

Manufacturing Barometer

Business outlook report
April 2016

Special topic:

Energy costs



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Quarterly highlights





Chief quarterly findings

A weakening of the macroeconomic environment was found in the first quarter of 2016 with plummeting energy prices, China's economic woes, and a strong US dollar leading to lukewarm corporate earnings. Yet US industrial manufacturers appear to be navigating through these volatile times at a slower but steady pace.

US industrial manufacturers forecast a notable 27 percent slowdown from a year ago in their own-company revenue growth forecasts for the next 12 months due to a slower US economy, a much slower global economy, the stronger US dollar, and resultant headwinds in basic demand. Cutbacks in major new investment spending levels, plans for hiring and need for qualified, skilled workers are reported for the next 12 months, along with limited plans to expand in markets abroad. Overall level of operating capacity in 1Q 2016 was down from an 81.7 percent average a year ago to 78.1 percent, off nearly 3 points. A definite upside in the first quarter was a strong gross margin report: with quarterly costs lower due to price of energy/oil and commodities. But panelists had a disastrous view of the world economy in 1Q 2016: 59 percent viewed it as declining (46 points higher than a year ago), and only 2 percent thought it was growing (36 points lower than a year ago). Yet, looking ahead to the next 12 months, panelist views moved toward uncertainty about the global economy (54 percent) rather than outright pessimism (22 percent) – and they expected to achieve a continued contribution from their own-company international revenue over the next 12 months (32 percent). Note that the US Fed, in voting against an interest rate increase this quarter, cited the negative impact of the international markets for the first time (particularly China) on the US economy.

Optimism about the US economy continues at lower levels

A year ago, three-fourths (76 percent) of industrial manufacturers were optimistic about the 12-month prospects for the US economy. Optimistic sentiment dropped off to the 46 percent level last quarter and continued at a lower quarter-to-quarter forecast of 42 percent, or 34 points below a year ago.

On the bright side, only 10 percent were pessimistic about the US economy's prospects (only 7 points above a year ago). The remaining large group of uncertain respondents, 48 percent, signals possible demand problems ahead.

In 1Q 2016, 55 percent believed the US economy was growing (30 points below the 85 percent in 1Q 2015), and 18 percent viewed the US economy as declining (up 16 points from a year ago). Overall, attitudes about the US economy's prospects over the next 12 months appeared to have leveled off at this notably lower level.

Optimism about the world economy overridden by uncertainty

A year ago, 42 percent of industrial manufacturers were optimistic about the world economy's prospects over the next 12 months, and 13 percent were pessimistic, more than 3-to-1 on the plus side. Today, 24 percent are optimistic about global prospects (off 17 points) and 22 percent are pessimistic (9 points higher), nearly a 1-to-1 ratio positive to negative. Yet the majority (54 percent) remain on the fence, neither optimistic nor pessimistic. However, panelists had a disastrous view of the world economy in 1Q 2016, with a historic high of 59 percent seeing it as declining, while only 2 percent viewed it as growing in the quarter. Overall, panelists have a much more positive view of the global economy's prospects when looking beyond the first quarter to a larger, 12-month outlook.

Own-company revenue forecasts at slower pace

Own-company revenue forecasts appear to have settled at a slower pace over the past two quarters – 3.6 percent last quarter and a 3.7 percent pace looking ahead over the next 12 months. This settling point is 27 percent below the forecast a year ago at the 5.1 percent forward rate of expected growth. Looking ahead, 72 percent expect positive revenue growth over the next 12 months – only 9 percent with double-digit growth and 63 percent with single-digit growth. On the debit side, 7 percent expect zero growth and 7 percent negative growth. However, once again a notable 14 percent are uncertain and decline to forecast (not reported).



International revenues appear steady but slower

On the face of it, panelists selling abroad (nearly all) project a continued contribution of 32 percent of total revenues from international sales – similar to the past 2 quarters, and above the 27 percent contribution a year ago. However, the true picture reflects a parallel slowing of international sales from 1.38 percent (27% of 5.1 revenue percent pace) to 1.18 percent (32% of 3.7 percent pace), or a 14 percent dropoff in prospective sales abroad. Quarterly international sales momentum was down in 1Q 2016, with 15 percent up but 28 percent down, a net 13 percent lower (off 9 points from a year ago). And planned expansion to new markets abroad is down to 10 percent (off 9 points from a year ago).

New hiring at lower level

Looking ahead, 38 percent of panelists plan to add employees to their workforce over the next 12 months, off from 42 percent last quarter and 52 percent a year ago (off 14 points). Few, only 12 percent, plan to reduce their workforce, and the majority, 50 percent, plan to stay about the same.

The overall composite growth is a flat +0.1 percent, similar to the prior quarter (0.0 percent) but below a year ago (+0.5 percent). A year ago, the majority of industrial manufacturers were planning new hiring (52 percent), and many were concerned about lack of qualified, skilled workers (35 percent) – a concern which has dropped sharply to only 15 percent (20 points lower).

Types of employees being planned to hire focused a bit more on professionals, 27 percent – chiefly technology/engineering (23 percent) – and blue collar workers, 22 percent (down 7 points this quarter), including skilled/specialized workers (15 percent) and semi-skilled or unskilled workers (17 percent).

More spending but at lower levels

CapEx spending is higher, planned by a 53 percent of these industrial manufacturers over the next 12 months, up 4 points and similar to the majority a year ago (52 percent). Yet the mean investment as a percentage of total sales has dropped nearly in half: From 3.3 percent of total sales level to 1.9 percent going forward (forty percent lower).

Increased operational spending over the next 12 months was still reasonably high at 80 percent, off 3 points from a year ago. The leading increased spending areas were new product or service introductions, 55 percent (up 11 points quarter-to-quarter), and research and development, 50 percent (up 9 points), followed by information technology, 35 percent (off 1 point), and business acquisitions, 33 percent (off 1 point). Plans for geographic expansion remained on pace, 20 percent, while marketing and sales promotion rose 2 points to 17 percent.

More than half (57 percent) of panelist firms have plans for new business initiatives over the next 12 months – M&A activities lead the way, cited by 40 percent (off 3 points from a year ago), specifically purchase of another business (37 percent) and sale of own business in whole or part (10 percent).

International expansion to markets abroad is down, cited by only 10 percent, off 9 points from a year ago; but new facilities abroad maintained an 8 percent level (off 4 points from a year ago). On the debit side, 8 percent will be reducing/closing facilities abroad (up 5 points from a year ago). Overall, a net 12 percent will be expanding abroad, while a net 10 percent will be reducing activities abroad.



Headwinds: Demand, strong dollar, and legislative/regulatory pressure

Condition of the world economy remains the underlying barrier to own-company growth over the next 12 months, and is reflected in the two top headwinds: Lack of demand, 50 percent (up 21 points from a year ago), and the strong dollar/monetary exchange rate, 45 percent (up 24 points from a year ago). At the next barrier level are legislative/regulatory pressures, 30 percent (up 8 points quarter-to-quarter) and decreasing profitability, 27 percent (off 2 points).

On the debit side, concern about oil/energy prices fell sharply quarter-to-quarter from 32 percent to 12 percent, a 20-point dropoff as the price of crude oil plunged below \$30 a barrel. Also dropping sharply, this time from a year ago, was concern about lack of skilled, qualified workers, off from 35 percent to 15 percent (a 20-point decline).

Gross margins up, costs down and prices slightly higher

In this low inflationary environment, the gross margins of industrial manufacturers was up sharply in 1Q 2016, with 43 percent higher margins and 15 percent lower, for a net plus 28 percent increasers (versus only net 2 percent a year ago).

Costs were lower, a net minus 2 percent, while prices were somewhat higher net plus 8 percent. Looking ahead, concern about decreasing profitability remained at a moderate 27 percent level, 6 points above a year ago (21 percent).

