

INFLATION, INTEREST RATES & THE COST OF FARM INPUTS

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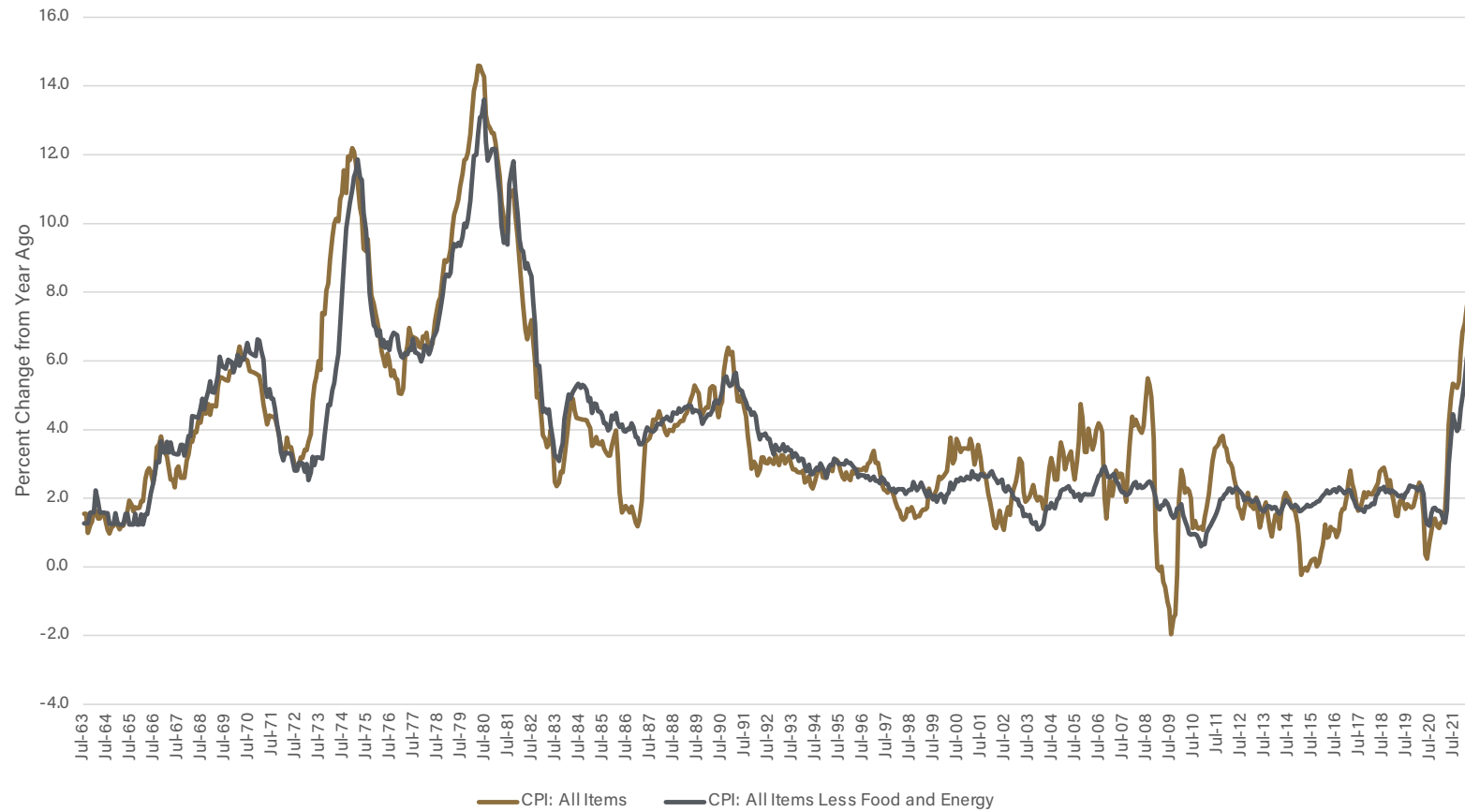


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KEY DEFINITIONS

- Inflation represents the decline in purchasing power of a currency over time.
- Quantitative estimates of the rate of inflation are typically made by examining the increase or decrease in the price levels of a basket of selected goods.
- Most economists would agree that an increase in the supply of money is the root cause of inflation.

