IlLUminate Blog Transcript: Zach Zacharia on Top 3rd Quarter Risks to Supply Chain

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ANNOUNCER: 00:01	This podcast is brought to you by ilLUminate, the Lehigh Business blog. To learn more, please visit us at business.lehigh.edu/news.
JACK CROFT: 00:13	Welcome, I'm Jack Croft, host of the ilLUminate podcast for Lehigh University's College of Business. Today is June 20th, 2023. And we're talking with Zach Zacharia about the state of the global supply chain in the first six months of 2023 and the biggest threats facing the supply chain for the third quarter of the year, as reported in the latest Lehigh Business Supply Chain Risk Management Index. Dr. Zacharia is an associate professor of supply chain management and director of the Center for Supply Chain Research at Lehigh. Welcome back to the ilLUminate Podcast, Zach.
ZACHARIA: 00:53	Thanks, Jack.
CROFT: 00:55	I'd like to start with something that's been much in the news lately, and that's the gasoline truck fire that collapsed a section of I-95 in Northeast Philadelphia, not far from Lehigh, on June 11th. The state and federal governments are pumping a lot of money and other resources into repairing what is the main north-south highway on the East Coast in record time, with the goal of reopening it to traffic by July 1. I think it's illustrative of something we've talked about on the podcast before, which is that in our global economy, an event that happens anywhere in the world can disrupt the global supply chain. So, I wonder if you could talk a little about why this extraordinary effort is underway to minimize the disruption to the supply chain caused by the section of the highway that collapsed.
ZACHARIA: 01:46	First of all, it's important to realize that I-95 is the busiest interstate in the U.S. and has the dubious distinction on having the slowest interstate section in the country. There's a particular section in New Jersey where the average speed is 29 miles per hour. That is the slowest average speed anywhere in the country for an interstate. It serves nine million trucks per year. $195 billion in freight goods move every year. And of course, I'm not at all talking about the commuter traffic that has to go in there as well. I'm just talking about freight traffic. So yes, this is very critical. Trucks, if they want to avoid this section completely, they'll have to potentially travel about 40 miles to completely detour. Otherwise, they can come right up. And as a matter of fact, yesterday, I just traveled that section. And you go through a series of traffic lights and local roads, and just imagine that you've got these large interstate-traveling trucks having to commute through somewhat local roads is definitely going to add delays. And I think the real key issue is it's going to add costs to the system. So clearly, the federal government and the Pennsylvania state government know that they have to get these things up as quick as possible. And their ambitious target is to get up back and open in two weeks. But if they don't do that, the costs to the economy are huge. So that's just the basic impact.
ZACHARIA: 03:23	To answer your other question, clearly-- and we've talked about this in the podcast in the past, and that is that supply chains are very much interconnected. And you have a typhoon in Japan that had huge effects to the global economy. You had a freeze in Texas about three years ago that really eliminated plastic resin. And plastic resin is a foundation for so much of the manufacturing that goes on. I think we, almost two

years later, have finally gone back to that kind of impact level. So clearly, and of course, we don't want to talk about COVID and all these things, but even simple events can have cascading effects throughout the supply chain.

CROFT: 04:07

We last talked about the supply chain right at the beginning of what was the new year at that time. So before we get into the nitty-gritty of the latest Lehigh Business Supply Chain Risk Management Index—which I'll refer to as LRMI, for short, for the rest of the way—which looks ahead to the third quarter of 2023, I was wondering if you could just give us a kind of short overview of the main events that have transpired in the supply chain over the first six months of this year now.

ZACHARIA: 04:41

Sure. And I think it's important to realize that if you look at the third quarter now-- and as you know that I have companies that are part of my advisory board in the Center for Supply Chain Research, and we talk about these issues. And so they're telling me that we still have labor issues. We still have a bit of the bullwhip effect where people have over-ordered thinking that there is going to be demand. And I think the best example of this is that there have been several companies that have invested in-- let's suggest things like lawn furniture and garden kind of things that last year there was such an increase in demand because people were staying in their house and they weren't necessarily traveling. Well, that demand has somewhat evaporated, and you've got the fact that now a lot of retailers are sitting on a lot of goods that they assumed would sell this year because they were basing it on what happened last year. And so you've got that bullwhip effect. Inflation is still an issue. And one of these new things that are actually happening, and I'm sure you've heard of this, is everyone talks about nearshoring and, a new term, friend-shoring. And by nearshoring, bringing manufacturing instead of remote locations, bringing it much closer to the U.S., and Mexico has benefited a lot from that. And friend-shoring, finding countries that can be viewed as friends of the U.S. that still has lower labor costs.

