

## Head-to-Head: GE vs Siemens

### Both Buy-rated; Edge to GE on 2013 But Siemens Better on 2014

#### ■ Industry Overview

- **First in a series from Citi Research** — Citi Research Industrials analysts Deane Dray (US) and Mark Fielding (Europe) have teamed up to put the two Multi-Industry behemoths, GE and Siemens, through an insightful head-to-head global analysis. The two companies have been profiled on growth leverage, end market drivers, geographic exposures, balance sheet, cash generation, and return metrics.
- **And the winner is...** — The two ended up remarkably close after a head-to-head competition across a dozen performance metrics and we see both as having attractive equity stories. In 2013, GE's favorable late-cycle exposure suggests it is better positioned in the near-term. However, looking out to 2014, the edge shifts to Siemens if it can deliver on its restructuring (as we think it can).
- **Key differentiators** — GE Capital (46% of 2012 earnings) is by far the most impactful difference (Siemens' captive finance business is just 7%), but there are many industrial investors still wary of GE's outsized financial services exposure. We especially like GE's long-cycle positioning in its \$20 bil Aviation platform. In contrast, Siemens has substantially more exposure to the electricity grid, industrial automation, and short-cycle industrial products. By geography, GE is overweight US (47% vs Siemens 21%) with Siemens having more Europe (44% vs GE's 20%).
- **Bull case for GE** — We are positive on the earnings power in GE Industrial, and the upside valuation implications from high earnings visibility, record late-cycle \$210 bil Industrial backlog, and 26% high-margin service and aftermarket revenues. The longer term right-sizing of GE Capital to represent just 30% of earnings would be a game-changer for industrial investors and should drive multiple expansion.
  - **GE valuation looks attractive at low-end of its historical relative range** — GE's 13.6x 2013 EPS is a 15% discount to large-cap peers, at the low-end of its (15%) to 10% historical relative range. Our \$25 target assumes the shares trade inline with peers and implies 15% ETR including the 3.5% dividend yield.
- **Bull case for Siemens** — Siemen's new company program (announced November 2012), in our view, represents a fundamental value-creating shift to boost profits and cash returns, not just for 2014, but longer-term. Management is targeting "at least 12%" Total Sector Profit margins in 2014 versus 9.5% in 2012. This will be driven by €6bn of productivity savings. In addition, management assumptions on pricing may prove conservative, creating upside risk.
  - **Siemens valuation** — Our €100 target is based on a 5Yr average P/E of c12.5x14E. At 9.1x14E P/E Siemens trades at c28% discount to European engineering coverage. New targets under the 'One Siemens' program imply an EBIT margin of at least 12.5% underlying. If achieved, this could support a valuation of up to 1.2x sales, implying a valuation of €111 per share.

#### Deane M. Dray, CFA

+1-212-816-4030

deane.dray@citi.com

#### Mark Fielding

+44-20-7986-4018

mark.fielding@citi.com

#### Matthew W. McConnell, CFA

matthew.w.mcconnell@citi.com

#### Bilal Aziz

bilal.aziz@citi.com

#### Jessica Mullin

jessica.mullin@citi.com

#### Related Reports

[World Champions — Industrials - Industrial Standouts in Global Quality amid Challenging Macro](#)

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

Citi Research is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

## Head-to-Head: GE vs Siemens

**WITHIN THIS REPORT:** We have conducted a head-to-head comparison of GE and Siemens, two of the largest global diversified industrial companies. There are both intriguing overlaps in business lines as well as different strategic platforms, creating the basis for unique growth opportunities and external drivers. In this context, we have examined operating and financial performance metrics, strategic overlaps and portfolio differences, geographic exposures, and absolute and relative valuations.

**Near-term edge to GE but Siemens looks more favorable on 2014:** The two giants ended up remarkably close after a head-to-head competition across a dozen performance metrics. Both are Buy-rated with attractive equity stories in our view. Given GE's attractive late-cycle positioning, we would see GE as preferable over Siemens when looking at 2013. At this time, GE also measures favorably on recurring revenue mix, historical organic revenue growth, and operating margins. However, looking out into 2014, the edge arguably goes to Siemens from upside to its ambitious restructuring efforts.

**Our Head-to-Head summary comparisons are as follows:**

Figure 1. Head-to-Head Comparison

	GE	SIEMENS
<b>End Market Growth</b> (Weighted Average)	4.1% We assume no growth from GECC, which weighs on GE's total end market growth since it still represents 31% of revenues and 46% of net income.	✓ 4.8% Siemens' solid growth outlook is driven by its exposure to faster-growing markets such as oil & gas, power generation, and industrial automation.
<b>Geographic Exposure</b> (Weighted Average)	✓ 3.0% Emerging markets (33% of sales) and US (47%) position GE relatively well by geography.	2.6% Europe represents 44% of sales and is a drag to near-term organic revenue growth.
<b>Cyclical Exposure</b> (Mid + Late-Cycle)	50% GE is 35% early-cycle (mostly GE Capital), 20% mid-cycle, 30% late-cycle, and 15% defensive.	✓ 56% Siemens is 19% early-cycle (mainly discrete automation), 23% mid-cycle, 33% late-cycle, and 25% defensive.
<b>Recurring Revenues</b>	✓ 26% We estimate 26% recurring revenue, representing the higher-margin service revenue in Industrial.	20% We estimate 20% recurring revenue which largely come from the service related revenues from Fossil Power.
<b>Organic Revenue Growth</b> (10-Yr Avg)	✓ 4.0% GE's 8% organic growth was above the sector avg in 2012 and should remain strong in 2013/2014 as its late-cycle markets continue to improve.	3.1% Siemens' organic growth has averaged 3.1% over the past 10 years, below the c5% achieved by its large-cap Electrical peers.
<b>Operating Margin</b> (5-Yr Avg)	✓ 15.5% GE's Industrial operating margins have averaged 15.5% over the past five years and should increase as the late-cycle recovery continues.	11.3% Siemens margins have been on an upward trajectory over the last ten years and we look for further progress to a 12-13% sustainable level.
<b>ROIC</b> (5-Yr Avg)	11.2% ROIC bottomed out in the high single-digits at the depths of the recession when GE Capital losses partially offset resilient Industrial profitability.	✓ 14.5% Improving ROIC has been achieved in tandem with improved operating margins.
<b>Free Cash Conversion</b> (5-Yr Avg)	119% GE's free cash flow conversion has trended around 119% for the past five years, slightly above the sector average of 111%.	✓ 124% Siemens' FCF conversion has been strong and has averaged 124% over the past five years.
<b>Balance Sheet</b> (2012 Net Debt-to-EBITDA)	✓ -0.1x GE Industrial is in a net cash position, providing ample firepower for bolt-ons and buybacks. The debt is rated Aa3 / P-1 by Moody's and AA+ by Standard & Poor's with a stable outlook from each.	0.4x Siemens has re-levered post a €3bn buyback in Aug 2012; target is for net debt/EBITDA of 0.5-1.0x. The debt is rated Aa3 / P-1 by Moody's and A+ by Standard & Poor's with a stable outlook from each.
<b>Adjusted EPS Growth</b> (10-Yr CAGR)	0.1% GE's EPS has remained flat over the past ten years as it systematically shrinks GE Capital which averaged +50% of net income from 2003-2007.	✓ 13.4% Siemens' EPS growth has been driven by operational efficiencies and improving delivery.
<b>Relative Valuation</b>	GE has averaged a 12% premium to SIEGn.DE on forward P/E over the past five years, and is currently trading just above this level.	✓ The value proposition for Siemens is centered on 2014. GE trades at a 19% premium to SIEGn.DE on 2014E, above the historical average.
<b>Dividend Yield</b>	3.5% GE's 3.5% dividend yield is the highest in the US Multi-Industry sector, but behind Siemens.	✓ 3.8% Siemens dividend yield is 3.8%, well above the sector average.

