

## **CAR Research Memorandum**

# **The Effect on the U.S. Economy of the Successful Restructuring of General Motors**

by

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## Introduction

In late 2008 and throughout much of 2009, the global economy was in recession and the world's automotive industry was in crisis. In the United States, automotive sales plummeted to historically low levels, both automotive commercial and consumer credit availability contracted sharply disappeared almost and critically, two major U.S. automotive manufacturers—General Motors (GM) and Chrysler—were on the brink of collapse. In the United States and Canada, federal, state and provincial governments stepped in to provide aid to the Detroit-based automakers with operations in their countries. These loans and other financial assistance funds provided to General Motors and Chrysler averted certain economic catastrophe had the companies been allowed to fail. Sufficient time has now passed since the U.S. policy intervention for an evaluation of the public benefits of avoiding an economic disaster and to weigh the public and private benefits against the public cost of aid to GM and Chrysler. This memorandum will focus on GM since it is clear that the final equity position of the U.S. Treasury in the company will soon be sold in the coming weeks. This sale will almost certainly restart the discussion over the question of the “worthiness” of the government’s “investment” in the new GM or its actual return to the general public.

We expect that much will be made of the shortfall between the total aid granted to GM and the proceeds from the government’s sale of stock. The Center for Automotive Research (CAR) maintains that such a simple calculation represents the crudest form of partial analysis. Any complete cost-benefit assessment of the federal assistance to GM in its restructuring must consider the total net returns to the public investment in GM in the U.S. economy because that is an actual role of the federal government as defined by Congress. In other words, the U.S. government is not a simple investor in companies but an active participant, when needed, in the overall U.S. economy on the behalf of all of the U.S. citizenry.<sup>1</sup>

## The Situation in the U.S. Auto Industry and Market in 2008 and 2009, Past CAR Studies

Throughout the discussion on whether the U.S. government should intervene to save the U.S. automotive industry, there was general agreement that the failure of General Motors and Chrysler would cause great harm to the U.S. economy – especially “main street” companies and employees in U.S. manufacturing and retailing – and especially in the upper U.S. Midwest states. The magnitude of the potential employment and economic impacts, the size of the government response, and the precedent that would be set by government action were the focus of intense debate for many weeks in 2008 - 2009.

On November 4, 2008, CAR produced the first rigorous estimate of job loss and economic impact related to the 2008 automotive crisis in a research memorandum entitled, “The Impact on the U.S. Economy of a Major Contraction of the Detroit Three Automakers.”<sup>2</sup> As the decision on whether to proceed with

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<sup>1</sup> See for example provisions in the Employment Act of 1946, and the Full Employment and Balanced Growth Bill of 1976.

<sup>2</sup> McAlinden, Sean P., Kristin Dzikczek and Debra Maranger Menk, CAR Research Memorandum: The Impact on the U.S. Economy of a Major Contraction of the Detroit Three Automakers, Center for Automotive Research, November 4, 2008. [http://www.cargroup.org/documents/Detroit\\_Three\\_Contraction\\_Impact.pdf](http://www.cargroup.org/documents/Detroit_Three_Contraction_Impact.pdf)

structured bankruptcies of General Motors and Chrysler was being debated in the Spring of 2009, CAR produced a second research memorandum entitled, “The Impact on the U.S. Economy of Successful versus Unsuccessful Automaker Bankruptcies.”<sup>3</sup> Several other industry analysts, economists, policy organizations, and government offices—including the White House—also weighed in on the issue of how big the economic impact would be if one or more of the Detroit Three automakers were to fail.<sup>4</sup>

In CAR’s November 4, 2008 memorandum, economic impacts were estimated for two scenarios involving a short-term, severe (50- to 100-percent) contraction of Detroit Three capacity in the United States. The job loss estimates ranged from 2.5-3 million jobs in the first year, and 1.5-2.5 million in the second year; the estimates of personal income loss ranged from \$125.1-150.7 billion in the first year; and \$86.4-138.2 billion in the second year; and the estimates of net impact to government, in terms of increased transfer payments, reduced social security receipts and reduced personal income taxes paid, ranged from \$49.9-60.1 billion in the first year, and \$33.7-54.3 billion in the second year.<sup>5</sup>

CAR’s May 26, 2009 memorandum produced estimates for two scenarios as well: a quick, orderly Section 363 bankruptcy (which is what happened), and a drawn-out, disorderly bankruptcy proceeding leading to a liquidation of the automakers.

