OESA AUTOMOTIVE SUPPLIER BAROMETER

Focus on Globalization and Supply Chain

Q2 2017

Q2 2017 OESA SUPPLIER BAROMETER: Key Findings

- **Supplier Outlook Remains In Positive Territory:** The Q2 (April) Supplier Barometer Index (SBI) declined 3 points from the Q1 (January) level of 54; overall not only did the optimistic outlook decline, pessimism increased. There were mixed sentiment shifts between sizes of companies with smaller companies having an improved outlook compared to larger companies. Optimism is driven by continued customer program development while pessimism is a result of the expected flattening to the auto market.

- **Trade Policy Changes Remain the Greatest Concern:** …even more so than what was indicated in Q1. Uncertainty in policy direction and taxation is making it difficult for suppliers to make global and NAFTA manufacturing decisions.

- **The Shortage of Skilled Labor is Another Problem:** Tight supply of skilled hourly and technical staff continues to be a constraint to suppliers. More vocational training is needed and a clear understanding of the implications associated with increasing minimum wages across occupations.

- **Terrorism or Some Kind of International Event is Less of a Concern for Most:** However, this issue has moved up in the list of threats to suppliers' outlooks; specifically mentioned was North Korea, Russia and the Middle-East.

- **Supply Chain Disruption Scenarios are Being Managed:** Raw material shortages increased in probability of occurrence and severity to businesses. But customer delays occur most frequently and are at the mid-point range of severity.

- **Production Risk Concerns, Internal and Within the Supply Chain, Stem from Capacity Related Issues**: In addition, staffing, scheduling, customer delays and uncertainty in taxation policies were noted concerns.

- **Supply Chain Capacity and Rationalization Direction is Unclear:** Though most suppliers believe that N.A. capacity rationalization will occur over the next year, 26% also indicate that their supply base is currently too small.

Q1 2017 OESA SUPPLIER BAROMETER: Key Findings (continued)

- **The 'Watch List' of Direct Supplier Risk Appears to be Improving:** …though it is difficult to understand where the shifts in results are coming from. What is clear from suppliers is that the reason for direct suppliers being put on a 'watch list' has moved from a financial cause to quality and delivery performance.

- **Sourcing Localization Remains the Trend**: The pace of localization efforts though is slower than it was five or six years ago.

- **The United States Remains the Hub of Production in North America:** Mexico will continue to grow as a regional manufacturing center, serving customers there and taking advantage of lower production costs. NAFTA agreements and taxation are the unknowns being closely monitored.

- **Surveyed Supplier Import/Export Balance is Skewed by Nearly 2X**: As a median value, 12% of current U.S. production is exported outside of the U.S. while 25% of material (on a dollar basis) needed for production is purchased outside of the U.S. Most exports are sent to Mexico and Asia is the main supplier of imports. In addition, the rate of exports is increasing faster than imports.

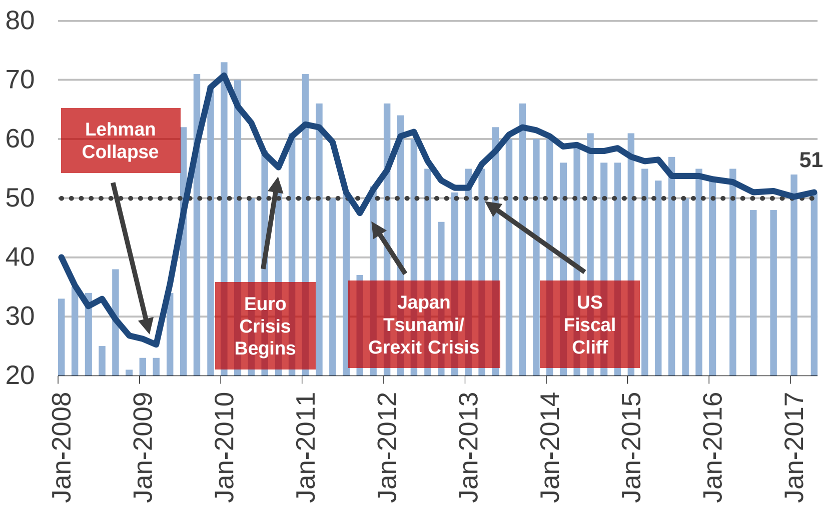
OESA SUPPLIER BAROMETER

OESA SUPPLIER BAROMETER: Results

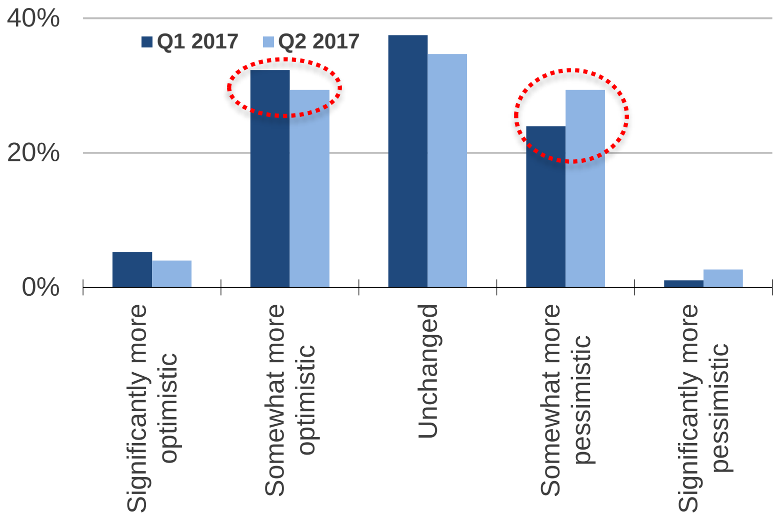
SBI score at 51 – Sentiment is trending downward but still above neutral

**Describe the general twelve month outlook for your business.
Over the past three months, has your opinion become…?**

Supplier Barometer Index: (SBI 6m Average)



Current Supplier Outlook (Share of Respondents)

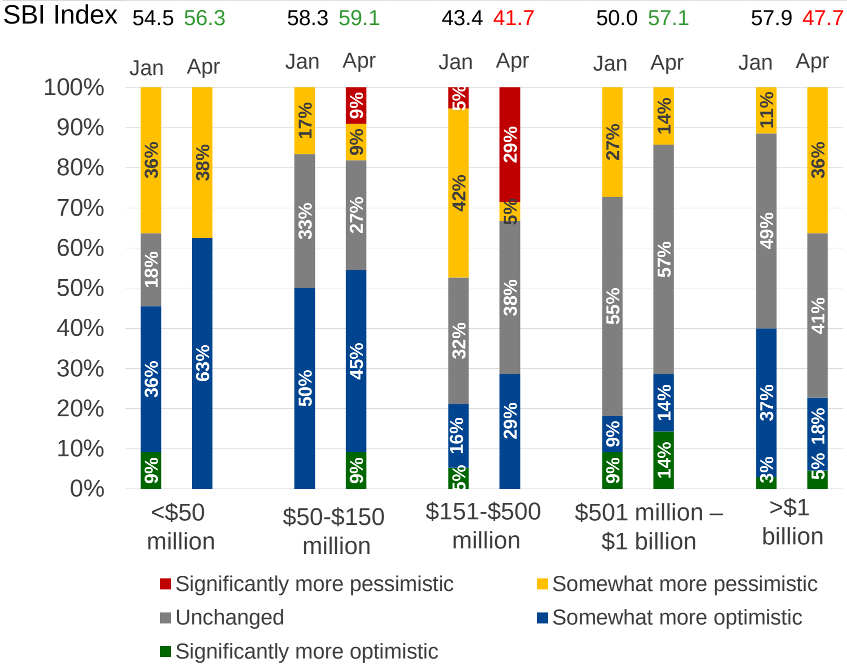


75 responses

OESA SUPPLIER BAROMETER: SBI Results By Company Revenue

Mixed outlook among larger and smaller suppliers

Describe the general twelve month outlook for your business. Over the past three months, has your opinion become…?



