SUPPLY CHAIN RISK INDEX™ LEHIGH + CSCMP

Lehigh Business Supply Chain Risk Management Index

Quarterly Report

4th Quarter / 2025

LEHIGH UNIVERSITY | College of Business

CENTER FOR SUPPLY CHAIN RESEARCH AT LEHIGH

CSCMP™ Council of Supply Chain Management Professionals

Educating and Connecting the World's Supply Chain Professionals.™

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 4th quarter of 2025 compared to the risk in the 3rd quarter of 2025 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 4th quarter is 67.05, which is a decrease from the 3rd quarter, suggesting a lower level of risk in the 4th quarter of 2025.**

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 for the fourth quarter indicates a decrease in risk, with eight out of ten risk categories showing a decline. Cybersecurity and Data Risk emerged as the highest risk at 78.31, rising modestly, while other categories declined significantly. This increase in cybersecurity risk underscores the persistent and evolving nature of cyber threats in an increasingly digital supply chain environment. Government Intervention Risk remained the second-highest risk, but did decrease significantly from 83.33 to 77.11, suggesting a reduced anxiety over regulatory uncertainty and trade restrictions. Supplier Risk, while the third-highest risk, declined by the greatest amount, from 85.48 to 72.89, suggesting an easing of concerns around sole-source dependencies and geographic concentration, which have dominated supply chain risk assessments. Economic Risk continued its downward trajectory, dropping from 79.44 to 72.29, reflecting improved conditions around energy costs and border delays. Customer Risk remained relatively stable at 70.48, suggesting continued but manageable uncertainty around demand patterns. The average risk index dropped substantially from 70.32 to 67.05, representing the lowest risk values in the last three quarters.

Risk Type	3rd Quarter 2025 Risk Index	4th Quarter 2025 Risk Index	Trend
Cybersecurity and Data Risk	77.42	78.31	↑
Government Intervention Risk	83.33	77.11	↓
Supplier Risk	85.48	72.89	↓
Economic Risk	79.44	72.29	↓
Customer Risk	70.43	70.48	↑
Transportation Disruption Risk	68.95	65.66	↓
Technological or Competitive Risk	63.98	62.65	↓
Environmental Risk	58.89	58.43	↓
Operational Risk	58.95	56.63	↓
Quality Risk	56.32	56.02	↓
Average Risk Index	70.32	67.05	↓

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.

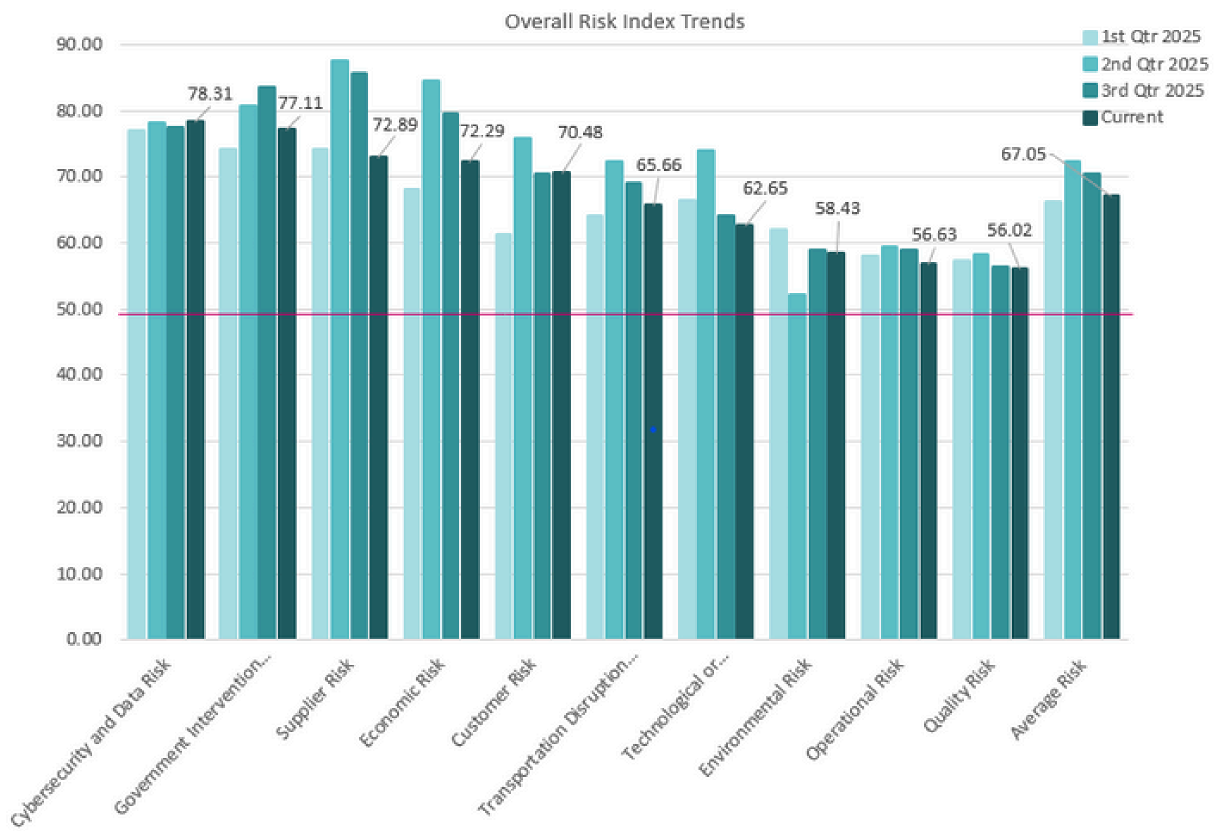
Did You Know?

