

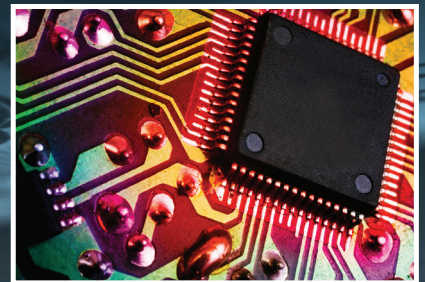


**GARDNER  
RESEARCH**

# 2014

## PLASTICS CAPITAL SPENDING

### Survey & Forecast



[GARDNERWEB.COM/RESEARCH](http://GARDNERWEB.COM/RESEARCH)

# \$3.001 Billion

According to 2014 Plastics Capital Spending Survey by Gardner Research, U.S. plastics processing facilities will spend \$3.001 billion on primary processing equipment, auxiliary equipment and molds and related supplies.

## AUXILIARY EQUIPMENT

SURVEY RESULTS **\$1,058,000**

## MOLD and MOLD RELATED SUPPLIERS

SURVEY RESULTS **\$989,000**

## PRIMARY PROCESSING EQUIPMENT

SURVEY RESULTS **\$954,000**

GARDNER PROJECTION **\$1,250,000**

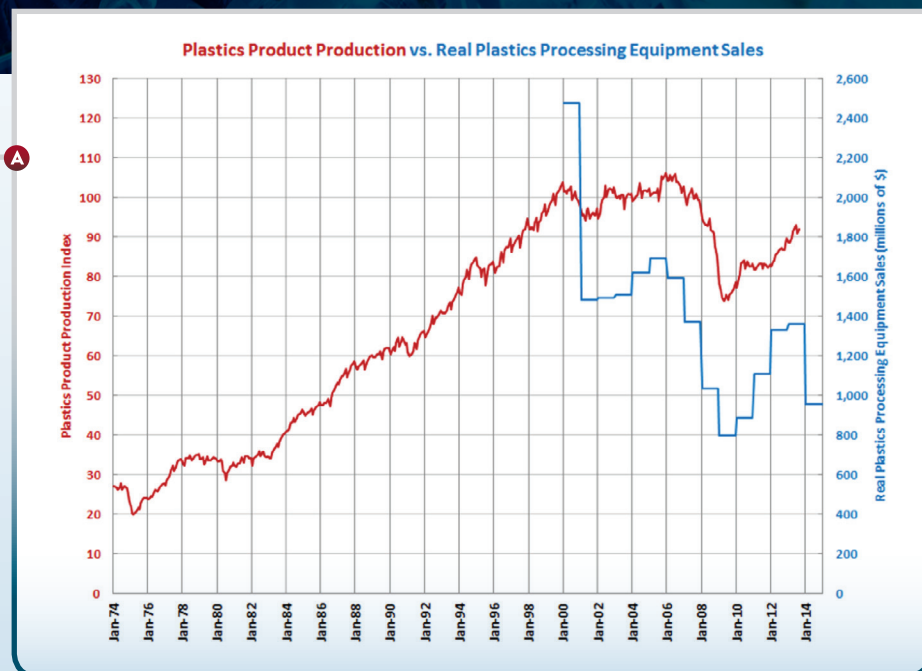
### Why the forecast is too low?

The estimate for 2014 is based strictly off of the responses to our survey. However, we believe that the survey is too pessimistic about capital spending plans in the plastics industry for 2014. There are a number of reasons for this.

1. INDUSTRIAL PRODUCTION
2. CAPACITY UTILIZATION
3. LIMITED HISTORICAL DATA

### 1. INDUSTRIAL PRODUCTION

Industrial production is a very good leading indicator of plastic processing equipment sales too. Industrial production of plastic product tends to lead processing equipment sales by 12 to 24 months. Industrial production has been growing at an accelerating rate since the beginning of 2012. This would indicate that plastic processing equipment sales should remain strong and not fall off in 2014. **SEE CHART A**