75 responses

More Optimistic

- Improved manufacturing focus by new President on taxes, vocational training, leaving TPP, reciprocal trade policy, etc.
- Despite indicators that the market in N.A. has topped, our OEM customers are still moving forward with the projects we are developing.
- Start-up automotive OEMs are coming into the industry which creates opportunities for new business.
- Improvements since 1st quarter continued.
- Presidential change caused some anxiety over taxation in import business.
- Outlook was already optimistic, but recent wins/bookings have surpassed expectations.

No Change

- Softer sales, higher incentives, NAFTA rhetoric subsiding.
- Cautiously optimistic.
- Market continues to pace ahead, but the current administration has not shown competence to lead increased growth after it seemed to be heading that direction.

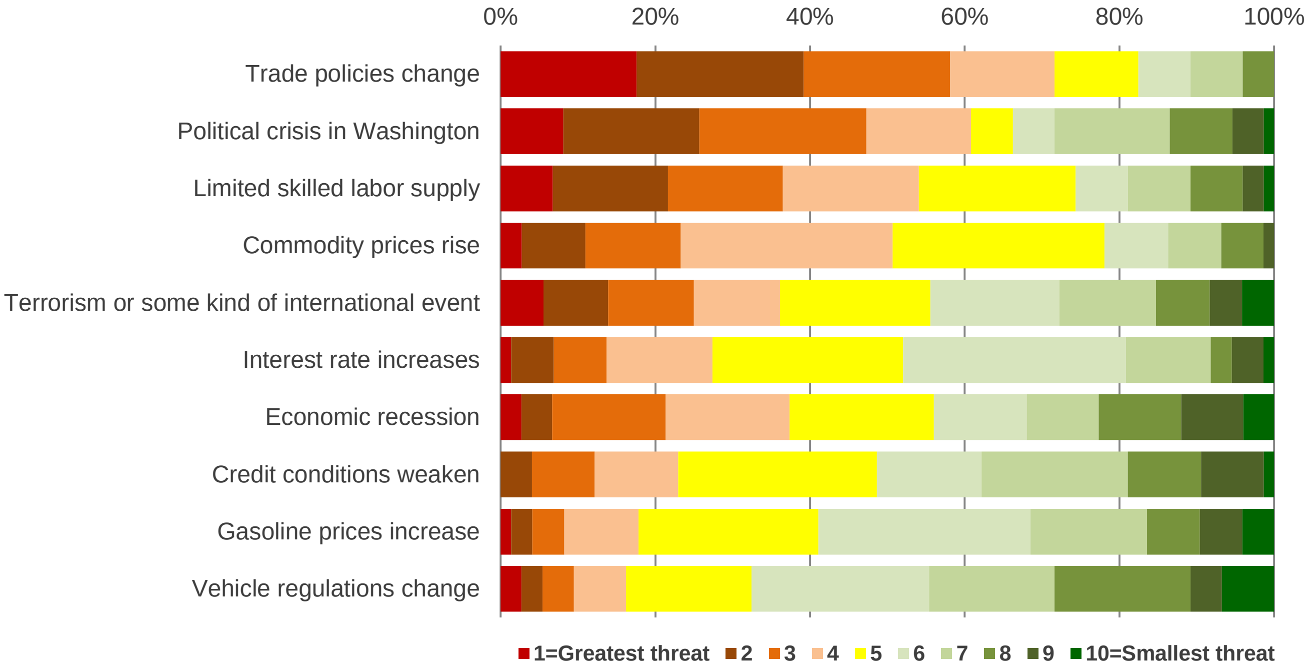
More Pessimistic

- I see inventories climbing and volumes declining. Customers announcing down weeks.
- Volumes not holding first quarter.
- Slight demand drops from forecast.
- Incentives, SAAR and financial results of OEMs are concerning for the future.
- Car inventory up, used cars available, OEMs keep pumping, hoping for a good summer. I would be really worried if fuel was going up again.
- Softening of market in some areas. Uncertainty about NAFTA situation. Internal topics.
- Auto industry is flattening. Future uncertain due to political climate change (NAFTA, etc.)
- Market appears at a peak, at some point it will need to relax.
- Due to declining month over month sales.
- Mechanical engineering design work is going down.
- Big increase in customer upfront payment demands related to sourcing.

OESA SUPPLIER BAROMETER: Threats to the 2017 Outlook

Changes to existing trade policies are of greatest concern to suppliers

What are the greatest threats to the industry over the next 12 months?



Threat	Average Rating	Prior Quarter Average Rating
Trade policies change	3.5	3.7
Political crisis in Washington	4.4	4.3
Limited skilled labor supply	4.4	4.6
Commodity prices rise	4.6	4.7
Terrorism or some kind of international event	5.2	5.8
Interest rate increases	5.3	5.3
Economic recession	5.5	5.3
Credit conditions weaken	5.8	5.8
Gasoline prices increase	5.9	5.5
Vehicle regulations change	6.2	6.4

Green indicates a lower/improved concern rating, red is a higher concern, black is unchanged

No. of Responses = 73

OESA SUPPLIER BAROMETER: Threats to the 2017 Outlook
Comments

Trade Policies

- Possible NAFTA rule changes / tariffs.
- No real outlook.
- “Build here" tax changes could have a major impact. Many components are not available in the U.S. and the proposed regulations allow no exceptions.
- High level of uncertainty. Difficult to make solid decisions. OEM position not clear yet (i.e. who covers additional border taxes and duties?)
- Probably the greatest risk to our business due to extensive global supply and footprint.
- Improved NAFTA and GATT for U.S. will improve U.S. manufacturing growth.

Limited Skilled Labor Supply

- Supply is tight but we are still getting good candidates.
- More related to direct labor. As the minimum wage increases, it is harder for suppliers to differentiate the wage between fast food and entry level manufacturing.
- Always an issue. Need more state or better nation-wide dual education programs to increase quality and quantity of technically skilled labor.
- Near-term there is a lack of skilled labor. With the new administrations focus on vocational training, I believe the longer-term prospects are good.

Political Crisis in Washington

- Instability of Washington vs other parts of the world, i.e. North Korea.
- Not really predictable.
- President Trump's resolve to exit NAFTA may negatively impact OEMs and supplier alike.
- High level of uncertainty.
- The Trump administration has shown a particular talent for finding crisis.
- Congress and the people surrounding the new President are stifling his objectives to lower taxes, improve health care and improve trade. Also, foreign entanglements promoted by the establishment politicians are causing economic uncertainty.

Commodity Price Increase

- Steel and rubber- trickle down increases.
- Recession will reduce demand of commodities. The flip side is that a currency devaluation will make commodity prices look higher.

OESA SUPPLIER BAROMETER: Threats to the 2017 Outlook
Comments – continued

Terrorism or Some Kind of International Event
- It's an ongoing threat that is largely baked into the market already.
- Not predictable.
- North Korea, Middle-East, Russia.

Economic Recession
- President Trump's policies seem to have helped the economy so far.
- The economy has shown to be stable.
- We are in year 9 of a bull market. The average bull market is 7 years. I expect increasing interest rates, higher unemployment, and deflation as a result. Maybe a USD/EU currency devaluation.