The Lehigh Business Supply Chain Risk Management Index for the 4th Quarter in 2025 is

67.05

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 4th Quarter 2025

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

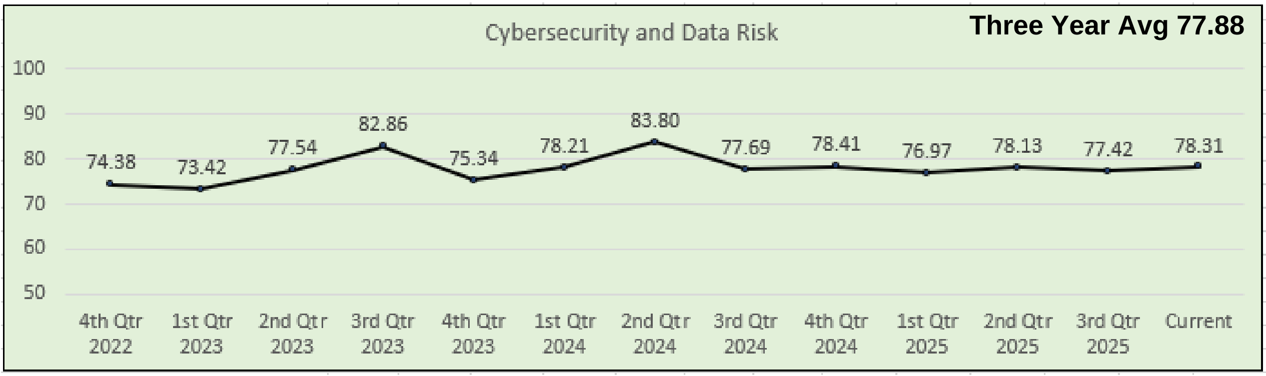
1. Government Intervention Risk
2. Economic Risk
3. Cybersecurity and Data Risk
4. Supplier Risk

01 Cybersecurity and Data Risk

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

Selected Comments:

- This is the most risky of any function due to the expanding digital age.
- This will continue to increase due to AI enabling bad actors.
- With more utilization of AI & ML the potential threats are still unknown.
- It's already at the highest levels seen, and we believe it will continue to get worse.
- I believe that we are beginning to see instability in the Gen-AI business.
- AI has increased the amount of cold (spam) calls and e-mails to try and gather information.
- Geopolitical forces will increase cybersecurity and data risk.
- This is a constant game of cat and mouse between the criminals, scammers, and the enforcement agencies.
- You never know how they are going to strike. We expect this risk to remain constant.
- The digital age has enhanced this risk across all industries and applications.
- This risk is always increasing, especially regarding the unknowns surrounding "artificial intelligence," including what AI truly is and what is out there.
- AI tools and technologies have increased the number of attempts to hack into our systems. The threat is getting more frequent, more sophisticated and more challenging to detect.
- This continues to be a problem both from domestic and foreign actors. It is happening far more than anyone will admit.
- This risk increases as Nation-State actors and APT continue to scale, especially by leveraging AI.
- We expect cyber issues to increase. We have dealt with DDOS already this year and see traffic from spoofed areas related to our website we do not like.
- Foreign intrusion into data systems will increase risk.