An important assumption in the 2008 and 2009 memorandums was the likely effect of a GM and Chrysler permanent shutdown on the U.S. automotive supplier base or U.S. auto parts manufacturing industry in the United States (and North America). CAR assumed this would have an almost immediate and major effect on the U.S. vehicle production of Ford Motor Company and the international automakers located in the United States in 2009. It was further assumed this effect would be lessened in 2010 and almost gone by 2011. This assumption was based not only on the poor financial and business condition of the auto parts sector in the first quarter of 2009 but also on the high state of supplier interdependence in the U.S. automotive production system. The sharing of suppliers by the various automakers was a natural outcome of the de-integration of both Ford and GM manufacturing in the late 1990s and the spin-off of their major parts divisions, Delphi and Visteon.

In a document submitted by the Motor & Equipment Manufacturers Association (MEMA) to the U.S. Treasury on February 13, 2009, the association reported the results of a fourth quarter 2008 study by CSM Worldwide Inc. that showed “the strong mutual dependency of the supply base and the two

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<sup>3</sup> McAlinden, Sean P., Debra Maranger Menk, Adam Cooper, CAR Research Memorandum: The Impact on the U.S. Economy of Successful versus Unsuccessful Automaker Bankruptcies, Center for Automotive Research, May 26, 2009. <http://www.cargroup.org/pdfs/impact.pdf>

<sup>4</sup> A sampling of reports forecasting the economic impacts if one or more U.S. automakers were to fail includes:

“The Economic Impact of the Detroit Three Automakers in Canada,” The Centre for Spatial Economics, December 2008.

Scott, Robert, “When Giants Fall: Shutdown of one or more U.S. automakers could eliminate up to 3.3 million U.S. Jobs,” Economic Policy Institute, December 3, 2008.

“Automaker Bankruptcy Would Cost Taxpayers Four Times More Than Amount of Federal Bridge Loans,” Anderson Economic Group/BBK, December 8, 2008.

Wial, Howard, “How a Metro Nation Would Feel the Loss of the Detroit Three Automakers,” The Brookings Institution, Metropolitan Policy Program, December 12, 2008.

Werling, Jeffrey, “Potential Job Losses from Restructuring the U.S. Auto Industry,” University of Maryland, Inforum Economic Summary, December 16, 2008.

“Fact Sheet: Financing Assistance to Facilitate the Restructuring of Auto Manufacturers to Attain Financial Viability,” White House, Office of the Press Secretary, December 19, 2008.

“U.S. Motor Vehicle Industry: Federal Financial Assistance and Restructuring,” Congressional Research Service, 7-5700, January 30, 2009.

“Bankruptcy or Bailout—Which Would Best Help the American Auto Industry?” IHS Global Insight, February 9, 2009.

<sup>5</sup>McAlinden, Dziczek, Menk, op.cit., pages 4-6.

manufacturing sectors – traditional domestics (the Detroit Three) and new domestics (international automakers) – in North America.”

- Of the suppliers that sell to General Motors:
  - 51% also sell parts to Ford
  - 56% also sell parts to Chrysler
  - 58% also sell parts to Asian vehicle manufacturers
  - 37% also sell parts to European manufacturers
  
- Of the suppliers that sell to Ford:
  - 70% also sell parts to General Motors
  - 64% also sell parts to Chrysler
  - 65% also sell parts to Asian vehicle manufacturers
  - 46% also sell parts to European manufacturers
  
- Of the suppliers that sell to Chrysler:
  - 66% also sell parts to General Motors
  - 54% also sell parts to Ford
  - 58% also sell parts to Asian vehicle manufacturers
  - 44% also sell parts to European manufacturers<sup>6</sup>

MEMA further stated that:

The financial distress or failure of General Motors, Ford, or Chrysler will quickly propagate through not only U.S.-based vehicle manufacturers, but also Asian- and European-based vehicle manufacturers operating in North America. In turn, any failure of any critical supplier will propagate itself through the entire U.S. motor vehicle industry. The failure of one or more key suppliers – no matter how large or small – can shut down entire supply chains, resulting in multiple vehicle and truck assembly plant closings and resonating throughout the entire vehicle aftermarket.<sup>7</sup>

Indeed, there is also reason to believe that the automotive supplier chain is even more interdependent at the second tier of supply than at the first tier which was studied by CSM Worldwide. This can result because two large first tier automotive systems’ suppliers each supply separate automakers but sharing the same second tier supplier of subcomponents. The collapse of this small second tier company could effectively shut down assembly plants at the two automakers and, of course, the rest of their supply chains.

