

JANUARY 2025

PURDUE AGRICULTURAL ECONOMICS REPORT

your source for in-depth agricultural news straight from the experts

Outlook 2025 Issue

Contents:

Editorial Introduction1

The Outlook for the U.S. Economy in 2025.....3

Interesting Times for U.S. Trade Policy6

Farm Policy Outlook.....13

Food Prices16

Health Outcomes: How does Indiana compare to the rest of the country?20

2025 Agricultural Credit Outlook24

2025 Purdue Crop Cost and Return Guide29

2025 Farmland and Cash Rent Outlook33

“What to Watch” in Dairy Markets in 202534

Analysis of Labor Market Outcomes during the COVID36

Editorial Introduction – Outlook 2025

Roman Keeney, Associate Professor of Agricultural Economics and Co-editor of the PAER

Welcome to the Outlook 2025 Issue of the PAER! We are publishing a little later than usual this year to give our contributors time to track policy developments tied to the incoming presidential administration. The 2024 election looms large on the economy in this year’s outlook content – with voters opting for a policy agenda with many potential impacts for agricultural fortunes.

The issue leads with Larry DeBoer’s outlook for the US economy. He explains how the US staved off predicted recessions in the 2023-24 window and spent most of 2024 with solid economy fundamentals. Continued significant dissatisfaction with the economy drove voters to pick a

presidential ticket that promised a widespread shakeup of the economy, including more tariffs, tax cuts, reduced government spending and aggressive immigration policy.

Russell Hillberry examines one aspect of that economic shakeup: the promised tariffs on the US’s three largest trade partners of the new administration. He uses the most recent trade war outcomes to explain how potential retaliations and escalations are likely to disproportionately burden export-oriented agriculture -- depressing farm incomes that could require expanded subsidies to farms as was done in 2018-2020.

Dewey Robertson and associate professor Roman Keeney pick up on the domestic policy realm, reporting that the long-delayed farm bill stands a good chance of passage in 2025, with Republicans assuming unified control of the federal government. Getting a farm bill would be a positive for the agricultural economy, but a number of items in the economic policy agenda, including reduced spending, removal of migrant workers and tariffs, all could create disruptions that impact incomes more drastically than farm subsidy programs can accommodate without additional emergency funds.

The final general economy piece this year concerns the level of food prices. Caitlenn Hubbell and Joe Balagtas examine food price inflation rates, finding that they have lowered to 1.8% while consumer perceptions of increased food costs remain high. This perception is likely driven by lingering reactions to overall prices that are 25% higher than in 2020. They point to a general continued lowering trend in inflation, though specific products like eggs, chocolate and coffee are experiencing price increases due to disease and drought conditions impacting production.

As usual, we use the middle of the issue for rural economy issues, and this year, our contribution comes from Laura Montenovo, who reports on health outcomes in Indiana relative to the rest of the country. Examining uninsured rates in Indiana, she finds they are slightly lower than the national average, but there is considerable heterogeneity throughout the state. Comparing this to health outcomes, there does not appear to be evidence of strong correlation between life expectancy and uninsured rates across Indiana counties.

We turn to the farm economy specifically for the second part of the issue, beginning with Joshua Strine and Todd Kuethe reporting on credit market conditions. They find the outlook is moderately pessimistic for 2025, with lower operating margins on farms and increased demand for credit despite higher rates and limited funds. There is potential for some relief on the horizon. If the economy maintains stable unemployment and sees continued lowering of inflation, then there are strong signals that the Federal Reserve will lower the federal funds rates that steer borrowing rates across the country.

Those lower operating margins are the subject of Michael Langemeier's outlook on cost and returns for crops. Using available information from January, he estimates [per-acre costs and breakeven rates for cash crops](#) that are very similar to 2024 but much higher than pre-COVID levels of 2019. High input costs continue to drive low per-acre profitability measures. Langemeier provides regular updates to crop cost and returns estimates on the [Center for Commercial Agriculture's website](#).

Kuethe, in a second contribution to the issue, identifies the high input costs and tight margins for crops as a cause for dipping low incomes. In a Purdue survey record, land values are recorded for the 2024 year, but respondents indicate that these levels are weaker than in 2022. These mixed signals indicate that flattening or slight declines are likely on the horizon for land values. Those same market fundamentals are expected to put downward pressure on cash rental rates.

In our final focus on agricultural markets, Nicole Widmar looks to 2025's prospects for dairy markets. Key indicators predict that output will be up again, as HPAI was managed with additional testing mandates limiting spread and a prognosis that most cows are able to recover. She notes that concerns remain and that management will continue to be a policy concern. Broader policy concerns remain in trade, where dairy has been a source of dispute that could be impacted by trade restrictions.

We close this year's issue with a second contribution from Laura Montenovo. In this special feature, she summarizes an international study focused on COVID-19 outcomes, a topic that continues to influence economic fortunes in the US and around the world. The focus of the article is labor market outcomes with labor demand factors of hirers being the common driver of job losses across countries. Specifically, job market losses track closely to a sector's requirements for face-to-face work versus the potential flexibilities for occupational duties to be completed remotely.

The editors would like to thank our contributors for their hard work in making this issue possible, and we hope the information continues to be useful and thought-provoking for PAER readers. We also encourage readers to keep up to date with the many centers in Purdue's Agricultural Economics Department, where valuable information on [commercial agriculture](#), [agribusiness](#), [food demand](#) and [food waste](#), [global trade](#) and [regional development](#) can be found.

PURDUE

AGRICULTURAL ECONOMICS REPORT

The Outlook for the U.S. Economy in 2025

Larry DeBoer, Extension Specialist and Professor Emeritus

Summary: Amid much policy uncertainty, output will likely grow about 2.2% in 2025, a bit slower than in 2024. Inflation should fall gradually to 2.4%, the unemployment rate should remain unchanged, and the Fed will cut interest rates more slowly than previously expected.

By most measures, the United States economy is in fine shape. The recession that many dreaded for 2023-24 never happened. Gross domestic product grew at accustomed rates in 2024. Though the unemployment rate increased, it remains at historically low levels. Inflation continued to fall, though not yet to the target 2%. Interest rates are higher than we're used to but are coming down. The Federal Reserve achieved its "soft landing" and anticipates more interest rate reductions in the coming year.

But prices are higher than they were. Housing is less affordable. Job opportunities in some industries have dried up. People are unhappy with the economy. They say so in surveys. They said so with their votes. They elected a new administration to shake things up. The potential for higher tariffs, deportations, tighter immigration policy, tax cuts, and large Federal spending reductions creates more than usual uncertainty for forecasts.

But that's no excuse. What might happen in 2025?

How Much Can Output Grow?

We are near full capacity. The economy can only produce so many goods and services, which limits how much people, businesses, and the government can buy. Output growth in 2025 may depend more on the availability of resources and advances in productivity than on people's willingness to spend.

If the fourth quarter is like the first three, 2024 gross domestic product will have grown 2.8% above inflation. We can break this down into four components. Working-age population grew 0.6%. The share of that population participating in the labor force rose 0.1%. The share of the labor force actually employed went down 0.5%. And productivity—output produced by the average worker—increased 2.6%. Those percentages sum to 2.8%, the rate of real GDP growth. We can project these four components to forecast growth for 2025.

Working age population growth depends on long-term fertility, which has been mostly decreasing since the end of the baby boom. It also depends on net immigration, which increased after the pandemic but seems likely to slow in 2025 if immigration policy is tightened. With immigration down, let's set the population increase at 0.3%

Labor force participation is also on a downward trend. In 1997, 67.1% of the population was employed or looking for work, and now it's 62.7%. This is mostly due to baby boomer retirements. The percentage tends to fall during recessions and rise in expansions but usually does not reach its former peak. With the expanding economy, labor force participation may rise a tick, perhaps another 0.1%.

The unemployment rate increased from 3.6% in 2023 to 4.1% in 2024. That means the "employment rate" fell from 96.4% to 95.9%. The Federal Reserve's interest rate hikes slowed the economy, as intended. The unemployment rate stabilized in the second half of 2024 in the low 4% range. It's unlikely to change much in 2025. Let's say the employment rate will be unchanged.

That leaves productivity growth, which was the biggest contributor to output growth in 2024. Productivity growth boomed from 1995 to 2005, rising 2.1% per year on the first wave of information technology adoption. Then, it slumped, rising only 1.3% per year from 2006 to 2022. In the past year and a half, though, productivity has grown at twice that rate.

More rapid productivity growth may be a blip or a trend. It may be a blip resulting from the recovery from the pandemic. But it may be a trend based on rising new business formation and a new wave of IT. Let's split the difference and put productivity growth at 1.8%, which is also the average over the past 75 years.

Adding up those four components sets real **GDP growth at 2.2% for 2025.**

Can a case be made on the spending side for 2.2% growth? Consumers remain pessimistic, though not as sour as they were at mid-year, according to the University of Michigan survey of consumer sentiment. Businesses have been ordering fewer consumer goods, which implies more pessimism about how much they'll spend. Consumer spending above inflation rose 3% in 2024. Perhaps 2% is more likely in 2025.

Real business investment rose 3.3% in 2024. High interest rates discouraged investment, but interest rates will be coming down. New opportunities in information technology may increase intellectual property investment. Housing starts were down slightly in 2024, and building permits continue to be low at the end of the year. Home building has lagged since the Great Recession of 2007-09, even when mortgage rates were very low between 2015 and 2021. Home construction seems unlikely to accelerate. Overall business investment could rise 5% in 2025.

Exports rose 4.6%, and imports rose 7.1% in 2024. A rise in U.S. tariffs would depress imports. Our trading partners would respond with higher tariffs on our exports. International trade generally would be reduced. For 2025, suppose both import and export growth are cut by half, to 2.3% for exports and 3.6% for imports.

Government spending above inflation rose 3.4% in 2024. Budgets are likely to be tighter in 2025. Federal tax cuts and efforts to reduce the budget are likely to slow Federal spending growth, and a survey of state budget officers showed reduced plans for spending among state governments in 2025. Put the overall government spending increase at 2.5% for 2025.

Slower consumer and government spending growth, somewhat faster investment growth, and both imports and exports falling are one way to get 2.2% growth in real GDP. It's a plausible forecast for output growth.

Unemployment and Inflation

At the start of 2024, according to the U.S. Bureau of Labor Statistics, businesses were trying to fill 8.7 million job openings, but there were only 6.1 million people searching for work. That's 2.6 million more openings than searchers. The labor market was very tight. In November, the most recent estimate, there were 8.1 million openings and 7.1 million searchers, a gap of one million. The labor market is not as tight as it was. The Fed's interest rate hikes were intended to cool the labor market, and they did.

Real GDP growth of 2.2% is likely to increase the number of job openings, but labor force growth will increase the number of job searchers, too. This means the 2025 unemployment rate is likely to remain unchanged, with a few small ups and downs. It was 4.2% in November. **The unemployment rate should still be 4.2% by the end of 2025.**

The 12-month Consumer Price Index (CPI) inflation rate peaked at 9.0% in June 2022. It was 3.1% at the beginning of 2024 and is 2.7% now. This is partly the achievement of the Federal Reserve's interest rate increase but mostly the result of the easing of supply chain pressures as business got back to normal after the pandemic. The New York Federal Reserve's index of global supply chain pressure has an average of zero, but it peaked at 4.4 at the end of 2021 then fell rapidly. It is -0.3 now.

The components of the CPI inflation rate are revealing. Twelve-month durable goods inflation peaked at 18.8% in February 2022. In 2024, it was -2.0%, which is less than the -0.3% rate at the end of 2019. Manufacturing productivity usually rises fast enough to reduce prices (or deliver higher quality products per dollar spent). Non-durable goods inflation peaked at 16.1% in June 2022 and is 0.4% now. It was 2.3% at the end of 2019. Non-durable goods include energy prices, which rise and fall with the price of oil. Gasoline prices are about the same now as they were at the beginning of 2024, so non-durable inflation is low.

Service price inflation peaked at 7.6% in January 2023. Now it's 4.5%, compared to 2.7% at the end of 2019. This is the component that is keeping overall inflation above the Fed's 2% target. Service inflation is dominated by the cost of housing, which the BLS measures with data on rents. Lagging residential construction has created a short supply, which is raising housing prices faster than the prices of other goods and services.

Service inflation has been falling very gradually, just half a point through all of 2024. That will likely continue. At that rate, though, it will be two more years until the overall inflation rate hits the Fed's 2% target. **The inflation rate is likely to be around 2.4% over the twelve months of 2025.**

Interest Rates

The Federal Reserve raised its policy interest rate, known as the "federal funds rate," from near zero in February 2022 to 5.3% in July 2023, a very rapid increase. It remained at that rate until September 2024 and now varies around 4.4%. The Fed cut the rate a quarter point at each of their last three meetings.

At the December policy meeting, the median projection of Federal Reserve Board members was for two quarter-point rate cuts in 2025, which would put the federal funds rate at 3.9%. This reflects a pessimistic turn in Fed opinion. In September, members anticipated four rate cuts. It's a recognition that the inflation rate is falling more slowly than expected and perhaps a hedge against possible tariff hikes from the new administration.

The yield on 3-month Treasury bills rises and falls with the federal funds rate, so expect a **3-month Treasury bill interest rate of 3.9% by this time next year.** That's a half-point decline from the current rate.

In December, the Treasury yield curve righted itself for the first time in two years. The 10-year bond yield was 4.4%, slightly higher than the 3-month yield. For two years, the short-term rate exceeded the long-term rate, which is an inverted yield curve. That's often an indicator of approaching recession, but we've avoided that. Interest rates are likely to fall with the Fed's rate cuts, but the spread is likely to keep increasing. That implies a **10-year Treasury bond interest rate of around 4.2% by the end of 2025.**

Uncertainty

This forecast will be wrong, as all forecasts are. One reason is unusually high uncertainty about policy. Tariffs might be universal or targeted, or they might be a negotiating ploy and not raised at all. If tariffs are large and general, inflation will be higher. Deportations of undocumented immigrants might be widespread or targeted at people with criminal records. Or perhaps border security and immigration rules will be tightened without many people deported. Widespread deportations would reduce the labor force, decreasing output growth and raising inflation. Bigger tax cuts would increase growth and inflation. Budget cuts would decrease growth and inflation.

Then there are the wild cards. War over Greenland and the Panama Canal. Widespread natural disasters. A new pandemic. More rapid than expected adoption of AI technology. The usual risks of big oil price changes. Plus, economic shocks that we can't anticipate.

Let's face it. Forecasting is hard.

PURDUE

AGRICULTURAL ECONOMICS REPORT

Interesting Times for U.S. Trade Policy

Russell Hillberry, Professor of Agricultural Economics

Summary: *The President-elect's trade policy is likely to be at least as harmful in his second term in office as it was in his first term. Export-oriented agriculture will bear a disproportionate share of the costs from another trade war.*

As urban legend has it, an ancient Chinese curse says, “May you live in interesting times.” Apparently, the curse is neither ancient nor Chinese. Whatever its origin, it seems that the curse has fallen on export-oriented agriculture (and on the writer of this annual outlook). The re-election of Donald Trump as U.S. President promises a return to the chaotic and unwise trade policies of his first term—policies that damaged the aggregate U.S. economy, with export-oriented agriculture bearing a disproportionate share of the costs. (Oh well, at least it was interesting.) One aspect of the chaos surrounding the President-elect’s trade policy is the arbitrary and frequently changing level of threatened tariffs, as well as the identity of the changing countries whose exports he says he wishes to target. This inconstancy is itself a cost to businesses that wish to trade and invest in the U.S.; it also complicates any effort to predict the trade policy landscape in 2025.

This review considers two of the President-elect’s most recent proposals. In both cases, retaliation by threatened partners would substantially reduce incomes in export-oriented agriculture. The sectors that would be most affected are, most likely, soybeans should China be the targeted partner, and corn, pork, dairy, and poultry if Mexico is the primary target. If the proposal the President-elect campaigned upon is enacted – and if U.S. trade partners retaliate in kind – recent research suggests that significant income losses will be felt across the breadth of agricultural sectors that participate in large-scale export activity. Model estimates suggest that U.S. landowners’ incomes would fall by 6%. On the other hand, U.S. food manufacturing sectors might benefit from a trade war because reduced agricultural commodity prices would give them access to cheaper inputs.

The consequences of trade policy actions are often difficult to summarize succinctly because nearly every trade policy action generates winners and losers, both at home and abroad. While the effect of tariff increases on the economy is almost always negative, some industries benefit, and others are hurt, making it difficult to observe aggregate consequences. But consequences for individual sectors are sometimes quite visible, as they were in 2018.

