

Idle Capacity Costs: It Isn't Just the Expense

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SFAS No. 151 CALLS FOR MANUFACTURING FIRMS TO REPORT THE ABNORMAL LEVEL OF UNUSED FIXED COSTS AS A PERIOD COST AND NOT INCLUDE THESE COSTS IN PRODUCTS. WE FIND THAT NORMAL IDLE CAPACITY COSTS ARE QUITE LARGE AND RELEVANT TO INVESTORS. WE ALSO ARGUE THAT THESE UNUSED FIXED COSTS ARE MADE UP OF PAST, CURRENT, AND FUTURE CASH OUTLAYS, THE COMPOSITION OF WHICH SHOULD VARY WIDELY ACROSS FIRMS. BASED ON THESE OBSERVATIONS, WE ARGUE THAT THE CURRENT REPORTING STANDARD DOES NOT GO FAR ENOUGH. WE PROPOSE A STANDARD THAT REQUIRES FIRMS TO RECOGNIZE THE EXPENSE ON THE INCOME STATEMENT AND THE IDLE ASSETS ON THE BALANCE SHEET AND TO INCLUDE DISCLOSURES DETAILING THE BREAKDOWN OF THE EXPENSE BETWEEN CASH FLOWS AND ACCRUALS.

Based on the changes in accounting for inventory costs created by Statement of Financial Accounting Standards (SFAS) No. 151, "Inventory Costs—an amendment of ARB No. 43, Chapter 4," Sid Ewer, Craig Keller, and Stevan Olson argued in a 2010 *Strategic Finance* article that more firms should be recognizing a line-item expense for the cost of abnormal idle capacity.¹ We agree with their arguments that companies producing at an abnormally low level should not include the amount of unused fixed costs in the value

of inventory produced, but we do not believe that they went far enough in advocating for improved disclosure of these costs of idle capacity. We further argue that the current standard does not go far enough.

For many companies, the amount of abnormal unused capacity is not a material amount, but what many users of financial statements would be surprised to discover is the level of normal unused capacity. Consider the example of two firms, each which usually operates at less than 100% capacity. Firm A consistently operates at 95% capacity utilization (CU), and firm B

consistently operates at 75% CU. If each of these firms had a down year and operated at 5% less, Ewer, Keller, and Olson would suggest that the companies each record a period expense of the 5% of fixed costs that they did not use that year. While this would be a step in the right direction, we believe that recording a period expense of 10% of fixed costs for firm A and 30% of fixed costs for firm B would be much more informative to investors and would be strong motivation to the managers of firm B to trim (or justify) their capacity costs.

The current standard that calls for the reporting of abnormal idle capacity seems to result in no disclosure, even when idle capacity is quite large. We were surprised to find out that of the two U.S. and two Japanese companies we reviewed for this article—General Motors (GM) and Ford, headquartered in the United States, and Toyota and Honda, headquartered in Japan—only Toyota included any mention of SFAS No. 151 as part of its footnote on newly adapted SFAS. Not surprisingly, Toyota anticipated that the new rule would have no material impact on its financial statements.

Additionally, we argue that the recognition of the expense is not enough because not all expenses are created equal. If a company's unused capacity is primarily depreciation, then it has little impact on future operations. But if the expense for idle capacity primarily includes charges for taxes, utilities, insurance, and fixed labor costs, then these cash outflows preclude the company from investing in other activities that would bring it future returns.

Finally, we agree with Ewer, Keller, and Olson that if a firm has separable asset groups that are idle, it should not include these assets in property and plant but should report them in an investment category. We believe that a complete standard should require companies to recognize the expense on the income statement and the idle assets on the balance sheet and, perhaps most important, to include a footnote disclosure detailing the breakdown of the expense between cash flows and accruals.²

To support our arguments, we analyzed the four automakers. This analysis demonstrates that capacity utilization is informative in predicting future operating profitability. We find that changes in current year CU are negatively related to the next year's gross margin. If

investors were given this information in a timely fashion, they would be better able to predict the future cash flows of the firm. We also provide data on idle capacity for General Motors North America (GMNA) operations for 2002 through 2008. During this period, GMNA reported losses of \$27.6 billion, and, at the same time, the costs of its idle capacity totaled at least \$32 billion. This demonstrates that, at least for GM, these costs clearly are material.

ARE CAPACITY UTILIZATION RATES RELEVANT TO INVESTORS?

