



Lehigh Business Supply Chain
Risk Management Index

Quarterly Report

3rd Quarter / 2026



LEHIGH | College of
UNIVERSITY | Business

CENTER FOR SUPPLY CHAIN RESEARCH AT LEHIGH



Council of Supply Chain
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LEHIGH BUSINESS SUPPLY CHAIN RISK MANAGEMENT INDEX

Welcome to the **Lehigh Business Supply Chain Risk Management Index Report** developed by the Center for Supply Chain Research at Lehigh University and the Council of Supply Chain Management Professionals.

We launched this index in August of 2020 to better understand the different kinds of supply chain risks businesses face. **Supply chain professionals rated the likelihood that the risk in the 3rd quarter of 2026 compared to the risk in the 2nd quarter of 2026 would likely increase, remain the same, or decrease for 10 different supply chain categories.**

The Lehigh Business Supply Chain Risk Management Index (LRMI) value is a number between 0 – 100, where greater than 50 suggests increased risk, equal to 50 suggests the same risk, and less than 50 suggests decreased risk. **The average LRMI for the 3rd quarter is 69.34, which is an increase from the 2nd quarter, suggesting a higher level of risk in the 3rd quarter of 2026.**

The table below reflects the 10 categories of risk from highest risk to lowest risk when evaluated independently as perceived by supply chain professionals.

If you would like to have additional information about the survey or to participate in the survey, please contact Dr. Zach G. Zacharia at zacharia@lehigh.edu.



Executive Summary

The LRMI Risk Report for the third quarter of 2026 was significantly impacted by the U.S.–Iran War, the blockade of the Strait of Hormuz, and the resulting spike in fuel and diesel prices. Transportation Disruption Risk surged to 87.50—the highest score of any category this quarter and a sharp climb from 71.82 in the second quarter. This surge vaulted it from the middle of the pack to the single largest supply chain concern. Economic Risk followed closely at 83.97, up from 74.07, reflecting fears that surging energy and commodity costs, stubborn inflation, and labor shortages could tip the economy into a recession. Government Intervention Risk rose to 76.92 amid uncertainty over tariff policy following a Supreme Court ruling that struck down major tariffs. Cybersecurity and Data Risk, which had led the index for years, eased slightly to 75.95 but remained the fourth-highest concern; respondents cited AI-enabled phishing, autonomous exploitation of software vulnerabilities, and third-party breaches. Overall, six out of the ten risks increased, driving the average risk index up from 65.74 to 69.34 and signaling a significant escalation in risk for Q3 2026. Interestingly, in a head-to-head comparison, respondents ranked Economic Risk as their top concern ahead of Transportation Disruption Risk, underscoring that both are critical threats this quarter.

Risk Type	2nd Quarter	3rd Quarter	Trend
	2026	2026	
Risk Type	Risk Index	Risk Index	
Transportation Disruption Risk	71.82	87.50	↑
Economic Risk	74.07	83.97	↑
Government Intervention Risk	71.76	76.92	↑
Cybersecurity and Data Risk	76.85	75.95	↓
Supplier Risk	74.07	72.15	↓
Technological or Competitive Risk	65.74	68.99	↑
Customer Risk	66.67	65.82	↓
Environmental Risk	51.85	57.69	↑
Operational Risk	51.36	55.00	↑
Quality Risk	53.18	49.38	↓
Average Risk Index	65.74	69.34	↑

The Risk Index is a number between 0 – 100.

The further the number is from 50 the greater the level of risk.

The arrow indicates whether the risk is increasing or decreasing in comparison to the previous quarter.

Did You Know?

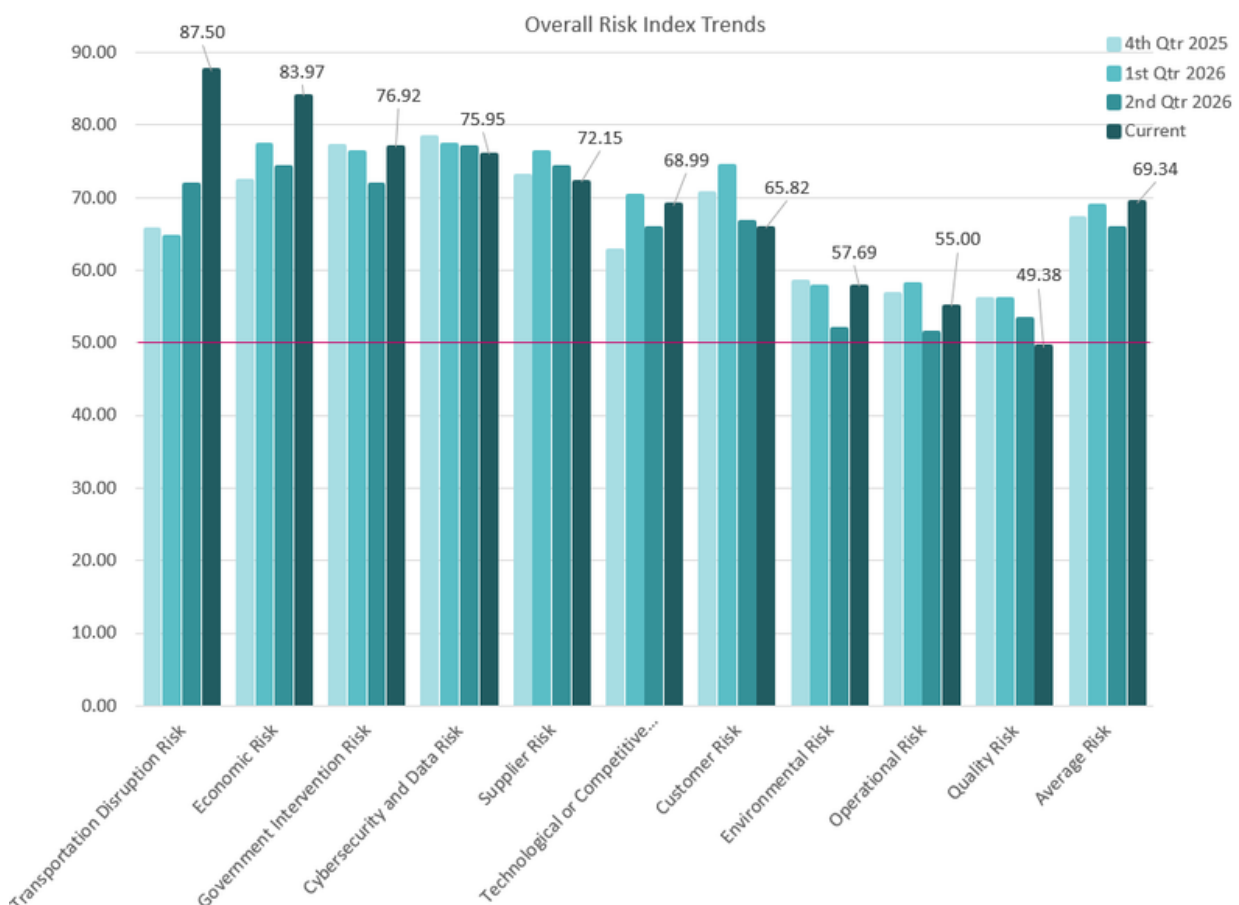
The Lehigh Business Supply Chain
Risk Management Index for the
3rd Quarter in 2026 is

