Lehigh Business Supply Chain Risk Management Index

Quarterly Report

1st Quarter / 2026

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 1st quarter of 2026 compared to the risk in the 4th 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 1st quarter is 68.78, which is an increase from the 4th quarter, suggesting a higher level of risk in the 1st 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 for the first quarter of 2026 indicates an increase in overall risk, with six of ten risk categories increasing. Economic Risk emerged as the highest risk at 77.32, up significantly from 72.29, reflecting renewed concerns about macroeconomic conditions, including inflation pressures, interest rate effects, and currency volatility. Cybersecurity and Data Risk ranked second highest at 77.27, down slightly from 78.31, yet it continues to reflect the persistent threat landscape facing digital supply chains. Government Intervention Risk ranked third at 76.29, declining modestly from 77.11, suggesting continued but stabilizing concerns around regulatory changes and trade policies. Notably, Technological or Competitive Risk experienced the largest increase among all categories, rising from 62.65 to 70.20, indicating heightened anxiety regarding innovation pressures, competitive disruption, and challenges in technology adoption. Customer Risk also increased substantially from 70.48 to 74.24, suggesting growing uncertainty around demand volatility and customer behavior patterns. The average risk index increased from 67.05 to 68.78, marking a reversal of the downward trend observed in recent quarters and representing the highest average risk in the past two quarters.

Risk Type	4th Quarter 2025 Risk Index	1st Quarter 2026 Risk Index	Trend
Economic Risk	72.29	77.32	↑
Cybersecurity and Data Risk	78.31	77.27	↓
Government Intervention Risk	77.11	76.29	↓
Supplier Risk	72.89	76.26	↑
Customer Risk	70.48	74.24	↑
Technological or Competitive Risk	62.65	70.20	↑
Transportation Disruption Risk	65.66	64.50	↓
Operational Risk	56.63	58.00	↑
Environmental Risk	58.43	57.73	↓
Quality Risk	56.02	56.00	↓
Average Risk Index	67.05	68.78	↑

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.

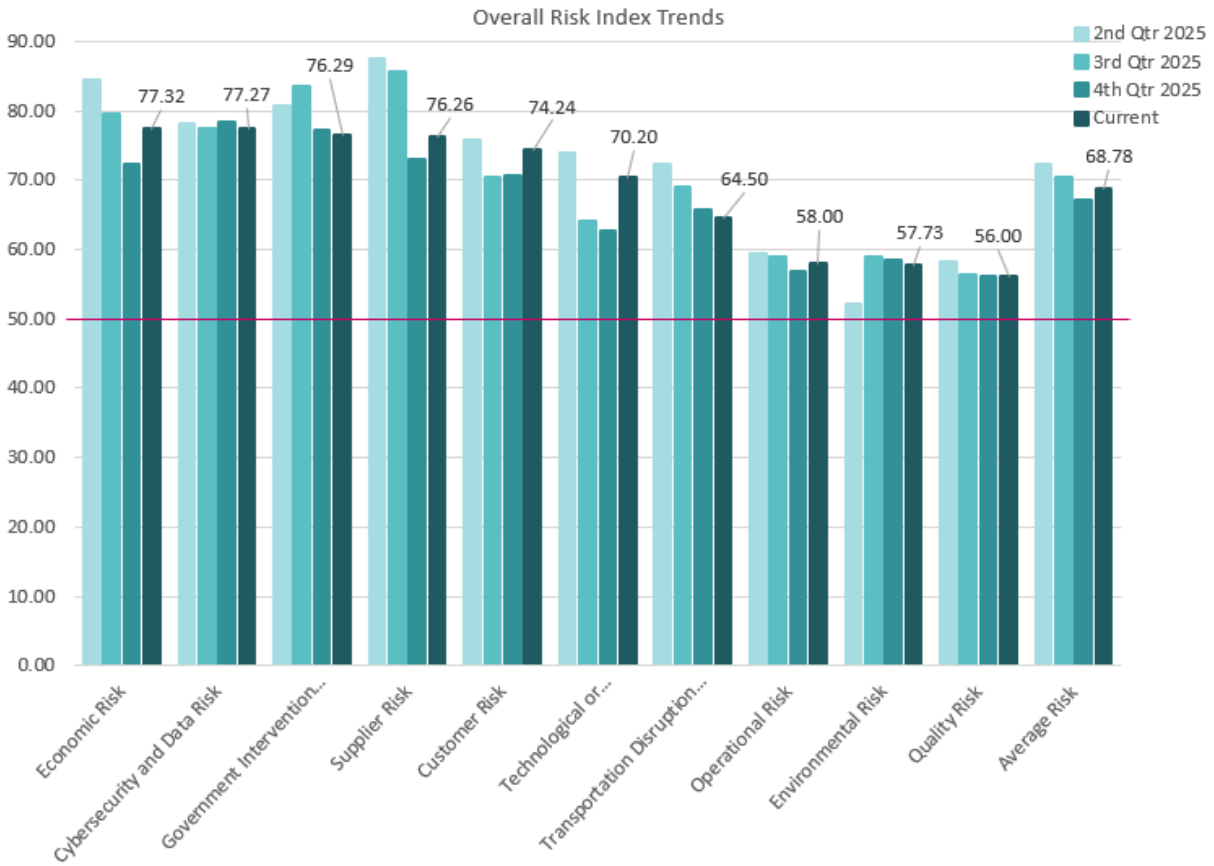
Did You Know?