A quarter-over-quarter comparison of key indicators shows the business outlook for the next 12 months and how the views of the panel have changed each quarter (see chart 1.1). The pages that follow provide a detailed look at each question for the past five quarterly surveys.



Energy costs

Three-quarters (76 percent) of panelists believe the cost of energy will become significantly lower for US manufacturers. Only 24 percent disagree.

Nearly two-thirds (64 percent) of industrial manufacturing companies are planning for lower overall energy costs over the next 12-18 months, averaging approximately 4.2 percent lower. Thirty-six percent have no plans.

But about one-third (36 percent) of panelist companies are planning for longer term lower overall energy costs over the next 2-3 years, averaging approximately 4.4 percent lower. A strong majority, 60 percent, are not anticipating longer term lower energy costs, and 4 percent were not certain.

Panelists believe that lower energy prices over the next 2-3 years will have a largely moderate positive impact on consumer confidence (88 percent) and the US economy (60 percent), as well as own company's revenues (45 percent) and profit margins of companies in their own industry (45 percent). However, panelists see limited impact on the US job market (only 21 percent).

Half (52 percent) of industrial manufacturing panelists believe current energy prices have had a positive impact on their own company over the past 12 months – largely split between a moderate (55 percent) or limited impact (41 percent), with only 4 percent strong impact. Another 38 percent believe it had very little impact at all, and 10 percent a negative impact (oil-related companies).

If energy costs become notably lower, own companies are likely to employ the energy-premiums by taking higher profits for their companies (62 percent), improving supply chains (60 percent), expanding in existing markets (48 percent), or developing/upgrading manufacturing systems (46 percent). Others would increase CapEx spending (31 percent) or upgrade IT systems (24 percent). A limited number would pass on energy premiums to their customers (19 percent), or use it for additional new hiring (19 percent).

Virtually no barriers or obstacles are expected that would prevent panelists businesses from capitalizing on anticipated lower energy costs in the near future (only 7 percent).

Cash position

It is noteworthy that nearly half, 48 percent, of industrial manufacturing companies report that they are now maintaining a larger cash position than they usually do. Only 31 percent are not, 7 percent were not certain, and 14 percent were not reported.

Panelists with larger than usual cash positions (48 percent) foresee utilizing that cash over the next 12-18 months largely for new acquisitions (65 percent), along with increased R&D (40 percent). Other mentions include major manufacturing/supply chain expansion (20 percent) and increased hiring (15 percent). Note: Overall, that means 31 percent (65 percent of 48 percent) of total panelists have cash and foresee new acquisitions near term.

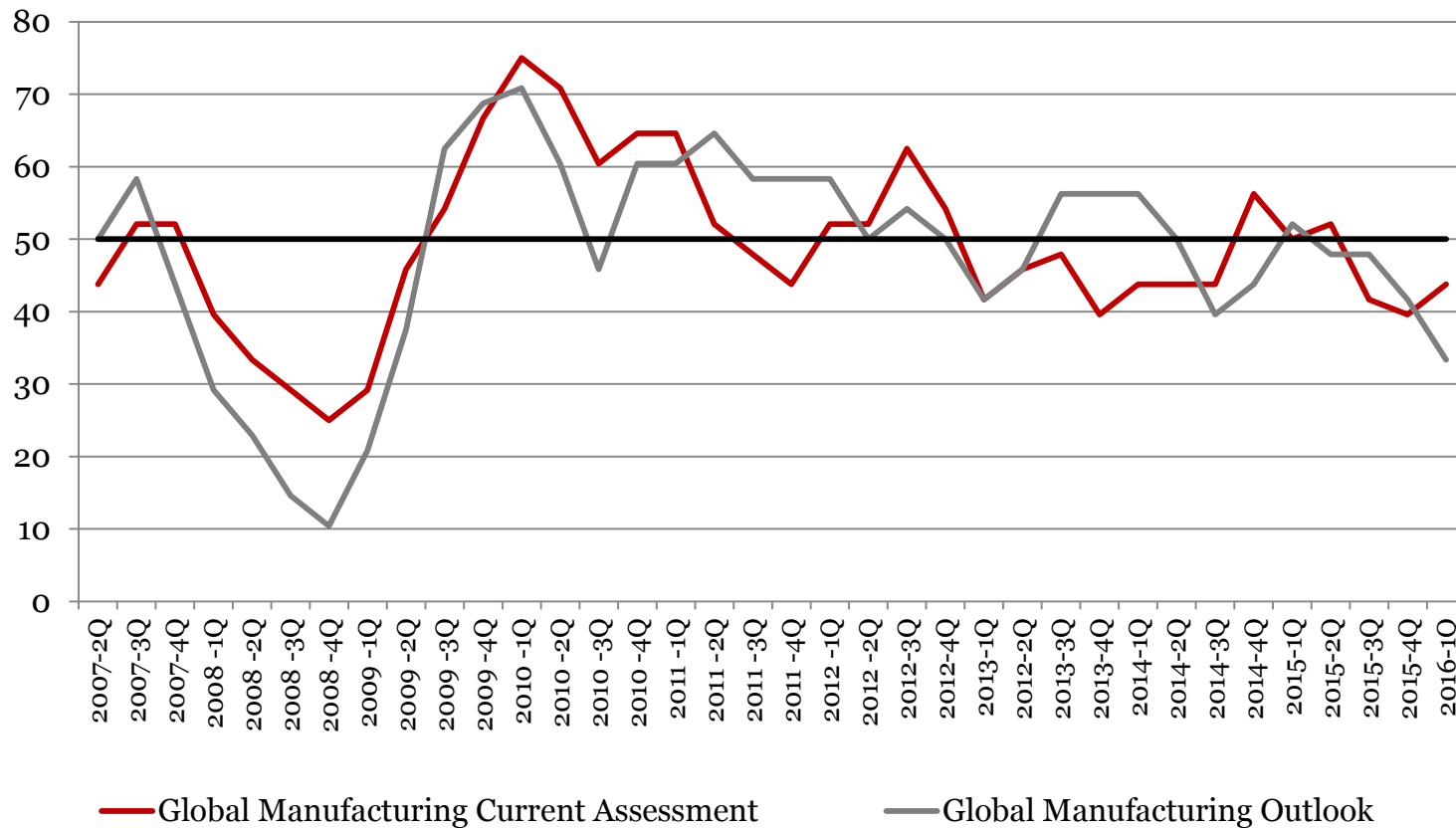


Chart 1.1 Key indicators for the business outlook

A quarter-over-quarter comparison of the survey's key indicators shows how the 12-month outlook has changed each quarter. The change column indicates the movement of opinion of those surveyed over the past two quarters.