Consumer Price Index
U.S. Bureau of Labor Statistics



There Are Many Measures of Inflation...None of Them Are Perfect

- ✓ CPI, calculated by BLS regularly takes stock of around 80,000 products. This market basket is based on a survey of consumers' spending that the bureau carries out every two years.
- ✓ The largest product categories are housing, at roughly 32% of the index, food at 14% and transport commodities (such as cars) at 8%
- ✓ CPI suffers from a problem known as "substitution bias". Substitution bias causes the CPI to overstate inflation.
- ✓ The BLS publishes "chained CPI", which—like most countries' inflation indices—corrects for substitution bias.
- ✓ The Federal Reserve, America's central bank, uses another measure of inflation, which corrects the bias and includes items that are paid for on consumers' behalf, such as the employer's portion of health insurance. Inflation according to these measures tends to be lower than according to the CPI, and is currently 8.1% (by the chained index) and 6.7% (chained PCE), 3.6% (trimmed mean PCE—a measure of "core" inflation)—both of the PCE measures are only thru Feb.

INFLATION MECHANISMS

- Demand-Pull Inflation
 - When an increase in the money supply increases overall demand more than the productive capacity of an economy.
- Cost-Push
 - When production costs increases prices.
- Built-In
 - When individuals expect current inflation rates to continue in the future.

What could cause inflation expectations to break free again, as in the 1970s?

- ✓ Contrasting the experience of the American and German economies, the IMF concluded that central-bank independence made all the difference. Both the Federal Reserve and the Bundesbank mistakenly saw 1970s-era unemployment as mostly temporary
- ✓ But the Bundesbank managed to resist its government's calls for looser monetary policy
- ✓ The Fed, under chairman, Arthur Burns, was more responsive to Richard Nixon's demands
- ✓ Finally, in the late 1970s, when public opinion no longer saw unemployment but inflation as the chief economic evil, it became politically possible to give the Fed license to stamp out inflation

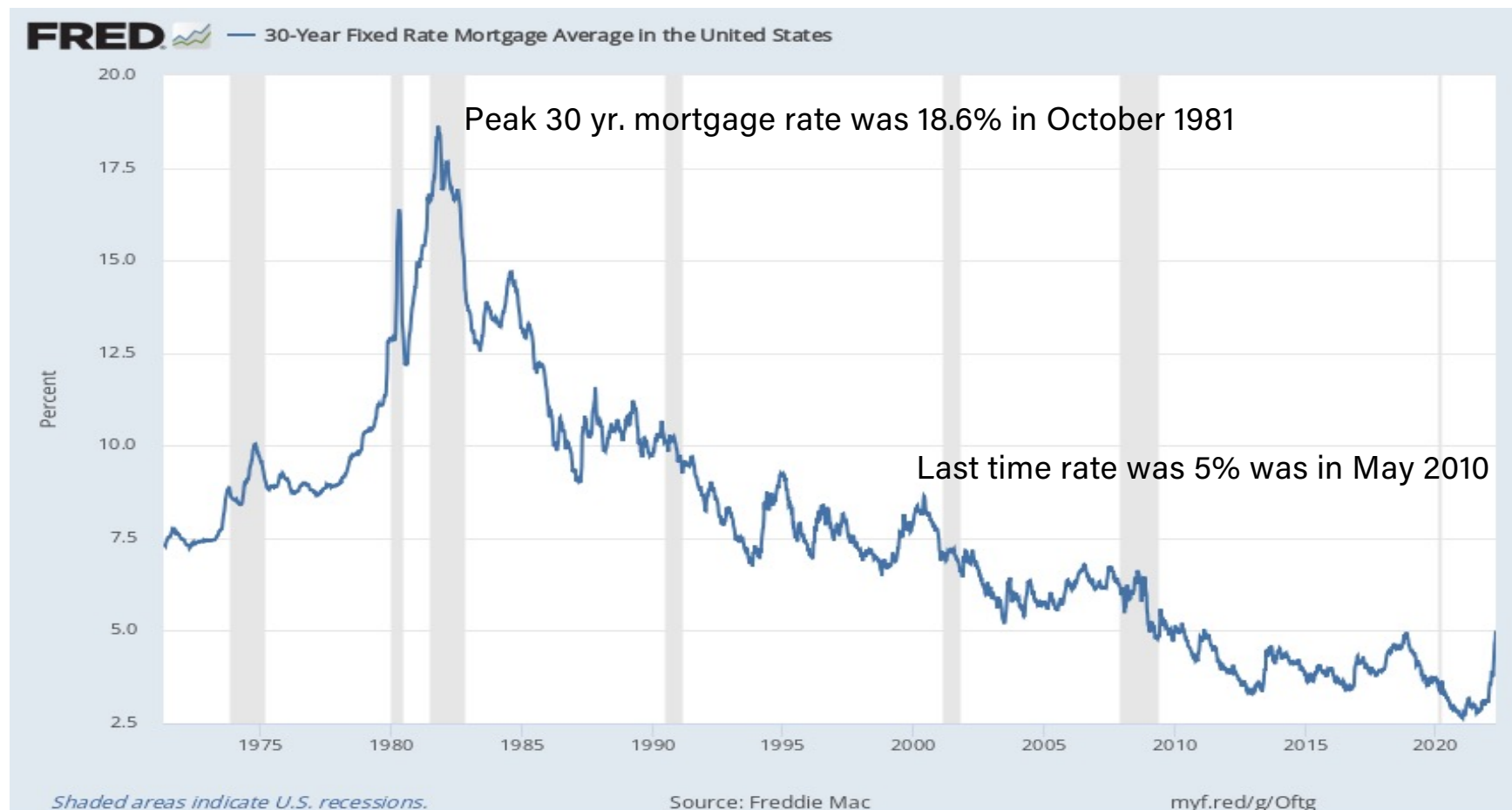
Source: "The Death of Inflation", Economist.com, published in April 2013