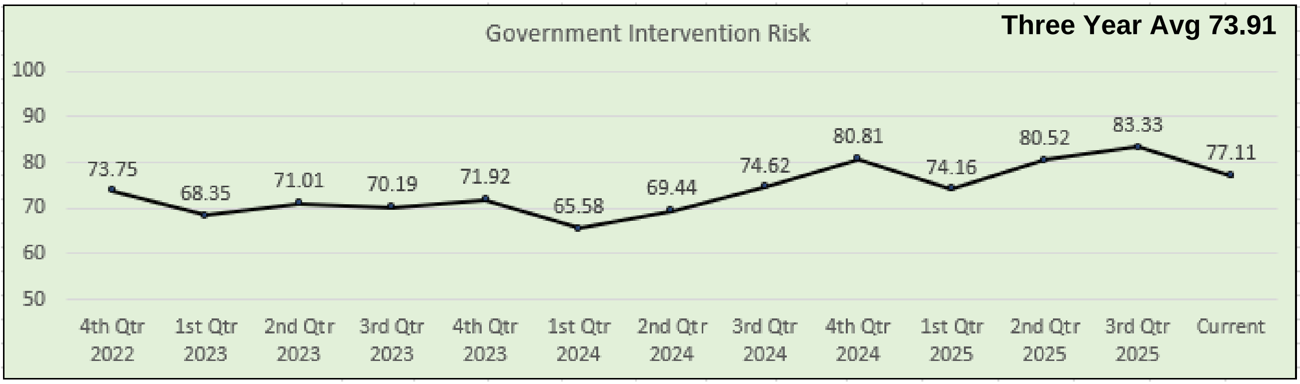


02 Government Intervention Risk

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

Selected Comments:

- Deregulation should be a benefit, but interference at the presidential level may provide a headwind.
- This risk remains very high with the U.S. Executive Branch intervening in all sorts of areas normally outside their responsibilities.
- Tariffs are causing an unforeseen nature to the future of sales and raw material pricing.
- This is the biggest concern right now. The tariff volatility has already caused issues this year and, given the uncertain tariff policies, it is likely to continue to be an issue.
- Tariffs are killing us! We need to get back to a free market!
- Geopolitical tensions define the current age! We are trying to get used to the consistent turmoil (building agility) recognizing that there might not ever be a "new normal."
- The administration is killing small businesses. They do NOT care.
- We expect this risk to decrease. The effects of tariffs should level, and we expect no business interference from GOV.
- We are required to be Cybersecurity Maturity Model Certification 2.0 compliant, but the regulation keeps changing, is expensive, and no one seems to be able to readily tell us what to do.
- Contract Manufacturing is well positioned globally, but the U.S. market is uncertain.
- All the changes currently taking place, I have waited 35 years for. This is going to increase my sales revenue by 30% in the 4th Quarter of 2025.
- While the tariffs were implemented in the second and third quarters, the uncertainty of U.S. government actions and the response from foreign governments continue to make operating difficult.

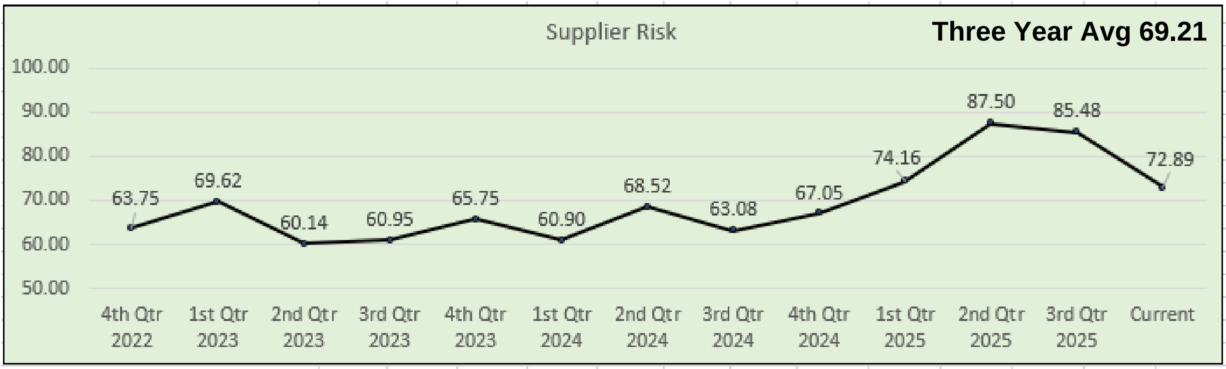


03 Supplier Risk

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 the same. There are price increases due to tariffs, but ample supply.
- Suppliers are changing their manufacturing in response to tariffs.
- There has recently been an increase in activity with expedited shipments. I'm not sure what this means, other than that suppliers were holding tight and demand has crept up.
- Wait times are increasing for steel and similar items. We are a manufacturer and our suppliers are not able to get what we need.
- Onshoring is causing some supply capacity limitations while getting up to speed.
- The tariff situation cannot be underestimated. It's a mess.
- I believe that businesses have adjusted to the shifts in the global market of this year.
- Supplier risk will remain at a high level due to high global tariff/trade instability.
- Tariffs can and will have an impact on risk to both raw goods and finished products.
- Price volatility from suppliers is an issue, as well as the global effects of American protectionism.
- Tariffs are forcing a shift away from high tariff countries and proven suppliers in those markets. Suppliers will fail, and I expect that shortages of labor and infrastructure shortages will occur in the markets of lower tariff exposure.
- International providers are of concern, due to price yin and yang with threats of tariffs on and off. Some foreign providers do not even want to ship to the USA.
- For myself, we have continually increased our sources of supply for 35 years, vetted by me. At the moment, I am expanding product lines, bringing on more suppliers nationally and internationally, and short lead times are important. We are filling the gaps that have left end users without a source of supply as well.
- Global economic uncertainty and tariffs will increase risk.
- We're working around tariff threats, but, so far, we haven't been affected.