There are approximately 14,000 individual parts in an intermediate-sized vehicle. Many of these parts are unique in the vehicle which cannot be shipped in an incomplete state.<sup>8</sup> It is generally accepted in

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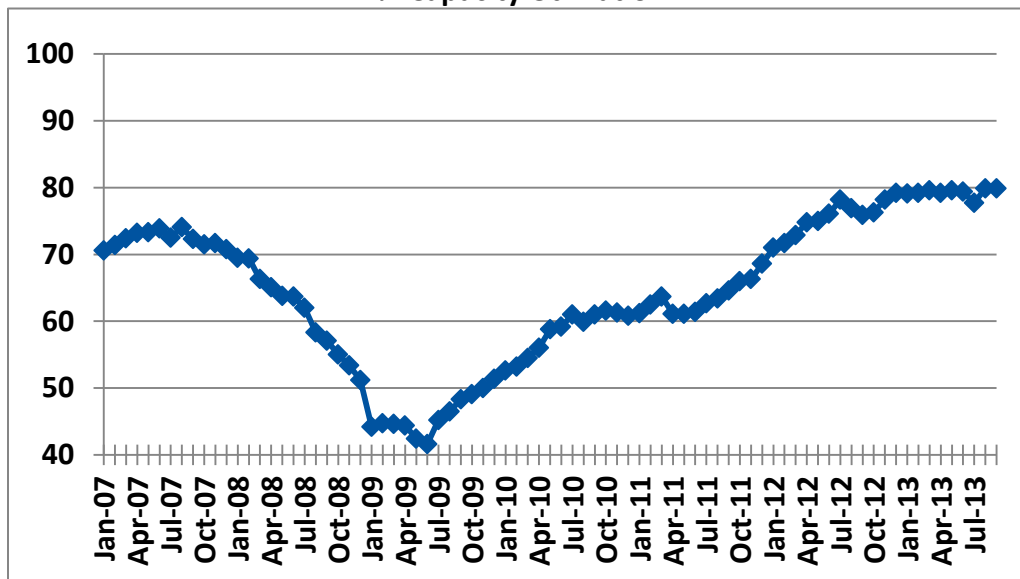
<sup>6</sup> Motor & Equipment Manufacturers Association, Motor Vehicle Supplier Sector Emergency Financial Assistance Request, Submitted to U.S. Department of Treasury, February 13, 2009. Page 5.

<sup>7</sup> Ibid, page 5.

<sup>8</sup> CAR estimate.

the U.S. auto industry that about 65 percent of the vehicle’s value is produced by independent auto suppliers. In the first quarter of 2009, the U.S. Census reported the presence of about 6,103 auto parts manufacturing establishments in the United States (only 5,614 establishments exist as of 2012).<sup>9</sup> Based on the CSM Worldwide estimate shown above it is likely that over 50 percent of these establishments supplied, directly or indirectly, GM and Chrysler but also Ford and international automakers in the United States. The average utilization rate of the U.S. auto parts manufacturing sector was reported by the Federal Reserve at 41.6 percent in June of 2009 as shown in Chart 1 below. That the massive supplier sector was under heavy financial stress in the first quarter of 2009 cannot be doubted. In a survey of its membership on January 14, 2009, the Original Equipment Suppliers Association (OESA) reported that 38 percent of respondents stated they were in a negative or significantly deteriorating situation financially. On the other hand, 68 percent of this group of first tier suppliers expected it was very likely or imminent that one or more of their (second tier) suppliers would enter Chapters 7 or 11 Bankruptcy within the next six months. Indeed, first quarter North American vehicle production had fallen by 33 percent in 2009 year-over-year. As Chart 2 shows, GM and Chrysler’s share of North American vehicle production was level at 45 percent in 2006 and 2007 but falls to 35 percent in 2009.<sup>10</sup> The complete loss of this remaining third of North American production would have obviously shut down in turn hundreds if not thousands of 1<sup>st</sup> and 2<sup>nd</sup> tier suppliers also connected to Ford and the international producers operating in North America. Credit to small or large automotive suppliers, even based on payables, was unavailable for much of 2009.