Under an accounting system that assigns excess capacity costs to current production and an incentive system that rewards short-term decision making, companies produce more vehicles than they can sell. In a 2011 article, Alexander Brüggem, Ranjani Krishnan, and Karen Sedatole found that, compared to one-year-ahead forecasted production numbers, the Big Three automakers increase production by one-half percent for each one percent increase in excess capacity.³ Because this extra production needs to be moved, they argue that such excess production increases the need for advertising and price discounting. They find a positive relationship between excess production and advertising expenditures, rebate percentages, and inventory build-up. Finally, they argue that the price discounting damages brand image—an intangible asset that the current accounting system ignores. Brand image is important to companies and investors to the extent that it translates into company value and share price.

Even as current price discounting affects brand image negatively, it also affects a company's current performance. Together with increased inventory carrying costs associated with excess production, current price discounting should affect current selling prices and current gross margins negatively. Of course, selling prices may also decrease as—over time—companies change the lineup of vehicles they produce. In addition, if, over time, there is a move toward smaller vehicles that demand lower selling prices without a proportionate decrease in production costs, then gross margins will decline as well. But if price discounting drives down gross margins, then a review of the auto industry's performance and production numbers should reveal that relationship.

To test the relationship between current and future gross margins, we obtained select capacity, production, and sales volume data from AutomotiveNews.com and PWC Autofacts for GM, Ford, Toyota, and Honda over nine years.⁴ The time period we studied was from 1999 through 2007, which resulted in 36 company-year observations. The gross margin data for those company-years came from the COMPUSTAT database. Our review of the data from those auto manufacturers found that current-year excess production (and thus current-year higher capacity utilization) was associated with current-year and next-year gross margins. Our results support the hypothesis that companies' gross margins suffer while they produce and sell more vehicles than the market can sustain.

The results of our study are based on normal capacity utilization numbers. We believe that capacity utilization numbers should be based on practical or even theoretical capacity, which we suspect would significantly decrease the reported capacity utilization for the domestic auto manufacturers. Because such numbers currently are not reported, we can only speculate how those utilization numbers would have affected the relationship between production and reported gross margins. Armed with the knowledge that low capacity utilization fuels excess production that lowers gross margins, we believe that capacity utilization disclosures of any kind will alert investors—and thus company management—to the need for bringing these numbers in line with the rest of the industry.

The current accounting system rewards behavior that affects current and future gross margin levels negatively. Because (projected) gross margin factors heavily into the determination of company value and share price, company executives and investors should pay close attention to production and capacity levels. A change in the accounting for idle capacity costs would result in costs that are not affected by production levels, thus breaking the link between excess capacity and excess production and averting the downward spiral effect of rewarding dysfunctional behavior.

IDLE CAPACITY AT GMNA

We use the North American Operations of General Motors Corporation to illustrate the current treatment

of the cost of idle capacity (i.e., no recognition). We compare this to our recommended treatment, where the cost of idle capacity is recognized as a separate line item in the income statement for financial reporting. Our goal is to demonstrate that the normal costs of idle capacity are quite large and that, by anyone's definition, they meet the materiality standards for recognition.

We compiled GMNA's sales revenues, pre-tax net incomes, and two-shift rated capacity utilization ratios for fiscal years 2002 through 2008 from GM press releases reporting the unaudited annual results.⁵ During this period, GMNA was responsible for 58% to 75% of the entire company's total auto revenue. GMNA was profitable in the first three years of this period but was in a loss position for the remaining four years. During the whole period, it operated between 75% and 92% of capacity based on the capacity potential of two shifts per plant. While GM reports its capacity as a percentage, it does not calculate a dollar value for the unused capacity. Using both press releases and annual reports, we were able to estimate the dollar value of fixed costs for GMNA to be between \$40 billion and \$29 billion (see Table 1).

We also extracted GMNA's pro-forma income statements for fiscal years 2002 through 2008 from GM's press releases, which revealed that GMNA lost about \$27.5 billion during that time. We use the reported capacity utilization ratios and our estimates of total fixed costs to separate total costs into the cost of resources used and the cost of idle capacity.⁶ These estimates of idle capacity range from \$2.5 billion in 2006, when GMNA had made drastic cuts in fixed costs, to \$7.3 billion in 2008, when GMNA sales fell by more than 25% from the year before (see Table 2).