From U of Michigan's Consumer Sentiment Survey...Consumers Keep Pushing Their Inflation Expectations Up

Consumers' Expected Change in Inflation Rates

DATE OF SURVEY			NEXT YEAR		NEXT 5 YEARS
April	2021		3.4		2.7
May	2021		4.6		3.0
June	2021		4.2		2.8
July	2021		4.7		2.8
August	2021		4.6		2.9
September	2021		4.6		3.0
October	2021		4.8		2.9
November	2021		4.9		3.0
December	2021		4.8		2.9
January	2022		4.9		3.1
February	2022		4.9		3.0
March	2022		5.4		3.0
April	2022		5.4		3.0

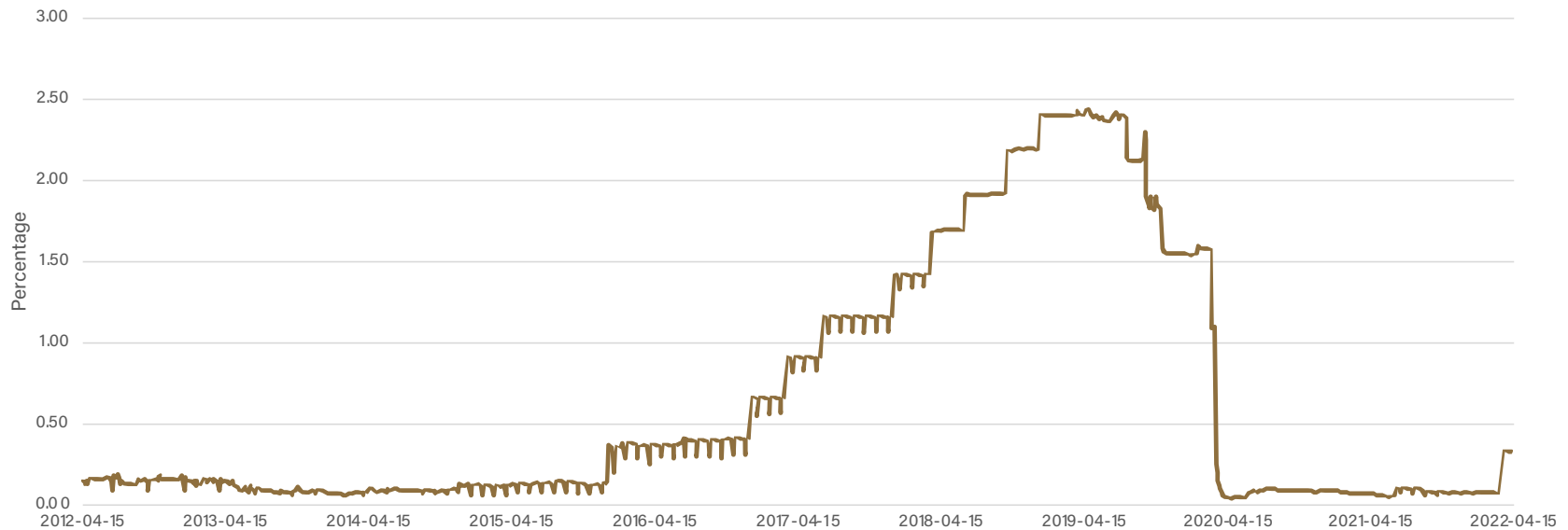
**INTEREST RATES HAVE BEEN RISING SHARPLY
BUT REAL RATES ARE STILL NEGATIVE...HOW HIGH WILL RATES HAVE TO GO?**