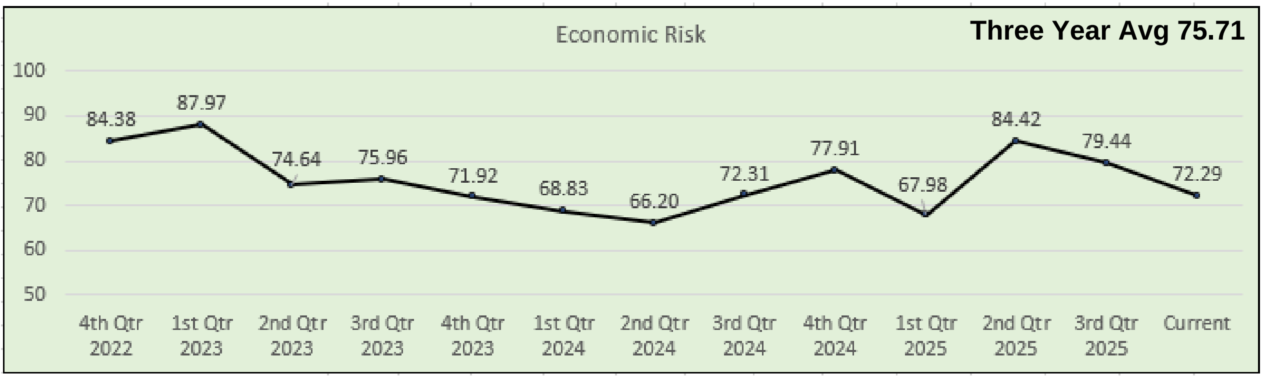


04 Economic Risk

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

Selected Comments:

- NJ energy costs are increasing drastically.
- Watch out for declining labor force due to deportation and slowing birth rates.
- Economic risk remains high.
- Tariffs can and will have an impact on risk to both raw goods and finished products.
- Risk is expected to increase because of Trump.
- The labor market is favorable to business, but we still have problems finding the right skillsets in the current labor pool.
- Commodity price volatility is greatly affected by tariffs at this moment.
- Inflation and disruption will increase risk.
- All of the aforementioned (e.g., increasing energy costs, commodity price volatility, labor shortages, sudden demand shocks, global energy shortages, and border delays) are on managers' minds.
- No potential change foreseen.
- Border delays, as the current administration fights with neighboring countries, will increase risk.
- My company will not be affected at all. In fact, energy has lowered and will stay low. We have already brought in the appropriate sources of supply because this has been the plan for a year, and we are expanding currently. There will be no border delays unless there is a force majeure event, which you can never prepare for.
- Uncertainty is impacting global consumers and suppliers.
- Skilled labor is difficult to find.
- Energy cost, and material and labor cost escalation, will increase risk.

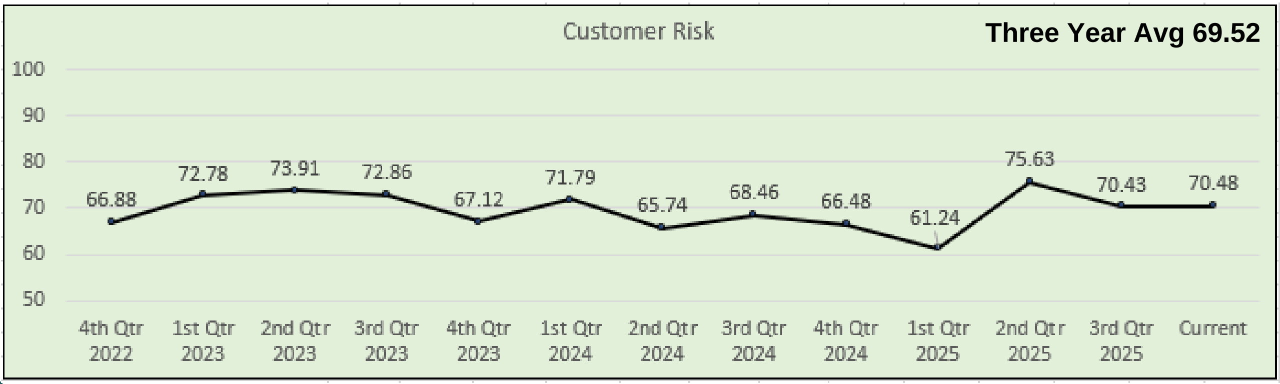


05 Customer Risk

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:

- Customers have indicated that they will not pay for tariff increases, resulting in cancellation of contracts.
- The decrease in interest rates, while positive, will see a rapid heating of the market.
- Customer risk will increase because our company raised pricing with a 2 week warning, which caused a spike in sales. Since a segment of our business is high residential, it is insulated from price increases.
- Uncertainty impacting capital expense plans will increase risk.
- Tariff and economic uncertainty will lead to a decrease in customer demand for manufacturing.
- Changing customer base demographics will lead to an increase in risk.
- Customers in my industry that are heavily invested in China supply chains will be challenged to execute their holiday 2025 business. They likely have not ordered sufficiently for the holiday business demand. They will also take pricing actions that lower their unit velocity. Customers will be challenged, and some may fail.
- Tariffs and reshoring have changed the dynamic of our customer base in recent months.
- There are always force majeure events or disruptions to any market, so you have to forecast daily. There will be no change; that is why my company has adapted and evolved over 35 years to foresee what the consumer requires, so that the manufacturer can be informed. It is important to be aware of financial, technical, and cultural changes because they drive all markets.
- The U.S. economy is 70% consumer spending. Consumer sentiment is slowing.
- Customers in the EU are nervous and looking beyond the USA for suppliers.
- Risk will increase due to customer consolidation, causing a reduction in the marketplace.

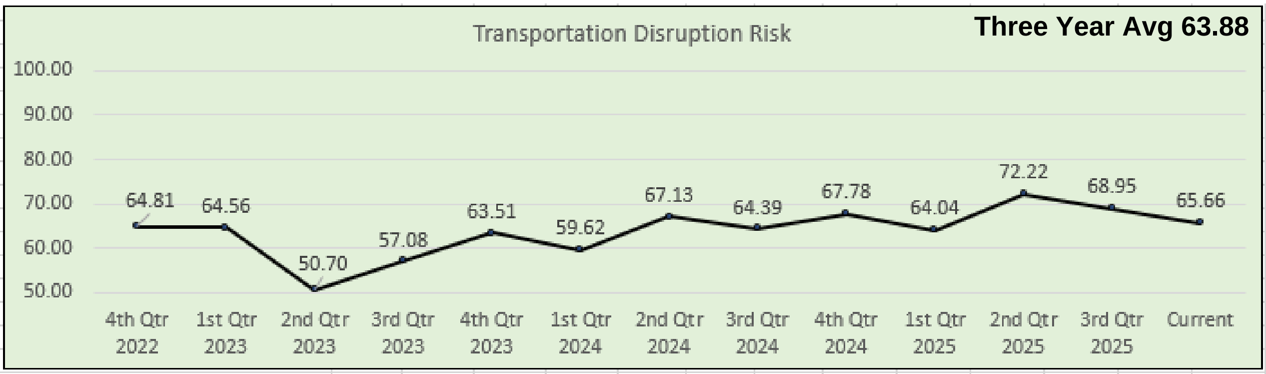


06 Transportation Disruption Risk

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

Selected Comments:

- This is expected to remain at a relatively high risk level due to unpredictable/fluid global tariffs and trade driven by Trump administration policies.
- The crackdown on poor speaking/understanding ESL drivers will have a detrimental effect on capacity. To be clear, I am very happy the crackdown is happening.
- Using foreign suppliers is becoming untenable due to the tariff situation. It would possibly be tenable if tariffs were being used to reduce the government debt, but the debt is growing even faster under Trump.
- I am currently experiencing container shortages from China into Costa Rica.
- Yes, we expect risk to increase. Folks are worried about fuel prices going up as well as deteriorating roads.
- As many of today's truck drivers are immigrants, or of international descent, it is becoming increasing difficult to find carriers for certain lanes, driving increased cost. No one is talking about it, but some drivers are beginning to fear being stopped, detained and deported, even if they are U.S. citizens, because of ICE determinations based on skin color or verbal ability.
- There is a shortage of drivers. Loaded cargo trailers stand idle at trucking terminals causing supply chain delay.
- Threats of a 200% tariff on Chinese goods will absolutely have a major effect on risk.
- Fuel prices, nationally and internationally, have had a major impact on decreasing my company's overhead. This also benefits my end-use Business-to-Business customers with lower pricing. Transportation is the largest cost to all of us. In 35 years, I have never found a disruption of driver shortage.