Over the period of fiscal years 2002 through 2008, GMNA's total operating income, i.e., sales revenue less the cost of resources used to earn the sales revenue, was about \$4.4 billion, whereas its cost of idle capacity over the same period was about \$32 billion. These amounts are clearly material to the interpretation of financial performance. Might General Motors Corporation have taken, or been forced to take, the appropriate corrective actions to reduce its idle capacity and avoid bankruptcy if financial reporting had required disclosure of the cost of idle capacity?

Table 1: **General Motors North America (GMNA) Operations—
Estimates of Fixed Costs**

Panel A: Details Extracted from General Motors Press Releases [amounts in millions]

	2002	2003	2004	2005	2006	2007	2008
GMNA sales revenue	\$114,444	\$116,310	\$114,582	\$104,755	\$109,779	\$112,448	\$ 86,187
GMNA pre-tax income	\$ 4,198	\$ 915	\$ 1,137	\$ (9,747)	\$ (6,903)	\$ (3,290)	\$ (13,903)
GMNA capacity utilization							
[two-shift rated]	88.4%	89.7%	85.8%				
[two-shift rated, annualized]				89.80%	92.40%	88.30%	74.70%

Panel B: Estimation of GMNA's Fixed Costs [amounts in millions]

	2002	2003	2004	2005	2006	2007	2008
GMNA fixed costs	\$40,000	\$40,000	\$40,000	\$40,000	\$33,200	\$31,000	\$29,000

WHY CASH FLOW IS IMPORTANT

Operating expenses on the income statement represent the variable and fixed costs incurred (or allocated) to generate that period's revenues. Some fixed costs represent outlays in prior periods (e.g., capital investments), some represent outlays in future periods (e.g., postretirement costs other than pensions), and the remainder represent current outlays (e.g., labor costs, insurance, utilities). Costs representing prior-period cash outlays, such as depreciation, are sunk; most other fixed costs represent current and future cash outflows, which compete with those meant for other purposes, such as reducing debt or paying dividends. This section will illustrate that, in the years before 2008, the domestic automakers faced proportionately more current and future cash outlays related to their excess capacity than did their "transplant" competitors. (Transplants are companies owned abroad with plants in the United States.)

During the 1980s, the UAW negotiated the installation of a Jobs Bank with the Detroit Big Three—a program under which laid-off workers would continue to receive up to 95% of their wages; that lasted until the end of 2008.⁷ At that time, domestic car makers required 40 to 50 hours to build a typical vehicle—almost twice the hours required by the Japanese.⁸ The

Jobs Bank program effectively converted labor costs from a variable cost to a fixed cost. During the time period under study here, the Jobs Bank participation approached 15,000 in early 2006 when the labor force at several factories converted to that program.⁹ At the same time, and in order to protect high-paying jobs, the UAW resisted the introduction of capital-intensive robotics already used in the U.S. plants of Japanese and German car manufacturers. While more than two-thirds of the transplants' production lines accommodated different vehicles, only one-third of the Big Three plants were expected to get similarly equipped by 2005.¹⁰ Taken together, this suggests a significant difference in the makeup of the fixed costs at U.S. plants when comparing domestic to foreign automakers. Fixed costs at the domestic plants require more current and future cash outlays than those at the foreign automaker plants with more capital-intensive assembly lines. Except as outlined in the next paragraph, this difference in cash outlays for fixed costs applies equally to the fixed costs associated with excess capacity. Moreover, if the domestic automakers have more excess capacity than the foreign automakers, then their cash outlays associated with the excess capacity still would be higher.

GMNA's annual fixed costs from 2002 through 2008 ranged from \$29 billion to \$40 billion. Its depreciation

Table 2: **GMNA Operations—Estimates of Idle Capacity**

Panel A: Income Statement—Extracted from Information in General Motors Press Releases
[amounts in millions]

	2002	2003	2004	2005	2006	2007	2008	2002–2008 total	
								Amount	%
Sales revenue	\$114,444	\$116,310	\$114,582	\$104,755	\$109,779	\$112,448	\$ 86,187	\$758,505	100.0%
Total costs	\$110,246	\$115,395	\$113,445	\$114,502	\$116,682	\$115,738	\$100,090	\$786,098	103.6%
Pre-tax net income	\$ 4,198	\$ 915	\$ 1,137	\$ (9,747)	\$ (6,903)	\$ (3,290)	\$ (13,903)	\$(27,593)	-3.6%