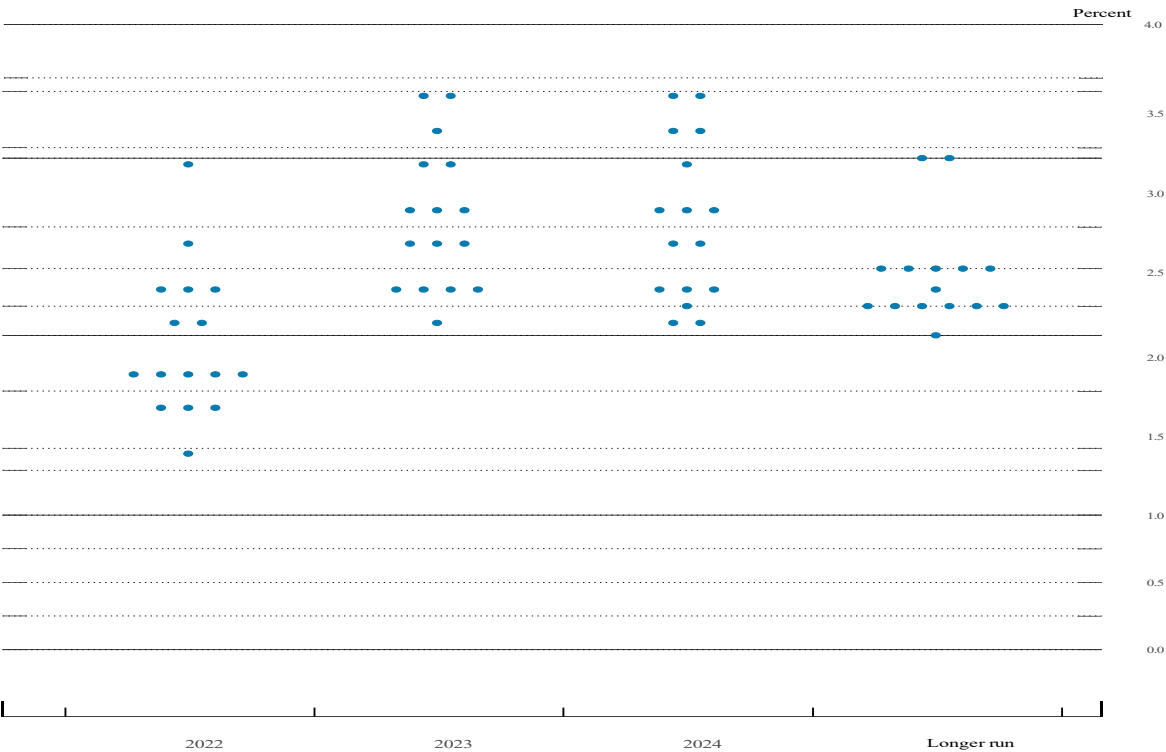
Interest Rates

Fed Funds Rate is Key Factor in Where We Go

Federal Funds Rate
April 2012 to April 2022



Interest Rates...The “Dot Plot”



FARM INPUT PRICE CHANGES

- Input price changes in production agriculture and other industries are due to general inflation as well as supply and demand fundamentals specific to a particular input
- Having said that, some inputs are more closely aligned or correlated with general inflation than other inputs

LONG-TERM RELATIONSHIPS

- Over the 1973 to 2021 period, the average rate of change for the implicit price deflator for personal consumption expenditures (PCE) and agricultural production items was similar (approximately 3.5 percent)
- However, relative variability is much higher for agricultural production items
- Correlation between inflation rates and farm input price indices, 1973 to 2021:
 - PCE and Agricultural Production Items: 0.594

LONG-TERM RELATIONSHIPS (CONTINUED)