Gasoline Price Increase
- Not a likely impact in the next 12 months.
- If gas goes up in this climate, we may see 2009 again.
- Reduced EPA regulations and opening the U.S. energy restrictions will provide lower electricity costs along with lower oil and natural gas prices. In addition, it will reduce our reliance on Middle East oil which means our military is not needed to protect oil coming form those regions.

Interest Rate Increase
- We know interest rates are tending upward and that could slow buying especially with pressure in the secondary credit market.
- The Federal rates have been slower to change than expected and the Federal Reserve is not as shaken by the new administration as originally expected.

Credit Conditions Worsen
- The secondary market for credit appears to be coming under increasing pressure.
- Inflation.
- Rates are increasing, derivatives are at risk of imploding which will hurt the banking system and reduce credit significantly.

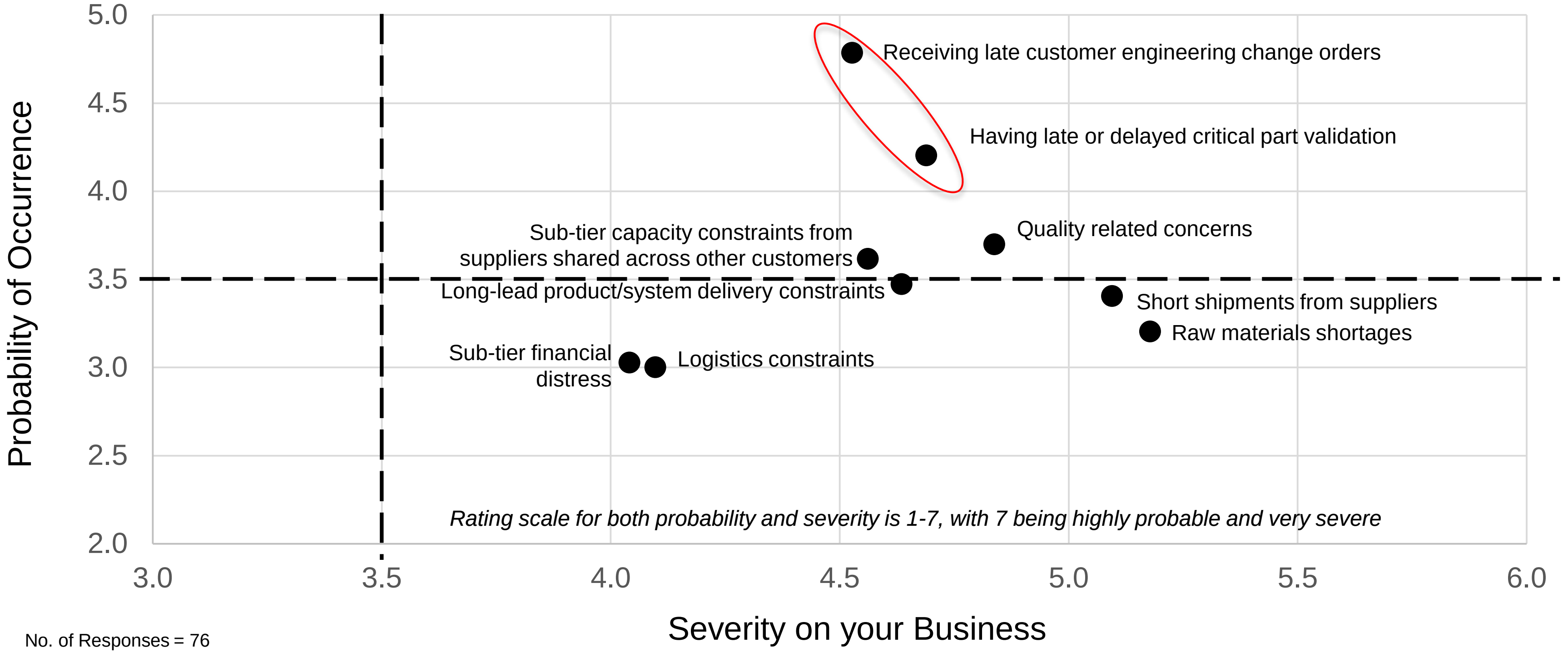
Vehicle Regulations Change
- Slowing CAFE regulations could dampen the U.S. market while the rest of the world pushes forward.
- As the EPA rolls back all signs of climate change support this may impact demand for our more efficient and higher priced products.
- MPG increase.
- The current administration is reducing regulations on autos.

SUPPLY CHAIN

Supplier Concern Scenarios: Most are being managed. Customer program activities remain top concerns.

April 2017

Within Your Supply Chain, Over the Next 12 Months, Rate the Likelihood of Occurrence and the Severity That Each of the Following Possible Scenarios Would Have on Your Business.



No. of Responses = 76

Supplier Concern Scenarios: Comments

April 2017

Within Your Supply Chain, Over the Next 12 Months, Rate the Likelihood of Occurrence and the Severity That Each of the Following Possible Scenarios Would Have on Your Business.

Short shipments from suppliers
- Economic conditions will deteriorate impacting confidence in the supply chain.

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- Economic conditions will deteriorate impacting confidence in the supply chain.

Sub-tier capacity constraints from suppliers shared across other customers
- Recession will open up capacity in supply chain

Raw material shortages
- Financial stability of supply chain will impact flow of goods

Receiving late customer engineering change orders
- This happens daily and is not going to sop.

Long-lead product/system delivery constraints
- This risk is managed by planning and monitoring.
- Currency instability will impact JIT transactions.

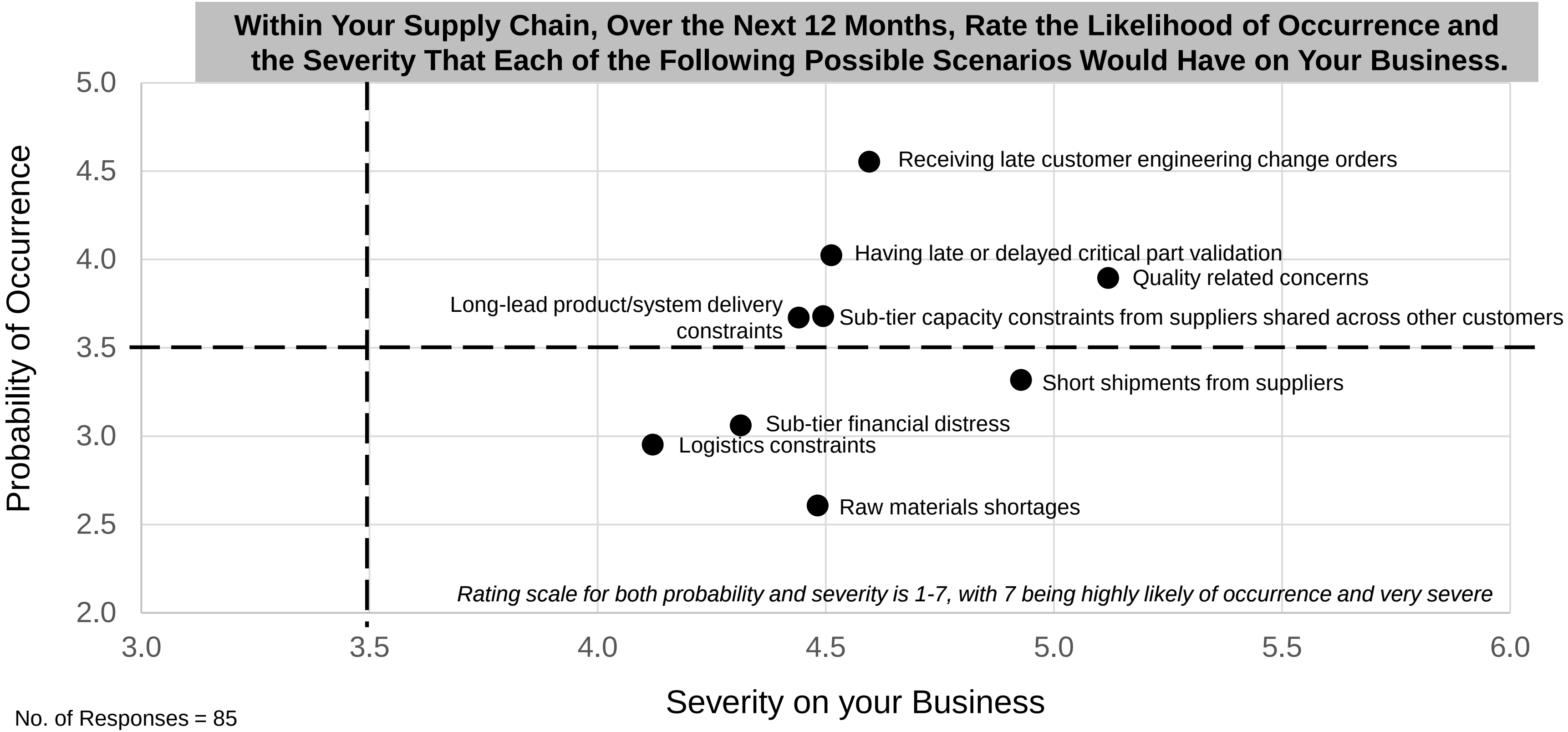
Sub-tier financial distress
- Hard to monitor if the sub-tier is not transparent.
- Recession will impact supply chain

