Economic & Cement Outlook
Dave Zwicke, Sr. Director & Regional Economist
November 2022

Total Cement Consumption
Index, 2000=100

Composition of Cement Growth: Iowa
Metric Tons

Agriculture
Public
Nonresidential
Residential

-100,000 -50,000 0 50,000 100,000 150,000

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Source: USGS, PCA
General Economic Context

Context: The Economy Started From Position of Strength

Labor Markets Are Strong

% Unemployed

Household Debt Service Ratio

Debt as % of Disposable Income

Labor Markets Remain Tight: IA

US Job Losses Will Materialize

U.S. Quarterly Change in Employment, Thousands

Currently 97,000 open positions in Iowa compared to 47,000 unemployed

Source: BLS
Key Factors Responsible for Slowdown
- High inflation robs spending
- Aggressive interest rate increases
- Strengthening dollar reduces exports

Demand-Side and Supply-Side factors are resulting in 40 year high inflation rates.
- Wage inflation brought on by reduced labor participation, health concerns due to Covid, child care, heightened unemployment & Covid relief benefits, & retirements.
- Global supply chain disruptions.
- Logistic disruptions ship, truck & rail.

The longer these trends are in place, the more likely higher inflation becomes “embedded” and implies a longevity for higher than desired inflation rates.
Strength & Duration of U.S. Recoveries
Real GDP Percentage Growth From Previous Trough

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Durable goods spending far outpacing demand for services
Real Personal Consumption Expenditure, Index

Inflation Outlook
CPIU % Change

"Sticky Supply-Side Improvement"
- Covid Impairment & Shutdowns (China)
- Drought Hydroelectric Shutdowns (China)
- Geopolitical Supply Disruptions
- Labor Scarcity
- Energy exposure

Components
- Jolts Total
- Delivery Days
- Back Orders
- Inventory/Sales Ratio

Key Assumption:
As Covid declines, supply constraints ease.
Hence, "Transitory Inflation"
The easing in supply-chain pressures are "sticky" downward and slow to correct.

Reasons for "Stickyness"
- Global & China Resurgence
- Labor Participation Improvement slow
- Strong Demand conditions likely to prevail
- Inventories remain lean
- Logistics

Initial Results: PCA not conservative enough
Federal Funds Outlook

PCA Outlook Fed Funds

Residential

Demographics By Generation

Source: U.S. Census Bureau, PCA

New Home Affordability

New Home Price Outlook
Annual % Growth

Monthly Payment
Annual % Growth

90% Increase since 2020
Rising Mortgage Rate Impact on Affordability - 2021
(Conventional, 30 Year Fixed 3.4%)
Mortgage Payment Relative to Household Income (Top 100 MSAs)

Source: PCA

Caution: 20% Above 5 Year Average Affordability
Concern: 30% Above 5 Year Average Affordability

Rising Mortgage Rate Impact on Affordability - 2022 (first half)
(Conventional, 30 Year Fixed 4.6%)
Mortgage Payment Relative to Household Income (Top 100 MSAs)

Source: PCA

Caution
Concern

Rising Mortgage Rate Impact on Affordability - 2023
(Conventional, 30 Year Fixed 6.5%)
Mortgage Payment Relative to Household Income (Top 100 MSAs)

Source: PCA

Caution
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Rising Mortgage Rate Impact on Affordability - 2022 (first half)
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**Rising Mortgage Rate Impact on Affordability- 2023**
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**Months of Supply of Homes on the Market: U.S.**

**Shift in Homebuyer Preferences & Cement Impact**

**Housing Permits: IA**

**U.S. Housing Market vs. IA**

- Prior to the pandemic, 2 single family permits had been issued for every 1 multifamily unit.
- Throughout pandemic, ratio increased to 2.5 single family units for every 1 multifamily.
- Despite expected rise in multifamily construction, volumes will not offset declines in single family.

