



2018 Q1 Tooling Barometer

March 28, 2018

Purpose and Methodology

Harbour Results, Inc. regularly conducts market research within the tooling industry to examine key trends, benchmarks, and forecast indicators. Over 100 tooling manufacturers and automation suppliers in 8 countries participated in this study, along with 60 production companies. The HRI team carefully analyzed the data from this study and reached out to companies when questions arose. In appreciation of your facility taking the time to be involved in this report, HRI is sending out this output for personal use. If any questions, comments, or suggestions arise when reading the following content, please reach out to the following individuals:

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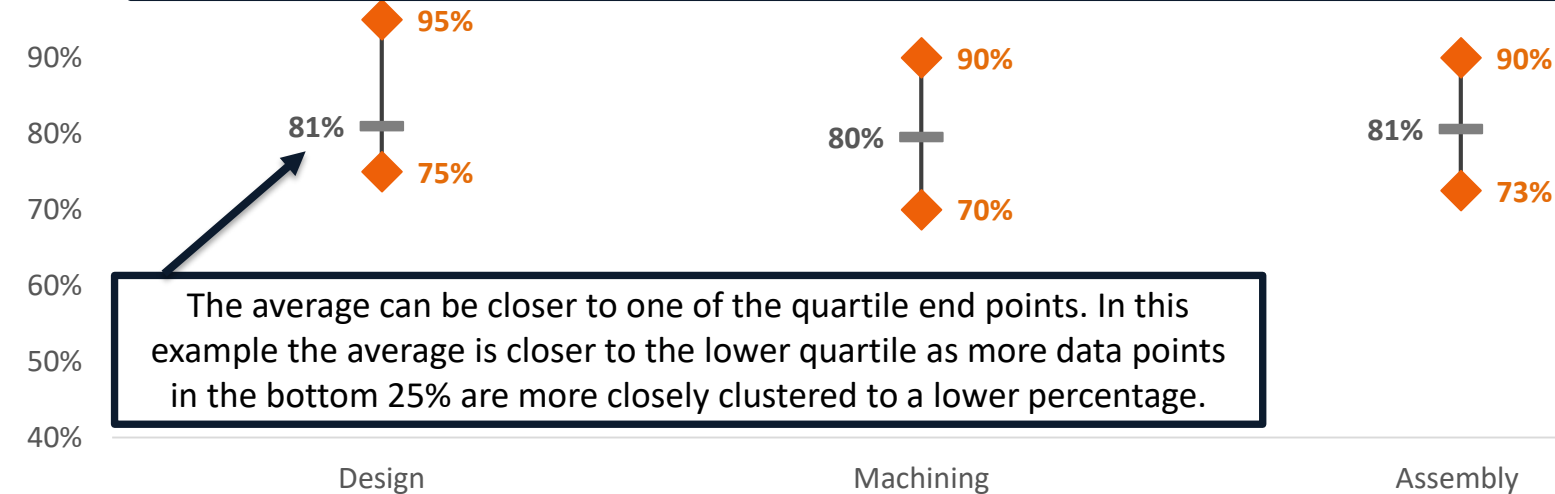
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Methodology - Quartile Example

Mold Builder Capacity Utilization

50% of the data points are between the top and low quartile points.
The remaining 50% split above and below the points – 25% fall above the top quartile and 25% fall below the bottom quartile data point.

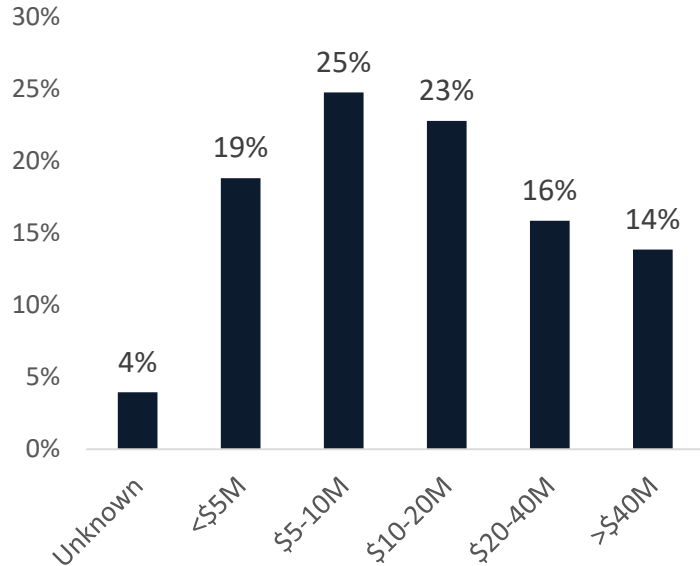


The average can be closer to one of the quartile end points. In this example the average is closer to the lower quartile as more data points in the bottom 25% are more closely clustered to a lower percentage.

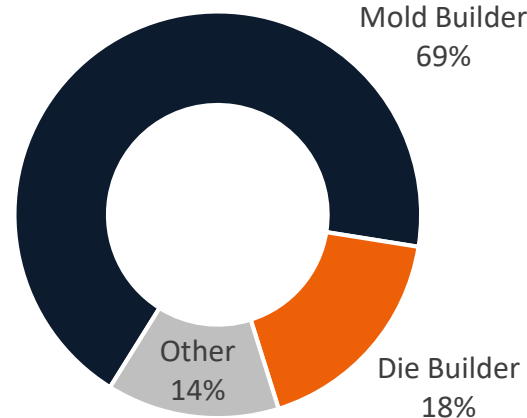
◆ High/Low Quartile — Average

Respondent Demographics: 102 Shops

Revenue Range (USD)



Shop Type



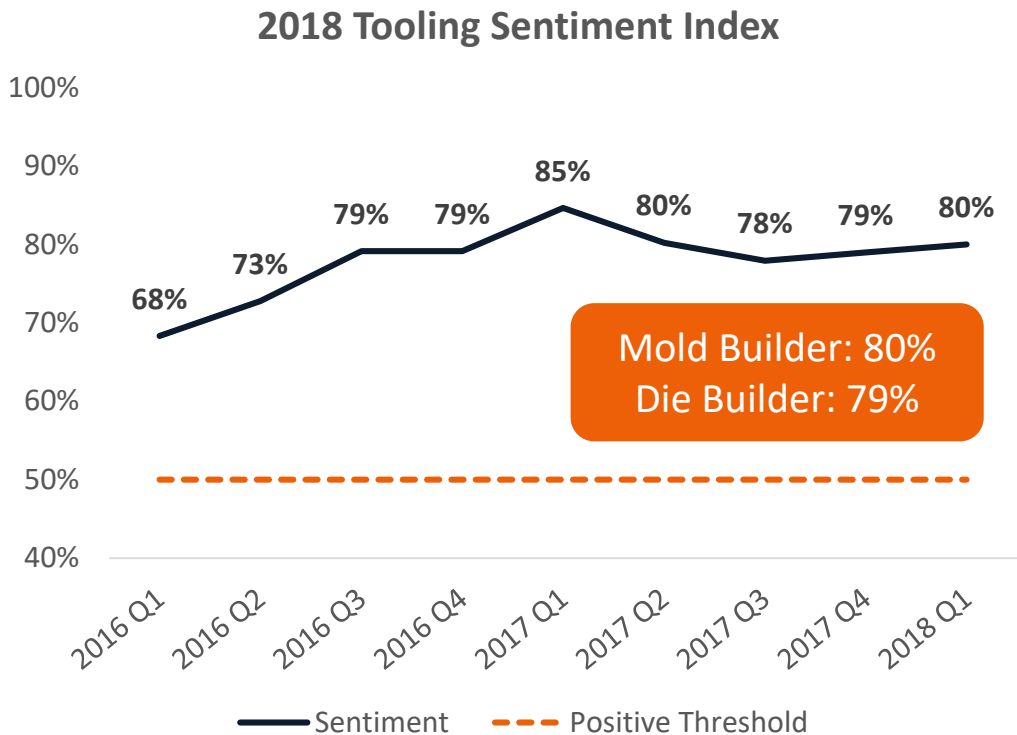
Other Contains:
 Equipment Suppliers - Automation
 Equipment Suppliers - Gauge/Fixture

Location

Region	% of Total
United States	56%
Canada	37%
Europe	5%
Asia	2%

Questions: What was your annual revenue for 2017? What is your Facility's Primary Focus? Please identify your company's geographic location.

Sentiment Increases, Still Down 5 Points from Peak

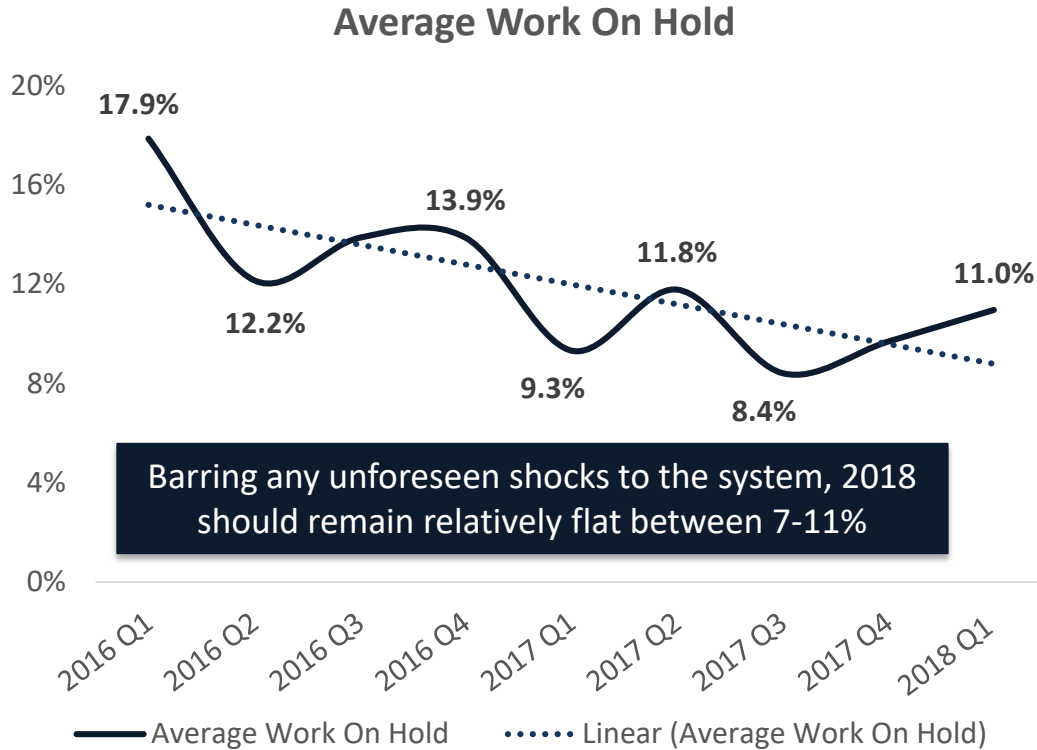


The first quarter saw a 1 point increase in overall sentiment and remains overwhelmingly positive.

