

Estimated Effects of UAW-GM Strike

Methodology and Sources

Brian Peterson, Director of Public Policy & Economic Analysis © 2019, Anderson Economic Group, LLC
See notice for limited reproduction rights, cautions, and disclaimers.

ABOUT THE UAW-GM STRIKE

On September 16, 2019, the United Autoworkers Union (UAW) began a strike against General Motors (GM) for the first time since 2007. Approximately

46,000 hourly employees at dozens of GM assembly plants and automotive parts warehouses across the country walked off the job and began picketing. The impacts of the strike grew beyond just lost UAW worker wages as the strike continued without a quick resolution, eventually affecting GM supplier worker wages and resulting in GM operating losses.

The public policy and automotive industry experts at Anderson Economic Group built a model to estimate the economic effects of the UAW-GM strike.

ABOUT ANDERSON ECONOMIC GROUP

Anderson Economic Group, LLC (AEG) is a research and consulting firm that has extensive experience in quantifying the impacts of economic disruptions, including events such as strikes, port shutdowns, and natural disasters. AEG has been quoted in numerous stories about the UAW Strike, including those by the Associated Press, New York Times, Fox Business, National Public Radio, CNN, CNBC, and the BBC. AEG has offices in East Lansing and Chicago.

For more information, see “About Anderson Economic Group” on page 4, or visit <http://www.AndersonEconomicGroup.com>.

OVERVIEW OF APPROACH

Our model estimates the direct effects of the UAW-GM strike on the following:

- Wages and salary earnings to workers in the automotive industry, including both UAW and non-UAW workers in the U.S.;
- Earnings to employee-owned U.S. supplier businesses;
- Federal income and payroll tax revenue and Michigan state income tax revenue;
- GM operating losses; and
- Earnings to U.S. auto dealers and their employees.

Our analysis focuses on direct economic consequences, and unless explicitly stated, does not include indirect, induced, signaling, financial market, or other effects. Our work is based on a careful, well-reasoned methodology that avoids double counting and accounts for firm and worker behavior prior to and during the strike.

METHODOLOGY

Lost Wages

We describe our methods for estimating each impact below.

UAW Worker Wages. To estimate lost UAW worker wages, we estimated the number of UAW GM hourly workers in the U.S., and then multiplied this number by average daily wages for these workers. We used UAW GM hourly worker totals from information provided by GM in July, 2019, as well as employment information from GM’s 2018 10-K. We assumed that a portion of these workers are “temporary” workers, based on estimates produced by *Automotive News*, the Center for Automotive Research, and Global Automakers.¹ We estimated average annual wages for hourly UAW GM workers based on data provided by GM. We estimated auto parts supplier hourly wages based on data from the U.S. Bureau of Labor Statistics.

Non-UAW Worker and GM Supplier Wages. The UAW strike inevitably results in decreased demand for automotive parts and components. We estimated lost supplier wages as a proportion of lost UAW wages, using professional judgment to determine the proportion each week. We increased this proportion in weeks two through four to reflect the increasing pressure on suppliers to reduce production.

For the purposes of this analysis, ‘wages’ do not include strike pay, unemployment benefits, income taxes, health care contributions, or payroll taxes. Strike pay, taxes, and any substitute job earnings are estimated separately for some periods.

1. “The UAW-Detroit 3 2019 Negotiations,” *Automotive News*.

Lost Tax Revenue

We used our estimates of lost wages to determine the amount of lost Federal income and payroll tax revenue, as well as lost Michigan state income tax revenue. We used the following tax rates in our estimates:

- Average marginal Federal income tax rate: 22.15%
- Combined Federal payroll tax rate: 15.35%
- Michigan state income tax rate: 4.25%

We used an average marginal Federal income tax rate rather than an effective tax rate because the lost worker tax revenue would come from each worker's highest income tax bracket. Marginal tax rates for affected workers vary depending on filing status and non-wage income. We estimated an average marginal tax rate using information on average annual wages for GM and automotive supplier workers, as well as Census data on marriage rates and Internal Revenue Service (IRS) data on the types of income reported by joint- and single-filers at various income levels. We used a combined Federal payroll tax rate consisting of both the employee and employer Medicare and Social Security taxes, as well as Federal unemployment taxes.

We did not estimate lost corporate income taxes, lost sales taxes, lost personal property taxes, or lost other business taxes.

GM Operating Losses

We define "GM Operating Losses" as any revenue deriving from strike-affected operations, less actual costs of that same operation (including fixed costs that cannot be avoided, such as costs of plant and equipment and utilities). Losses are not based on projected profits. To estimate operating losses, we took account of the following:

- The historical and current operations of GM Company;
- The financial structure of the GMNA automotive operations, to the extent that this structure is ascertainable from GM's investor disclosures;
- Direct fixed costs that are not productive during the strike;
- Our expectations regarding the limited ability of the company to sell some of its products in inventory; and
- Accounting practice and historical share of production held in inventory, based on GM's 10K for 2018.