### 2. CAPACITY UTILIZATION

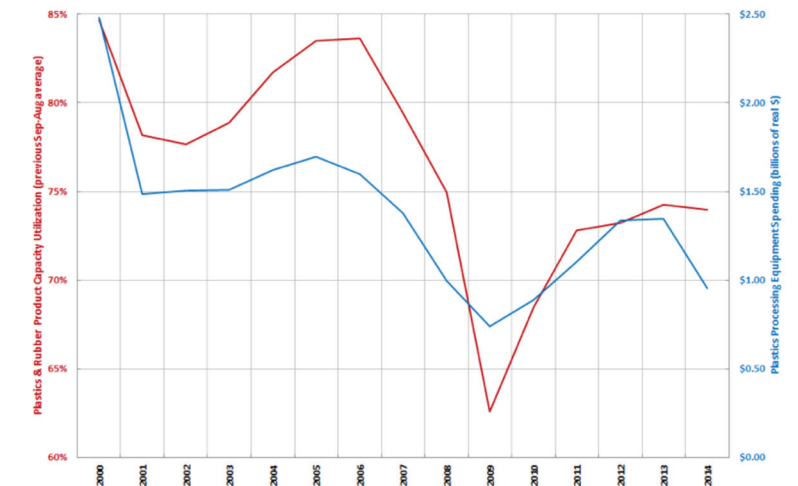
Capacity utilization is the number one leading indicator for plastics processing equipment sales. Changes in capacity utilization tend to lead changes in capital spending by about one year on average. According to Federal Reserve data, capacity utilization at plastics processors has generally been on a slow but steady rise since 2011. Based on our survey results, capacity utilization may fall slightly in 2014. Based on the trend in capacity utilization, plastics processing equipment sales should be closer to \$1.3 to \$1.5 billion in 2014. **SEE CHART B**

It is also helpful to look at plastic processing equipment sales as a function of capacity utilization, which we call our plastic equipment demand curve. The red line on this chart represents optimal demand for plastic processing equipment based on capacity utilization. Based on our survey's capacity utilization of 74%, optimal equipment demand would be \$1.118 billion. Also, we know that capital equipment sales tend to fall above (over buying) or below (under buying) optimal demand in four to seven year cycles. 2014 would be year three of the current over buying cycle. So, we should expect sales in 2014 to be above the optimal line, which would put actual sales closer to \$1.3 to \$1.5 billion. **SEE CHART C**

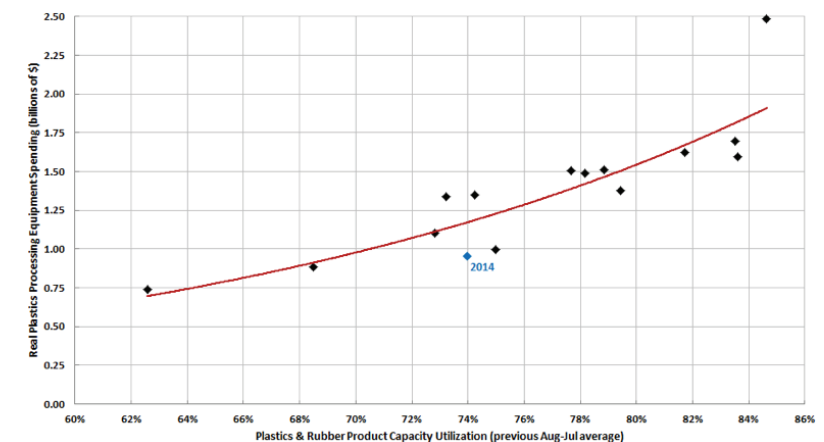
### 3. LIMITED HISTORICAL DATA

We have conducted the survey with our new methodology for just a few years. Therefore, we have a limited sample size to compare to actual data to tweak the methodology. Last year, the survey showed a similar decline in spending. But, we indicated that based on the leading indicators actual spending would be significantly higher. It turns out our opinion was right. **SEE CHART D**