Business outlook, next 12 months among industrial manufacturers

	2015				2016	Change	Page
	1Q'15	2Q'15	3Q'15	4Q'15	1Q'16	4Q'15-1Q'16	
Optimistic about US economy	76%	69%	60%	46%	42%	↓	11
Optimistic about world economy	42%	38%	23%	27%	24%	↓	12
Expect positive revenue growth	83%	81%	73%	70%	72%	=	20
Average growth rate expected	5.1%	4.9%	5.3%	3.6%	3.7%	=	20
Planning major new investments	52%	34%	37%	49%	53%	↑	22
New investments as a % of sales	3.3%	3.3%	5.6%	1.9%	1.9%	=	22
Planning to hire	52%	52%	37%	42%	38%	↓	21
New workers as a % of workforce (net)	0.5%	0.2%	-0.2%	0.0%	0.1%	=	21
Expected barriers to growth:							
• Lack of demand	29%	39%	32%	39%	50%	↑	23
• Monetary exchange rate	21%	37%	38%	49%	45%	↓	23
• Legislative/regulatory pressures	33%	39%	25%	22%	30%	↑	23
• Decreasing profitability	21%	24%	25%	29%	27%	=	23
• Lack of qualified workers	35%	24%	10%	14%	15%	=	23
• Competition from foreign markets	17%	17%	12%	22%	13%	↓	23
• Taxation policies	24%	29%	17%	14%	13%	=	23
• Oil/energy prices	26%	22%	20%	32%	12%	↓	23
• Higher interest rates	10%	7%	12%	10%	12%	=	23
• Pressure for increased wages	17%	12%	12%	14%	10%	↓	23
• Capital constraints	14%	14%	12%	7%	7%	=	23



Background/methodology

PwC has surveyed global manufacturing executives since 2003 with the results published in our *Manufacturing Barometer* publication. The responses to these survey questions have been used to measure the sentiment of manufacturers by creating current assessment and outlook indices. The Global Manufacturing Current Assessment Index measures current trends in pricing, margins, employment, and capital expenditures, while the Global Manufacturing Outlook Index measures expectations for revenue, employment, operational spending, and capital expenditures. These results are calculated as a four-quarter moving average of diffusion indices which measure the degree to which their equal-weighted components move in the same direction at the same time. The indices are scaled between 1 and 100 with above 50 indicating more positive sentiment and below 50 indicating more negative sentiment.

Economic views





Which best describes your view of the US economy this quarter?

In first-quarter 2016, 55 percent of US industrial manufacturers surveyed believed the US economy was growing, off 9 points from the prior quarter's 64 percent and far below the high 85 percent a year ago (minus 30 points). Eighteen percent believed it was declining (up 4 points) and 27 percent saw no change from fourth-quarter 2015.

Looking at the next 12 months, how do you feel about the prospects for the US economy?

Looking ahead, still fewer industrial manufacturing panelists (42 percent) expressed optimism about the 12-month outlook for the US economy, down 4 points from the prior quarter's 46 percent and 34 points below a year ago (76 percent). Ten percent were pessimistic (up 1 point from last quarter), while 48 percent were uncertain. A year ago, more than three-fourths (76 percent) were optimistic, and only 3 percent were pessimistic.

Chart 2.1 View of the US economy, this quarter

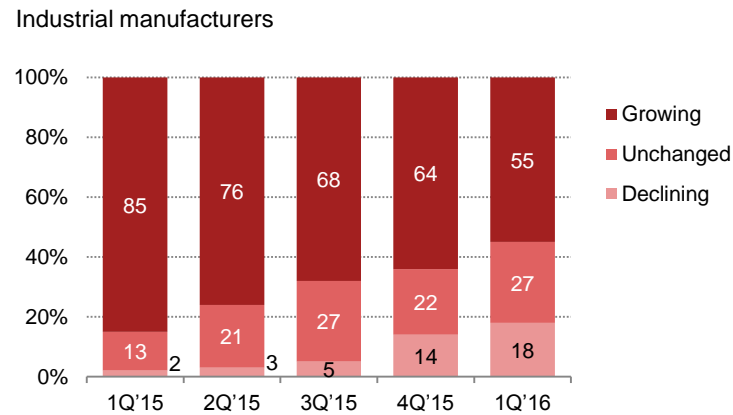
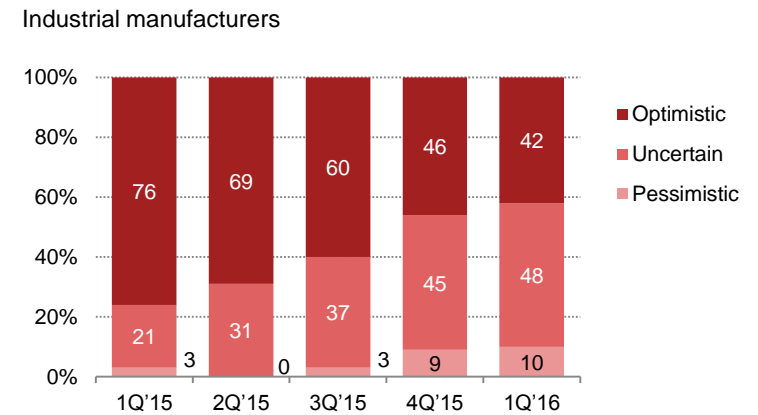


Chart 2.2 View of the US economy, next 12 months



Note: In 1Q 2016 total respondents = 60



Which best describes your view of the world economy this quarter (international marketers only)?

In first-quarter 2016, a low of only 2 percent of the panelists marketing abroad viewed the world economy as growing, off 16 points from last quarter's 18 percent; and 36 points below the 38 percent a year ago. Significantly, the majority of industrial manufacturers, 59 percent believed it was declining (19 points higher than the prior quarter). A year ago, only 13 percent viewed it as declining. Thirty-nine percent said they saw no change. Currently, perceptions of the world economy's decline were at a disturbingly low point for the panel in 1Q 2016.

Looking at the next 12 months, how do you feel about the prospects for the world economy (international marketers only)?

Looking ahead, panelists believe the world economy will recover from its first quarter dive. Only 24 percent of US-based industrial manufacturers who market abroad are optimistic about the prospects for the world economy over the next 12 months, off 3 points from the prior quarter's 27 percent, and 18 points below a year ago (42 percent). Twenty-two percent are pessimistic (same), while a majority, 54 percent, are uncertain. A year ago, 42 percent were optimistic (18 points higher) and 13 percent were pessimistic (9 points lower).

Chart 2.3 View of the world economy, this quarter

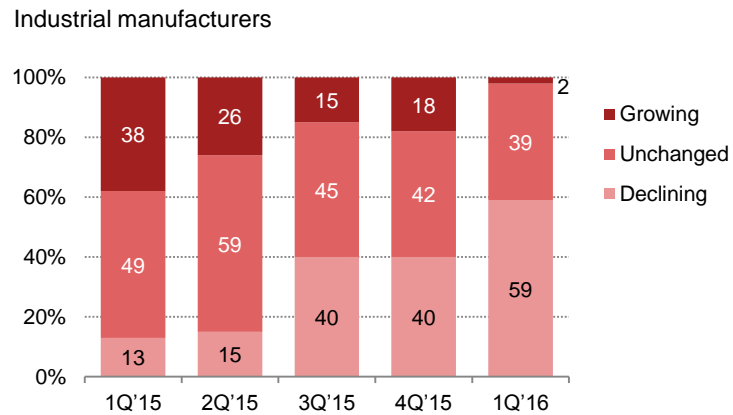
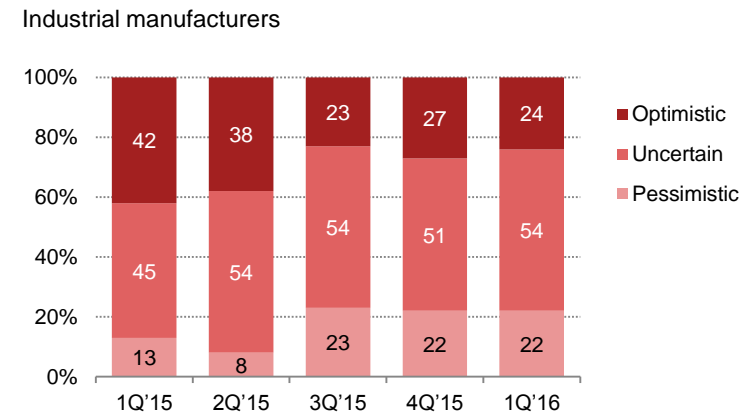


Chart 2.4 View of the world economy, next 12 months



Note: In 1Q 2016 total respondents marketing abroad = 58

Company performance





What is your company's estimated revenue growth rate for the calendar year?