Source: Citi Research

## Bull Case Head-to-Head

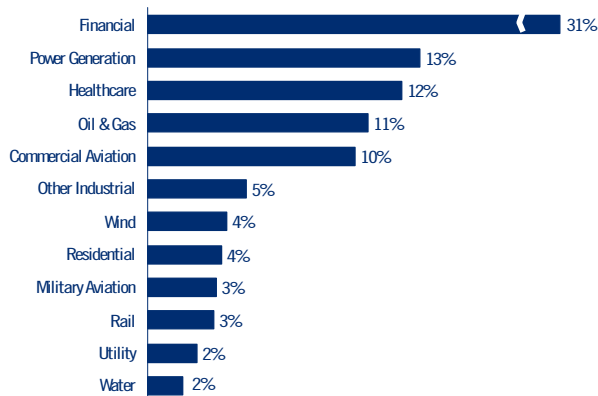
Figure 2. Bull Case Profiles

	General Electric	Siemens
<b>Buy Thesis</b>	Investors should be encouraged by the earnings power in GE Industrial, and the positive valuation implications from higher visibility and faster Industrial growth into 2013. GE has solid line-of-sight based on its robust late-cycle \$210 bil Industrial backlog, and high-margin service and aftermarket revenues. The resumption of regular GE Capital dividend and expected future special cash dividends to the parent is funding accelerated investor-friendly buybacks and dividend growth.	The new company programme announced at the end of FY12 aims to achieve total sector profit margin of at least 12% by 2014 driven by €6bn of productivity savings. We see the new programme as more than a margin target, but rather as a fundamental directional shift that should create significant value for shareholders via increased profitability and cash returns, not just for 2014, but longer-term. Furthermore a strong start to 2013E suggests the potential for near term EPS momentum too.
<b>Investor Pushback</b>	<ul style="list-style-type: none"> <li>Despite setting long-term targets of 30%-35% of total parent earnings, GE Capital still contributed about 46% of 2012 net income and will be a headwind to EPS growth as this key business is strategically resized.</li> <li>The sharp cut to organic revenue growth guidance in Dec 2012 was unsettling for investors and ongoing legacy charges to the divested Japanese retail finance business have been a disappointment.</li> <li>Following a robust year of wind shipments, the falloff in Wind orders should be a 300 bps drag to Industrial organic revenue growth in 2013 and a 3c EPS headwind.</li> </ul>	<ul style="list-style-type: none"> <li>There has not yet been enough evidence surrounding the detail of the €6bn savings programme. Although Siemens has announced disposal of some non-core businesses, they have yet to provide solid evidence of action within the supply chain, manufacturing footprint and process efficiency.</li> <li>The profit bridge to 12% total sector margins by 2014 implies annual price pressure of 2.5-3% which could contain downside risk in an uncertain economic environment.</li> <li>Siemens has a history of "one-off" problems and investors are concerned by the reliability of future EPS.</li> </ul>
<b>What is Changing</b>	<ul style="list-style-type: none"> <li>GE is methodically shrinking GE Capital, which averaged +50% of GE parent earnings from 2003-2007 but is now being reduced to 35% by 2015 and eventually to 30% through portfolio run-off, exiting certain businesses (like commercial real estate equity), and divestitures of non-core assets.</li> <li>M&amp;A is being contained to bite-sized \$1-\$3 bn bolt-on targets.</li> </ul>	<ul style="list-style-type: none"> <li>We believe the transition to a cost focused approach from a growth driven one will drive increased profitability and cash returns. Siemens has underperformed its peers over the last two years under the growth agenda but the previous cost reduction phase of 2008-11 was in our view a significant success. We remain encouraged by the new company plan and remain confident in management's ability to deliver.</li> </ul>
<b>Potential Catalysts</b>	<ul style="list-style-type: none"> <li>We see the potential for GE Capital to divest its consumer lending businesses, accelerating the balance sheet shrink and freeing up capital to invest in Industrial and do more buybacks.</li> <li>News of another special dividend from GE Capital to the parent would be a positive. These funds would likely go into buybacks.</li> <li>Traction in delivering on its targeted 70 bps of Industrial operating margin goals in 2013 would be a positive.</li> </ul>	<ul style="list-style-type: none"> <li>Since the announcement of the new plan Siemens has outlined specific restructuring measures totaling c€1.2bn by 2014 and we look for more such announcements on an ongoing basis.</li> <li>Siemens has recently announced the disposal of its baggage handling and solar businesses. Further streamlining of the portfolio is expected.</li> <li>The announcement of another share buy back (following the €3bn buy back announced in Aug 2012) also cannot be ruled out.</li> </ul>
<b>Our Estimates</b>	<ul style="list-style-type: none"> <li>We expect 11% EPS growth in 2013, driven by an 8% increase in Industrial operating profit, low single-digit growth in GE Capital net income, plus the benefits of 2012 buybacks. Bolt-on M&amp;A or accelerated buybacks would be additive to our estimates.</li> </ul>	<ul style="list-style-type: none"> <li>We forecast for a 10% EPS decline in 2013E; this is based off a high level of non-recurring gains in the preceding year and a weaker cyclical backdrop. Our 2014E forecasts point to an EPS growth of 22% as profitability improves on the back of achievement of margin targets related to the 'One Siemens' Program.</li> </ul>
<b>Valuation</b>	<ul style="list-style-type: none"> <li>Shares trade for 13.6x our 2013 EPS estimate, a 15% discount to peers and at the low-end of its (15%) to 10% historical relative range.</li> <li>Sum of the parts implies a \$21 share price based on Industrial earnings and GE Capital net income at 1.2x tangible book value.</li> <li>Our DCF analysis implies a \$20 share price, conservatively assuming GE Capital trades for 1.2x tangible book value and adding the present value of Industrial cash flow. Our analysis shows 70% of GE's market cap attributable to Industrial.</li> <li>GE's dividend yield stands at 3.5%, among the sector's highest.</li> </ul>	<ul style="list-style-type: none"> <li>Shares trade at 9.1x our 2014 EPS estimate which is at a c28% discount to the sector at 12.6x14E. We use 2014 as the base year as the benefits from the new company plan will be back end loaded.</li> <li>We value Siemens at €100 per share based on a 5Yr average P/E of 12.5x14E.</li> <li>We would highlight that Siemens trades on an EV/Sales of 0.8x14E and the new targets under the 'One Siemens' program imply an EBIT margin of at least 12.5% underlying. If achieved, this could support a valuation of up to 1.2x sales, implying a price of €111 per share.</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>New equipment pricing remains a key risk for Industrial profitability and the target for 70 bps of margin expansion in 2013.</li> <li>While GE Capital has ample access to credit markets and funding, it would be susceptible to any significant tightening in credit markets such as the disruptions to the financials in 2008/2009.</li> <li>Regulatory requirements for additional capital at GE Capital or other requirements could impact GE Capital's ability to return capital to the parent.</li> </ul>	<ul style="list-style-type: none"> <li>Siemens currently assumes a negative drag from pricing of 2.5-3% in its profit bridge till 2014. This could be a potential area of downside if the macroeconomic environment deteriorates suddenly.</li> <li>With c. 44% of sales coming from Europe any returns of sovereign debt issues could weigh on company capital spending plans within the region.</li> <li>Siemens has had a number of "one-off" issues in recent years (such as the problems with offshore grid connections in its Transmission business in 2012) and execution remains a risk area.</li> </ul>

Source: Citi Research

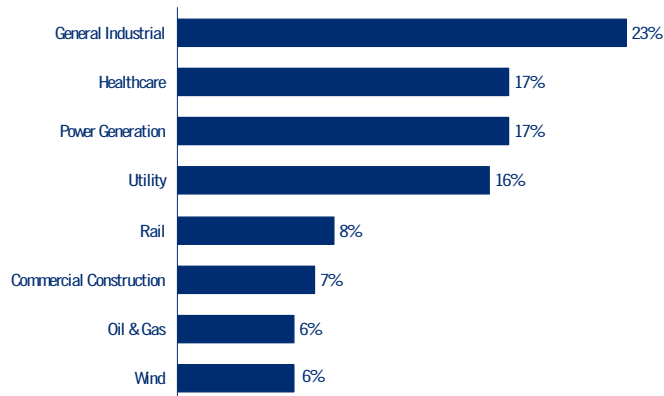
## End Market Profiles

Figure 3. GE Revenue by End Market



Source: Citi Research, Company Reports

Figure 4. Siemens Revenue by End Market

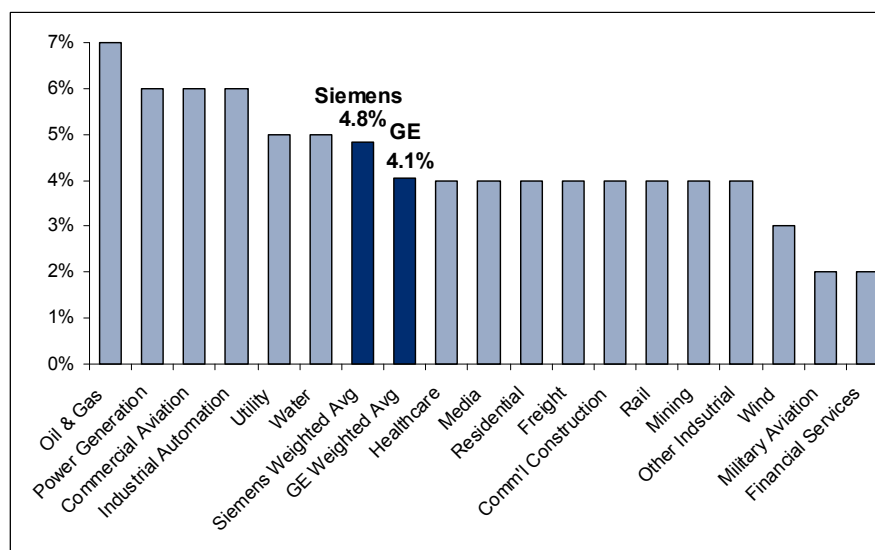


Source: Citi Research, Company Reports

**Blended end market growth opportunity comparison.** Our analysis below profiles the key end market exposures for GE and Siemens, and assigns their medium-term growth potentials to arrive at an estimate for each company's weighted end market growth opportunity. While this analysis provides a good proxy for expected underlying end market growth, it should not be considered a strict company-specific growth target since GE and Siemens each have a track record for gaining market share and outperforming their peers. The key conclusion is that Siemens is positioned for incrementally faster end market growth over the next few years vs GE, mainly because GE is weighed down by GE Capital, which represents GE's largest business at 31% of revenue and about 46% of earnings in 2012.