The Lehigh Business Supply Chain Risk Management Index for the 1st Quarter in 2026 is

68.78

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 1st Quarter 2026

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

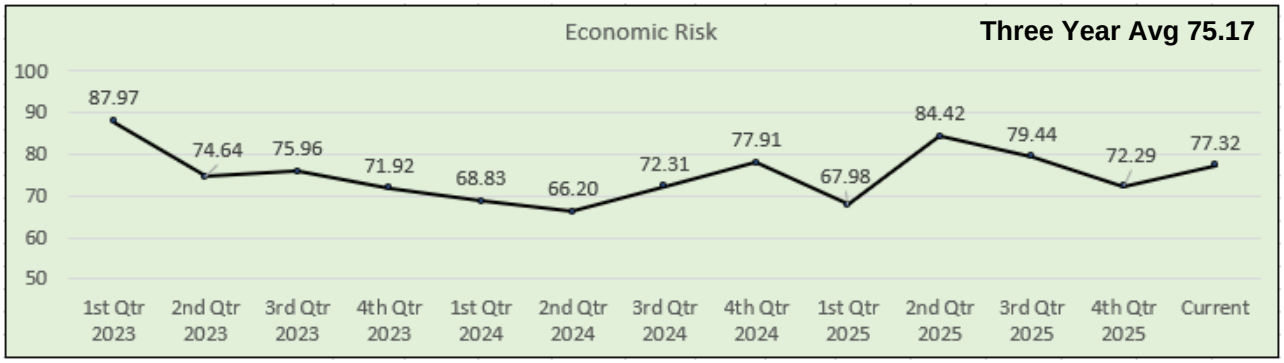
1. Government Intervention Risk
2. Economic Risk
3. Cybersecurity and Data Risk
4. Supplier Risk

01 Economic Risk

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

Selected Comments:

- We expect further market volatility in the first quarter of 2026.
- There is a shortage of trained labor to fill increasing demand by onshoring.
- Energy is lower and will remain that way. All other categories of risk are of no consequence at this time.
- The economy seems to be more fragile.
- Economic risk is expected to increase due to inflation, affordability, tariffs, etc.
- Russia's war in Ukraine could cause significant disruption to global supply chains.
- The divergent consumer on both the high end and low end will cause affordability issues.
- We are worried about the electricity supply and about consumer demand.
- Europe is still not stable. The U.S. economy might be a bit overheated. Most businesses traded down in Q4 2025.
- We are uniquely positioned in the substantial increase in demand regarding the cybersecurity services we focus on.
- We continue to keep a close pulse on geopolitics and have designed our supply chains accordingly over the past decade. We seek out access to hard facts and do not rely on the slop being served up by 95% of our print, tv, and internet/social media. Gaining unbiased insights allows us to make better decisions and our financial performance illustrates this success. Additionally, we do worry about the value of USD compared to other currencies and value stores. We've been seeing more asset trades that don't have to involve large amounts of volatile currency.
- We expect risk to increase due to energy costs, specifically data center effects on both energy usage and investments.
- Data centers are increasing energy costs. We've seen border delays at Laredo, Texas.
- Yes, risk will increase; there are too many demand shocks.

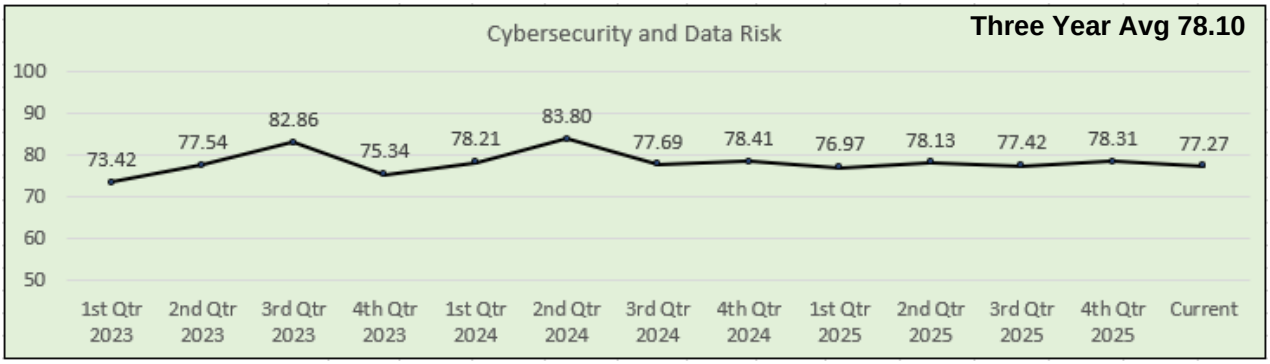


02 Cybersecurity and Data Risk

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

Selected Comments:

- We're experiencing increased cyberattack attempts. We're also undergoing system/software upgrades in Q1 which could potentially cause software issues.
- Although there is an expression of a rise in global risk, for the firms we deal with, the feeling is that they are well-positioned to ward off any threats.
- Risk will continue to increase in our era of total warfare. No data are secure.
- Risk is expected to increase because of Trump policies.
- Botnets continue to increase in effectiveness and frequency (Mirai, Aisuru, etc.)
- A commercial war might lead to cyberattacks sponsored by non-democratic governments.
- Risk will be higher as bad actors use AI to increase the number and effectiveness of cyberattacks.
- There is an increased risk of cyberattacks in the defense industry supply chain.
- We have an extensive program for risk abatement and control. Bad actors and AI-enabled crime will increase. This is a constant source of risk.
- Bad actors are leveraging AI and scaling at an alarming rate. It's not if, but when.
- Cyberattack patterns continue to increase in frequency and in complexity.
- As the digital age becomes more complex, the risk of data breeches increases.
- This risk continues to increase, especially with the probing that China is doing.
- This does not affect my business at all. The manufacturers would be at risk.
- With AI being thrust into every aspect of life, including the workday, there must be a risk to the collection and misuse of data.
- There is more access than ever; how does all of that align to privileged access to those systems that house competitive advantage?
- We have implemented additional cybersecurity safeguards for extra protection.

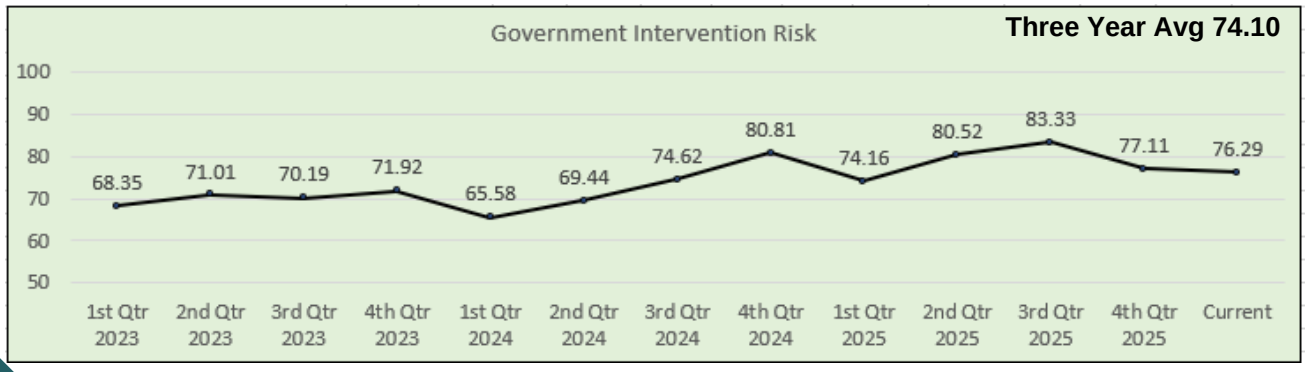


03 Government Intervention Risk

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

Selected Comments:

- U.S. tariffs will stabilize at 20% - and the uncertainty around China will stabilize. I expect a resolution of Brazil and India trade challenges by year end.
- Governments are participating in a great power competition, so more changes are on the horizon. The environment will remain turbulent until power distributions are settled.
- Risk is expected to decrease. Clarification and staying on top of all of the above-mentioned geopolitics with tariffs and such is already forecasted out. In fact, it has brought in more business than ever to the USA!
- The ongoing volatile tariff situation is creating a lot of uncertainty and reconfiguration of supply chain at a significant cost.
- Governments are running larger deficits, which increases the risks of higher taxes and the rise of protectionism.
- Whilst Europe attempts to raise quality standards, it is backpedaling as a result of the U.S. administrations' "light-touch" industrial policies and the Draghi Report.
- Risk remains at very high levels due to extremely unpredictable Trump administration actions, often through executive orders to bypass Congress.
- The uncertainty is a killer. Racial profiling in ICE enforcement is also a killer.
- The idiots who thought "climate change" and "racism" were the biggest threats to the country are starting to drown in their own ignorance. The U.S. government is currently investigating Small Business Administration (SBA) 8(a) Business Development program grifters who rely on passthroughs and kickbacks in the name of fake "equity" as a means to divert and embezzle resources from worthwhile programs that actually increase diversity and inclusion.
- Price increases due to tariffs are becoming permanent.

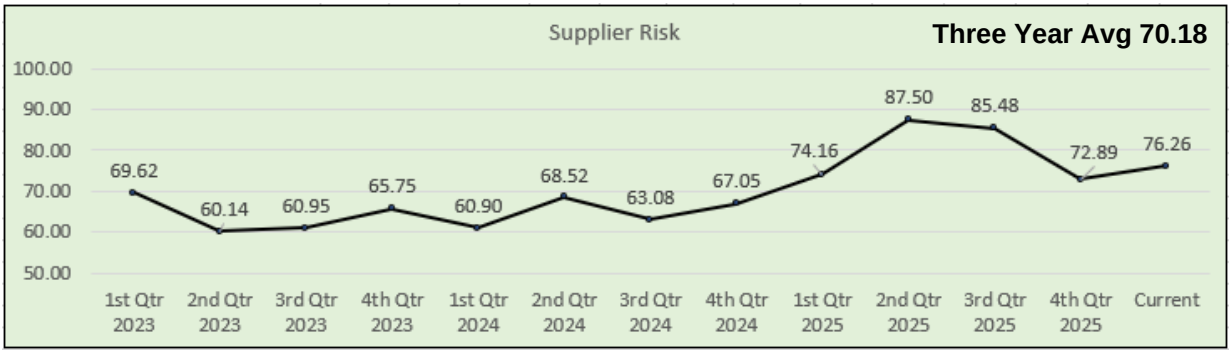


04 Supplier Risk

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

Selected Comments:

- Tariffs will disrupt the supply chain. Reshoring will cause financial challenges for suppliers and they will shift production to private label, as is happening now with China.
- Supplier risk will definitely increase. The companies we work with are unsure as to how their suppliers are going to handle global disruptions.
- Raw material price volatility and delivery schedule inconsistency are big issues.
- Counterfeit is always a problem for a global product. Every supplier has a price increase for every new quote.
- Volatility, due to tariffs and China's control of rare earth metal, will cause risk to increase.
- Import taxes have, according to some shippers and freight forwarders I have talked with, created a chaotic situation. Freight forwarders have to spend a lot more time figuring out what the import taxes are. New and unexpected regulations are a disruption. Import taxes have forced some U.S. importers to change sourcing, perhaps to a different geographical location. All importers are facing potential increased geopolitical shocks and financial and regulatory risks.
- Suppliers are established long term. There will be some financial risk from interference because of tariffs.
- Tariff mitigation has forced our Sourcing Team to diversify our supply chain and supply base, resulting in less risk.
- Tariffs have an impact on suppliers staying solvent; resilient supply chains are at a premium.
- We are reducing our sourcing due to tariffs and global isolationist policies, which are reducing our ability to source properly.
- Here the risk is +/-. Suppliers will be affected by the same factors that affect the downstream businesses.

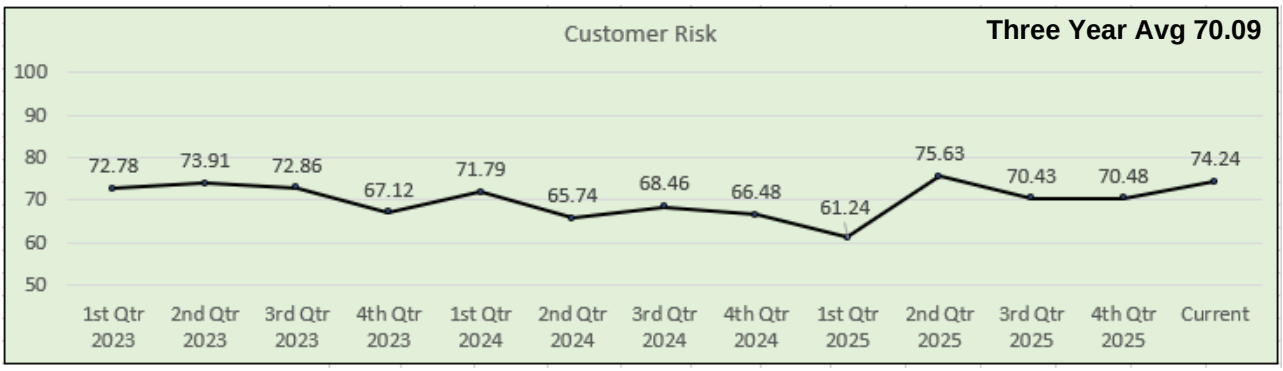


05 Customer Risk

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:

- Continued expansion of e-commerce and increase of major retailers will increase pressure on smaller retail chains.
- Private label expansion is always a threat to our business. It is critical that we remain committed to being price conscious, focus on innovation, and adhere to our highest quality standards.
- Increasing price competition in our field makes this a risk that we are concerned with more than ever.
- Reliance on international customers was impacted by U.S. administration trade policy.
- Customer service is worsening. Consumer credit is at an all time high. All types of insurance and heath care costs are out of control, negatively affecting consumers' disposable income.
- Currently, customers, both current and potential, felt that it was the responsibility of the firm to address customer risk issues and that they did not perceive additional threats.
- Shortened planning windows, due to uncertainty, require faster response times and increase volatility.
- Risk remains at a high level due to a year-over-year (YOY) of 3% and rising inflation, with big increases forecast for most items as huge tariffs paid by U.S. companies are passed through more and more to consumers.
- We're not anticipating a tremendous impact; we feel that our analytical ability puts us in a favorable position to solve existing market challenges, even in a down economy.
- The idea of customer service is lost on companies owned by big capital. Consumers are tired of receiving poor service and are flocking to companies who treat them with basic dignity and respect.

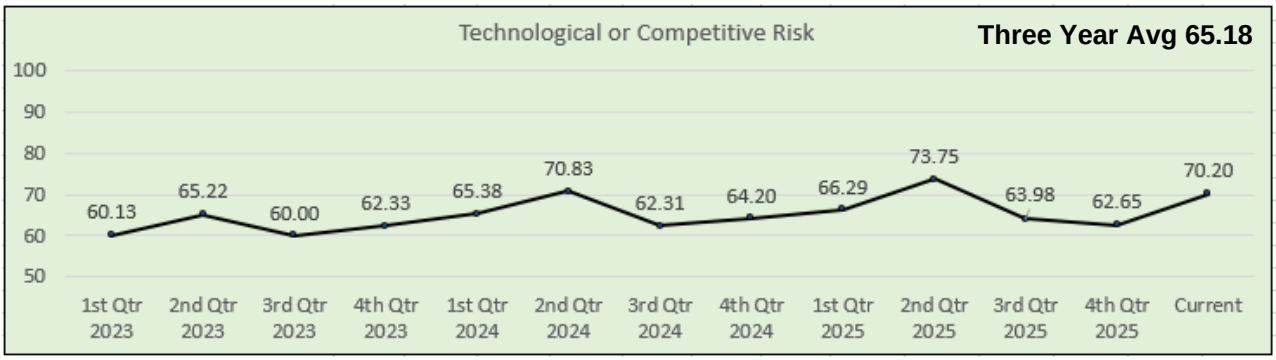


06 Technological or Competitive Risk

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

Selected Comments:

- New competitors may create turbulence.
- All firms face the same technological changes. However, the "newness" and "rapidity" of change is disconcerting; particularly as to its applicability for business.
- The common strategy in manufacturing to combat reduced labor pools is to automate processes. Automation is expensive and requires people with a higher level of skill.
- Risk will decrease as the U.S. becomes more self-sufficient and competitive.
- The European chemicals industry faces heightened threats from Asian competitors.
- Risk will be increased due to the impact of AI advances and unpredictable U.S. trade/regulatory policies.
- The industry will always innovate; discerning what technology is legit and will become adopted at scale is a never ending effort.
- Companies need to adapt to and execute programs with artificial intelligence in a prudent way, which is consistent with their business needs and overall capability.
- AI investment is overloaded and many key resources needed to support it (e.g., the electric grid) are being stressed by the demand, which is negatively affecting the rest of the economy. In addition, we are seeing that consumer AI is generally ineffective and not helpful.
- Risk is expected to increase because of Trump policies.
- The U.S. government (especially from the Biden admin) has purposefully not regulated the biggest bad actors and it is taking a toll in this area. These risks will not be allayed until our government is no longer owned by oligarchs.
- AI continues to reshape the environment. However, we are in a bubble.
- AI is making everybody feel that they are slipping behind with respect to technology.

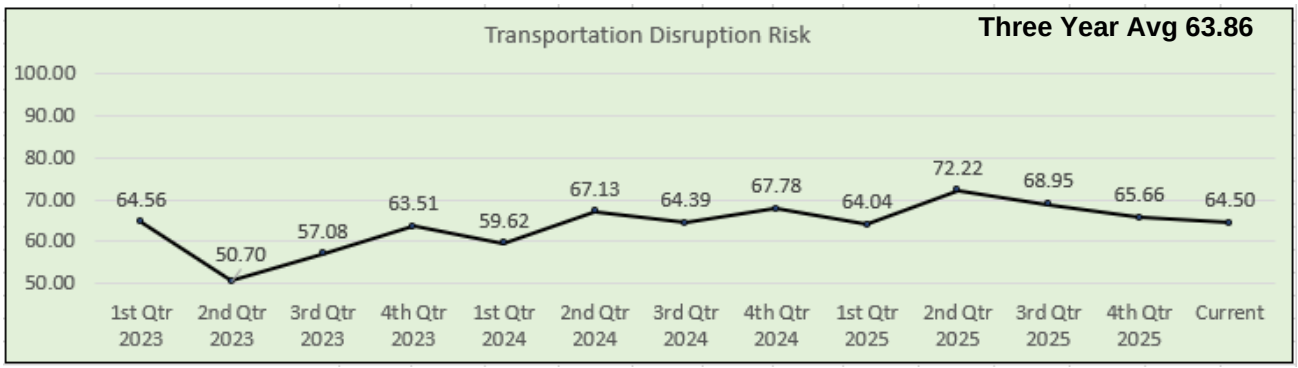


07 Transportation Disruption Risk

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

Selected Comments:

- Transportation is normal. We expect the level of risk to remain the same.
- Firms are worried that fuel prices and employer wages will rise.
- Ocean rates are currently low, but we expect an increase in Q1 of 2026.
- Fuel prices are down in the U.S. and internationally for shipping. Wars, such as the Russia-Ukraine war, coming to an end will help with the logistics of containers. The lead times due to these wars were unbearable.
- Maritime transportation of chemicals is tightening, making export difficult.
- The import taxes and ship taxes could lead to demand volatility. The English language requirement could lead to driver shortages.
- The decreasing labor supply due to immigration deportation policy will increase risk.
- Fuel prices should remain constant. The driver shortage in the Less-than-Truckload (LTL) and Over-the-Road (OTR) sectors doesn't impact us much; the transport market is relatively soft. Labor disruption in transportation remains a constant threat.
- Brazil tariffs are currently at 50%. Importers have paused as many shipments as possible, essentially 'hedging bets" that tariffs will be reduced/eliminated. If/when that happens (I expect it will), shipping capacity will be constrained.
- Middle East shipping routes are still a concern, but are at least more stable now then in the past 12 months.
- There are bottlenecks that will increase complexity. Some that we are concerned about are tied to nation-state level activity; a disrupted supply chain strains the economy.
- Trucking companies are less reliable; there are many delays.
- Weather conditions lead to driver shortages.



08 Operational Risk

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

Selected Comments:

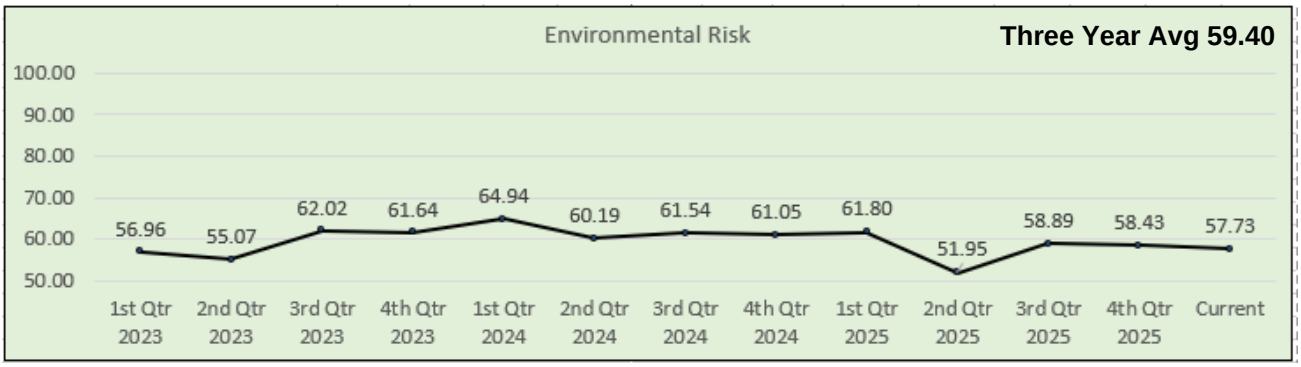
- Risk will decrease as hurricane season is now over for the year.
- Aging equipment can pose a significant operational risk. Many companies did not invest in new equipment during the COVID-19 years, leaving older equipment in place.
- 35 years of experience sourcing raw materials internationally tells us that the level of operational risk will not change. Forces majeure happen all the time, and you adapt. More important factors are lead times, warehousing in the U.S., and lack of raw materials available for small to medium businesses.
- The threat landscape is increasing. More importantly, there are a substantially higher number of operational risks being reported, per our analysis. More risk means more control is needed.
- Tariffs are taking a toll on margins and order entry.
- A key aspect of managing operational risk is in having the flexibility of mind to acknowledging that there are risks, some apparent and others unknown.
- We have not heard any company express a sense of uptick in this area.
- My chemical plant experience suggests that the winter months tend to have more unexpected issues thanks to freezing temperatures.
- We may face a shortage of qualified labor, potentially due to both evolving technology and increasing deportations.
- We are currently conducting some significant construction and expansion activities that are driving this additional risk consideration.
- An upcoming capital project in manufacturing must meet the tight timeline or create significant inventory risks.
- Labor shortages due to ICE raid fear among Hispanic workers in the United States will increase risk.