ZACHARIA: 06:10

Another factor that has become very, very apparent is the new Inflation Reduction Act has brought a lot of growth in manufacturing in the Deep South. In fact, I was talking to one executive who told me that, in some sense, we are taking technology and manufacturing processes that were developed in China and bringing that back to the U.S. They're building plants in Tennessee and Alabama, Kentucky, so on to get access to the U.S. market. The Inflation Reduction Act has really pushed an effort into electric cars, that kind of battery manufacturing, and these kinds of things. So that has definitely sort of increased a growth in manufacturing, which is a really new and surprising trend as we start to bring manufacturing back to the U.S. Another factor I think that's still very relevant as far as my advisory board members are concerned is labor. They're dealing with issues of working from home. In fact, one of our members talked about the fact that there seems to be a bit of a disconnect in the same warehouse or manufacturing location. It is possible for sort of the white-collar workers who are not directly involved in manufacturing and more of the office could potentially stay at home. But it's completely unfair to the people who are actually doing the manufacturing because they have to come to the warehouse or to the factory. And so these are issues that are trending.

ZACHARIA: 07:51

And also, I'm sure you're aware that there has been a real increase in office building vacancies. And this is going to become a real issue. A lot of the people that are on my board have told me that they've gone to a three-day mandatory in-office policy, a

Tuesday, Wednesday, Thursday just so that they could schedule meetings. And they're not really able to go back to five days. But some of the executives I've talked to have told me that that's what they would like to have, but they're getting pushback. And so they're sort of compromising on the three-day aspect. And of course, as you know, the feds are continuing to raise their rates, and it's slowing the economy down. It is working. And I think the consumers are really beginning to think about major purchases as prices keep increasing. But as you know, the inflation rate went down this last quarter. And so that's really kind of good, as far as that goes.

CROFT: 08:51

All right. So let's turn to the third quarter risk index report. And just to recap quickly, the LRMI was developed in 2020 by the Center for Supply Chain Research at Lehigh and the Council of Supply Chain Management Professionals. And as we've discussed on previous podcasts, the risk index is a number between 0 and 100, where greater than 50 suggests increased risk, 50 suggests the same risk, and less than 50 suggests decreased risk. The numbers are based on ratings submitted by participating supply chain professionals on whether they felt the risk for the upcoming quarter, in this case, the third quarter of 2023, compared to the risk in the second quarter would likely increase, remain the same, or decrease for 10 different supply chain categories. So let's start with the average risk, which heading into the third quarter this year came in at 65.18. How does that compare to the average risk in the past couple of years, and what does that tell us?

ZACHARIA: 10:00

So 65.18 is a low risk. For the last three quarters, we were hovering around 65. But just over a year ago, we were at 69.5. And remember, as I had talked earlier, an increase of four points is not a linear increase. Actually, it's a little bit more. It's not necessarily an exponential curve. But the number four is not just an arithmetic increase. So that is significant. For most parts, supply chain managers think that there has been less risk these last three quarters than there was a year ago. And definitely, people are thinking that there is less risk going on.

CROFT: 10:50

For the second quarter in a row, Cybersecurity and Data Risk leads the 10 risk categories included in the index. But it has opened a wider gap on the second risk category, which remains Economic Risk, increasing significantly by five points to 82.86 on the risk index. So what factors go into Cybersecurity and Data Risk? And what are some of the biggest threats that supply chain professionals reported they're most concerned about?

