rate reaches 3% in 2023.
- **Federal Reserve takes a less aggressive policy stance** in light of lower inflation. Inflation expectations ease. Risk premiums ease. Interest rates rise at a slower pace versus baseline.
- **Consumer spending accelerates.** With covid retreat, pent-up demand released. Strong consumer position enhanced by lower inflation, lower interest rates, strong labor market conditions, and cessation of hostilities in Europe.

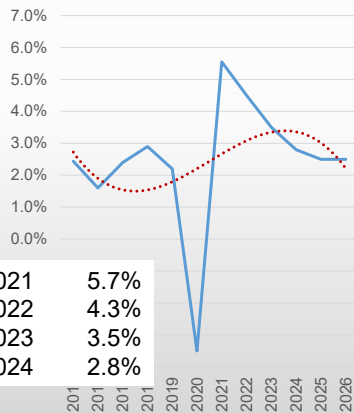
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Scenario: Everything Works

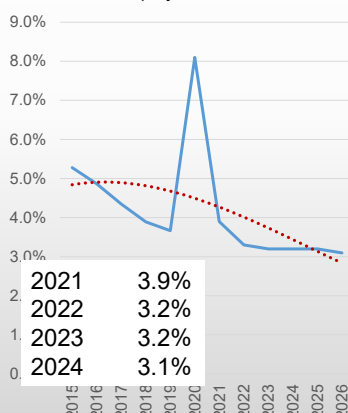
GDP Growth

Real GDP Annual Growth



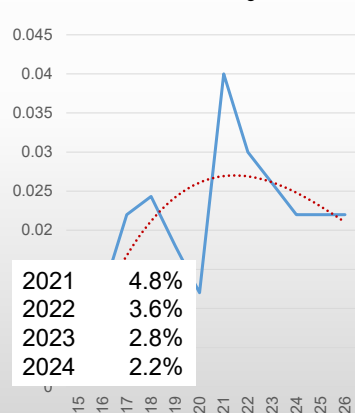
Unemployment Rate

Percent Unemployed

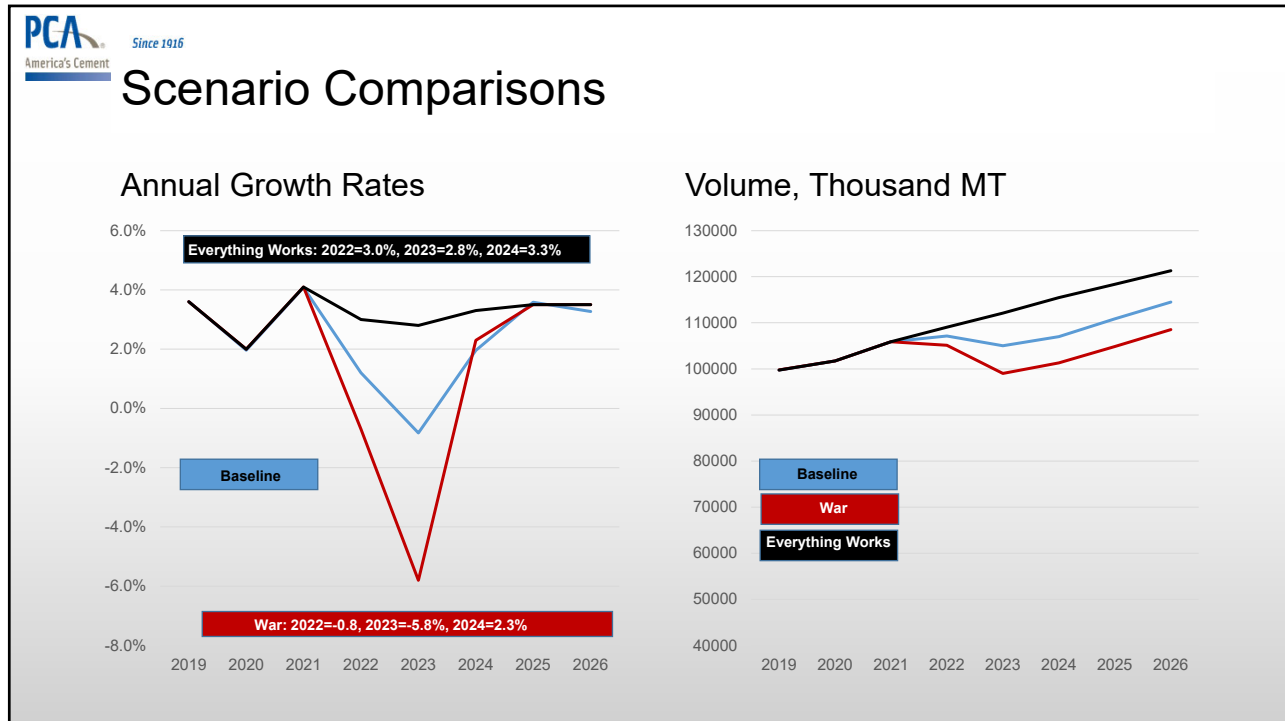


Inflation Rate

CPIU, Annual Percent Change



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Cement Outlook

Ed Sullivan, SVP & Chief Economist

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