09 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:

- We will potentially experience weather related issues in Q1 2026.
- Being unable to assess the risk of climate change will increase risk.
- The government is cutting back on investment in this area.
- Risk is expected to increase because of Trump policies.
- Environmental risk is a constant-things happen and you adapt.
- Weather patterns are more unpredictable and seem to have higher peaks and valleys.
- There will be continued increased risk as global warming continues to drive major weather extremes.
- While we got through hurricane season without a hit, we had major fires in California. It seems like volatility is up.
- We keep working towards sustainability. As I heard in a recent meeting, "If you are generating large amounts of pollution and try to justify it with purchasing carbon credits or the like, then you are part of the problem." We take environmental risk into consideration when making sourcing and site decisions and this has been a good strategy for us to allay these actual risks...and we don't have to pay into some grifting scheme to justify any bad deeds.
- There is not enough being done to remediate persistent chemicals such as PFAS (Per- and polyfluoroalkyl substances) in the aquifers. The microplastics damaging the ecosystems need attention.
- Risk will increase due to declining efforts to mitigate.
- I am anticipating a continuation in deregulation efforts that should map to areas that impact us; it's just hard to know what will happen.



10 Quality Risk

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

Selected Comments:

- Established blender, no worries or issues.
- The ISO 9000 series is undergoing significant updates, which will increase risk.
- Continuing improvements in automation should reduce quality risk in the coming months.
- Europe is increasingly raising the quality bar for the manufacturing sector.
- Customer quality expectations are increasing. This becomes compounded with more complex products that require skilled workers to fabricate.
- Those that are still highly dependent on China, despite over a decade of warning, will continue to be affected. Others who have a basic clue about geopolitics and the real situation will continue to perform well.
- As Large Language Models (LLMs) refine ability there will be more and more heavily AI-leveraged outcomes, thereby increasing risk.
- PFAS (Per- and polyfluoroalkyl substances) Regulations allow the discontinuance of Teflon and other products with forever chemicals. My products are affected and alternatives need to be qualified.
- Workers are rushing and factories seem not to be quality checking as often.
- There is a sustained focus on prevention and mitigation of supplier quality risks.
- As boomers age out, getting new, younger associates of the same caliber and experience will be difficult. Additionally, the demographics of a small workforce pool will leave employers with fewer qualified candidates.
- Import taxes could affect quality. Perhaps if U.S. buyers are forced to find new sources for their products, they may have to pay more, or accept lower quality? This is to be determined. Our Port handles a lot of food, so this is an important matter.
- Local suppliers have been improving quality standards.