ZACHARIA: 11:22

So the kind of factors we talk about is cyberattacks, data corruption, data theft, system viruses, security platform controls. And I think that, as you know, as more and more people work from home, there is less security from those kinds of remote workers. And so there is a greater risk. And I don't have any absolute evidence to back this up, but there is a sense that the cyberattacks are, in many cases, state-sponsored, with Russia and China being actively involved as opposed to just a bunch of hackers sitting in some basement somewhere. And so now, our companies, our U.S. companies have become very, very good targets. And clearly, the system has made us more aware of these kinds of risks. And companies know they have to invest to try and protect. But as I think you and I talked about, the majority, if not all of these kinds of attacks, only get through because a human being clicked on something that they shouldn't necessarily have. And it was so funny. I actually fell for one of these kinds of tricks that the Lehigh University LTS (Library and Technology Services) actually sent out, and it was a phishing email. And then they forced me to go and watch a video and go through half an hour or an hour of training and all this. But it was done so well.

ZACHARIA: 13:03 And the funny thing was it was a wellness email and said, "Click on here to do this wellness thing." And actually, that was on my to-do list. And I didn't pay attention, and I clicked on the link, and then aha, they got you. And so I'm very much reminded that it's not necessarily that the companies don't have excellent systems in place. They can be bypassed by just an inadvertent choice that a single employee makes.

CROFT: 13:32 Now, Economic Risk had hovered above 80 on the risk index for seven straight quarters from the third quarter of 2021 through the first quarter of this year, peaking at, I believe this is still the all-time high for any category, 90.72 in the third quarter of last year. It remains number two in the new index, inching up just slightly from the previous quarter to 75.96. So what are some of the main factors that go into this category?

ZACHARIA: 14:07 So the kind of factors we look at is increasing energy costs, commodity price volatility, labor shortages, demand shocks, global energy shortages, border delays. So these are all the kind of factors that people consider when they're looking at Economic Risk.

CROFT: 14:26 OK. And even though Economic Risk has dropped a whopping 15 points in just the past year, it obviously remains a concern to supply chain professionals. So what are some of the issues you're hearing about that they see as most threatening now?

ZACHARIA: 14:44 Well, so some of our comments that the people who fill out the survey talked about was inflation, bank failures. We had one person that said that the Fed is being out of touch as they continually try and increase the rates, which makes the Economic Risk resource scarcity, especially qualified labor. And the feds are trying to be very careful, right? You have to sort of manage-- you don't want the economy necessarily to go into a recession, but you have to manage the inflationary pressure. So these are all factors that really weigh in on the economy.

CROFT: 15:21 And you had mentioned the labor shortage earlier. And obviously, this became a huge issue during the worst of the global pandemic. What is kind of driving that now that the problem is persisting so strongly across the board?

ZACHARIA: 15:43 Well, as far as labor is concerned, I think you've definitely-- one of the things that COVID did-- I mean, COVID did so many changes. But as you know, some people really questioned, "What are they doing?" And they started to find you couldn't just necessarily throw money at the problem. And I think the new workers that are entering the workforce, so my students that I actually have at university and are entering the workforce, they are very much concerned about, I guess, a life balance, a work-life balance. They are concerned about things like the potential to work remotely, to have flexible schedules, and things like that. And just throwing additional money isn't necessarily going to make a difference. And I think some of the research I've looked at have suggested that you have senior management who actually became successful because they put 60 hours, 70 hours a week working at their job, and that's how they climbed the ranks. So when they're faced with new workers entering the workforce that say, "No, we want to finish in 40 hours, and can we perhaps look at some way of making that even more flexible?" And so there's a real disconnect with senior management versus new workers.

ZACHARIA: 17:14 And you're seeing that ripple effect of labor issues going throughout the supply chain. So I think that this is still going to be an issue going forward. I mean, people are really going to push for more flexibility. And I think that companies are going to be very hard-pressed to continue insisting on a regular five-day workweek when they can. But I mean, obviously, certain kinds of hospitals, manufacturing, particular kind of things that still run those kinds of 24/7, have got to just figure out ways to deal with these kinds of labor issues.

CROFT: 17:53 Now, Customer Risk has been over 70 on the index for four of the past five quarters and has ranked third on the index for all three quarters this year so far. Although it actually ticked down one point from the second quarter, it still remains at 72.86. So again, same questions. What are the main factors in Customer Risk that are being included in this? And what are the biggest threats that supply chain professionals have talked about in that category as they look forward to the next three months?

