

Chicago Fed Letter

Economy to roll along at a solid pace in 2015 and accelerate slightly in 2016

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According to participants in the Chicago Fed's annual Automotive Outlook Symposium, the nation's economic growth is forecasted to be near its long-term average this year and to strengthen somewhat in 2016. Inflation is expected to decrease in 2015 but rebound in 2016. The unemployment rate is anticipated to move lower through the end of 2016, reaching 5% by then. Light vehicle sales are predicted to improve moderately in 2015 and 2016.

The Federal Reserve Bank of Chicago held its 22nd annual Automotive Outlook Symposium (AOS) on May 29, 2015, at its Detroit Branch. More than 75 economists and analysts

from business, academia, and government attended the AOS. This *Chicago Fed Letter* reviews the forecasts from last year's AOS for 2014, and then analyzes the forecasts for 2015 and 2016 (see figure 1) and summarizes the presentations from this year's AOS.¹

The U.S. economy continued to expand from the longest and deepest drop in economic activity since the Great Depression. During the 23 quarters

pace of economic recovery is quite sharp following a deep recession.

While the economy's expansion has lasted nearly six years, signs of slack still remain in the economy. The unemployment rate in May 2015 was 5.5%—close to what is considered the natural rate of unemployment (i.e., the rate that would prevail in an economy making full use of its productive resources). However, several other labor market indicators suggest that slack remains in the employment market. First, the labor force participation rate has fallen over the past several years below what demographic changes of an aging population can explain. Second, the percentage of workers who are working at part-time jobs but desire full-time employment is significantly above what it has historically averaged. And third, the pool of unemployed workers who have been out of work for more than six months remains at levels that are exceptionally high—higher than anything seen since the Great Depression.

In addition to the persistent slack, there have been two big shocks to the U.S. economy over the past year. First, the average price of oil, which stood at \$106 per barrel in June 2014, began to slide lower over the following months

following the end of the Great Recession, the annualized rate of real gross domestic product (GDP) growth was 2.2%—near what is considered the long-term trend rate of growth for the U.S. economy. This GDP growth rate is very disappointing, since typically, the

1. Median forecast of GDP and related items

	2014 (Actual)	2015 (Forecast)	2016 (Forecast)
Real gross domestic product ^a	2.4	2.1	2.7
Real personal consumption expenditures ^a	2.9	2.6	2.7
Real business fixed investment ^a	6.2	2.5	4.1
Real residential investment ^a	2.5	6.1	8.5
Change in private inventories ^b	80.0	71.7	53.3
Net exports of goods and services ^b	-471.4	-546.4	-569.7
Real government consumption expenditures and gross investment ^a	0.8	0.8	1.3
Industrial production ^a	4.5	1.5	2.9
Car and light truck sales (millions of units)	16.4	16.8	17.1
Housing starts (millions of units)	1.00	1.09	1.23
Unemployment rate ^c	5.7	5.2	5.0
Consumer Price Index ^a	1.2	0.7	2.2
One-year Treasury rate (constant maturity) ^d	0.15	0.65	1.60
Ten-year Treasury rate (constant maturity) ^d	2.28	2.46	3.10
J. P. Morgan trade-weighted dollar index ^a	7.4	7.0	0.0
Oil price (dollars per barrel of West Texas Intermediate) ^e	73.16	62.32	68.55

^aPercent change, fourth quarter over fourth quarter.

^bBillions of chained (2009) dollars in the fourth quarter at a seasonally adjusted annual rate.

^cFourth quarter average.

NOTE: These values reflect forecasts made in May 2015.

SOURCES: Actual data from authors' calculations and Haver Analytics; median forecast from Automotive Outlook Symposium participants.

and then collapsed beginning in October, reaching \$48 per barrel in January of this year. The decline in energy prices has had both positive and negative impacts on the U.S. economy. On the positive side, users of energy have enjoyed a substantial reduction in their costs of purchasing energy. The primary beneficiaries have included consumers, manufacturers, and the transportation sector. However, over the past seven years, the United States has become a significantly larger producer of energy, and hence, the loss of income to the domestic

the challenges posed by a stronger dollar, its annualized growth rate turned negative, to -1.6% over the first five months of 2015. Light vehicle sales (car and light truck sales) improved from 15.5 million units in 2013 to 16.4 million units in 2014—a 5.7% gain. This increase in light vehicle sales was much larger than the 2.9% increase in real personal consumption expenditures for 2014. Light vehicle sales continued to improve in 2015: The annualized selling rate of light vehicles was 16.8 million units in the first five months of this year.

actual number of starts fell just short of the 1.02 million units expected for last year.

