

October Newsletter 2021

Hello Colleagues and Friends,

As we welcome in the Autumn months, C-FARE is continuing its mission to translate knowledge generated by agricultural and applied economics professionals. This month's newsletter features:

- The Market Corner article by C-FARE Board Member **David Zilberman** titled **The Circular Economy**
- An Op-Ed on **COVID, Supply chains, and Inflation** by C-FARE Board Chair, **Gal Hochman**
- Register for two of our upcoming events: iSEE webinar **“Transforming Food Systems for a Circular Economy”** and C-FARE's Annual Brandt Forum **“Impacts of a Digitally Driven Global Economy on the Future of Farming”**
- New Direction features articles and papers titled:
  - [Enabling circularity in grain production systems with novel technologies and policy](#)
  - [Action Plan for Climate Adaptation and Resilience](#)
  - [Climate-Smart Agriculture and Forestry Partnership Program](#)
  - [Investing In Rural Prosperity](#)

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## **Market Corner**

With growing concern about environmental protection and climate change, there is a drive to develop a circular economy. The circular economy is contrasted with the linear system that we have today where we apply various inputs to produce outputs and, in the process, generate residues that may cause harm.

When policy-makers ignore the social cost of these residues and don't establish incentives or standards to reduce them, we end up with problems like climate change where continuous use of fossil fuels results in greenhouse gases.

One of the most important challenges of agricultural research was to develop technologies that reduce residues. Many of these technologies increase the precision of agricultural systems. They



include, for example, drip irrigation that increases the percentage of irrigated water or applied chemicals utilized by crops and thus reduces waste and run-off. Other precision technologies increase input use efficiency in pest control and animal agriculture. Better ability to monitor the performance of living organisms and modify it in a precise manner can increase production while reducing negative environmental side-effects. This is one of the advantages of modern genetic engineering, which is based on understanding and modifying molecular and cellular systems. The effectiveness of the recent Pfizer and Moderna is a testimony of the value of precise genetic engineering.

A major challenge of circular systems in recycling of residue materials and here increase knowledge of living systems and the ability of different organisms to utilize various chemicals to produce new products. With new technologies, we are likely to provide the foundations for biorefineries that will be able to utilize living organisms including plants and algae to produce food products as well as fuel and fine chemicals. Thus, expanding the value added of agricultural activities and enabling moving from a non-renewable to renewable economy, which will be circular.

Our policy challenge is to provide support for research and development that will lead to capabilities that will enhance the circular economy as well as policy incentives to adopt and utilize these new capabilities.

**David Zilberman, C-FARE Board Member, University of California**

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## Op-Ed



During the last summer, [economic growth weakened](#). Even though a few sectors showed strength, deceleration in economic activity in contact-intensive industries such as dining out, travel, and tourism became common because of safety concerns due to COVID-19.

However, we also witnessed a slowdown in sectors of the economy impacted by supply disruptions and labor shortages, as opposed to the softening of demand. The auto sales and home sales activity are two examples.

The [supply shortages](#), driven mainly by input and labor shortages, led to inflationary pressure. As a result, the price dynamics caused by COVID-19 resulted in price movements that are very different from what we were used to before the pandemic. One of the concerns raised is whether this [episodic price movement](#) is reshaping price and wage movements and

how it will affect the long-run expectations. Inflation expectations have risen this year, with the expectation measure reaching the highest level compared to the previous ten years of the Atlanta Fed's one-year ahead Business Inflation Expectation measure. In addition, the Consumer Price Index (CPI) measure of rent [went up by 0.5 percent between August and September](#), suggesting an upward shift in long-run expectations.

The recent change in prices resulted from the propagation of idiosyncratic shocks that disrupted the existing supply chains. To this end, evidence suggests a difference in responses, both between and within sectors. For example, COVID-19 caused industries requiring social contact to shrink, followed by some firms exhibiting adaptation (e.g., digitalization and direct marketing). However, most of the observed transformation is of the larger firms, with the smaller firms trying to ride the wave, hoping it will end sooner rather than later. However, many predict the COVID-19 effects will stay longer than expected, with [many believing COVID-19 will impact the economy well into 2022](#).

Many attributed these changes to the vaccine rollout when asked about the [driving forces behind the increased demand](#). At the same time, others also emphasized the fiscal relief package, seasonal demand, and broad-based economic recovery.