**Chart 1: U.S. Auto Parts Manufacturing  
% Capacity Utilization**



Source: U. S. Federal Reserve Board of Governors<sup>11</sup>

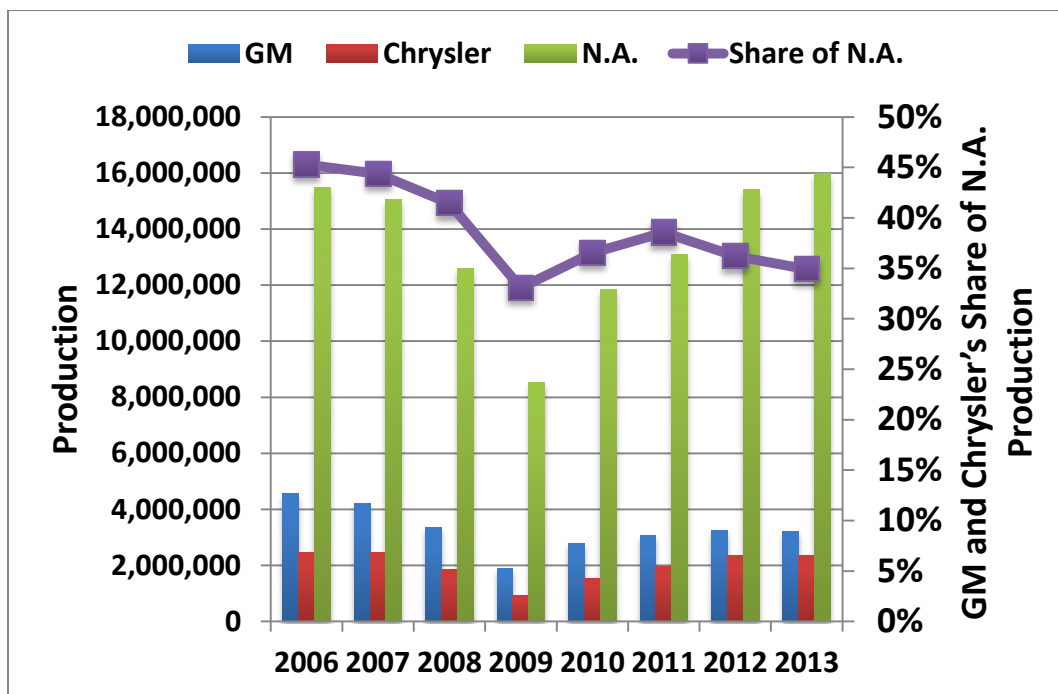
<sup>9</sup> Quarterly Census of Employment and Wage <http://www.bls.gov/cew/>

<sup>10</sup> Motor & Equipment Manufacturers Association, Original Equipment Suppliers Association, Automotive Original Equipment Suppliers Financial Health Survey, Results. January 14, 2009.

<sup>11</sup> Special request by OESA, NAICS 3363 capacity utilization corrected in April 2013 to reflect updates in FRB dataset

The process by which this rolling disaster would have occurred in the first quarter of 2009 was discussed a great deal in the North American auto industry at the time. The loss of General Motors and Chrysler business for hundreds, if not thousands, of suppliers would have resulted in an average decrease of 35 percent of revenue, forcing many firms into insolvency. Many of these companies supplied two or more first tier suppliers or automakers. An actual fact not understood outside of the industry is that the tooling and equipment needed to make parts for surviving automakers was often part-and company-specific, and owned by the customers themselves but placed at these suppliers. If the suppliers were forced into the early stages of Chapter 7 or 11 insolvency it was not clear as to whether the customer firms could retrieve the equipment and tooling for placement at other surviving suppliers. The actual process of re-assembling the supplier sector, it was estimated at many briefings by bankruptcy law firms, could take months, leading to long production interruptions for all the automakers.

