

Global Theme Machine

Quarterly Update: Health Care themes lead the way

- **Latest Theme Portfolio Rankings** — We present the latest quarterly output from the Global Theme Machine and, with Health Care themes leading the way in the rankings, present a brief overview of recent Citi research on Health Care related themes.
- **Leveraging Citi's Global Research Platform** — Citi's equity analysts, covering almost 3,200 stocks, matched companies to 76 investment themes and our Quantitative Research team then used style factors to help rank themes relative to each other based on: valuation; growth; price momentum; quality; risk; and earnings momentum.



The size of words represents a News Trend Indicator based on 1m observations versus 12m average, indicating the amount of news stories on these themes.
Source: Citi Research, Bloomberg and www.wordle.net

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

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Theme Investing

Evaluate the relative attractiveness of themes on a number of different financial metrics

Launched on 24 June, the Theme Machine is a unique Theme product to evaluate the relative attractiveness of themes on a number of different financial metrics.

76 investment themes mapped across Citi analyst coverage and ranked using a range of quantitative factors

The genesis for this work came from increasing demand for Thematic work given the increasing interconnectedness of companies, economies and financial markets, and our desire to bring more order and analysis to Theme investing.

In a significant first step Citi's equity analysts, covering almost 3,200 stocks, matched companies to 76 investment themes. Citi's Quantitative Research team then used tools developed over many years to analyse and rank each theme for investors. Which themes are currently outperforming? Are the outperforming theme's relative valuations stretched? Is their earnings momentum moving up or down? How do themes rate on quality, growth or risk scores? Each style uses multiple inputs: e.g. eight different valuation methodologies roll up to the valuation score. Themes are evaluated by style factors relative to each other and then an overall composite score produced. The naming of this product "Theme Machine" seemed appropriate given the undertaking.

Since inception, top ranked themes up 5.35%; bottom ranked themes up 4.54%

At launch we noted that the methodology had not been back tested for prediction on future performance. Although we caution that the timeframe for this analysis so far has been short, in the almost 4 months since launch the median performance of the top twenty theme portfolios was 5.35%, and on the same basis, the bottom twenty was 4.54%.

The Theme Machine encourages contact with Citi analysts and adds value to clients by leveraging Citi's global platform

Despite this performance, the product is designed to be one input only to the many factors have to assess the investment worthiness of themes. The classification of stocks into themes can be more art than science. The framework is designed to highlight stocks that may be of interest and we would encourage clients to contact Citi analysts on their fundamental recommendations. While we show the ten stocks for each theme on the individual theme pages, ranked by analyst Estimated Total Return forecasts, most themes include many more stocks and these can be made available on request. Please also reach out to Citi's Quant team for bespoke screens on this work: e.g. if clients would like to double weight valuation and triple weight price momentum, this is possible. Our aim is to leverage Citi's integrated global research platform to add value to clients.

Highlights of Analysis

Themes can be thought as “assets” in their own right. The price paid for the asset should ideally reflect its current and future fundamentals and any other important or related factors. To this end we consider the theme portfolios ranked according to investment styles and a composite of all styles. These styles are well-known and cover fundamental valuation, growth, quality/risk and technical factors such as Price Momentum. They provide investors with a good benchmark on the relative attractiveness of our themes and an additional, objective, metric to assess the theme’s investment “worthiness”. In addition, monitoring the delta of the theme rank¹ can also indicate how the theme’s relative attractiveness is changing from one period to the next, suggesting entry/exit points for investing in themes. Please note that all Theme rankings can be found in the Appendix of this document.

Currently a number of Healthcare theme score strongly based on a range of different investment metrics. The rank has improved over the last month with the Momentum metrics being the main contributor to this improvement. Top/Bottom 10: Overall