**Source:** PCA
1. Home Price Growth has Exceeded Income: IA

2. Residential Cement Consumption - Iowa

3. Nonresidential

4. Commercial Construction Spending

Source: NAR, Census, PCA

Source: PCA

Source: Census, Dodge, PCA
U.S. Farm Debt
Real 2019 $s, millions

Source: U.S. Department of Agriculture (USDA): Farm Income and Wealth Statistics

U.S. Net Income
Real 2019 $s, billions

Commercial Cement Consumption – U.S.
Metric Tons

Source: PCA

Public Capital Investment
Share of GDP

State & Local capital investment in as a share of GDP has declined to near a post WWII low

Federal capital investment based on structures, i.e. schools & roads. Excludes equipments & software

Source: BBA, PCA
Some of the declining public markets are poised to benefit from federal Infrastructure and Jobs Act (IIJA) spending.

Reduced Mobility Likely Negatively Impacting Fuel Tax Revenues

There Will Be a Wait for Pouring to Begin

Average Construction Start: Early/Mid-2023
Construction Costs Relative to Overall Inflation

Index, January 2019=100

Since the start of the pandemic construction costs have risen 14% relative to 13% on overall inflation.

- The rise in construction costs is attributed to many factors such as: labor and material availability, energy prices, land acquisition costs, among numerous others.

Infrastructure Has Experienced Higher Relative Inflation

Highway Construction Costs vs CPI

Index, January 2019=100

Infrastructure Investment & Jobs Act Cement Potentials

Inflation has eroded some of the purchasing power of IIJA

- In 2023 PCA estimates initial funding will be eroded 18.8% and up to 33.8% by 2030.
- Based on the spending distribution, overall funding could be at risk of 27.1% erosion.
- Roads & Bridges are at highest risk given recent cost pressures.

Metric Tons (000s) | Initial Estimate | Inflation Adjusted | Erosion %
--- | --- | --- | ---
Roads & Bridges | 18,264 | 13,100 | -29.1%
Passenger and Freight Rail | 397 | 293 | -26.3%
Safety | 53 | 41 | -22.4%
Public Transit | 200 | 140 | -40.0%
Broadband | 67 | 50 | -22.4%
Parks & Waterways | 2,983 | 2,230 | -25.3%
Airports | 5,101 | 4,100 | -25.7%
Water Infrastructure | 4,292 | 3,150 | -25.9%
Power and Grid | 138 | 101 | -27.0%
Resiliency | 8,043 | 6,902 | -25.4%
Clean School Buses and Ferries | 0 | 0 | 0%
EV Charging | 30 | 22 | -26.3%
Connecting Communities | 319 | 236 | -25.9%
Addressing Legacy Pollution | 777 | 580 | -25.3%
Western Water Infrastructure | 1,809 | 1,350 | -25.4%
Total | 47,488 | 34,634 | -27.1%

Public Cement Consumption – Iowa

Source: PCA

- Roads & Bridges 18,604 13,197 -29.1%
- Passenger and Freight Rail 397 293 -26.3%
- Safety 53 41 -22.4%
- Public Transit 200 140 -40.0%
- Broadband 67 50 -22.4%
- Parks & Waterways 2,983 2,230 -25.3%
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Source: BLS, ENR, PCA

Bureau of Reclamation Construction Cost Index

Annual Percent Change 2022/2021

- Steel Tower and Substations 19.8%
- Laterals and Drains 18.5%
- Secondary Roads 15.2%
- Earth Dams 14.4%
- Steel Pipelines 13.3%
- Primary Roads 12.9%
- Canals 11.7%
- Pumping Plants 11.6%
- Diversions Dams 11.3%
- Concrete Dams 11.0%
- Concrete Pipelines 10.0%
- Distribution Pipelines 9.5%
- Bridges 9.3%
- Wood Pole Transmission Lines 7.4%
- Powerplants 7.3%

Source: FHWA, BLS PCA

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Pumpin...
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