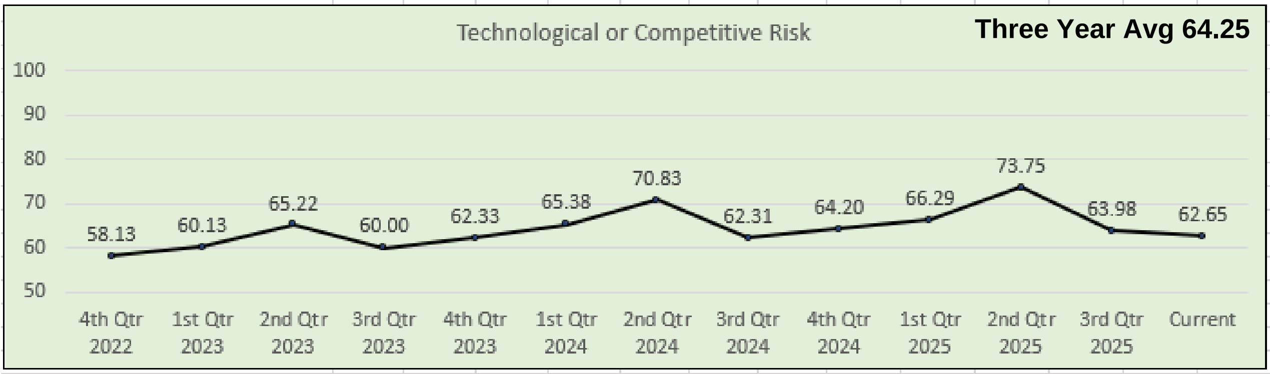


07 Technological or Competitive Risk

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

Selected Comments:

- Firms need to adopt an artificial intelligence strategy.
- More risk is forecasted due to major tech breakthroughs enabled by AI.
- The threats posed by wide-scale adoption of ML and AI are still yet to be tested.
- Figuring out how to further leverage AI will remain a focus area for the foreseeable future.
- Tariffs, tariffs, tariffs.....will cause risk to increase.
- AI is driving a new era of advancement. Processes will be broken to accommodate speed and information availability.
- The rate of change is accelerating and the adoption of AI is a challenge.
- Similar to cybersecurity, there is uncertainty around what AI actually is and what it can do. "AI fear" is driving up reticence.
- AI is a key differentiator for those firms that embrace speedy adoption and gain a competitive advantage.
- There is an increase in demand for the use and deployment of AI technology across our business, as well as from our clients.
- We supply power into the PJM electric grid (PJM is the regional grid operator and wholesale electricity market for 13 U.S. states and D.C.) and are competing to develop power solutions for AI enterprises. Competition in this area is increasing and expected to continue increasing.
- It has been hard to keep up and move forward when plans have had to change due to unavailable base materials. Competition is increasing from around the world. Tariffs have increased counterfeit issues, not removed them.
- We've experienced an increase in customers taking vendored supply in-house.

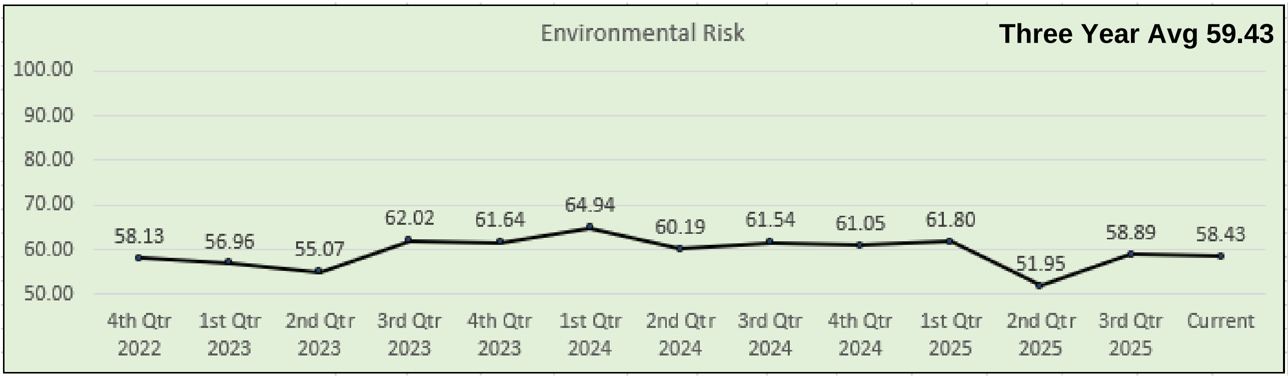


08 Environmental Risk

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

Selected Comments:

- Environmental risk is increasing as climate change/global warming is driving major, severe weather, and this will continue.
- Weather is playing an ever increasing role as an environmental risk factor - it's king tide season in Florida.
- There is potential for a hurricane until November.
- Environmental risk will increase due to climate uncertainty, and how it will be addressed.
- There are concerns about the dismantling of FEMA, and it's unclear what the fall hurricane season will disrupt.
- We're experiencing regulations compliance cost increases.