Figure 1. Overall Top/Bottom 10 Theme Ranking, bottom 10 in italics, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
MSCI World		8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)
Healthcare IT	Healthcare	1 (17)	63 (59)	9 (63)	3 (21)	3 (14)	5 (1)	2 (41)
Medical Tourism	Healthcare	2 (16)	67 (69)	3 (68)	19 (13)	4 (8)	2 (7)	6 (36)
Value Healthcare Spend	Healthcare	3 (3)	61 (68)	18 (56)	7 (3)	13 (13)	3 (21)	15 (11)
DNA/Genetics	Healthcare	4 (51)	56 (65)	14 (74)	21 (37)	2 (23)	1 (7)	24 (62)
Medical Tech	Healthcare	5 (7)	72 (71)	5 (40)	10 (16)	5 (25)	23 (14)	7 (10)
Obesity	Healthcare	6 (22)	64 (73)	6 (65)	24 (11)	12 (32)	4 (34)	20 (7)
Software as Service	Information Technology	7 (32)	33 (59)	7 (45)	39 (50)	41 (22)	12 (9)	8 (29)
Services Offshoring	Trade/Globalisation/Construction	9 (24)	71 (33)	12 (50)	18 (56)	18 (27)	32 (2)	1 (23)
Unlocking Healthcare R&D	Healthcare	10 (53)	77 (77)	2 (39)	22 (18)	37 (69)	6 (20)	14 (37)
***	***	***	***	***	***	***	***	***
Infrastructure	Trade/Globalisation/Construction	68 (69)	13 (16)	71 (61)	64 (70)	62 (59)	59 (32)	45 (68)
Urbanisation	Trade/Globalisation/Construction	69 (66)	19 (36)	57 (27)	68 (69)	55 (62)	66 (26)	54 (70)
Global Trade	Trade/Globalisation/Construction	70 (61)	49 (44)	66 (46)	50 (62)	50 (71)	57 (18)	63 (49)
Mining Capex	Resources/Commodities	71 (74)	4 (2)	73 (77)	69 (73)	58 (50)	69 (54)	74 (76)
Agricultural Tech	Resources/Commodities	72 (67)	12 (7)	64 (46)	76 (75)	66 (64)	64 (37)	76 (75)
Agriculture Demand	Resources/Commodities	73 (48)	18 (5)	69 (53)	71 (58)	71 (39)	58 (27)	73 (67)
Precious Metals	Resources/Commodities	74 (70)	5 (1)	61 (68)	77 (77)	75 (46)	68 (60)	77 (77)
Clean Tech	Climate Change	75 (72)	76 (70)	40 (34)	46 (71)	76 (76)	75 (66)	65 (17)
Resource Scarcity	Resources/Commodities	76 (77)	39 (15)	53 (42)	75 (76)	74 (70)	74 (61)	72 (72)
Timber	Resources/Commodities	76 (50)	70 (52)	59 (37)	56 (44)	59 (43)	73 (75)	70 (9)

Source: Citi Research

¹ The number in parenthesis represents the rank of the theme three months ago.

Top/Bottom 5: Valuation

Figure 2. Valuation Top/Bottom 5 Theme Rankings, bottom 5 in italics, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
MSCI World		8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)
Hydro Energy	Energy	37 (73)	1 (4)	77 (50)	73 (72)	57 (61)	13 (69)	12 (71)
Wind Energy	Energy	56 (70)	2 (13)	75 (26)	63 (59)	52 (68)	29 (71)	56 (64)
P&C pricing	Trade/Globalisation/Construction	61 (15)	3 (3)	76 (29)	60 (46)	63 (26)	48 (47)	49 (21)
Mining Capex	Resources/Commodities	71 (74)	4 (2)	73 (77)	69 (73)	58 (50)	69 (54)	74 (76)
Precious Metals	Resources/Commodities	74 (70)	5 (1)	61 (68)	77 (77)	75 (46)	68 (60)	77 (77)
***	***	***	***	***	***	***	***	***
3D Printing	Industrial Trends	21 (10)	73 (61)	17 (43)	4 (7)	1 (10)	45 (68)	39 (1)
World Champs	Miscellaneous	14 (33)	74 (72)	1 (66)	17 (24)	8 (1)	7 (37)	60 (40)
Biotech	Healthcare	16 (55)	75 (76)	20 (73)	16 (17)	21 (56)	18 (32)	25 (39)
Clean Tech	Climate Change	75 (72)	76 (70)	40 (34)	46 (71)	76 (76)	75 (66)	65 (17)
Unlocking Healthcare R&D	Healthcare	10 (53)	77 (77)	2 (39)	22 (18)	37 (69)	6 (20)	14 (37)

Source: Citi Research

Top/Bottom 5: Growth

Figure 3. Growth Top/Bottom 5 Theme Rankings, bottom 5 in italics, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
MSCI World		8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)
World Champs	Miscellaneous	14 (33)	74 (72)	1 (66)	17 (24)	8 (1)	7 (37)	60 (40)
Unlocking Healthcare R&D	Healthcare	10 (53)	77 (77)	2 (39)	22 (18)	37 (69)	6 (20)	14 (37)
Medical Tourism	Healthcare	2 (16)	67 (69)	3 (68)	19 (13)	4 (8)	2 (7)	6 (36)
Patents/IP	Information Technology	15 (42)	66 (75)	4 (6)	31 (48)	36 (65)	22 (30)	9 (4)
Medical Tech	Healthcare	5 (7)	72 (71)	5 (40)	10 (16)	5 (25)	23 (14)	7 (10)
***	***	***	***	***	***	***	***	***
Mining Capex	Resources/Commodities	71 (74)	4 (2)	73 (77)	69 (73)	58 (50)	69 (54)	74 (76)
Regulatory Change in Financials	Trade/Globalisation/Construction	60 (26)	11 (20)	74 (15)	42 (30)	65 (67)	76 (25)	23 (19)
Wind Energy	Energy	56 (70)	2 (13)	75 (26)	63 (59)	52 (68)	29 (71)	56 (64)
P&C pricing	Trade/Globalisation/Construction	61 (15)	3 (3)	76 (29)	60 (46)	63 (26)	48 (47)	49 (21)
Hydro Energy	Energy	37 (73)	1 (4)	77 (50)	73 (72)	57 (61)	13 (69)	12 (71)

Source: Citi Research

Top/Bottom 5: Price Momentum

Figure 4. Price Momentum Top/Bottom 5 Theme Rankings, bottom 5 in italics, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
MSCI World		8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)
Factory Automation	Industrial Trends	33 (35)	59 (38)	31 (25)	1 (34)	11 (48)	62 (49)	43 (8)
Pension Shortfalls	Miscellaneous	36 (2)	36 (12)	72 (18)	2 (10)	35 (4)	77 (76)	4 (12)
Healthcare IT	Healthcare	1 (17)	63 (59)	9 (63)	3 (21)	3 (14)	5 (1)	2 (41)
3D Printing	Industrial Trends	21 (10)	73 (61)	17 (43)	4 (7)	1 (10)	45 (68)	39 (1)
Electric Automotive Technology	Industrial Trends	30 (30)	65 (37)	13 (1)	5 (45)	40 (55)	70 (59)	3 (2)
***	***	***	***	***	***	***	***	***
<i>Hydro Energy</i>	<i>Energy</i>	37 (73)	1 (4)	77 (50)	73 (72)	57 (61)	13 (69)	12 (71)
<i>Inflation hedges</i>	<i>Miscellaneous</i>	63 (62)	6 (30)	70 (22)	74 (68)	67 (57)	53 (43)	31 (63)
<i>Resource Scarcity</i>	<i>Resources/Commodities</i>	76 (77)	39 (15)	53 (42)	75 (76)	74 (70)	74 (61)	72 (72)
<i>Agricultural Tech</i>	<i>Resources/Commodities</i>	72 (67)	12 (7)	64 (46)	76 (75)	66 (64)	64 (37)	76 (75)
<i>Precious Metals</i>	<i>Resources/Commodities</i>	74 (70)	5 (1)	61 (68)	77 (77)	75 (46)	68 (60)	77 (77)

Source: Citi Research

Top/Bottom 5: Quality

Figure 5. Quality Top/Bottom 5 Theme Rankings, bottom 5 in italics, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
MSCI World		8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)
3D Printing	Industrial Trends	21 (10)	73 (61)	17 (43)	4 (7)	1 (10)	45 (68)	39 (1)
DNA/Genetics	Healthcare	4 (51)	56 (65)	14 (74)	21 (37)	2 (23)	1 (7)	24 (62)
Healthcare IT	Healthcare	1 (17)	63 (59)	9 (63)	3 (21)	3 (14)	5 (1)	2 (41)
Medical Tourism	Healthcare	2 (16)	67 (69)	3 (68)	19 (13)	4 (8)	2 (7)	6 (36)
Medical Tech	Healthcare	5 (7)	72 (71)	5 (40)	10 (16)	5 (25)	23 (14)	7 (10)
***	***	***	***	***	***	***	***	***
<i>Battery Technology</i>	<i>Industrial Trends</i>	47 (41)	55 (49)	46 (4)	9 (42)	73 (66)	40 (46)	26 (18)
<i>Resource Scarcity</i>	<i>Resources/Commodities</i>	76 (77)	39 (15)	53 (42)	75 (76)	74 (70)	74 (61)	72 (72)
<i>Precious Metals</i>	<i>Resources/Commodities</i>	74 (70)	5 (1)	61 (68)	77 (77)	75 (46)	68 (60)	77 (77)
<i>Clean Tech</i>	<i>Climate Change</i>	75 (72)	76 (70)	40 (34)	46 (71)	76 (76)	75 (66)	65 (17)
<i>Fuel Cells</i>	<i>Energy</i>	65 (57)	38 (40)	62 (30)	40 (74)	77 (72)	44 (23)	47 (28)