Our medium-term blended end market growth assumptions and each company's end market exposure shows Siemens is comparatively well-positioned with blended end market growth opportunity of 4.8% vs 4.1% for GE.

Figure 5. Blended Leverage to End Market Growth



Source: Citi Research

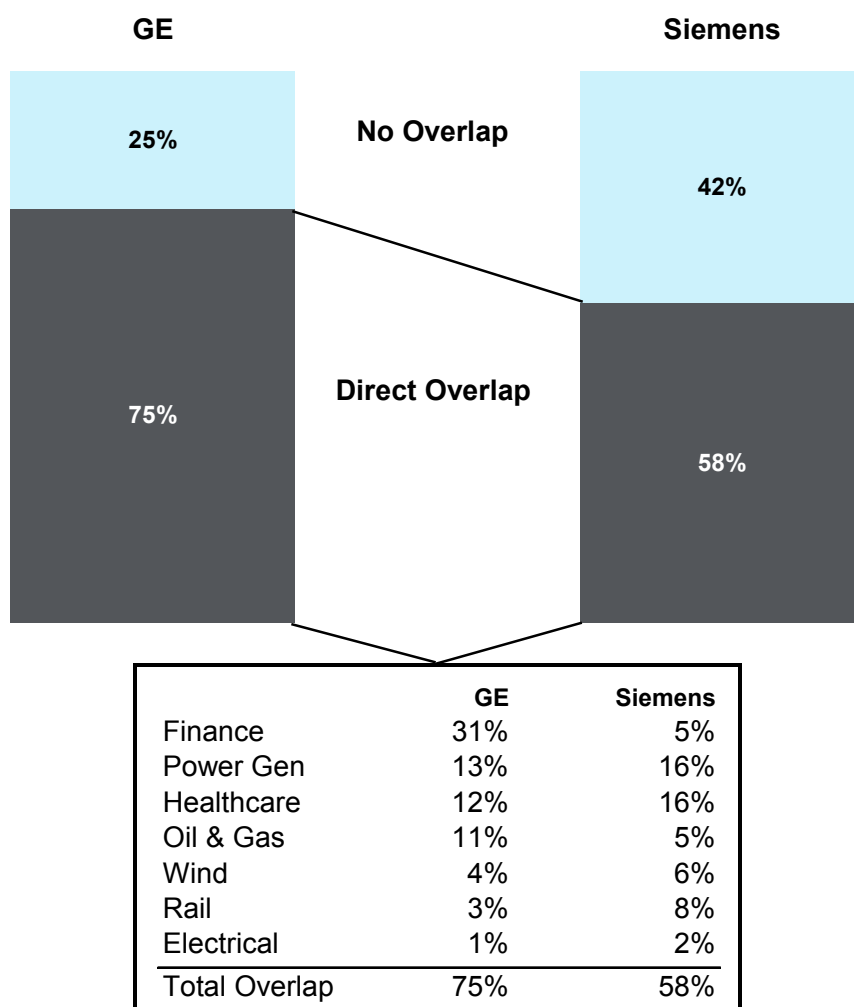
## Strategic Overlaps

Siemens' 2012 revenue of \$104.6 bn is 2% above GE Industrial's revenue in 2012 of \$102.8 billion.

GE and Siemens have substantial overlap across their strategic growth platforms.

**Overall, Siemens' industrial business is slightly larger than GE Industrial on a revenue basis, but GE Industrial is more profitable.** Siemens generated \$104.6 billion of annual sales in F2012 (YE September) vs. \$102.8 billion for GE excluding GE Capital. Including GE Capital revenues, GE's total sales jump to \$147.4 billion, well above Siemens' total. As the exhibit below shows, GE Industrial generates a strong 2012 operating margin of 15.1%, above the sector average of 14.6%. Siemens' consolidated operating margin was 9% in 2012, much lower than GE Industrial, although Siemens was partly weighed down by one-off items. We note that compared to history, Siemens' margins have improved significantly in the last decade, largely due to Siemens' focus on cost (particularly its 'Fit 4 2010' program) and reducing non-core exposure.

Figure 6. Key Business Overlaps, Percentage of Total Revenues



Source: Citi Research

**Specific overlap in Energy and Healthcare platforms.** The Energy and Healthcare platforms are the most directly comparable divisions within GE and Siemens.

For additional insight, see Mark Fielding's report: [Siemens \(SIEGn.DE\) - Energy CMD Supports Group Margin Potential](#)

■ **Two global leaders in gas turbines.** GE and Siemens are the two global leaders in the gas turbine market, representing more than three-quarters of the market combined. We believe GE is the global leader with an installed base of roughly 6,000 turbines, and has held 40%-50% share of the global turbine market across the cycle. Siemens has been incrementally growing share and is now at roughly 40% of the market and a close No. 2 to GE. Siemens has invested \$1.3 billion to expand its gas turbine production capacity, and has a major production facility in North Carolina, enabling it to compete in the US with GE. The distant No. 3-6 players in the market that represent less than a quarter of the market combined are Mitsubishi Heavy Industries, Alstom, Bharat Heavy, and Rolls Royce.

■ **Healthcare overlaps.** GE is the global leader in diagnostic imaging equipment with leading positions in X-Ray, computerized tomography (CT), magnetic resonance imaging (MRI), and ultrasound systems. It has also invested substantially in healthcare IT, and in life sciences businesses that complement its core diagnostic imaging businesses. Siemens overlaps with GE across its healthcare markets and is only just behind GE in the size of its global imaging equipment market. In addition Siemens has a large laboratory diagnostics business that does not overlap with GE.

In the exhibits below, we compare the two companies on total industrial revenues and operating profit, and then spotlight the energy and healthcare businesses revenue and operating profit, and again show relatively similarly-sized businesses where GE generates a higher operating margin. GE's businesses without a directly comparable reporting segment at Siemens include Aviation (17% of GE Industrial sales), Home & Business Solutions (9% of sales), and Transportation (3%). Siemens' Industry sector (26% of sales) is not directly comparable with any GE segment and primarily represents Siemens' global leading industrial automation and drives businesses.

Figure 7. GE Industrial vs Siemens Revenue and Operating Income (\$Mil)

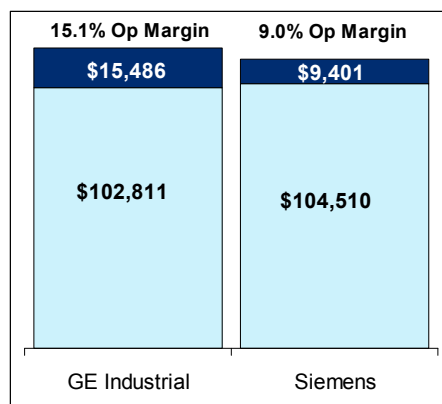


Figure 8. GE Energy vs Siemens Energy Revenue and Operating Income (\$Mil)

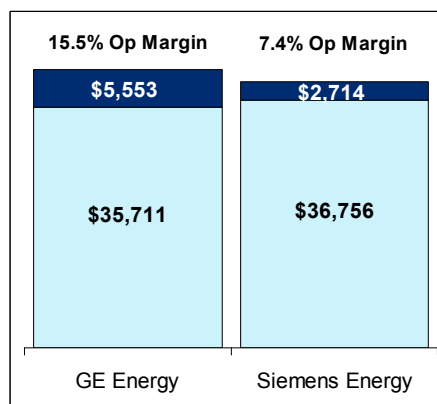
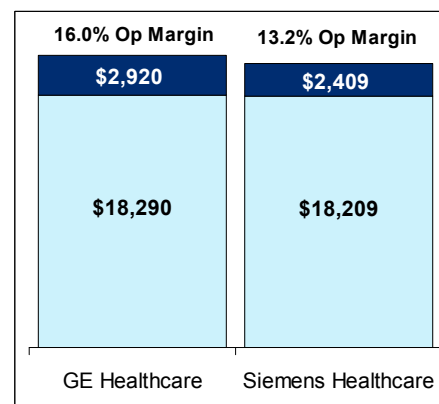


Figure 9. GE Healthcare vs Siemens Healthcare Revs and Operating Income (\$Mil)



Source: Citi Research

Note: GE Energy is the combination of the Power & Water and Energy Management segments

## Portfolio Differentiators

### GE Standouts

**GE Capital is the biggest differentiator.** At its peak, GE Capital contributed 55% of GE's total net income, a level we do not expect to see ever again; the long-term

target is for 30% of earnings, but GE Capital still contributed about 46% of GE net income (adjusting for some small GE Capital items at the parent level). Even with the new "safe and secure" mantra, GE Capital provides cash flow, end market exposures, and risks not found in the Siemens portfolio. Siemens' captive finance business is just 7% of earnings and 5% of revenues. Our take on the strategic positives and negatives of GE Capital to the GE portfolio are summarized in the exhibit below:

#### **Positives of GE Capital to the GE Portfolio:**

- **Back to the basics, leveraging GE's domain expertise:** GE Capital leverages the core business' domain expertise in key verticals such as healthcare, aviation, and energy, creating a key competitive advantage for both the Industrial and the GE Capital businesses. It is winding down commercial real estate equity exposure. GE Capital has also already gone through its first audit by the Federal Reserve, its new regulator.
- **Strong positions in core markets:** GE Capital is the industry leader across most of its markets, including middle market commercial lending, private label credit cards, aircraft leasing, and energy project financing.
- **Dividends support Industrial growth:** GE Capital is freeing up significant regulatory capital as its balance sheet shrinks, enabling additional special dividends from GE Capital to the parent, similar to the \$4.5 billion special cash dividend that was up-streamed to the parent in 2012. We expect GE Capital to continue paying a regular dividend equal to 30% of its earnings to the parent.
- **Early-cycle exposure drives first leg of the recovery:** GE Industrial is more of a late-cycle-weighted business based on its power gen and aviation exposure. GE Capital balances the portfolio with early-cycle exposure, which drove the strong 2011 earnings recovery before the Industrial recovery started to kick in later in 2012.