**Chart 2: GM, Chrysler, and N.A. Vehicle Production  
GM/Chrysler Share of N.A. Production**



Source: LMC Automotive

## Comments of Automotive Executives on the Interdependence of the Supply Chain

A number of senior auto executives have supported the probability of a supplier sector interruption in the case of a GM/Chrysler failure in early 2009. In 2012, Alan Mullaly, CEO of Ford Motor Company, stated “If GM and Chrysler would’ve gone into free-fall, that could’ve taken the entire supply base into free-fall also, and taken the U.S. from a recession into a depression. That is why we testified on the behalf of our competitors even though we clearly did not need precious taxpayer money.”<sup>12</sup> Other

<sup>12</sup> “Bailouts of GM, Chrysler, Were Good for Ford Too: Alan Mullaly.” Alan Task. Yahoo Finance, Daily Ticker, June 26, 2012.

international automaker executives including Nissan-Renault CEO, Carlos Ghosn, and Honda CEO, Takeo Fukui, publicly backed the U.S. government's assistance to GM and Chrysler in principal.<sup>13</sup> Toyota Motor Sales USA President, Jim Lentz, stated that his company shared "two thirds of its suppliers with GM,"<sup>14</sup> which supports the CSM Worldwide material listed above.

## **Scenarios and Methodology for Estimating the Cost/Benefits of GM Restructuring**

The forecast model used to produce CAR's 2008 and 2009 economic impact studies contained an underlying model of the U.S. economy. Specifically, the model used to produce the CAR May 2009 estimates of the economic impact of "good" versus "bad" bankruptcies assumed that Gross Domestic Product (GDP) would fall 3 percent in 2009, and grow at a rate of only 1 percent in 2010. In fact, the economic activity was higher in the period, with actual GDP falling only 2.5 percent in 2009 and gaining at a rate of 2.5 percent in 2010.<sup>15</sup>

For purposes of this study, CAR researchers used two separate alternative scenarios—using a model loaded with actual economic performance data for the period 2009-2010 and actual employment for GM and Chrysler and for all of the automakers. As in the previous economic impact studies, CAR employed the Regional Economics Models, Inc. (REMI) forecasting model. The first scenario relied on the assumption of an automotive supplier sector collapse in January 2009 that continued for the balance of the year. It is also assumed that industry could achieve a 50 percent return to production and employment in 2010 and full recovery in 2011. The second estimate only considered the loss of GM employment only as a net loss for the industry in 2009 and a partial loss in 2010. This second scenario is examined by CAR as an attempt to gauge the effect of just the shutdown of GM employment and capacity on the U.S. economy without the assumption of a complete collapse of the North American supplier sector affecting all other automakers.

### **First Scenario (Total Industry effect):**

- 90% of industry automaker employment is lost in 2009 due to the virtual collapse of the North American supplier sector (Loss of 238,000 automaker jobs)
- The industry is back to 50% of actual automaker employment in 2010
- The industry is back to 100% of automaker employment in 2011 as the supplier sector is repaired along with credit markets

### **Second Scenario (GM-only effect)**

- Employment and production equivalent to actual 2009 GM employment (average of EOY 2008 and 2009 company reported employment) is lost for all of 2009
- 50% of GM's actual 2010 employment is replaced by other OEM employment in 2010
- 100% of GM 2010 EOY employment is replaced in 2011

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<sup>13</sup> "Surprise: Japanese, Korean Carmakers Want a Detroit Bailout." Ian Rowley and Moon Ihlwan, Bloomberg Businessweek, November 19, 2008.

<sup>14</sup> "Toyota prepared for GM bankruptcy," www.thestar.com, published on April 8, 2009.

<sup>15</sup> BEA/USDOC, 2013.

CAR believes that much of the U.S. operating capacity of Ford and the international automakers would be reemployed by 2010. However, CAR also believes that new capacity and sizable additions to workforces by these firms sufficient to replace shutdown GM and Chrysler U.S. capacity and employment would not have been in place that year. For example, as shown in Table 1 below, combined GM and Chrysler U.S. employment was 135,000 at the end of 2008 and 111,074 at the end of 2009. The combined U.S. employment of all international automakers was smaller than either of these two totals in 2008 and 2009. It typically takes automakers years to add plant and equipment and train new workers for this purpose. Such a replacement, even with the addition of Ford’s efforts would not have been possible in 2009-2010. This same slow process would be taking place in the supplier sector to replace liquidated firms forced into insolvency by the absence of GM and Chrysler. As a result, the U.S. auto market would have experienced a surge in imports in 2009 and 2010 and a significant loss of U.S. automotive and overall employment. We estimate this loss in automaker employment and income in the automotive sector in both scenarios at 90 percent in 2009 and 50 percent in 2010.