Panel B: Income Statement—Using Estimated Fixed Costs and GMNA's Two-Shift Rated Capacity Utilization
[amounts in millions]

	2002	2003	2004	2005	2006	2007	2008	2002–2008 total	
								Amount	%
Sales revenue	\$114,444	\$116,310	\$114,582	\$104,755	\$109,779	\$112,448	\$ 86,187	\$758,505	100.0%
Cost of resources used	\$105,606	\$111,275	\$107,765	\$110,422	\$114,159	\$112,111	\$ 92,753	\$754,091	99.4%
Operating income	\$ 8,838	\$ 5,035	\$ 6,817	\$ (5,667)	\$ (4,380)	\$ 337	\$ (6,566)	\$ 4,414	0.6%
Cost of idle capacity	\$ 4,640	\$ 4,120	\$ 5,680	\$ 4,080	\$ 2,523	\$ 3,627	\$ 7,337	\$ 32,007	4.2%
Pre-tax net income	\$ 4,198	\$ 915	\$ 1,137	\$ (9,747)	\$ (6,903)	\$ (3,290)	\$ (13,903)	\$(27,593)	-3.6%

Panel C: Notes to the Financial Statements
[amounts in millions]

	2002	2003	2004	2005	2006	2007	2008	2002–2008 total	
								Amount	%
GMNA depreciation	\$4,751	\$6,199	\$6,381	\$7,605	\$5,691	\$5,612	\$5,844		
% of estimated fixed costs	11.9%	15.5%	16.0%	19.0%	17.1%	18.1%	20.2%		
Cost of idle capacity components									
Cash outflows	\$4,089	\$3,482	\$4,774	\$3,304	\$2,091	\$2,970	\$5,858	\$26,568	83.0%
Accruals	\$ 551	\$ 638	\$ 906	\$ 776	\$ 433	\$ 657	\$1,479	\$ 5,439	17.0%
Total	\$4,640	\$4,120	\$5,680	\$4,080	\$2,523	\$3,627	\$7,337	\$32,007	100.0%

ranged from about 12% to 20% of its annual fixed costs during this period. Using the reported depreciation and our estimated fixed costs, we calculate how the cost of idle capacity was divided between current and future cash flow. On average, only 17% of the estimated \$32 billion was depreciation, which leaves \$26.5 billion that GMNA lost in cash over this period. To illustrate how this translates to the cost of each vehicle, we look at a single year: 2005. In that year, GMNA produced 4.6 million vehicles and sold 5.1 million vehicles. Based on its two-shift capacity utilization, its idle capacity costs took away about \$650 in current and future cash

outlays from each vehicle sold—cash outlays that the transplants did not face and that could have been used to lower prices, pay down debt, make investments in new technology, or pay dividends (see Table 2).

Instead of dedicating all current and future cash outlays to current and future production, GMNA committed a substantial portion of its annual cash outlays to support its excess capacity. Besides having the cost of idle capacity shown separately from its cost of goods sold, it would be useful to require a further division of those idle capacity costs in the notes to the financial statements. Not all costs of idle capacity are incurred

equally, nor do they have the same impact on current and future cash outflows. Users reading such disclosures would realize that—at least in GMNA’s case—the majority of those idle capacity costs represent very real (and perhaps avoidable) cash outlays. In turn, this should encourage management to negotiate contract changes in a more timely fashion.

OUR STANDARD MEETS THE CRITERIA

The fundamental premise of our article is that a reporting standard that required a period expense on the income statement, a separate line item on the balance sheet for idle assets, and a footnote disclosure detailing the cash flow portion of the expense might have saved General Motors from bankruptcy if it and others had been required to disclose the cost of idle capacity in their financial statements.¹¹ Such disclosure of the cost of idle capacity, which amounted to billions of dollars, might have prompted the automakers to fix the idle capacity problem instead of allowing it to fester until it was too late. We maintain that recognition of the cost of idle capacity would have been beneficial for the bankrupt automaker and would be beneficial for investors and creditors of all manufacturers in the future. We have seen where a new required disclosure changes managers’ real economic decisions. Perhaps the best example of this is the requirement to report a liability for postretirement benefits. After this standard became effective, employers moved quickly to curtail these plans.