Export-oriented agriculture was among the most visible losers from the 2018 trade war. In retaliation for U.S. tariffs on Chinese manufactured goods in 2018, China imposed a 25% tariff on imports of U.S. soybeans, largely switching their purchases from U.S. to Brazilian sources. Since China was by far the largest importer of soybeans, the result of its tariff on U.S. soybeans was a sharp drop in the price of U.S. soybeans, both in absolute terms and relative to the price in Brazil. Figure 1 reproduces and annotates a figure from an earlier version of this review, Hillberry (2018). The figure shows the prices of soybeans in Chicago and Paranagua, a major port for soybean exports from Brazil. International market forces tend to keep these prices together over time, but the trade war in 2018 saw a sharp drop in the U.S. export price relative to the Brazilian price. Rarely is a country such a large buyer of a product that its own tariff differential on the same product from two different export sources passes through entirely to prices, but in this case, China was large enough to make that happen. The price gap between Paranagua and Chicago soybeans in October of 2018 was \$89 per metric ton (or \$2.42 per bushel) against a U.S. price of just over \$300 per metric ton.

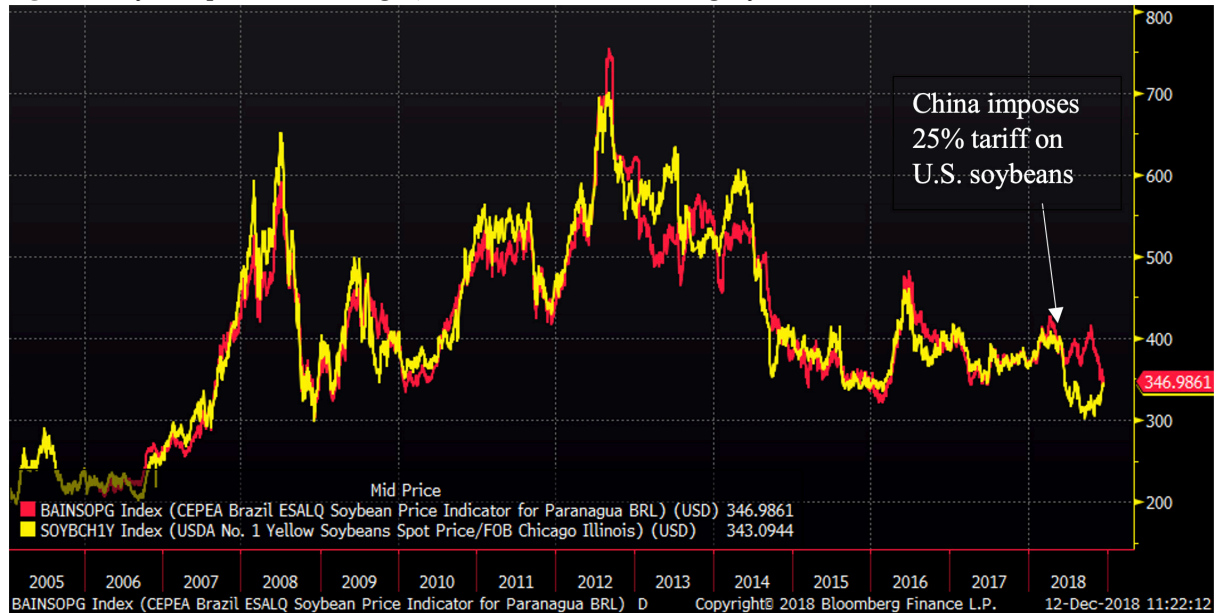
Figure 1. Soybean prices in Paranagua, Brazil (red line) and Chicago (yellow line) in USD/metric ton

Image notes: Copyright by Bloomberg Finance LP. Adapted from Hillberry (2018)

The political consequences of this negative shock to farm incomes were largely offset when then-President Trump arranged a bailout of domestic farmers (Belmonte, 2021). The bailout used 92% of the revenues earned by assessing tariffs in the first place, negating one of the only positive effects of the tariffs on the U.S. economy (Bernstein, 2024). Since the 22nd Amendment to the Constitution precludes another term for President Trump, it may be that such largesse should not be expected in his forthcoming term, even if the negative consequences of the trade war hit U.S. agricultural exports similarly. Since tariff revenues have become a key justification for imposing the tariffs in the first place, there will be less flexibility to use those revenues to bail out farmers hurt by the President's trade war.

Likely impacts of the Trump campaign's tariff proposals (and retaliation by other countries)

The trade policy proposal that Donald Trump campaigned on prior to the 2024 election was a broad 60% increase in tariffs on imports from China and a 10 or 20 percent broad tariff on imports from all other countries. While Congress has given the president relatively wide authority to impose tariffs on individual products or individual countries, it seems that a proposal to enact broad-based tariffs (across both countries and products) would require Congressional action. Members of Congress from districts where export-oriented agriculture is important should take this proposal seriously, as the proposal, along with likely retaliation from U.S. trading partners, is expected to generate considerable harm to several agricultural exporting sectors (and to the economy as a whole).

Balistreri et al. (2024) use a calibrated global trade model to assess the effects of the President-elect's proposals, together with proportional responses by U.S. trading partners. In a model of global trade, the authors consider the economic effects of a 60% U.S. tariff on Chinese goods and a 10% tariff on goods from other countries, together with each country imposing retaliatory tariffs on U.S. exports in line with what the U.S. imposed upon their exports. The model offers considerable sector-level detail and so allows the distributional effects of the tariff war to be discussed in some detail.

According to the model estimates, the net annual cost of the trade war for U.S. households would amount to approximately \$7000 per year (6.8% of consumption). Because agriculture is a major export sector, retaliation by U.S. trade partners would mean that many agricultural sectors would generally see losses that are even larger than that of the typical U.S. household. Sector-level results for the modeled trade war scenario are reported in Table 1. The hardest hit sectors are oilseeds and cotton, though producers of milk, swine and poultry, sugar cane and beets, corn, and livestock also suffer substantial losses of income in the simulated trade war. The very large tariffs on China (matched by equivalent Chinese tariffs on U.S. goods) are likely the main reason that the oilseed sector is hurt so badly. Import competing sectors – primarily horticulture – see increases in income due to the trade war. Another way to look at the effect of the modeled tariff war on agriculture is to consider the calculated effect on the incomes of landowners, which fall by 6.4% in the modeled scenario.

Table 1. Simulated effects of Trump campaign tariff proposal and retaliation on Ag and Food Sectors

GTAP sector (descriptive information)	Change in income (billions of \$US)	Percentage change
Selected Agricultural sectors		
Oil seeds (mostly soybeans)	-5.4	-19.1
Plant based fibers (e.g. cotton)	-0.8	-13.6
Milk	-0.8	-9.0
Other animal products (e.g. swine and poultry)	-2.4	-8.6
Sugar cane and sugar beet	-0.1	-7.4
Cereal grains (including corn)	-1.0	-5.6
Cattle, Sheep, goats and horses	-1.2	-5.1
Wheat	-0.0	-0.8
Vegetables, fruits and nuts	1.8	4.1
Other crops (e.g. cut flowers)	2.9	23.1
Sectors processing agricultural output		
Leather products	2.6	28.8
Sugar	0.0	23.1
Processed rice	0.1	19.9
Vegetable oils and fats	1.6	17.9
Other meat products (e.g. pork and poultry meat)	1.0	4.6
Other food products (including processed fish, vegetables, flour and more)	2.7	3.4
Meat from cattle, sheep, goats and horses	0.7	2.4
Beverages and tobacco	1.0	0.9

Note: Calculations by Balistreri, Binte Ali, and McDaniel (2025). Estimates taken from Table 3 of that study. Simulated effects of 60 percent increase in tariffs on imports from China and a 10 percent increase in tariffs on imports from all other countries, along with symmetric retaliation by foreign trading partners.

The second part of Table 1 shows that processors of agricultural inputs benefit from a trade war scenario. Since foreign tariffs limit the options for U.S. exporters, U.S. exports are sold instead in the U.S. market, so commodity prices fall in the U.S. Processors in the U.S. benefit from these lower input prices. Since most processing sectors' sales are relatively concentrated in U.S. domestic markets, their output prices do not fall as much as their input prices, leading to increased net incomes in those sectors.

Since this discussion focuses on the effects of the tariffs and likely retaliation on agriculture and food sectors, we refer the reader to the original study to see the likely effects on the sectors outside of food and agriculture. Briefly, incomes in manufacturing sectors rise substantially, but these gains are more than offset by losses in the service sectors of the economy. Within mining, petroleum extraction and refining benefit, while incomes in the coal, natural gas, and mineral sectors fall. Incomes in the economy as a whole fall by \$702 billion, or 3.6%. The 6.8% reduction in U.S. consumption arises through a combination of lower incomes and higher prices.

Another interesting result coming from the paper is that in the scenario in which the President-elect's proposal is met with proportional retaliation by all U.S. trading partners, China emerges as a net winner from the tariff conflict. Since China imports less from the U.S. than the U.S. does from China, the distortionary effects of China's tariffs are smaller there than U.S. tariffs are in the U.S. Since China is only raising tariffs on the U.S. in this scenario, importers there are able to switch to other sources more easily than U.S. importers since U.S. importers also see tariffs rise on imports from countries other than China. China's export interests are hurt by reduced access to the U.S. market, but the retaliatory tariffs that other countries put on U.S. exports give Chinese exporters a new advantage over U.S. exporters in those markets. This advantage in foreign markets is more than enough to offset the losses to China of its own bilateral trade war with the U.S.

Implications of the new proposal to target Canada and Mexico

Soon after his 2024 election, President-elect Trump proposed a different set of tariffs than those he had campaigned on. He proposed new 25% tariffs on goods coming from Canada and Mexico, as well as 10% additional tariffs on China. The proposal is new, and the writer is not aware of a model-based analysis of the effects of a trade war among North American countries. What we can do is look at the size of the two North American markets and the composition of the imports they buy from the U.S. Data from the U.S. Department of Agriculture show that each of the North American markets are roughly similar in size to the Chinese market in terms of food and agriculture exports. China is still the largest market, with \$28.84 billion of U.S. export sales there in 2023. Canada and Mexico each imported \$23.38 billion of U.S. agricultural exports. Even though each market is smaller than China, together they are quite a bit larger.

Exports to Canada are concentrated in processed foods and fresh fruits and vegetables. These sectors may be less susceptible to a U.S.-Canada trade war than would agricultural commodities because the substitution of U.S. commodity exports with exports from other countries is easier than with fruits, vegetables, and processed foods. In Mexico, as in China, imports from the U.S. are often agricultural commodities, so it is worth comparing the two markets to see how different commodities are exposed to a trade war with North America instead of China.

Table 2 shows U.S. exports to Mexico, China, and the World, respectively, as well as Mexican and Chinese market shares for a set of large U.S. agricultural export commodities. The table reiterates the point that U.S. soybean farmers are heavily exposed to China, which accounts for half of U.S. soybean exports. But the table also shows that there are several sectors quite exposed to Mexico, especially corn at 41%. However, the pork-related products sector and the dairy sector see almost 30% of the U.S. export sales go to Mexico, while in the poultry sector, the figure is 23%. What this data suggests is that the impact of retaliatory tariffs by Mexico will hit quite differently than retaliatory tariffs by China. They are likely to be painful for U.S. export-oriented agriculture just the same. A multi-front trade war would have even larger negative consequences.

Table 2. U.S. Exports of Agricultural and Food Products to Mexico, China and the World 2023

	to Mexico		to China		to World
	Billions of \$	share of U.S. total exports of product	Billions of \$	share of U.S. total exports of product	Billions of \$
Corn	5.39	0.41	1.63	0.12	13.1
Soybeans	2.79	0.10	15.06	0.54	27.72
Pork and Pork Products	2.35	0.29	1.24	0.15	8.17
Dairy Products	2.32	0.29	0.61	0.08	8
Poultry Meat and Products	1.26	0.23	0.73	0.13	5.49
Beef and Beef Products	1.08	0.11	1.61	0.16	9.97
Total exports of agriculture	28.38	0.16	28.84	0.17	174.17

Source: USDA Foreign Agriculture Service, *Global Agricultural Trade System*, Drawn December 17, 2024.

Are the tariff threats real, or just a negotiating tactic

Some commentators have argued that, as President, Trump is unlikely to impose large tariffs but rather plans to use the threat of tariffs merely as a “negotiating tool.” Bade (2024) offers a useful discussion along these lines. Given the economic disruption outlined in the trade war simulation discussed above, it is to be hoped that the President-elect can be persuaded not to start another tariff war. This writer’s opinion is that the emerging view on Wall Street and among trade-supporting Republican politicians is overly optimistic. It is likely that President Trump will increase tariffs, harming the U.S. economy and export-oriented agriculture in particular. Without going into the topic in great detail, here are some key points to keep in mind when hearing the argument that tariffs are “only a negotiating tool.”

1. In his first term, the president-elect built an infrastructure to exchange tariff exclusions for political favors; this infrastructure is not useful to him without large tariffs in place.

In many countries, high tariffs facilitate corruption by government officials, who use their authority over tariff collection to exchange tariff reductions/exemptions for bribes that are paid by importing firms (see, for example, Sequiera, 2016 for evidence from Mozambique, and Rijkers et al., 2017 for Tunisia). Due to its overall low tariff structure, outright bribery has not been a problem in the U.S. in living memory. There has been a tariff suspension process that allows firms to petition Congress to reduce statutory tariffs for a period of two to three years. Ludema et al. (2018) describe the process. Perhaps not surprisingly, Ludema et al. find that lobbying expenditures by both proponents and opponents affect the likelihood that Congress approves a requested suspension. While certainly exuding a whiff of corruption, this run-of-the-mill transactional politics was, at least, openly scrutinized through reports by a bipartisan federal commission and open debate in Congress.

In his first term as president, Donald Trump introduced a process that brought the decision to grant tariff exemptions inside the executive branch. Fotak et al. (forthcoming) explain that the exemption process for imports coming from China was not subject to legislative or regulatory oversight. There is also no infrastructure for appealing the decisions made in the Executive Branch. Statistical analysis of the tariff exemption decisions made under then-President Trump shows that, all else equal, firms donating to Republicans in the 2016 election cycle were more likely to be granted exemptions from paying tariffs, and firms donating to Democrats were more likely to have tariff exemption requests denied when compared to a firm that made no donations at all (Fotak et al., forthcoming). The authors also find that firms hiring lobbyists who had played a role in the Trump administration were more likely to be successful in their requests for tariff approvals. DePillis (2020) offers a journalistic account of the process and the ways in which the system worked against small businesses that lacked the clout to be successful in their application for an exemption.

In the unlikely event that the President-elect's negotiations were to successfully use the threat of tariffs to achieve something that is useful to the people of the United States, he would forego the opportunity to use the tariff exemption process to reward friends and punish enemies. In this author's view, the motive to use the tariff exclusion process for political and/or corrupt purposes is a key reason to believe that large tariffs will, in fact, be put in place during the next administration. Krugman (2025) agrees and explains that induced investments in the President-elect's cryptocurrency might be a likely vehicle through which he could personally profit from the corrupt use of the tariff exemption process.

2. Expected revenue from tariffs could partially offset revenues from other tax cuts.

One of the most consequential decisions that Congress will face in the upcoming year is whether (and if so, how) to renew the temporary tax cuts that were implemented in 2017, along with the difficult task of finding the funds necessary to pay for the additional tax cuts and expenditures the President-elect promised during the campaign. Bogage (2025) explains that merely extending the existing tax rates into the future – an extension of the planned temporary tax cuts – is projected to increase the government debt by \$5 trillion over the next decade, while the President-elect's entire set of promises made during the campaign would increase the debt by \$15 trillion. The non-partisan Committee for a Responsible Budget (2024) estimates that the tariffs in the President-elect's campaign proposal would raise approximately \$2.7 trillion, though the negative effects of retaliation and/or exclusions on the estimated tariff revenue to be collected were not considered. If scored this way, the tariff revenues could be used in Congress' budget reconciliation process to offset more than half of the cost of renewing the existing tax rules. Thus, including tariff increases in the tax cut legislation offers the President-elect another motive for increasing tariffs during his term. This is another reason to believe that the tariffs are not simply a negotiating tool; the President-elect expects to put them in place. It is worth noting, however, that many Republican senators are skeptical of relying on tariffs as a source of revenues (see Everett and Goba, 2024), and renewing the tax plan would likely rely on many of these Senators' votes.

3. Uncertainty about the future of tariffs is itself costly for firms making trade and investment decisions.

Whether or not the tariffs go into place, the uncertainty generated by the President-elect's ever-evolving threats means that it is extremely difficult for firms to make trade and investment decisions. Without a firm policy proposal, firms have difficulty understanding their input prices. Firms wishing to export do not know if their exports will face retaliatory tariffs. All else equal, firms in supply chains would prefer to be located in a market with less trade policy uncertainty than the U.S. currently. Even if the President-elect never imposes the tariffs he threatens, the uncertainty he creates while "negotiating" poses real costs to businesses involved in international trade and reduces the incentive to invest in the U.S.

4. The U.S. Constitution grants Congress, not the President, the authority to set the tariff.

Article 1, section 8 of the U.S. Constitution grants Congress the right to set tariffs (or duties, as it says there). Starting in the 1930s, Congress began granting the president limited power to set the tariff in international negotiations. Later grants of power defined sets of circumstances when the President could act on their authority. It is unlikely that the Congresses that granted such powers had in mind that the President alone would set tariff rates that were capable of collecting trillions of dollars of revenue without even consulting the Congress, whose responsibility in our system is to authorize tax and spending decisions. The arbitrary ways in which the President and the U.S. Trade Representative's office have decided to impose large tariffs on broad swathes of U.S. international trade (and give exemptions to the tariffs at their own discretion) runs counter to the spirit of the Constitution, which set the power to tax and set tariff rates firmly in the hands of Congress. Congress should take all necessary steps to reclaim this power from a President who is clearly abusing the powers that Congress long ago delegated, under the assumption that the delegated power would be used responsibly and to the benefit of the American people.

Conclusion

Much of the media discussion about tariffs focuses on the question of whether they are a net positive or net negative for the economy, in aggregate. Standard models of international trade typically show that the net effects of tariffs on the aggregate economy are likely to be negative. But the most important implication of the models for politics is that tariff policy has sizable distributional consequences—large tariffs produce both large winners and large losers among different segments of the U.S. economy. Moreover, it is likely that U.S. trading partners would retaliate against U.S. tariffs with tariffs of their own and that retaliations magnify greatly the losses borne by export-oriented sectors like agriculture. Detailed analysis of the tariff plan that President-elect Trump proposed during the campaign – along with a likely scenario for retaliation by foreign governments – shows that, broadly, those involved with manufacturing sectors would benefit from a tariff war, while those involved with services and agriculture would lose. Higher prices for imported goods would hurt consumers, leaving the U.S. worse off as a whole. The specific sectors that are most harmed by a tariff war depend upon the countries initially targeted by U.S. tariffs. Chinese retaliation against U.S. tariffs would likely hurt growers of soybeans most, while retaliation by Mexico would likely hurt corn, pork, dairy, and poultry sectors. One interesting result from a formal analysis of the President-elect's campaign proposals is that the food processing sectors can benefit from a tariff war because fewer export opportunities for agriculture give U.S. food processors cheaper inputs.

The inconstancy of the President-elect's tariff plans is a burden on business in the United States. Even after the election, it is difficult to form expectations about the coming trade policy environment. This analyst thinks that it is most likely that the post-election plans are implemented rather than those he proposed in the campaign, as the President retains authority to impose tariffs on individual countries, while his election campaign plan requires a vote in Congress. As of now, this suggests tariffs on Mexico, Canada, and China, the U.S.'s three largest trading partners. Imposing tariffs on the largest trade flows gives him the most opportunity to use the tariff exclusion process for his personal and political benefit. It is time for Congress to reclaim the tariff-setting authority it was granted in the Constitution; the President-elect has clearly been misusing the authority Congress transferred to the Presidency under the assumption that it would be used responsibly and for the benefit of the American people.

References

- Bade, G. (2024, December 6). *Decoding Trump's tariff threats*. Politico. <https://www.politico.com/newsletters/politico-nightly/2024/12/06/decoding-trumps-tariff-threats-00193118>
- Balistreri, E. J., Ali, S. B., & McDaniel, C. (2025). *Tariff: the most beautiful word in the dictionary?* [Unpublished Manuscript]. Yeutter Institute, University of Nebraska—Lincoln, Lincoln, Nebraska. https://balistreri.createunl.com/Papers/Beautiful_Tariffs.pdf
- Belmonte, A. (2021, January 18). *Trump's massive farmer bailout failed to make up for the "self-inflicted" trade damage*. Yahoo Finance. <https://finance.yahoo.com/news/trump-farmer-bailout-legacy-trade-135241986.html>
- Bernstein, J. (2024, July 12). *Tariffs as a major revenue source: Implications for distribution and growth*. The White House. <https://bidenwhitehouse.archives.gov/cea/written-materials/2024/07/12/tariffs-as-a-major-revenue-source-implications-for-distribution-and-growth/>
- Bogage, J. (2025, January 2). 10 policies Republicans could use to pay for new tax cuts. *Washington Post*. <https://www.washingtonpost.com/business/2025/01/02/trump-budget-cuts-national-debt/>
- Committee for a Responsible Federal Budget. (2024, October 28). The fiscal impact of the Harris and Trump campaign plans-2024-10-28. *U.S. Budget Watch 2024*. <https://www.crfb.org/papers/fiscal-impact-harris-and-trump-campaign-plans>
- DePillis, L. (2020, March 1). How Trump's trade war is making lobbyists rich and slamming small businesses. *ProPublica*. <https://www.propublica.org/article/how-trump-trade-war-is-making-lobbyists-rich-and-slamming-small-businesses>
- Everett, B., & Goba, K. (2024, November 19). Republicans leery of trying to pay for tax cuts with Trump's tariffs | *Semafor*. <https://www.semafor.com/article/11/19/2024/republicans-leery-of-trying-to-pay-for-tax-cuts-with-trumps-tariffs>
- Fotak, V., Lee, H. S., Megginson, W. L., & Salas, J. M. (2024). *The Political Economy of Tariff Exemption Grants* [Unpublished manuscript]. <https://jfq.org/wp-content/uploads/2024/08/23440-Tariff-Exemptions.pdf>
- Hillberry, R. (2018), "The Administrations' Trade Policy: What It May Mean for the Future!" *Purdue Agricultural Economics Report*. <https://ag.purdue.edu/commercialag/home/paer-article/the-administrations-trade-policy-what-it-may-mean-for-the-future/>
- Krugman, P. (2025, January 3). Never underestimate the ignorance of the powerful. *Krugman Wonks Out Substack*. <https://paulkrugman.substack.com/p/never-underestimate-the-ignorance>
- Ludema, R. D., Mayda, A. M., & Mishra, P. (2017). Information and Legislative bargaining: The political economy of U.S. tariff suspensions. *The Review of Economics and Statistics*, 100(2), 303–318. https://doi.org/10.1162/rest_a_00705
- Rijkers, B., Baghdadi, L., & Raballand, G. (2015). Political Connections and Tariff Evasion Evidence from Tunisia. *The World Bank Economic Review*, 31(2), 459–482. <https://doi.org/10.1093/wber/lhv061>
- Sequeira, S. (2016). Corruption, Trade Costs, and Gains from Tariff Liberalization: Evidence from Southern Africa. *American Economic Review*, 106(10), 3029–3063. <https://doi.org/10.1257/aer.20150313>

PURDUE

AGRICULTURAL ECONOMICS REPORT

Farm Policy Outlook

Dewey J. Robertson, Graduate Research Assistant; Roman Keeney, Associate Professor of Agricultural Economics

Summary: In this outlook we examine the agricultural policy implications of a new Trump administration, focusing on the potential passing of a 2025 farm bill and its impact on the sector. We consider how the farm safety net will address new policy agendas such as federal budget priorities and broader economic issues such as trade, immigration, and energy.

Farm Policy Outlook

In November's U.S. elections, Republicans regained control of the White House and Senate while maintaining their majority in the U.S. House of Representatives. The Republican agenda **voiced by Donald Trump throughout the campaign year** was focused on a number of key issues for agriculture, including trade and energy, the size of the federal government and the regulatory state, and immigration. Each of these are notable for their potential to impact agricultural production costs and markets. During the first Trump administration, an aggressive trade policy that sparked retaliations on U.S. agricultural exports was a dominant concern, with the U.S. ultimately needing to deliver some **\$28 billion to farmers to sustain agricultural incomes between 2018 and 2020, a number that more than tripled the direct cost of direct support to farms as compared to 2017.**

While the outlook for agricultural trade and policies is covered elsewhere in this issue, the trade war of the first Trump administration was notable for exposing the limits of farm bill commodity support programs for insulating farmers from large market shocks. Those farm bill policies were **codified in 2018's Agricultural Improvement Act, which reauthorized and updated** the farm bill from 2014. That 2018 legislation was passed during the last time that Republicans had unified control of the federal government and was set to expire at the start of the 2024 fiscal year in October of 2023. Failure to pass replacement legislation for the 2018 farm bill in both 2023 and 2024 led to successive one-year extensions, making updating the farm bill an agricultural policy priority for 2025.

Progress on farm bill in 2024

The last farm bill was passed in December of 2018 and was programmatically similar to its predecessor legislation from 2014. **The U.S. House Committee on Agriculture voted a new farm bill out of committee in late May 2024.** The eventual score for this House version of the farm bill showed an increase in spending over 10 years of \$28.1 billion across all programs, with the largest increases coming for commodity support programs (+\$37 billion) partially paid for with offsets in nutrition programs (-\$27 billion). The increase in commodity supports is driven by increased reference prices, while the reduced nutrition program outlays come from limiting the amount that SNAP payments can increase in response to economic conditions going forward.

The Senate never took up the farm bill in committee during 2024, though **retiring Senate Ag Committee chair Debbie Stabenow did release her draft version to highlight differences from the House bill on commodity and nutrition spending.** Ultimately, the 2018 farm bill was extended for a second one-year stint through September 30, 2024, before Congress recessed in December. This **extension was passed alongside legislation to continue funding the government that included \$10 billion in aid for commodity producers.** The political shifts in Washington mean that the May 2024 House version of the farm bill likely serves as the starting point for a potential 2025 farm bill, but that process could still be complicated by both competing views in the Republican caucus on the priorities within the farm bill as well as the total spending number for a farm bill set against the backdrop of increasing deficits.

Agriculture and the policy agenda

The Trump transition team's **emphasis on reducing federal deficits** could represent a real complication for the passage of the farm bill, given that the overriding legislative priority is a **series of expanded tax cuts** tacked onto an extension of **expiring tax reforms passed in 2017**. An aggressive deficit reduction agenda could limit the ability to increase farm spending if entitlements like SNAP and commodity program payments are targeted or limit the ability of USDA to deliver on these and other programs if **discretionary funds for staffing and operations are targeted for reductions**. The argument for maintaining or increasing mandatory spending on programs is that it limits the need for emergency support to low-income families or farm households when economic shocks arise and thus saves money. However, those safety net programs have not been sufficiently responsive to shocks like the recent trade war, inflation spikes, and COVID disruptions to meaningfully retard large emergency disbursements.

The influence of deficits on the farm bill may be magnified by timing. It is expected that the farm bill debate will follow soon after actions on spending bills for fiscal 2025, a reconciliation bill that extends tax cuts, and defense and border security. Discussions over treating these in an all-in-one package have **faltered, with parts of the Republican caucus balking at using party-line reconciliation** to address border and immigration issues in tandem with tax policies. However the process plays out, an important signal for farm bill fortunes will emerge as part of the reconciliation tax package as **SNAP has become a priority target for reductions to trim spending and pay for tax cuts**.

Beyond the **farm bill and its big-ticket SNAP program**, conservation funding in the Inflation Reduction Act of 2022 has become a point of contention. Efforts to use the money initially targeted to climate-smart funding for more traditional farm support or conservation efforts have been pursued since its passage. The Biden administration and Republicans from districts with IRA projects **have pushed to spend out IRA funds ahead of January's inauguration** to ensure that program actions begun can be sustained to completion.

While the stakes for agriculture of the farm bill and tax policy issues are fairly well defined, prospective actions on border security migrant deportation are more uncertain. USDA reports that nearly half of the **agricultural workforce is undocumented as of 2022**. Beyond the farm, **unauthorized workers are employed in food processing sectors at significantly higher rates than in the broader economy**. The transition period appears to have narrowed the parameters of a concerted deportation action in response to the overall logistical challenge and reaction to industry concerns. **Farm groups were quick to advise that a major labor shock to agriculture would be devastating to costs of production and retail prices for food**. A more modest deportation agenda would preserve time for either Congress to take up **comprehensive immigration reform** or a carve-out program that grants **work authorization for certain undocumented migrants who have been working in agriculture**.

Prospects for 2025

The 2025 policy agenda is broad, with meaningful stakes for agriculture in every corner. It seems likely that a third year of extending the farm bill will be unnecessary with unified control of the federal government matching the political situation of the current farm bill's passage in 2018. We expect there will be meaningful actions on energy, trade, taxes and immigration that will all have impacts on the agricultural economy. What is unclear is how robust the farm safety net of a 2025 farm bill could be to protecting farm incomes from adverse impacts elsewhere in the policy agenda. The 2018 farm bill proved limited in protecting farm incomes from spillover effects of broader economy shocks, and those limitations of the previous bill will serve as a useful guide in designing a new 2025 farm bill and assessing its effectiveness.

References

- Agriculture Improvement Act of 2018, H.R.2, 115th Congress. (2018). <https://www.congress.gov/bill/115th-congress/house-bill/2>
- Anderson, S. (2020, February 7). Trump tariff aid to farmers cost more than U.S. nuclear forces. *Forbes*. <https://www.forbes.com/sites/stuartanderson/2020/01/21/trump-tariff-aid-to-farmers-cost-more-than-us-nuclear-forces/>
- Clayton, C. (2024, December 31). Top 10 Ag Stories of 2024: No. 1: With farm bill shelved, Congress pumps economic aid into farm economy. *DTN Progressive Farmer*. <https://www.dtnpf.com/agriculture/web/ag/news/article/2024/12/31/farm-bill-shelved-congress-pumps-aid>
- Douglas, L., & Hesson, T. (2024, November 25). US farm groups want Trump to spare their workers from deportation. *Reuters*. <https://www.reuters.com/world/us/us-farm-groups-want-trump-spare-their-workers-deportation-2024-11-25/>
- Duehren, A., & Edmondson, C. (2024, November 19). How Trump's tax cuts and tariffs could turn into law. *The New York Times*. <https://www.nytimes.com/2024/11/19/us/politics/trump-tax-cuts-congress.html>
- Durkee, A. (2025, January 17). What is Agenda47? What to know about Trump's policy agenda before his inauguration. *Forbes*. <https://www.forbes.com/sites/alisondurkee/2025/01/17/what-is-agenda47-what-to-know-about-trumps-policy-agenda-before-his-inauguration/>
- Falk, G. 2020. *The Farm Bill: A Primer*. CRS Report R48167. Washington, DC: Congressional Research Service, January 7. <https://crsreports.congress.gov/product/pdf/R/R48167>
- Farm Workforce Modernization Act of 2023, H.R.4319, 118th Congress. (2023). <https://www.congress.gov/bill/118th-congress/house-bill/4319>
- Hanrahan, R. (2024, December 17). *Government funding bill to include AG economic aid, sources say*. Farm Policy News. <https://farmpolicynews.illinois.edu/2024/12/government-funding-bill-to-include-ag-economic-aid-sources-say/>
- Hanrahan, R. (2024, November 19). *Stabenow Releases Lame-Duck Farm Bill Text*. Farm Policy News. <https://farmpolicynews.illinois.edu/2024/11/stabenow-releases-lame-duck-farm-bill-text/>
- Kanno-Youngs, Z., & Ngo, M. (2024, December 3). Why Republicans might oppose Trump's push to undo Biden's triumphs. *The New York Times*. <https://www.nytimes.com/2024/12/03/us/politics/biden-trump-legislation-republicans.html>
- Lerman, D. (2025, January 6). *Quick action planned for 'big, beautiful' budget bill*. Roll Call. <https://rollcall.com/2025/01/05/house-senate-gop-at-odds-over-big-beautiful-budget-bill-plan/>
- Musk, E. & Ramaswamy, V. (2024, November 20). Elon Musk and Vivek Ramaswamy: The DOGE plan to reform government. *The Wall Street Journal*. <https://www.wsj.com/opinion/musk-and-ramaswamy-the-doge-plan-to-reform-government-supreme-court-guidance-end-executive-power-grab-fa51c020>
- Passel, J. & Krogstad, H.M. (2024, July 22). *What we know about unauthorized immigrants living in the U.S.* Pew Research Center. <https://www.pewresearch.org/short-reads/2024/07/22/what-we-know-about-unauthorized-immigrants-living-in-the-us/>
- Schwartz, I. (2024, November 7). *FNC's Ingraham vs. Speaker Johnson On "Comprehensive Immigration Reform" Plan: "That Sounds Like Amnesty"* [Video]. Video | RealClearPolitics. https://www.realclearpolitics.com/video/2024/11/07/laura_ingraham_vs_speaker_johnson_on_comprehensive_immigration_reform_plan_that_sounds_like_amnesty.html
- Siddiqui, F., Stein, J., & Dwoskin, E. (2025, January 19). DOGE is dispatching agents across U.S. government. *The Washington Post*. <https://www.washingtonpost.com/business/2025/01/10/musk-ramaswamy-doge-federal-agencies/>
- Tax Cuts and Jobs Act, H.R.1, 115th Congress. (2017). <https://www.congress.gov/bill/115th-congress/house-bill/1/text/eh>
- U.S. Department of Agriculture, Economic Research Service. 2025. *Farm Bill Spending*. Accessed January 15. <https://www.ers.usda.gov/topics/farm-economy/farm-commodity-policy/farm-bill-spending>
- U.S. Department of Agriculture, Economic Research Service. 2025. *Farm Labor*. Accessed January 15. <https://www.ers.usda.gov/topics/farm-economy/farm-labor>
- Yarrow, G. (2025, January 13). *Eyeing SNAP cuts in reconciliation*. POLITICO. <https://www.politico.com/newsletters/weekly-agriculture/2025/01/13/eyeing-snap-cuts-in-reconciliation-00197735>

