An Economic Dashboard for the Green Industry

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In this paper, an economic dashboard is described that encompasses the most pertinent economic indicators affecting the green industry. The economic dashboard is not a predictive or market timing tool. The dashboard is intended as a tool for green industry owners and managers to set context and perspective when evaluating the current state of the economy. It is not meant to serve as a direct prediction regarding the future performance of any economic or financial market. It is not intended to predict or guarantee future investment performance of any sort.

An economic indicator is simply any economic statistic, such as the unemployment rate, GDP, or the inflation rate, which indicate how well the economy is doing and how well the economy is going to do in the future. If a set of economic indicators suggests that the economy is going to do better or worse in the future than businesses had previously expected, they may decide to change their strategy. Unfortunately, the population of possible indicators for managers to consider is voluminous. The objective of this research was to provide a subset of indicators that owners and managers could track to develop a representative snapshot on the nature of the economy in the short run.

To understand economic indicators, we must understand the ways in which economic indicators differ. Economic Indicators can have one of three different relationships to the economy:

- A **procyclic** (or procyclical) economic indicator is one that moves in the same direction as the economy. So if the economy is doing well, this number is usually increasing, whereas if we're in a recession this indicator is decreasing. The Gross Domestic Product (GDP) is an example of a procyclic economic indicator.

- A **countercyclic** (or countercyclical) economic indicator is one that moves in the opposite direction as the economy. The unemployment rate gets larger as the economy gets worse so it is a countercyclic economic indicator.

- An **acyclic** economic indicator is one that has little or no relation to the health of the economy. Acyclic indicators are rare and generally of little use.

Economic Indicators can be leading, lagging, or coincident which indicates the timing of their changes relative to how the economy as a whole changes.

- **Leading** economic indicators are indicators of change before the economy changes. Stock market returns are a leading indicator, as the stock market usually begins to decline before the economy declines and they improve before the economy begins to pull out of a recession. Leading economic indicators are the most important type for investors as they help predict what the economy will be like in the future.

- A **lagged** economic indicator is one that does not change direction until a few quarters after the economy does. The unemployment rate is a lagged economic indicator, as unemployment tends to increase for 2 or 3 quarters after the economy starts to improve.

- A **coincident** economic indicator is one that moves at the same time as the economy does. The Gross Domestic Product is a coincident indicator.

From a procedural standpoint, any economic dashboard needs to contain a mix of each type of indicator in order to be most useful to green industry owners and operators. The list of indicators (and their source) that we have selected is presented below. They reflect the underlying economic and financial conditions that have the greatest potential for reflecting changes in economic variables that will likely affecting the green industry.

a. Leading Economic Index (Conference Board)
b. Chicago Fed National Activity Index (FRB Chicago)
c. Bloomberg Financial Conditions Index
d. Daily Consumer Leading Indicators (Consumer Metrics Institute)
e. Conference Board Consumer Confidence Index
f. Real Personal Income Levels (Bureau of Economic Analysis)
g. Employment Trends Index (Conference Board)
h. Unemployment Claims (U.S. Department of Labor)
i. Existing Homes Sales and Inventory Months of Supply (Nat. Assoc. of Home Builders)
j. New Residential Homes Sales and Inventory Months of Supply (U.S. Census Bureau)
k. Residential Investment (Bureau of Economic Analysis)
l. Buildfax Residential Remodeling Index
m. Architectural Billings Index (American Institute of Architects)
n. Real GDP (Bureau of Economic Analysis)
o. Industrial Production (FRB St. Louis)
p. ATA Truck Tonnage Index (American Trucking Association)

Notice that the indicators to be included in the dashboard are related to general economic conditions, employment, housing, and productive capacity of businesses. All of these are reflective of factors that affect the green industry directly and represent all of the types of indicators aforementioned. Each of the indicators is defined in Table 1, with implications also provided.

Economic reports and indicators are often-voluminous statistics put out by government agencies, non-profit organizations and even private companies. They provide measurements for evaluating the health of our economy, the latest business cycles, and how consumers are spending and generally faring. Various economic indicators are released daily, weekly, monthly and/or quarterly.

For business owners and executives (and investors), being able to understand the economy's "health" and direction can help guide business and investment decisions. Economic indicators are not perfect crystal balls, but they are certainly better than winging it.

While it is important to keep a pulse on the economy, few analysts or economists wade through <u>all</u> of these massive volumes of data. Which reports are worth the effort to track on a regular basis and why? This paper has presented a short list of economic indicators that the authors feel are particularly correlated with key driving forces and trends that directly impact green industry businesses today.

It is anticipated that green industry business leaders can utilize this information to make better hiring decisions, match inventories to the business cycle (businesses that are sensitive to the economic cycle need larger inventories during periods of economic growth than during recessions), improve business forecasts, and evaluate new business opportunities based on current economic conditions.

Table 1. Summary of economic indicators serving as a green industry dashboard.

Indicator	Definition & Implications
Leading Economic Index (Conference Board)	This leading indicator is intended to forecast future economic activity. The 10 components of the Conference Board Leading Economic Index® for the U.S. include: Average weekly manufacturing hours, Average weekly initial claims for unemployment insurance, Manufacturers' new orders of consumer goods and materials, ISM Index of New Orders, Manufacturers' new orders of nondefense capital goods excluding aircraft orders, Building permits of new private housing units, Stock prices, 500 common stocks, Leading Credit Index™, Interest rate spread of 10-year Treasury bonds less federal funds, and Average consumer expectations for business conditions.
Chicago Fed National Activity Index (FRB Chicago)	The Federal Reserve Bank of Chicago combines 85 different indicators into one number to give a sense of whether the overall U.S. economy is growing faster than its historical trend (numbers above zero) or slower (numbers below zero). If you average the last three months' index values, you get the CFNAI-MA3 ("moving average 3 months"). When the CFNAI-MA3 value moves below -0.70 following a period of economic expansion, there is an increasing likelihood that a recession has begun. Conversely, when the CFNAI-MA3 value moves above -0.70 following a period of economic contraction, there is an increasing likelihood that a recession has ended.
Bloomberg Financial Conditions Index	Monitors the level of stress in the U.S. financial markets. The Bloomberg Financial Conditions Index combines yield spreads and indices from the Money Markets, Equity Markets, and Bond Markets into a normalized index. When this index is high (good), it means that money is probably flowing well between banks and businesses or consumers. When it goes lower (worse), it means that credit is probably tough to get, so many businesses and people cannot get a hold of the money they need to take care of their needs (hiring workers, buying inventory, buying machinery, etc.)
Consumer Leading Indicators (Consumer Metrics Institute)	Consumer spending accounts for a significant portion of the overall U.S. economy. This indicator measures the consumer's interest in items that are discretionary, meaning that they are not necessary for survival like food, gas or water. The data is tracked every day and posted only a day or two later, so this is one of those rare almost real-time indicators.
Conference Board Consumer Confidence Index	The Conference Board Consumer Confidence Index ® (CCI) is a barometer of the health of the U.S. economy from the perspective of the consumer. The index is based on consumers' perceptions of current business and employment conditions, as well as their expectations for six months hence regarding business conditions, employment, and income. The Consumer Confidence Index and its related series are among the earliest sets of economic indicators available each month and are closely watched as leading indicators for the U.S. economy.
Real Personal Income Levels (Bureau of Economic Analysis)	Personal income levels are important for the health of the economy. When people have more income, they spend more, which helps business grow and employ more people. The NBER (who officially decides whether the economy is growing or shrinking) looks at real personal income less transfer payments (government benefits). The "real" refers to the fact that this statistic is adjusted for inflation.
Employment Trends Index (Conference Board)	The Employment Trends Index aggregates eight labor-market indicators, each of which has proven accurate in its own area. Aggregating individual indicators into a composite index filters out "noise" to show underlying trends more clearly. The eight labor-market indicators aggregated into the Employment Trends Index include: Percentage of Respondents Who Say They Find "Jobs Hard to Get" (The Conference Board Consumer Confidence Survey®); Initial Claims for Unemployment Insurance (U.S. Department of Labor); Percentage of Firms With Positions Not Able to Fill Right Now (© National Federation of Independent Business Research Foundation); Number of Employees Hired by the Temporary-Help Industry (U.S. Bureau of Labor Statistics); Ratio of Involuntarily Part-time to All Part-time Workers (BLS); Job Openings (BLS); Industrial Production (Federal Reserve Board); and Real Manufacturing and Trade Sales (U.S. Bureau of Economic Analysis).
Unemployment Claims (U.S. Department of Labor)	Weekly initial unemployment claims is one of the most important jobs indicators because, of all the jobs-related indicators, it is the closest to being a leading indicator of any kind. Typically, changes in the labor market are lagging the changes in the general economy, but initial weekly unemployment claims are about synchronous with the general economy. As long as the 4-week moving average of unemployment claims stays down below 400,000 we probably are not in a recession.

Existing Homes Sales and Inventory Months of Supply (National Association of Home Builders)	You can get a sense for whether there are too many existing homes still on sale (inventory) by taking the total inventory and dividing it by the pace of sales. The result is “months of supply,” which means that if existing homes were to continue selling at the same rate as the most recent month of data, the current inventory of homes would be sold by that many months. A normal reading is around 6 months – a higher number means too much inventory, and if supply is greater than demand, that usually means prices will drop.
New Residential Homes Sales and Inventory Months of Supply	When there are too many new homes still left unsold (inventory) on the market, it usually means that prices will be dropping because supply is greater than demand. The opposite is also generally true. A good way of measuring the inventory is to calculate how long it would take that inventory to sell at the current pace of sales. The normal level for this is around 6 months.
Residential Investment (Bureau of Economic Analysis)	Residential investment is one of the best leading indicators for the general economy, meaning that what happens to residential investment typically ends up happening to the general economy a few months later. Investment in residential structures consists of new construction of permanent-site single-family and multi-family units, improvements (additions, alterations, and major structural replacements) to housing units, expenditures on manufactured homes, brokers’ commissions on the sale of residential property, and net purchases of used structures from government agencies. Residential structures also include some types of equipment such as heating and air-conditioning equipment. In other words, residential investment refers to money that people spend on buying homes (either to live in or to rent out), home improvements and money people make on the sale of homes.
Buildfax Residential Remodeling Index	The BuildFax Remodeling Index (BFRI) is based on construction permits for residential remodeling projects filed with local building departments across the country. The index estimates the number of properties permitted. The national and regional indexes are based upon a subset of representative building departments in the U.S. and population estimates from the U.S. Census.
Architectural Billings Index (American Institute of Architects)	A leading economic indicator of demand for commercial and industrial building activity. The ABI is based on responses to the monthly Work-on-the-Boards survey that asks the principals and partners of architecture firms (that are American Institute of Architects members), whether their billing activity for the previous month grew, declined or remained flat. The change in billing activity tells us about the level of demand for design services from architecture firms; in other words, it tells us about the level of interest in constructing new buildings. When the index is above 50, demand is increasing; when it is below 50, demand is falling.
Real GDP (Bureau of Economic Analysis)	GDP is the broadest and most comprehensive measure of the economy that is widely accepted. It basically measures the value of all goods and services produced in the country, regardless of industry. GDP is the monetary value of all the finished goods and services produced within a country's borders in a specific time period, though GDP is usually calculated on an annual basis. It includes all of private and public consumption, government outlays, investments and exports less imports that occur within a defined territory. GDP = C + G + I + NX where: "C" is equal to all private consumption, or consumer spending, in a nation's economy; "G" is the sum of government spending; "I" is the sum of all the country's businesses spending on capital; "NX" is the nation's total net exports, calculated as total exports minus total imports. (NX = Exports - Imports)
Industrial Production (FRB St. Louis)	The index of industrial production shows how much factories, mines and utilities are producing. The manufacturing sector accounts for less than 20 percent of the economy, but most of its cyclical variation. Consequently, this report has a big influence on market behavior. In any given month, one can see whether capital goods or consumer goods are growing more rapidly. Because it relates to manufacturing, and manufacturing is only about 20 percent of our economy, at first glance one might consider this indicator not important. But the changes in the manufacturing sector track the changes in the economy extremely well; the cycles of the two are well matched, making IP important to track.
ATA Truck Tonnage Index (American Trucking Association)	Each month, ATA asks its membership the amount of tonnage each carrier hauled, including all types of freight. The indexes are calculated based on those responses. The sample includes an array of trucking companies, ranging from small fleets to multi-billion dollar carriers. Trucking serves as a barometer of the U.S. economy, representing 67% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods.