



Are advanced
manufacturing
companies nimble
enough to rise in
the next downturn?

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This is one of a series of articles focusing on how CEOs, CFOs and boards of directors can sustainably transform financial or operational performance through value creation, value preservation or value recovery. Other articles will include life sciences, consumer products and retail.

Advanced manufacturing companies face a number of headwinds as they attempt to position themselves to thrive in the next economic downturn. At the same time, they need to fund the long-term technological investments that will be the backbone of the factory of the future.

As they ready themselves for the next threat or disruption – whether economic, regulatory, geopolitical or technological – advanced manufacturing companies face many challenges. These challenges include high fixed costs; a shortage of labor with the skills required to work in the modern factory; and global trade volatility that increases costs and hinders supply chains.

Despite years of consolidation at the top of some subsectors, these industrial manufacturing, aerospace and defense, and chemicals businesses remain asset-heavy, making it difficult to quickly address the current challenges, let alone an economic slowdown.

When a company believes the next threat or disruption will occur within the next 12 months, more immediate, and often draconian, measures are required such as near-term cost

reduction activities (reductions in force, spending cessation) and brute force working capital management (aggressive A/R collection, inventory reduction and working with vendors on terms extension). However, if a company believes it still has one or more years of “runway,” the company can focus on more strategic cost reduction, along with optimization of its capital structure, business model and overall portfolio.

		Industrials	Chemicals	Aerospace and defense	All industries
From 2010-18, as businesses recovered from the Great Recession, advanced manufacturing companies who represented the top 10% of their respective sectors' financial performance deployed several strategies to better position their businesses. These strategies, as broken down by sector and compared with all industries, included:	Distributed dividends and repurchased shares	88%	97%	76%	84%
	Optimized their financial and operating performance	55%	58%	67%	64%
	Mergers and acquisitions	49%	23%	71%	46%
	Divestitures	26%	7%	24%	24%
	Leadership movement	66%	37%	48%	66%
	Strategic changes and shifts (new joint ventures, alliances, agreements)	49%	47%	33%	50%
	New product launches/enhancement, and business expansion	49%	53%	38%	59%

1 Revamp the cost structure

Reducing operating costs through increasingly flexible and global workforces, automation, technology and other means is essential.

Consider options for workforce flexibility

On the employment side, companies can take advantage of the growing gig economy to fill temporary needs and work closely with labor to develop options for temporary lulls in production. Younger workers have, in some cases, shown that they value time itself as a benefit, so temporary sabbaticals may be more palatable as a way of managing labor needs.

EY professionals helped one manufacturer with a flexible workforce approach as it reduced one product line and needed to adjust to the lower production needs of the replacement product line – a switchover that could take up to two years. The company worked with the works council and union to create a more flexible solution for employees who would be needed

once the new product line ramped up, utilizing sabbaticals and other voluntary steps to temporarily scale down the number of workers. This helped mitigate the impact of the shutdown on some employees, even as the company needed to realign its workforce to the needs of the new product line. In this situation, involving labor early helped our client achieve the flexibility they needed.

An additional strategy is to stress test a company's overhead structure using multiple reduced volume and profit scenarios, or to confirm a company is sufficiently "lean." This includes potentially reducing the number of management layers.

Examine and rationalize the real estate footprint

As companies in the sector consolidate, they should also examine their corporate real estate footprint as an area to cut costs and, potentially, free up capital. Can facilities be consolidated, freeing up space to

either sell or sublease office space and factories? Are factories and office space designed to facilitate employee productivity? Are there opportunities to renegotiate maintenance contracts?

Corporate real estate can offer a wealth of cost savings. Building a sustainable corporate real estate operating model that addresses these issues can be a way of systematically finding untapped cost reductions.

Utilize technology

Technology can also help reduce costs. Smart sensors and artificial intelligence (AI) in the factory can help in areas such as predictive maintenance that can save larger costs down the road. They can also enable efficient labor utilization based on an understanding of where labor is being used at any given time. 3D printing, meanwhile, can support rapid prototyping for accelerated product development and enhanced customization. Biosensors and predictive analytics may be a useful tool to help reduce workplace accidents. An additional benefit is potential insurance and health care savings.