The composite average growth estimate for own-company revenue for the calendar-year 2016 rose to 2.5 percent from 1.8 percent in the fourth quarter for calendar-year 2015, but was sharply below the 4.1 percent a year ago. Seventy-three percent of respondents said they expect positive own-company growth, with 10 percent expecting double-digit growth and 63 percent anticipating single-digit growth. Thirteen percent were on the negative side (off 12 points), while 12 percent expected zero growth and 2 percent were not reported.

What is your industry's estimated growth rate for the calendar year?

Estimated industry growth rate for calendar-year 2016 rose to 1.7 percent, above the fourth quarter's 0.9 percent for calendar-year 2015 but far below the 3.7 percent a year ago. Sixty-eight percent of panelists reported positive industry growth for 2016 (5 percent double-digit growth and 63 percent single-digit growth). Twelve percent were on the negative side (off 12 points) and 18 percent expected zero growth for this year. Two percent were not reported.

Chart 3.1 Company revenue growth, calendar year

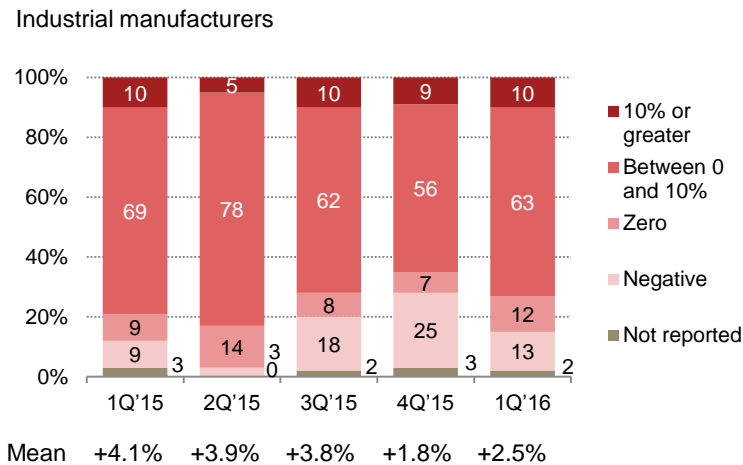
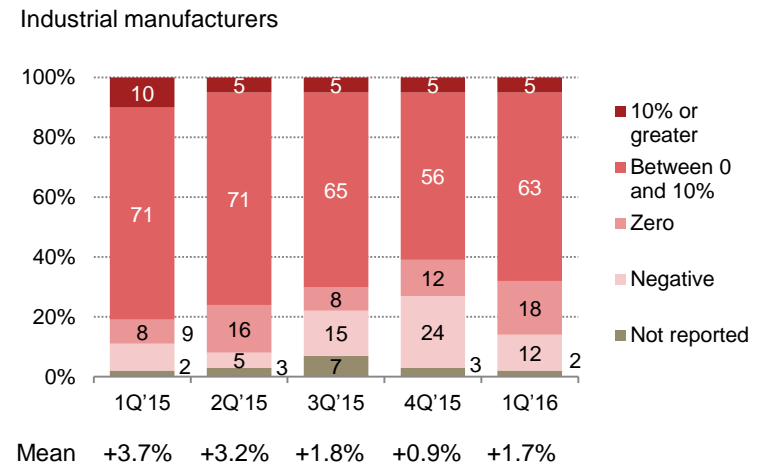


Chart 3.2 Industry growth, calendar year



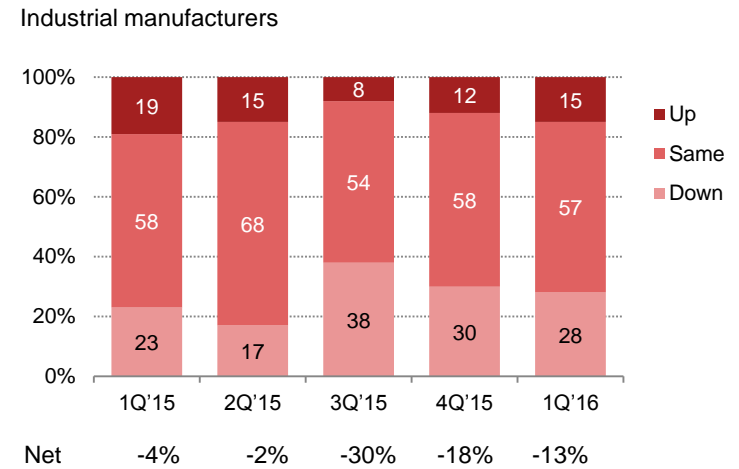
Note: In 1Q 2016 total respondents = 60



Are international sales up, down, or the same compared with three months ago (international marketers only)?

US-based industrial manufacturers that sell abroad reported continued downward momentum in international revenue but at a moderate pace in first-quarter 2016, with 15 percent reporting an increase in sales and 28 percent reporting a decrease, for a net minus 13 percent decrease (5 points better than the previous quarter, but 9 points below a year ago). The remaining 57 percent said sales stayed about the same quarter to quarter. Note that this appears to continue a quarterly slowing of international sales among these panelists, only slightly improved.

Chart 3.3 International sales



Note: In 1Q 2016 total respondents marketing abroad = 58

Changes in gross margins

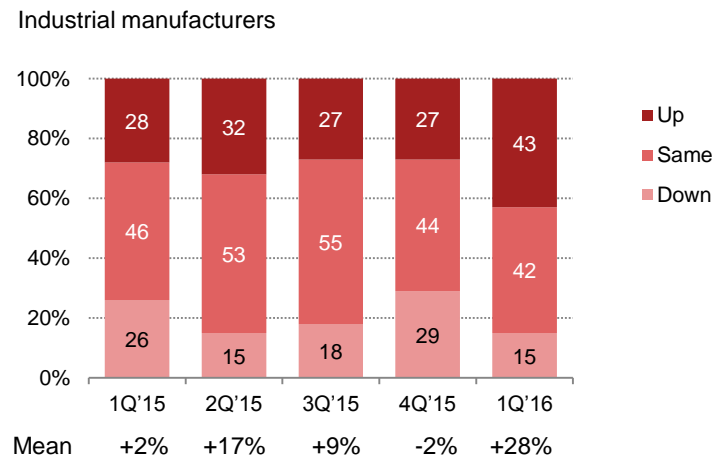


Changes in costs and prices

Are gross margins up, down, or the same compared with three months ago?

In first-quarter 2016, gross margins improved sharply. They were higher for 43 percent of panelists and lower for 15 percent, for a net plus 28 percent, 30 points above the prior quarter's minus 2 percent, and well above the plus 2 percent a year ago. Forty-two percent stayed about the same.

Chart 3.4 Changes in gross margins

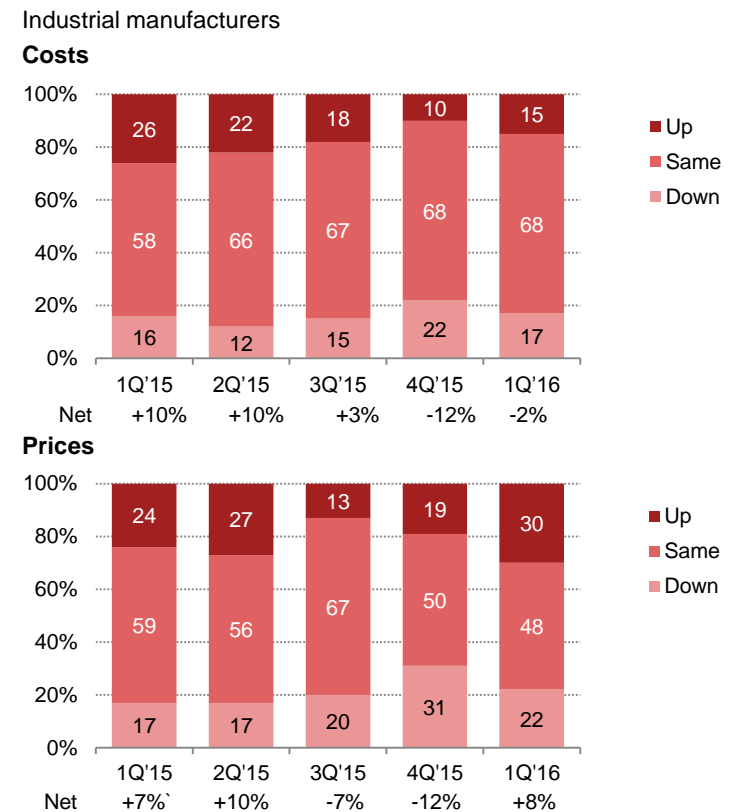


Note: In 1Q 2016 total respondents = 60

Are costs up, down, or the same compared with three months ago? prices?