Outlook for 2015 and 2016

The economy is forecasted to grow at a solid pace in 2015 and at a somewhat faster pace in 2016: The growth rate of real GDP is predicted to be 2.1% in 2015 and 2.7% in 2016. In part, 2015's annual economic performance is being held down by the weak performance of the economy in the first quarter on account of adverse weather conditions; the surging value of the dollar against foreign currencies; and the disruptions at West Coast port terminals. The quarterly forecast (over the period 2015:Q2–2016:Q4) shows the annualized rate of real GDP growth averaging 2.6% for the rest of this year and then ticking higher to 2.7% for 2016. The unemployment rate is predicted to edge lower through the end of 2016: It is expected to fall to 5.2% by the fourth quarter of 2015 and then ease to 5.0% by the final quarter of 2016. Inflation, as measured by the CPI, is expected to decrease from a very low 1.2% in 2013 to 0.7% in 2015 and then increase to 2.2% in 2016. Real personal consumption expenditures are forecasted to expand at solid rates of 2.6% this year and 2.7% in 2016. Light vehicle sales are expected to rise to 16.8 million units this year and then improve to 17.1 million units next year. Real business fixed investment is predicted to record solid growth rates of 2.5% in 2015 and 4.1% in 2016. Because of the challenges posed by the rising dollar, industrial production is forecasted to grow at a slower pace of 1.5% this year; that said, it's expected to grow at a rate of 2.9% (close to its long-term growth rate) next year.

The housing sector is predicted to continue to improve over the forecast horizon. Real residential investment is anticipated to expand at a rate of 6.1% in 2015 and at a rate of 8.5% in 2016. Housing starts are expected to increase to 1.09 million units in 2015 and 1.23 million units in 2016.

The long-term interest rate (ten-year Treasury rate) is forecasted to increase 18 basis points in 2015, to 2.46%, and 64 basis points in 2016, to 3.10%. The short-term interest rate (one-year Treasury rate) is expected to increase

Light vehicle sales are expected to rise to 16.8 million units in 2015 and then improve to 17.1 million units in 2016.

energy sector now leads to a greater negative impact than it historically has.

Second, the value of the U.S. dollar in international exchange markets has strengthened substantially over the past year. This higher value of the dollar against foreign currencies has had a dramatic impact on trade and, hence, growth of the economy. A strengthening dollar makes U.S.-made goods more expensive to foreign consumers, thus reducing the demand for such goods from abroad and lowering the growth of exports. It also makes foreign-made goods less expensive to U.S. consumers, thus increasing the demand for such goods here and raising the growth of imports. So, given the significantly stronger dollar, it's no surprise that the United States saw its trade deficit increase in the first quarter of 2015, amounting to a 1.9 percentage point drag on the growth rate of real GDP.

With the slack in the economy, falling energy prices, and lower prices on imports, inflation has remained low. Inflation, as measured by the Consumer Price Index (CPI), was extremely low at 1.2% in 2014, matching its rate in 2013 (the lowest rate since 1964); by May 2015, the year-over-year rate of inflation had fallen to 0.0%.

Industrial output in 2014 rose 4.5%—a strong pace above the long-term trend. However, perhaps because of

The housing sector has continued its very tepid recovery from the Great Recession. Housing starts went up from 0.93 million units in 2013 to 1.00 million units in 2014—a gain of 7.8%. Housing starts rose further in 2015, to an annualized rate of 1.03 million units over the first five months of the year. This pace is still well below the nearly 1.4 million annual housing starts that the United States averaged during the 1990s. Residential investment normally plays a major role during an economic recovery. However, since the start of the recovery from the Great Recession in mid-2009, residential investment has contributed just 0.2 percentage points toward the overall economy's annualized growth rate of 2.2%.

Results versus forecasts

For 2014, the actual growth rate of real GDP was 2.4%—very close to the 2.3% forecasted by participants at last year's AOS. The unemployment rate actually averaged 5.7% in the final quarter of 2014—lower than the predicted average of 6.3%. Inflation, as measured by the CPI, was in fact 1.2% in 2014—0.8 percentage points lower than the projected 2.0% increase in prices for the previous year. Light vehicle sales actually rose to 16.4 million units in 2014 from 15.5 million units in 2013, surpassing the forecast of 16.0 million units. Housing starts increased to 1.00 million units in 2014 from 0.93 million units in 2013; so, the

50 basis points this year, to 0.65%, and 95 basis points next year, to 1.60%. The trade-weighted U.S. dollar is predicted to strengthen by 7.0% this year and then stay steady in 2016. The trade deficit (net exports of goods and services) is projected to increase this year and next.