In the age of the smart factory, manufacturing customers are looking for solutions that enable better connectivity to meet their needs. These solutions can bring data to a central hub that can then use artificial intelligence and advanced analytics to enable data monetization, predictive maintenance and servicing.

An example is a German manufacturer that has been successful as an early adopter of technology to develop the smart, connected machines that reshape the factory floor. The machines helped customers with operations in far-flung global locations discover patterns of problems and address them on a systematic basis.

Questions to consider

- ▶ What technological solutions can help our facilities run more efficiently?
- ▶ Are there ways to enable workforce flexibility that can meet the needs of both the company and its workers?
- ▶ Is our real estate footprint optimal and can we address costs by revisiting facilities contracts?

2 Optimize capital structure

Economic and industry cycles can happen, often with little warning. Being prepared going into an uncertain period or downturn can preserve and even increase value for all stakeholders. Conversely, lack of liquidity and limited debt covenant flexibility can often lead to pain points and loss of value.

A comprehensive capital structure review can help identify areas for improvement and more closely align desired flexibility with corporate strategy, as well as prepare for downside scenarios.

Steps companies should consider include:

- ▶ Modifying financial/restrictive covenants
- ▶ Increasing revolver size
- ▶ Terming out revolver fundings
- ▶ Approaching new financing markets, such as alternative capital providers and different international markets
- ▶ Reducing reporting requirements
- ▶ Evaluating tax consequences

It remains critical, whenever possible, to optimize the balance sheet and approach the financing markets from a position of strength. CFOs and other executives should assess alternatives early, establish a plan and approach markets when financial performance and market conditions are supportive, rather than just when needed.

At the same time, the importance of evaluating the tax considerations in advance of any capital structure changes to avoid unintended consequences cannot be overstated. This will also help the organization remain compliant, mitigate risk and reduce administration costs.

Of course, not every company will come at this from a position of strength. For example, EY teams helped a US-based diversified industrial business to quickly negotiate interim flexibility in its balance sheet as it faced imminent pressure from its banks. This allowed it the time to put a turnaround plan in place, divest some assets and cut costs to lower its break-even level. This restructuring was executed in one year, leaving the company better positioned for the next downturn.

There are several additional strategies that advanced manufacturing companies can consider today to be better positioned for the next recession or for other disruptive events. Of course, individual situations will vary. A company dealing with a current crisis will need to stabilize before focusing on value creation strategies or longer-term structural changes such as adopting an asset-light manufacturing model or reshaping their geographic footprint.





Manage inventories

Managing inventory is also essential for optimizing working capital. According to research by the [Federal Reserve Bank for St. Louis](#), manufacturing inventories are significantly higher than pre-recession levels when measured as a ratio to sales. There may be several reasons for this, including hedging against supply chain disruption caused by trade disputes, natural disasters and other circumstances. Long-running economic strength has also driven up sales, incentivizing companies to carry more inventory.

But as some warning signs of a slowing economy begin to appear, companies may want to reduce inventory proactively as a way of freeing up working capital.

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Rigorously allocate capital

A formal, systematic capital allocation program is also a key component in optimizing the capital structure. Yet, in a recent EY survey of advanced manufacturing CFOs, only 38% said their company had a formal, systematic approach to capital allocation.

The process needs to be nimble and comprehensive. Companies need to consider all levers of capital allocation, including divestments, acquisitions, R&D and working capital. Rationalization or realignment of legal entity structures may help streamline capital allocation and investment decisions while reducing costs and other management distractions. It is no longer sufficient to set capital spending in October and then let it run for the next 14 months. Companies need to be able to adjust mid-year when opportunities or disruptions occur.

For example, EY teams recently assisted a global steel producer that was facing a scarce resource environment coupled with shareholder and market pressures. EY professionals helped evaluate their capital investment approval process and rebuild their analytical framework for evaluating and prioritizing capital investments.