Logistics constraints
- Very severe if we start seeing more issues at the US-MX border.
- Currency fluctuation will slow trade

Quality related concerns
- Compressed schedules and late awards are the root cause.
- Assuming worst severity. Biggest risk is a pass through resulting in warranty or field action.
- Many parts come from China

Having late or delayed critical part validation
- Late customer awards and changes are driving this!

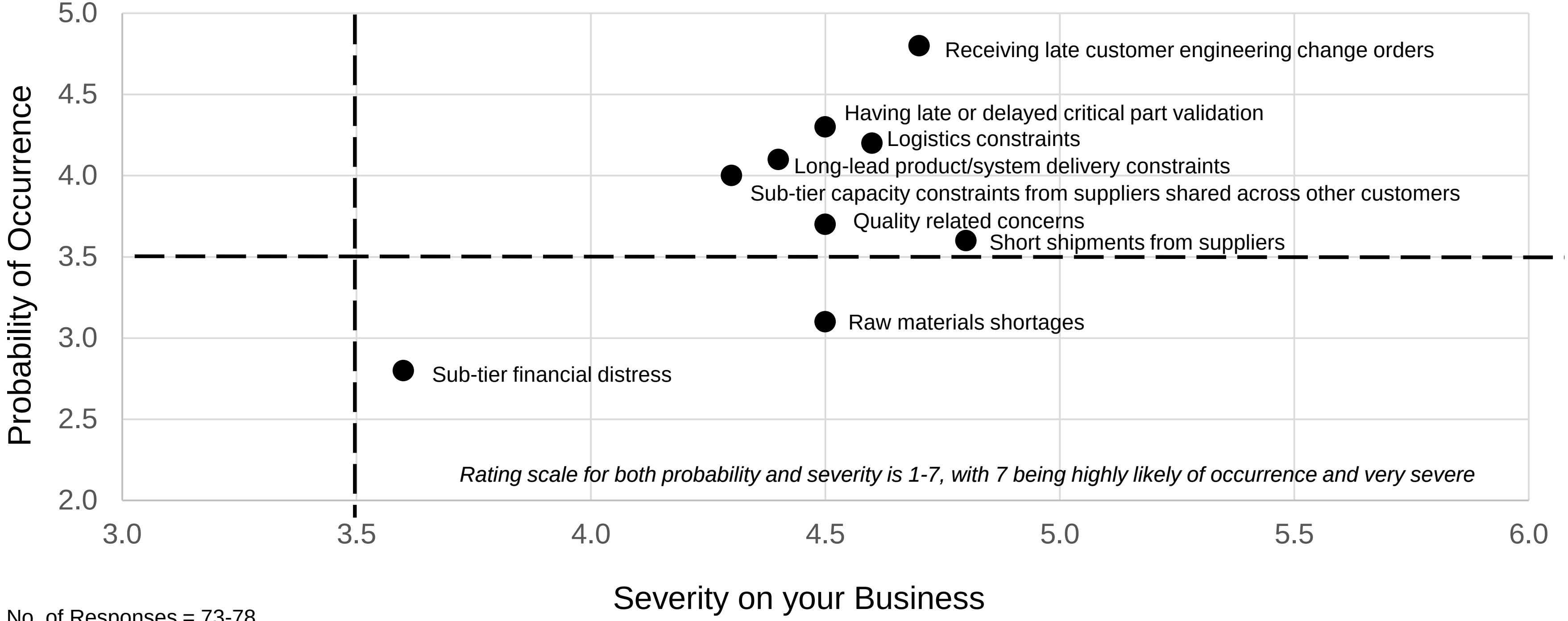
Supplier Concern Scenarios: March 2016 Comparator



No. of Responses = 85

Supplier Concern Scenarios: March 2015 Comparator

Within Your Supply Chain, Over the Next 12 Months, Rate the Likelihood of Occurrence and the Severity That Each of the Following Possible Scenarios Would Have on Your Business.



No. of Responses = 73-78

Internal Production Risks: Predominantly Staffing, Capacity and Scheduling

What is your greatest <u>internal</u> risk in meeting customer production requirements?

Staffing
- Skilled technical shortage. (11 responses)
- Staffing (3 responses)
- Labor shortage (3 responses)
- Direct labor availability. (2 responses)
- Line efficiencies with turnover of associates. (2 responses)
- Having qualified trained resources.
- Trained and skilled workforce.
- Technical staffing
- Program management of new projects affecting readiness for launches.
- Skilled trades, technical knowhow and experience to solve problems
- Availability of technical resources. Leadership and technical talent in low cost regions.
- Launch engineering support.

Quality
- Quality. (2 responses)
- Quality concerns relative to imported parts from China.

Capacity and Scheduling
- Capacity. (3 responses)
- Accurate schedules. (2 responses)
- Balancing capacity amongst multiple customer volume increases.
- Capacity constraint for a specific part or product.
- International logistics delays.
- Being late.
- New major launches.
- Launching new facilities.
- Ensuring that we have adequate inventory as new parts start full production.
- Manage complexity of relatively low volume, but very high part number diversification, which may lead to set-up risks and production constraints.
- Lack of significant planning and understanding the market demand. Under capitalized plants based on lower expectations than customers are portraying.

Equipment
- Equipment downtime. (3 responses)
- Keeping our equipment well maintained.

Customer requirements and timing
- Passing vehicle validation.
- Managing late changes in a program.
- Qualifying new production locations by our customers.
- Not meeting timing due to late OEM kick-offs.
- Development lead-time.
- Bad customer releases.
- Changing orders and meeting requirements.
- Significant changes /increases in build with short lead-times.
- Mountain of work all due at the same time - some customers want sooner results and other OEMs delay their decision to increase the mountain.

Other
- Economic conditions in the global regions we supply along with the currency stability in those regions.
- Crisis caused by national threat or disaster.
- Fire.

