



Purolator International Long Island Supply Chain Index

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**Report prepared by
Stony Brook University**

Purolator
International

INTRODUCTION

The Purolator International Long Island Supply Chain Index launched in March 2016 as an annual guide to the overall economic health of Long Island. By gauging the state of the local manufacturing industry, directly from the feedback of Long Island based manufacturers, research data can reliably forecast the overall strength of the local region for the coming six months.

This Index is the fourth installment commissioned by Purolator International. Initial survey data was collected in November 2015 (publicly released March 2016), the second survey in May 2016 (publicly released August 2016) and the third survey in July 2017 (publicly released in October 2017). Survey respondents are asked to provide insight into new orders, production level, prices, employment, inventory levels, backlog of orders, exports, and air shipments.

A key element of this research is the overall index analysis. Each data point from the survey has been converted into an index that ranges from 0 (unanimous decline) to 100 (unanimous improvement). The numbers above 50 indicate positive growth and those below 50 indicate decline.

In addition to the Index questions, this year's survey also asked respondents about their perceptions of the future of the Long Island manufacturing industry, including what industries show potential for growth, the use of advanced manufacturing and/or robotics, and how the region can better support local manufacturing (pages 14-16).

The Purolator International Long Island Supply Chain Index survey was designed and analyzed by Stony Brook University. The interviews were conducted by The Ohio State University with a sample of manufacturing businesses in Nassau and Suffolk counties of New York. Data was collected by telephone between December 11, 2018 and March 25, 2019. Further information on the methodology is available in the Appendix to the report.

KEY INDEX FINDINGS

- Long Island manufacturing executives and managers anticipate good conditions in the coming six months.
- The outlook is more optimistic than a year ago.
- Each Index indicator is in positive territory (exceeding 50) and has increased over the last year. There is a marked increase in optimism about new orders, production levels, hiring, and exports compared to a year ago.
- The picture for new orders was especially positive. Almost two-thirds (64%) of all executives and managers expect new orders to increase in the next six months, compared to only 7% who perceive decline. Another 30% expect new orders to remain the same. This resulted in an Index of 78.6 for new orders, one of the most optimistic findings in this year's survey. Almost half of this increase in new orders was attributed to the emergence of new customers and/or markets as well as a general improvement in business conditions.
- Optimism about increased production levels is equally high. Over half (54%) of Long Island manufacturing executives expect production levels to increase in the next six months, compared to 4% who expect a decrease, resulting in an optimistic index score of 75.2. Almost half of this increased production was attributed to the emergence of new customers and/or markets as well as a general improvement in business conditions.
- The picture for hiring is very positive. 66% of companies had hired at least one new employee in the last year. 36% of executives and managers said they would increase the number of employees in the next six months, and only 4% expected to decrease their workforce, resulting in a positive index of 66, a marked improvement over 2017 (59.7).
- Most expected their inventory levels to remain the same in the coming months (58%), but a greater percent expected an increase (28%) rather than a decrease (14%) resulting in a positive index score of 56.7.
- Companies expect their backlog of orders to increase rather than decrease as further evidence of good business conditions. 49% expected conditions to remain the same, 38% expected backlog to grow, and 13% expected the backlog to decrease. This leads to a positive index score of 62.7.
- Over 50% of companies reported exporting goods outside the U.S., a significant increase over 2017 (35%). Of those who currently export goods, 35% expect this to increase whereas 56% expect levels to remain the same, leading to a positive Index of 62.7.

Business Conditions

Long Island manufacturing executives and managers expect growth in the coming months, and are considerably more optimistic about business conditions than a year ago. Overall, the Purolator International Long Island Supply Chain Index increased almost six points, going from 61.6 in 2017 to a current 67.5.

Long Island manufacturers expressed optimism in all areas covered by the Index but that sentiment is especially strong when it comes to new orders, production levels, and hiring. Another interesting finding was the increase in the number of Long Island companies exporting their goods.