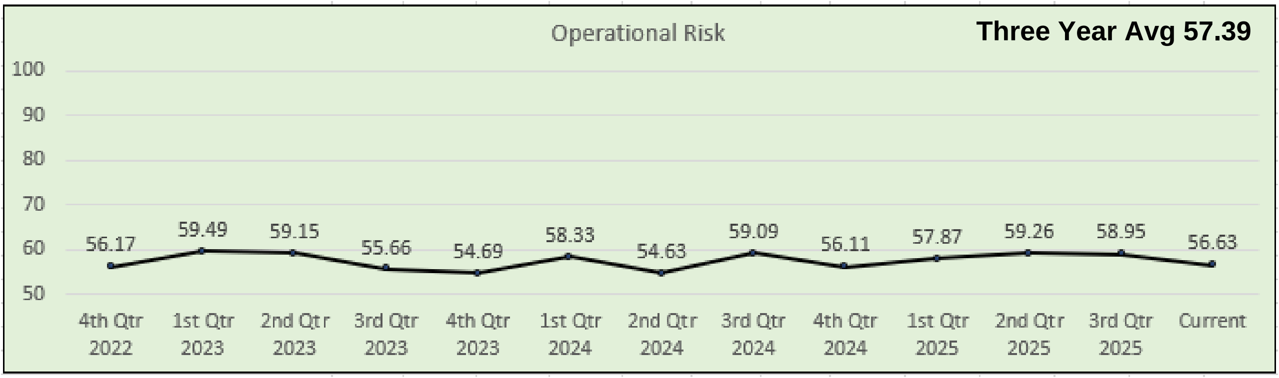


09 Operational Risk

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

Selected Comments:

- The threats of U.S. & reciprocal tariffs pose a potential systemic risk to operations.
- The tariff situation is untenable. There is absolutely no way to plan projects more than six weeks in advance which means that business growth opportunities are at extreme risk, especially when new tooling and artwork for consumer packaging needs to be designed and implemented. There is absolutely no thought in Washington about how small manufacturers can deal with this dynamic situation, as they do not have the resources to bring work into the U.S. on a whim. As a result, we've seen our employment reduced by 50%.
- The war in Ukraine will increase operational risk.
- Operational risk is increased by the threat of a hurricane.
- Risk from operational disruptions has never been mentioned.
- The operational risks we face are consistent and generally known.
- With tariffs, if you have a machine made overseas, your costs may go up as the access to repair parts may go down. Immigration/visa issues may also minimize the availability of technicians or specialized providers. Downtime issues could be an increasing problem.
- My company has been more interrupted by the disruptions of wars and logistics for shipping than anything else. Additionally, the oil pricing has reduced, the current government realignment of fair trade is exceptional, and the government's decrease of regulations will continue the ability to expand and thrive for innovation.
- Hurricane season is at its peak right now. So far, so good; but the threat is always looming.
- The shortage of a skilled workforce increases operational risk.



10 Quality Risk

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

Selected Comments:

- The shifting of supply chains due to import tariffs may cause an increase in quality risk.
- The need to utilize alternative vendors for raw goods can potentially cause a risk to operations.
- Quality risk is not the issue. Tariffs are driving the risk.
- We expect no increase in risk.
- There is a shift of supply chains, from those that are stable and proven to those that that are new and untested.
- We continually struggle with receiving forecasts from customers who expect the products on the shelf and are giving shorter lead-times when placing orders.
- The softening of federal Occupational Safety and Health Administration and general safety requirements among suppliers will increase quality risk.

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.

LRMI = (P1 * 1) + (P2 * 0.5) + (P3 * 0)

P1 = percentage of answers reporting an improvement

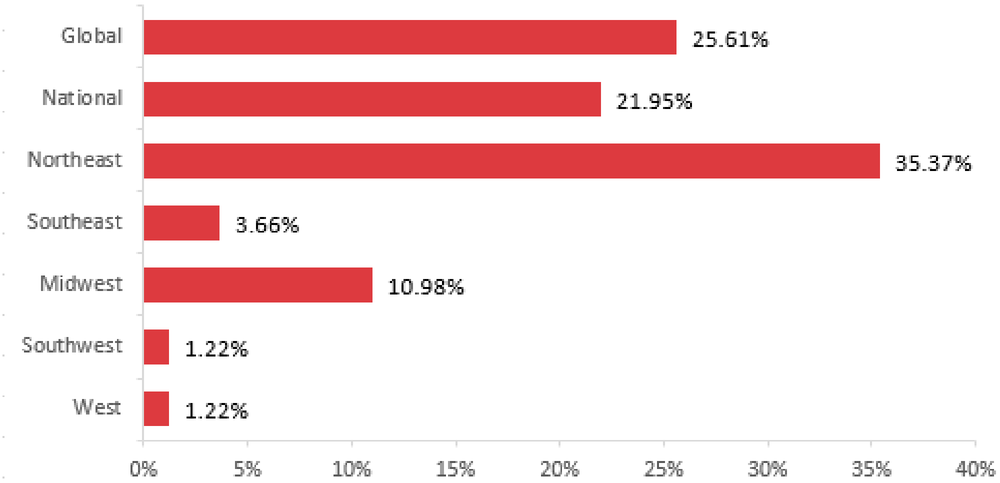
P2 = percentage of answers reporting no change

P3 = percentage of answers reporting a deterioration

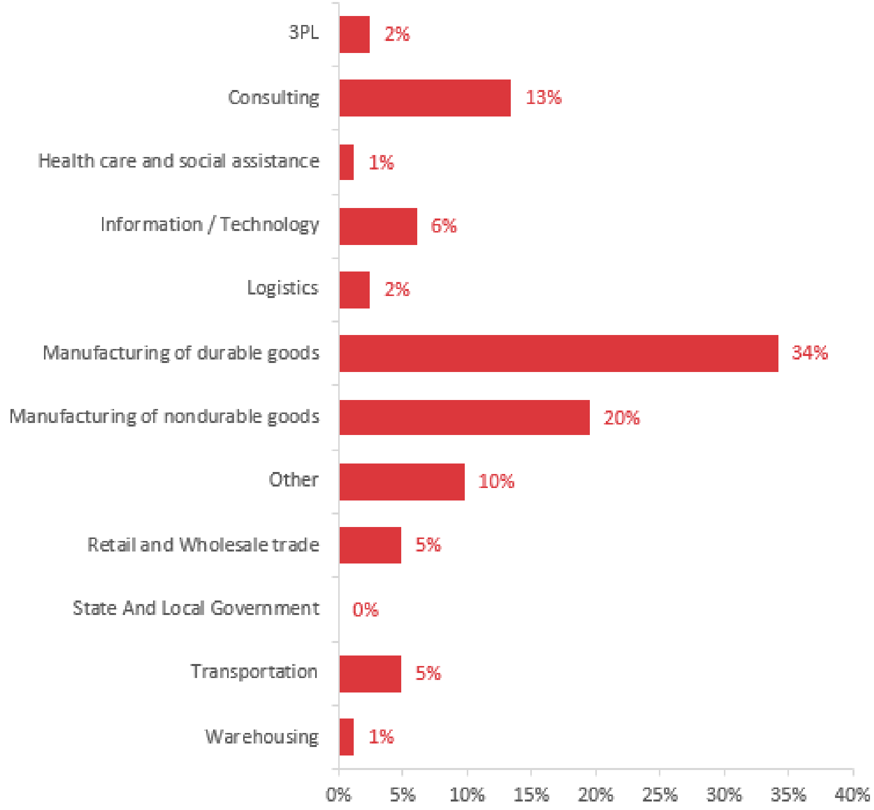
Appendix B

Survey Demographics

Region



Industry



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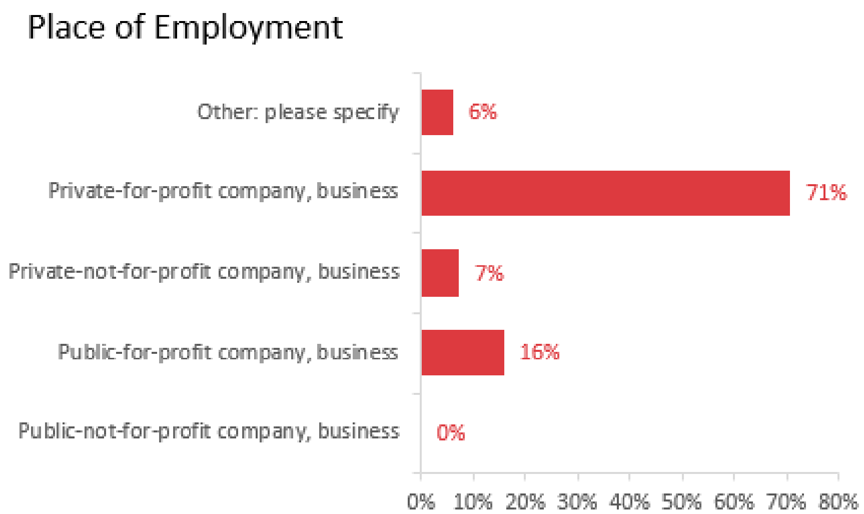
Appendix B
Demographics (continued)



Appendix B
Demographics (continued)