Supply Chain Production Risks: Again Capacity along with Delays and International Taxation Uncertainty

What is your greatest supply chain risk in meeting customer production requirements?

Capacity

- Capacity (3 responses)
- Commodity shortages (2 responses)
- Global supply shortages in the semiconductor business.
- Sub-supplier capacity constraints, specifically related to electronics components used globally (not unique for our company).
- Supply base capacity to meet demand.
- Tier II capital constraints due to unscheduled volume increases . Mix changes.
- Single sourced components, which could impact more than 80% of end part items.
- Supply fluctuations.
- Overseas supply (Asia, Europe, etc.)
- We purchase many of our automotive parts from our sister companies who are at capacity in Europe so we have to share.
- Continuous flow of quality subcomponents.
- New suppliers - no track record.
- Tooling or equipment breakdowns.
- Supplier fire.
- Financial strength of supply chain as recession ensues.
- Ability of our Tier 2 and/or Tier 3 to support on-going schedules.

Timing and Delivery Delays

- Lead-times on electrical components.(2 responses)
- Delivery cycle time.
- Long lead-time.
- Long lead-items from Europe to US and not enough notice from customer schedule changes.
- Long supply chain for some parts from Europe and Asia.
- Delayed shipments.
- Containers from Asia.
- Shipping stoppages from China.
- Late shipments due to weather, etc.
- Vendor delays during mountain of work.

Material Availability

- Raw material shortage. (9 responses)
- Material issues.
- PA6 base resin shortage.
- Rationalization of raw materials and/ or sales control/ allocation.
- Raw material costs (inflation).
- Specific single sourced raw materials.
- Imported steel from Europe.

Customer Requirements

- Late changes and volume mix changes beyond the quoted capacities.
- Material approvals for alternate suppliers.
- Ability to flex suppliers to meet customer unanticipated build changes.
- Price increases.
- Managing quick demand changes.

Regulations and International Influences

- The unknown actions on NAFTA (2 responses)
- Governmental regulation changes BAT. (3 responses)
- Disruptions in Mexico and at the US-MX border.
- Steel tariffs.
- Current administration in Washington destabilizing world trade.
- China governmental/environmental interference in supply chain.

Staffing

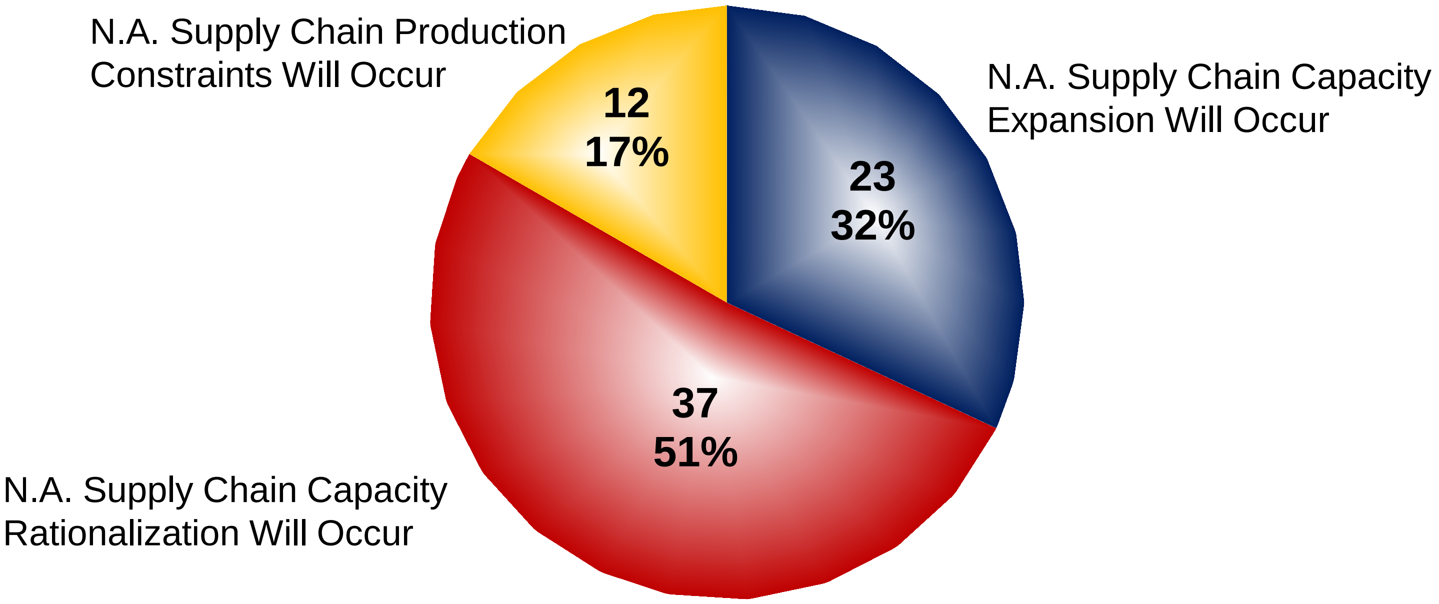
- Having qualified trained resources.
- Skilled labor shortage.

Quality

- Quality issues. (5 responses)

Capacity: Over 50% of suppliers expect N.A. supply chain rationalization

How do you see North American supply chain capacity changing over the next year?

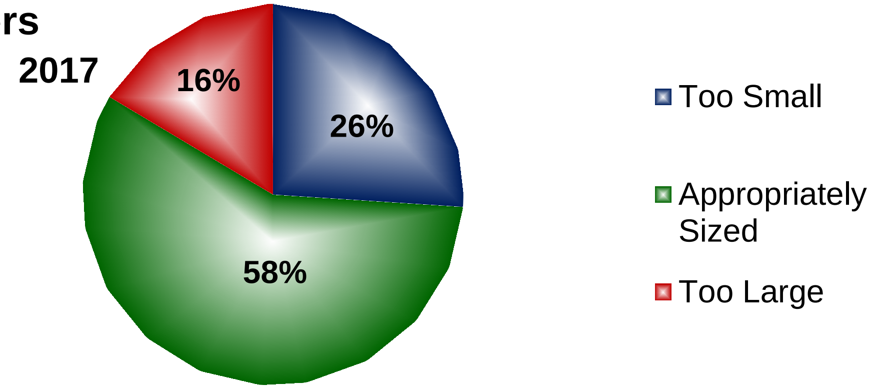


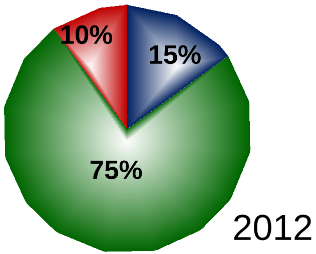
No. of Responses = 72

Size of Supply Base: A Mixed Message Here for Direct Suppliers…If the Supply Base is Shrinking, Will N.A. Rationalization Occur?