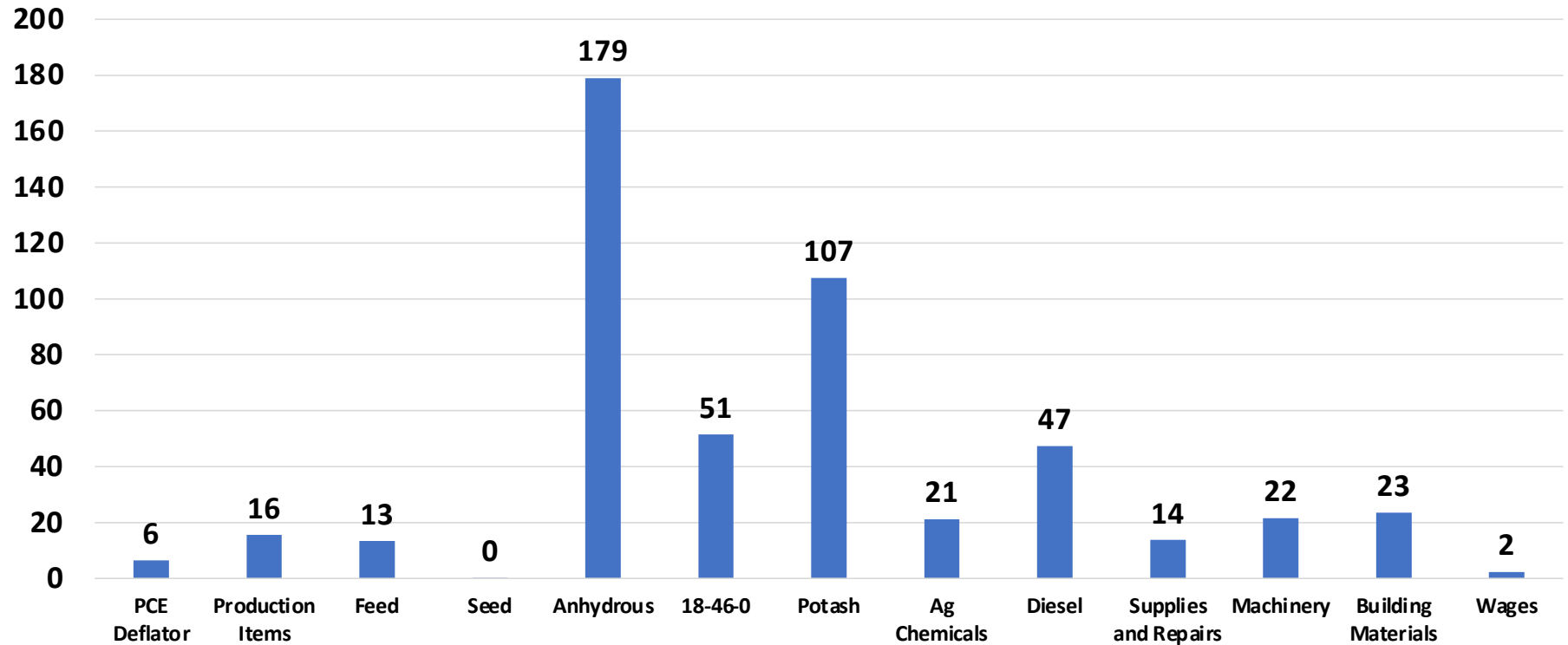
- Correlation between inflation and specific farm input price indices:
 - PCE and Feed: 0.261 (not significant)
 - PCE and Seed: 0.355
 - PCE and Fertilizer: 0.446
 - PCE and Fuels: 0.521
 - PCE and Labor: 0.775
 - PCE and Machinery: 0.775

RECENT TRENDS

- General inflation and the price for certain agricultural inputs has increased dramatically in the last 12 months.
- To illustrate recent changes in prices, we computed average price changes using the latest available 12 months of data (see figure on next slide)

Percentage Change in Inflation and Farm Input Prices in the Last 12 Months February 2022 vs. February 2021

% Change



IMPACTS

- Countervailing Pressures
 - Interest Rates: Downward pressure on asset prices
 - Inflation: Upward pressure on asset prices and costs of inputs
- Banks have increased liquidity
- Repayment rates are increasing



MONTHLY OUTLOOK

PURDUE CENTER FOR
COMMERCIAL AGRICULTURE

Next *Crop Outlook Webinar* will be on Monday, May 16, 2022

Details Available at
purdue.edu/commercialag



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