Auto sector outlook

Emily Kolinski Morris, chief economist, Ford Motor Co., delivered the vehicle sales outlook for North America from the perspective of an original equipment manufacturer. She noted that since 2009, auto industry sales have trended upward across North America as a whole and in its three largest nations—the United States, Canada, and Mexico. According to Kolinski Morris, 2015 sales in these three countries are expected to either match or modestly exceed 2014 levels. Focusing exclusively on the United States, Kolinski Morris observed that many economic indicators here are supporting a strong market for automobiles: Employment and income continue to grow at a steady pace, energy prices are low, and consumer sentiment is approaching an all-time high. As more people return to work, most of them will need vehicles to get to their jobs. Except for a handful of cities, the urban geography of the United States still requires most workers to drive to their places of employment. Replacement demand has been another important driver of sales growth. The average age of vehicles on the road surged up during the recession and is currently a record 11.5 years. But more-recent survey data indicate that consumers' expected holding period until their next auto purchase has declined since peaking in 2009. Unfortunately, these favorable conditions for new auto sales are being offset by a weak housing market. Low mortgage rates have failed to spur a rebound in homebuilding, and new home sales remain depressed. Given that home buyers and construction firms have historically accounted for a large portion of auto demand, new vehicle sales are expected to remain near their current level, Kolinski Morris noted. An unintended consequence of new mortgage underwriting regulations, she argued, has been to push capital away from subprime mortgages and into

subprime auto loans, facilitating car purchases for low-income consumers (or those without pristine credit histories). Domestic banks, on net, have reported increasing demand for auto loans in every quarter since mid-2011. Compared with default rates for subprime mortgages, default rates for subprime auto loans have been quite low, so investors in these auto loans have received a relatively healthy rate of return. Kolinski Morris said she did not think subprime auto lending posed a risk to the economy as a whole because auto assets can be easily repossessed. She reported that her 2015 vehicle sales outlook for the United States was between 17.0 million and 17.5 million units (including medium- and heavy-duty trucks).

Kenny Vieth, president, Americas Commercial Transportation (ACT) Research Co. LLC, presented an optimistic outlook on commercial vehicles (medium- and heavy-duty trucks). Reliable freight volumes and the resolution of the California port strike have contributed to a slow, gradual expansion of the trucking industry. The price of diesel fuel has declined (though not as much as that of regular fuel), boosting the profitability of the trucking industry. Moreover, results from the Federal Reserve's *Senior Loan Officer Opinion Survey on Bank Lending Practices* show that banks are easing lending standards, making credit more readily available. Still, labor-related issues are expected to remain a challenge for the industry, said Vieth. Although many trucking firms complain that there is a driver shortage, Vieth argued this was a good problem for them to be having. Unlike the cost of fuel or the volume of freight, finding additional labor is much more within the control of the trucking firms; for instance, they can attract drivers by raising wages, buying new trucks, or improving working conditions. Historically, driver shortages are strongly correlated with profits: When demand for trucking services rises (as implied by driver shortages), trucking firms can pass higher wage costs on to their customers, said Vieth. There is also a shortage of new heavy-duty trucks available for purchase in 2015 on account of production constraints among original equipment manufacturers, he noted.

(Demand for these trucks was quite strong, as evidenced by the rapidly rising backlog of orders from mid-2014 until this spring.) Given the fairly tight supply of trucks, prices for hauling freight are expected to trend upward until mid-2016, when more capacity is predicted to become available. According to Vieth, heavy-duty truck sales in North America are forecasted to increase from 286,200 units in 2014 to 328,700 units in 2015 and then drop to 307,000 units in 2016; medium-duty truck sales are expected to increase from 212,300 units in 2014 to 218,000 units in 2015 and then to 229,300 units in 2016.

Steven Szakaly, chief economist, National Automobile Dealers Association (NADA), presented the light vehicle sales outlook from the dealers' perspective. He emphasized the important role that auto dealers play in the economy. Compared with other employers in the auto and retail sectors, auto dealerships pay their employees higher wages—while operating with a net profit margin of only 2.2%. According to Szakaly, dealers make only \$62 of profit per vehicle. Since car sales are not very profitable, many dealers earn most of their money through financing (and service) contracts.

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Low interest rates have allowed dealers to remain profitable, but as rates begin to rise over the next few years, dealers are likely to have to find other ways to earn profits. Szakaly also said he is concerned that fuel efficiency mandates would make new vehicles unaffordable. By his calculations, these standards could raise the average cost of a new vehicle between \$3,000 and \$5,000. According to Szakaly, light vehicle sales are projected to move up to 16.9 million units in 2015 but then decline to 16.4 million units by 2017.

David Andrea, senior vice president, Original Equipment Suppliers Association (OESA), presented the outlook on the auto parts supplier industry and reported the results from OESA's *Automotive Supplier Barometer*—a bimonthly survey of its regular member firms' top executives. The outlook for equipment suppliers continues to be stable and modestly positive, he said. Average capacity utilization² is roughly 80% among all suppliers and continues to climb upward. The lowest quartile of companies increased their average capacity utilization to 66% from 55% in three years—which Andrea said he found particularly encouraging. Suppliers reported that delivering parts on time was one of the main problems they were dealing with. They are taking many approaches to addressing this issue, including boosting buffer stocks, increasingly sourcing their components from multiple regions, sourcing materials or components closer to their point of use, and expediting shipments. Suppliers have also been creating advanced simulations of supply chain disruptions to find ways to improve their delivery performance when actual disruptions do occur. High-profile product recalls have been a persistent problem for the auto industry, suggesting that quality control for parts may be an issue. Regulators are considering a variety of ways to reduce this problem—e.g., new whistle-blower incentives, higher caps on civil penalties, pre-certification of compliance with regulations and standards by suppliers, and stricter reporting requirements of auto-related fatalities from original equipment manufacturers.

Despite these concerns, Andrea said he remained optimistic about the automotive industry. According to the composite forecast presented by Andrea, North American car and light truck production is anticipated to increase to 17.3 million units in 2015 and then grow to 18.2 million units by 2017.³

Richard Wallace, director of transportation systems analysis, Center for Automotive Research (CAR), discussed the commercial viability of connected, self-driving vehicles. Connected vehicles communicate wirelessly with other vehicles, roadside infrastructure, and Internet databases. The technologies enabling this connectivity have several potential applications, such as the following: safety improvements, through the use of traffic signal violation warnings and automatic crash prevention; electronic payments, for tolls and parking; improved vehicle maintenance, through automated diagnostics and software updates; and more-efficient mobility, by optimizing traffic signal timing and using advanced traffic navigation. To ensure accuracy and safety, vehicles will require various types of sensors—e.g., radar, ultrasound, and laser scanners, as well as night vision and 3-D video cameras. Wallace emphasized that the main challenge was not in building the hardware to gather data, but in writing the software to analyze them. Some of the technologies necessary for connected, self-driving vehicles (e.g., for collision warnings) are available today as optional safety features. Other technologies have been demonstrated in pilot programs. In 2012, researchers in Europe successfully tested a high-speed vehicle platoon—several vehicles driving fast and tightly together to reduce air drag. Earlier this year, a concept car manufactured by Audi drove itself over 550 miles on public highways from San Francisco to Las Vegas. Wallace cited these examples as proof that the technologies are workable. However, in the short term, legal concerns will be the primary barrier to widespread adoption of connected, self-driving vehicles, he said. Courts and regulators will need to agree on how to assess liability in the event of an accident. Security and privacy

concerns about the computer systems employed in these cars will also be major challenges. Core safety systems, as well as those storing consumers' personal data, must be able to withstand attacks from hackers. Wallace said a more subtle barrier to the adoption of these vehicles will be social norms. Passengers in self-driving cars have reported feeling uncomfortable and nervous. Consumers are likely to shift their preferences toward increased automation for their vehicles, but the process will be slow and uncertain. According to Wallace, connected, self-driving vehicles capable of navigating through traffic are predicted to be in production by the year 2025 at the earliest. However, it is likely to take many years beyond that before all vehicles on the road have self-driving capability—and the full benefits of automotive connectivity can be realized.

Conclusion

The participants at this year's AOS predicted the growth rate of the U.S. economy to be near its long-term average in 2015 and then improve somewhat in 2016. While the collapse in oil prices should be generally beneficial for economic growth, the surging U.S. dollar has added some headwinds. Both factors are predicted to lessen inflationary pressures this year. Inflation is anticipated to average 0.7% in 2015, though it's projected to bounce back to 2.2% in 2016. The unemployment rate is expected to decline to 5% (quite close to its natural rate) over the next year and a half. Light vehicle sales are forecasted to improve moderately this year and in 2016.

¹ Some materials presented at this year's AOS are available at <https://www.chicagofed.org/events/2015/automotive-outlook-symposium>.

² Capacity utilization is calculated as the actual output produced with installed equipment divided by the potential output that could be produced with it if used to its full capacity.

³ This composite forecast's light vehicle production volumes represent those for cars, as well as trucks in classes 1–5. The AOS median forecast's light vehicle sales volumes represent those for cars, as well as trucks in classes 1–3.