ZACHARIA: 18:28 Well, the factors that are taken into account in Customer Risk is fast-changing customer demand, easy-to-lose customer loyalty, changing customer-based demographics, hard-to-predict customer behavior, hard-to-meet customer expectations. I mean, these are all kind of factors because our customer preferences are changing. And they're getting more customized, the need to be able to provide specifically what the customer wants. And of course, we're having problems also with returns. Some of the large e-commerce companies are looking at ways to restrict returns because that's a significant added cost that they have to deal with. And as you know, when we talked a little bit about this-- is that the customer demand being highly variable has meant that you don't have a real increase in transportation demand. Consumer credit, that is now pretty high. That's probably going to become troublesome in the future if they start to default on some of that. And consumers are making different choices. You can now see that everybody predicted that there would really be this rush to e-commerce. I mean, e-commerce has happened, but now regular bricks and mortar is starting to recover, and consumers are going back there. But I just went to my local Giant, and I still see that they have a section for people who just order online and pick it up. My students tell me in my own class.

ZACHARIA: 20:15 So these are very able-bodied 22-year-olds and that aren't necessarily afraid of COVID have just continued to just order online and pick it up from the store. They don't want to go into the store, which is kind of an interesting thing when you think about it.

CROFT: 20:33 I think there's probably, as a result of the pandemic-- I think certainly those of us who are older found out that we really kind of missed that experience of shopping in the store instead of just clicking on a computer. And I think that that's certainly been a part of what's fueled this drive back into brick-and-mortar stores because it's a different experience. It's not better or worse. It's just different. For those who like it, it's something that I think for the first time in their lives when they couldn't do it, they realized how much they wanted to.

ZACHARIA: 21:09 Exactly. And I think that people were actually kind of surprised by how much people-- I mean, companies were kind of surprised by how much they did want to go back to the bricks-and-mortar experience. And I completely agree with you. I like going shopping. I like picking up the apple myself or the banana or whatever else. I want to look at what they have. And so we've actually had shoppers. So my students have actually played that role of being shoppers, and they say that they have to check for the right product. And then if they don't have that particular thing, they have a list of items that they could substitute for this online purchaser. So you are going to get a group of people that will always continue to order online. But the vast majority of people do like the-- especially things like grocery shopping and maybe even regular retail stores, they are going back to that. But remember, this is not anywhere near pre-pandemic levels. It is going back. But I don't see the malls being full of cars again. I still see that, yeah, and I'm sure you've noticed that as well.

CROFT: 22:19 Right. And we've actually done a couple of podcasts on the issue of the future of malls. And I don't know that there will be malls. I think that's already changing to this storefront entryway thing where people can park, go to the store they want, and come back out. But that's getting us a little off-topic here. So let's get back to, actually in a sense, the topic that we started with and that you've talked about a couple of other times, and that's government intervention risk, which is the fourth category over 70, which is pretty high. What are the factors in that category, and what are the supply chain professionals most concerned about relating to government intervention?

ZACHARIA: 23:08 Well, so the factors are new regulations, tariffs, trade wars, government restrictions on source materials, source technologies. As you know, the U.S. has come out very strongly in selling secure technology to the Chinese. I mean, we saw a little bit of thawing between China and U.S. yesterday, as you know, with (U.S. Secretary of State Antony) Blinken going over there. But this is a huge issue. Everyone is being very wary about this. But neither side can live without the other. The U.S. cannot live without not having China involved, and China cannot live without the U.S. So there are going to be-- they have to figure out a way to work together. But supply chain professionals are very concerned about that. Clearly, supply chain professionals are worried about the debt that we have. And you have government regulations like the independent contractor law that could affect transportation companies, freight companies. And whenever you have these kinds of global trade issues is still a big factor. I mean, you and I talked about the fact that Russia attacking the Ukraine has shifted the whole global view, the idea that globalization is always good, just go to the lowest cost place. Well, that has really retrenched. People are now thinking about ways how to manufacture locally. And because you can't rely on global supply chains that can be affected by political decisions that have nothing to do with the economy, but nevertheless, as a direct effect on your bottom line.

CROFT: 24:54 Now, there are a couple other categories that I find interesting in this report. And Environmental Risk is one, and Transportation Disruption Risk is the other, both of which increased by seven points in the new index. Now, Environmental Risk hung out pretty consistently in the bottom half of the risk index in the past, and this time shot up to the top five for the first time in the third quarter report. So does this signal that the extreme weather and natural disasters that have become alarmingly more frequent in recent years, that these are really registering with supply chain professionals and kind of keeping them up at night?