#### **Negatives of GE Capital to the GE Portfolio:**

- **Earnings volatility and transparency:** GE Capital added significant volatility in the 2008-2009 credit crisis, but we believe risk has been greatly reduced by shrinking the balance sheet, reducing financial leverage, cutting reliance on commercial paper funding, and methodically lowering the long-term contribution to consolidated earnings.
- **Run off of non-core "red assets":** Non-core businesses have added quarterly noise including UK mortgages, Japan consumer lending, and commercial real estate equity investments. These non-core platforms are in run-off, or have been eliminated.
- **Proactive balance sheet reduction limits GE total growth:** GE is systematically limiting GE Capital's growth opportunities as it shrinks the balance sheet from the pre-recession peak above \$625 billion to \$420 billion at year-end 2012. The decline shifts the mix more towards Industrial, but is a drag to GE's consolidated earnings growth. Rather than be fixated on the modest earnings dilution from contracting GE Capital's balance sheet, we expect investors will be enthused about attractive earnings mix weighted to industrial. We expect to see a sustainable P/E multiple expansion associated with this higher industrial mix.



The high margin revenue GE earns by servicing an aircraft engine over its 30-40 year economic life is 6x-7x the proceeds from the one time equipment sale.

**Leading Aviation platform differentiates GE.** GE's \$20 billion aviation business is a core business in which Siemens does not participate. Aviation has attractive exposure to global infrastructure development and the increase in air transportation, which is expected to grow at roughly 2x GDP. Aviation also creates a stream of relatively predictable and high-margin recurring revenue from its installed base of roughly 50,000 engines – more than half of the global installed base. Aviation has a \$102 billion backlog, roughly half of GE Industrial's total Industrial backlog including contract service agreements.

## Siemens Portfolio Standouts

**Industrial automation and short-cycle products.** Siemens' Industry division is the global leader in providing solutions for factory/process automation, electro-mechanical products and motion control systems. Siemens comfortably commands market leading positions in both the Automation and Drives subdivisions of the business. The business is among the more cyclical within the Siemens portfolio and as such should be a beneficiary in times of manufacturing expansion.

The division should also benefit from the thematic of growing wage inflation in developing countries which should see increased demand for the use of the company's control systems and other applications of information technology to reduce human intervention within the manufacturing plant. We would highlight that Siemens has already secured a c.40% market share in Programmable Logic Controllers (the main discrete Automation product) globally, with many local manufacturers still preferring the company's technology over domestic players.

**Electricity grid exposure.** Siemens' exposure to the Power Transmission & Distribution markets accounts for c.16% of Siemens' Group sales, equally split between the Power Transmission business within the Energy sector and the Power Grid Solutions & Products business within the Infrastructure and Cities sector. Market demand here has remained pressured over the past two years with overcapacity on the supply side and pricing has consequently been under pressure. However, recent comments suggest that it may be nearing a trough.

The longer term drivers of the business remain supportive and are largely based on replacement demand driven by an aging fleet in Western Economies and the need for extra capacity in developing nations to meet growing electricity demand. Globally, this market is a structurally strong area to be in. Not surprisingly, China is Siemens Energy's largest national power transmission market. In the new 'One Siemens' program, the company is targeting a growth in profitability in the Transmission business, but we believe the improvement looks to be more 2014 loaded.

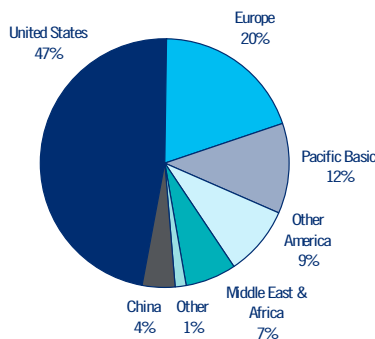
**Mobility platform.** Siemens' Mobility business accounts for 8% of sales and sits within the wider Infrastructures and Cities division. The company is able to offer the complete package of solutions for rail operators globally, which range from providing rolling stock to complete signaling and automation solutions. The recent acquisition of Invensys Rail solidified Siemens' global dominance in the rail market as Invensys Rail's strong position in mainline, mass transit products will complement Siemens' rolling stock offering and signaling systems. Siemens was already the global leader in the Rail signaling market and this will further reinforce this situation with an implied market share of over 15% globally being twice the size of its nearest competitor.



## Geographic and Emerging Market Exposure

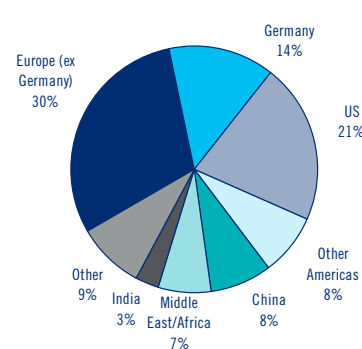
**Substantially different geographic exposures.** GE and Siemens have each made substantial investments to develop an emerging market footprint and have been generating above-average growth in these geographies. By the numbers, Siemens generates 32% of its sales in emerging markets vs 33% for GE. Not surprisingly, GE generates 47% of its sales from the US relative to 21% at Siemens. Siemens has a much larger presence in Europe, at 44% of sales versus 20% at GE.

Figure 10. GE Revenue by Geography



Source: Citi Research, Company Reports

Figure 11. Siemens Revenue by Geography

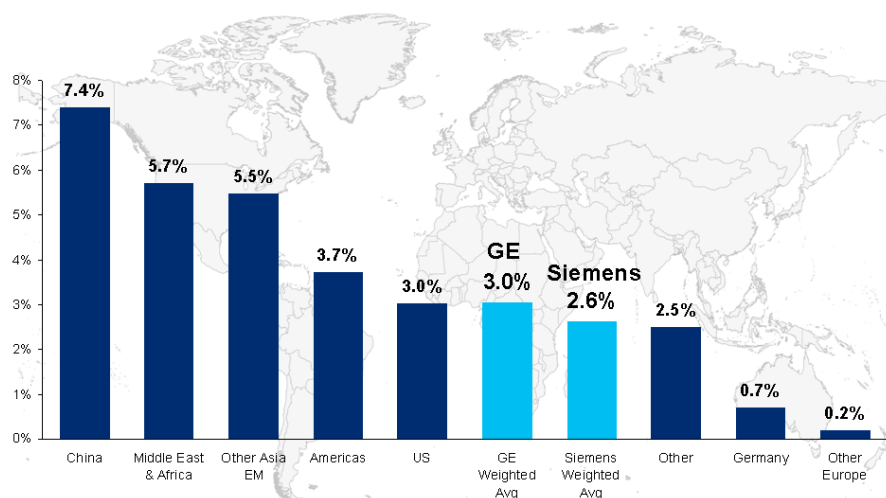


Source: Citi Research, Company Reports

**Weighted estimates for geographic growth.** Similar to our previous analysis on end market growth, we analyze geographic exposures vs Citi economists' expectations for GDP growth to compare GE and Siemens' geographic positioning. We conclude that GE is slightly better positioned based on its emerging market exposure, but mostly due to its lack of focus on Europe, where it generates just 20% of sales vs 44% for Siemens. We expect the US to be a relatively strong growth driver over the next 3-5 years, benefitting GE, which has 47% exposure vs just 21% for Siemens.

Based on Citi's economists' GDP forecasts, the weighted average of the economies where GE generates its sales is expected to increase 3.0%; Siemens is slightly lower at 2.6%.