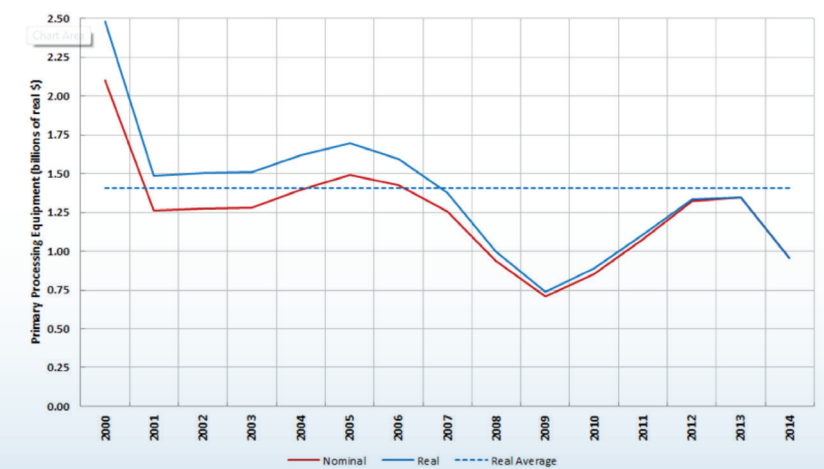
### B Capacity Product Capacity Utilization



### C Plastics Processing Equipment Spending



### D HISTORICAL DATA



**GROWTH AREAS**

SPENDING BY INDUSTRY TYPE	2009	2013	2014
Custom Processors	\$ 608,021,586	\$ 1,175,509,951	\$ 908,818,815
Automotive	82,624,204	450,629,570	386,017,405
Metalcutting Job Shops	24,543,377	65,570,748	313,239,380
Electronics, Computers, & Telecommunications	172,894,527	138,058,043	291,806,238
Machinery and Equipment Manufacturing	21,588,857	32,171,125	213,788,667
Other Manufacturing	49,048,368	65,685,519	200,287,852
Medical	91,829,501	149,063,682	182,716,738
Petrochemical Processors	233,183,236	350,348,268	129,642,099
Aerospace	55,608,890	8,863,969	113,880,637
Plastics and Rubber	235,279,515	474,176,941	112,240,097
Non-Manufacturing	0	0	92,010,397
Power Generation	87,119,753	30,774,608	82,853,639
Forming and Fabricating (non-auto)	55,738,283	52,772,507	61,103,763
Pumps, Valves and Plumbing Products	9,006,654	53,747,288	32,347,670
Industrial Motors, Hydraulic & Mechanical Components	29,260,050	8,031,865	26,841,859
<b>ALL</b>	<b>\$ 2,179,092,255</b>	<b>\$ 3,220,138,151</b>	<b>\$ 3,293,869,492</b>

SPENDING BY REGION	2009	2013	2014
East North Central	739,453,299	1,314,877,800	1,180,261,492
East South Central	140,382,425	287,926,825	356,382,299
Middle Atlantic	235,527,179	145,881,457	228,767,938
Mountain	82,374,844	158,200,711	80,263,843
New England	157,255,310	164,381,161	177,260,126
Pacific	43,385,721	199,173,025	175,828,011
South Atlantic	461,262,150	427,258,305	435,958,374
West North Central	105,863,519	381,899,397	342,210,519
West South Central	213,587,808	140,539,469	316,936,889
<b>ALL (-)</b>	<b>2,179,092,255</b>	<b>3,220,138,151</b>	<b>3,293,869,492</b>

**East North Central**  
OH, IN, IL, MI, WI

**East South Central**  
KY, TN, AL, MS

**Middle Atlantic**  
NY, NJ, PA

**Mountain**  
MT, ID, WY, CO, NM, AZ, UT, NV

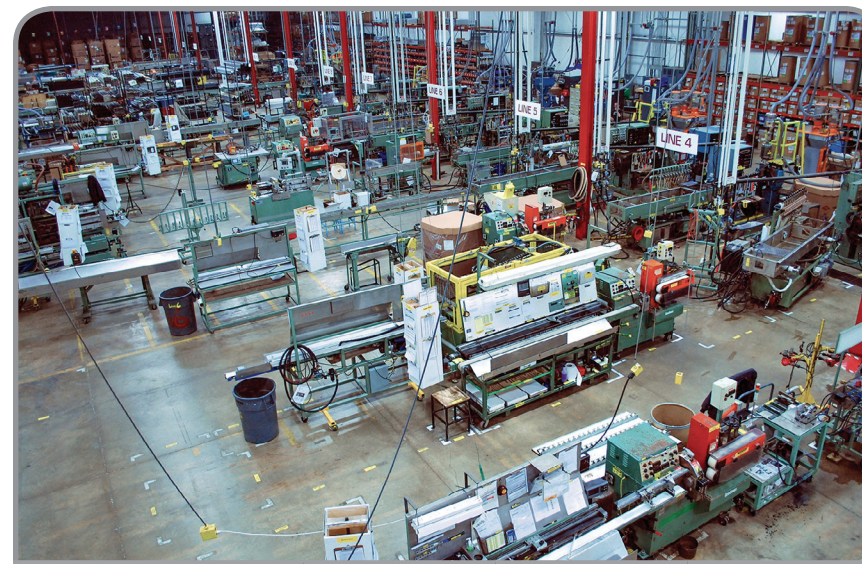
**New England**  
ME, NH, VT, MA, RI, CT