PURDUE

AGRICULTURAL ECONOMICS REPORT

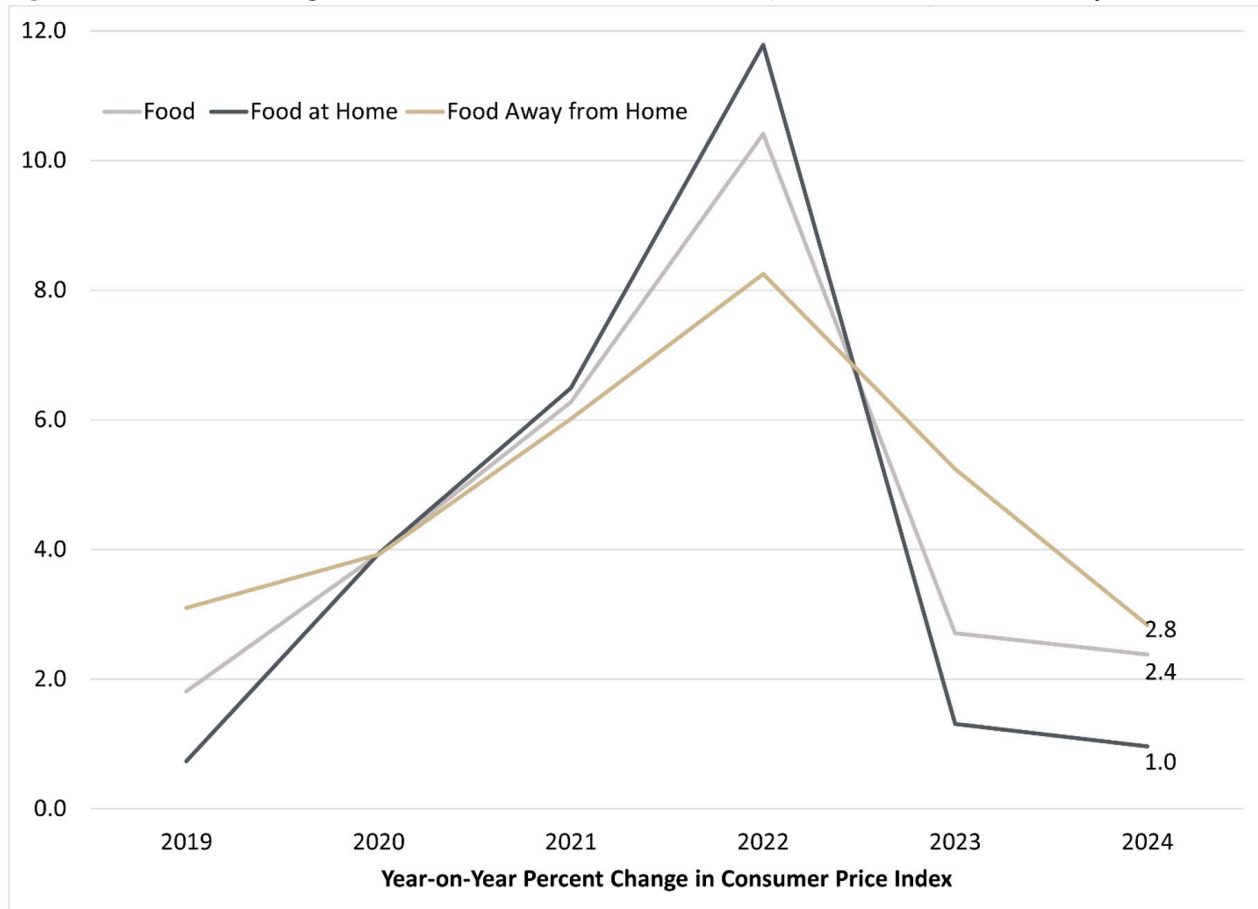
Food Prices

Caitlinn Hubbell, Market Research Analyst; Joe Balagtas, Professor of Agricultural Economics

Summary: Hubbell and Balagtas take a look back at the big food price stories over the past year. They also look ahead at what's in store for 2025, and discuss how food prices may be affected by policy changes and weather events in the year to come.

Food price inflation continued to cool in 2024, with food prices rising by 1.8% over the course of the year (see Figure 1), down from 11.8% in 2022 and 2.3% in 2023, and consistent with pre-pandemic norms. Prices of Food at Home (FAH, or groceries) rose by 1% in 2024, while prices for Food Away from Home (FAFH, or food service, including restaurant meals, rose by 2.8%.

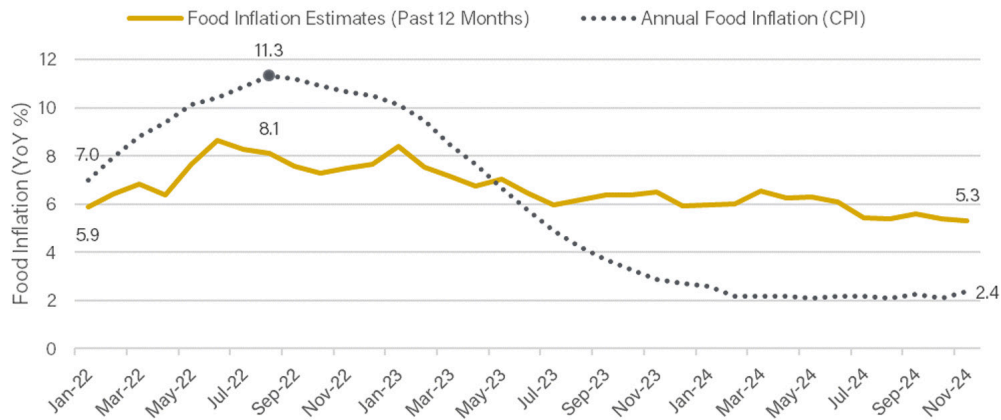
Figure 1. Year-on-Year Changes in the Consumer Price Indexes for Food, Food at Home, and Food Away from Home



Note: 2024 data are through November. Source: authors' calculations from Bureau of Labor Statistics data

While official food inflation estimates have cooled substantially since 2022, consumer perception of food inflation has remained elevated (Figure 2). Consumers in the **Consumer Food Insights** survey reported food inflation of 5.3% for 2024, which is lower than inflation perceptions in the previous two years but almost triple official estimates of 1.8%. During the initial period of high inflation through 2022, consumers typically reported lower inflation rates than official estimates. But as food inflation measured by the CPI cooled dramatically through 2023 and 2024, consumers perceived only modest reductions in food inflation.

Figure 2. Consumer Food Inflation Estimates (Past 12 Months) versus CPI Annual Food Inflation Rate

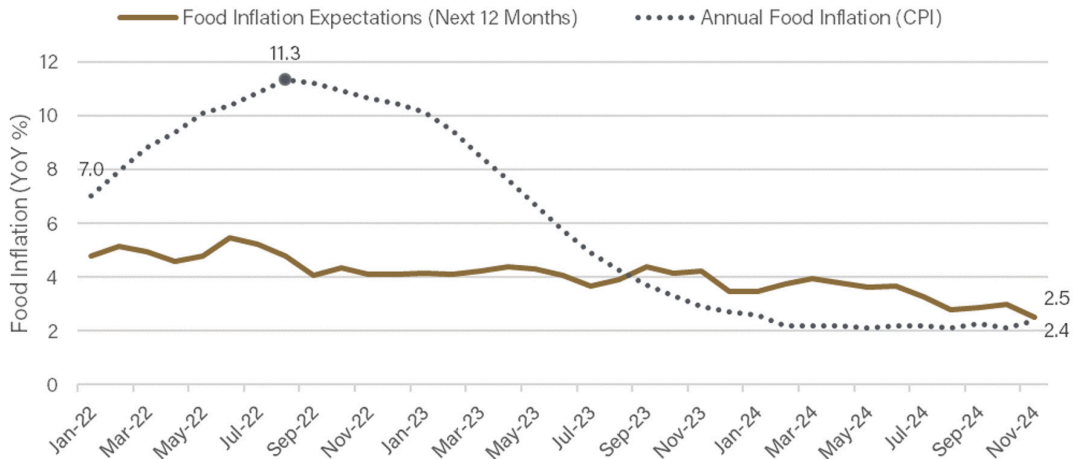


Source: Consumer Food Insights Survey and Bureau of Labor Statistics

Despite the slowing of food inflation, food prices are nearly 25% higher than they were back in 2020 when food inflation first jumped before accelerating in 2021. This increase in the price level is likely contributing to the gap in experienced versus official food inflation estimates as consumers slowly adjust.

Looking ahead, consumers are more optimistic about the future of food prices, predicting lower levels of future food inflation than their estimates of past inflation. Figure 3 summarizes average food inflation expectations, as predicted by consumers, compared with the CPI food inflation rate. Looking twelve months ahead, consumers predict that food prices will be approximately 2.5% higher than in November 2024, matching the **USDA Economic Research Service's** prediction for annual food price increases in 2025.

Figure 3. Consumer Food Inflation Expectations (Next 12 Months) versus CPI Annual Food Inflation Rate

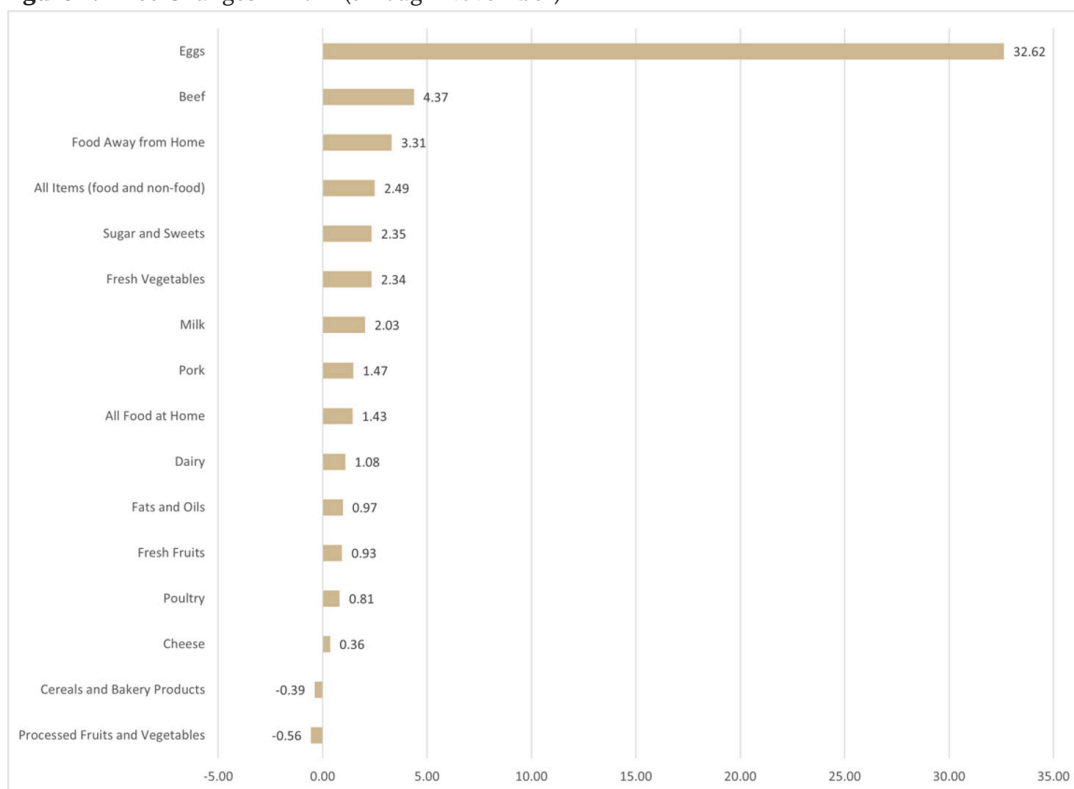


Source: Consumer Food Insights Survey and Bureau of Labor Statistics

In addition to inflation, supply and demand factors continue to influence the relative prices of specific food products. Over the last year, eggs have seen the largest increase in price at 32.6% from last year. This is largely due to the resurgence of highly pathogenic avian influenza (HPAI) in the last several months. Other commodity markets have been affected by difficult growing conditions around the globe. Production challenges in West Africa have resulted in a 93% increase in global chocolate prices for 2024; however, recent unseasonal rains are anticipated to relieve some of the pressure and hopefully lower the price of cocoa. Drought in Brazil and disease pressure in Vietnam, two major coffee exporters, has driven higher coffee prices. Global coffee prices rose by 54%, yet retail coffee prices in the U.S. rose by 1.9% in 2024.

Beef prices rose by 4.3% in 2024, driven by low cattle numbers, difficult weather, high grain prices, and high interest rates. Meanwhile, prices of other protein staples, including pork, poultry, and dairy products, rose by less than 2% over the past year.

Figure 4. Price Changes in 2024 (through November)



Source: Authors' calculations from Bureau of Labor Statistics data

So, what's on the horizon for 2025?

As we look toward 2025, **USDA predicts** that inflation will continue to cool, forecasting inflation rates of 1.9% for all food, 0.8% for food at home, and 3.5% for food away from home. However, much uncertainty remains about how the economy will perform, including how/if the Federal Reserve will continue to cut the federal funds rates. The most recent rate cut of 0.25 percentage points occurred this past December, the third rate cut for 2024.

Further economic uncertainty exists in light of potential federal policy changes as Donald Trump returns to the White House. Statements from President-elect Trump that suggest increased tariffs on major trading partners could impact food prices through various channels. In general, tariffs raise the price of imported goods. Thus, tariffs on food imports or on inputs to food production would likely increase U.S. food prices. However, the specific implementation details of such trade policies and potential retaliatory measures from trading partners remain unclear, making it difficult to quantify the exact impact on consumer food prices.

President-elect Trump also campaigned on tighter immigration, which could have significant implications for the agricultural sector. The agricultural industry relies heavily on immigrant labor, particularly in labor-intensive crops and livestock operations. In recent years, 19% of U.S. farmworkers were immigrants with work authorization, and 42% were immigrants with no work authorization. Any substantial reduction in the agricultural workforce could potentially lead to increased labor costs and reduced agricultural production, which could translate to higher food prices for consumers. But, as with trade policy, the timing, scope, and implementation of any changes to immigration policies would ultimately determine their impact on food prices and agricultural production.

Finally, growing conditions in certain parts of the world will impact production and, thus, prices. Given these multiple sources of uncertainty, food price projections for 2025 should be viewed with caution. While baseline inflation forecasts suggest moderation, policy changes, weather patterns, and other supply chain events could create significant deviations from these expectations.

PURDUE

AGRICULTURAL ECONOMICS REPORT

Health Outcomes: How does Indiana compare to the rest of the country?

Laura Montenovo, Assistant Professor of Agricultural Economics

Summary: *Indiana's health outcomes largely align with U.S. averages, but notable differences exist, including a lower life expectancy by nearly two years and a lower uninsured rate. Unlike national trends, Indiana counties do not show a strong inverse relationship between uninsurance rates and life expectancy.*

In this report, I highlight trends in health outcomes in Indiana compared to the rest of the United States. The main takeaways:

- Despite most health outcomes in Indiana aligning with the U.S. averages, the numbers reveal some non-negligible differences between Hoosiers' health outcomes and national trends.
- Across the country, there is geographic variation in health outcomes and differences between rural and urban areas.
- Indiana's percentage of uninsured individuals is 1.5 percentage points lower than the nation, on average.
- Based on 2019-2021 data, Indiana's life expectancy is almost two years lower than the national one for the same period.
- In the United States, county-level uninsurance rates and life expectancies move in a moderately strong opposite direction, but such a relationship does not arise in Indiana counties.

A Variety of Health Outcomes

County Health Rankings is a program of the University of Wisconsin's Population Health Institute. As part of this program, the Institute publishes health data for local areas in the U.S. to allow for analyses of health trends and disparities within and across communities.¹ Although I will discuss state-level averages here, including both rural and urban areas, the data includes county-level numbers, allowing for much more granular analyses.²

Based on 2024 data,³ the percentage of Hoosiers with fair or poor health was about 16%, more than one percentage point higher than the U.S. average. In Indiana, 18% of the population reports being smokers, compared to the 15% national average.

The obesity rate in Indiana this year is 33.6%, about three percentage points higher than in the U.S. overall. The share of physically inactive Hoosiers can partially explain this discrepancy, as 25% of Hoosiers claim to be physically inactive, while the national average is two percentage points lower (23%). Because only 76.5% of people in Indiana have access to exercise opportunities versus 80.6% nationally, easing access to physical exercise opportunities may be a valuable policy objective in Indiana.

¹ For more information: www.countyhealthrankings.org

² Contact the author if you are interested in county-level analyses.

³ The discussion here is on dimensions for which sharper trends arise and is not comprehensive of all health outcomes in the County Health Rankings. Contact the author if interested in some dimensions left out in this brief.