Figure 12. Blended Leverage to Projected Geographic Growth



Note: Growth rates based on Citi economists forecasts for 2012-2016 GDP growth by geography

Source: Citi Research

Figure 13. Geographic Exposure

	General Electric	Siemens
United States	<b>47% of Sales</b> GE generates just under half of its sales in the US, substantially more than Siemens, though its US sales have been steadily declining as a percent of revenue over the past decade.	<b>21% of Sales</b> US generates a fifth of Siemens' revenues, and this has broadly remained steady over the past decade.
Europe	<b>20% of Sales</b> Europe has also been steadily declining as a percentage of GE's sales over the past ten years and it focuses more of its international expansion in emerging markets	<b>44% of Sales</b> Europe does still remain a big part of Siemens' business. However, 14% of this is attributable to Germany alone where the company commands market leading positions in all of its key markets.
Emerging Markets	<b>29% of Sales (ex-China)</b> GE recently appointed Vice Chairman John Rice to the role of international growth guru as part of its ongoing focus on international markets. Emerging markets represent 29% of GE's sales and have increased at a 15% CAGR over the past ten years. GE's company-to-country strategy leverages its product breadth and expertise across many infrastructure-related markets.	<b>24% of Sales (ex-China)</b> This is not a separate segment within Geographic regions but includes markets within the EMEA + Americas + Asia Pacific reporting segments. Emerging markets share has grown from 4% in 2000 to c.32% in 2012 and Siemens expects the good level of growth in Emerging Markets to continue into the medium term.
China	<b>4% of Sales</b> GE's emerging markets exposure includes about 4% of sales from China, where it typically competes with established (and often state-supported) competitors. We see the biggest China opportunity for GE in Healthcare, where GE is often not competing against a local "national champion." GE also has a major China presence for Aviation where it has avionics on AVIC planes, energy infrastructure, and oil & gas.	<b>8% of Sales</b> Siemens operates in China both directly and through JVs and Wholly Foreign Owned Enterprises (WFOEs/WOFEs). The company competes with ABB and Alstom in Power Generation, T&D and Automation, and GE and Philips in Healthcare. The company commands a market leading position in China in Automation technology and, like GE, faces no real "national champion" in Healthcare.

Source: Citi Research

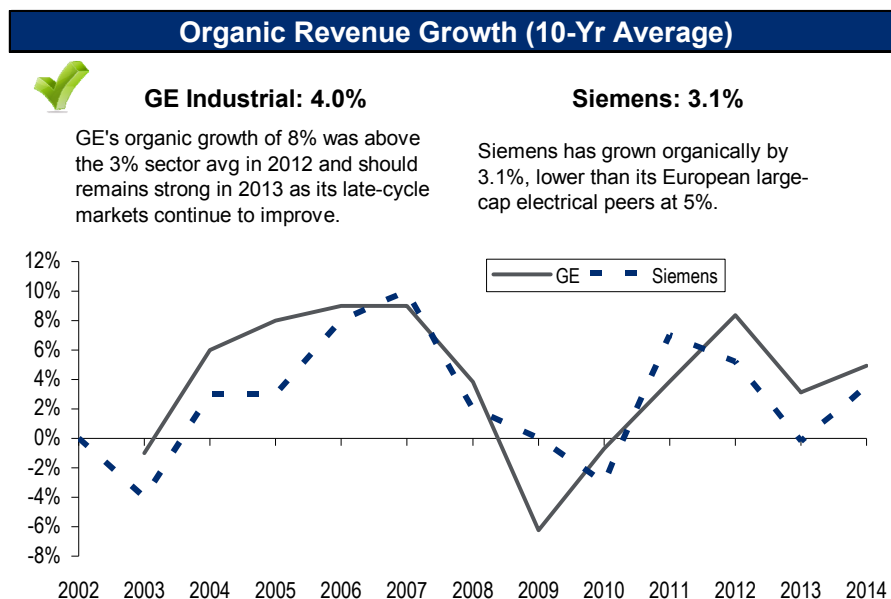
## GE and Siemens Head-to-Head on Key Metrics

Our following Head-to-Head analysis shows how GE stacks up against Siemens on key metrics including organic revenue growth, EPS growth, ROIC, free cash flow, dividend yield, and leverage. Our analysis shows that GE comes out ahead in two categories (organic revenue growth, operating margins, and leverage), while Siemens is better in four (ROIC, EPS growth, free cash flow, and cash returns to investors).

### Advantage: GE

GE's Industrial organic revenue growth has been ahead of Siemens' growth over the past ten years.

Figure 14. Organic Revenue Growth

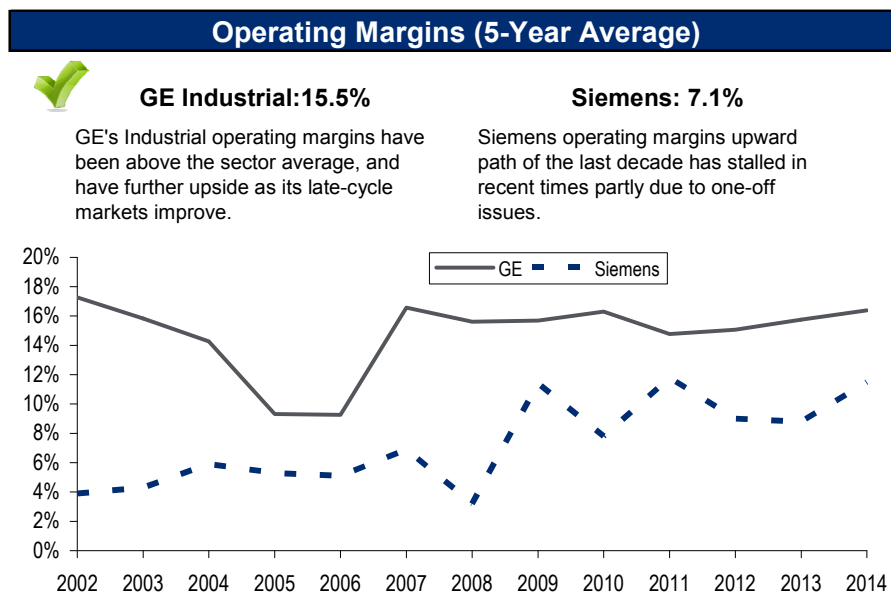


Source: Citi Research

### Advantage: GE

Siemens continues to execute to focus on restructuring as its margins lag GE Industrial and the peer group average.

Figure 15. Operating Margins

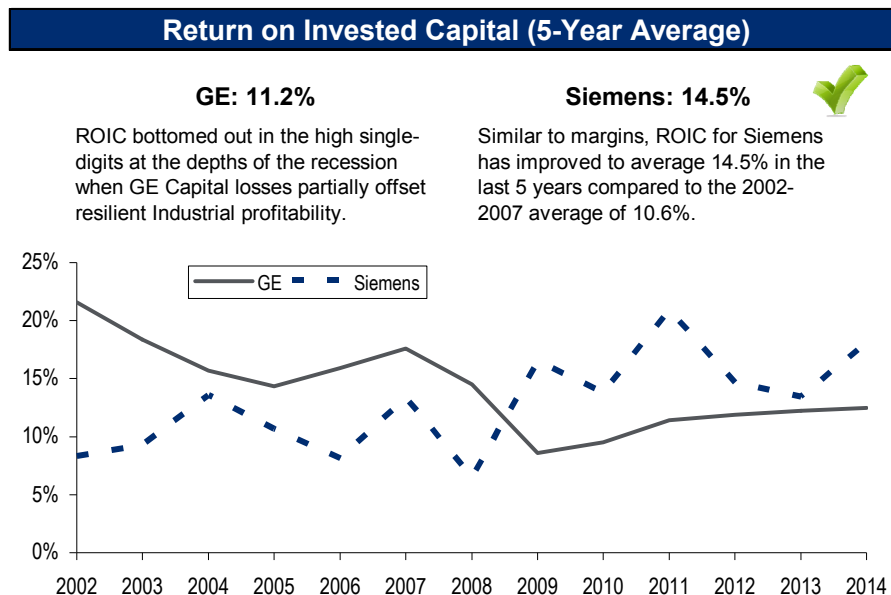


Source: Citi Research

### Advantage: Siemens

Siemens has steadily improved its ROIC during its restructurings and operating margin expansion.

Figure 16. Return on Invested Capital

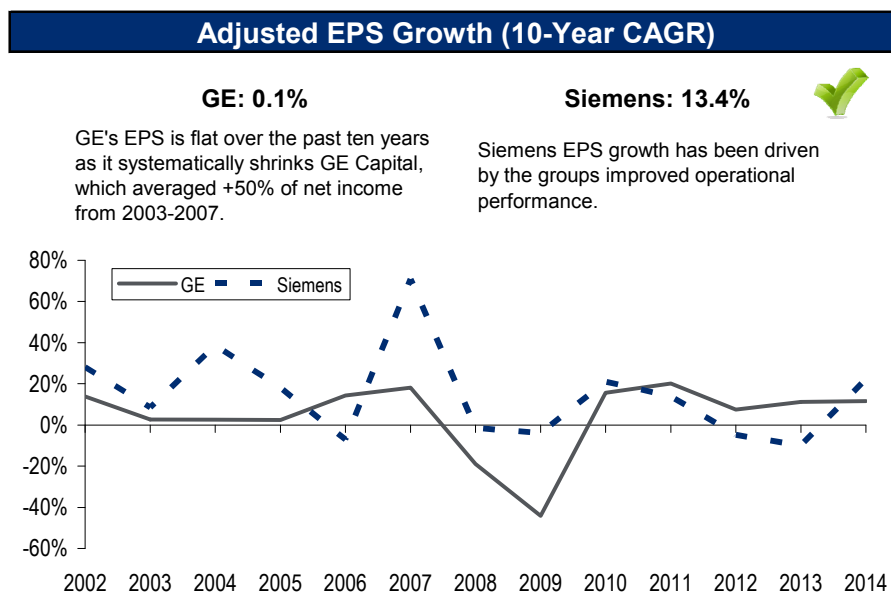


Source: Citi Research

### Advantage: Siemens

GE's EPS has been flat over the past ten years, reflecting the fall-off from the energy bubble in the early 2000's and the systematic reduction of GE Capital.

