



# CRA Insights: Economic Consulting

CRA Charles River  
Associates

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The Ceridian-UCLA Pulse of Commerce Index™ (PCI) is a real-time measure of the flow of goods to US factories, retailers, and consumers. April's results represent the seventeenth consecutive month of year-over-year improvement in the index, up 3.5 percent. A little over a year after its release, the index continues to receive increasingly frequent and widespread coverage in national media. In this *CRA Insights*, we describe some of the work by CRA and others that led to the creation of the PCI as well as the importance of the index as a strong indicator of the progress of the US economy's recovery.

## Ceridian-UCLA Pulse of Commerce Index™

### Background

In 2008, Ceridian Corporation, a global business services company providing electronic and stored value card payment services and human resources solutions, began working with Charles River Associates to examine what value could be extracted from the vast amount of data it processed and accumulated in its daily operations. CRA's Vice President Brian Palmer teamed with Senior Consultant Ed Leamer, who is also Professor and Chauncey J. Medberry Chair in Management at UCLA and Director of the UCLA Anderson Forecast, to determine how the data could be used to create value for Ceridian.

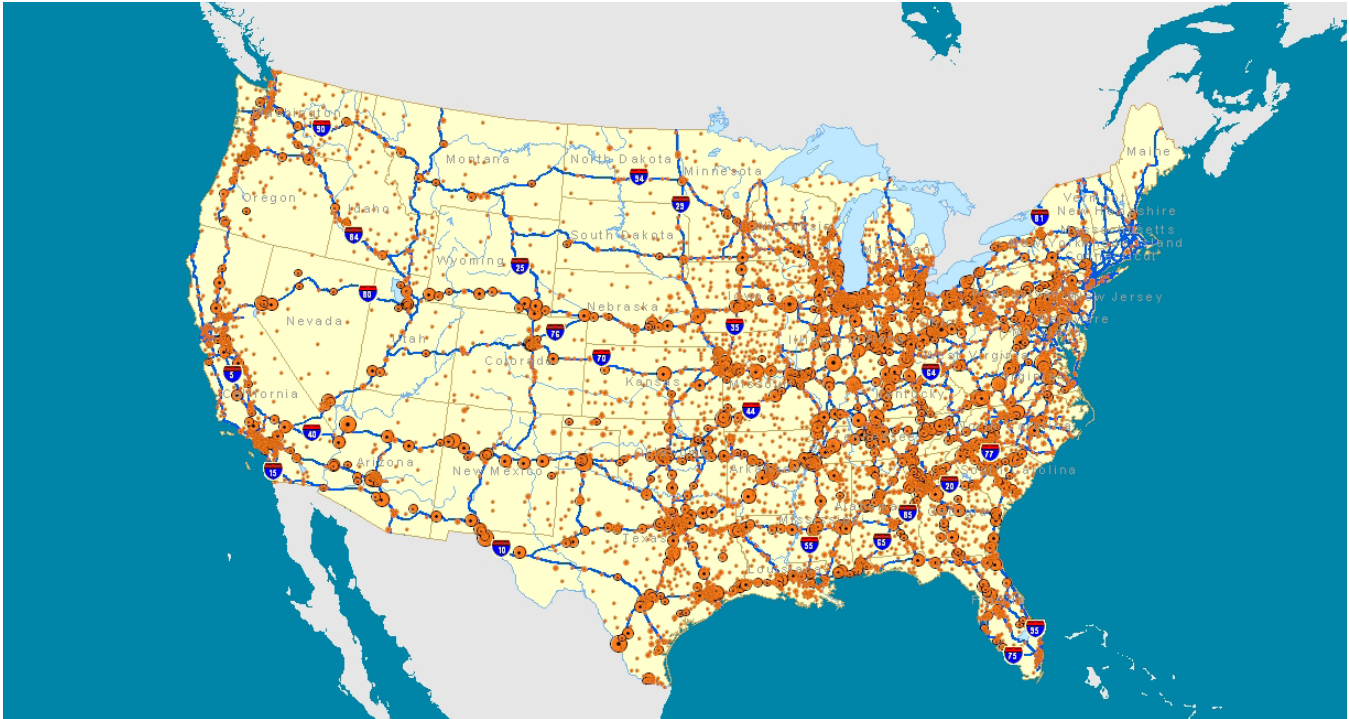
One of Ceridian's subsidiaries, Comdata—a provider of transaction processing and information services to the transportation industry—offers services to manage corporate expenditures, including a payment card that is used by over the road truckers for diesel fuel purchases. As a result of reviewing the data compiled from this service, the team found a strong correlation between purchases of diesel fuel for over the road trucking and other indices of economic activity—such as Industrial Production. Further analysis confirmed that this data could be utilized not simply as a proxy for an existing index of economic activity but as an independent and meaningful measure of the health of the economy by providing a timely snapshot of interstate commerce.