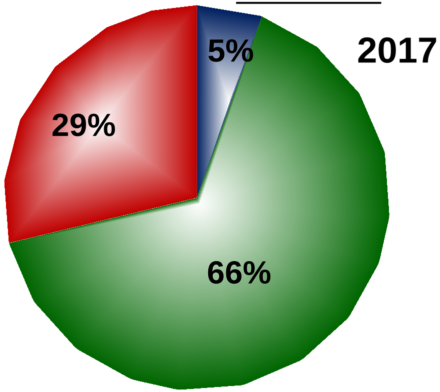
Considering your 2017-2018 North American production planning volumes expectation, in terms of the number of your NA suppliers, select the relative size of your current supply base

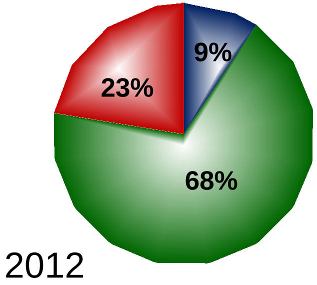
Direct Suppliers





Indirect Suppliers

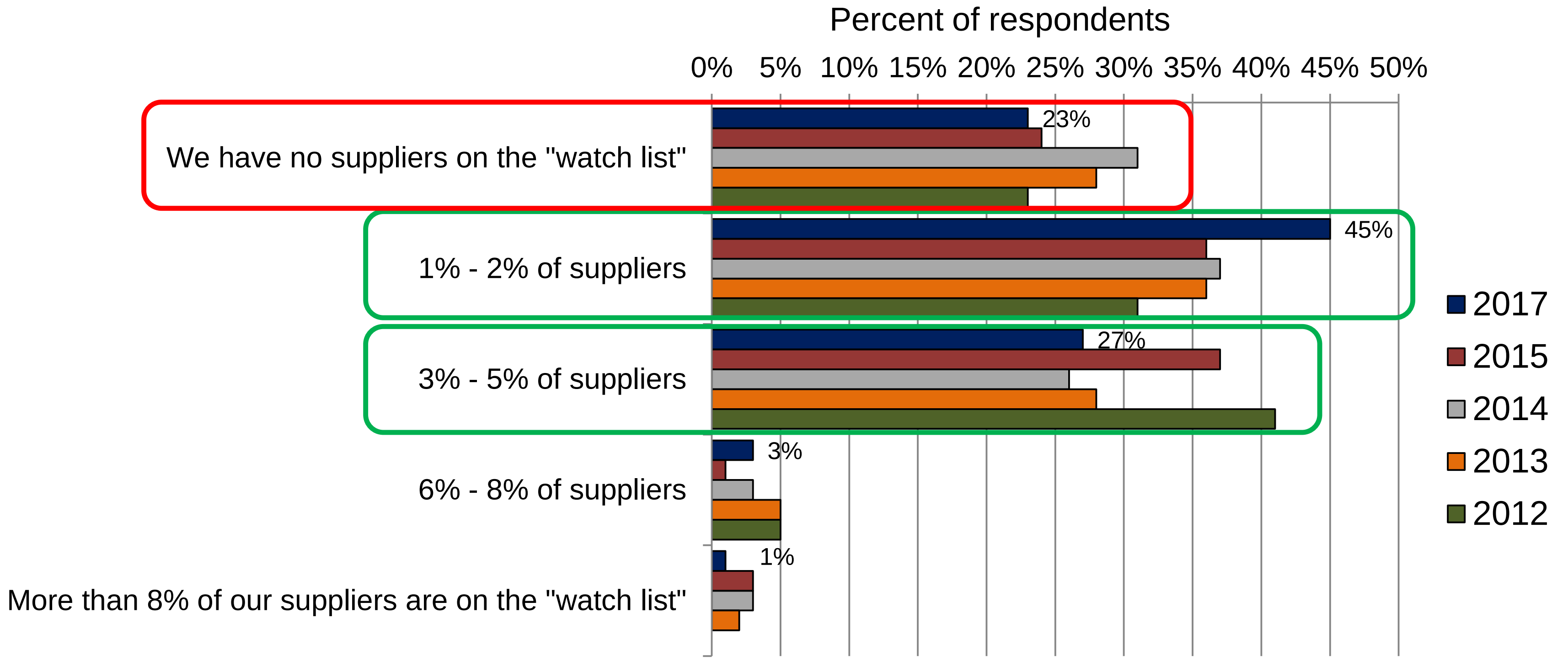




No. of Responses = 73

Direct Supplier Risk: Mixed Results in the Size of the "Watch List"

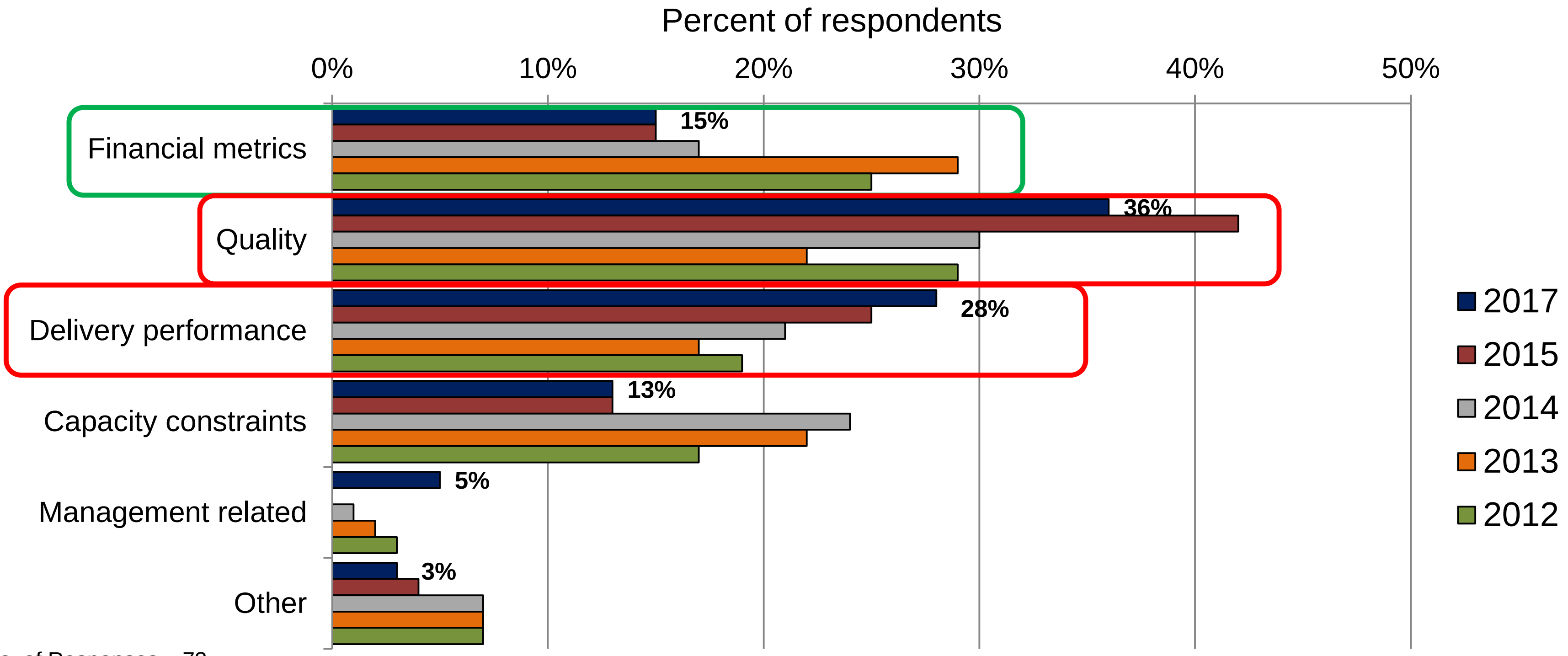
What percent of your North American direct material suppliers are currently on your "watch list?"