In first-quarter 2016, costs were slightly lower but prices were somewhat higher. Fifteen percent of US-based industrial manufacturers reported higher costs (up 5 points) and 17 percent reported lower costs (down 5 points), for a net minus 2 percent change, 10 points better than the prior quarter's minus 12 percent. On the price side, 30 percent raised prices (up 11 points) while 22 percent lowered them (off 9 points), for a net plus 8 percent reporting lower prices (20 points better than the prior quarter) as some price flexibility returned.

Chart 3.5 Changes in costs and prices



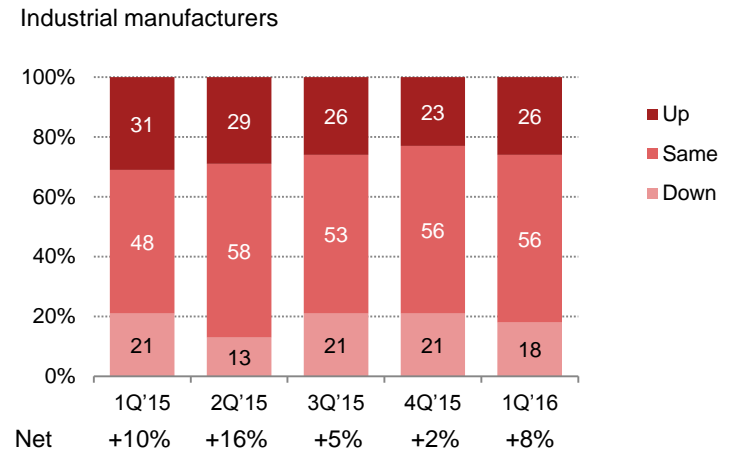
Inventory movement



Are finished inventories as a percentage of sales up, down, or the same compared with three months ago?

Inventories as a percentage of sales grew for 26 percent of US-based industrial manufacturers in the fourth quarter, up 3 points from the prior quarter. Levels were down for 18 percent (3 points lower), for a net plus 8 percent higher inventory movement in first-quarter 2016. A year ago in 1Q15, inventories were slightly higher at net plus 10 percent, on the up side.

Chart 3.6 Inventory movement



Note: In 1Q 2016 total respondents = 60

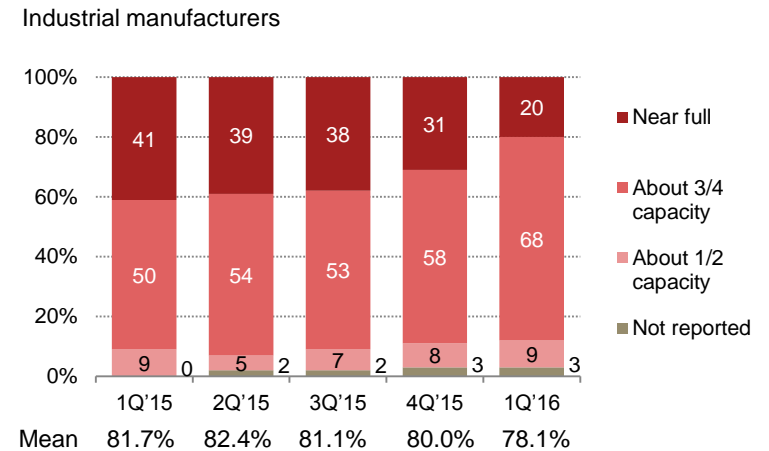
Level of operating capacity



What is your organization's current operating capacity?

Operating capacity is an estimate of the current level of permanent staffing and operations compared with what is needed for full-capacity output. In the first quarter, the mean was off nearly two points to 78.1 percent of capacity, with 20 percent of industrial manufacturers surveyed claiming to be at or near full capacity, off 11 points from the prior quarter and 21 points below a year ago (41 percent).

Chart 3.7 Level of operating capacity



Note: In 1Q 2016 total respondents = 60

Business outlook, next 12 months



Revenue growth, next 12 months

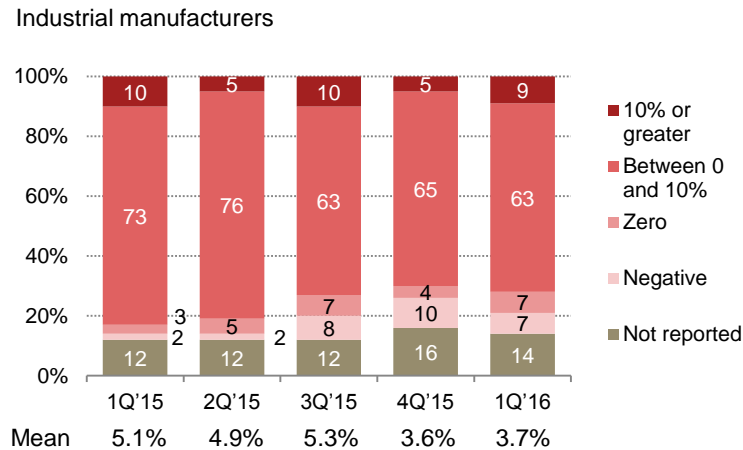


International sales, next 12 months

What is your organization's estimated revenue growth rate for the next 12 months?

The projected average revenue growth rate over the next 12 months among panelists continued at a slow 3.7 percent pace, similar to the prior quarter's 3.6 percent, but significantly lower than a year ago (5.1 percent). This is the slowest revenue growth rate since 1Q 2010's 3.0 percent. Seventy-two percent expect positive revenue growth for their own companies, with 9 percent forecasting double-digit growth and 63 percent forecasting single-digit growth. Seven percent forecast negative growth, 7 percent forecast zero growth, and a high 14 percent were not reported. Many fewer reported positive revenue growth than a year ago (83 percent, 11 points less), and the overall mean growth rate dropped by 27 percent (5.1 percent versus 3.7 percent).

Chart 4.1 Revenue growth, next 12 months

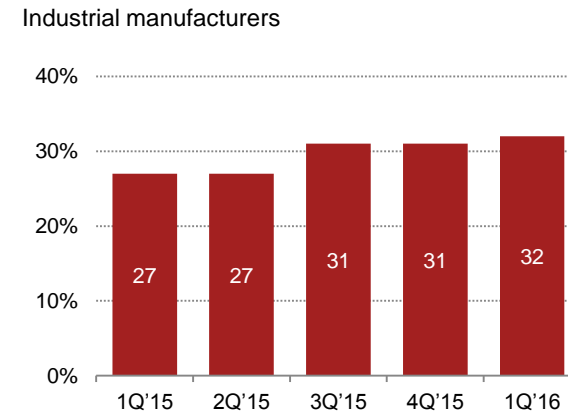


Note: In 1Q 2016 total respondents = 60

What percentage of your business's total revenue over the next 12 months do you expect to be derived from international sales (international marketers only)?

Of respondents selling abroad, the projected contribution of international sales to total revenue over the next 12 months continued at the 32 percent level, similar to the prior two quarters, and 5 point above a year ago. It is noteworthy that despite the 1Q16 net 13 point falloff in international sales, the overall mean international contribution to revenue is expected to remain pretty much on pace. However, overall revenue growth was down 27 percent and international sales was off 14 percent from a year ago.

Chart 4.2 International sales, next 12 months



Note: In 1Q 2016 those marketing abroad = 58



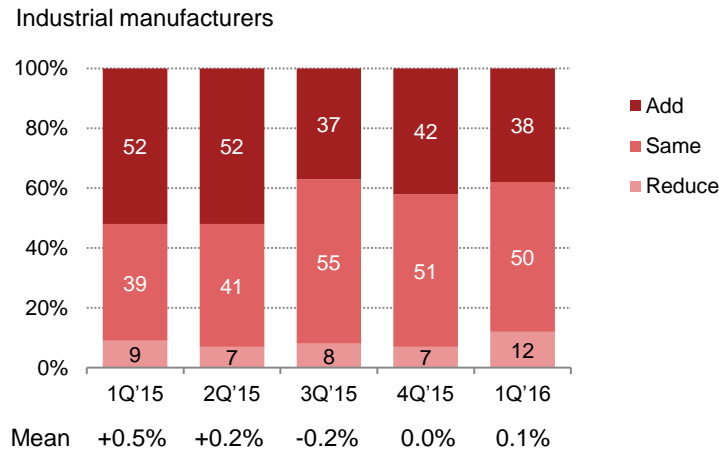
Do you plan to add or reduce the number of full-time equivalent employees over the next 12 months?

In total, 38 percent of industrial manufacturers plan to add employees to their workforce over the next 12 months, off 4 points from the 42 percent in the fourth-quarter 2015, and off 14 points from a year ago (52 percent). Only 12 percent plan to reduce the number of full-time equivalent employees (up 5 points) and 50 percent will stay about the same. Total net workforce growth projection was flat this quarter at 0.1 percent, similar to the last quarter's 0.0 percent but slightly below last year's plus 0.5 percent, indicating continued flat hiring among these industrial manufacturing firms.

What types of employees do you plan to add over the next 12 months?

Among the 38 percent of panelists planning to hire within the next 12 months, the most sought-after employees will be blue collar/skilled labor (22 percent, off 7 points) and professionals/technicians (27 percent, same). White collar support was at 5 percent, and middle management at 7 percent. Note that technology/ engineering led the way among professionals, at 23 percent (off 4 points). Blue collar is split between skilled/specialized workers (15 percent) and semi-skilled (17 percent).

Chart 4.3 Percent planning to hire



Note: In 1Q 2016 total respondents = 60

Chart 4.4 Percent planning to hire by type of employee

Industrial manufacturers	1Q'15	2Q'15	3Q'15	4Q'15	1Q'16
Planning to hire (net)	52%	52%	37%	42%	38%
• Blue collar workers	33%	39%	23%	29%	22%
• Skilled/specialized workers	-	29%	17%	19%	15%
• Semi-skilled or unskilled workers	-	22%	15%	15%	17%
• Professionals	21%	29%	25%	27%	27%
• Technology/engineering	-	29%	25%	27%	23%
• Sales/marketing	9%	12%	3%	---	7%
• Business/finance	-	10%	3%	2%	---
• White collar support	10%	19%	5%	10%	5%
• Middle management	-	12%	7%	2%	7%
• Senior management	-	3%	2%	---	---



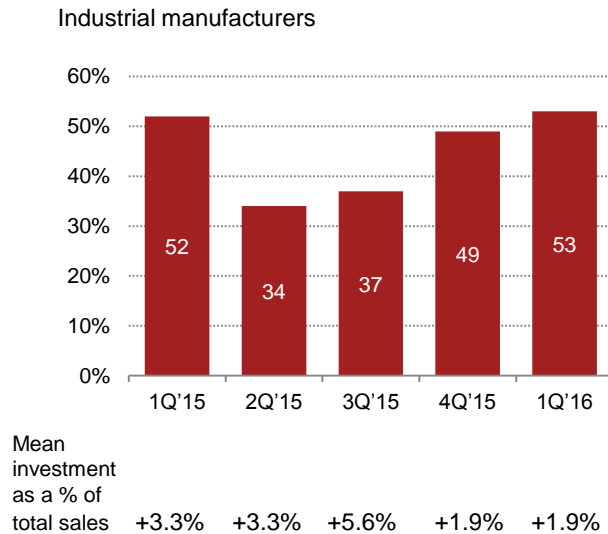
Are you actively planning any major new investments of capital over the next 12 months? If so, what percentage of total sales do you expect to invest?

Overall, 53 percent of US industrial manufacturers surveyed plan major new investments of capital during the next 12 months, up 4 points from the prior quarter's 49 percent, and similar to last year's 52 percent. The mean investment as a percentage of total sales was at the same low 1.9 percent, sharply down from 3.3 percent a year ago. These findings indicate an improvement in the number of panelist firms planning CapEx spending over the next 12 months, but they have sharply decreased their planned spending levels (off 40 percent from year ago).

Over the next 12 months, where do you expect to increase spending?

Looking ahead over the next 12 months, operational spending was off somewhat with 80 percent of respondents planning to increase operational spending, off 6 points quarter-to-quarter. Increased expenditures leaders were new product or service introductions (55 percent, up 11 points), research and development (50 percent, up 9 points), information technology (35 percent, off 1 point), and business acquisitions (33 percent, off 1 point). Plans for geographic expansion increased 1 point to 20 percent. Marketing and sales promotion rose 2 points to 17 percent, but advertising dropped to 5 percent.

Chart 4.5 Percent planning major new investments of capital



Note: In 1Q 2016 total respondents = 60

Chart 4.6 Percent planning to increase operational spending

Industrial manufacturers	1Q'15	2Q'15	3Q'15	4Q'15	1Q'16
Percent planning to increase spending (net)	83%	75%	82%	86%	80%
• New product or service introduction	55%	44%	48%	44%	55%
• Research and development	40%	34%	37%	41%	50%
• Information technology	33%	22%	22%	36%	35%
• Business acquisition	28%	20%	23%	34%	33%
• Geographic expansion	19%	12%	13%	19%	20%
• Marketing and sales promotion	9%	9%	10%	15%	17%
• Facilities expansion	19%	10%	20%	22%	18%
• Advertising	1%	2%	---	9%	5%
• Internet commerce	3%	7%	5%	2%	2%

Expected barriers to business growth

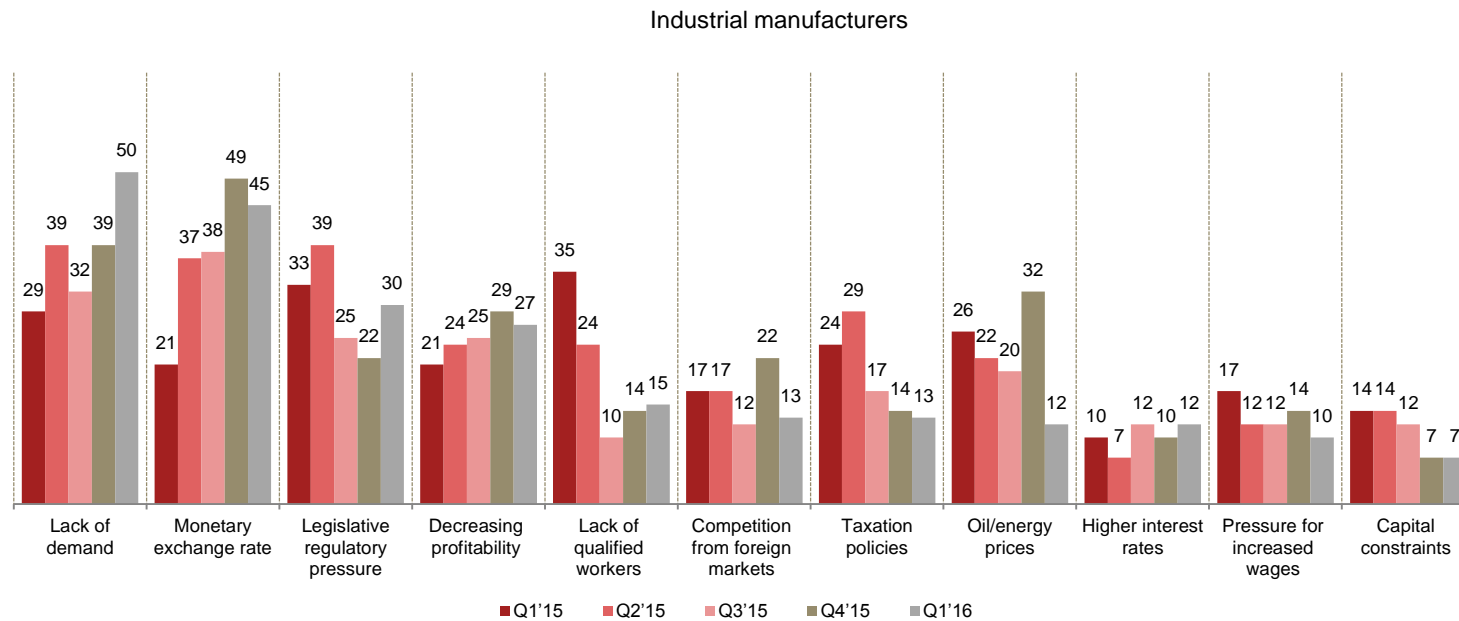


Over the next 12 months, will any of the following represent barriers to business growth?

Significantly, lack of demand and monetary exchange rate have become the leading headwinds to growth over the next 12 months, at 50 percent and 45 percent, respectively. A year ago, monetary exchange rate was at 21 percent, 24 points lower, while lack of demand was at 29 percent, 21 points lower.

Two other chief barriers to growth were at somewhat lower levels: legislative/regulatory pressure at 30 percent (up 8 points) and decreasing profitability at 27 percent (off 2 points). Falling sharply was oil/energy prices, down to 12 percent (off 20 points), and lack of qualified workers, 15 percent (off 20 points from a year ago).

Chart 4.7 Expected barriers to business growth



Note: In 1Q 2016 total respondents = 60



Over the next 12 months, do you expect to participate in any of the following new business initiatives?

More than half the panelists are planning new business initiatives, 57 percent (8 points higher). Importantly, many panelists (40 percent) are planning M&A activity over the next 12 months (up 1 point from the last quarter). They are mostly planning to purchase another business (37 percent) and some are planning to sell part or all of their own business (10 percent). Plans for expansion to new markets abroad dropped to 10 percent (down 4 points), with 8 percent planning new facilities abroad (off 1 point). Reductions abroad were reported by a net 8 percent, with closing/reduction of facilities abroad cited by 8 percent, while 12 percent expanded abroad (2 points higher).

Strategic alliances (20 percent) remained on pace but new joint ventures (13 percent) were lower this quarter.

Chart 4.8 Plans for M&A and other business initiatives

Industrial manufacturers					
	1Q '15	2Q '15	3Q '15	4Q '15	1Q '16
New business initiatives (net)	57%	54%	43%	49%	57%
• M&A activities (net)	43%	29%	27%	39%	40%
• Purchase another business	29%	19%	22%	34%	37%
• Sell part/all own business	16%	14%	7%	10%	10%
• Equity carve-out/spin-off	3%	---	2%	2%	2%
• New strategic alliance	17%	29%	13%	20%	20%
• New joint venture	19%	19%	13%	17%	13%
• Expand to new markets abroad	19%	12%	8%	14%	10%
• New facilities abroad	12%	9%	5%	9%	8%
• Close/reduce facilities abroad	3%	10%	7%	3%	8%
• Reduce activity in markets abroad	3%	7%	7%	7%	3%

Note: In 1Q 2016 total respondents = 60

Special topic:
Energy costs

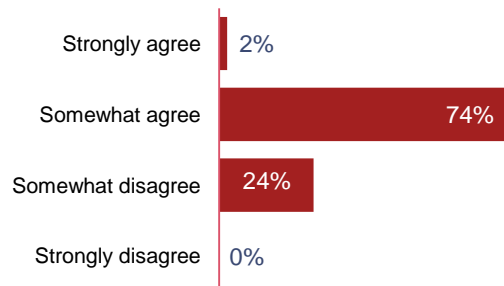




To what extent do you agree with the following statement? “America is becoming energy independent and many experts predict that the cost of energy will become significantly lower for US manufacturers.”

Three-quarters (76 percent) believe the cost of energy will become significantly lower for US manufacturers. Only 24 percent disagree.

Chart 5.1 Costs of energy will be lower



In your own company’s plans for the next 12-18 months, are you anticipating lower overall energy costs? What percent lower? Nearly two-thirds (64 percent) of industrial manufacturing companies are planning for lower overall energy costs over the next 12-18 months, averaging approximately 4.2 percent lower. Thirty-six percent have no plans.

In your company’s longer term plans for the next 2-3 years, are you anticipating lower overall energy costs? What percent lower? But about one-third (36 percent) of panelist companies are planning for longer term lower overall energy costs over the next 2-3 years, averaging approximately 4.4 percent lower. Most, 60 percent, are not anticipating longer term lower energy costs, and 4 percent were not certain.

Chart 5.2 Lower energy costs next 12-18 months

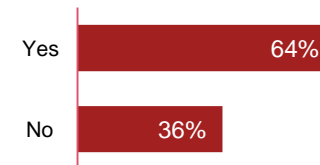
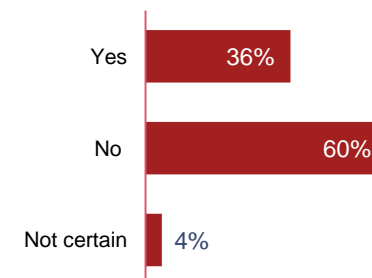


Chart 5.3 Lower energy costs next 2-3 years

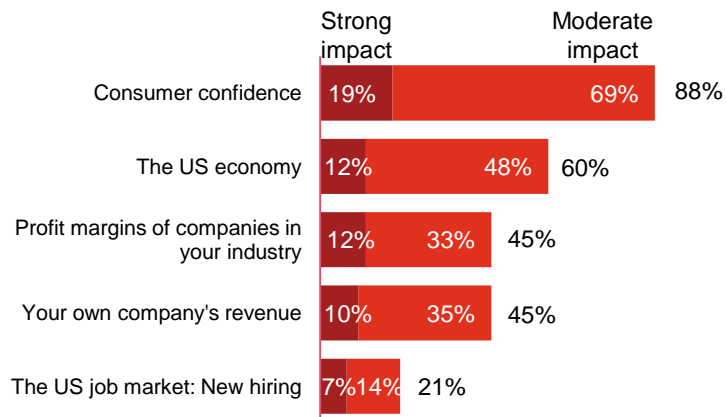




Looking ahead over the next 2-3 years, to what extent do you believe lower energy prices – and their contribution to many other products or services – will have a positive impact on the following items?

Panelists believe that lower energy prices over the next 2-3 years will have a largely moderate positive impact on consumer confidence (88 percent) and the US economy (60 percent), as well as own company revenues (45 percent) and profit margins of companies in their own industry (45 percent). But panelists see limited impact on the US job market (only 21 percent).

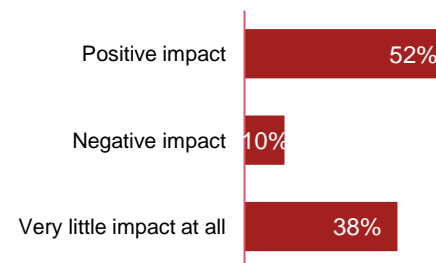
Chart 5.4 Impact of lower energy prices



To what extent have current energy prices had an impact on your own company over the past 12 months?

Half (52 percent) of industrial manufacturing panelists believe current energy prices have had a positive impact on their own company over the past 12 months, largely split between a moderate (55 percent) or limited (41 percent) impact, with only 4 percent indicating a strong impact. Another 38 percent believe it had very little impact at all, and 10 percent a negative impact (oil-related companies).

Chart 5.5 Impact of current energy prices on own company

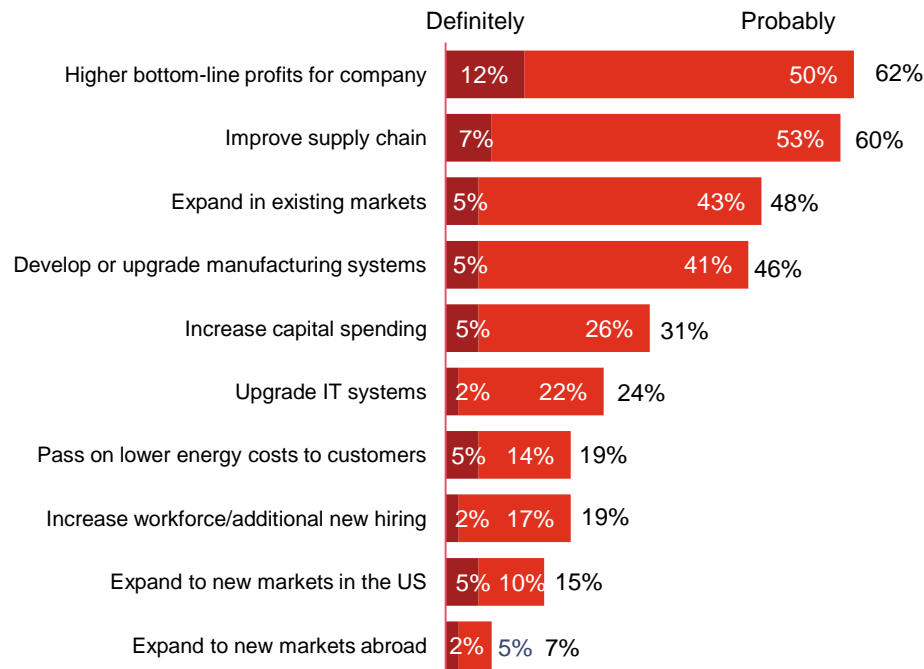




Looking ahead, if energy costs become notably lower, how is your own company likely to employ this energy premium?

If energy costs become notably lower, own companies are likely to employ the energy-premiums by taking higher profits for their companies (62 percent), improving supply chains (60 percent), expanding in existing markets (48 percent), or developing/upgrading manufacturing systems (46 percent). Others would increase CapEx spending (31 percent) or upgrade IT systems (24 percent). A limited number would pass on energy premiums to their customers (19 percent), or use it for additional new hiring (19 percent).

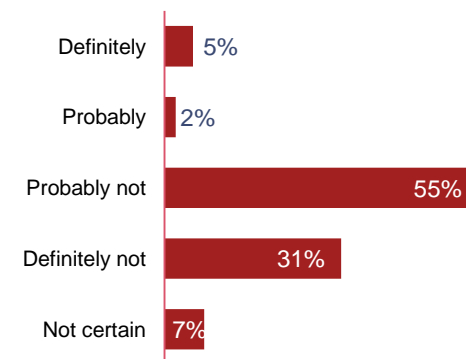
Chart 5.6 How own company will employ energy premium



Do you expect any major barriers or obstacles that may not allow your own business to capitalize on anticipated lower energy costs over the near future?

Virtually no barriers or obstacles are expected that would prevent panelists' businesses from capitalizing on anticipated lower energy costs in the near future (only 7 percent).

Chart 5.7 Barriers to capitalize on lower energy costs



Maintaining larger cash position



Utilizing larger cash position

Most companies are now maintaining a larger cash position than they typically do. Is this the case for your company?

It is noteworthy that nearly half, 48 percent, of industrial manufacturing companies report that they are now maintaining a larger cash position than they usually do. Only 31 percent are not, 7 percent were not certain, and 14 percent were not reported.

If yes to the previous question, over the next 12-18 months, do you foresee utilizing that cash for the following?

Panelists with larger than usual cash positions (48 percent) foresee utilizing that cash over the next 12-18 months largely for new acquisitions (65 percent), along with increased R&D (40 percent). Other mentions include major manufacturing/supply chain expansion (20 percent) and increased hiring (15 percent). Note: Overall, that means 31 percent (65 percent of 48 percent) of total panelists have cash and foresee new acquisitions near term.

Chart 5.6 Maintaining large cash position

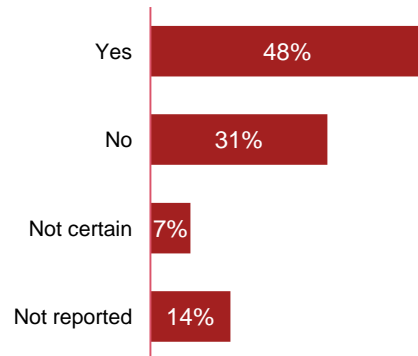
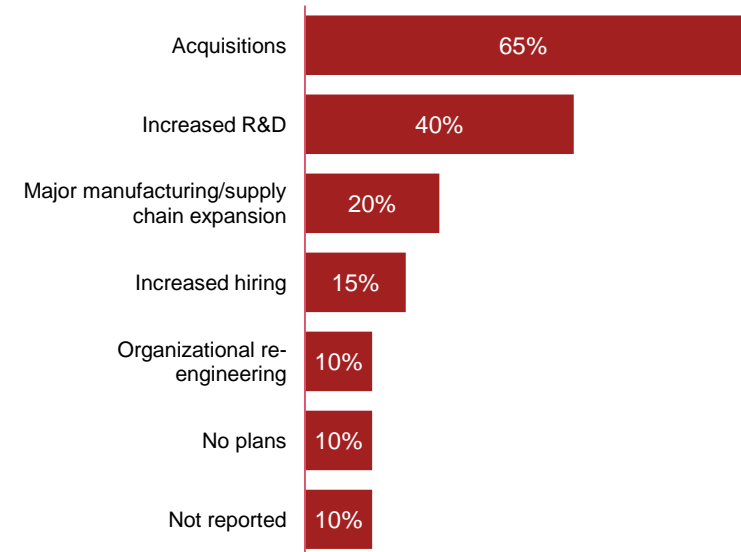


Chart 5.9 Foresee utilizing cash





Demographics

Who	Senior executives of US-based industrial manufacturing organizations
Interview dates	December 22, 2015 to March 21, 2016
	Industrial manufacturers (60)
Average number of employees at location	6,321
Average business unit revenue	\$2.44 billion
Average enterprise revenue	\$6.13 billion
Market capitalization	\$7.90 billion
Industry sectors	Products 100% Manufacturing 100%

Methodology

PwC's *Manufacturing Barometer* is a quarterly telephone survey conducted by the independent research firm BSI Global Research Inc. Our regular survey panel consists of senior executives from a geographically balanced sample of large companies in the United States. Ninety-five percent of the panelists hold titles such as president, CEO, CFO, VP of finance, treasurer, controller, internal audit director, or other related title.

Industry contact:

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US Industrial Manufacturing Leader
+1 704 350 7993

About the research:

The *Manufacturing Barometer* is one in a series of quarterly business outlook surveys from PwC. The survey provides a view on the 12-month outlook for revenue growth, new investments, new hiring plans, emerging business barriers and more. In addition to the business outlook, we hear from our panelists about special issues they face as the business climate changes. Results of the quarterly business outlook surveys and special issue surveys are available at www.barometersurveys.com.

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