This analytical work led to the creation of the Ceridian-UCLA Pulse of Commerce Index. “It is called the Pulse of Commerce because the arteries of the economy are the interstates that crisscross the country, and the products on the trucks are the lifeblood of the system,” says Professor Leamer. “Without the movement of goods, the economy would die.”

### The advantages of the index and how data is collected

The PCI differs from other measures of economic activity because it is based upon actual transaction data collected in real time. The PCI is constructed from hundreds of millions of transactions at over 7,000 truck stops and diesel fuel distribution stations across the continental US. Because the PCI is based on actual transactions, its advantages are that it does not suffer from being survey data collected only from individuals who choose to answer (with potentially mixed incentives for accuracy), and it does not contain incomplete

Figure 1: Fueling locations across the US



information, such as Industrial Production, where approximately 72% of the source data are available at initial release and data for a given month may require revision in up to five subsequent months (or even years later; see the April 2011 PCI report<sup>1</sup>).

The vast amount of data available from Comdata also allows for a more accurate adjustment of the “normal” month-to-month variation than may be accomplished with some other monthly data series. Specifically, in addition to a seasonal adjustment, there is also an adjustment for the number of weekday and weekend days in a month. The weekday/weekend adjustment is performed because diesel fuel purchases for over the road trucks follow a predictable pattern: purchases are the lowest on the weekends (Saturday and Sunday), purchases increase each day during the workweek until a peak on Wednesday, and then purchases decrease each day after Wednesday until the next weekend. The total amount of fuel purchased on Wednesday is approximately twice the amount purchased on Saturday or Sunday.

### The significance of the index and its growing acceptance as an economic indicator

The PCI has been shown to be a reliable measure of economic activity in addition to closely tracking the Federal Reserve’s Industrial Production Index. Since its release in February 2010, the PCI has established a good track record of signaling potential economic turning points during its first year in use. The nature of the information used to construct the PCI and the timeliness of its compilation and release has demonstrated that the PCI is an important early indicator of economic activity. As the index changes, it offers real comparisons to past performance and shows the overall direction of the US economy. For example, in the summer of 2010, the PCI was correctly contrary to contemporaneous predictions of a double dip recession.

The PCI data and accompanying report are released monthly—generally around the tenth of each month—before Industrial Production and other indices of economic activity. Public releases of the data and the reports are available for every month since the index’s release.

<sup>1</sup> <http://www.ceridianindex.com/userfiles/file/Index-Report-March-2011.pdf>

Reporting on the monthly PCI release has appeared in *The Wall Street Journal*, *Financial Times*, *Barron's*, *Fortune*, *The Economist*, Reuters, on CNBC, and in a number of other media outlets. Last month, *Bloomberg BusinessWeek* said, “Ceridian-UCLA’s Pulse of Commerce Index is a novel way of measuring economic activity.”<sup>2</sup> Additional information on the Ceridian-UCLA Pulse of Commerce Index™—including a white paper on how the index is constructed, a tutorial video, FAQ section, the monthly reports, and much more—can be found at [www.ceridianindex.com](http://www.ceridianindex.com).

For information about Charles River Associates and the work it has done to help clients extract value from their own proprietary data, please contact Brian Palmer.

**Brian Palmer**

Vice President

+1-626-564-2020

[bpalmer@crai.com](mailto:bpalmer@crai.com)

[www.crai.com](http://www.crai.com)

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<sup>2</sup> [http://images.businessweek.com/mz/11/15/1115\\_mz\\_17econthepump.pdf?chan=magazine+channel\\_news+-+global+economics](http://images.businessweek.com/mz/11/15/1115_mz_17econthepump.pdf?chan=magazine+channel_news+-+global+economics)