No. of Responses = 73

Direct Supplier Risk: "Watch List" Reasons Move from Financial to Quality and Delivery Concerns

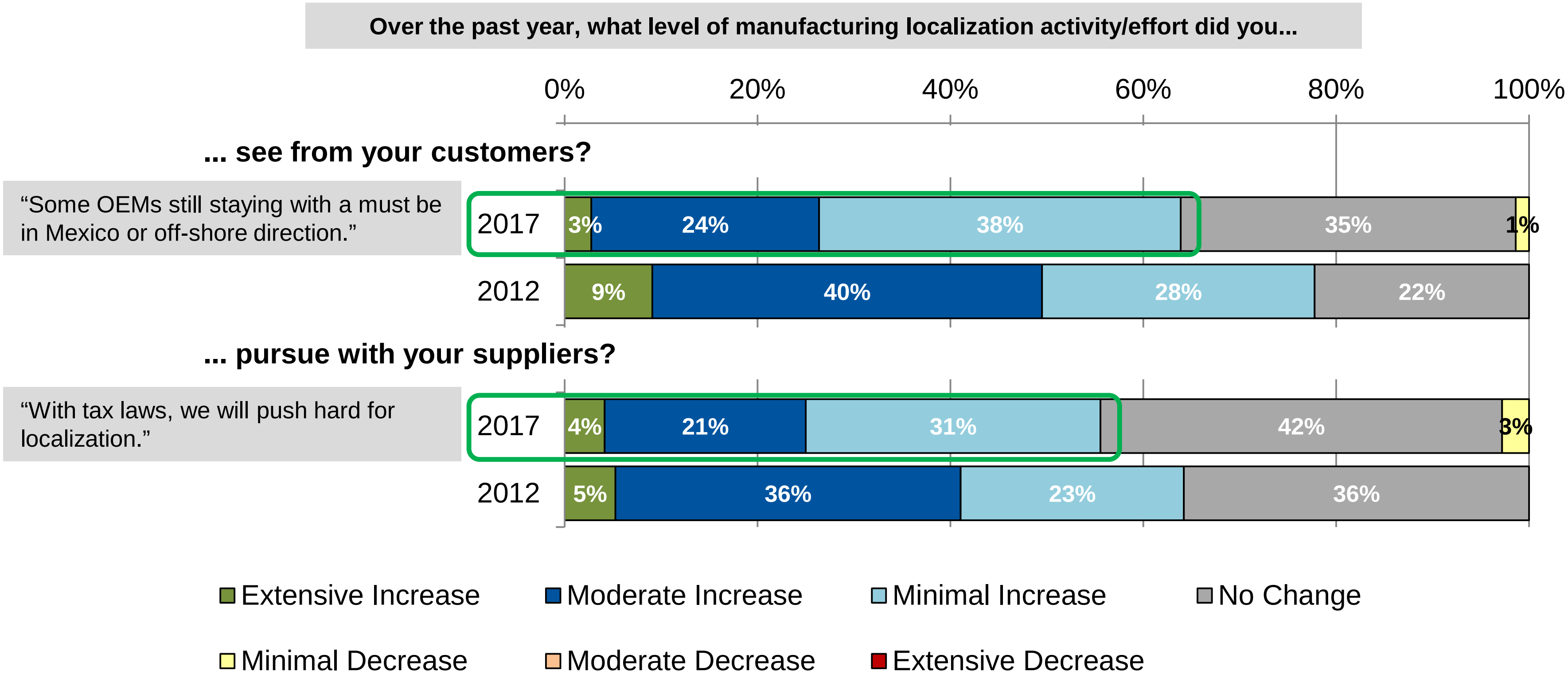
What is the primary reason companies are being added to or continuing on the supplier "watch list?"



No. of Responses = 73

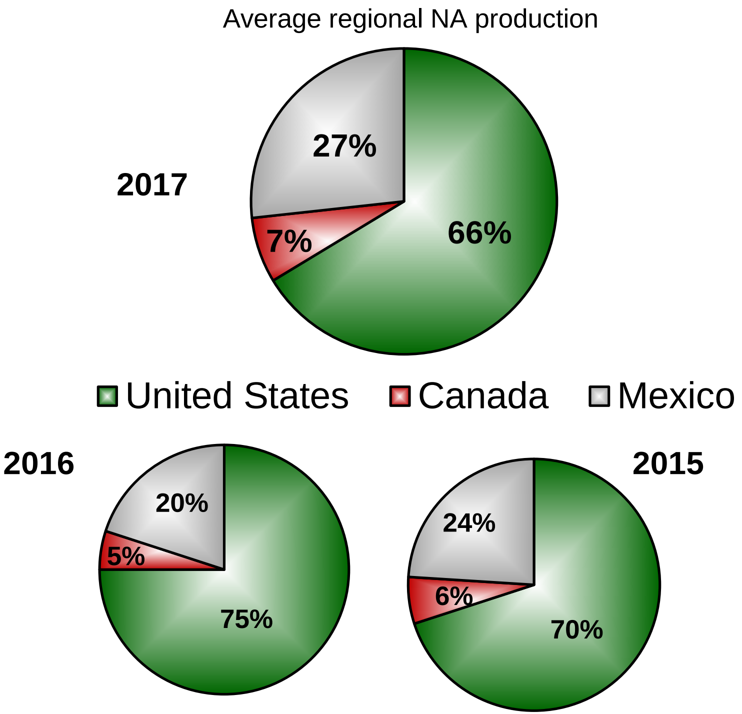
GLOBALIZATION

Sourcing Localization: Localization Continues for Most, At a Slower Pace



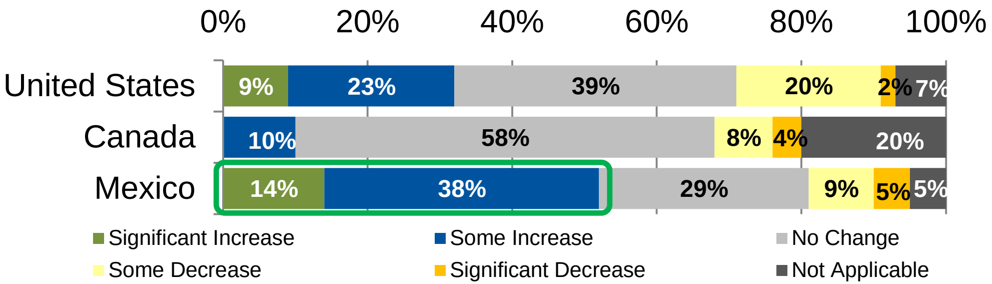
N.A. Production: The U.S. Remains the Hub of Manufacturing with More Growth Expected in Mexico

For your products produced in North America, identify the percent manufactured in each of the following countries.



	Number of respondent companies with manufacturing in each region	Range of manufacturing volume for these companies
United States	56	2-100%
Canada	25	5-70%
Mexico	44	4-100%

How do you expect that these percentages will change over the next 5 years?



N.A. Production: Comments

Please elaborate on regional directional changes and reasons for the changes.

United States:

- Need to add capacity.
- Depending on the NAFTA trade agreement, may significantly increase.
- Adding a U.S. assembly plant.
- Increase to gain market share.
- Increasing with localization from Mexico.
- Increased from expansion of manufacturing in south U.S.
- Will increase due to additional work but actual percent may stay the same.

Canada:

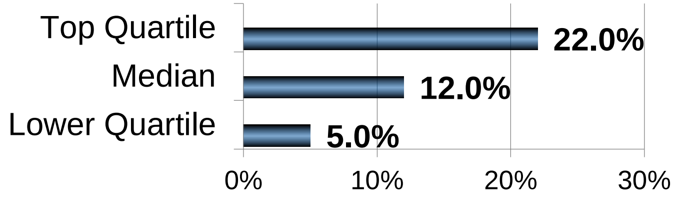
- *No comments provided.*

Mexico:

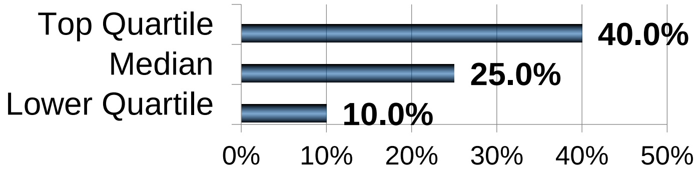
- Need to add capacity.
- Increasing: Cost reduction plus developing supplier and a presence in Mexico.
- We will increase our Mexico production and have no plans for US or Canada production.
- Increasing with lower cost of production, and OE customers increasing demand in Mexico.
- Increasing to utilize excess capacity in Mexican operations.
- Eliminating some production in Mexico and moving to U.S.
- OEM localization efforts are increasing for Mexico.
- We plan on opening a Mexican facility to do final assemble of parts from the U.S.
- Additional manufacturing in Mexico.
- Growing for that market to serve OEMs.
- No changes since all manufacturing is currently in Mexico.

U.S. Production Export/Purchase Balance: Purchased Imported Supply Outweighs Production Exports by 2X

Estimate the percent of your current U.S. production that is exported outside of the United States.



Estimate the percent of your current material costs for U.S. production (by dollar value) that is purchased outside of the United States.



What is the estimated split of these exports (in percent) to each of the following regions?

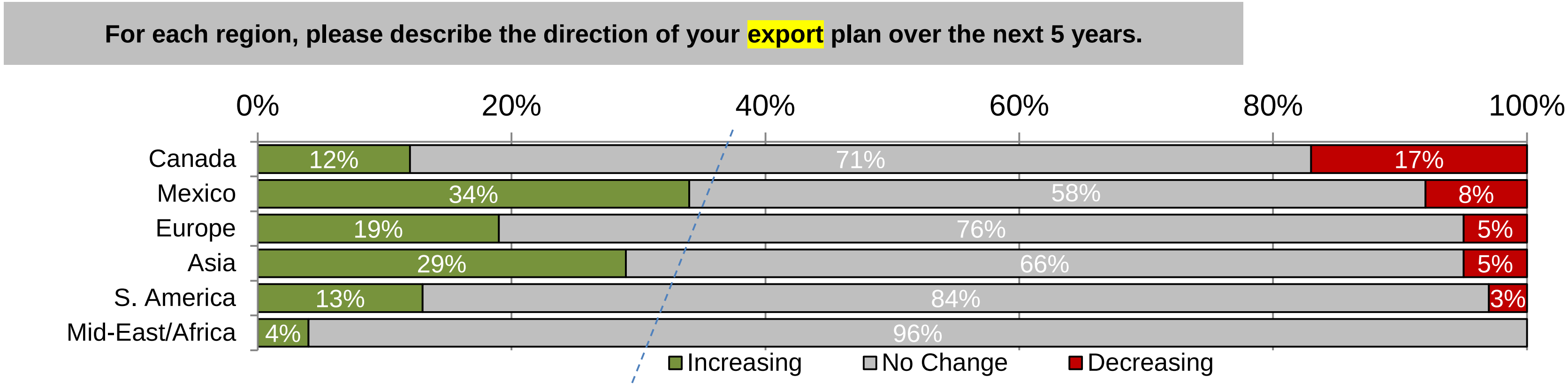
	Lower Quartile	Median	Upper Quartile	Number of respondent companies exporting to each region
Canada	20%	25%	45%	37
Mexico	30%	50%	70%	42
Europe	5%	15%	25%	25
Asia	5%	10%	30%	29
S. America	2%	5%	10%	16
Mid-East/ Africa	1%	1%	3%	3

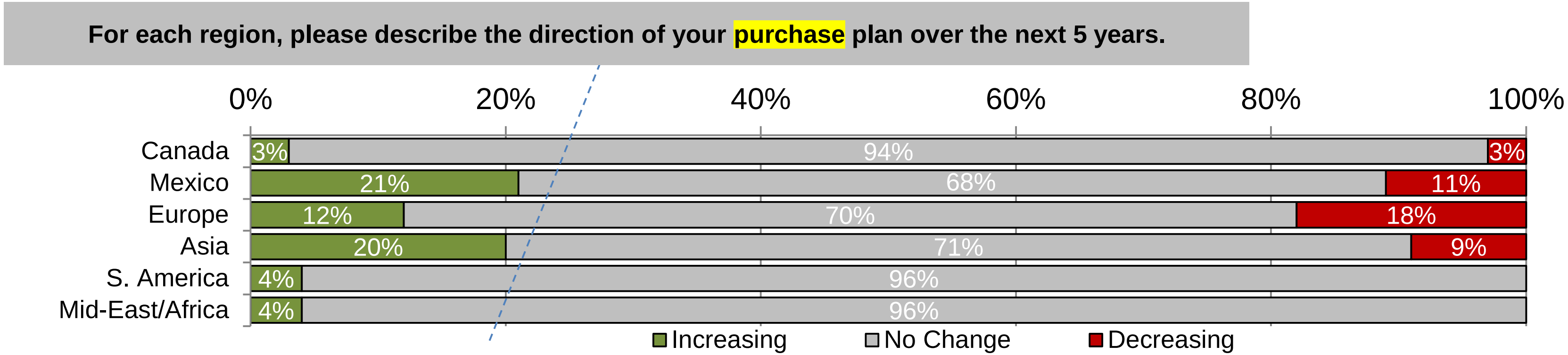
What is the regional split of your total (by dollar value) of materials/components purchased for U.S. production

	Lower Quartile	Median	Upper Quartile	Number of respondent companies exporting to each region
Canada	5%	12%	25%	19
Mexico	15%	20%	50%	21
Europe	10%	30%	53%	27
Asia	35%	68%	95%	34
S. America	5%	10%	20%	5
Mid-East/ Africa	1%	1%	1%	1

No. of Responses = 51

U.S. Production Export/Purchase Balance: Over the Next 5 Years, the Export Pace exceeds Purchased Imports





U.S. Production Export/Purchase Balance: Customers and Trade are Significant Considerations in Decisions

What major factors drive regional export direction?

Responses:

- Customer driven (4 similar responses).
- Customer location. (3 responses)
- Trade agreements and local content. (2 similar responses)
- Technology. (2 responses)
- Global programs expanding outside of U.S. (2 similar responses)
- Customer market share.
- Delivering more equipment to OEM, Tier 1 and 2 suppliers invested with new operations in Mexico.
- Use of proprietary products.
- Global Footprint in place to service regions closer to end customer.
- Labor.
- Cost of production.
- Regulations.
- Logistics.
- We build where we produce so not much export activity.
- Economics such as currency fluctuations and transportation.
- Asia mandated to purchase in local country by their government.
- We supply U.S. companies with U.S. manufactured goods.
- OEM expansion in Mexico and recovery of South America.
- Capacity in strategic locations.
- Growth of business in Mexico driving more USA intra-company exports to Mexico.

What major factors drive regional purchase direction?

Responses:

- 94.2% of the world's natural resources are produced in SE Asia. 90% of USA's natural resource consumption is predominantly produced in the Mid-East regions.
- Europe is our only source of raw material for a product line.
- Commodity driven.
- 63% U.S.

Contact

The OESA Automotive Supplier Barometer is a survey of the top executives of OESA regular member companies. The OESA Automotive Supplier Barometer takes the pulse of the suppliers' twelve month business sentiment. In addition, it provides a snapshot of the industry commercial issues, business environment and business strategies that influence the supplier industry.

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