The objective of financial reporting is to help investors and creditors assess the amount, timing, and uncertainty of future cash flows for the company.¹² We believe that removing the cost of idle capacity, if material, from the cost of goods sold and reporting the two separately will meet this objective. We maintain that this separation is worthy of recognition, not just disclosure. Statement of Financial Accounting Concepts No. 5, “Recognition and Measurement in Financial Statements of Business Enterprises,” explains that to qualify to be recognized, an item should meet four criteria. The item should meet the definition of an element, be measurable, be relevant to financial statement users, and reliably represent the economics of the transaction.¹³ We believe that the reporting standard pro-

posed earlier meets these four criteria.

The cost of idle capacity is a relevant figure for both managers and investors. Some companies calculate the information for internal purposes, and analysts spend their resources estimating the costs of idle capacity. The fact that analysts try to estimate this expense, combined with the predictive value, and the clear materiality of idle capacity costs tell us that this is relevant information. Currently, outside analysts can measure this reliably enough to publish estimates of firms’ capacity, and investors rely on these estimates. The techniques to measure these costs would only benefit from the FASB’s due process of standard setting. ■

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ENDNOTES

- 1 Sid R. Ewer, Craig Keller, and Stevan Olson, “No Equivocating: Expense Those Idle Capacity Costs,” *Strategic Finance*, June 2010, pp. 55-59. Note: Although the actual SFAS No. 151 does not show up in the cross reference of the FASB *Accounting Standards Codification*®, the standard it modified, ARB No. 43, does. It is now in Inventories (330-10-30-(3-7)). The particular language is in paragraphs 6 and 7.
- 2 Ideally we would like to see a line item on the statement of cash flows, but with the resistance in the preparer community to a direct statement of cash flows, we think that it is unlikely that level of recognition would be generally accepted.
- 3 Alexander Brügggen, Ranjani Krishnan, and Karen L. Sedatole, “Drivers and Consequences of Short-Term Production Decisions: Evidence from the Auto Industry,” *Contemporary Accounting Research*, Spring 2011, pp. 83-123.
- 4 “Global Market Data,” *Automotive News*, June 25, 2007; retrieved April 16, 2010, from www.automotiveneews.com.
- 5 We recognize that the sales revenues and pre-tax net incomes reported in the press releases are unaudited. Because capacity utilization ratios are revealed only in press releases, however, we also use the sales revenues and pre-tax net incomes from the press releases for consistency.

- 6 For example, GMNA's cost of used resources and cost of idle capacity for 2007 are computed as follows. As GMNA's capacity utilization ratio for 2007 is 88.30% and its estimated total fixed costs are \$31 billion, its 2007 cost of idle capacity is \$3.627 billion $[(100\% - 88.30\%)(\$31 \text{ billion})]$. As GMNA's 2007 total costs are \$115.738 billion, its 2007 cost of used resources is \$112.111 billion $[\$115.738 \text{ billion} - \$3.627 \text{ billion}]$.
- 7 Mike Ramsey, "GM, Chrysler Win Union Concessions to Bolster Aid Bid," Bloomberg News, December 3, 2008; retrieved July 3, 2010, from www.Bloomberg.com.
- 8 Laurie Harbour-Felax, "State of the Industry," *Automotive Design & Production*, December 2006, pp. 22-24.
- 9 Jeffrey McCracken, "Detroit's Symbol of Dysfunction: Paying Employees Not to Work," *The Wall Street Journal Online*, March 1, 2006; retrieved July 3, 2010, from <http://online.wsj.com/article/SB114118143005186163.html>.
- 10 Daren Fonda, "Why the Most Profitable Cars Made in the U.S.A. Are Japanese and German," *TIME*, May 11, 2003; retrieved July 3, 2010, from <http://www.time.com/time/magazine/article/0,9171,451002,00.html>.
- 11 We suspect that Chrysler had many of the same issues with idle capacity and might have been better off with these proposed reporting rules. Because they were part of Daimler or held by a private firm during the period we studied, we cannot make the same type of estimates of their idle capacity costs.
- 12 Financial Accounting Standards Board (FASB), Statement of Financial Accounting Concepts No. 1, "Objectives of Financial Reporting by Business Enterprises," 1978, superseded by Statement of Financial Accounting Concepts No. 8, "Conceptual Framework for Financial Reporting," 2010.
- 13 Financial Accounting Standards Board, Statement of Financial Accounting Concepts No. 5, "Recognition and Measurement in Financial Statements of Business Enterprises," 1984.