ZACHARIA: 25:39 Yeah. I'm glad you brought this up, Jack. This was a very surprise addition to the top five. It's never been up there. And if you look at the comments that the people who filled out the survey put in identified natural disasters seem to be increasing. The summer hurricane season is approaching. And it looks like we're going to have more hurricanes coming. Global warming seems to become a factor for increasingly more extreme weather, again, leading to increased risk. I mean, I'm sure you were coughing a week ago when we were getting that smoke from Quebec. And just imagine fires almost a thousand miles away. I mean, I'm sure you-- I actually came out and I could smell smoke. I mean, this was just a crazy thing when you think about it. So there are people who fill out the survey who don't necessarily buy into the fact that there has been increased global warming. But companies, I think, for the most part, can see that the weather events are becoming perhaps more extreme. And this is leading to factors, I think, that have made Environmental Risk a more important risk to consider going forward.

CROFT: 27:05

Now, unlike Environmental Risk, Transportation Disruption Risk, pretty much for the three years that you've been doing the LRMI, has lived in the top half most of the time and just recently dropped down to the lowest of the 10 risk categories for the first time in the second quarter. But I noticed in this report, that seven-point increase has moved it out of the basement to number eight. So what does that tell us?

ZACHARIA: 27:38

Well, and I sort of alluded to this before, transportation demand is still very soft. In other words, we have much more capacity than freight. In fact, one of our advisory board executives said that, "For the first time ever, I have transportation company executives calling and asking if there's any freight that we need to move because they just have capacity." But the transportation executives who actually run these companies are also saying that, "We are relying on relationships." If you go chasing after the lowest price, well, demand is going to come back. And when demand comes back, prices are going to go up, and people are going to remember. So relationships still really matter. So transportation is always a big risk factor in supply chains as a whole. But because you've got such a surplus in capacity, and you could see, and as I sort of suggested before, a lot of the retail companies have inventory. So they're not out there trying to fill up their warehouses. We have a real-- we have much more inventory than is normal for this time of the year. And so therefore, until that inventory gets purchased, you're not going to have demand for transportation, which is why transportation risk is still relatively very low.

CROFT: 29:07

Yeah. Now we obviously have talked about a lot of different things today. But I would like to give you the opportunity before we close, looking at the third quarter report, if there are any other trends you've spotted in the latest LRMI that our listeners should be aware of.

ZACHARIA: 29:30

Well, obviously, labor factors, as I talked about, and inflation, are really important things going ahead and potentially recession later this year. In that interview that we conducted the first quarter, I had suggested to you that most of the executives I talked to felt optimistic that we had avoided a recession and that we were going to be climbing out of the recession and would be in great shape by the third quarter of this year. But now, talking to these same executives, they seem to believe that we are going to go into a recession. As the feds keep increasing rates to try and slow down inflation, it's most likely going to push our economy in that direction. And now people are suggesting maybe it won't be the fourth quarter we're going to recover. It might be the first quarter of next year because now overall demand is still relatively soft. The inflation is there. Prices are increasing. And are the consumers going to start purchasing the big items that sort of charge up the economy, or will the feds continue increasing of rates cool the economy further? So you go into a recession. Obviously, we're not sure. But I do think that we're going to be going through some very interesting times ahead.

CROFT: 30:52 Zach, it's always a pleasure. And I'd like to thank you again for being with us on the ilLUminate podcast today.

ZACHARIA: 30:58 Thanks very much, Jack. I always really appreciate a chance to talk to you about our LRMI reports, that is now being sent out.

CROFT: 31:08 Now, in addition to serving as director of the Center for Supply Chain Research at Lehigh, Zach Zacharia teaches graduate and undergraduate courses in supply chain operations management and logistics and transportation. Zach is an example of how the faculty and students at Lehigh Business are generating new ideas for education and future knowledge in the field of supply chain management. This podcast is brought to you by ilLUminate, the Lehigh Business blog. To hear more podcasts featuring Lehigh Business thought leaders, please visit us at business.lehigh.edu/news. And don't forget to follow us on Twitter @LehighBusiness. This is Jack Croft, host of the ilLUminate Podcast. Thanks for listening.