Our analysis presumes that GM's activities in the first and second weeks of the strike made use of some portion of its fixed expenses; this includes, for example, making use of facilities in which parts and vehicle inventories are stored and from which could be sold. It also recognizes that some facilities included in "fixed" expenses are being used to plan and prepare for future production, including for models that are not yet being assembled. Our analysis also implies that, after the first two weeks, some "variable" expenses became part of the

expense base that could not be effectively used. We also presumed that GM began cost-mitigating efforts affecting salaried workers by the fifth week of the strike.

Note that these estimates are subject to the cautions and limitations stated here, including the inherent imprecision of “daily” and “weekly” figures, and the difference between economic causality and accounting recognition.

Lost Auto Dealer Earnings

We estimated actual losses to automobile dealers in the United States and their employees, including losses from planned repairs that could not be accomplished due to shortages of parts, and losses from new car sales that are postponed indefinitely due to the strike. We took into account the ability of consumers to substitute purchases of similar vehicles (or postpone for short time periods purchases of desired vehicles), so that lost sales and repairs were only counted if they resulted in a consumer not being able to make the purchase or repair he or she desired within a reasonable time period. Losses to dealers and their employees were estimated net of the expected substitution by their customers.

We estimated these losses on a dealership-facility basis, where a dealership-facility could represent multiple brands and would therefore be able to suggest other vehicles to purchase, and make use of a wide stock of parts. Because most categories of GM vehicles had inventories in excess of 70 days, we did not estimate any lost new car sales in the first three weeks of the strike. Beginning the fourth week of the strike, we undertook a small sample survey of automobile dealers to inform our estimate of lost sales and repairs.

Effect on Michigan’s Economy

Because of the high concentration of automotive industry activity in Michigan, we performed an additional analysis to determine the strike’s economic impact in the state. We used a modest multiplier to estimate the lost income in other industries and in the rest of the automotive industry, from direct lost wages caused by the strike. This multiplier is less than that commonly used in economic impact analysis of events such as the construction of a new plant. We used this more conservative method to account for the fact that workers, suppliers, and GM anticipated this strike and took some preemptive steps to avoid losses due to it.

We used a modest, and small, fraction of lost GM profits as a portion of lost income to the region. We ignored effects on governments (from lost tax revenue); strike pay (partially due to the fact that strike pay is only given after 15 days, and only to some workers, and derives from worker contributions); and other factors.

ABOUT ANDERSON ECONOMIC GROUP

Anderson Economic Group LLC is a research and consulting firm that specializes in economics, public policy, finance, market analysis, and land use eco-

nomics. We have performed studies on site selection, economic impact, business taxes, and the effectiveness of incentives across the country. AEG has offices in East Lansing and Chicago. AEG's past clients include:

- *Governments*, such as the states of Kentucky, Michigan, North Carolina, Tennessee, and Wisconsin; the cities of Detroit, MI, Cincinnati, OH, Norfolk, VA, and Fort Wayne, IN; counties such as Oakland County, Michigan, and Collier County, Florida; and authorities such as the Detroit-Wayne County Port Authority;
- *Corporations* such as CVS Caremark, GM, Ford, Delphi, Honda, Metaldyne, Taubman Centers, The Detroit Lions, PG&E Generating; SBC, Gambirinus, Labatt USA, and InBev USA; automobile dealers and dealership groups representing Toyota, Honda, Chrysler, Mercedes-Benz, and other brands;
- *Nonprofit organizations*, such as the University Research Corridor, University of Chicago, Michigan State University, Van Andel Institute, the Michigan Manufacturers Association, National Association of Realtors, International Mass Retailers Association, American Automobile Manufacturers Association, Automation Alley, and the Illinois Chamber of Commerce.

For more information, please visit <http://www.AndersonEconomicGroup.com>.

ABOUT THE AUTHOR

Brian R. Peterson

Mr. Peterson is a consultant and the director of the public policy and economic analysis practice area at Anderson Economic Group. In addition to conducting economic and fiscal impact analyses, Mr. Peterson works with public and private clients across the country on projects that include pension reform and compensation analysis, housing policy, and environmental economics.

Prior to joining AEG, Mr. Peterson worked as a policy analyst with the Chicago Metropolitan Agency for Planning, where he focused on freight and manufacturing industry cluster development strategy and transportation planning.

Mr. Peterson holds a Master of Urban Planning from the University of Wisconsin—Milwaukee and a Bachelor of Arts in economics and urban studies from the University of Minnesota—Twin Cities.

CONTRIBUTORS

Patrick L. Anderson

Mr. Anderson founded Anderson Economic Group in 1996, and serves as the company's principal and CEO.

A nationally-recognized expert in business economics, Mr. Anderson has written over 100 published works, including *Economics of Business Valuation* from Stanford University Press. Four of his journal articles, "Pocketbook Issues and the Presidency," "The Value of Private Businesses in the United States," "Policy Uncertainty and Persistent Unemployment," and "Business strategy and firm location decisions: testing traditional and modern methods" have received awards for outstanding writing from the National Association of Business Economics.