Another common determinant of overweight and obesity rates is the accessibility and affordability of healthy food. This includes proximity to grocery stores, cost barriers, and accessibility to healthy foods more broadly. The lack of such accessibility generates food deserts, making it harder for people to consume healthy foods consistently. The Food Environment Index,⁴ which summarizes such accessibility, is slightly lower for Indiana (6.8) than in the U.S. (7.5), potentially explaining part of the discrepancy in the Indiana and national obesity rates.

Healthcare providers are scarcer in Indiana than in the nation. A common way of measuring the availability of healthcare providers is to compute the number of individuals in a geographical area relative to the number of healthcare providers in the same area. In Indiana, for each primary care physician and each dentist, there are 200 more individuals than in the United States. For each mental health provider, there are over 150 more Hoosiers compared to the U.S. These numbers suggest that there are more people for each healthcare provider in Indiana than in the U.S. on average, implying relatively lower accessibility to healthcare professionals in the state.

The rankings also point to higher teen birth rates in Indiana (20.2%) than in the U.S. (16.9%) and a higher rate of preventable hospitalizations among Hoosiers. In this case, the discrepancy with the U.S. average is about 500 preventable hospitalizations per 100,000 individuals. Such a difference may be surprising if one notes that the percentage of annual Medicare enrollees with the annual flu vaccination is 4% higher than the U.S. average (50% in Indiana versus 46% nationally).

Despite Indiana's percentage of excessive drinking aligning with the national one (~18%), the percentage of driving deaths with alcohol involvement in Indiana is over ten percentage points lower than in the U.S. (28.7% versus 18.3%).

Health Insurance Rates and Life Expectancy

Using an interactive tool⁵ produced by NORC⁶ as part of an initiative supported by the CDC,⁷ I report below two maps, one for Indiana and one for the United States. The maps include data on life expectancy, that is, the average number of years a person can expect to live,⁸ and the percentage of people without any health insurance, whether public or private.

Indiana has a slightly lower percentage of uninsured people than the U.S. (8% in Indiana vs 9.5% nationally), and it has a lower average life expectancy than the U.S. (75.6 years in Indiana versus 77.3 years nationally). However, this hides considerable heterogeneity among Indiana counties. In the U.S., the percentage of uninsured adults is 13% on average, while in Indiana, it is 10%, and that of uninsured children is 6% on average, both in the U.S. and in Indiana. Hamilton County and Boone County in Indiana have the lowest share of uninsured adults (6%), while Daviess and Lagrange counties have the highest (19% and 24%, respectively). Hamilton, Henry, Delaware, Perry, Porter, Madison, Boone, Hendricks, Warren, and Howard counties have the lowest share of uninsured children at 4%, while Daviess and Lagrange have the highest (21% and 26%, respectively). The lowest life expectancy is in Scott County, at 69.5 years, and the highest is in Hamilton County, at 81 years.

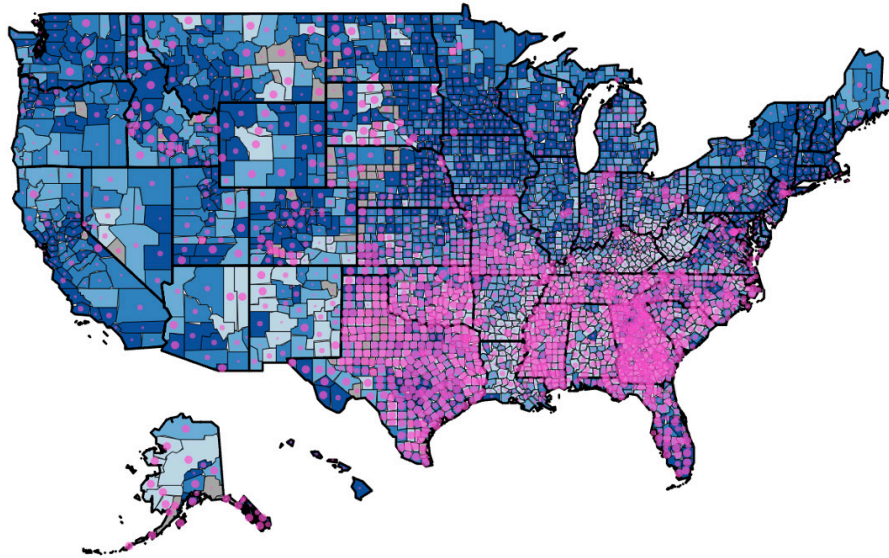
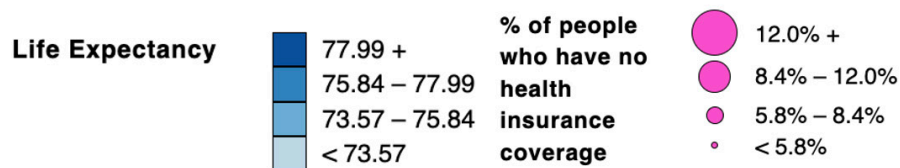
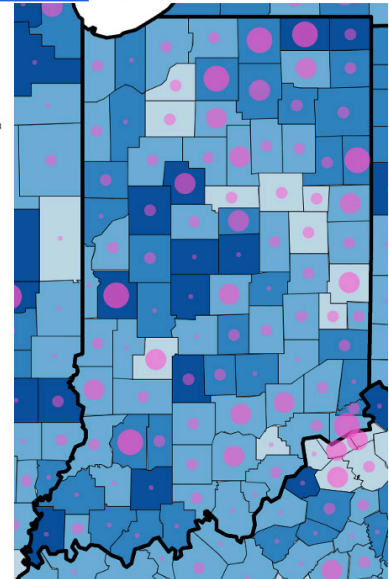
⁴ The Index goes from 0 (worst) to 10 (best).

⁵ Easily accessible at: <https://ruralhealthmap.norc.org/>

⁶ The National Opinion Research Center is an independent research institution at the University of Chicago.

⁷ Centers for Disease Control and Prevention.

⁸ The more technical definition from the CDC is "The average number of years of life remaining to a person at a particular age and based on a given set of age-specific death rates—generally, the mortality conditions existing in the period mentioned."

Figure 1. Life Expectancy and Share of Uninsured in the U.S. (Panel A) and Indiana (Panel B)**Panel A: United States****Panel B: Indiana**

Note: Life expectancy data in the map comes from the NCHS Mortality File accessed through the Robert Wood Johnson Foundation County Health Rankings. The data refers to the years 2019-2021.⁹ Health insurance coverage data is estimated from the U.S. Census Bureau American Community Survey between 2018 and 2022.

The two figures above report the average life expectancy between 2019 and 2021 and the share of the uninsured population between 2019 and 2022 at the county level for the U.S. (Panel A) and Indiana (Panel B). As the legend indicates, the darker the shade of blue, the higher the life expectancy. The percent uninsured is juxtaposed on the life expectancy map by adding pink bubbles in each county, with the size of the bubble increasing with the share of uninsured. Hence, the darker the blue, the higher the life expectancy, and the “pinker” the areas, the higher the percentage of people in the county without health insurance coverage.

Based on this, there are a few takeaways from the maps. First, the highest uninsurance rates are in the South, especially Texas, Oklahoma, Mississippi, Georgia, Florida, Tennessee, and the Carolinas. The health insurance coverage is higher in the West Coast, the Northeast, and, to a lower extent, the Midwest, with some exceptions (especially Missouri) and more within-state variation. Second, life expectancy appears higher in the Northeast, Midwest, and some areas in the West region (particularly in coastal California, Washington State, an agglomerate of counties between Montana, Idaho, Utah, Wyoming, and Colorado). Third, Indiana shows substantial internal heterogeneity in life expectancy. The counties with higher life expectancy are in the Northwest areas of Indianapolis (Boone, Hamilton, and Hendricks), those with the largest academic institutions in the state (Indiana University, Notre Dame, and Purdue University), and Parke Dubois, and Posey counties in Southern Indiana. Fourth, health insurance coverage also varies substantially across counties. The counties characterized by the three lowest uninsurance rates are Hamilton (4.7%), Henry (6.3%), and Delaware (6.9%). Those with the three highest uninsurance rates are Adams (12.5%), Daviess (20%), and LaGrange (25%). There are several Indiana counties characterized by high uninsurance rates and relatively high life expectancy (e.g., LaGrange, Parke, and Carroll) and others with low uninsurance rates and relatively low life expectancy (e.g., Scott, Starke, Pulaski, Howard, Grant, Blackford, Delaware, and Fayette).

⁹ More information at: <https://www.countyhealthrankings.org/health-data/health-outcomes/length-of-life/life-expectancy?year=2024>

These cases motivated me to understand better to what extent there is a relationship between uninsurance rates and life expectancy. To do so, I compared the county-level variation in uninsurance rates to that in life expectancy, and I detected a notable difference between Indiana and the United States. I computed the correlation between uninsurance rates and life expectancy. Correlation is a statistic between -1 and 1 that measures the extent to which two variables are linearly related. In this context, the idea is to determine whether counties characterized by low uninsurance rates are also those characterized by high life expectancy and vice versa.¹⁰ The correlation between these two quantities is -0.44 when considering all U.S. counties, indicating that uninsurance rates are likely accompanied by lower life expectancy despite this relationship being only moderately (rather than strongly) positive. When considering only Indiana counties, the relationship is 0.06, which is positive but very close to zero, implying an essentially null relationship.

While we cannot draw any causal conclusions from these analyses, it does seem like whatever mechanisms are in place across the United States that explain the moderate negative correlation between county-level uninsurance rates and life expectancy appear to be attenuated in Indiana.

In this report, I have identified key differences and similarities in health outcomes between Indiana and the nation, which I hope are useful for local and state policymakers attempting to prioritize their scarce resources in policies related to healthcare and health behavior.

¹⁰ If the correlation between two quantities is close to -1, then the two quantities move in opposite directions. The closer to the number -1, the more perfectly linear this relationship is. Positive correlations correspond to relationships where two quantities move in the same direction. If the correlation is close to zero (whether positive or negative), then there is not a clear linear relationship between the two quantities.

PURDUE

AGRICULTURAL ECONOMICS REPORT

2025 Agricultural Credit Outlook

Joshua Strine, PhD Student; Todd Kuethe, Professor of Agricultural Economics and Schrader Chair in Farmland Economics

Summary: *Despite lower interest rates, agricultural credit market conditions weakened in 2024, with rising loan demand, declining repayment rates, and reduced fund availability signaling challenges for 2025. While short-term loan rates may continue to decline, farmers face tighter operating margins and financial strain heading into the new year.*

Despite lower interest rates, agricultural credit market conditions weakened in 2024, suggesting a pessimistic outlook for 2025. The Federal Reserve's Federal Open Market Committee (FOMC), comprised of members of the Board of Governors and Federal Reserve Bank presidents, lowered the target range of the federal funds rate¹ three times in 2024, following 11 increases over the two prior years.

As shown in Figure 1, 68 counties in northern and central Indiana are part of the Federal Reserve Bank of Chicago region, and the remaining 24 counties in southern Indiana are part of the Federal Reserve Bank of St. Louis. It is important to note that both Federal Reserve regions cover large areas with diverse agricultural sectors. Thus, local conditions may deviate from broad, regional trends. At the time of writing, agricultural credit market information for the St. Louis Federal Reserve district was available through the third quarter of 2024 through the Federal Reserve Bank of Kansas City's [Agricultural Finance Updates](#) and for the Chicago Federal Reserve district through the third quarter of 2024 through the bank's [AgLetter](#) publication.

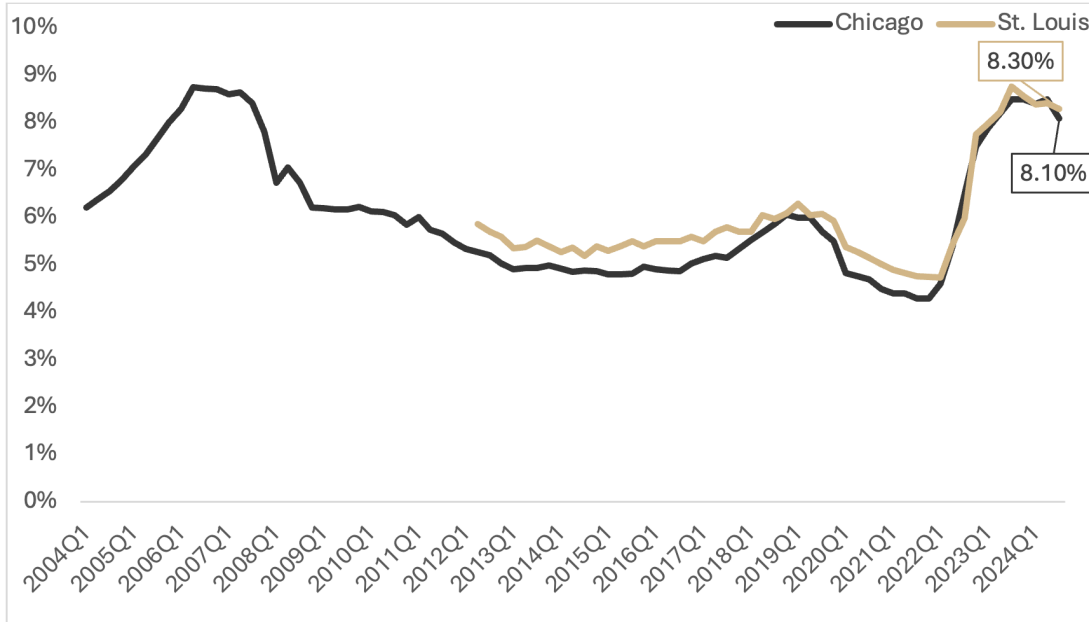
Figure 1. Chicago and St. Louis Federal Reserve Districts



¹ The federal funds rate is the interest rate at which deposit-granting institutions (i.e. banks) trade federal funds with each other

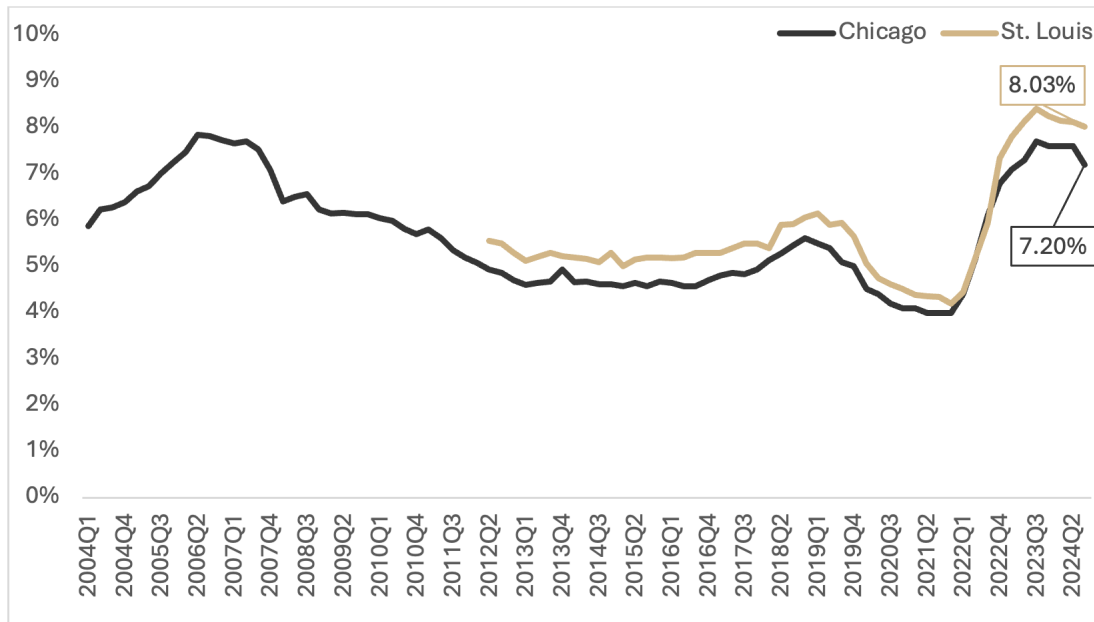
Figure 2 plots the average interest rate on farm operating loans, those primarily used to finance current crop production expenses and the care and feeding of livestock (including poultry). From the fourth quarter of 2023 to the third quarter of 2024, operating loan rates fell from 8.5% to 8.1% in the Chicago Fed District and from 8.56% to 8.3% in the St. Louis District. These decreases end a trend of increasing operating loan interest rates that had persisted since 2021 when interest rates were as low as 4.30% in the Chicago Fed district and 4.75% in the St. Louis Fed district. While the decreasing rate is a welcome sight for borrowers, operating loan interest rates have remained at levels unseen since 2007.

Figure 2. Average Fixed Interest Rate on Operating Loans, 2004Q1-2024Q3



The interest rates on long-term farm real estate loans also decreased in 2024, but the changes were less pronounced. As shown in Figure 3, farm real estate loan rates fell from 7.6% to 7.2% in the Chicago Fed District and from 8.25% to 8.03% in the St. Louis Fed District. Similar to operating loan rates, the decreases in farm real estate loan rates end a trend of increasing real-estate interest rates that have persisted since 2020 in both Federal Reserve districts, and interest rates remain at the highest levels observed since 2007.