However, the uncertainty surrounding COVID-19 slows down the recovery of supply. [As a result, many firms do not expect to increase supply to meet the growing demand](#). In addition, finding workers is becoming a significant challenge. Restaurants and other intensive-contact industries are struggling with extreme shortages. Some face difficulties in having skilled workers on-site since many are reluctant to relocate to an on-site presence. In addition, the constraints born from COVID-19 led to at-home childcare duties, which further restrict labor supply.

We observe significant constraints and challenges with procuring inputs, with friction affecting both domestic and international supply chains. For example, [disruptions in China due to COVID-19 significantly affected U.S. supply chains](#). These disruptions led the U.S. to import from other Asian countries. However, these changes were driven mainly by firms with already established relationships in other Asian countries. In addition, large U.S. customers continued trading with the Chinese suppliers; the smaller U.S. customers were more to struggle and try to maintain the status quo albeit the deteriorating market conditions. Large and well-established firms appear more resilient and better equipped to handle the economic ramifications of COVID-19.

As we advance, COVID-19 will give further impetus to existing trends, leading firms to consider bringing some critical activities back to the United States or setting up backup suppliers to reduce their exposure to any single supplier or country. While introducing such additional safeguards will reduce the efficiency of supply chains in regular times, it may also improve performance in the long term by [mitigating the high costs of supply chain disruptions](#). As data becomes available on the [supply matrix](#), we will better understand how supply chains responded and changed during and following the pandemic. However, we know so far that supply chains are dynamic. The industries' response during the pandemic likely led many enterprises to adapt and change their processes, thus [mitigating](#) the negative ramifications

from COVID-19. To this end, consumers responded to COVID-19 by changing their [food-spending patterns](#). During the pandemic, food expenditure at groceries increased, while spending on food away from home decreased. In addition, more consumers began to stock more food at home. However, as the economy started recovering, these trends changed, and we witnessed a partial readjustment of food expenditures toward pre-pandemic levels.

**Gal Hochman, C-FARE Board Chair, Rutgers University**

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### Upcoming Events

- **October 27, 2021 at 2 PM ET**

C-FARE partners with the Institute for Sustainability, Energy, and Environment (iSEE) at the University of Illinois Urbana-Champaign to present the webinar “[Transforming Food Systems for a Circular Economy](#)”.

- **November 2, 2021 at 12 PM ET**

C-FARE invites you to the November **Brandt Forum** 2021 on the “[Impacts of a Digitally Driven Global Economy on the Future of Farming](#)”.

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### New Directions

**Enabling circularity in grain production systems with novel technologies and policy.** There is an urgent need to transform unsustainable “linear” grain production systems in the U.S. and other countries like China, Brazil, Argentina, Canada, Russia, Australia and Europe, into more circular and sustainable systems to address the simultaneous challenges of resource depletion, environmental degradation, and the growing global demand for food under the threat of climate change. [The Full Analysis Available Here](#).

**Action Plan for Climate Adaptation and Resilience.** This Action Plan for Climate Adaptation and Resilience outlines how USDA will provide relevant information, tools, and resources to its stakeholders and target programs and activities to increase resilience to climate impacts. USDA will prioritize equity, promote environmental justice through a focus on healthy communities, and target adaptation actions with co-benefits for climate mitigation, conservation, and sustainability. [Full Access Here](#).

**Climate-Smart Agriculture and Forestry Partnership Program.** In response to the Executive Order titled Tackling the Climate Crisis at Home and Abroad, the USDA published a Federal Register notice on March 16, 2021, to request comments on a Climate-Smart Agriculture and Forestry (CSAF) strategy. As one element of the CSAF strategy, the USDA are considering actions to expand the use of climate-smart farming practices and aid in the marketing of agricultural commodities. [Learn More Here.](#)

**Investing In Rural Prosperity.** Rural communities throughout the U.S. are vibrant places, with great people, rich culture and heritage, and deep social ties. But recent structural changes to the economy, along with long-term challenges, have left many in these communities at a crossroads, wondering which direction will lead to prosperity for all. The Federal Reserve Bank of St. Louis and the Federal Reserve Board, seeks to help people living in rural areas navigate the challenges and opportunities they face to reach a future in which economic prosperity is a reality. [Read More Here.](#)