Figure 17. Adjusted EPS Growth

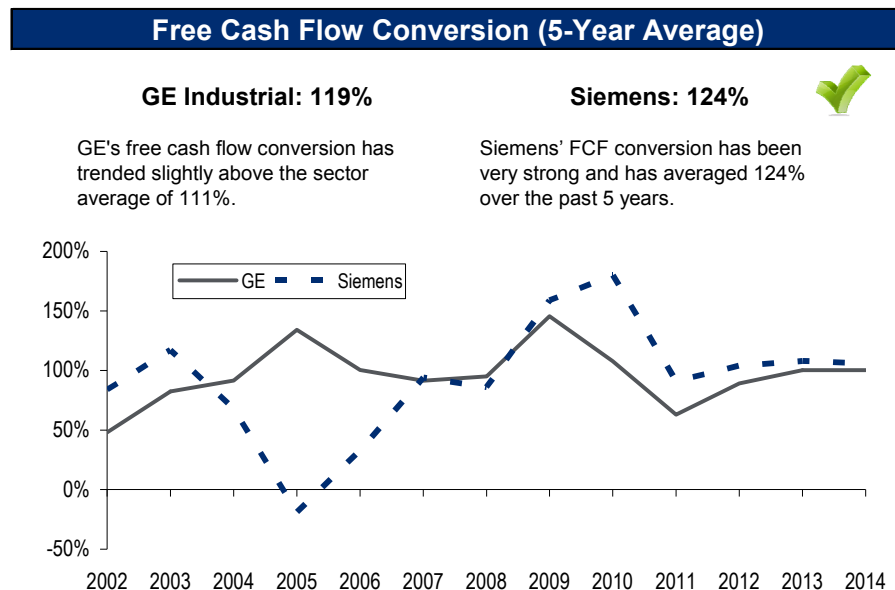


Source: Citi Research

### Advantage: Siemens

Siemens' FCF has been strong at 124% over the past five years, above the sector average and above GE Industrial.

Figure 18. Free Cash Flow Conversion

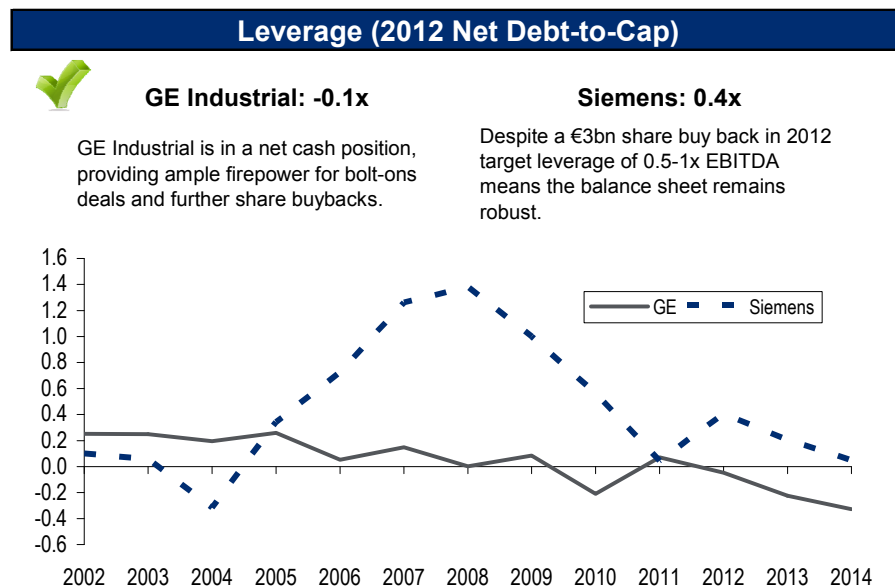


Source: Citi Research

### Advantage: GE

GE has ample firepower to continue increasing the dividend and repurchasing shares.

Figure 19. Balance Sheet Leverage

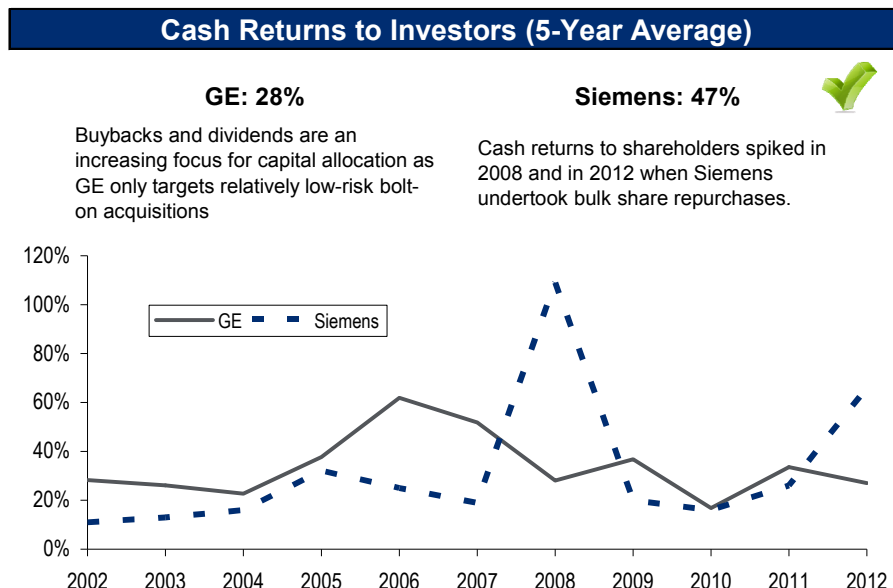


Source: Citi Research

## Advantage: Siemens

Siemens has prioritized share buybacks and dividends. GE's cash return to investors as a percent of cash flow has been dragged by GE Capital, which recently resumed its dividend stream to the parent in 2012.

Figure 20. Cash Returns to Investors



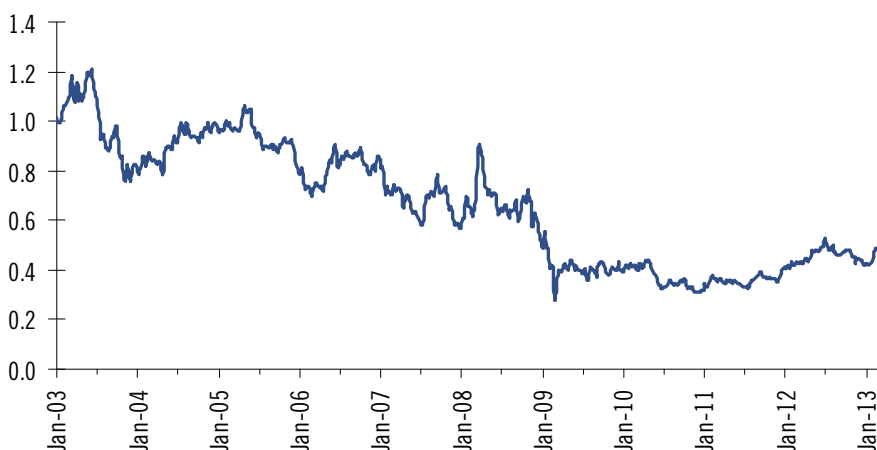
Note: Cash Returns to Investors is calculated as buybacks and dividends as a percent of operating cash flow.

Source: Citi Research

## Relative Valuation

GE has underperformed Siemens over the past ten years, mostly due to the fall-off from the early 2000's Energy bubble and the 2008/2009 financial crisis.