Then EY teams helped the client implement tools to provide an objective framework for comparing projects, allowing management to hold divisions accountable to capital investment forecasts and returns. This allowed for more consistent and comparable business case submissions, allowing decision makers to clearly and dynamically understand project value creation, risk and prioritization against strategic priorities.

Questions to consider

Companies that take steps today to improve their capital structure will have the flexibility to invest in a downturn and gain market share over competitors who may instead pursue austerity.

In order to optimize the capital structure, companies should ask:

- ▶ Do we have a formal, systematic approach to capital allocation that also allows for mid-year adjustment as circumstances warrant?
- ▶ Are we actively considering divestments as a way to raise capital for other opportunities?
- ▶ Is executive compensation aligned with working capital goals?
- ▶ Does our legal entity structure facilitate or hinder our ability to make capital allocation decisions that maximize our return on investment?

3 Redefine the business model

In the future factory, it may not be essential to own all parts of production. A key question is what pieces of the business model are essential to own and control, and what can be operated better by a partner who may have a more flexible, and lower cost structure.

Manufacturers are constantly challenged with making the decision of whether to adopt an asset-light model and how to do so while maintaining intellectual property and appealing to the end customer. Executives need to regularly review the assets they own and the manufacturing they conduct in-house to determine whether those assets and functions are essential to what differentiates their business.

In both the automotive and aerospace sectors, we have witnessed OEMs divesting large internal manufacturing capabilities to leverage a new owner's ability to achieve labor and other cost reductions. In turn, these savings can be shared with the OEM in the form of lower procurement costs.

Regularly review the supply chain for costs and flexibility

Reviewing the supply chain for cost reduction opportunities and increased flexibility is also key. Companies need to regularly benchmark procurement practices, measure the cost effectiveness of supply chain partners through "should-cost" analysis and determine whether their general terms and conditions provide the highest degree of leverage. An optimized supply chain should take into account the tax considerations arising in relevant jurisdictions and provide flexibility to react to ever-changing global trade considerations, regulatory requirements and tax reform.

Although an acquisition can serve as an impetus to drive increased value and procurement synergies, such value capture should not be limited to one-off events. Technology enablement such as blockchain can also drive increased frequency of strategic sourcing and procurement efforts while increasing track-and-traceability, order accuracy, and quality assurance.

Flexibility is also a necessity. The current trade situations around the globe show how being able to source materials from many locations can help mitigate disruption. Earlier this

year, US-based chemicals company FMC Corp noted that it had utilized a broad base of long-established suppliers, including some that it had not worked with recently, for materials that were temporarily unavailable due to a trade dispute. It also said it would look to manufacture new products in other locations. Other companies have also discussed relocating production or raising prices to mitigate tariff effects.

Having the right model is essential, but that model is changing for many manufacturers.

Questions to consider

- ▶ What manufacturing is essential to my business and what assets can be divested to a third party that would become a long-term supplier?
- ▶ Could a joint venture or partnership help keep operations lean while opening growth opportunities?
- ▶ Does our supply chain give us flexibility, as well as reliability?
- ▶ Are we getting the government incentives that are available when we invest in our supply chain?



4 Reassess the portfolio

Manufacturing leaders need to make informed, data-based decisions on their businesses and offerings. If the businesses no longer fit the company's core, they should be considered for divestment. If there are gaps in the offerings, they need to be filled organically or through acquisitions.

In fact, acquisitions can be essential to filling in gaps in a company's portfolio, vertically integrating less cost-effective components of the supply chain, bringing in workers with in-demand skills, and in some cases, enabling the flexibility to survive a disruptive event. Many smaller manufacturers have been hit especially hard when one of their customers needs to slow or even halt production, as they have no other business to pivot to. Some measure of diversification can be an asset, provided the businesses are truly related. In any acquisition or divestiture, consideration should be given to the tax aspects of the transaction.

Determine if your products address current demands

Advanced manufacturing companies that have successfully restructured still lag companies in other industries when it comes to new product launches and enhancement. In the age of the smart factory, there is more opportunity to address key customer concerns such as connected solutions and products that have less of an environmental footprint. These solutions can bring data to a central hub that can then use artificial intelligence and advanced analytics to enable data monetization, predictive maintenance, and servicing.