**Table 1: GM/Chrysler EOY U.S. Employment**

Year	Chrysler-EOY	GM-EOY	Total
2008	43,602	91,655	135,257
2009	34,084	76,990	111,074
2010	38,191	74,046	112,237
2011	41,587	73,954	115,541
2012	49,783	76,520	126,303

*Source: Company reports*

**The REMI Model**

The REMI model uses annualized data. At the REMI website, [www.remi.com](http://www.remi.com), the resources tab provides model documentation detailing every dataset, as well as data scrubbing procedures. The REMI model provides for central bank monetary responses and federal fiscal policy responses to movements in the economy. There are three options that may be chosen for simulation purposes. Each of these options provides varying levels of federal involvement and different rates of policy response. For this memorandum we used the Keynesian closure option. This option has the lowest level of federal response to economic upheavals, with no fiscal intervention to economic shocks in any sector of the economy. This option provides the clearest picture of the true role that any one industrial sector has within the national and regional economies. The purpose of this analysis was not to forecast the federal response to the automotive industry contraction, but to show the extent to which the auto industry is a large component of the overall U.S. economy.

Within the REMI model, important algorithms affecting the rate of economic growth or contraction are the migration equations (the movement of population from one area or state to another). Migration occurs due to economic pulls or pushes; the migration equations used in REMI reflect the mobility of the population as experienced in the U.S. economy over the past 30 years. Therefore, the ability of a labor force to recover from this type of industrial shock is reflected in model results.



Trade with other nations, via imports and exports, is part of the model and is affected by economic changes. Exchange rates are not a focus of the model, and are incorporated into the trade effects based on historical data.

Generating meaningful results from an economic model requires:

- having an understanding of the algorithms, datasets and formulae of the model being used,
- having familiarity with how changes in various data inputs will impact results, and
- calibrating the model to historical, known outcomes.

In addition, economic simulations are most useful when combined with a theory of how model results can be used against the backdrop of current economic conditions. Every situation has aspects that are not going to be captured in a model in such a way as to produce consistently accurate forecasts. The current economy in the United States is extremely volatile. The employment impact results found in this study—in either of the scenarios—are quite low, because many of the employment losses due to GM's and Chrysler's downsizing have already occurred and are part of the model's baseline. For all industries, capital funds are not as readily available as they were even a year ago. Therefore, investment spending (which is needed for economic and employment recovery) is presently not occurring at the healthier levels, seen as recently as 2007. This would indicate that the recovery predictors of the model (based on 15-year historical averages) are optimistic for current economic conditions.

## Results

**Table 2: November 2013 Backcast of Economic Impact of Government Aid to U.S. Automotive Industry**

	Industry Scenario		GM Scenario	
	2009	2010	2009	2010
Total Employment	-2,630,750	-1,519,375	-1,196,203	-674,359
Personal Income (Lost) \$	-\$173.5	-\$110.9	-\$79.5	-\$49.7
Increase in Transfer Payments \$ \$Bil	\$14.4	\$8.3	\$6.5	\$3.7
Decline in Social Security Receipts \$	-\$29.5	-\$18.4	-\$7.9	-\$5.6
Decline in Personal Income Taxes \$	-\$20.8	-\$13.9	-\$9.5	-\$6.2
Net Impact on Government Revenue/Spending	64.7	40.6	23.9	15.5
Net Impact on Government Total: 2009-2010	\$105.3 billion		\$39.4 billion	

*Note: All dollar amounts are in billions of current dollars.*

The results from Table 2 above can be summarized as follows:

### Jobs

The industry scenario results estimate that the shutdown of GM and Chrysler would have reduced U.S. employment by 2.631 million jobs in 2009 and 1.519 million jobs in 2010. The GM scenario effect would have reduced U.S. jobs by 1.196 million jobs in 2009 and .675 million jobs in 2010. These job losses include 238,000 automaker jobs in 2009 and the loss of 142,000 automaker jobs in 2010 in the industry scenario. The balance of the remaining job losses in this scenario are supplier jobs in both the manufacturing and non-manufacturing sectors, and spin-off employment losses due to loss of automaker and supplier income leading to reduced spending in the U.S. economy. The GM total jobs loss total includes 84,322 lost automaker jobs in 2009 and 37,759 lost automaker jobs in 2010. The balance of the remaining job losses in the GM scenario are supplier jobs in both the manufacturing and non-manufacturing sectors, and spin-off employment losses due to the loss of GM employee and supplier income leading to reduced spending in the U.S. economy.

### Personal Income

The industry scenario results estimate that the shutdown of GM and Chrysler would have reduced U.S. personal income by \$173.5 billion in 2009 and \$110.9 billion in 2010 for a two-year total of \$284.4 billion. The conservative GM scenario effect would have reduced U.S. personal income by \$79.5 billion in 2009 and \$49.7 billion in 2010 for a two-year total of \$129.2 billion.

### Impact on Government Revenues and Spending

The CAR estimate of the net impact to the federal government's budget— higher transfer payments, lower social security receipts and lower personal income taxes paid—amounted to \$64.7 billion in 2009, and \$40.6 billion in 2010 in the total industry scenario for a two-year total of \$105.3 billion. The CAR estimate of the net impact to government budget in the GM scenario— higher transfer payments, lower social security receipts and lower personal income taxes paid—amounted to \$24.0 billion in 2009, and \$15.5 billion in 2010 for a two-year total of \$39.4 billion.

## The Government Accountability Office (GAO) Estimate of the Cost of Assisting General Motors

A GAO report in October lists the assistance provided by the Troubled Asset Relief Program (TARP) of the U.S. Treasury to Old GM and the New GM (now called GM) in bankruptcy. This includes a \$13.4 billion loan granted in December 2008 to Old GM to fund working capital. GAO also reported that Treasury lent \$884 million to the Old GM for the purchase of additional ownership interests in a rights offering by General Motors Acceptance Corporation (GMAC). In April 2009, Treasury loaned an additional \$6.0 billion to fund Old GM as it worked to submit a viable restructuring plan. This too was a working capital loan. It certainly allowed GM to take the strategic action on May 28, 2009 to pay its June 2 payables to its suppliers – saving hundreds, if not thousands of these firms from possible insolvency. Finally, in June 2009, Treasury provided Old GM with \$30.1 billion under a debtor-in-possession financing agreement to assist during the restructuring. With this money, GAO reports that “the newly organized GM was able to purchase most of the operating assets of the former company through a sale under Section 363 of the bankruptcy code.” Treasury was able to convert most of its total loans into 60.8 percent of the common equity in the New GM and \$2.1 billion into preferred stock. Treasury also received \$7.1 billion in notes from GM.<sup>16</sup>

Much of GM’s U.S. Treasury assistance has been repaid. In May 2010, \$6.7 billion in previous TARP loans were repaid to Treasury. In addition, a series of actions starting with the original GM Initial Public Offering (IPO) in November 2010 has allowed Treasury to recoup a total of \$35.21 billion (\$25 billion in equity sales) of its \$51 billion investment and reduce its ownership of GM equity to 7.32 percent as of September 18, 2013.<sup>17</sup> The Treasury has sold additional stock in dribbles since then. However, Treasury’s estimate for the revenue to be gained from the sale of 101,336,666 Treasury-held shares of GM stock was that it would be insufficient to make up the \$16.21 billion in remaining unpaid assistance funds. At a share price of \$36, about \$3.65 billion in additional revenue would be realized, leaving a shortfall of \$12.56 billion.

In the U.S. Treasury’s monthly report to Congress for October 2013, TARP reported the sale of an additional \$1.2 billion in GM stock in October 2013 bringing total reimbursements to “approximately \$37.2 billion.” TARP includes revenue from company repayments, sales of stock, dividends, interest, and other income. For example, the interest and dividend payments paid by GM totaled \$757 million through September 30, 2013.<sup>18</sup> This would leave a shortfall of \$13.80 billion. The number of shares sold in October was not disclosed. TARP did report a “realized loss” of \$9.7 billion through September 30, 2013, for the sale of stock below the original IPO cost basis of \$43.52 per share.<sup>19</sup> Based on estimates by analysts, it appears that about 50 million remaining shares of GM stock are held by the U.S. Treasury at this time.<sup>20</sup> At a current share price of \$39, it would appear the federal government could recover an additional \$2 billion or so of revenue leaving a net loss of \$11.8 billion on its total of \$51 billion in assistance to GM.

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<sup>16</sup> United States Government Accountability Office. Troubled Asset Relief Program, Status of Treasury’s Investments in General Motors and Ally Financial, Report to Congressional Committees. October 2013, GAO-14-6. Pages 4,5.