Figure 21. GE vs Siemens Ten-Year Relative Stock Price Performance



Source: Citi Research

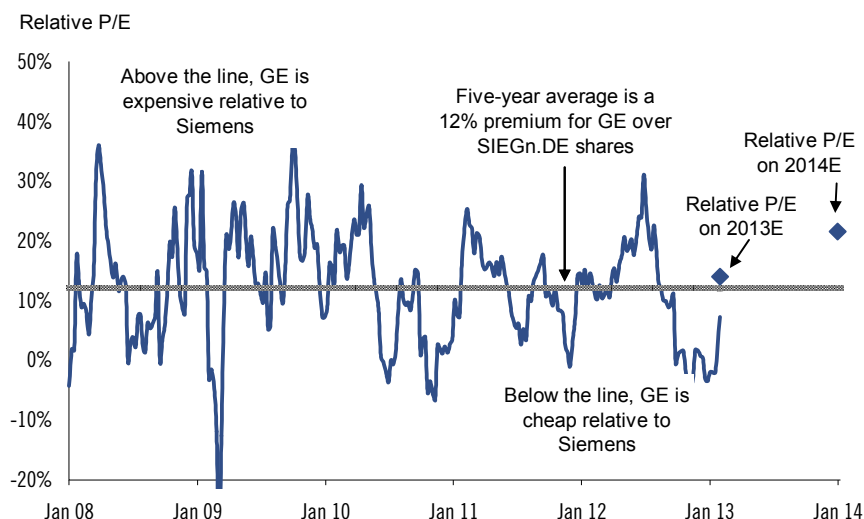
**GE shares have historically warranted a modest premium to Siemens.** We believe P/E is one of the few reliable metrics to compare relative valuations of GE vs Siemens due to GE Capital, which distorts the traditional enterprise value-based metrics such as EV/EBITDA and EV/Sales. On relative P/E, GE shares have averaged a 12% premium to Siemens' forward P/E over the past five years, and a 15% average premium over the past ten years. We attribute the long-term premium to GE's more consistent delivery and profitability across most of its platforms. On current consensus, GE is trading essentially inline with its historical average relative



GE shares are trading at a 14% premium to SIEGn.DE shares on forward P/E, slightly above the five-year average of a 12% premium.

valuation vs Siemens. Siemens appears more attractive moving to an above average valuation discount to GE as we get through 2013E and into 2014E when we look at our slightly above consensus Siemens earnings forecasts.

Figure 22. GE vs Siemens Relative P/E Since 2008



Source: Citi Research, Factset

## GE Valuation

- **P/E towards the low-end of its historical relative range to peers.** Aside from the 2008/2009 credit market melt-down when liquidity concerns surged, GE has consistently maintained a (15%) discount to a 10% premium to the average NTM P/E of its large-cap peers. The shares are currently trading at 13.6x 2013 EPS, and are at a 15% discount to US Multi-Industry peers, towards the low-end of its historical relative range.
- **Sum-of-the-parts implies \$21 valuation.** Our sum-of-the-parts analysis implies a \$21 share price based on Industrial earnings and a 1.2x multiple of tangible book value for GE Capital, inline with the peer group average. The analysis implies a \$14 per share valuation for Industrial, or 67% of our total sum-of-the-parts value, and GE Capital would be worth \$7 per share or 33% of the whole.
- **DCF implies a \$20 share price, using conservative assumptions.** For our DCF analysis, we value the cash flow associated with GE Industrial and then assign a 1.2x multiple to the GE Capital tangible book value to arrive at our fair value estimate. Our analysis concludes that GE Industrial alone is worth roughly \$13 per share, assuming an 8.0% WACC with a 1.0 beta and a 1.5% terminal growth rate.

## Siemens Valuation

- **We value Siemens at €100 per share based on a 5-Year average P/E of c12.5x14E.** At 9.1x14E P/E, Siemens trades at c28% discount to our wider European engineering coverage. We use 2014 as the base year as the benefits from the new company plan will be back end loaded.

- **EV/Sales valuation could suggest €109 per share.** We would highlight that Siemens trades on an EV/Sales of 0.8x14E and the new targets under the 'One Siemens' program imply an EBIT margin of at least 12.5% underlying. If achieved, this could support a valuation of up to 1.2x sales, implying a price of €111 per share.

## General Electric Company

(GE.N; US\$22.50; 1)

### Company description

General Electric (GE) is one of the prototypical multi-industry companies with global business units in sectors ranging from power generation to financial services to transportation. GE's core products include aircraft engines, locomotives and other transportation equipment, oil and gas power turbines, alternative energy systems, medical imaging equipment, and water treatment systems. GE Capital Corp (GECC), the largest non-bank financial company, has core businesses in commercial finance, consumer finance and equipment management, with specific financing support for its energy and aviation "verticals" industrial businesses. The financial services segment is now targeted to eventually contribute 30% of consolidated parent earnings, down from about half in the past several years. GE currently has a minority ownership of the NBCU media through a JV with Comcast. GE currently employs about 300,000 employees and serves customers in over 100 countries. The company is headquartered in Fairfield, Connecticut.

### Investment strategy

We rate the shares of GE Buy. Investors should be encouraged by the earnings power in GE Industrial, and the positive valuation implications from higher visibility and faster Industrial growth into 2013. GE has solid line-of-sight based on its robust late-cycle \$203 bil Industrial backlog, and high-margin service and aftermarket revenues. The resumption of regular GECC dividend and expected future special dividends to the parent is funding accelerated investor friendly buybacks and dividend growth. M&A should stay in the bite-sized \$1-\$3 bil range.

### Valuation

Our \$25 target price assumes the shares trade in line with our 15.0x target group multiple on 2013E EPS. GE's historical relative P/E range versus peers is a 15% discount to a 10% premium.

### Risks

We see the following risks to the stock achieving our price target and earnings forecasts:

- Macroeconomic conditions. Economic factors, including the pace of the global recovery, late-cycle exposures in power generation and commercial aerospace industries, inflation, commodity prices, credit availability, currency, product costs, and price realization, could cause GE's results to be lower than anticipated, and cause GE to not reach our price target.
- Financial risks. A recession could cause our sales and earnings estimates to be too aggressive, which, in turn, would affect our price target on the stock.
- Acquisition risks. Acquisitions are focused on relatively low-risk bolt-ons, but an acquisition strategy still entails risks. Success depends on identifying and acquiring attractive businesses at prices that can be accretive to earnings.
- Regulatory risk. Capital requirements for GECC are subject to a change financial reform, which could impact GECC's long-term returns.

- Other factors that could cause GE shares to exceed our price target include: A stronger-than-expected decline in provisions for losses in GECC, a sharper recovery in aerospace aftermarket sales as global flight hours increase, or a synergistic acquisition that could drive estimates higher.

## Siemens

(SIEGn.DE; €76.83; 1)

### Company description

Siemens is a diversified European electrical equipment manufacturer. Its products, systems, solutions and services are focused on three core end markets: Energy (Generation and T&D), Industry (Automation & Control/ Industrial and Public Infrastructure) and Healthcare. It also has a number of JV/equity investments.

### Investment strategy

We rate Siemens Buy. While the economic backdrop is more uncertain, we Siemens earnings as relatively more resilient and late-cycle, growth in certain businesses in addition to self-help cost actions should support this. This is combined with a relatively low valuation versus both history and the sector, on our estimates.

### Valuation

Our 12 month Target Price of €100 is based on a P/E of 12.5x FY14E, in line with Siemens' 5-year average one-year forward P/E.

### Risks

We believe the current uncertain outlook for the world economy could result in significant earnings risk over the next 18 months. Siemens is a diversified company; a common driver across many divisions is corporate investment and economic activity, so a shift in the economic outlook could alter Siemens' valuation. Stock-specific risks that may result in the shares not achieving our share price target include failure to deliver targeted cost savings.

If the impact on the company from any of these factors proves to be greater/less than we anticipate, we believe the stock will likely have difficulty achieving or could outperform our target price.

# Appendix A-1

## Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

## IMPORTANT DISCLOSURES

### Siemens (SIEGn.DE)

#### Ratings and Target Price History

#### Fundamental Research

Analyst: Mark Fielding



	Date	Rating	Target Price	Closing Price
1	27-Apr-10	1H	*86.00	73.03
2	30-Apr-10	1H	*95.00	74.34
3	21-Jan-11	1H	*113.00	92.35
4	28-Jan-11	1H	*120.00	93.79

\* Indicates change

	Date	Rating	Target Price	Closing Price
5	12-Sep-11	1H	*105.00	64.45
6	7-Oct-11	Stock rating system changed		
7	8-Oct-11	*1	105.00	72.05
8	10-Jan-12	1	*100.00	75.75

	Date	Rating	Target Price	Closing Price
9	25-Jan-12	1	*95.00	73.52
10	13-Jul-12	1	*85.00	68.03
11	12-Nov-12	1	*100.00	79.28

Rating/target price changes above reflect Eastern Standard Time

### Siemens (SIEGn.DE)

#### Ratings and Target Price History

#### Best Ideas Research

#### Relative Call (3 Month)

Analyst: Mark Fielding



	Date	Rating	Target Price	Closing Price
1	11-Feb-11	*ADD MP	-	94.68
2	14-Jul-11	*REM MP	-	93.45

\* Indicates change

	Date	Rating	Target Price	Closing Price
3	15-Sep-11	*ADD MP	-	69.54
4	28-Nov-11	*REM MP	-	71.26

Rating/target price changes above reflect Eastern Standard Time

## General Electric Company (GE)

### Ratings and Target Price History Fundamental Research

Analyst: Deane M. Dray, CFA

Covered since September 14 2010



	Date	Rating	Target Price	Closing Price
1	12-Feb-10	Coverage terminated		
2	14-Sep-10	*1M	*19.00	16.16
3	11-Nov-10	1M	*21.00	16.35
4	20-Jan-11	1M	*23.00	18.43
5	22-Feb-11	1M	*25.00	20.82

\* Indicates change

	Date	Rating	Target Price	Closing Price
6	10-Aug-11	1M	*20.00	15.09
7	8-Oct-11	Stock rating system changed		
8	8-Oct-11	*1	20.00	15.50
9	24-Oct-11	1	*19.00	16.45
10	8-Nov-11	1	*22.00	16.48

	Date	Rating	Target Price	Closing Price
11	21-Feb-12	1	*24.00	19.41
12	28-Jun-12	1	*23.00	20.20
13	5-Sep-12	1	*25.00	20.65
14	16-Nov-12	1	*24.00	20.14
15	7-Jan-13	1	*25.00	21.13

Rating/target price changes above reflect Eastern Standard Time

## General Electric Company (GE)

### Ratings and Target Price History Best Ideas Research

#### Relative Call (3 Month)

Analyst: Deane M. Dray, CFA

Covered since September 14 2010



	Date	Rating	Target Price	Closing Price
1	10-Aug-11	*ADD MP	-	15.09

\* Indicates change

	Date	Rating	Target Price	Closing Price
2	12-Apr-12	*REM MP	-	19.30

Rating/target price changes above reflect Eastern Standard Time

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Siemens AG

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of General Electric Co

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of Siemens, General Electric Company.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Siemens, General Electric Company.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from General Electric Company.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Siemens, General Electric Company in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): Siemens, General Electric Company.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: Siemens, General Electric Company.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: Siemens, General Electric Company.