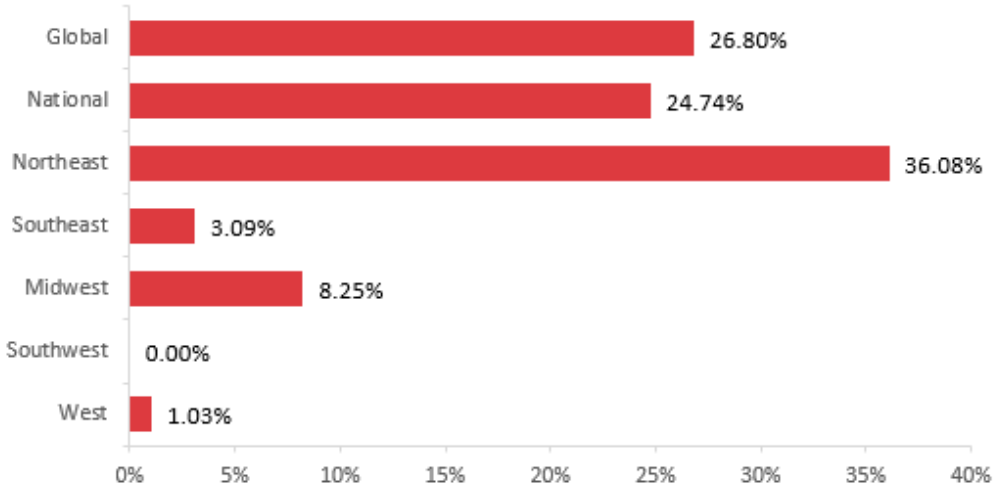
Appendix A
Risk Index Summary

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

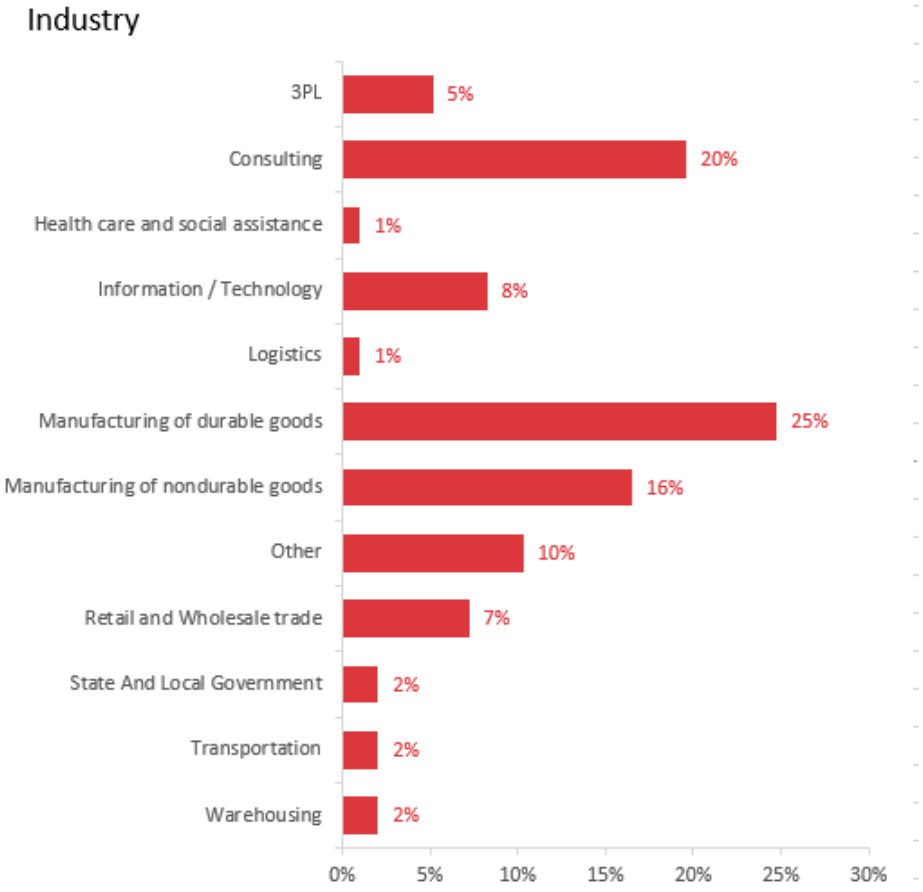
The further the number is from 50 the greater the level of risk.
LRMI = (P1 * 1) + (P2 * 0.5) + (P3 * 0)
P1 = percentage of answers reporting an improvement
P2 = percentage of answers reporting no change
P3 = percentage of answers reporting a deterioration

Appendix B
Survey Demographics

Region



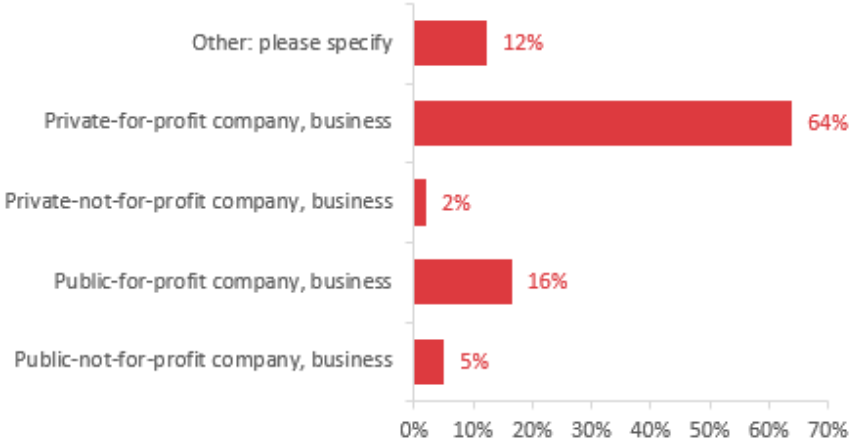
Industry



Appendix B
Demographics (continued)

Primary Role

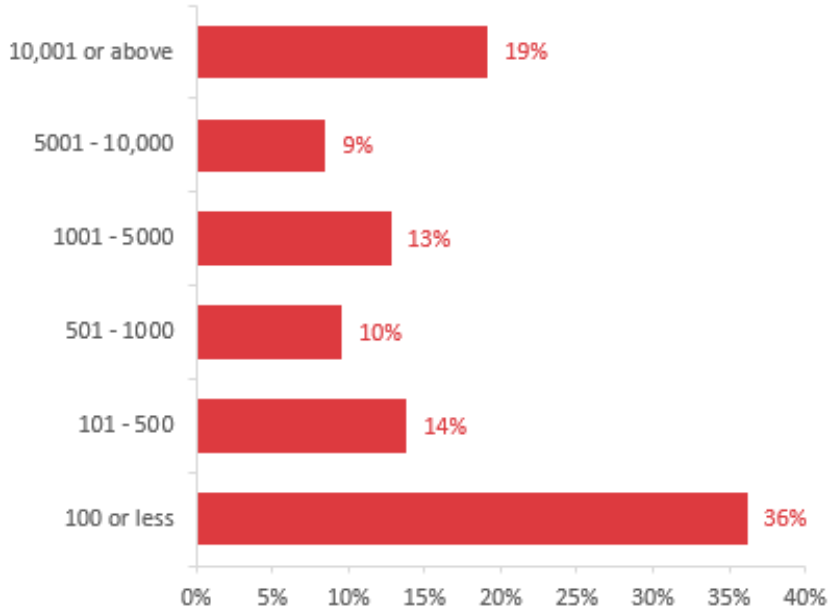
Place of Employment



Appendix B

Demographics (continued)

Company Employee Amount



Work Experience