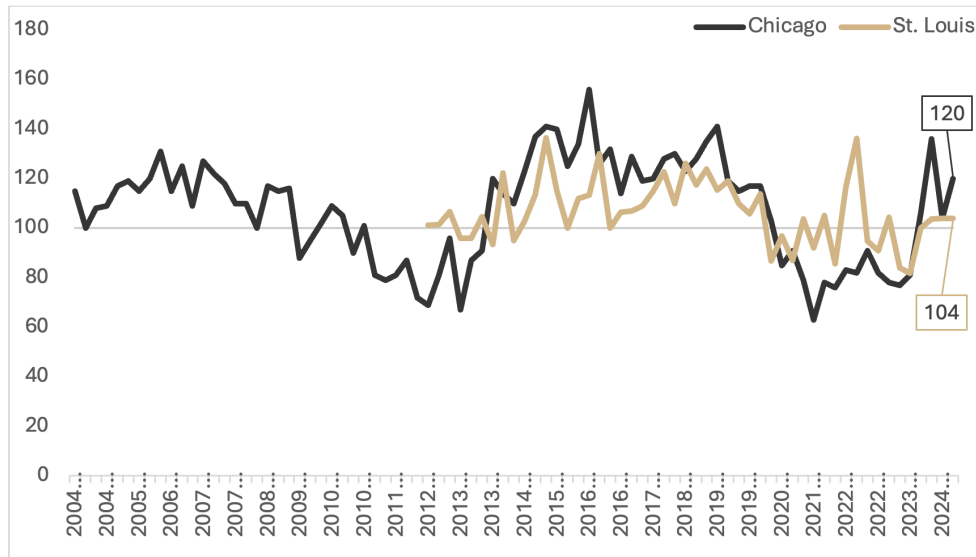
Figure 3. Average Fixed Interest Rate on Long Term Farm Real Estate Loans, 2004Q1-2024Q3



The Federal Reserve surveys also collect a number of subjective agricultural credit market conditions from agricultural bankers across their region. Respondents report whether various conditions – including loan demand, the availability of funds, and repayment rates – were “higher,” “lower,” or the “same” in each quarter relative to the same quarter a year ago. The responses are summarized by indexes, calculated as the share of lenders reporting “higher” minus those reporting “lower” plus 100. Thus, when the index is below 100, market conditions are worse than a year before.

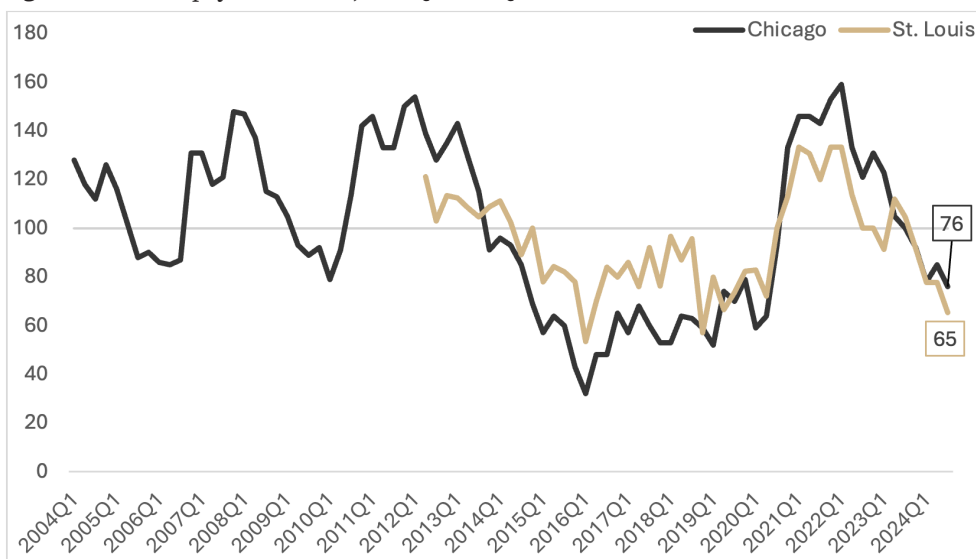
Figure 4 shows that the demand for agricultural loans increased in 2024 relative to 2023, ending a trend of decreasing demand. Bankers have indicated a year-over-year increase in demand for agricultural loans through the first three quarters of 2024. The increased demand for agricultural credit reflects the tighter operating margins in 2024. While both crop prices and input costs have decreased, the drop was more pronounced for crop prices.

Figure 4. Demand for Agricultural Loans, 2004Q1-2024Q3



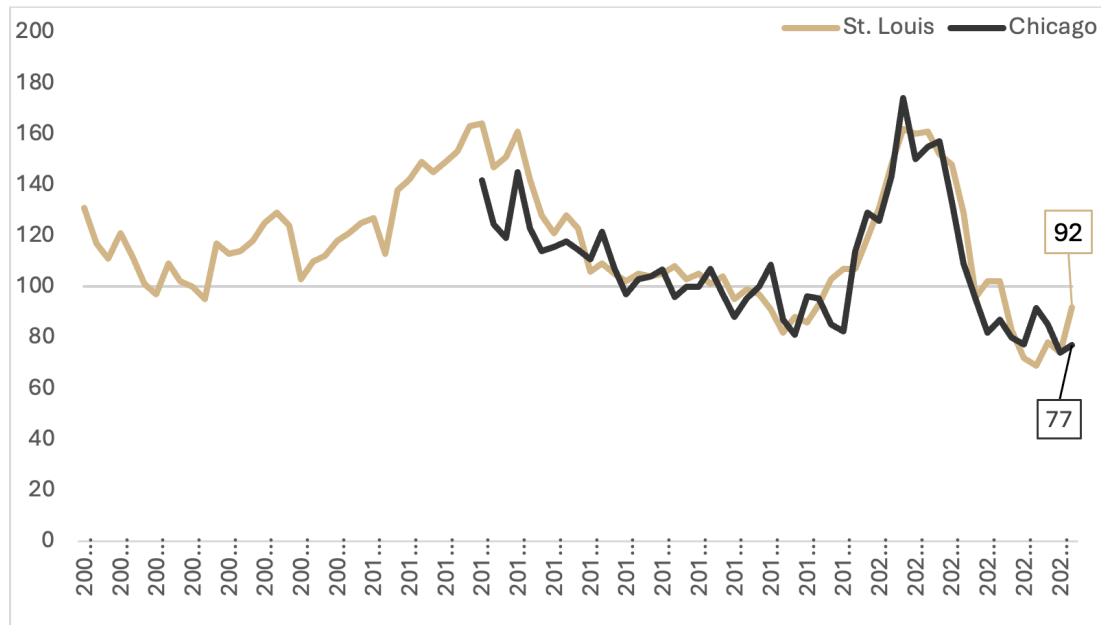
In addition, loan repayment rates decreased between 2023 and 2024. As shown in Figure 5, lenders’ reported repayment rates relative to the same quarter of the previous year have been below 100 since the fourth quarter of 2023. During the three years prior to the fourth quarter of 2023, the loan repayment index was positive since the onset of the COVID pandemic. The recent downturn in the index suggests that going into 2025, farmers are struggling to pay off their debts.

Figure 5. Loan Repayment Index, 2004Q1-2024Q3



Finally, the Federal Reserve surveys suggest that agricultural bankers have expressed a continued decrease in the availability of funds. As shown in Figure 6, agricultural bankers across the St. Louis Fed District have indicated decreasing availability of funds since quarter three of 2022, and agricultural bankers across the Chicago Fed District have expressed a similar reduction since the second quarter of 2023. Thus, agricultural credit markets in 2025 will likely be marked by both higher levels of demand and lower levels of supply.

Figure 6. Availability of Funds at Agricultural Banks, 2004Q1-2024Q3



In sum, current credit market conditions generally provide a pessimistic outlook for 2025. With lower operating margins, farmers are expressing a greater demand for credit. Lenders must balance this demand with a decreased amount of funds available and lower loan repayment rates. If there is one bright spot for 2025, it is the potential for further reductions in short-term loan rates. The FOMC's most recent "[Summary of Economic Conditions](#)" suggests that the committee expects to decrease the Federal Funds rate to a target range of 3.75 – 4.00% in 2025. The most recent Fed projections suggest stable unemployment rates and a decrease in inflation in 2025, prerequisites for future rate declines.

References

- Cowley, C. and T. Kreitman. 2024a. *Early Signs of Financial Pressure*. Federal Reserve Bank of Kansas City, August. <https://www.kansascityfed.org/agriculture/ag-credit-survey/early-signs-of-financial-pressure/>
- Cowley, C. and T. Kreitman. 2024b. *Slowdown in Farm Economy Continues*. Federal Reserve Bank of Kansas City, Ag Finance Update, November. <https://www.kansascityfed.org/pdf/article/articlepage/15379/>
- Federal Open Market Committee 2024. *Summary of Economic Projections*. Federal Reserve, December. <https://www.federalreserve.gov/monetarypolicy/files/fomcprohtable20241218.pdf>
- Oppedahl, D. and E. Kepner. 2024. *Farmland Values and Credit Conditions*. Federal Reserve Bank of Chicago, AgLetter No. 2006, November. <https://www.chicagofed.org/publications/agletter/2020-2024/november-2024>

PURDUE

AGRICULTURAL ECONOMICS REPORT

2025 Purdue Crop Cost and Return Guide

Michael Langemeier, Professor of Agricultural Economics

Summary: Production costs and breakeven prices in 2025 are expected to be similar to those experienced in 2024. However, production costs are still considerably higher than what they were prior to the advent of COVID-19.

The 2025 [Purdue Crop Cost and Return Guide](#), which is available for free download from the [Center for Commercial Agriculture](#) website, gives estimated costs for planting, growing, and harvesting a variety of crops, as well as estimated contribution margins and earnings. The guide is updated frequently as grain futures prices change and the costs of inputs, such as seed, fertilizer, pesticides, and fuel, fluctuate. This paper discusses estimates made in early January.

The guide presents cost and return information for low, average, and high productivity soils. Table 1 presents crop budget information for low productivity soil. Tables 2 and 3 present crop budget information for average and high productivity soils, respectively. The discussion in this paper will focus on the estimates for average productivity soil. Double-crop soybeans are typically planted after wheat, so it is typical to combine the contribution margin for these two crops when comparing to continuous corn, rotation corn, and rotation soybeans. The yield estimates reflect trend yields for Indiana for each crop. The contribution margin for average productivity soil, obtained by subtracting total variable cost from market revenue, ranges from \$89 per acre for continuous corn to \$263 per acre for wheat/double-crop soybeans. The contribution margins for rotation corn and rotation soybeans on average productivity soil are \$173 and \$239 per acre, respectively. The contribution margin is used to cover overhead costs such as machinery ownership costs, family and hired labor, and cash rent.

From 2007 to 2013, the contribution margin for rotation corn on average productivity soil was higher than the contribution margin for rotation soybeans. The average difference in the contribution margin was \$38 per acre during the 2007 to 2013 period. The situation was considerably different from 2014 to 2025. The average difference in the contribution margin during this period was an advantage for soybeans of \$63 per acre. The projected difference in contribution margins on average productivity soil between corn and soybeans for 2025 is \$66 per acre in favor of rotation soybeans. The projected difference in contribution margins between soybeans and corn is larger on low productivity soil and smaller on high productivity soil.

The projected cost of production and breakeven prices for corn and soybeans in 2025 are very similar to those experienced in 2024. The breakeven price for corn on average productivity soil is expected to drop from \$5.33 to \$5.27 per bushel. For soybeans, the breakeven price on average productivity soil is expected to drop from \$12.45 to \$12.30. Projected breakeven prices for corn and soybeans are 9.5% and 5.9% lower than budgeted breakeven prices for corn and soybeans in 2023. However, 2025 breakeven prices for corn and soybeans are approximately 18% and 13% higher than the corn and soybean breakeven prices in 2021.

Corn breakeven prices for 2025 for low and high productivity soils are expected to be \$5.60 and \$4.90 per bushel, respectively. For soybeans, 2025 breakeven prices on low and high productivity soils are projected to be \$13.20 and \$11.59 per bushel, respectively.

Expected corn and soybean prices, estimated using futures prices and long-run average bases, are substantially below breakeven prices, even for high productivity soils. As a result, projected 2025 earnings are well below zero. In the long run, earnings are approximately zero. When earnings are positive, owned assets such as machinery, buildings, and land, as well as unpaid operator labor, garner net returns above their opportunity cost (i.e., the value of the next best alternative). Negative earnings, on the other hand, indicate that owned assets and unpaid labor are receiving a net return that is below their opportunity cost.

What are the potential implications or consequences of the projected negative earnings in 2025? First, we would expect machinery and building purchases to be lower than they would be in a year with higher earnings (e.g., 2021 and 2022). In other words, depreciation is likely to be larger than machinery and building purchases in 2025. Second, we expect cash rents to be stable or experience downward pressure. Downward pressure is particularly likely given the fact that earnings were also relatively low in 2023 and 2024.

In summary, margins are expected to be relatively tight again in 2025. At this time, net returns for rotation soybeans are expected to be slightly higher than net returns for rotation corn. Thus, we would not expect continuous corn to be very prevalent in Indiana this year. The relatively high-cost structure, along with tight margins, increases the importance of carefully scrutinizing input and crop decisions, particularly those related to cash rent negotiations. Producers are encouraged to create crop budgets and, in general, improve their record-keeping.

Table 1. 2025 Purdue Crop Budget for Low Productivity Soil.

	Continuous Corn	Rotation Corn	Rotation Soybeans	Wheat	Double-Crop Soybeans
Expected Yield per Acre	156	166	51	71	36
Harvest Price	4.15	4.15	9.75	5.10	9.75
Market Revenue	\$647	\$689	\$497	\$362	\$351
Less Variable Costs					
Fertilizer	194	178	72	104	49
Seed	102	102	74	44	86
Pesticides	125	119	75	40	58
Dryer Fuel	43	34	0	0	4
Machinery Fuel	21	21	13	13	9
Machinery Repairs	45	45	40	40	25
Hauling	16	17	5	7	4
Interest	28	26	16	13	12
Insurance and Miscellaneous	50	50	40	25	5
Total Variable Costs	\$624	\$592	\$335	\$286	\$252
Contribution Margin	\$23	\$97	\$162	\$76	\$99
Earnings	-\$325	-\$241	-\$176	-\$262	\$99
Breakeven Price	\$6.23	\$5.60	\$13.20	\$8.79	\$7.00

See ID-166-W, 2025 Purdue Cost Cost & Return Guide, for more detail, January 2025 Estimates.

Table 2. 2025 Purdue Crop Budget for Average Productivity Soil.

	Continuous Corn	Rotation Corn	Rotation Soybeans	Wheat	Double-Crop Soybeans
Expected Yield per Acre	183	195	60	84	42
Harvest Price	4.15	4.15	9.75	5.10	9.75
Market Revenue	\$759	\$809	\$585	\$428	\$410
Less Variable Costs					
Fertilizer	205	189	82	128	56
Seed	124	124	74	44	86
Pesticides	125	119	75	40	58
Dryer Fuel	51	40	0	0	5
Machinery Fuel	21	21	13	13	9
Machinery Repairs	45	45	40	40	25
Hauling	19	20	6	9	4
Interest	30	28	16	15	13
Insurance and Miscellaneous	50	50	40	25	5
Total Variable Costs	\$670	\$636	\$346	\$314	\$261
Contribution Margin	\$89	\$173	\$239	\$114	\$149
Earnings	-\$313	-\$219	-\$153	-\$278	\$149
Breakeven Price	\$5.86	\$5.27	\$12.30	\$8.40	\$6.21

See ID-166-W, 2025 Purdue Cost Cost & Return Guide, for more detail, January 2025 Estimates.

Table 3. 2025 Purdue Crop Budget for High Productivity Soil.

	Continuous Corn	Rotation Corn	Rotation Soybeans	Wheat	Double-Crop Soybeans
Expected Yield per Acre	213	227	70	98	49
Harvest Price	4.15	4.15	9.75	5.10	9.75
Market Revenue	\$884	\$942	\$683	\$500	\$478
Less Variable Costs					
Fertilizer	217	202	94	153	65
Seed	124	124	74	44	86
Pesticides	125	119	75	40	58
Dryer Fuel	59	47	0	0	6
Machinery Fuel	21	21	13	13	9
Machinery Repairs	45	45	40	40	25
Hauling	22	24	7	10	5
Interest	30	29	17	16	13
Insurance and Miscellaneous	50	50	40	25	5
Total Variable Costs	\$693	\$661	\$360	\$341	\$272
Contribution Margin	\$191	\$281	\$323	\$159	\$206
Earnings	-\$270	-\$170	-\$129	-\$292	\$206
Breakeven Price	\$5.42	\$4.90	\$11.59	\$8.08	\$5.55

See ID-166-W, 2025 Purdue Cost Cost & Return Guide, for more detail, January 2025 Estimates.