Manufacturing executives and managers were most optimistic about new orders with an Index score of 78.6. Almost two-thirds (64%) of all executives and managers expect new orders to increase in the next six months, a marked increase from the 53% reported in 2017. Another 30% expect new orders to remain the same. This results in over 90% of respondents anticipating growth or stability in their business.

Similarly, over half (54%) of Long Island manufacturers expect production levels to increase, compared to only 4% who expected a decrease, resulting in an all-time high Index rating of 75.2

Expectations for a growth in employment also improved noticeably over the last year, rising from 59.7 in 2017 to 66.0 currently. In fact, 36% of respondents expect to hire in the next six months, an increase from the 25% reported in 2017. This demonstrates strong potential job growth for the region in the coming months.

Compared to the 2017 Index, the number of Long Island manufacturers that export has increased significantly, from 35% in 2017 to 53% currently, and 35% expect to increase the number of goods that they're exporting in the coming months.

Purolator International Long Island Supply Chain Index Summary

Table 1: Long Island Supply Chain Index

	% Increase	% Decrease	% Same	Index, 2019	Index, 2017	Index, 2016
New Orders	64	7	30	78.6	72.4	73.0
Production Level	54	4	42	75.2	69.9	69.3
Price (Raw Material)	62	4	34	78.9	75.0	67.5
Exports	35	9	56	62.7	56.8	60.0
New Employees	36	4	60	66.0	59.7	56.3
Inventory Level	28	14	58	56.7	53.7	54.9
Backlog Orders	38	13	49	62.7	55.6	54.3
Air Shipment*	24	5	71	59.3	50.0	49.3
SUMMARY INDEX				67.5	61.6	60.6

* Asked about past six months.

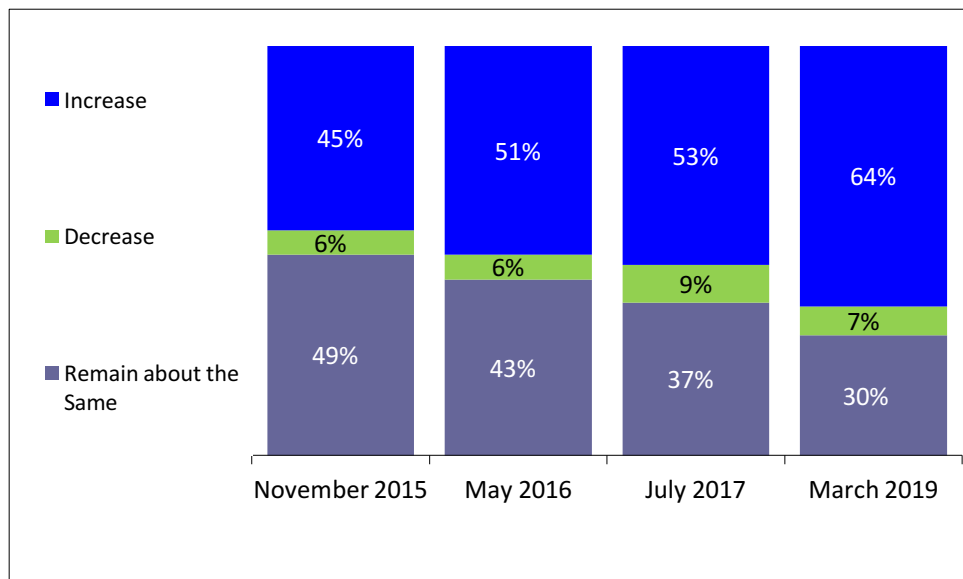
"Don't know" responses are excluded from the table but included in the calculation of percentages.

New Orders

Almost two-thirds (64%) of all executives and managers expect new orders to increase in the next six months. Only 7% mentioned a decrease, and less than a third (30%) expected new orders to remain the same. This results in considerable optimism about new orders.

When converted into an index ranging from 0 to 100 (complete decline to complete expansion), new orders yielded a very positive score of 78.6 (calculated adding the percent who see growth or expansion plus a half of those who believe things will remain the same). This is the highest Index score recorded over the last three years. (Figure 1)

**Figure 1: Over the next six months, do you anticipate
NEW ORDERS from customers to...? (Q2)**



Note: Data in 2015 excludes companies with 1-4 employees

Regardless of company size, manufacturing executives expected an increase in new orders in the coming months: 69% of companies with 25 or more employees anticipated an increase in new orders from customers, compared to 66% of companies with 10 or fewer employees.

When asked why they expect new orders to increase, a near majority of manufacturing executives and managers saw this as linked to factors likely to persist over time. Just over a quarter (28%) mentioned the emergence of new customers or new markets, 13% mentioned an improvement in business conditions, and 6% mentioned expanded production. A minority (27%) mentioned temporary factors linked to heightened seasonal demand as the explanation for anticipated new orders. Interestingly, 25% this year stated “other” reasons including competitors going out of business, or adding more sales forces, or marketing. (Table 2)

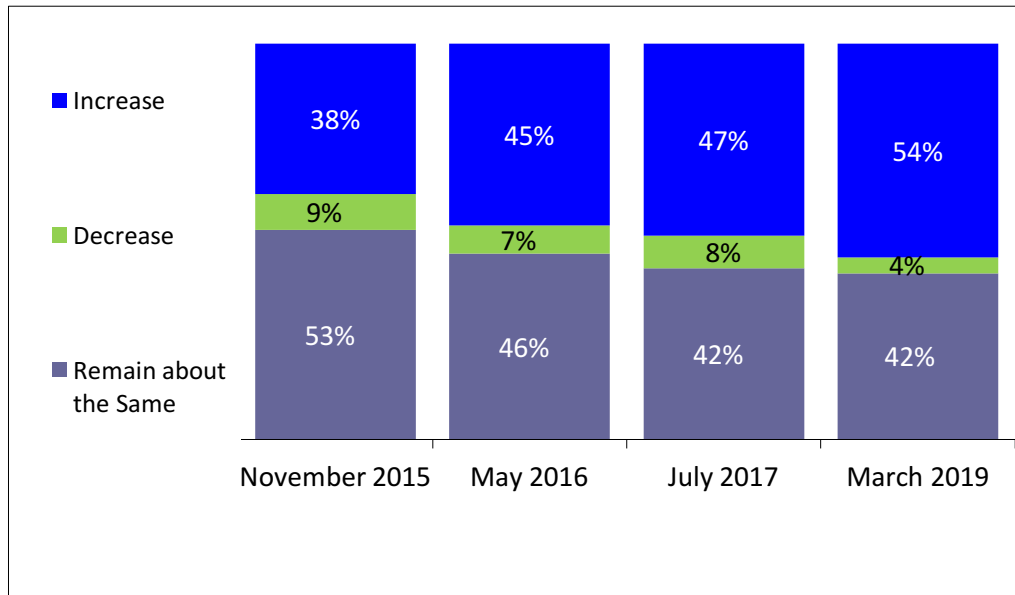
Table 2. What is the main reason why you expect NEW ORDERS from customers to increase? (Q2a)

Reasons for Increase	November 2015	May 2016	July 2017	March 2019
Emergence of new customers or a new market	32%	26%	34%	28%
Increase in seasonal demand	18%	26%	27%	27%
Improvement in general business conditions	21%	13%	19%	13%
Expanded production capacity	11%	13%	10%	6%
Other	18%	20%	10%	25%

Enhanced Production Levels

More than half (54%) of Long Island manufacturing executives and managers expect production levels to increase in the next six months, compared to only 4% who expect a decrease, leading to overall growth. This represents a marked increase over 2017. The production Index hit an all-time high of 75.2. (Figure 2)

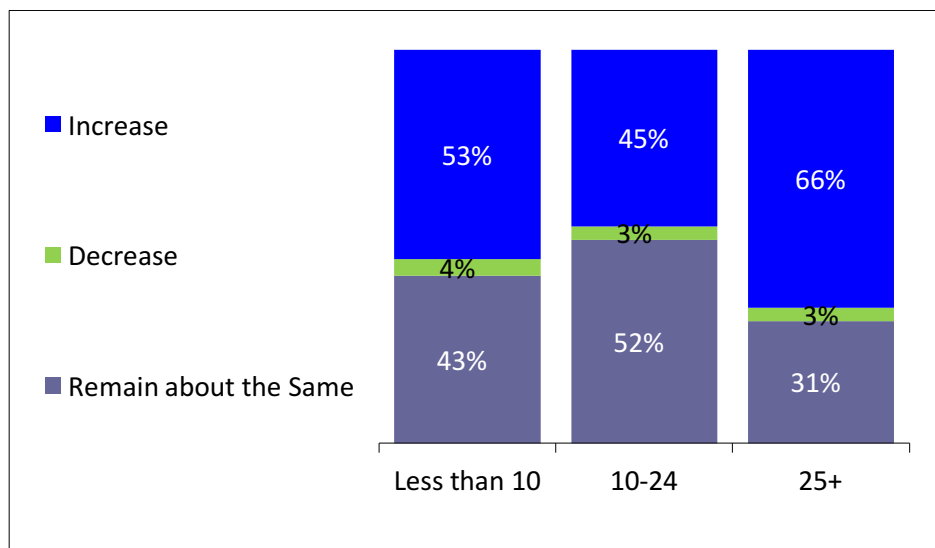
Figure 2. Over the next six months, do you expect PRODUCTION LEVELS to...? (Q1)



Note: Data in 2015 excludes companies with 1-4 employees

The expected growth in production was most pronounced among larger companies with 25 or more employees. 66% of these companies expected production to increase compared to 53% of those with fewer than 10 employees. (Figure 3)

**Figure 3. Over the next six months, do you expect PRODUCTION LEVELS to...? (Q1)
"By Number of Employees"**



Roughly 46% attributed the growth in production to relatively stable factors such as new markets (25%) and a general improvement in business conditions (21%). Another 23% attributed this to increased seasonal demand. (Table 3)

Table 3. What is the main reason why you expect PRODUCTION LEVELS to increase? (Q1a)

Reasons for Increase	November 2015	May 2016	July 2017	March 2019
Increase in seasonal demand	20%	27%	35%	23%
Emergence of new customers or a new market	24%	37%	25%	25%
Improvement in general business conditions	22%	15%	20%	21%
Expanded Production Capacity	16%	9%	14%	11%
Other	17%	12%	6%	21%

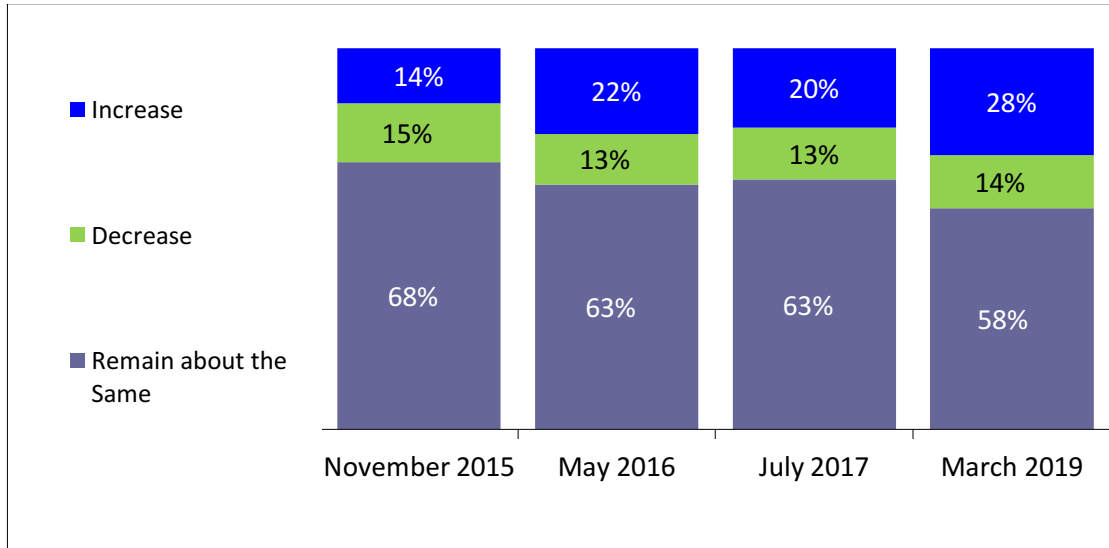
Note: Data in 2015 excludes companies with 1-4 employees

Inventory Levels

A greater number of Long Island manufacturing executives and managers expect their inventory levels to increase (28%) than decrease (14%) in the next six months, with 58% expecting levels to stay the same. This generated a positive Index of 56.7.

Increased inventory is considered more advantageous than decreased inventory because it means that manufacturers have the capacity to meet sales demand. Expectations about increased inventory were greater among companies with a smaller sales volume and fewer employees. 38% of those with less than a million dollars in sales expected an increase in inventory compared to 20% of those with sales over a million dollars. Overall, the inventory Index increased from 53.7 in 2017 to 56.7 in 2019. (Figure 4)

**Figure 4: Over the next six months,
do you expect your INVENTORY LEVELS to...? (Q3)**



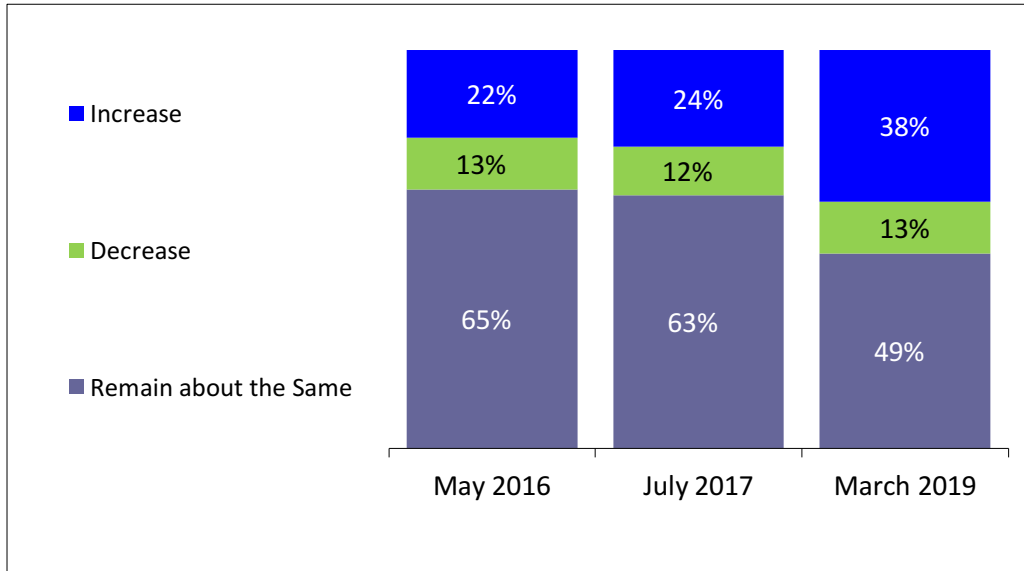
Note: Data in 2015 excludes companies with 1-4 employees

Backlog Order

A greater number of executives expected their backlog of orders to increase (38%) than decrease (13%) in the coming six months. This was largely due to stable factors such as new customers (33%) and improved business conditions (19%). Increased seasonal demand also played an influential role with 38% of executives and managers saying it would lead to an increase in backlog orders.

An expected increase in backlog was observed regardless of company sales volume. The backlog Index was a positive 62.7, an increase over 55.6 in 2017, reflecting an expected increase in orders and a potential need for increased future production. *(Figure 5)*

**Figure 5: Over the next six months,
do you expect YOUR BACKLOG OF ORDERS to? (Q9)**



Note: Question wasn't asked in 2015

Price of Raw Materials

Executives expected an increase in the price of raw materials in coming months, serving as an additional indicator of growth in the manufacturing industry. There have been expected increases in prices in each successive Index from 67.5 in 2016 to 75 in 2017 and 78.9 in 2019. In 2019, 62% of executives expected prices to increase compared to 4% who expected a decline.

Hiring

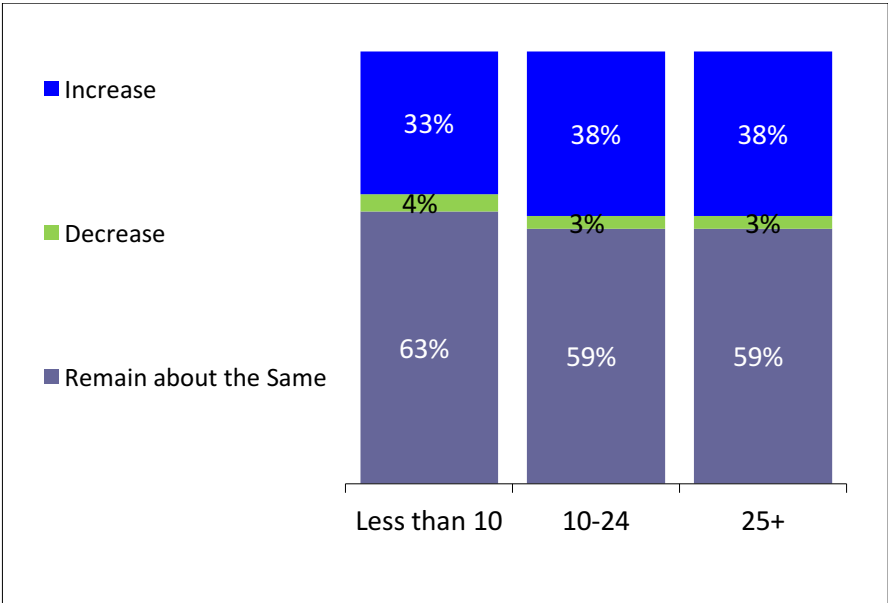
The overall picture for hiring is positive. 66% of companies had hired a new employee in the last year which was an increase over 2017 (60%). Large companies were most likely to have hired. 83% of companies with 25 employees or more had hired a new employee compared to 54% of those with 10 or fewer employees. 76% of companies with annual revenues of a million dollars or more had hired compared to 47% of those with revenues under a million.

The outlook for hiring in the next six months was also very positive and reflected an improvement over 2017. 36% of executives expected to expand the size of their company compared to 4% who said their company would decrease in size.

Company executives said that this growth was due to stable factors such as new customers (32%) and improved business conditions (24%) plus some increase in seasonal demand (16%). Overall, the employment Index reached a record high of 66 compared to 59.7 in 2017 and 56.3 in 2016.

Larger companies with a greater number of employees were most likely to say they would increase their workforce in the next 6 months. (Figure 6)

**Figure 6: Over the NEXT SIX MONTHS, do you expect the total number of employees in your company to? (Q6)
“By Number of Employees”**



Air Shipments

42% of companies in the study do not ship by air. Among those who do, a majority (71%) said air shipments had remained the same over the last six months. Almost a quarter of companies had increased (24%) air shipments in the past six months compared to only 5% who reduced the number of their air shipments.

Export

More than a half (53%) of all manufacturing companies surveyed export their products, an increase over 2017 when 35% of companies said they exported their products.

Of the less than half (47%) that do not export, only 18% said they were or might be interested in exporting goods in the future.

The most common region for exports is Asia (41%), an increase when compared to 2017 (28%). This is followed by Canada (34%) and Europe (30%). A quarter of companies export to Mexico (25%) and to other countries in Central and South America (25%). 14% export to the Middle-East. Among exporters, the majority (62%) receive less than 10% of their revenues from exports.

Among companies that export, a greater number expect to increase (35%) than decrease exports (9%) in the coming six months. Newer companies, founded in 1975 or later, were most likely to expect an increase in their exports (29% compared to 7% of companies founded before 1975).

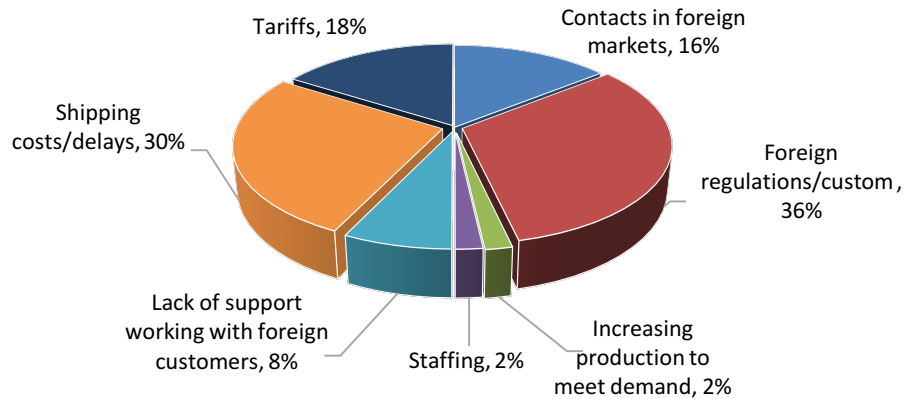
All told, the export Index for those companies currently engaged in exporting goods out of the country was a positive 62.7, and higher than in 2017 when the index was 56.8.

Challenges Faced by Exporters

When current exporters were asked about the challenges they face, the two most commonly mentioned factors were meeting foreign regulations and customs requirements, and shipping costs and/or delays. Other concerns included the cost of tariffs, developing contacts in foreign markets, and a lack of assistance in helping to market and work with foreign customers.

(Figure 7)

Figure 7. What if any challenges do you find in exporting your products?



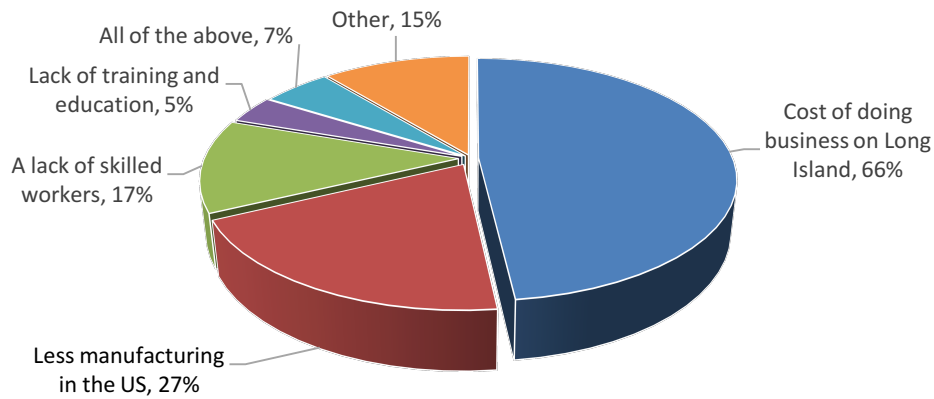
Future of Manufacturing on Long Island

In addition to the Index questions, the Purolator International Long Island Supply Chain Index asked survey respondents for their perceptions and beliefs about the future of the manufacturing industry on Long Island, where growth will occur, how the local government could better support local manufacturers, as well as the adoption of advanced manufacturing and/or robotics.

On average, manufacturing executives and managers were split over whether they felt more optimistic about Long Island manufacturing than 10 years ago. A slightly greater number were less optimistic (55%) than more optimistic (45%).

Those who responded with less optimism were then asked why they believe Long Island manufacturing was weaker than in the past, the most common response was the high cost of doing business on Long Island, followed by a general decline in American manufacturing, and a lack of skilled labor. (Figure 8).

Figure 8: Why do you believe the manufacturing industry on Long Island is weaker now than years past?



Manufacturing executives and managers were also asked what business groups and government could do to better support Long Island manufacturing. (Table 4)

Table 4: What could business groups and government officials do to better support the manufacturing industry on Long Island?

How can Business Groups and Government Help	March 2019
Provide tax relief	73%
Provide more education and training	32%
Pass favorable legislation	24%
Provide grant programs	24%
Other	15%

When asked what manufacturing industry sectors on Long Island have potential for future growth, the most popular response was medical care equipment and devices, followed by aerospace, biotechnology such as genetic research and DNA mapping, and computer and electronic components. (Table 5).

Table 5: In what manufacturing industry do you foresee growth opportunities on Long Island?

Manufacturing Growth Industries on Long Island	March 2019
Medical care equipment and devices	35%
Aerospace	32%
Biotechnology (genetic research, DNA mapping)	23%
Computer and electronic components	23%
Energy	14%
Chemical	7%
Other	24%

Advanced Manufacturing and Robotics

Almost 80% of respondents expected Long Island manufacturing companies to adopt advanced manufacturing and robotics, although executives were split over whether this would generate job losses (51% believed it would).

To date, 47% said their own company had digitized some of the manufacturing process, and 75% who had done so provided training for employees on the new technology.

Respondent Characteristics

The final number of respondents was 106. More than a fourth (41%) of all survey respondents were CEOs or Presidents, a quarter (25%) were Managers or Supervisors and the rest were VP/Directors or other executives. A majority of respondents' were involved in purchasing (67%), manufacturing or production (75%), operations (70%), Inventory (64%) and shipping (66%) and roughly two-thirds were involved in the supply chain. (Table 6)

Table 6: Title/Position of Respondent

Title	N=106
CEO/President	41%
Manager/Supervisor	25%
Vice President/Director	17%
Executive	5%
Other (Please specify)	12%

Current Position Involves:	
Manufacturing/Production	75%
Operations	70%
Purchasing	67%
Shipping	66%
Supply Chain	65%
Inventory	64%
Other	25%

Methodology

SUMMARY

The Supply Chain Index survey, obtained interviews with a sample of 106 manufacturing businesses in Nassau and Suffolk counties of New York. The survey was conducted by The Ohio State University and data was collected by telephone from December 11, 2018 to March 25, 2019. The margin of sampling error for the complete set of data is ± 9.5 percentage points. Stony Brook University designed the survey and analyzed the data to prepare this report.

DESIGN AND CONTACT PROCEDURES

Sample Design

Sample was provided by List Giant and was drawn from their Dun & Bradstreet Master File. All companies with manufacturing SIC codes with a location in Nassau or Suffolk county were initially selected.

Contact Procedures

Interviews were conducted from December 11, 2018 to March 25, 2019. Data was collected by phone interview. A total of between 2 and 11 attempts were made to contact every sampled company. Interviewers located the person responsible for manufacturing, production, inventory, operations, purchasing, or shipping. Interviewers also verified the number of employees to be 3 or more.

About Purolator International

Purolator International is a subsidiary of Purolator Inc., a leading integrated freight, package and logistics solutions provider in Canada. Purolator International specializes in the air and surface forwarding of Express, Freight and Parcel shipments, customs brokerage, and fulfillment and delivery services to, from and within North America. Purolator International has received numerous industry awards for its superior service and innovative solutions, including “100 Great Supply Chain Projects” by Supply & Demand Chain Executive magazine, “Top 100 Great Supply Chain Partners” by Supply Chain Brain magazine, “Top 100 3PL Providers” by Inbound Logistics, and Logistics Management’s “Quest for Quality Award.” In addition to facilities throughout New York, Purolator International has locations in key U.S. markets including Atlanta, Baltimore, Boston, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Columbus, Denver, Dallas-Fort Worth, Detroit, Nashville, Newark, Houston, Indianapolis, New York, Los Angeles, Kansas City, Memphis, Miami, Milwaukee, Minneapolis, Philadelphia, Phoenix, Pittsburgh, Raleigh-Durham, San Diego, Seattle, San Francisco, Salt Lake City, and St. Louis.

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