In the chemicals industry, environmental concerns and the circular economy are high-profile issues. Designing solutions for customers, such as a recyclable water-proof coating for paper coffee cups that replaces the current, non-recyclable version, is essential.

Chemical maker Chemours is one of many examples of a company trying to actively reshape its reputation, in part by developing new products that don't harm the ozone layer, keep cities cool and make engines more fuel efficient.

Manufacturers that offer solutions to best address environmental and technology concerns can reshape their business into that of a true partner, rather than an interchangeable supplier.

Questions to consider

- ▶ Do we have the best process to assess the opportunity gaps in our business?
- ▶ What products do we need to add to offer essential solutions and become a trusted partner to our customers?
- ▶ Do we have the right data to anticipate customer needs, and the people who understand that data?



Case study

How Honeywell used multiple levers to accelerate growth and expand margins

Honeywell, a diversified industrial manufacturer that makes products ranging from jet engines to building controls to industrial materials, is an example of a company that uses several levers to create value, reshaping from a position of strength.

Among the steps the company has taken were two major divestments that reduced cyclical risk, strengthened the balance sheet, increased free cash flow conversion and simplified end-market exposure.

The company has also realized the customer need for more software-oriented solutions and connected devices, so it created a new business unit in 2018 tasked with selling and marketing the connected solutions. Separately, the company's Honeywell Ventures unit invests in early-stage companies with emerging and disruptive technologies.

At the same time, Honeywell has been more focused on using digital solutions to manage its own costs and on improving efficiency of its own internal process. It has also reduced its enterprise resource planning (ERP) systems from 148 in 2016 to 48 in 2019 and plans to continue to reduce them in the future years. To streamline how decisions are made, it established similar processes and consistent data sets to be used in different geographies.

The company is also reshaping its supply chain, adopting an asset-light model, employing more automation and digitization and hiring and training

people to develop a workforce with the expertise needed to make the supply chain more flexible and capable.

These actions have already paid off for Honeywell, which has outperformed industrial companies, multi-industry peers and the S&P 500 in total shareholder return over the last year, 3 years, 5 years and 10 years. It also improved organic revenue growth to 6% in 2018 from an average of 1% in 2014-16, while exceeding its margin growth expectations and increasing software sales. Lastly, it has increased its available cash, giving it more optionality for acquisitions and capital expenditures while supporting increased dividend payments.

Conclusion

Advanced manufacturing companies can reshape from different perspectives, creating value from a position of strength, preserving value with an operational turnaround or recovering value to restore health when business survival is critical.

The common theme is that those that are focused on reshaping portfolios and investments today are set up for success during a downturn and could come out even stronger.

The **key themes** for executives to remember are:

1. Optimizing the capital structure is essential not just for companies that are restructuring, but also for companies that are thriving. A rigorous focus on working capital and capital allocation are essential for going into the next downturn as strongly as possible.

2. There are several levers to work with on the cost side. Teaming with labor to develop workforce flexibility, assessing all aspects of corporate real estate, pursuing new technologies and automation can all help free up cash to invest in long-term growth initiatives, including the factory of the future.
3. Reassessing business models to take advantage of capital, supply chain flexibility and the ability to scale the business can increase resilience.

A sharpened strategy includes developing the company into a manufacturing machine fit for the future – resilient to change – and competitive.

Contacts

Jeffrey Ficks

EY Americas Advanced Manufacturing
Restructuring Leader
jeffrey.ficks@ey.com
+1 312 879 5761

Falco Weidemeyer

Head of Restructuring Europe,
Middle East, India and Africa
falco.weidemeyer@de.ey.com
+49 6196 996 18335

David Gale

EY Global Advanced Manufacturing
Transactions Leader
david.gale@ey.com
+1 612 371 8482

David Sanders

Principal and Global Advisory Leader,
Advanced Manufacturing and Mobility
david.sanders@ey.com
+1 248 563 6123

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