<sup>18</sup> U.S. Department of the Treasury, Troubled Asset Relief Program, Monthly Report to Congress, October 2013. Page 5.

<sup>19</sup> Higgins, Tim and Angela Greiling Keane, “U.S. Lost \$9.7 Billion on GM Through September, Sigtarp Reports.”

Bloomberg/Newsroom, October 30, 2013.

<sup>20</sup> “GM Stock Rises as Government Sells More Shares.” <http://www.detroitnews.com/article/20131113/AUTO0103/311130110>

## Conclusion

The results of CAR's backcast of the effect of U.S. government assistance to GM and Chrysler and even to just GM alone in 2009 is striking. And it is important to note, that these companies are now poised to operate profitably even at lower levels of production and sales, for years to come. However, our analysis is meant to provide an estimate on the quick public return to the final net investment in GM, and Chrysler by the U.S. government. If the final net cost of this investment is \$11.8 billion in unrecovered funds in GM and the reported loss of \$1.9 billion in Chrysler, this net investment would total \$13.7 billion in Treasury funds. Our results show the U.S. government saved or avoided the loss of \$105.3 billion in transfer payments and the loss of personal and social insurance tax collections—or 768 percent of the net investment. Additionally, 2.6 million jobs were saved in the U.S. economy in 2009 alone and \$284.4 billion in personal income saved over 2009-2010.

Even more impressive are the results of the GM scenario which did not even require the assumption of shutting down the supplier sector or other automaker employment. The only assumption was that other automakers could not replace GM capacity and employment until 2011. In this case, the U.S. government avoided the loss of \$39.4 billion in increased transfer payments and lost taxes in just two years: 2009-2010. This is 334 percent of the projected \$11.8 billion of Treasury funds not recovered on the public's investment in GM. We should add once again that in this scenario, the U.S. economy avoided the loss of 1.2 million jobs in 2009 and the loss of \$129.2 billion in personal income in 2009-2010.

### Other Benefits of the Government Intervention

CAR also believes that the cost-benefit analysis of the U.S. government's investment in GM and Chrysler contained in this memorandum is still partial and incomplete. The following points should also be considered:

- If GM and Chrysler had ceased to operate permanently in January 2009, almost 600,000 existing GM and Chrysler retirees would have certainly seen their company pensions delayed and reduced (as was the case for Delphi salaried workers) and their retiree health benefits cancelled. The Pension Benefit Guarantee Corporation (PBGC) would have been overwhelmed. The majority of these retirees reside in the upper Midwest and a few retiree states (such as Florida & Arizona) and the economic impact on those states would have been catastrophic. Along with the loss of active automotive manufacturing employment, the additional loss of retiree income in these states would have produced a Depression Era economy in much of the upper Midwest economy.
- It is true that CAR projects that much of U.S. auto manufacturing employment would have recovered without U.S. government intervention by 2011 or sometime thereafter, but there would have been a decided shift in the location of this employment to the southern portion of the United States. This is where international automakers have decided to base much of their assembly capacity. Once again, the results for upper Midwest states such as Michigan, Ohio, and Indiana of this relocation would have been severe in the long term. Double digit unemployment rates would still exist in these states today. Further, it is not likely that an additional base of companies and employment in automotive research, product development,

and tooling would have re-appeared in the southern U.S. states from its current location in the upper Midwest. These critical pre-production activities are largely carried out in home countries by the international automakers and this important economic base would have been lost to the U.S. economy, perhaps forever.

- Finally, the possible psychological effect of the collapse of GM and Chrysler on the rest of the U.S. industrial base is most difficult to estimate. Given the tenor of the times in early 2009, it is not difficult to imagine an “Industrial Lehman Brothers Effect,” for the U.S. main street economy. If the U.S. government had refused to assist such large, integrated (with so many other industries), and strategic industrial firms as these two Detroit automakers in a financial crisis of unprecedented proportions, then the whole U.S. economy was operating without a safety net, with the exception of course, of the banking system.

Two consecutive executive administrations in Washington decided in late 2008 and early 2009 that the consequences of the potential losses and outcomes to the U.S. economy and people described above were worth avoiding through a federal intervention. CAR is confident that in the years ahead, this peacetime intervention in the private sector by the U.S. government will be seen as one of the most successful in U.S. economic history.

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