Figure 1. Fertilizer, Seed, Pesticide, and Cash Rent Cost per Acre Rotation Corn in Indiana.

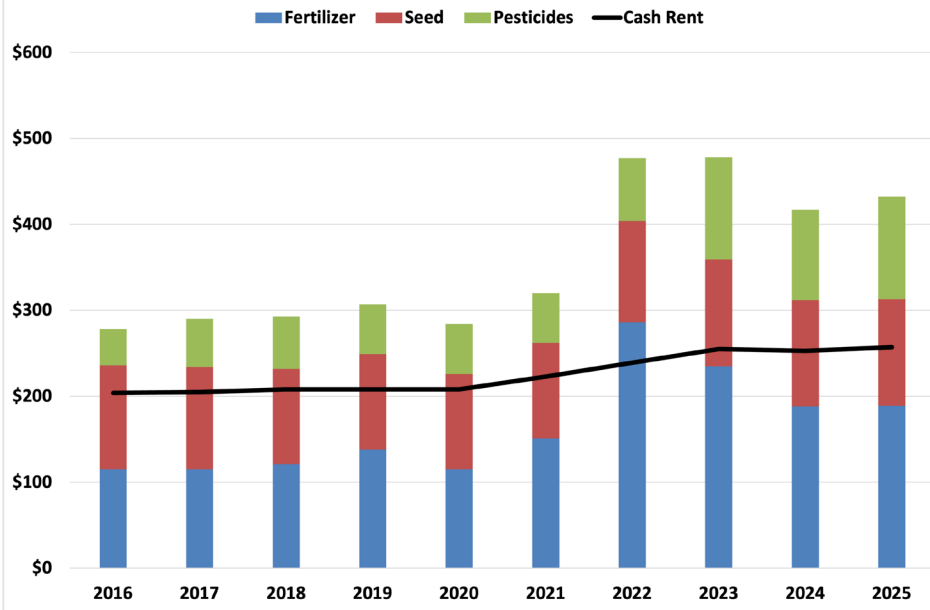


Figure 2. Variable Cost, Overhead Cost, and Gross Revenue per Acre Rotation Corn in Indiana.

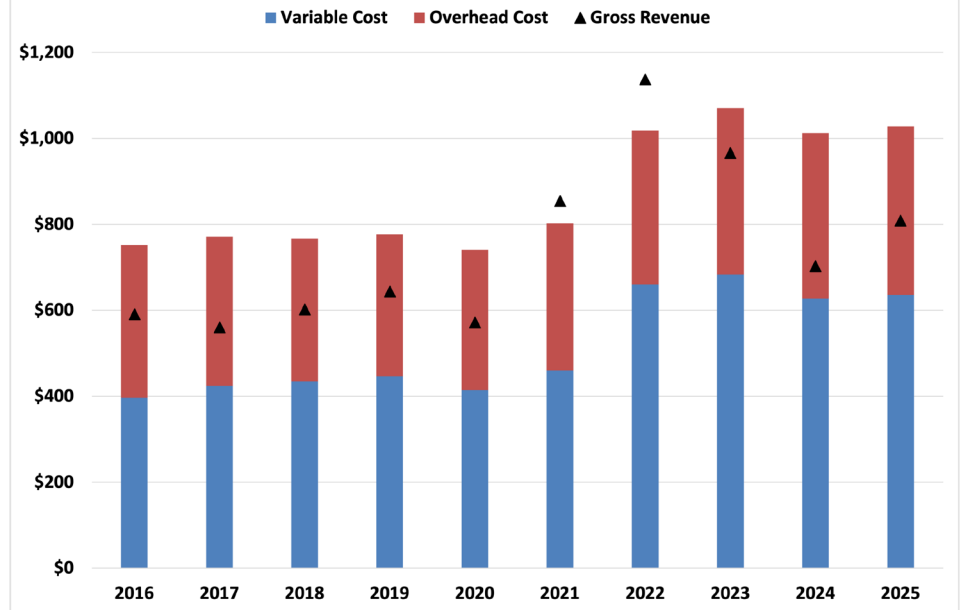


Figure 3. Fertilizer, Seed, Pesticide, and Cash Rent Cost per Acre Rotation Soybeans in Indiana.

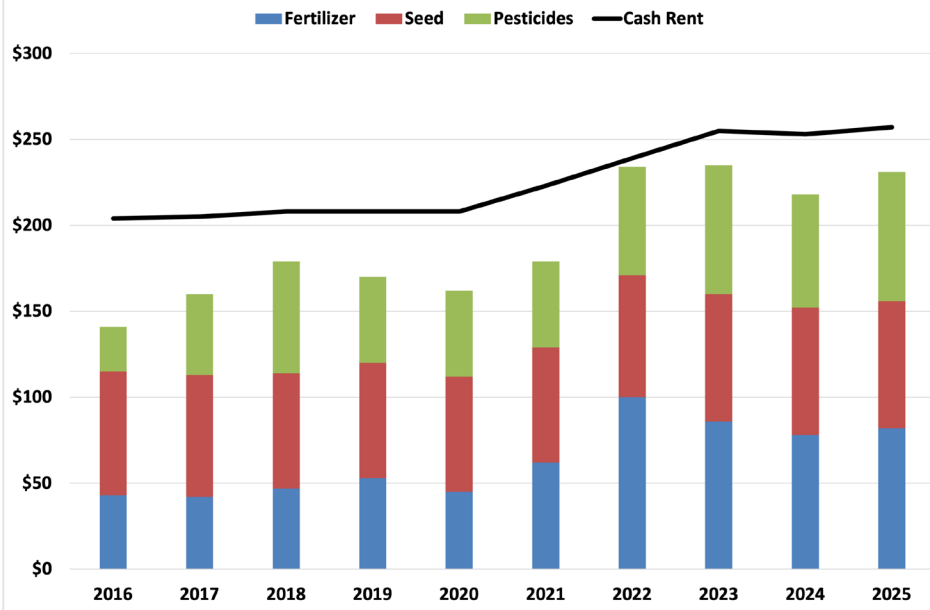
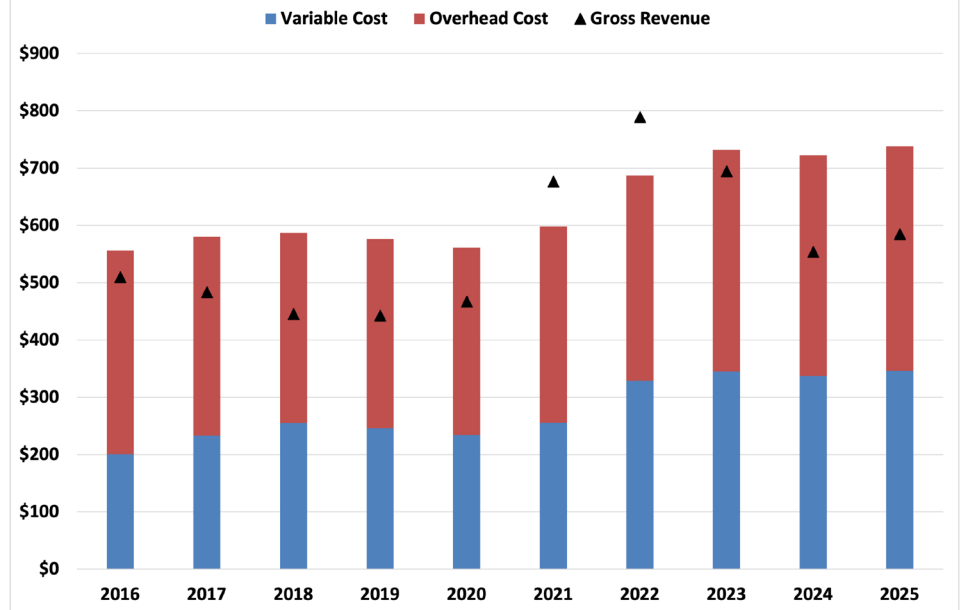


Figure 4. Variable Cost, Overhead Cost, and Gross Revenue per Acre Rotation Soybeans in Indiana.



PURDUE

AGRICULTURAL ECONOMICS REPORT

2025 Farmland and Cash Rent Outlook

Todd Kuethe, Professor of Agricultural Economics and Schrader Chair in Farmland Economics

Summary: *Indiana farmland values reached record highs in 2024 but showed slight declines, with further softening expected due to lower farm incomes, reduced crop prices, and high interest rates. Cash rental rates are also under pressure as tighter margins leave farmers with less capital for land expenses in 2025.*

Farmland Values

This summer, the 2024 [Purdue Farmland Values and Cash Rent Survey](#) suggested that Indiana farmland prices once again hit a new record high at \$14,392 per acre for top-quality land, \$11,630 per acre for average-quality land, and \$9,071 per acre for poor-quality land. However, the survey respondents suggested that prices actually peaked in December 2022 and retreated slightly in the first half of 2024. In addition, the respondents expected modest declines for the second half of 2024. The agricultural lender survey conducted by the [Federal Reserve Bank of Chicago](#) suggested that farmland prices in Indiana fell by approximately 2% between October 2023 and October 2024. In addition, the most recent iteration of Iowa State University's land value survey, released in December 2024, found that farmland across Iowa declined by 3.1% between November 2023 and November 2024.

The slight dip in farmland prices at the end of 2024 was driven by lower net farm incomes, reduced crop prices, and higher interest rates. In 2025, there is a potential for further reductions in interest rates, yet the prospect of higher commodity prices remains uncertain. As a result, the outlook for farmland prices is slightly pessimistic. While few expect a drastic decline in farmland prices, many expect modest declines to flattening prices in the coming year.

Cash Rental Rates

The recent 2025 [Purdue Crop Cost & Return Guide](#) suggests that the contribution margin, the difference between market returns and variable costs, will decrease relative to 2024 levels for both rotation corn (-27.6%) and rotation soybeans (-29.1%). These declines match similar reductions observed in 2022. Tighter margins suggest downward pressure on cash rental rates, as farmers will have less cash to allocate to labor, investment, and land. Further, in 2024, the contribution margin for rotation corn was below cash rental rates. Similar to the farmland sales market, the cash rental market suggests modest downward pressure on rents.

PURDUE

AGRICULTURAL ECONOMICS REPORT

“What to Watch” in Dairy Markets in 2025

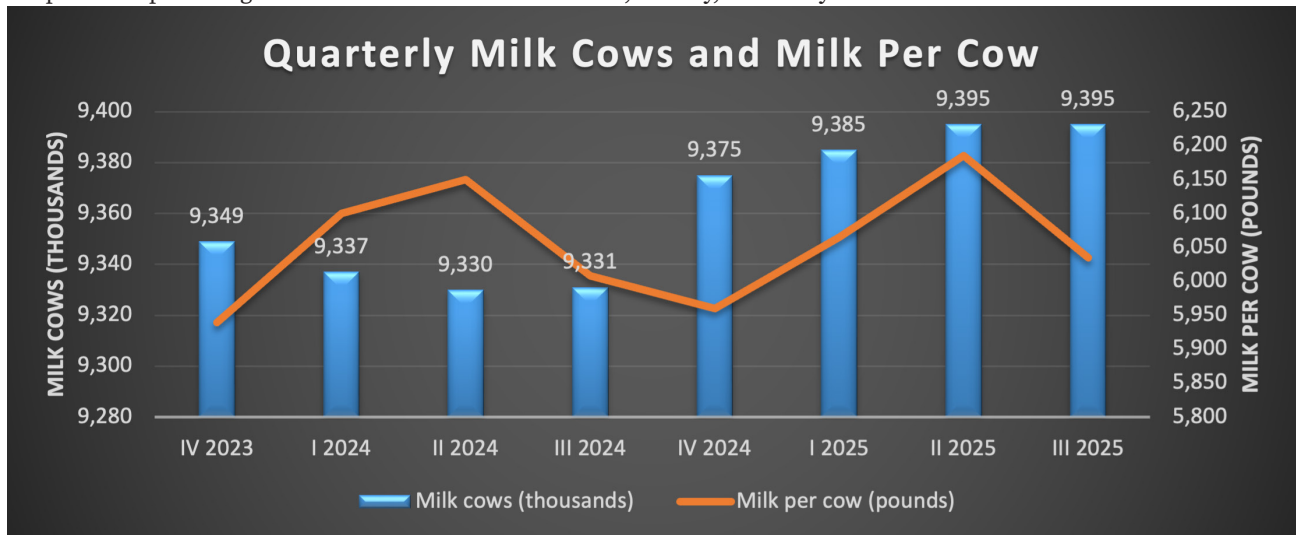
Nicole Olynk Widmar, Professor & Interim Department Head in Agricultural Economics

Summary: Strong domestic demand is expected to support relatively stable prices in dairy markets, but a variety of factors – both domestic and international – should be watched in 2025.

Total milk production for 2024 was forecasted (in December 2024) at 226.3 billion pounds, which was up slightly. Upward movement in dairy cattle numbers and milk per cow fueled this increase, which is expected to continue in 2025 when milk production is forecasted to reach 228 billion pounds.

The dairy herd size was reported at 9.365 million head in October 2023; it had been gradually increasing since August. Simultaneously, the average milk production per cow in October 2024 was around 3 pounds higher than in 2023. With both a larger dairy herd and higher milk per cow, it follows that milk production is higher (and expected higher yet in 2025 if growth in cow numbers continues as expected).

Graph developed using data from the ERS-USDA Livestock, Poultry, and Dairy Outlook. December 2024.



Source data and report available at: <https://www.ers.usda.gov/publications/pub-details?pubid=110629>

The dairy markets are currently projected to be reasonably stable, both in demand for products and in prices. The 2024 all-milk price forecast was lowered in the **December 2024 Outlook from ERS-USDA** to \$22.65 per hundredweight (cwt). For 2025, the all-milk price forecast was \$22.55 per cwt. Based on what was known at the end of 2024, strong domestic demand was expected to continue into 2025, which would draw down stocks of dairy products and support continued stability in prices.

Highly Pathogenic Avian Influenza (HPAI) was first confirmed in a dairy herd in the U.S. in March of 2024. As of December, there was HPAI in dairy herds confirmed in 16 states and 832 dairy herds, per the [ERS-USDA December Outlook report](#). The Animal Plant and Health Inspection Service (APHIS) of the USDA reported 925 cases in 16 states as of January 14th, 2025; the number of confirmed cases in cattle, by state, is reported by APHIS [here](#). April 1st, 2024, saw the [first report from the Centers for Disease Control \(CDC\) of a human case of HPAI](#) after being exposed to dairy cattle presumed to have been infected with the virus; additional cases in humans after contracting with infected cattle have been reported since. Infected dairy cattle can show clinical signs, including reductions in milk production, decreased feed consumption, abnormal feces, lethargy, dehydration, and fever, but most dairy cattle are able to recover. In April 2024, the USDA released a federal order, [accessible here](#), requiring testing of lactating dairy cows prior to interstate shipment and reporting any positive results. Then, in December 2024, USDA issued another federal order, [available here](#), requiring additional testing and reporting of raw milk, "... Federal Order requires testing of raw (unpasteurized) milk to detect and provide data for the control and eradication of HPAI. Samples will be collected at facilities that ship, receive, or transfer bulk raw (unpasteurized) cow's milk intended for pasteurization." The CDC, USDA, FDA, and state veterinarians and livestock associations are actively collaborating to protect livestock, as well as humans, and the continued safety and security of the U.S. milk supply. HPAI remains a concern for domestic livestock producers, including dairy, and remains closely watched by public health officials, given the cases in humans and transmission across species.

There are also several factors originating outside of dairy markets which could impact consumer confidence and spending. Inflation was top-of-mind for many people over recent years and is being talked about as an ongoing concern, although it is yet to be seen how much of a concern. Indeed, households have been challenged in recent years by increasing housing, food/grocery, and household consumable prices. The increases in grocery prices have altered the product mix for many households over the past several years, and further adjustments could be anticipated depending on the relative prices of competing products.

There is uncertainty inherent in the marketplace in 2025 under a new administration. Individuals are closely watching interest rates and performance in financial markets. While the variety of factors at play in these markets are beyond the scope of this outlook, we must remember that the confidence amongst households and consumers matters quite a bit for how households spend. For dairy, we'll be watching for how households spend on food away from home versus food for at-home cooking and consumption. If households get nervous financially and pull back on spending at restaurants and take-out, then we begin to think about cheese usage for pizza versus purchases of yogurt and fluid milk for at-home use. Whilst not necessarily problematic as a single change in purchasing behavior, pulling back on spending by households may result in softening of demand on products that may be considered non-essential (such as convenience or single-serve packaged products).

Finally, there are a variety of factors in international markets worth watching, including the potential for tariffs or other trade disputes to impact the trade of dairy and related products. However, it is too soon to tell how those conversations will develop or how dairy product flows may be impacted (or not).

PURDUE

AGRICULTURAL ECONOMICS REPORT

Analysis of Labor Market Outcomes during the COVID-19 Pandemic in Eight Countries

Laura Montenovo, Assistant Professor of Agricultural Economics¹

Summary: Pre-pandemic job characteristics and social distancing policies significantly influenced employment changes across eight countries during COVID-19, with employer behavior (labor demand) driving job losses more than worker decisions (labor supply).

Main takeaways:

- Pre-existing occupational sorting of workers in jobs that can easily be worked remotely and in jobs that involve many face-to-face tasks is similar across countries;
- Such sorting explains much of the changes in employment during COVID-19;
- Strict distancing policies during COVID-19 reduced employment even in the absence of high virus cases, highlighting the importance of mitigation policies in driving labor outcomes;
- Changes in labor market outcomes reflect changes in labor demand rather than labor supply.

In a research paper, authors compare changes in labor market outcomes during 2020 in eight countries that had very different pandemic experiences and policy responses (i.e., social distancing and social safety net). In particular, they focus on the United States, Australia, South Korea, Italy, Denmark, Spain, France, and Sweden.

The study explores the role that the COVID-19 virus and the mitigation policies separately played in shaping the labor market experience of different types of workers. Moreover, the authors investigate the determinants of cross-country differences and disparities.

The data comes from the labor market surveys of the nine countries, which the authors make as similar as possible so that each variable measures the same changes across countries. This allows for cross-country comparability of the results.

The authors use periodic labor force surveys in each country from January 2019 to December 2020. Specifically, they rely on the Australian Bureau of Statistics Longitudinal Labour Force Survey for Australia, the Economically Active Population Survey and Local Area Labour Force Survey for South Korea, the Current Population Survey for the U.S., and Eurostat for Italy, Denmark, Spain, France, the United Kingdom, and Sweden. The data for Australia, South Korea, and the U.S. are monthly, while those for the European countries are quarterly.

The empirical analysis aims to understand how some socio-demographic characteristics of workers and the types of jobs they had impacted their labor market outcomes during the first year of the pandemic.

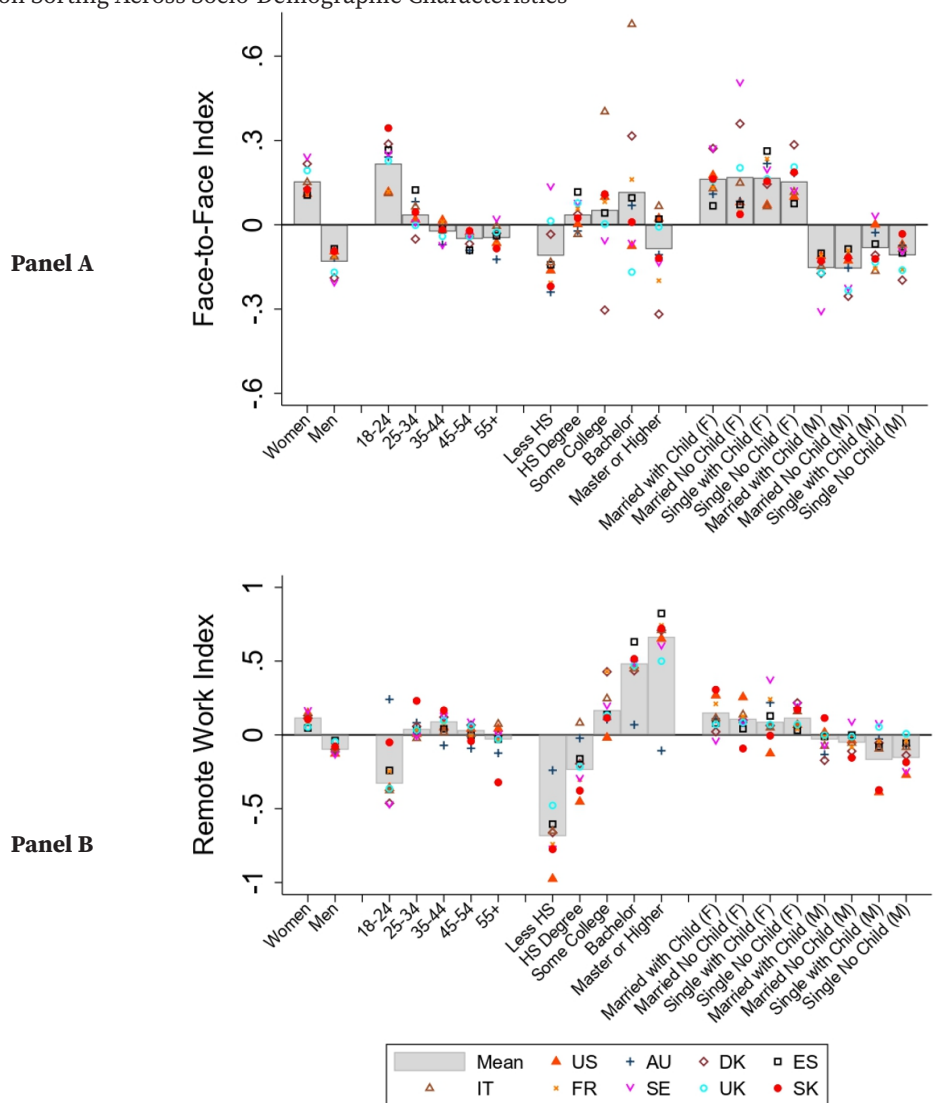
¹ This report is based on research by Robert Breunig (Australian National University), Wei Cheng (East China University of Science and Technology), Laura Montenovo (Purdue University), Kyoung Hoon Lee (Korea Institute of Public Finance), Bruce Weinberg (The Ohio State University), and Yinjunjie Zhang (Australian National University).

Specifically, the authors focus on gender, age, educational achievement, and parental and marital status as potential determinants of labor market changes during 2020. Moreover, they rank the jobs of workers based on how much, in 2019, their tasks require face-to-face interaction (Face-to-Face Index) and on the extent to which their tasks can be performed remotely (Remote Work Index).² Notably, they measure the indices using 2019 data in order to gauge the characteristics of jobs before the pandemic and exclude any impact that the pandemic had in shaping such characteristics. For example, teaching was considered a very face-to-face job before 2020, but it became quite prone to being remote since the beginning of 2020.

Then, the authors explore how much of these characteristics shaped workers' changes in labor market outcomes during COVID-19. The outcomes they consider are employed and at work, employed but currently absent from work, unemployed, and out of the labor force.

Figure 1 shows the average Face-to-Face (Panel A) and Remote Work (Panel B) job indices measured in 2019 for each country and the cross-country average in 2020 for the women, men, five age categories (18-24, 25-34, 35-44, 45-54, and 55+), five educational groups (less than high school, high school degree, some college, bachelor, masters or higher), and four household categories separately for females and males (married and single, with and without a child present in the household).

Figure 1. Pre-Pandemic Occupation Sorting Across Socio-Demographic Characteristics³



This graph shows whether specific socio-demographic subgroups tended to disproportionately sort themselves into jobs that differed in their flexibility and potential to adjust to the pandemic. Both panels indicate not only that such sorting is present but that it is very similar across the countries considered.

For example, women are more likely to be in jobs that rank high in face-to-face and remote work potential (e.g., teachers), while the opposite holds for men. Young workers are disproportionately in high face-to-face and low remote work occupations. As workers age, they enter jobs that rank lower in their face-to-face reliance. The lowest and highest education groups are less likely to be in jobs relying heavily on face-to-face tasks, while the opposite holds middle education groups. Instead, the remote work index increases substantially and monotonically with education achievement. Finally, differences by marital and parental status seem to be explained by gender differences rather than by household composition per se, as they track down the results for women and men overall.

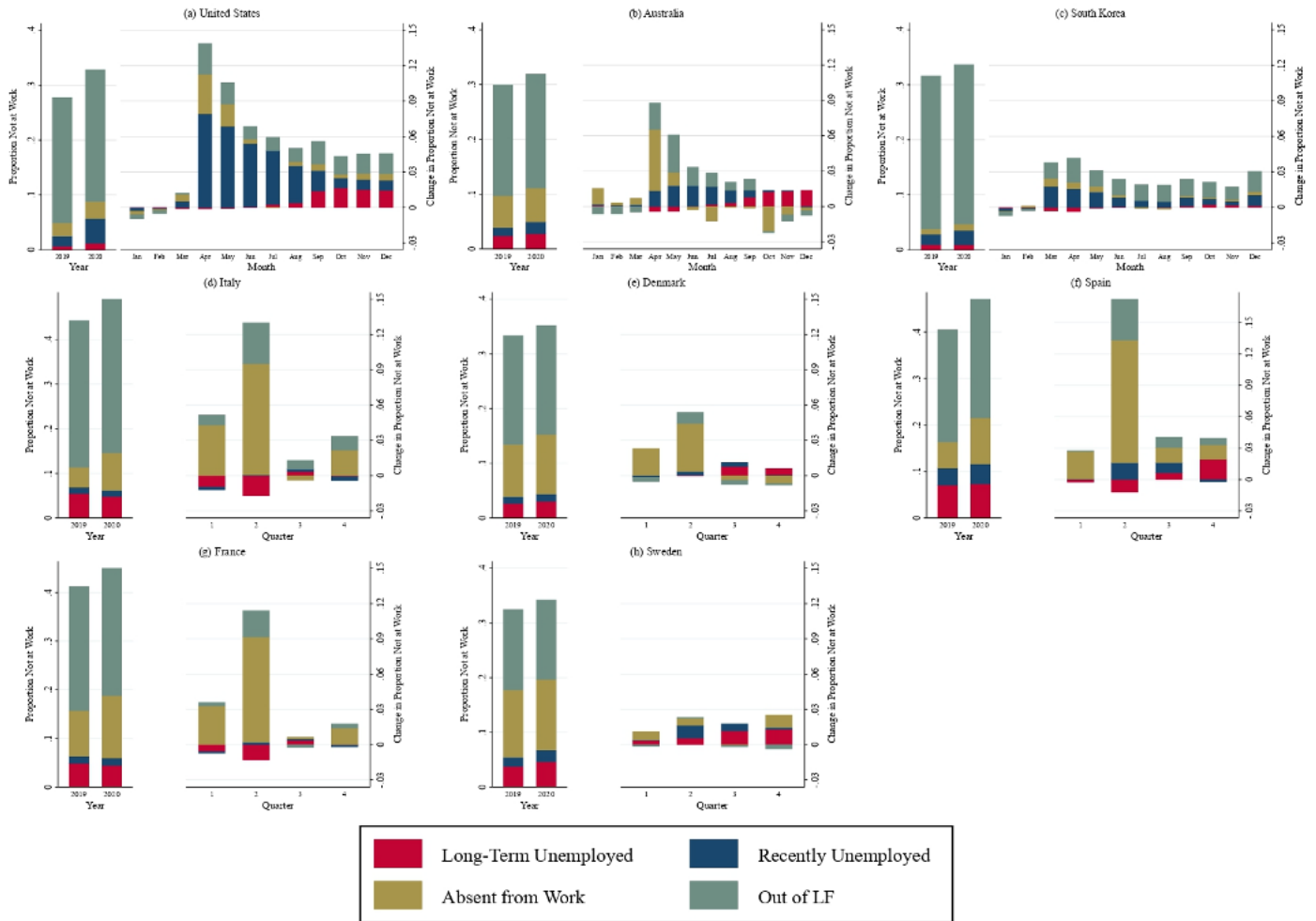
The analysis shows that such sorting of workers by socio-demographic characteristics that existed before the pandemic substantially explains the disparities in job loss and unemployment that these subgroups experienced during the pandemic. Some jobs can rank high in both face-to-face and remote work. In fact, certain tasks could normally be carried out in person before the pandemic, but they had the potential to be held remotely (which they did in 2020). Examples are teachers and administrators. Consequently, the remote work index might drive the labor market outcomes a bit stronger than the face-to-face index during the pandemic.

This is exactly what the results in Figure 1 suggest. Jobs that ranked high in face-to-face features were more likely to experience statistically significant but relatively mild decreases in employment in 2020, especially in Australia, Denmark, Sweden, the United Kingdom, and the United States. Instead, remote work is positively and strongly associated with employment in 2020 in all countries considered except Sweden. Overall, job characteristics that proved to be crucial in times of work-from-home are major drivers of employment outcomes in the United States and internationally. Because employment in 2019 is, instead, barely explained by such indices, it is safe to infer that they started to gain importance in shaping employment only as a result of the pandemic.

In Figure 2, the authors focus on the share of not-at-work individuals in the overall population in the United States, Australia, South Korea, Italy, Denmark, Spain, France, and Sweden. The bars on the left side of the graph show the shares in 2019 and 2020. The bars on the right side of the graph plot the changes between months (U.S., Australia, and South Korea) or quarters (European countries) in 2019 and 2020. Four categories of not-at-work are plotted and identified by different colors: long-term unemployment (i.e., unemployed for more than six months), recently unemployed (those who lost their jobs within the last six months), absent from work (employed but not currently working), and out of the labor force. The sub-categories are stacked and sum up to the overall not-at-work share. Figure 2 helps compare the reactions of labor markets to the virus and the mitigation policies across the eight countries.

First, although all countries experience the largest increase in the not-at-work share in April or the second quarter,

Figure 2. Change in Four Not-at-Work Categories Between 2019 and 2020



Note: The bars are measured as shares of the number of individuals in each category by the working age (18 to 65 years old) population. Using population in the denominator, rather than individuals in the labor force, is preferred to exclude the effect of changes in the size of the labor force due to the pandemic.

some start experiencing such increases in March or the first quarter. For example, South Korea and Italy both had surges in not at work in March and the first quarter, likely because the virus there broke earlier than in other countries.

Second, there is a wide cross-country variation in the magnitude of the increases. For example, the share of not-at-work increased by only about 3% in Sweden and South Korea and surged by well over 10% in Spain, where it increased by more than 15% in Italy, France, and the US.

Third, the overall change in the not-at-work group hides substantial differences in how the sub-categories varied across countries. Recent unemployment and absence from work both increased dramatically in the US. Instead, in South Korea, the change in out-of-work is largely driven by an increase in recent unemployment and out-of-labor force rates. In the other countries (except Sweden), absence from work was the main driver, followed by increases in out-of-the-labor-force. The authors note how these differences may be partially related to the labeling associated with social welfare policies, job retention, and short-term work schemes, especially in Europe and Australia. Fourth, the magnitude of the increases in not-at-work appears to be associated with the severity of the outbreaks in each country. However, some important exceptions are likely explained by the variation in mitigation policies. For example, in Australia, the social distancing policies may have caused the increase in the not-at-work share, given the absence of large COVID-19 case numbers. In South Korea, where cases were relatively low, increases in not-at-

work were lower than in Australia, potentially because, unlike Australia, no lockdowns were implemented. Finally, in Sweden, which did not enact any considerable or aggressive social distancing policies, the increases in not-at-work were extremely mild.

Overall, the authors conclude that mitigation measures, social distancing policies, and social welfare policies played a major role in shaping labor market outcomes during the pandemic in the eight countries they consider.

Finally, the authors use Figure 2 and other evidence to identify whether the changes in labor market outcomes during 2020 were due to labor supply or labor demand mechanisms. Labor supply mechanisms arise from changes in the behavior of workers, their willingness to work, participation in the labor market, or changes in their desired working conditions. Labor demand mechanisms arise from changes in the behavior of employers, including how much they hire, pay, and terminate.

Figure 2 suggests that changes in labor supply are unlikely the main determinants of the surge in the population not-at-work. Even though the share of workers exiting the labor force increased in all countries except South Korea, such sub-category plays a relatively minor role in the overall increase in the not-at-work during the pandemic. Moreover, most increases in out-of-labor-force rates revert quicker than for other sub-categories.

In further analyses, the authors find that much of the job losses during the pandemic were concentrated among younger workers. Because older workers were more vulnerable to the risks of contracting the virus, labor supply mechanisms would imply these workers to be those most likely to withdraw from the labor market. Further, because the authors find similar effects for individuals with and without children, parents choosing to leave their jobs to care for their children due to school closure does not seem like a major explanatory factor.

Based on their overall results, the authors suggest that the impact of the pandemic and related policymaking on the labor markets was largely driven by a change in the behavior of employers at an international level.

Conclusion

This report summarizes some of the main findings of a paper that compares the change of main labor market outcomes during the early stages of the COVID-19 pandemic across eight countries. First, they find that jobs' reliance on face-to-face tasks and flexibility to perform tasks remotely played a major role in shaping workers' job loss in 2020, and the results are consistent internationally. Second, they find that social distancing policies that have been implemented in response to the pandemic substantially shaped labor market outcomes, even in the absence of high COVID-19 numbers. Finally, their findings suggest that the main determinant of the labor market outcomes changes during 2020 were driven by labor demand mechanisms rather than by labor supply responses.

Reference

Montenovo, L., Jiang, X., Lozano-Rojas, F., Schmutte, I., Simon, K., Weinberg, B. A., & Wing, C. (2022). Determinants of disparities in early COVID-19 job losses. *Demography*, 59(3), 827–855. <https://doi.org/10.1215/00703370-9961471>