69.34



LRMI Risk Index Over the Last Year

One of the advantages of regularly examining supply chain risk is to consider how these risks change over time. The table below shows the changing levels of risk across the 10 different areas of the supply chain this last year. It is also insightful to see that some areas of the supply chain are consistently seen as high risk and other areas of the supply chain are seen as lower risk over the same one-year time period.



Four Biggest Risks in Head-to-Head Comparison 3rd Quarter 2026

(Respondents are asked to compare across all 10 risks simultaneously, instead of rating one risk at a time.)

1. Economic Risk
2. Transportation Disruption Risk
3. Government Intervention Risk
4. Supplier Risk

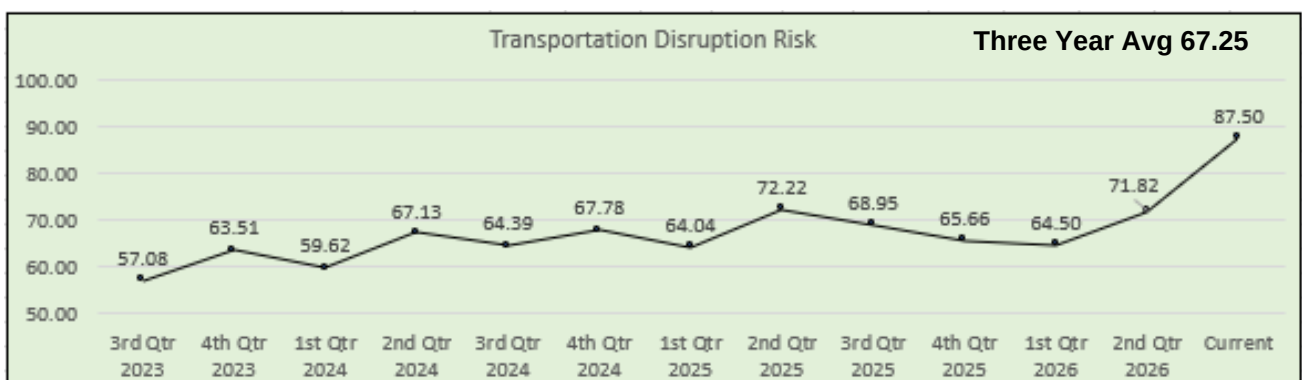


01 Transportation Disruption Risk

Some examples are: fuel prices, driver shortage, infrastructure and demand volatility.

Selected Comments:

- Transportation disruption risk is expected to remain elevated or increase if geopolitical tensions persist. Ongoing conflicts and regional instability can drive up fuel costs, particularly for gas and diesel, leading to higher transportation and logistics expenses. Additionally, critical trade routes and shipping channels may face operational disruptions or capacity constraints, creating further supply chain challenges. These factors could lead to longer lead times, increased costs, and reduced reliability across transportation networks, potentially impacting business operations and customer service levels.
- First-quarter shipping demand has surged by over 20%, exposing a critical underlying freight capacity shortage. While geopolitical conflicts may delay the full impact of this shortage until 2027, the risk remains imminent. Additionally, elevated fuel prices continue to pressure margins, particularly regarding uncompensated empty/deadhead miles.
- Costs for offshore products are expected to rise due to higher fuel prices affecting Indian manufacturing, alongside possible volatile feedstock pricing for petroleum-dependent goods. This global volatility is driven by the conflict between Iran and the U.S., during which the blockade at the Strait of Hormuz triggered multiple force majeure events between March and May.
- Costs are up, and people are leaving due to long hours and consolidation. International shipping is a concern with jet fuel shortages pending.
- Transportation disruption risk will increase due to: (1) fuel prices amid global uncertainty, (2) driver shortages caused by government safety compliance enforcement, (3) declining highway infrastructure, and (4) a K-shaped economic recovery and shifting consumer spending.

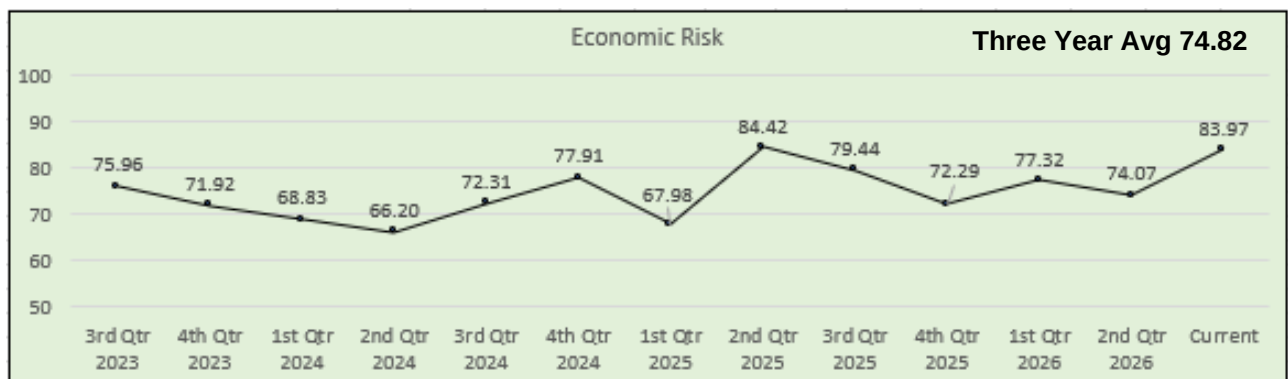


02 Economic Risk

Some examples are: increasing energy costs, commodity price volatility, labor shortages, sudden demand shocks, global energy shortages and border delays.

Selected Comments:

- Economic risk is expected to remain elevated but relatively stable in Q3 2026, driven by ongoing commodity price volatility, energy cost pressures, labor market constraints, and transportation disruptions. While global supply chains have improved compared to previous years, uncertainty in demand patterns and regional border delays continue to pose operational challenges. These factors may impact procurement costs, lead times, inventory management, and overall supply chain performance.
- The exponential growth of AI and data center infrastructure is accelerating energy and water consumption, introducing severe resource scarcity and economic risks.
- The ongoing war with Iran and the resulting disrupted oil flow are increasing economic risk, with the recent U.S. Consumer Price Index (CPI) at a 3.8% annual increase and the Product Price Index (PPI) in the 5-6% range.
- Risk is expected to remain the same in Q3. Managing economic risk is part of doing business and being responsive.
- Economic instability and uncertainty are increasing due to AI bubble fears, leading many enterprises to look for savings opportunities. This environment is also an opportunity for AI vendors like us to drive operational cost savings.
- Even though inflation is stabilizing, industrial energy costs and prices of commodities vary unpredictably. Combine that with ongoing warehouse labor shortages, and the baseline cost to operate is highly vulnerable to sudden economic shifts.
- The shock waves from both oil prices and other derivative products may already be driving an inevitable recession.
- Debt is increasing at an alarming rate.
- The U.S. and Israeli war on Iran is threatening to "crater" the global economy.

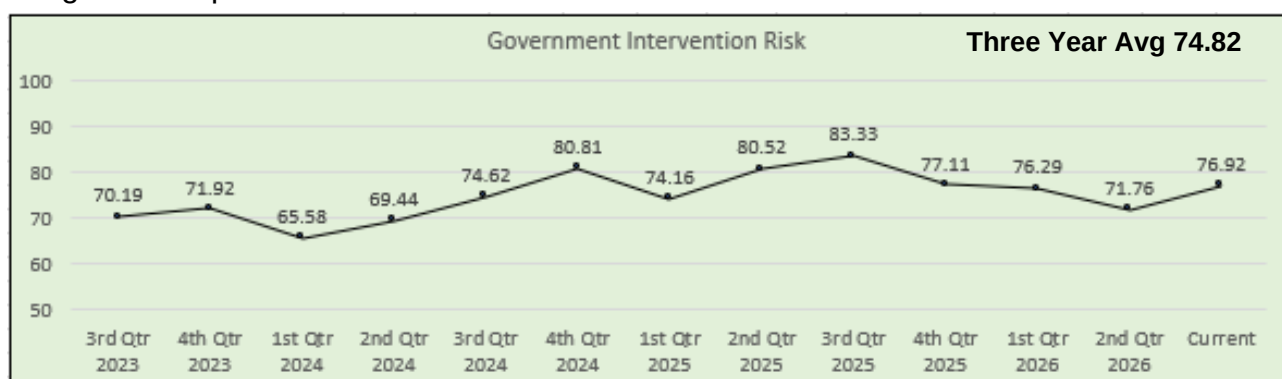


03 Government Intervention Risk

Some examples are: new regulations, tariffs/trade wars and governmental restrictions on source material, methodologies or technologies.

Selected Comments:

- Government intervention risk is expected to increase in Q3 2026 due to ongoing geopolitical tensions, tariffs, trade restrictions, and evolving regulatory requirements. Organizations may face higher sourcing costs, supply disruptions, and compliance burdens resulting from export controls, sanctions, and localization policies. These factors could impact material availability, supplier performance, and overall supply chain resilience.
- Risk remains very high - U.S. import tariffs are highly unpredictable and fluid as the administration tries to impose alternate tariffs to make up for major tariffs removed by Supreme Court action.
- With ongoing global trade tensions, there is a lot of noise about new tariffs on imported raw materials. If we rely heavily on overseas suppliers, any sudden trade restrictions or tariff hikes will directly squeeze our profit margins this quarter.
- Confidence is high that the recent tariffs will expire. As long as new tariffs are not put into place, we expect a decrease in risk.
- Government intervention risk is definitely rising. Between ongoing geopolitical tensions and abrupt tariff adjustments, the rules of global trade are shifting constantly. Concurrently, new environmental regulations and raw material sourcing restrictions are severely complicating long-term supply chain planning.
- A lack of clear policy from the federal government on both consumer and federal funding of K–12 education is leading to issues with budgeting and staffing.
- Public demonstrations ("demos") over the rising general cost-of-living are becoming a regular disruption.

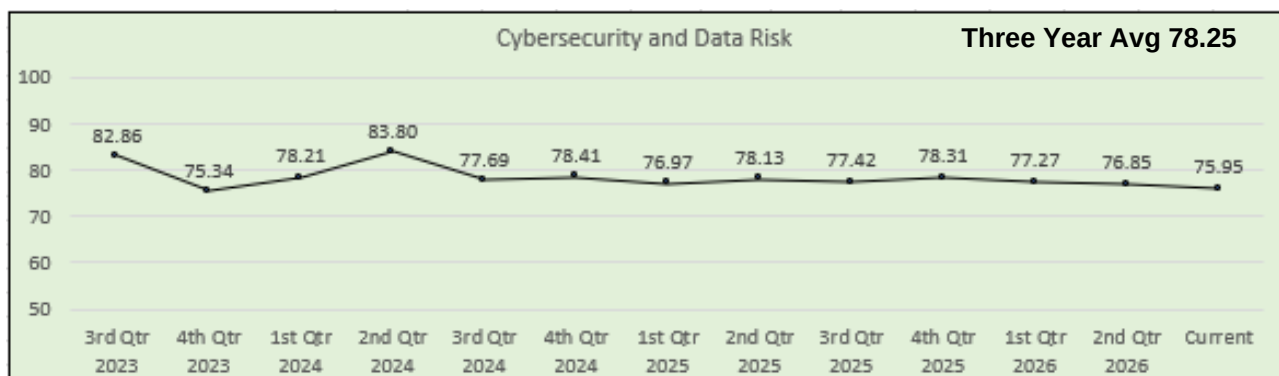


04 Cybersecurity and Data Risk

Some examples are: cyberattacks, data corruption, data theft, system viruses, hardware and software issues and security platform controls.

Selected Comments:

- Cybersecurity and data risk will increase due to the cascading impact of flawed AI outputs being reabsorbed into enterprise networks.
- With the advent of artificially supported cyberattacks, the firms we deal with cannot gear up fast enough to keep pace with criminal behavior.
- We have experienced an escalation in phishing and cyberattacks over the past two months. This threat has reached the executive level, and our CEO is actively directing the response to mitigate the risk. Additionally, we are scheduled to launch an ERP system implementation for the customer in Q3. We anticipate unforeseen challenges during this transition.
- Cybersecurity and data risk are expected to increase during the third quarter of 2026. While advancements in technology and artificial intelligence provide significant operational benefits, they also introduce new cybersecurity challenges and threat vectors. The growing use of AI-powered tools by employees may increase the risk of exposing sensitive company information if appropriate data governance, access controls, and security protocols are not consistently followed. Additionally, cyber threats continue to evolve in sophistication, requiring ongoing vigilance, employee training, and investment in security measures to mitigate the risk of data breaches, unauthorized access, and other cybersecurity incidents.
- Increased utilization of third-party, user-designated software has proven to be a primary entry point for malicious actors. This is how the Instructure/Canvas breach occurred.
- The use of AI, especially in Advanced Persistent Threats (APT) communities, is a big concern. The bad guys don't sleep and are getting better every day.
- Threats from Iran may increase cybersecurity and data risk in Q3 2026.



05 Supplier Risk



Some examples are: single/sole source supplier, suppliers from one geographic location, supplier quality issues and price volatility.

Selected Comments:

- Supplier risk is expected to remain elevated during the third quarter of 2026. Ongoing geopolitical tensions, trade restrictions, and regional instability may disrupt supplier operations and transportation networks, potentially affecting the availability of critical materials and components. These conditions could lead to supply chain interruptions, longer lead times, increased costs, and reduced supplier reliability. Maintaining supplier diversification, monitoring key suppliers, and developing contingency plans will be important to mitigating these risks.
- We expect a decrease in risk as we will be adding more U.S. manufacturers.
- We expect risk to increase in Q3. For instance, if a critical component is sourced from a single supplier located in a politically unstable region, any sudden border closure or factory delay on their end will immediately stall our assembly lines.
- Fuel prices and the war involving Iran have led to demand increases and supply decreases in several sectors of our business, including all commodity-based metals and plastics.
- Sole-source suppliers are the norm in semiconductor materials, and we have been managing this risk for decades. This is nothing new.
- Some suppliers will face insolvency due to their inability to recover tariff fees that the Supreme Court ruled illegal.
- Supplier risk is increasing due to volatility in global trade. Massive tariff changes and geopolitical tensions are forcing companies to rapidly reconfigure where they source their materials. Between these regulatory shifts and fluctuating raw material prices, guaranteeing consistent delivery schedules from suppliers is becoming more difficult.
- Supplier risk is expected to increase due to rising inflation, heightened geopolitical tensions, and escalating logistics costs, alongside disruptive factors such as emerging competitors and new technologies.

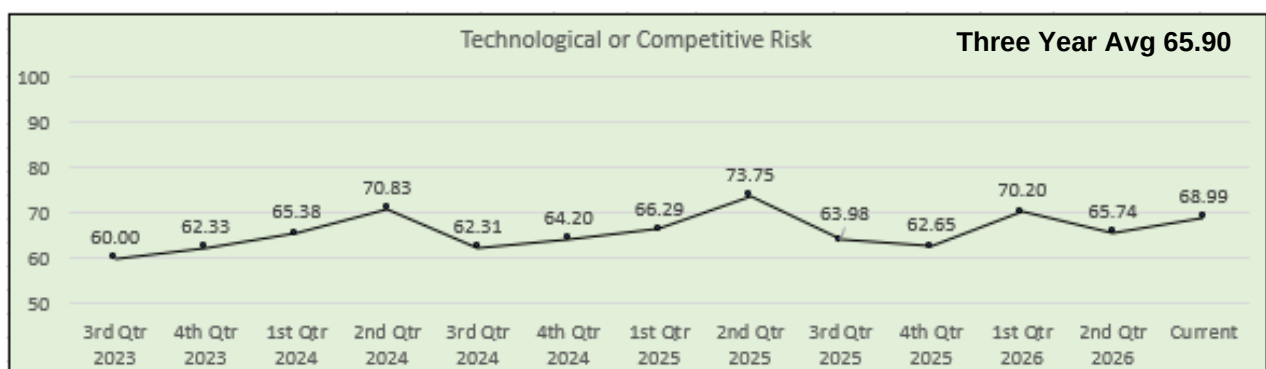


06 Technological or Competitive Risk

Some examples are: disruptive or replacement technologies, introduction of new competitor firms and ineffective or non-existent regulation for competitors.

Selected Comments:

- Technological and competitive risk is expected to remain stable during the third quarter of 2026. While technology continues to evolve rapidly and competitive pressures persist across the industry, the company is maintaining its current level of investment in technology, innovation, and market monitoring. Ongoing efforts to evaluate emerging technologies, improve operational capabilities, and respond to competitive developments are expected to help mitigate significant changes in risk exposure during the quarter.
- The shortage of qualified personnel, combined with the push to automate via AI, will place a severe strain on mid-level producers, who typically lack the resources of larger enterprises.
- AI is projected to replace certain customer-facing positions.
- These risks are expected to rise. Emerging technologies, particularly AI and automation, are transforming corporate operations. Competitors who adopt these tools more rapidly will place pressure on peers to accelerate their own integration.
- The energy crisis has precipitated a move away from traditional petrochemicals to biomass-derived materials.
- The expansion of AI and data centers has led to an increase in embedded errors within their outputs.
- The AI industry is evolving rapidly, exerting pressure on emerging companies from all sides. Large incumbents are investing massively to integrate AI into their products, while new startups seek strategic wedges to disrupt the market.
- For the firms we partner with, secondary competition is decreasing; while this is advantageous for the firms, it is disadvantageous for consumers.
- AI is driving a rapid evolution, making it imperative for businesses to keep pace.

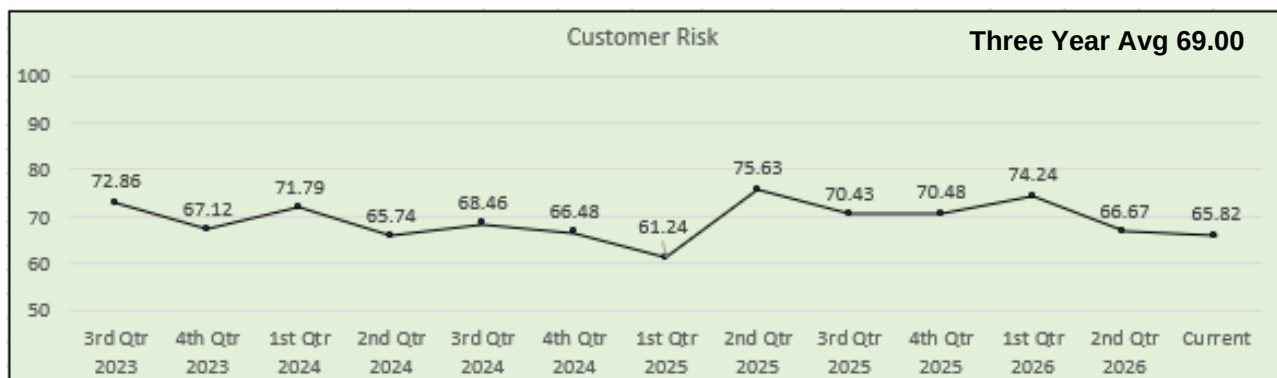


07 Customer Risk

Some examples are: fast changing customer demand, easy to lose customer loyalty, changing customer base demographics, hard to predict customer behavior and hard to service customers.

Selected Comments:

- The sustained decline in consumer sentiment—particularly as tracked by the University of Michigan index—is severely depressing consumer demand, creating an environment that disincentivizes capital investment.
- Short-term spikes in demand combined with industry-wide supply disruptions have necessitated an increase in expedited freight utilization for our operations.
- Concerns regarding fuel prices, inflation, and reduced customer spending will impact the aftermarket sector and, eventually, Original Equipment Manufacturer (OEM) sales.
- Advanced chip packaging processes are the norm for AI hardware and are being widely adopted by fabrication facilities across all technology generations. This rapid surge in demand is straining our current capacity as we hasten to build new capacity in Asia.
- We implemented further price increases as rising raw material costs and remaining tariffs continue to compress gross profit margins.
- Many of our clients are government agencies; the current administration's frequent policy shifts and rapid decision-making cycles present ongoing challenges for operational planning.
- We expect customer risk to remain the same; since the COVID-19 pandemic, customers have increasingly shifted toward a 'Just-in-Case' strategy.
- Continued volatility in fuel and transportation costs may increase product prices, placing additional pressure on customers and their purchasing decisions. In a competitive market, customers are often highly price-sensitive and may seek alternative suppliers offering lower-cost options. As a result, there is an increased risk of customer attrition, reduced demand, and potential market share loss if rising costs cannot be effectively managed or communicated to customers.

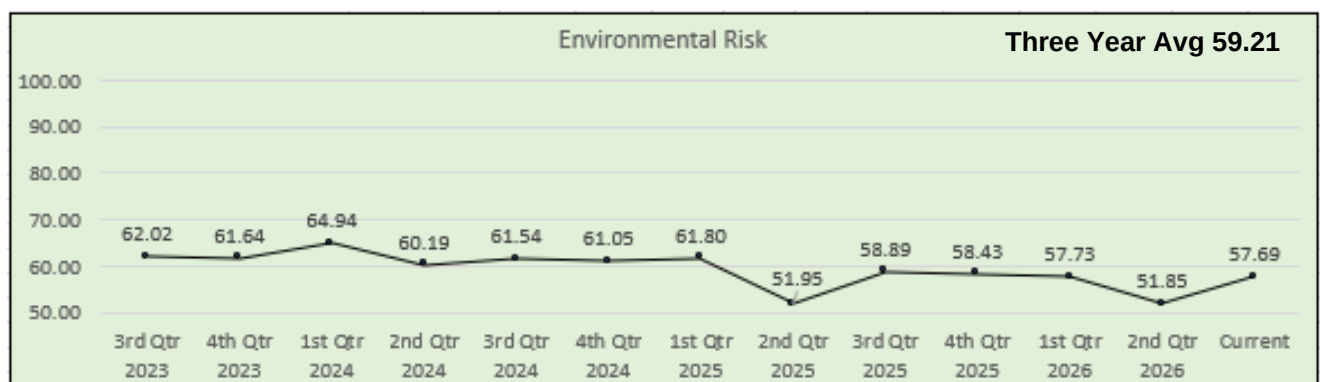


08 Environmental Risk

Some examples are: natural disasters, extreme weather, industrial accidents and pandemics.

Selected Comments:

- Environmental risks stem from climate change and reduced U.S. government regulation, the latter of which may permit unsafe operations—as evidenced by historical infrastructure failures like the Ohio train derailment.
- An anticipated increase in extreme weather events and natural disasters may threaten supply chain continuity.
- The Caribbean hurricane season poses significant disruption risks to companies with manufacturing operations in the region.
- Environmental risk remains high and is steadily escalating as rising global temperatures contribute to increasingly severe weather volatility.
- Current meteorological forecasts project lower overall hurricane risks for the upcoming season.
- Unpredictable variables preclude a definitive forecast.
- Environmental risk is expected to increase in Q3 2026 due to the growing frequency and severity of extreme weather events, including hurricanes, floods, wildfires, and heatwaves. These events may disrupt transportation networks, supplier operations, production facilities, and the availability of critical materials. In addition, industrial accidents and climate-related disruptions could impact business continuity, lead times, and overall supply chain resilience.
- Environmental risk is expected to remain stable. While natural disasters and extreme weather continue to pose localized operational threats, there is no definitive catalyst for a significant escalation next quarter. Organizations should maintain baseline preparedness for weather-driven or site-specific disruptions.

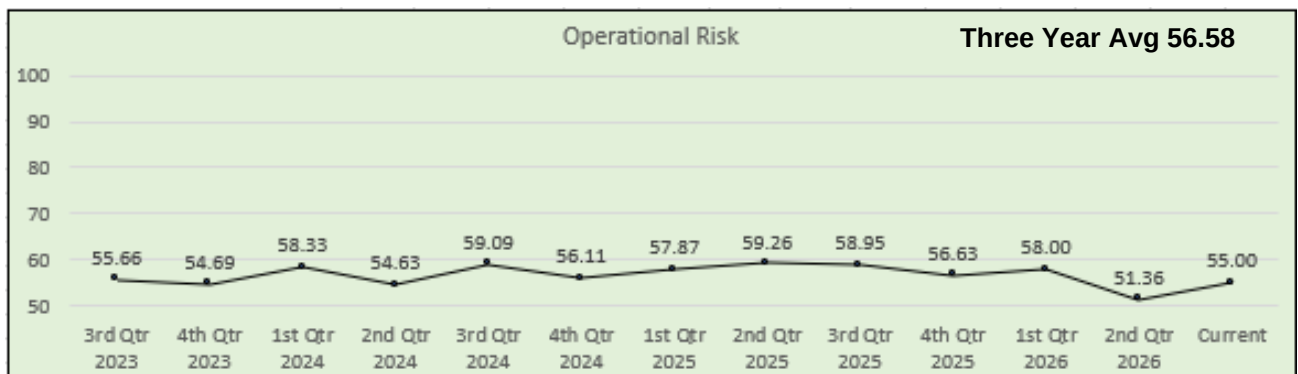


09 Operational Risk

Some examples are: site disasters, product counterfeiting, damage or disruption to physical assets and machine breakdown.

Selected Comments:

- The conflict involving Iran introduces substantial uncertainty into several of our raw material supply chains and has driven significant price increases. Concurrently, ongoing geopolitical risks in China present a strategic dilemma: we must navigate 'localization' to satisfy Chinese government mandates while remaining price-competitive and safeguarding our intellectual property.
- Primary operational threats include escalating material costs, potential labor disputes, and volatile regional events.
- As overall market demand softens, supply chains that are not operating at their margins will gain additional operational flexibility and consistency.
- Most manufacturers have successfully integrated predictive maintenance and asset-tracking technologies over recent years. Because these routine processes are now mature, the industry is not experiencing significant fluctuations in unexpected equipment failures. Consequently, operational disruptions are projected to remain stable this quarter.
- Risks remain high due to a severe shortage of qualified personnel within the labor pool.
- The disruptions caused by the war in Iran, alongside resultant inflationary pressures, are severely straining both our corporate margins and customers' purchasing power.
- Operational risks are likely to increase if the economy does not recover and gas prices remain elevated. Higher fuel costs drive up transportation and supply chain expenses, increasing the cost of consumer products. These additional costs are often passed on to consumers. As inflationary pressures continue, labor unions may seek higher wages to offset rising living expenses, resulting in increased labor costs for businesses. This combination of higher operating expenses and potential labor disputes could disrupt operations and negatively impact business performance.

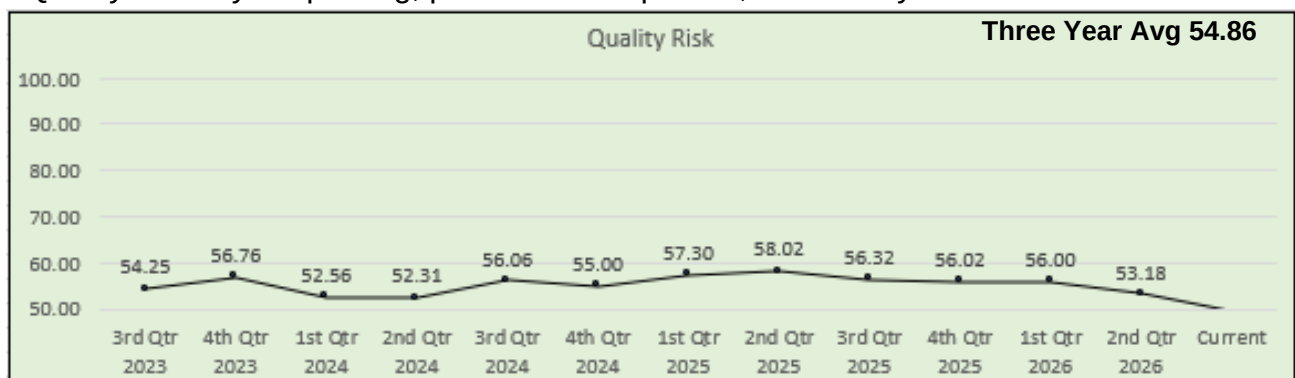


10 Quality Risk

Some examples are: lack of sufficient quality testing, changing quality standards, informal quality control documentation, customer safety issues and product recalls.

Selected Comments:

- Quality control frameworks such as ISO and Six Sigma are thoroughly integrated into U.S. manufacturing operations, ensuring baseline testing and documentation remain stable. In the absence of major industry-wide product recalls, quality-related risks are projected to remain steady entering Q3.
- High employee turnover and a low average workforce tenure continue to pose a risk.
- Following our successful ISO 9001 recertification, incremental quality risk is minimal, as standard operating procedures strictly adhere to these compliance benchmarks daily.
- Quality risk is expected to decrease during the third quarter of 2026. Continued advancements in technology, process automation, and quality control systems are expected to improve product and service consistency. Additionally, the ongoing evolution of compliance and safety standards, coupled with proactive monitoring and continuous improvement initiatives, should strengthen quality management practices and reduce the likelihood of quality-related issues.
- Material shortages necessitate component substitutions, which can inadvertently introduce quality vulnerabilities.
- Supplier and vendor turnover compounds this issue. Consequently, the need to continuously train new hires and onboard lower-skilled personnel remains a primary concern.
- Integrating quality checklists and real-time inspection checkpoints directly into the assembly line facilitates defect detection during active production. Consequently, this proactive mitigation reduces the volume of non-conforming products reaching final distribution.
- Quality is always improving, protocols are updated, and steady communication between



Appendix A

Risk Index Summary

The Risk Index is a number between 0 – 100.

Risk Index ≤ 49 suggests less risk

Risk Index = 50 indicates no change in risk

Risk Index ≥ 51 suggests greater risk

The further the number is from 50 the greater the level of risk.

$$\text{LRMI} = (P1 * 1) + (P2 * 0.5) + (P3 * 0)$$

P1 = percentage of answers reporting an improvement

P2 = percentage of answers reporting no change

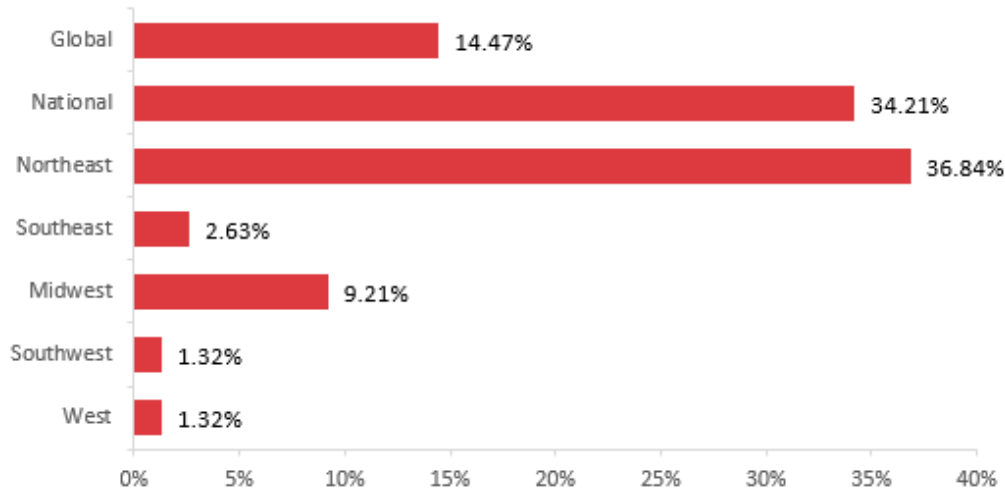
P3 = percentage of answers reporting a deterioration



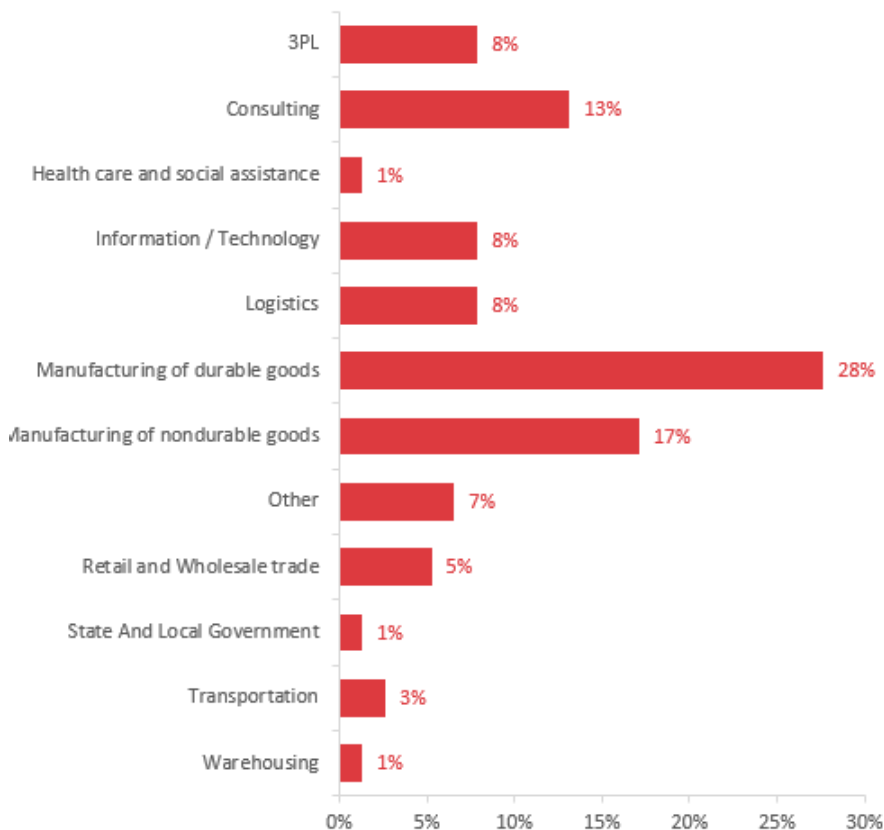
Appendix B

Survey Demographics

Region



Industry



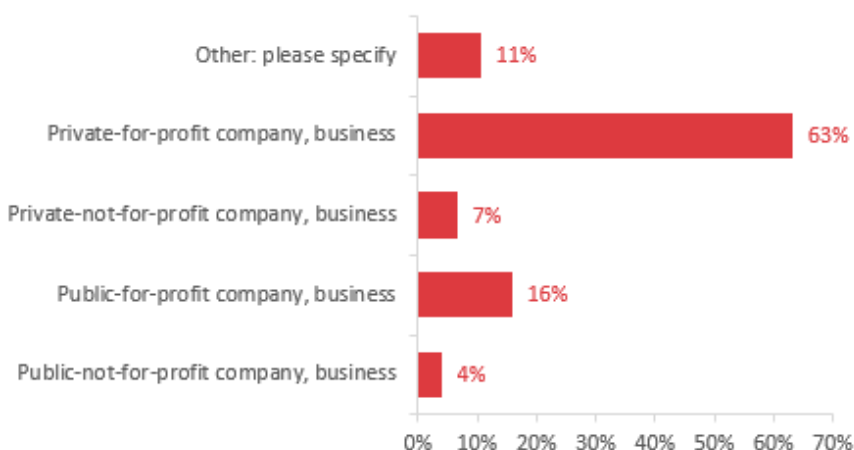
Appendix B

Demographics (continued)

Primary Role



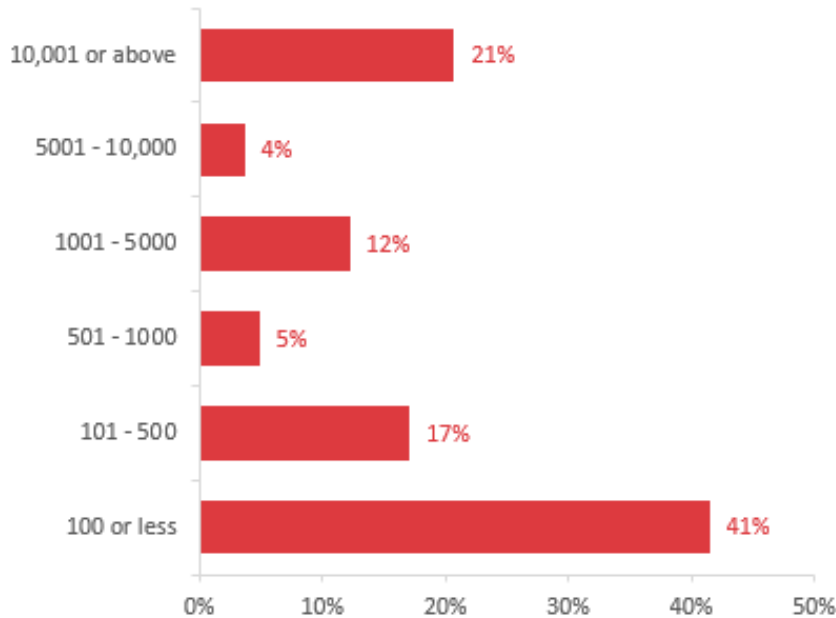
Place of Employment



Appendix B

Demographics (continued)

Company Employee Amount



Work Experience