Sentiment	% of Respondents	% Change from Q3 2017
Very Pessimistic	0%	-1%
Pessimistic	2%	-2%
Neutral	18%	-1%
Optimistic	57%	+1%
Very Optimistic	23%	+3%

Question: Over the next three months, what is the general outlook for your facility? Shop Type: Mold and Die Builders

Work On Hold Continues Downward Trend



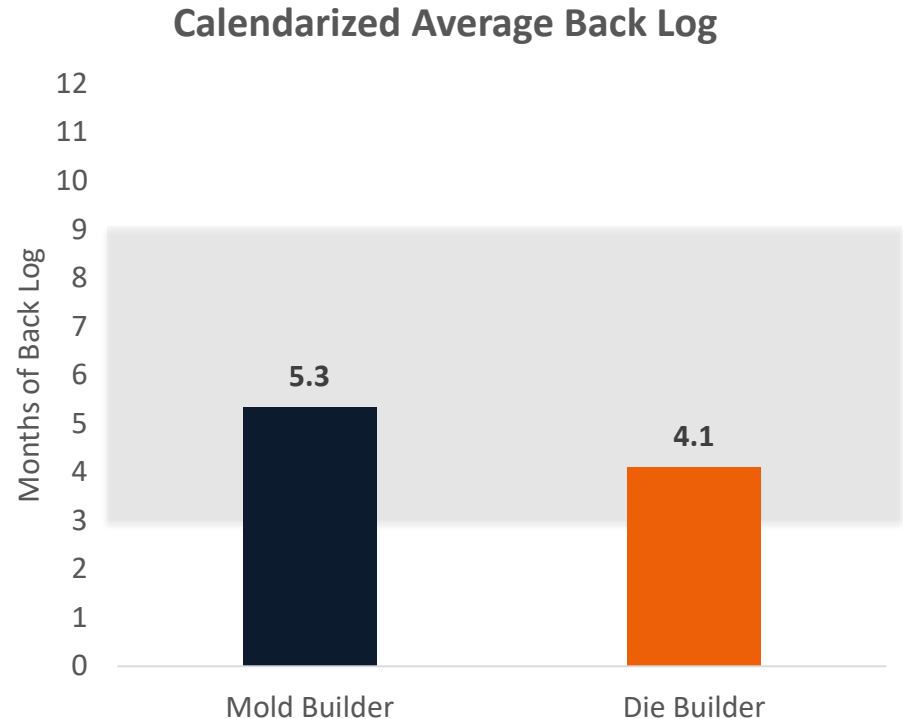
- Mold Shops are seeing higher levels of work on hold with an average of 12% (\$2.3M).
- Die Shops are experiencing lower work on hold levels with an average of 8% (\$1M) on hold.
- Work on hold increased from previous quarter following cyclical trends but long-term trend continues to decrease.

Question: What percentage of jobs have you been awarded are currently on hold due to reasons outside of your control? Shop Type: Mold and Die Builders

Mold Builders Maintaining Larger Back Logs

- The gray shaded area represents what HRI believes to be a targeted level for back log – between 3 and 9 months of annual revenue. This provides enough work to remain busy while reducing the need to outsource work or incur unexpected overtime hours.
- The best shops have a longer term horizon to future work.

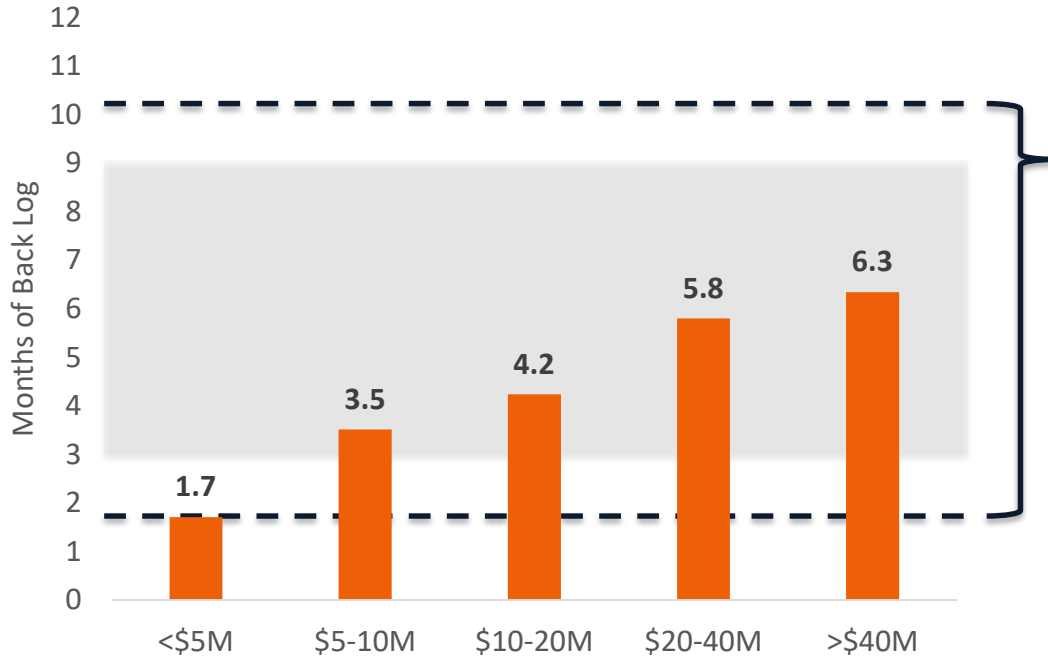
$$\text{Back Log Ratio} = \frac{\text{Back Log Value}}{\text{Annual Revenue}}$$



Question: What was your annual revenue for 2017? What is your facility's current back log? Shop Type: Mold and Die Builders

Back Log Varies Substantially by Shop Size

Calendarized Average Back Log



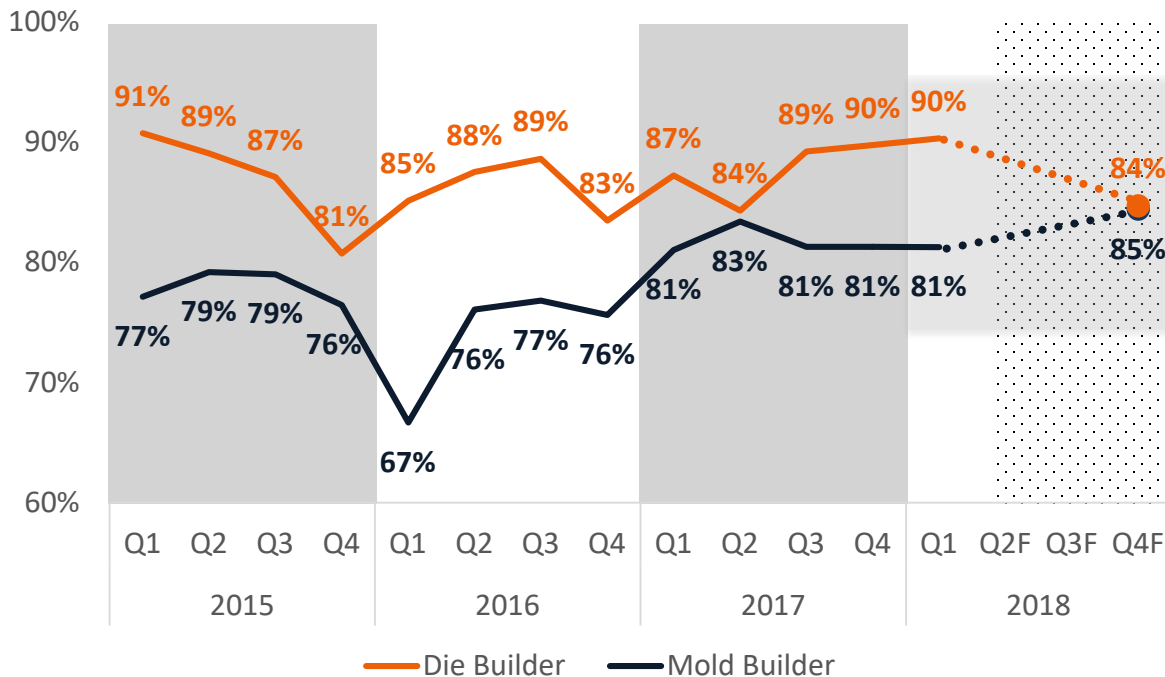
75% of shops presently have a back log valued between 1 month and over 10 months of their annual revenue.

Back log levels are not indicators of a company's profitability or efficiency but correlated strongly with a company's size.

Question: What was your annual revenue for 2017? What is your facility's current back log? Shop Type: Mold and Die Builders

Capacity Utilization Forecasted to Remain Stable

Capacity Utilization Trend by Shop Type



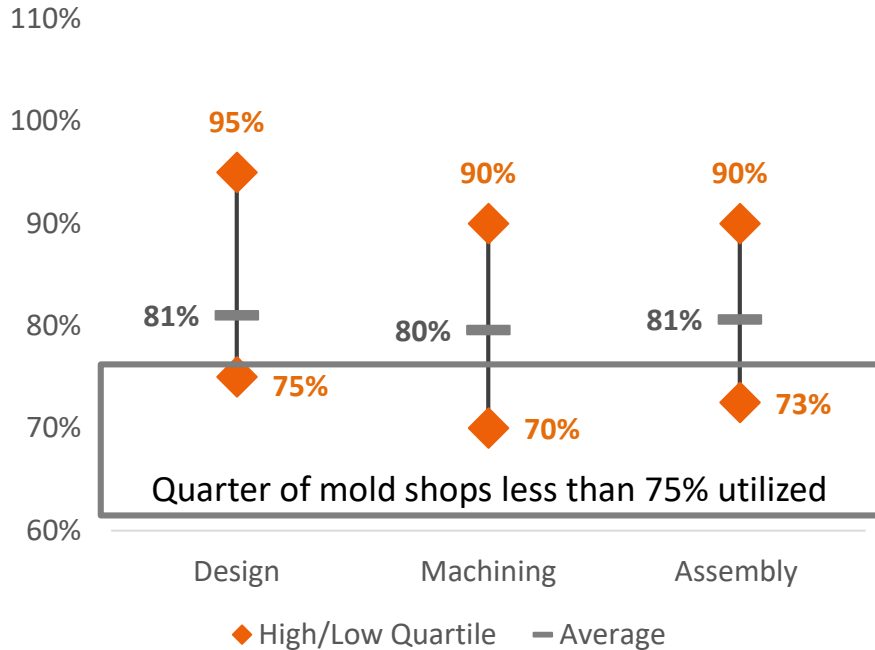
- Over the last 12 months, die and mold builders alike have experienced relatively strong build volumes.
- The shaded light gray area on the graph represents the range in which the majority (50%) of mold and die shops report their current and future utilization rates.

Question: What is your facility's current overall capacity utilization? What is your facility's expected 2018 overall capacity utilization? Shop Type: Mold and Die Builders

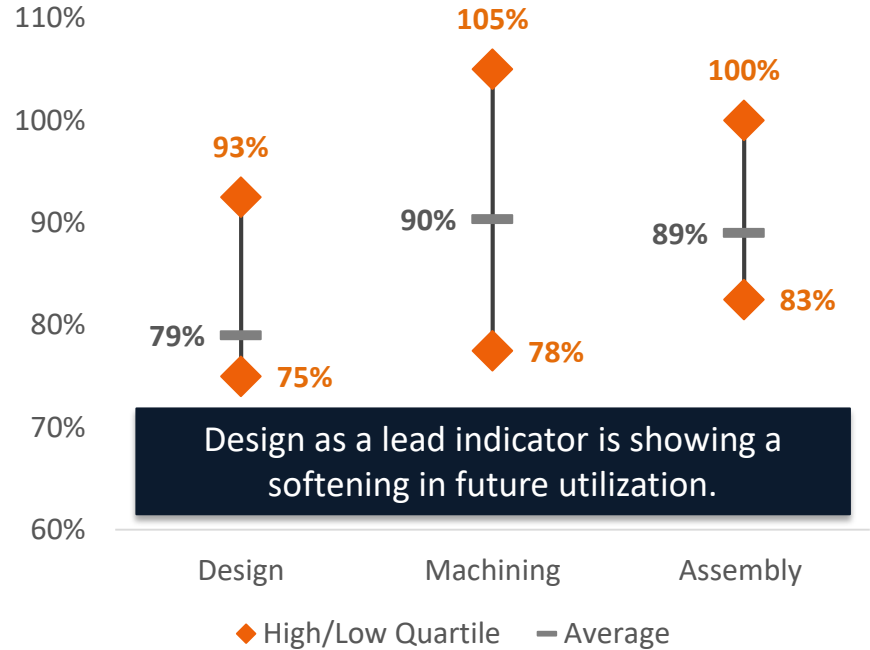
Die Shops Seeing Higher Utilization

Die Design Indicates Potential Leveling of Utilization

Mold Builder Capacity Utilization

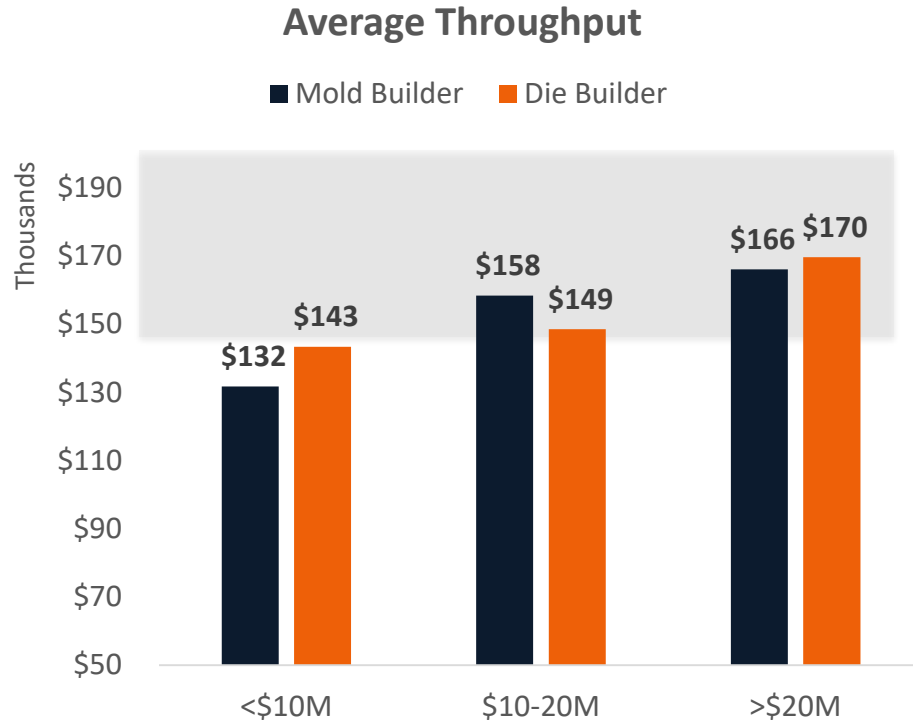


Die Builder Capacity Utilization



Question: Based on your shift structure and hours, what is your facility's Design/Engineering, Machining and Assembly Capacity Utilization? Shop Type: Mold and Die Builders

Die Shops Seeing Higher Efficiency Levels



HRI views throughput as a sign of efficiency which is strongly correlated to profitability – the gray shaded area represents strong throughput.

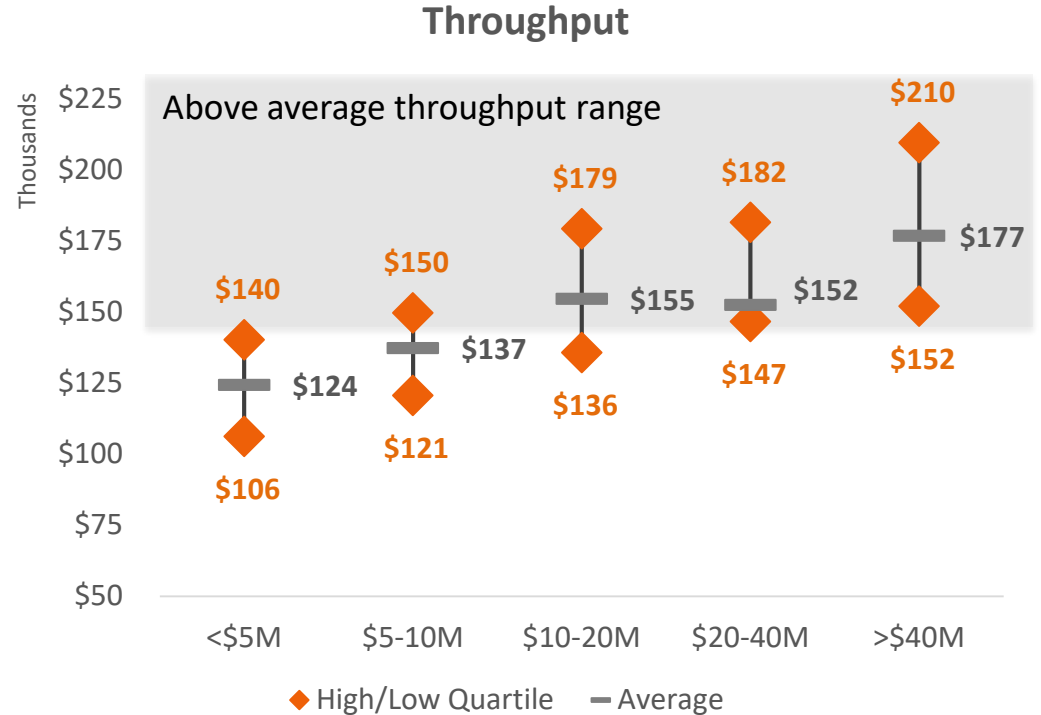
A shops ability to improve throughput should translate directly to their bottom line.

$$\text{Throughput} = \frac{\text{Revenue} - \text{Subcontracting}}{\text{Full Time Equivalent}}$$

Question: For calendar year 2017, what was your facility's Profit and Loss Statement Average Hours worked for Hourly Employees. Number of Full-time Hourly Employees, Number of Salaried Employees. Shop Type: Mold and Die Builders

Larger Shops See Higher Levels of Efficiency

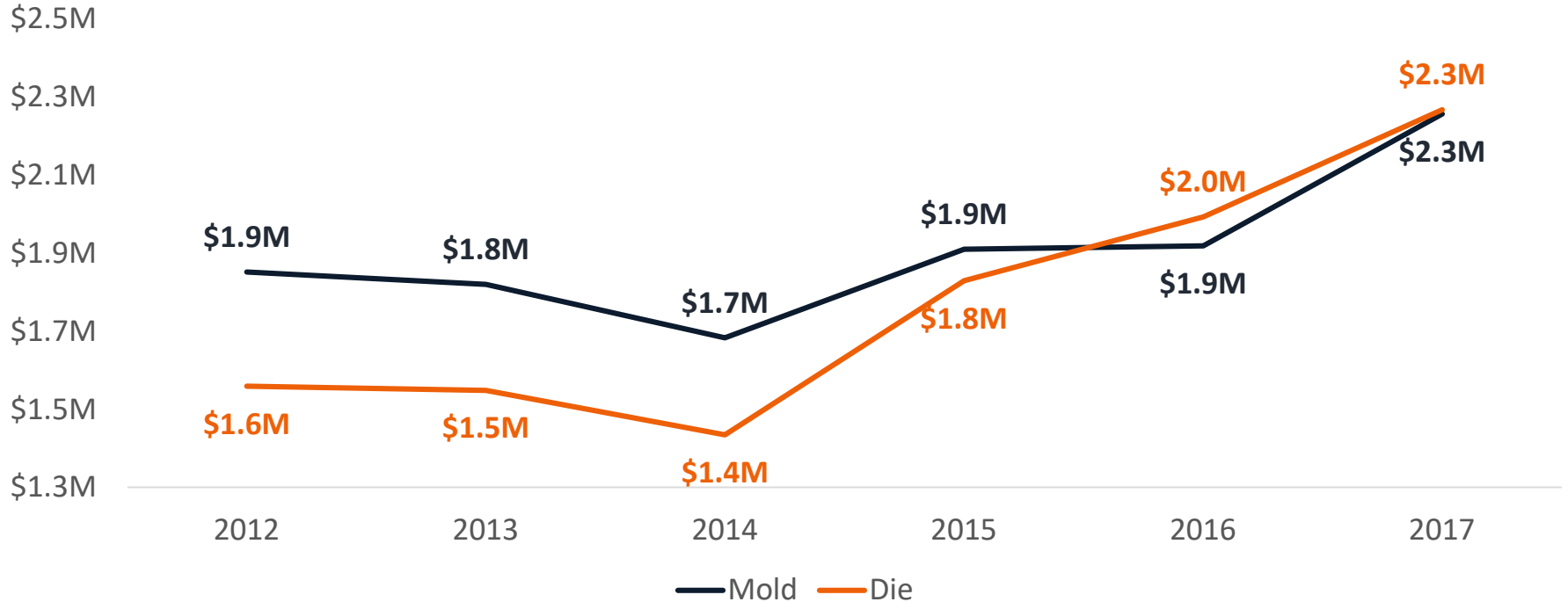
- Shops greater than \$30M in annual revenue see higher levels of efficiency in their throughput with an average of \$168k.
- Smaller shops are seeing lower levels of efficiency, below the target of \$150k.
- Shops over \$20M are investing in the next stair step of growth, impacting their throughput performance.



Question: For calendar year 2017, what was your facility's Profit and Loss Statement (in raw dollars)? Average Hours worked for Hourly Employees. Number of Full-time Hourly Employees, Number of Salaried Employees. Shop Type: Mold and Die Builders

Tooling Significantly Improving Design Efficiency

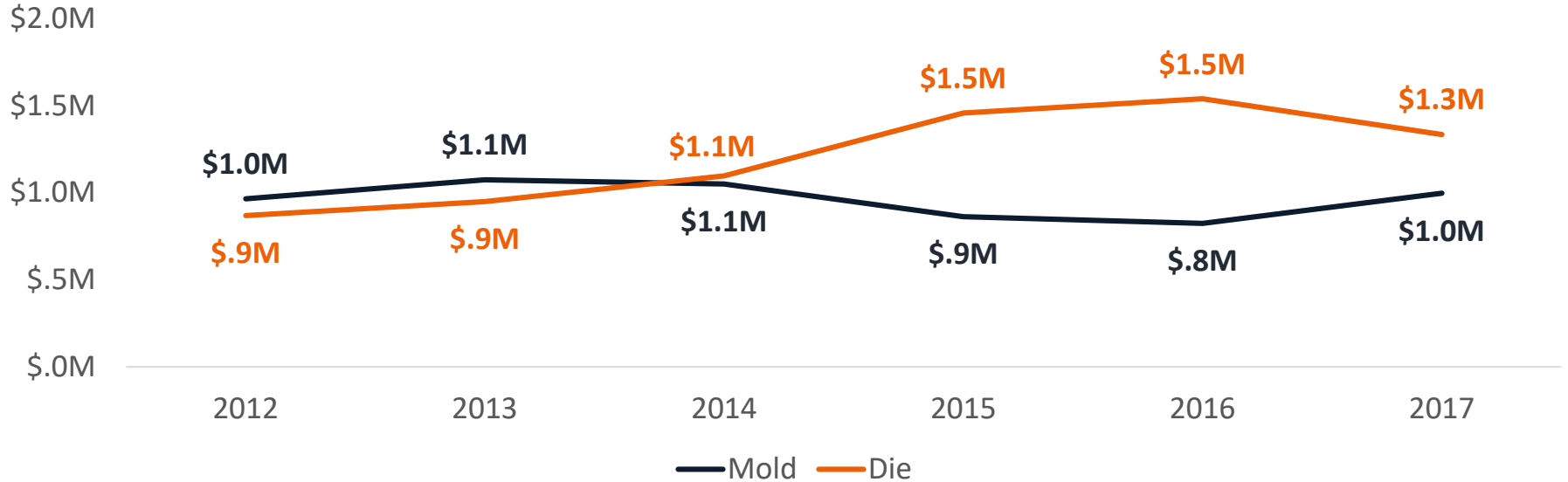
Revenue Per Designer



Question: What was your annual revenue for 2017? Employees in the following departments: Design, Machining and Toolmaking. Shop Type: Mold and Die Builders

Mold Depending On Higher Headcount in Machining

Revenue Per Machinist

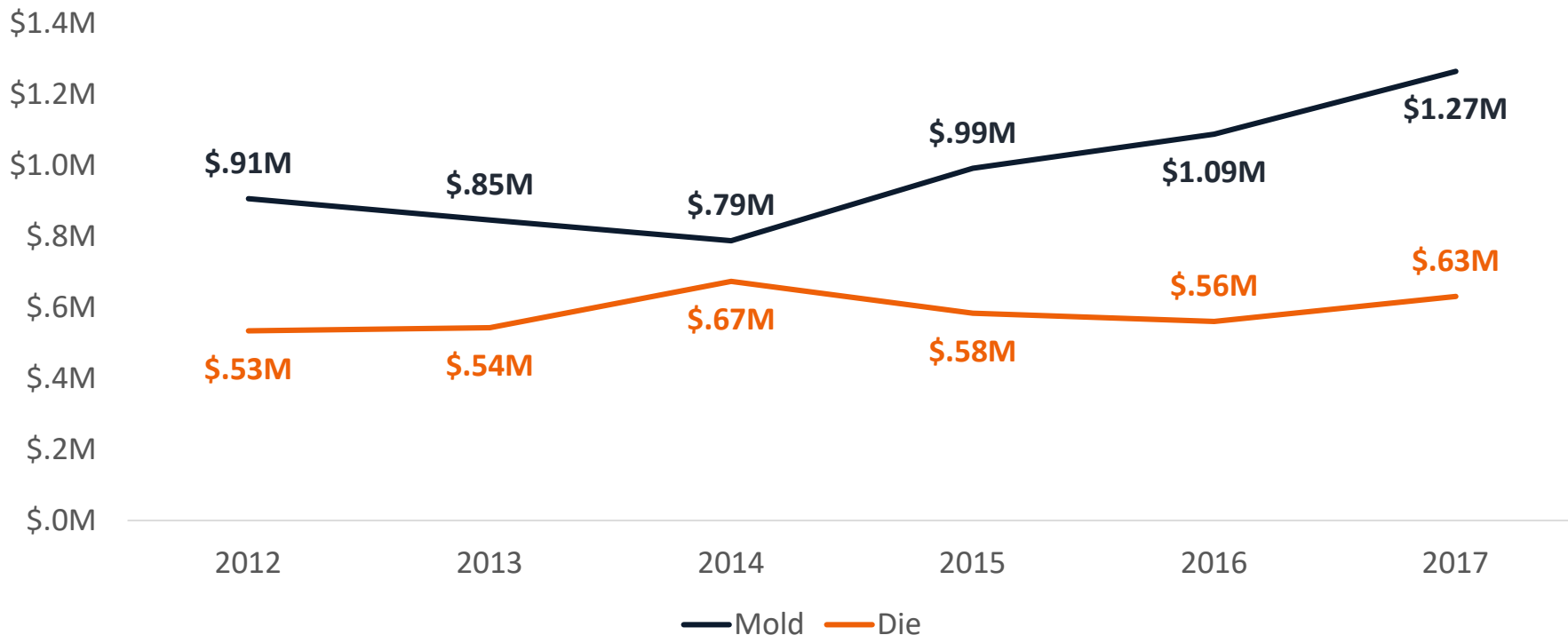


The transition in the mold industry toward more machinists has largely been a strategic effort aimed at reducing labor requirements in tool building and tryout.

Question: What was your annual revenue for 2017? Employees in the following departments: Design, Machining and Toolmaking. Shop Type: Mold and Die Builders

Mold Assembly Efficiency Improving Significantly

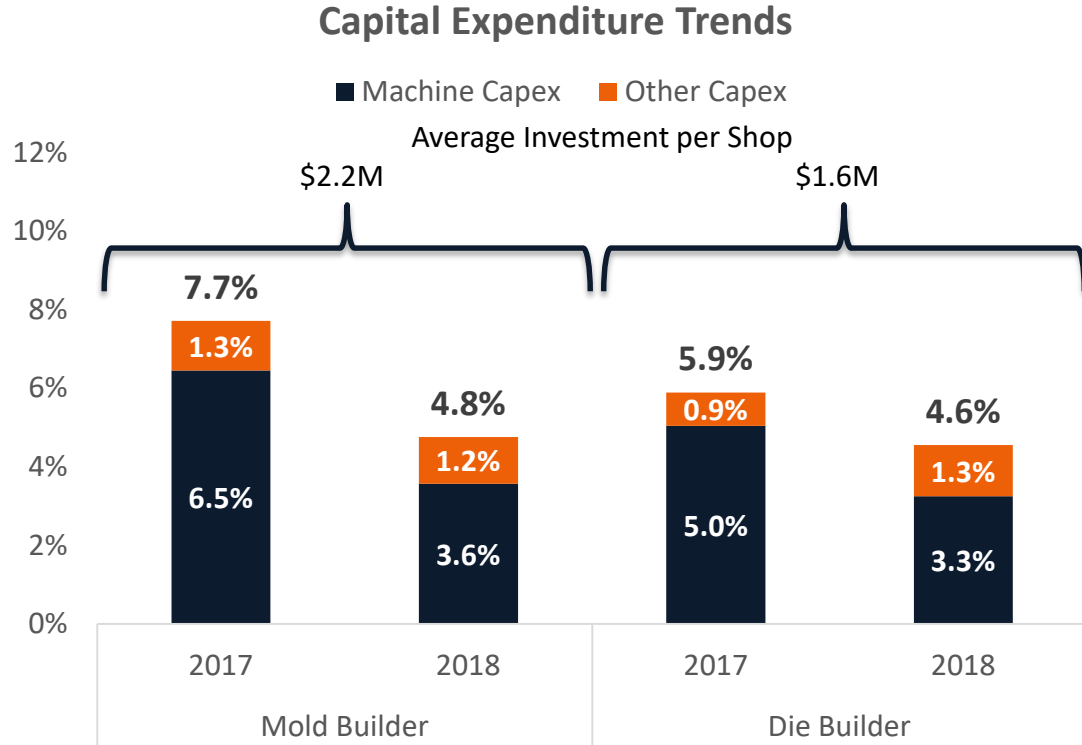
Revenue Per Toolbuilder



Question: What was your annual revenue for 2017? Employees in the following departments: Design, Machining and Toolmaking. Shop Type: Mold and Die Builders

Shops Planning to Invest Less in 2018

- On average mold builders investing more than die shops. Particular investment in automation and new high speed cutting equipment.
- Nearly all tool suppliers planning a decline from significant investment in 2017. A great deal of investment has already taken place and HRI suspects this will continue to slow.

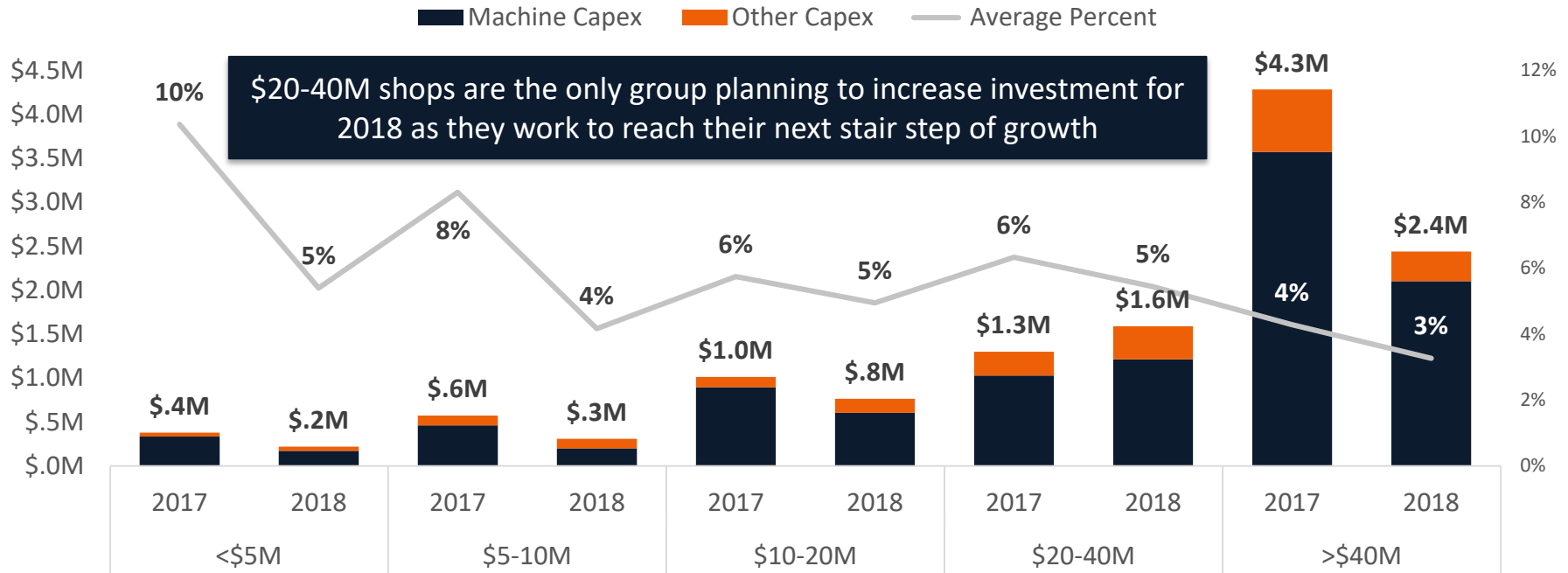


Question: How much did your facility contribute toward new capital expenditures in 2017 and how much is planned for 2018: Total, Machine, Other?
Shop Type: Mold and Die Builders

Large Shops Drive Investment by Dollar

However, Smaller Shops Invest Most as a Percentage

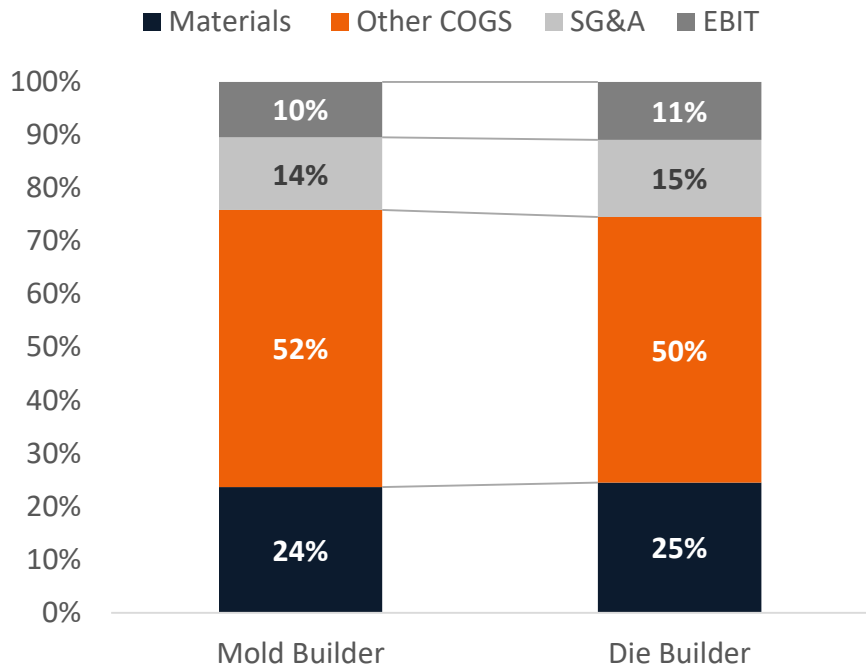
Capital Expenditure Trends



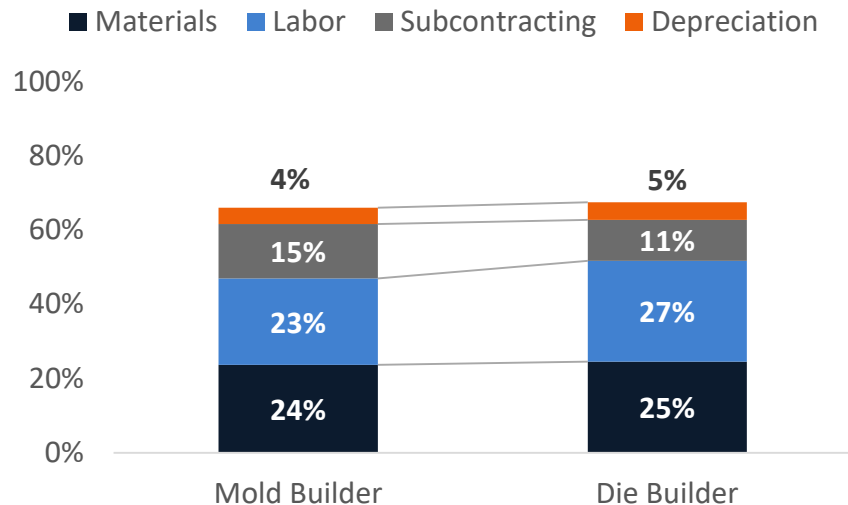
Question: How much did your facility contribute toward new capital expenditures in 2017 and how much is planned for 2018: Total, Machine, Other?
Shop Type: Mold and Die Builders

Mold and Die Shops See Similar P&L Statements

Profit and Loss Summary



Manufacturing Detail

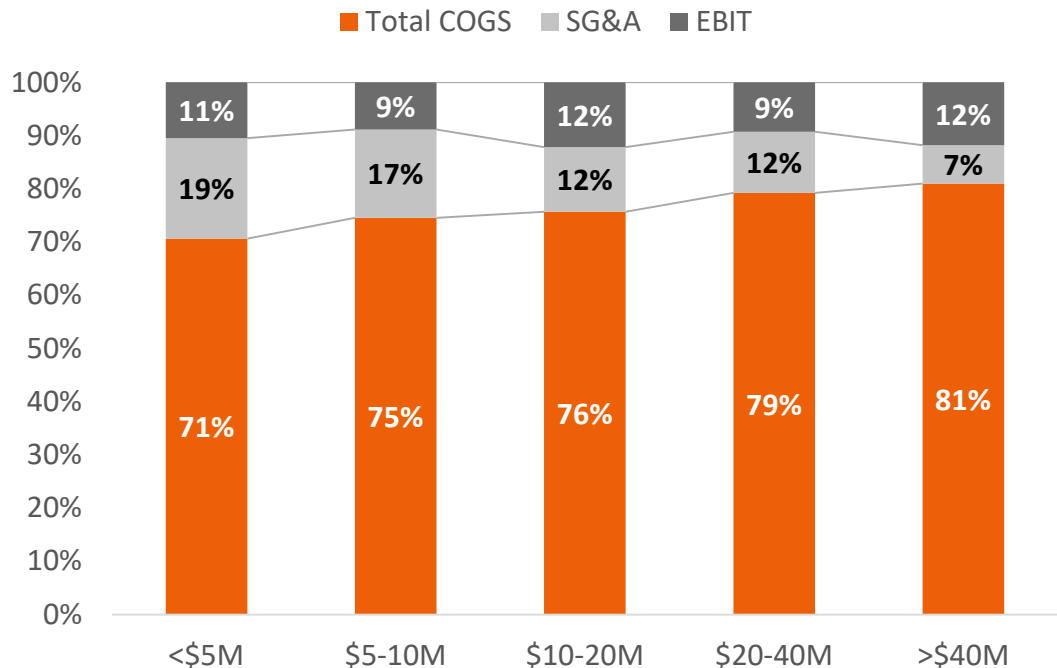


Die Builders' labor content offset by higher subcontracting by Mold Builders.

Question: For calendar year 2017, what was your facility's Profit and Loss Statement? Shop Type: Mold and Die Builders

P&L Breakdown Varies Significantly by Shop Size

Profit and Loss Summary

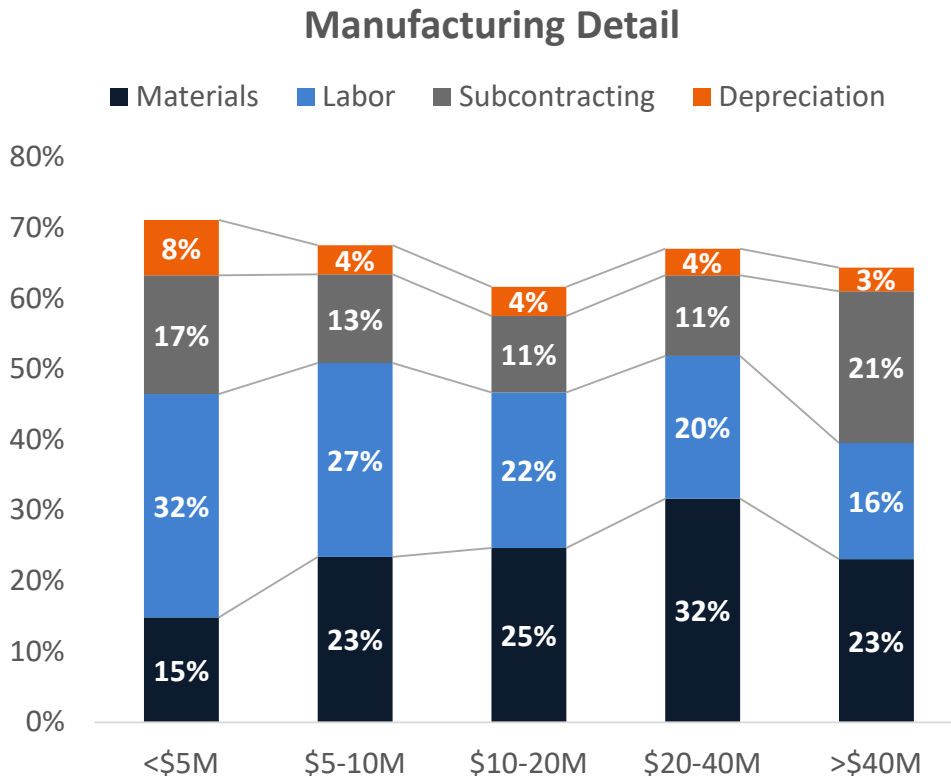


- Larger shops typically see higher cost of goods sold (COGS) but can better leverage SG&A costs.
- EBIT performance for larger shops were more impacted in 2018 by outsourcing.
- As \$20-40M shops invest to reach their next stair step of growth their profitability dips.

Question: For calendar year 2017, what was your facility's Profit and Loss Statement? Shop Type: Mold and Die Builders

Smallest and Largest Shops Outsourcing the Most

- Small shops are seeing labor costs double those of the largest shops due to less automation and older equipment.
- Smaller shops outsource for capability (i.e. gun drill, EDM, etc.) while larger shops outsource more for capacity constraints.



Question: For calendar year 2017, what was your facility's Profit and Loss Statement? Shop Type: Mold and Die Builders

Larger Shops Have Low Current Ratios

- **General Guidelines:**

<1: Too Low

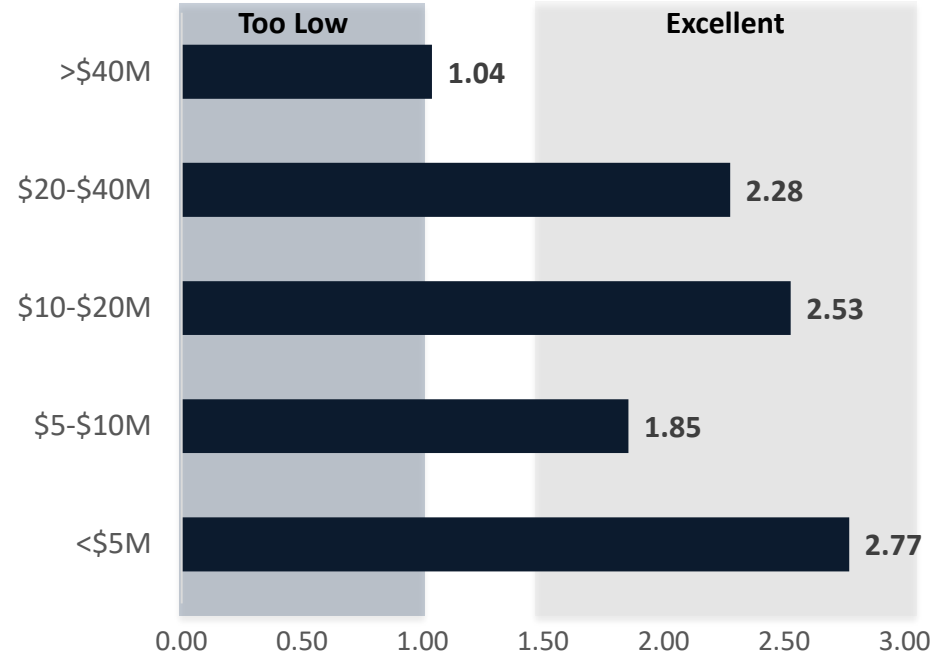
1.5-3: Excellent

>3: Too High

- Current ratio looks at the liquidity of the business – enough current assets needed to cover current liabilities
 - If too high, poorly leveraged assets or too much cash
 - If too low, risk not being able to meet current liabilities

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

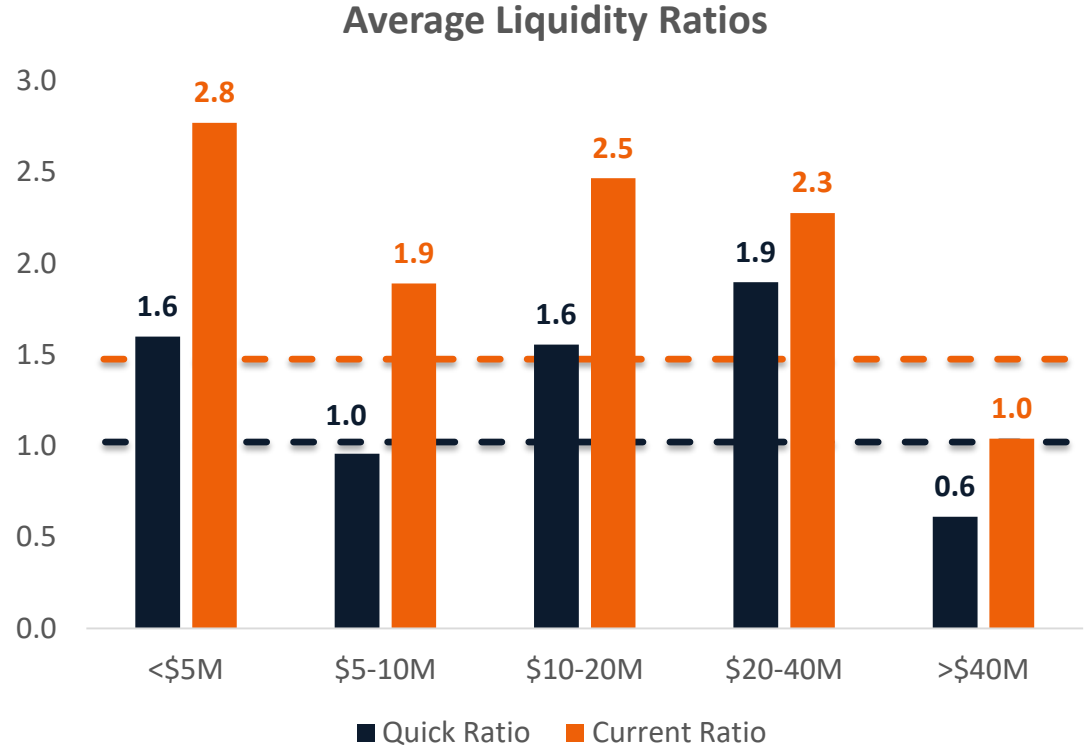
Average Current Ratio



Question: : For calendar year 2017, what was your facility's current assets and current liabilities? Shop Type: Mold and Die Builders

Over \$40M Most Impacted by Terms & Investment

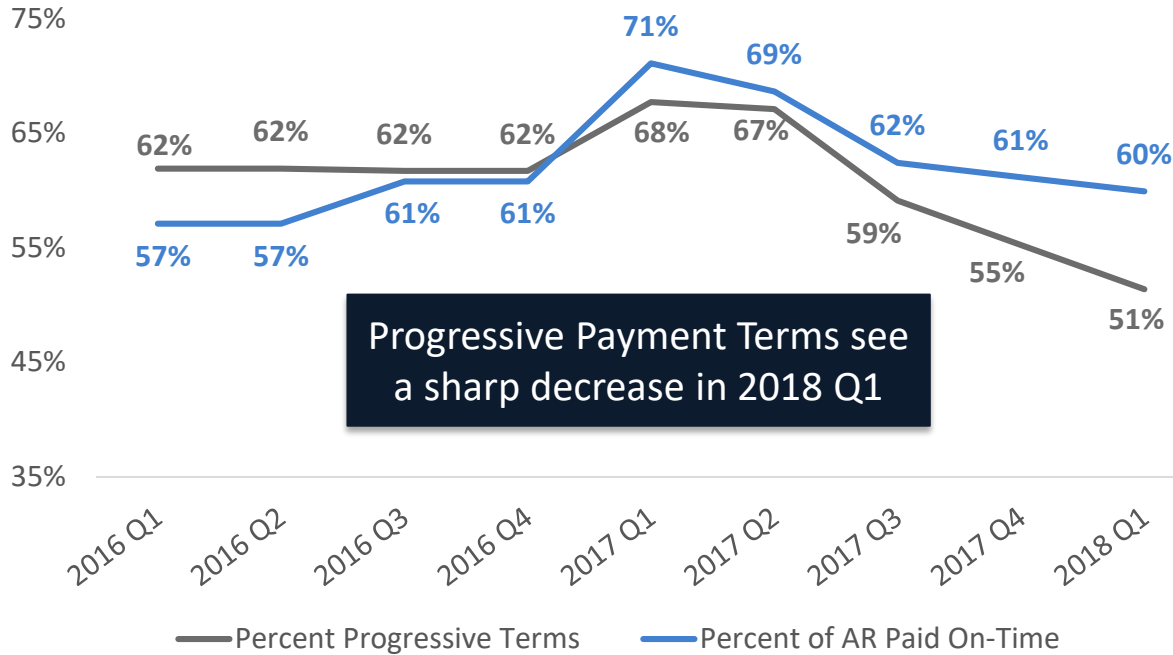
- **Quick ratio** – a liquidity ratio that further refines the current ratio by measuring the level of most liquid current assets to cover current liabilities.
- **Unique factors to a company and industry impact the quick ratio:** timing of capital expenditures, financial policies, timely payment from customers, ability to receive progressive payment terms and outsourcing



Question: For calendar year 2017, what was your facility's cash, accounts receivable, and current liabilities? Shop Type: Mold and Die Builders

Progressive Payments see a Sharp Decline

Progressive Payment Terms and AR Paid On Time



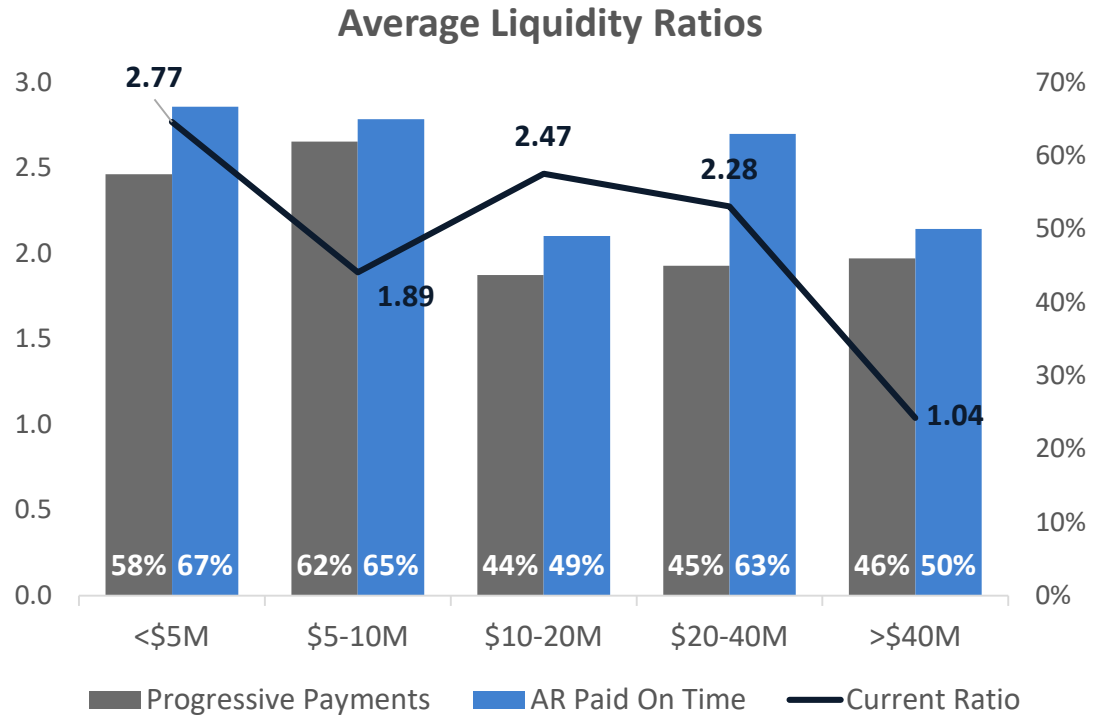
Progressive Payment Terms see a sharp decrease in 2018 Q1

Reduction in progressive payments will continue to increase as shop utilization levels return to more historic norms and outsourcing is reduced.

Question: Over the past three months, approximately what percent of your new booked business includes progressive payment terms and accounts receivables were being paid within contract terms. Shop Type: Mold and Die Shops

Largest Shops Receiving Least Payment Terms

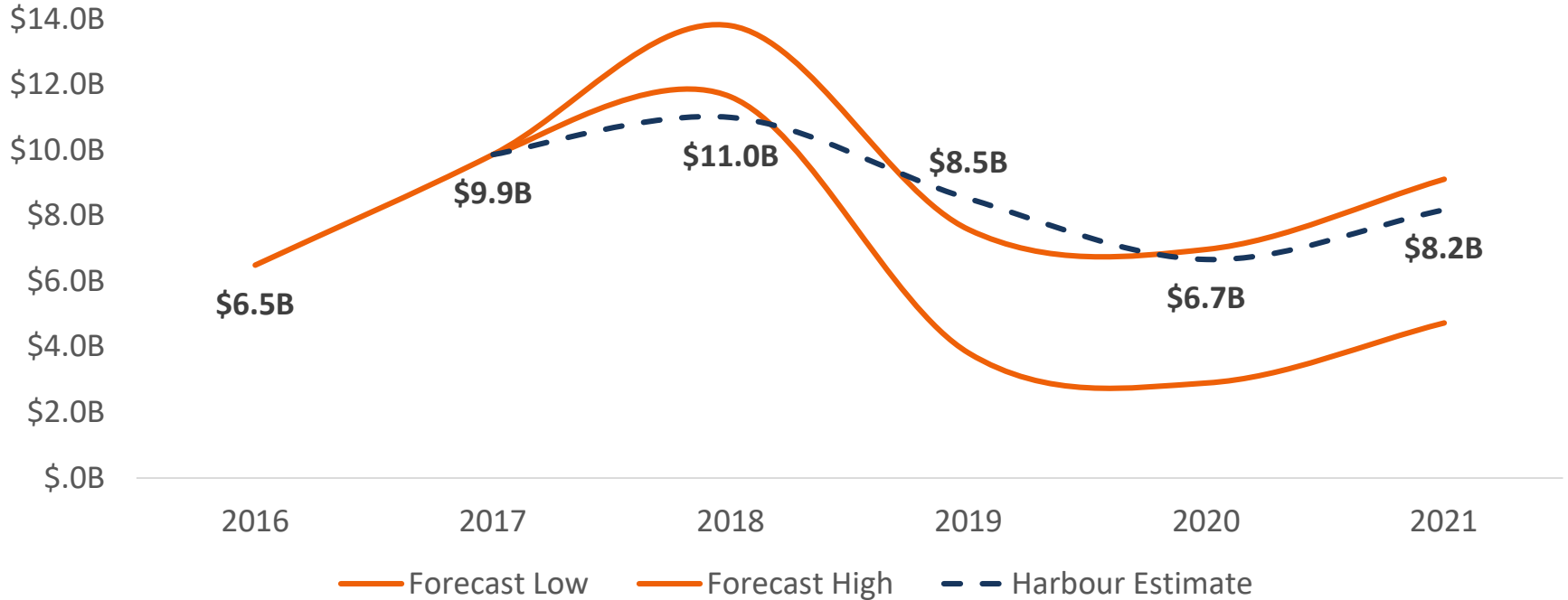
- Small shops command more progressive terms to survive and they have received them from large shops during outsourcing.
- Large shops have more ability to accept fewer progressive terms and need to keep business full to manage the size of their costs.
- With a potential market adjustment large shops will reduce outsourcing and the terms they are providing which may improve their liquidity.
- While smaller shops may see a reduction in revenue and potentially their liquidity.



Question: For calendar year 2017, what was your facility's cash, accounts receivable, and current liabilities? Shop Type: Mold and Die Builders

Vehicle Forecasts Still Indicate Potential Softening

Tool Sourcing Spend Estimate

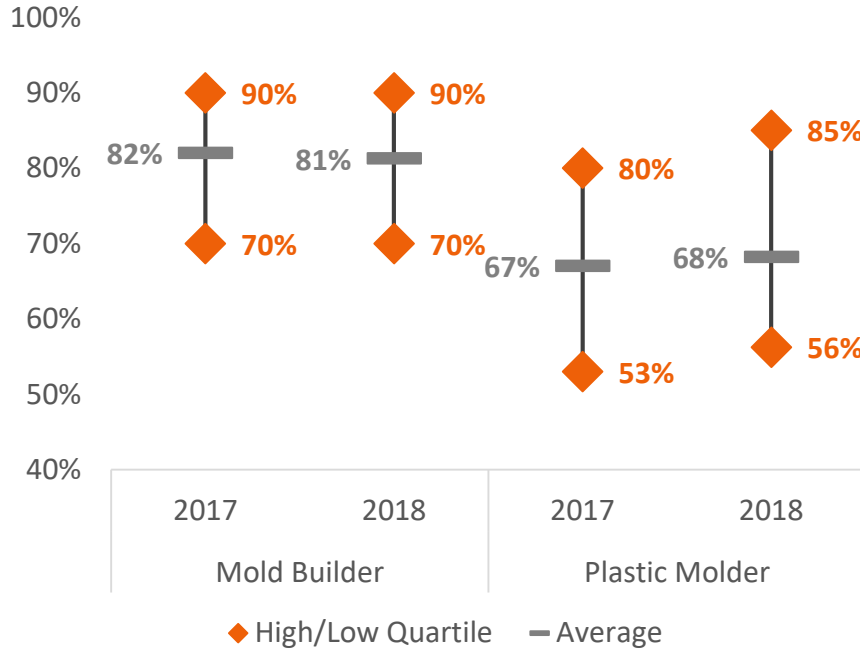


Source: LMC Automotive Forecast

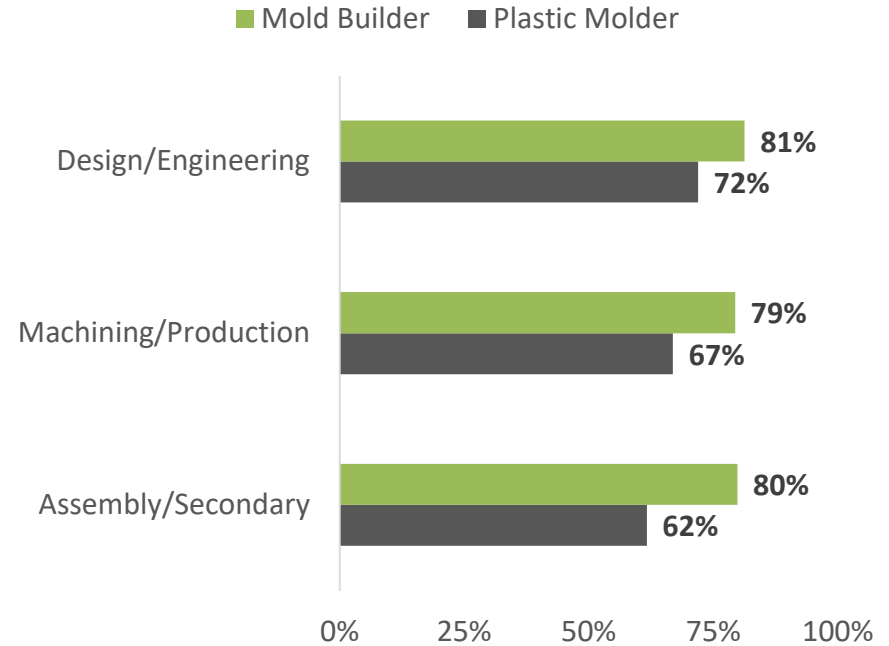
CUSTOMER ANALYTICS: MOLDERS AND STAMPERS

Mold Builders More Utilized than Customers

Overall Capacity Utilization

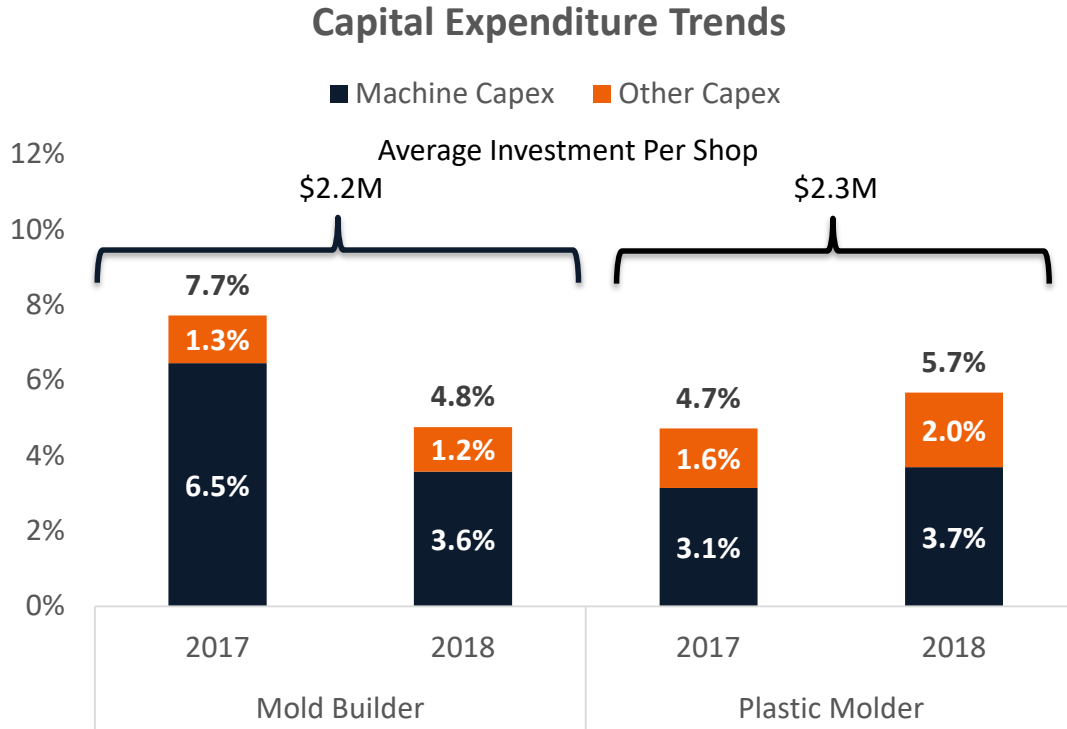


Function Capacity Utilization



Question: What is your facility's current overall capacity utilization? What is your facility's expected 2018 overall capacity utilization? What is your facility's utilization by Operational Department? Shop Type: Mold Builders, Plastic Molders

Molders Capital Expenditures are Flat

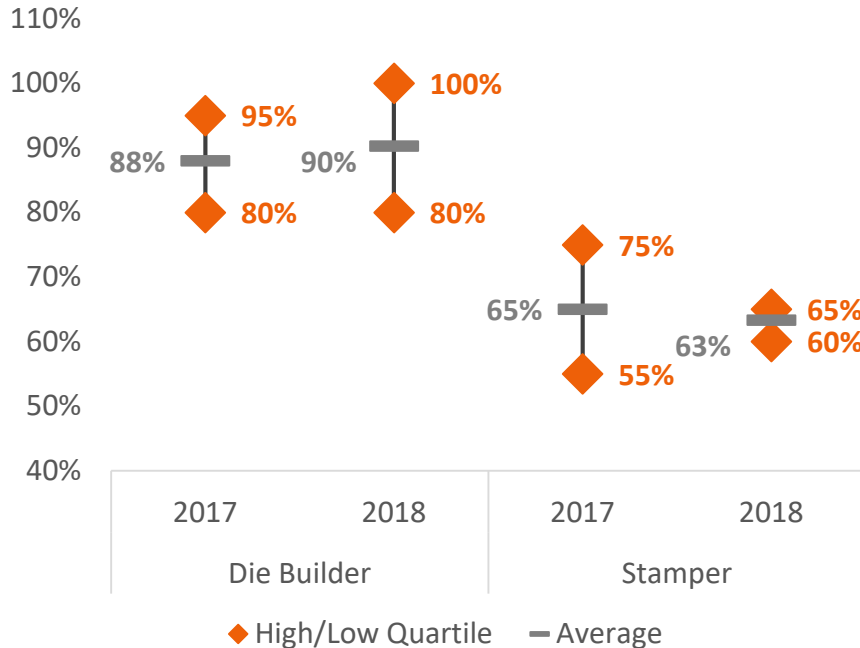


- Capital Expenditures need to be matched to the life span of the equipment to remain competitive.
- The flatter demand for plastic molders lends itself to more consistent capital investment. Shops are replacing old equipment with new mold machines.

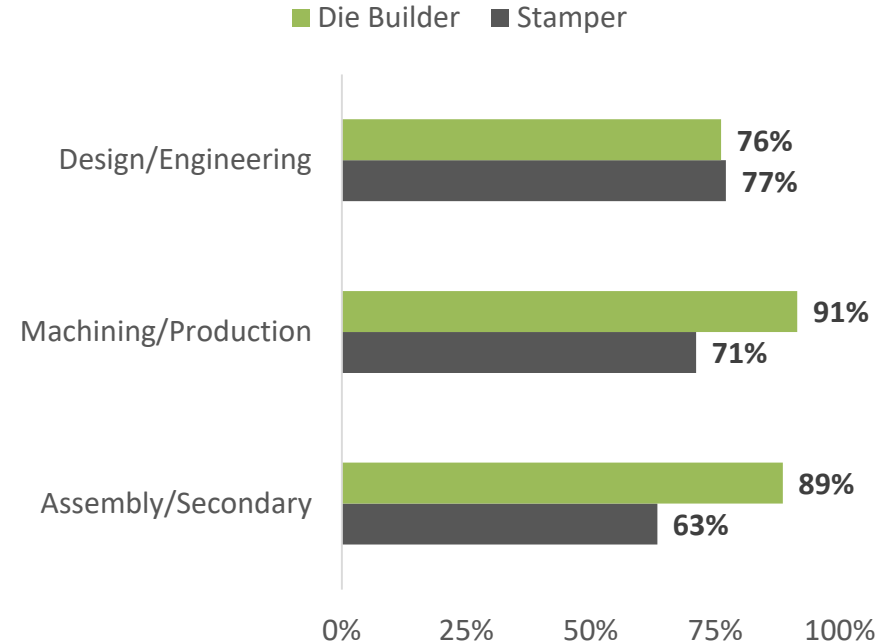
Question: How much did your facility contribute toward new capital expenditures in 2017 and how much is planned for 2018: Total, Machine, Other?
Shop Type: Mold Builders, Plastic Molders

Die Builders More Utilized than Customers

Overall Capacity Utilization



Function Capacity Utilization

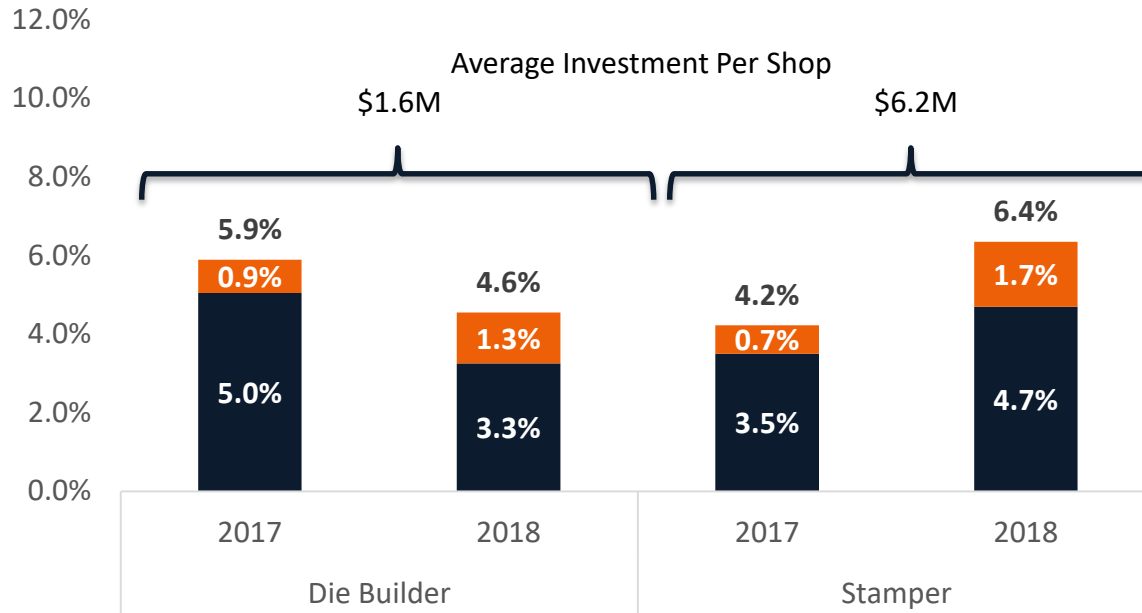


Question: What is your facility's current overall capacity utilization? What is your facility's expected 2018 overall capacity utilization? What is your facility's utilization by Operational Department? Shop Type: Die Builders, Stammers

Stamping Capital Expenditures are Up

Capital Expenditure Trends

■ Machine Capex ■ Other Capex



- Stampers have older equipment than molders and are now rebuilding presses and purchasing new high tonnage presses to meet the changing product needs.
- Die builders may not investing enough to stay competitive with the changing market.

Question: How much did your facility contribute toward new capital expenditures in 2017 and how much is planned for 2018: Total, Machine, Other?
Shop Type: Die Builders, Stampers

Summary

- Market remains strong looking in to 2018 – sentiment, back logs, and utilization levels all positive.
- Throughput trends with shop size; the largest shops are the most efficient. Variance in throughput is significant though, with shops at both extremes of efficiency at all sizes.
- The stair steps of growth for shops between \$20-40M is evident in the data – profit, investment and throughput all demonstrate the challenges these shops face.
- As tooling demand returns to less aggressive levels, A/R paid on time and progressive payments trend down. Large shops may see these trends result in a liquidity shortage.
- While we believe 2018 will be a strong sourcing year, some data points show symptoms of a return to normal sourcing levels.

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Thank you for the opportunity

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