**Pacific**  
AK, WA, OR, CA, HI

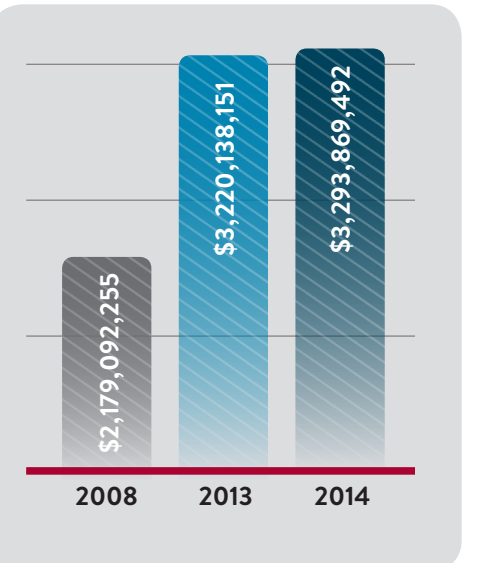
**South Atlantic**  
DE, MD, DC, VA, WV, NC, SC, GA, FL

**West North Central**  
MN, IA, MO, ND, SD, NB, KS

**West South Central**  
AR, LA, OK, TX



PLANT SIZE	2009	2013	2014
1-19	335,058,012	193,019,539	357,929,571
20-49	241,046,912	215,847,900	396,900,341
50-99	255,475,157	733,914,202	448,245,360
100-249	605,274,790	959,705,195	1,128,985,394
250+	742,237,385	1,117,651,314	961,808,827
<b>ALL (-)</b>	<b>2,179,092,255</b>	<b>3,220,138,151</b>	<b>3,293,869,492</b>



**CUSTOM PROCESSORS**

- Total spending by custom processors is projected to be \$909 million, which is 28% of the survey total
- Spending should increase at plants with fewer than 50 employees but decrease at plants with more than 50 employees

	2009	2013	2014
Injection Molding, Horizontal, Hybrid	27,900,00	97,200,00	179,600,00
Thermoforming	13,100,000	24,000,000	43,700,000
Complete Molds	109,900,000	178,300,000	138,000,000

**AUTOMOTIVE**

- There will be significant spending on gasoline engines, engines parts, and electrical equipment
- Spending on auxiliary equipment will be up nearly 100%
- Injection Molding, Horizontal, Hydraulic

	2009	2013	2014
Injection Molding, Horizontal, Hybrid	9,400,00	140,200,00	65,900,00
Chillers and Cooling Towers	1,100,000	2,800,000	14,400,000
Molds, Complete, Cold Runner	10,800,000	27,900,000	31,700,000

**METALCUTTING JOB SHOPS**

- Spending is forecast to be \$313.2 million, which is four times the level of spending in any year since at least 2008
- Nearly 66% of the spending will come from industrial mold shops

	2009	2013	2014
Injection Molding, Horizontal, Electric	6,800,00	1,100,00	52,300,00
Dryers	300,000	4,500,000	3,100,000
Molds, Complete, Hot Runner	900,000	5,200,000	33,600,000

**ELECTRONICS**

- Spending is forecasted to be \$292 million, which is up 112%

	2009	2013	2014
Injection Molding, Horizontal, Electronic	19,700,00	4,100,00	33,400,00
Screws/Barrels	5,400,000	0,000	8,300,000
Molds, Complete, Hot Runner	22,200,000	39,200,000	105,100,000

PRIMARY EQUIPMENT	2009	2013	2014
Additive, Direct Deposition	0	0	10,845,731
Additive, Laser/Electron Beam	0	0	7,755,259
Additive, Laser Sintering	0	0	12,279,604
Additive, Stereolithography	0	0	9,509,247
Blow Molding	50,194,955	47,617,881	11,317,935
Compounding	60,372,053	47,325,040	53,092,586
Extrusion, Cast/Blown Film	18,459,504	28,582,258	5,913,423
Extrusion, Pipe/Profile/Tube	21,318,677	50,258,175	19,721,084
Extrusion, Sheet	42,065,319	77,389,816	32,679,484
Injection Molding, Horizontal, Electric	187,534,892	363,663,296	213,319,197
Injection Molding, Horizontal, Hybrid	53,999,106	150,934,377	221,358,416
Injection Molding, Horizontal, Hydraulic	247,871,330	446,048,311	199,931,913
Injection Molding, Vertical, Electric	18,655,729	20,132,998	11,311,112
Injection Molding, Vertical, Hybrid	3,300,995	10,369,318	46,420,548
Injection Molding, Vertical, Hydraulic	22,466,793	31,569,310	28,578,395
Thermoforming	71,387,192	84,586,041	70,065,253
<b>EQUIPMENT (+)</b>	<b>797,626,545</b>	<b>1,358,476,822</b>	<b>954,099,187</b>

MOLDS, COMPLETE	2009	2013	2014
Molds, Bases	0	0	54,322,467
Molds, Complete, Cold Runner	137,159,459	193,930,312	293,042,193
Molds, Complete, Hot Runner	324,976,219	332,980,137	446,329,896
Molds, Hot Runners	9,927,395	22,081,841	17,857,236
Molds, Materials	127,121,059	0	54,702,823
Molds, Components	0	0	71,026,548
Molds, Other Supplies and Services	79,091,124	57,401,953	51,757,036
<b>MOLDS (+)</b>	<b>678,275,255</b>	<b>606,394,244</b>	<b>989,038,200</b>

SOFTWARE	2009	2013	2014
CAD/CAM	0	0	28,383,599
CNC, DROs, & Related	0	0	74,621,816
ERP	0	0	26,257,544
Mold-Flow Analysis	52,702,292	33,517,602	15,228,633
<b>SOFTWARE (+)</b>	<b>52,702,292</b>	<b>33,517,602</b>	<b>144,491,591</b>

TESTING	2014
CMM, Automatic, DCC	31,450,670
CMM, Manual	3,633,187
In-Process Gaging	23,171,787
Post-Process Gaging	11,548,573
Testing	34,429,629
Vision Systems	44,241,211
<b>TESTING (+)</b>	<b>148,475,058</b>

**Injection Molding, Horizontal, Hybrid**

- Spending will increase almost 50% to \$221 million
- The most spent on horizontal, hybrid injection molding machines since at least 2008
- Most of the spending will be by the West South Central and East North Central
- More than 66% of the spending will be in facilities with more than 50 employees

**Injection molding, Horizontal, Electric**

- Both custom processors and metalcutting job shops will spend more than \$50 million
- More than 40% of the spending will be in the East North Central
- Spending will be well distributed across plant size with the most coming in plants with more than 250 employees

**Molds, Complete**

- Spending on complete molds will be \$739 million, which is up just over 40%
- About 60% of the spending will be on molds with hot runners
- Both hot runner molds and cold runner molds are increasing substantially
- The East North Central will spend \$277, which is three times the next largest region
- Nearly 80% of the spending will be in plants with more than 100 employees

**\$3.001 Billion**

According to 2014 Plastics Capital Spending Survey by Gardner Research, U.S. plastics processing facilities will spend \$3.001 billion on primary processing equipment, auxiliary equipment and molds and related supplies.

**AUXILIARY EQUIPMENT**

SURVEY RESULTS **\$1,058,000**

**MOLD and MOLD RELATED SUPPLIERS**

SURVEY RESULTS **\$989,000**

**PRIMARY PROCESSING EQUIPMENT**

SURVEY RESULTS **\$954,000**

GARDNER PROJECTION **\$1,250,000**

**Why the forecast is too low?**

The estimate for 2014 is based strictly off of the responses to our survey. However, we believe that the survey is too pessimistic about capital spending plans in the plastics industry for 2014. There are a number of reasons for this.

- 1. INDUSTRIAL PRODUCTION**
- 2. CAPACITY UTILIZATION**
- 3. LIMITED HISTORICAL DATA**

AUXILIARY EQUIPMENT	2009	2013	2014
Additive Feeders	19,258,393	16,212,986	18,777,157
Blenders, Gravimetric and Volumetric	64,561,727	97,987,873	54,313,875
Chillers and Cooling Towers	56,038,635	88,170,231	77,586,061
Parts Conveyors	28,334,753	50,707,948	31,629,950
Extrusion Dies	33,637,018	32,296,566	24,080,391
Dryers	50,149,288	107,524,309	46,188,127
Extrusion Downstream Equipment	35,953,890	67,875,583	27,790,456
Gear Pumps	7,481,382	5,561,386	8,358,856
Granulators	46,398,490	59,311,769	27,214,967
Other Auxiliary Equipment	55,004,226	180,698,071	107,091,925
Resin Handling Equipment	0	108,459,869	103,469,868
Resin Testing Equipment	10,953,059	13,431,410	41,133,907
Robots	73,368,697	124,486,163	241,478,104
Screen Changers	18,047,162	10,067,033	7,024,330
Screws/Barrels	79,166,936	92,747,801	62,799,748
Shredders	15,876,893	24,192,839	28,660,422
Machine/Mold Temperature Controls	40,223,194	97,770,117	30,491,410
Welding/Assembly	16,034,421	44,247,530	119,675,903
<b>AUXILIARIES (+)</b>	<b>650,488,164</b>	<b>1,221,749,483</b>	<b>1,057,765,457</b>

**Resin Handling Equipment**

- Projected spending is \$103 million, which is virtually the same as 2013 but significantly more than previous years
- About 40% of the spending will come from petrochemical processors
- The East South Central and East North Central will account for almost 70% of the spending
- 60% of the spending will be in plants with 100-249 employees

## PLASTICS CAPITAL SPENDING

### METHODOLOGY

Gardner Research's 2014 Plastics Capital Spending Survey was sent to 17,000 subscribers of Plastics Technology and Moldmaking Technology magazines. Surveys were mailed in early August, and the survey period was closed late August. Respondents are asked to answer detailed questions about their budgeted spending on primary processing equipment, auxiliary equipment, molds, software, and testing equipment. The responses are projected across the plastics industry based on plant size. The survey has an error factor of +/- \$1,000,000 at a 95% confidence level for the total primary processing equipment spending projection.

### OTHER GARDNER RESEARCH

Capital Spending Survey and Forecast  
Tooling & Workholding Survey  
World Machine Tool Output & Consumption  
Media Usage in Manufacturing Facilities  
Gardner Manufacturing Index  
Top Shops Benchmarking Survey

View these and other Gardner Research reports at [gardnerweb.com](http://gardnerweb.com)

#### Gardner Corporate

6915 Valley Avenue,  
Cincinnati, OH 45244  
P 513-527-8800 F 513-527-8801

RICK KLINE, SR.  
President

RICK KLINE, JR.  
Vice President/Group Publisher

MELISSA SKAVLEM  
Chief Operating Officer

#### Gardner Research

STEVE KLINE, JR.  
Director of Market Intelligence  
[skline2@gardnerweb.com](mailto:skline2@gardnerweb.com)

NANCY EIGEL-MILLER  
Research Manager  
[NEM@gardnerweb.com](mailto:NEM@gardnerweb.com)

### GARDNER MATERIALS GROUP

## PlasticsTechnology

RICK KLINE, JR., Publisher  
[tegan@gardnerweb.com](mailto:tegan@gardnerweb.com)

## MoldMaking TECHNOLOGY®

CLAUDE MAS, Publisher  
[cmas@gardnerweb.com](mailto:cmas@gardnerweb.com)

## CW COMPOSITESWORLD

RICK KLINE, JR., Publisher  
[cmas@gardnerweb.com](mailto:cmas@gardnerweb.com)

## AUTOMOTIVE DESIGN and PRODUCTION

MIKE VOHLAND, Publisher  
[mvoiland@gardnerweb.com](mailto:mvoiland@gardnerweb.com)