Mr. Anderson is a sought-after speaker, having taken a leading role in several major public policy initiatives in his home state. He was the author of the 1992 Term Limit Amendment to the Michigan Constitution, and authored the 2006-initiated law repealing the state's 4-decade-old Single Business Tax. His firm's work resulted in a wage increase for home help workers in 2006, the creation of a Michigan earned income tax credit in 2008, and the repeal of the item pricing law in 2011. Before founding Anderson Economic Group, Mr. Anderson was the deputy budget director for the State of Michigan, and chief of staff for the Michigan Department of State.

Mr. Anderson is a graduate of the University of Michigan, where he earned a Master of Public Policy degree and a Bachelor of Arts degree in political science. He is a member of the National Association for Business Economics and the National Association of Forensic Economists. The Michigan Chamber of Commerce awarded Mr. Anderson its 2006 Leadership Michigan Distinguished Alumni award for his civic and professional accomplishments. The University of Michigan Ford School of Public Policy awarded him its Neil Staebler Award for civic participation in 2014.

Dr. Cristina Benton

Dr. Benton is a senior consultant with Anderson Economic Group, directing the market and industry analysis practice area. Her background is in research and data analysis, community and economic development, and urban planning.

While with AEG, Dr. Benton has worked on a number of economic development, retail, industry, and market analyses along with auto dealership franchise projects. She has led work for clients that include the State of Michigan, Project Management Institute, City of Trenton, NJ, Experience Grand Rapids, the Ann Arbor Area Convention and Visitors Bureau, and Automation Alley. Dr. Benton has also worked with numerous automobile dealerships and their attorneys in matters of sales performance assessments, geographic territory analyses, market opportunity studies, and expert testimony.

Prior to joining AEG, Dr. Benton worked as a community and economic development assistant with the City of East Lansing, Michigan, and as a research assistant at Michigan State University working on the evaluation of economic revitalization programs. She also taught university classes on economic development and lectured on market analysis.

Dr. Benton holds a PhD in geography and a master's in urban and regional planning, both from Michigan State University, along with a bachelor's degree in public administration from Babes-Bolyai University, Romania. She is a member of the Michigan Economic Developers Association (MEDA) and the National Association of Forensic Economics.

Kenan Cosguner

Mr. Cosguner is AEG's financial controller and a consultant working in the firm's strategy and business valuation practice area. His work includes financial and industrial data analysis, equity research, and valuation. He specializes in beverage, food and non-food retail, automotive, and franchise businesses.

During his tenure at Anderson Economic Group, Mr. Cosguner has assessed the business performance and value of automotive dealerships. He has assessed commercial damages for automotive clients involved in litigation, and has also conducted detailed financial analyses of assets for the oil and gas industry.

Prior to joining Anderson Economic Group, Mr. Cosguner worked with BNP Paribas Asia (TEB Investment) in Istanbul as a director in the research department. He authored comprehensive reports on both private and listed companies in consumer discretionary/staples, retail, real estate, aviation, agriculture, automotive, utilities, and mining sectors. Mr. Cosguner also worked previously in AEG's strategy and business valuation practice area between 2004 and 2006.

Mr. Cosguner holds an MBA degree with concentrations in accounting and finance from the Eli Broad Graduate School of Management at Michigan State University, and a BS degree in industrial engineering from Bilkent University in Ankara, Turkey. He has been a Chartered Financial Analyst (CFA charterholder) since 2001.

Andrew Miller

Mr. Miller is a senior analyst in the public policy and economic analysis practice area at Anderson Economic Group. His work focuses on economic and fiscal impact analysis and has included projects on housing policy, state economic indicators, and infrastructure funding.

Prior to joining AEG, Mr. Miller worked as a project coordinator at the Council for Adult and Experiential Learning, where he worked to advance higher education and workforce development opportunities for military veterans through policy advocacy and program development.

Mr. Miller holds a Master of Public Policy from the University of Chicago Harris School of Public Policy and a Bachelor of Arts in History from the University of Chicago.

**COPYRIGHT NOTICE &
DISCLAIMERS**

This entire report and associated materials, including tables, is copyright © 2019 by Anderson Economic Group LLC. Permission granted to reproduce in its entirety, including this notice, for news media and research purposes. All other rights reserved. Resale without permission, and use in derivative works, is expressly prohibited. "Fair use" excerpts may be included in news or research reports provided a complete citation is given to the author, title, and publisher.

This report is based on publicly available information; and regional, industry, and other information known to us that we deem, in our professional judgement, to be reliable or indicative at the current time.

This report does not constitute investment or tax advice. Readers are advised that this report, like all reports analyzing the likely course of future events, contains analyses, projections, and conjectures based on limited and imperfect information. Therefore, the actual future course of events are certain to deviate in some manner from those anticipated in this report. We may revise this report without notice to past readers.