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability which includes investment banking revenues.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Research product ("the Product"), please contact Citi Research, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's



disclosure website at [https://www.citivelocity.com/cvr/eppublic/citi\\_research\\_disclosures](https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures). Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

#### Citi Research Equity Ratings Distribution

<i>Data current as of 31 Dec 2012</i>	12 Month Rating			Relative Rating		
	Buy	Hold	Sell	Buy	Hold	Sell
Citi Research Global Fundamental Coverage	49%	38%	12%	7%	86%	7%
% of companies in each rating category that are investment banking clients	53%	49%	45%	60%	49%	55%

#### Guide to Citi Research Fundamental Research Investment Ratings:

Citi Research stock recommendations include an investment rating and an optional risk rating to highlight high risk stocks.

**Risk rating** takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.

**Investment Ratings:** Citi Research investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of Citi Research management not to assign a target price and, thus, not derive an ETR. Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation.

**Relative three-month ratings:** Citi Research may also assign a three-month relative call (or rating) to a stock to highlight expected out-performance (most preferred) or under-performance (least preferred) versus the geographic and industry sector over a 3 month period. The relative call may highlight a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Absent any specific catalyst the analyst(s) will indicate the most and least preferred stocks in the universe of stocks under consideration, explaining the basis for this short-term view. This three-month view may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of NASD/NYSE ratings-distribution-disclosure rules, most preferred calls correspond to a buy recommendation and least preferred calls correspond to a sell recommendation. Any stock not assigned to a most preferred or least preferred call is considered non-relative-rated (NRR). For purposes of NASD/NYSE ratings-distribution-disclosure rules we correspond NRR to Hold in our ratings distribution table for our 3-month relative rating system. However, we reiterate that we do not consider NRR to be a recommendation.

Prior to October 8, 2011, the firm's stock recommendation system included a risk rating and an investment rating. **Risk ratings**, which took into account both price volatility and fundamental criteria, were: Low (L), Medium (M), High (H), and Speculative (S). **Investment Ratings** of Buy, Hold and Sell were a function of the Citi Research expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating. Additionally, analysts could have placed covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and/or trading in the company's securities (e.g. trading suspension). Stocks placed "Under Review" were monitored daily by management and as practically possible, the analyst published a note re-establishing a rating and investment thesis. For securities in developed markets (US, UK, Europe, Japan, and Australia/New Zealand), investment ratings were: Buy (1) (expected total return of 10% or more for Low-Risk stocks, 15% or more for Medium-Risk stocks, 20% or more for High-Risk stocks, and 35% or more for Speculative stocks); Hold (2) (0%-10% for Low-Risk stocks, 0%-15% for Medium-Risk stocks, 0%-20% for High-Risk stocks, and 0%-35% for Speculative stocks); and Sell (3) (negative total return). For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings were: Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).

Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

#### NON-US RESEARCH ANALYST DISCLOSURES

Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the NYSE Rule 472 and NASD Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets Inc	Deane M. Dray, CFA; Matthew W. McConnell, CFA; Jessica Mullin
Citigroup Global Markets Ltd	Mark Fielding; Bilal Aziz

#### OTHER DISCLOSURES

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to Siemens, General Electric Company. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at [www.citiVelocity.com](http://www.citiVelocity.com).)

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citi Research to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

**Important Disclosures for Morgan Stanley Smith Barney LLC Customers:** Morgan Stanley & Co. LLC (Morgan Stanley) research reports may be available about the companies that are the subject of this Citi Research research report. Ask your Financial Advisor or use [smithbarney.com](http://smithbarney.com) to view any available Morgan Stanley research reports in addition to Citi Research research reports.

Important disclosure regarding the relationship between the companies that are the subject of this Citi Research research report and Morgan Stanley Smith Barney LLC and its affiliates are available at the Morgan Stanley Smith Barney disclosure website at [www.morganstanleysmithbarney.com/researchdisclosures](http://www.morganstanleysmithbarney.com/researchdisclosures).

For Morgan Stanley and Citigroup Global Markets, Inc. specific disclosures, you may refer to [www.morganstanley.com/researchdisclosures](http://www.morganstanley.com/researchdisclosures) and [https://www.citivelocity.com/cvr/eppublic/citi\\_research\\_disclosures](https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures).

This Citi Research research report has been reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval was conducted by the same person who reviewed this research report on behalf of Citi Research. This could create a conflict of interest.

**The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by.** The Product is made available in **Australia** through Citi Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in **Brazil** by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of **Canada** by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in **Chile** through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. The Product is made available in **France** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product is distributed in **Germany** by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in **India** by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in **Indonesia** through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in **Israel** through Citibank NA,

regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A. Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in **Italy** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Via dei Mercanti, 12, Milan, 20121, Italy. The Product is made available in **Japan** by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The Product is made available in **Korea** by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd. <http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03030&pageDiv=02>. The Product is made available in Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in **Mexico** by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In **New Zealand** the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ('FAA') through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in **Pakistan** by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in **Poland** by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the **Russian Federation** through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in **Singapore** through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold/Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the **Republic of South Africa** (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in **Spain** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 29 Jose Ortega Y Gasset, 4th Floor, Madrid, 28006, Spain. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan and/or through Citibank Securities (Taiwan) Company Limited ("CSTL"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the respective license scope of each entity and the applicable laws and regulations in the Republic of China. CGMTS and CSTL are both regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS and CSTL]. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in **Thailand** through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in **Turkey** through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the **U.A.E.**, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFS") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different Citi Research ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in **United Kingdom** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. This



material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in **United States** by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority.

Pursuant to Comissão de Valores Mobiliários Rule 483, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citi Research's Products can be found at [https://www.citivelocity.com/cvr/eppublic/citi\\_research\\_disclosures](https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures).

Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations.

The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted.

Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product. With the exception of our product that is made available only to Qualified Institutional Buyers (QIBs) and other product that is made available through other distribution channels only to certain categories of clients to satisfy legal or regulatory requirements, Citi Research concurrently disseminates its research via proprietary and non-proprietary electronic distribution platforms. Periodically, individual Citi Research analysts may also opt to circulate research posted on such platforms to one or more clients by email. Such email distribution is discretionary and is done only after the research has been disseminated via the aforementioned distribution channels. Citi Research simultaneously distributes product that is limited to QIBs only through email distribution.

The level and types of services provided by Citi Research analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with Citi and legal and regulatory constraints. Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes Citi estimates, data from company reports and feeds from Reuters and Datastream.

© 2013 Citigroup Global Markets Inc. Citi Research is a division of Citigroup Global Markets Inc. Citi and Citi with Arc Design are trademarks and service marks of Citigroup Inc. and its affiliates and are used and registered throughout the world. All rights reserved. Any unauthorized use, duplication, redistribution or disclosure of this report (the "Product"), including, but not limited to, redistribution of the Product by electronic mail, posting of the Product on a website or page, and/or providing to a third party a link to the Product, is prohibited by law and will result in prosecution. The information contained in the Product is intended solely for the recipient and may not be further distributed by the recipient to any third party. Where included in this report, MSCI sourced information is the exclusive property of Morgan Stanley Capital International Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, redisseminated or used to create any financial products, including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI, Morgan Stanley Capital International and the MSCI indexes are services marks of MSCI and its affiliates. The Firm accepts no liability whatsoever for the actions of third parties. The Product may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the Product refers to website material of the Firm, the Firm has not reviewed the linked site. Equally, except to the extent to which the Product refers to website material of the Firm, the Firm takes no responsibility for, and makes no representations or warranties whatsoever as to, the data and information contained therein. Such address or hyperlink (including addresses or hyperlinks to website material of the Firm) is provided solely for your convenience and information and the content of the linked site does not in anyway form part of this document. Accessing such website or following such link through the Product or the website of the Firm shall be at your own risk and the Firm shall have no liability arising out of, or in connection with, any such referenced website.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST