Orange County Transportation Infrastructure Construction Cost Pressure Index, Fall 2022

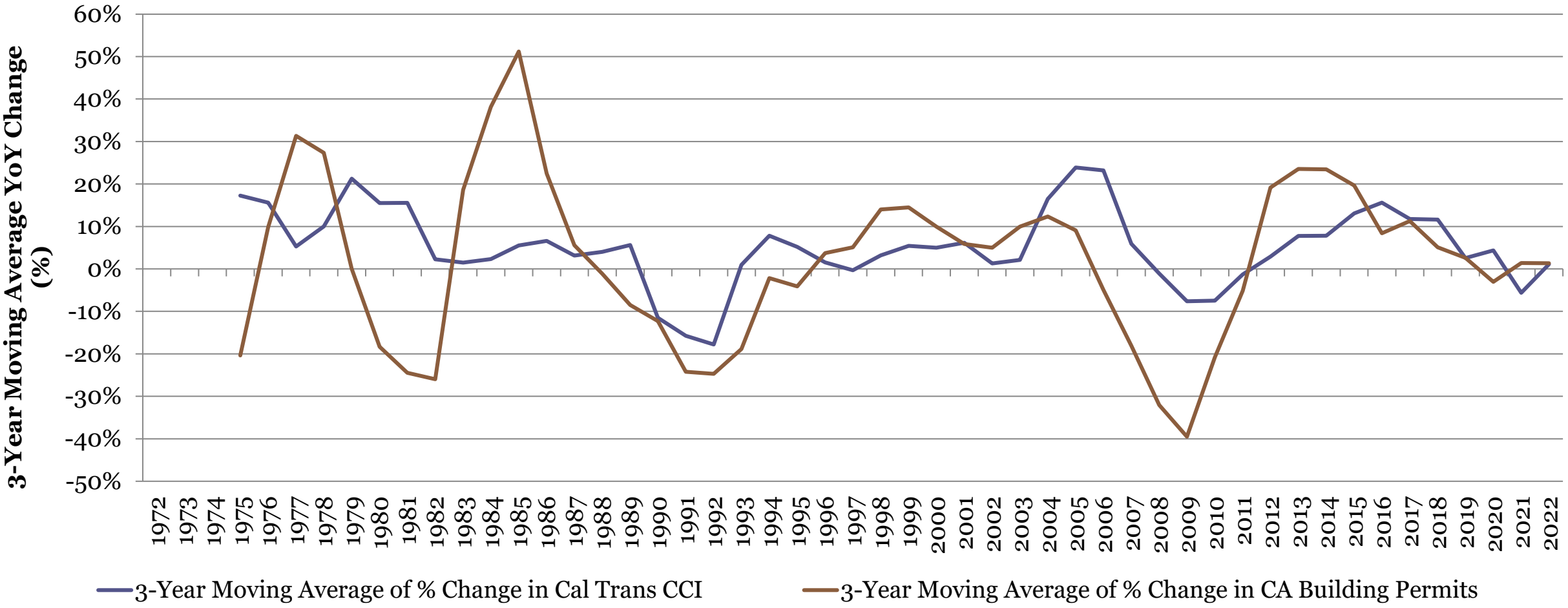
Orange County Business Council

September 2022

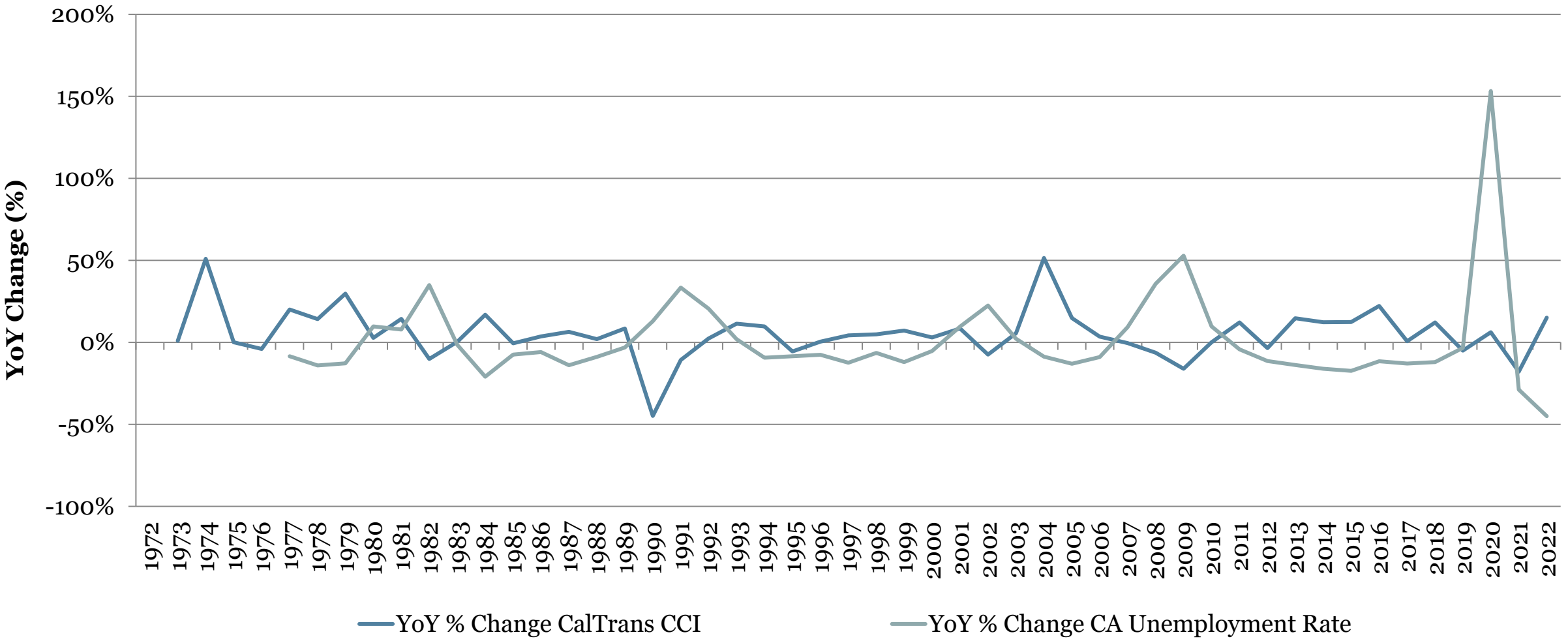
Orange County Transportation Infrastructure Construction Cost Pressure Index Model Components

- Economic Trends – State-level building permits and unemployment rate (Census and California Employment Development Department (EDD));
- Material Costs – Construction Aggregate, PCC Pavement, PCC Structural Concrete, Structural Steel and Bar Steel (Caltrans).
- Labor Costs – Localized construction wages of NAICS defined sectors provided by Bureau of Labor Statistics (BLS).
- Economic Conditions – Tight economy in 2002-2005 and slack economy in 2007-2011.

3-Year Moving Average of Year-Over-Year Percent Change in Caltrans CCI and Building Permits



Year-Over-Year Percent Change in Caltrans CCI and CA Unemployment Rates



Forecast and Range of Orange County Transportation Infrastructure Cost Increases by Index Value

- 2022 – Forecasted Index Value: 5
- 2023 – Forecasted Index Value: 4
- 2024 – Forecasted Index Value: 4
- 2025 – Forecasted Index Value: 2

Range of Cost Fluctuations by Index Score			
Index	Low	Medium	High
0	-17%	-9.5%	-2%
1	-2%	-0.5%	1%
2	1%	1.5%	2%
3	2%	4%	6%
4	6%	8.5%	11%
5	11%	25.5%	40%

Recovery from the Pandemic Begins

- Building activity begins to slow as record prices and interest rate increases reduces affordability;
- Despite uncertain economic outlook, the labor market remains strong and surprisingly tight;
- Wages continue to tick higher thanks to a tight labor market but largely offset by inflation;
- Building materials costs (PCC Structure, Steel Structure) showed small declines (-2 to -3%) outweighed by increases in Aggregate base, PCC Pavement, and Steel Bar (24% to 105%).

Year-over-Year Changes in California Building Permits, California Unemployment Rate and Orange County Construction Labor Costs, 2016-2022

Year	California Building Permits	% change year-on-year	California Unemployment Rate	% change year-on-year	OC Construction Labor Costs (avg. annual wage)	% change year-on-year
2016	102,350	4.2%	5.5%	-11.6%	$67,179	3.8%
2017	114,780	12.1%	4.8%	-12.9%	$71,474	6.4%
2018	113,502	-1.1%	4.2%	-12.0%	$74,669	4.5%
2019	109,904	-3.2%	4.1%	-3.4%	$77,289	3.5%
2020	104,554	-4.9%	10.3%	+153%	$81,460	5.4%
2021	117,291	12.2%	7.3%	-28.9%	$84,040**	3.2%
2022*	113,360	-3.4%	4.0%	-44.9%	-	-

*2022 values projected from year-on-year changes in quarterly data, 1st quarter 2021 to 1st quarter 2022.
** 2021 values projected form year-on-year changes in quarterly data, 4th quarter 2020 to 4th quarter 2021.

OCBC Infrastructure Construction Cost Forecast

- Systematic Risks – Supply chain disruptions, Russia-Ukraine War
  - While supply chain is improving, continued disruptions expected abroad.
  - Despite Fed intervention, inflation remains stubbornly high.

OCBC OC Transportation Infrastructure Construction Cost Index Score, 2022-2025		
Year	Index Score	Range of Cost Fluctuation
2022	5	11% to 40%
2023	4	6% to 11%
2024	4	6% to 11%
2025	2	1% to 2%

- Idiosyncratic Risks – not predictable and therefore not in model
  - Pace of Fed interest rate hikes largely unknown, subject to rapid changes.
  - Lingering impacts of pandemic, zero tolerance policy in China (Shenzhen).
  - General political uncertainty both domestically and internationally.

Questions