Source: Citi Research

Top/Bottom 5: Low Risk

Figure 6. Low Risk Top/Bottom 5 Theme Rankings, bottom 5 in *italics*, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
MSCI World		8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)
DNA/Genetics	Healthcare	4 (51)	56 (65)	14 (74)	21 (37)	2 (23)	1 (7)	24 (62)
Medical Tourism	Healthcare	2 (16)	67 (69)	3 (68)	19 (13)	4 (8)	2 (7)	6 (36)
Value Healthcare Spend	Healthcare	3 (3)	61 (68)	18 (56)	7 (3)	13 (13)	3 (21)	15 (11)
Obesity	Healthcare	6 (22)	64 (73)	6 (65)	24 (11)	12 (32)	4 (34)	20 (7)
Healthcare IT	Healthcare	1 (17)	63 (59)	9 (63)	3 (21)	3 (14)	5 (1)	2 (41)
***	***	***	***	***	***	***	***	***
<i>Timber</i>	<i>Resources/Commodities</i>	76 (50)	70 (52)	59 (37)	56 (44)	59 (43)	73 (75)	70 (9)
<i>Resource Scarcity</i>	<i>Resources/Commodities</i>	76 (77)	39 (15)	53 (42)	75 (76)	74 (70)	74 (61)	72 (72)
<i>Clean Tech</i>	<i>Climate Change</i>	75 (72)	76 (70)	40 (34)	46 (71)	76 (76)	75 (66)	65 (17)
<i>Regulatory Change in Financials</i>	<i>Trade/Globalisation/Construction</i>	60 (26)	11 (20)	74 (15)	42 (30)	65 (67)	76 (25)	23 (19)
<i>Pension Shortfalls</i>	<i>Miscellaneous</i>	36 (2)	36 (12)	72 (18)	2 (10)	35 (4)	77 (76)	4 (12)

Source: Citi Research

Top/Bottom 5: Earnings Momentum

Figure 7. Earnings Momentum Top/Bottom 5 Theme Rankings, bottom 5 in *italics*, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
MSCI World		8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)
Services Offshoring	Trade/Globalisation/Construction	9 (24)	71 (33)	12 (50)	18 (56)	18 (27)	32 (2)	1 (23)
Healthcare IT	Healthcare	1 (17)	63 (59)	9 (63)	3 (21)	3 (14)	5 (1)	2 (41)
Electric Automotive Technology	Industrial Trends	30 (30)	65 (37)	13 (1)	5 (45)	40 (55)	70 (59)	3 (2)
Pension Shortfalls	Miscellaneous	36 (2)	36 (12)	72 (18)	2 (10)	35 (4)	77 (76)	4 (12)
US Onshoring	Trade/Globalisation/Construction	12 (47)	62 (66)	39 (24)	8 (38)	9 (38)	41 (45)	5 (44)
***	***	***	***	***	***	***	***	***
<i>Agriculture Demand</i>	<i>Resources/Commodities</i>	73 (48)	18 (5)	69 (53)	71 (58)	71 (39)	58 (27)	73 (67)
<i>Mining Capex</i>	<i>Resources/Commodities</i>	71 (74)	4 (2)	73 (77)	69 (73)	58 (50)	69 (54)	74 (76)
<i>EM in DM</i>	<i>Miscellaneous</i>	40 (45)	32 (27)	16 (58)	26 (25)	48 (7)	39 (71)	75 (58)
<i>Agricultural Tech</i>	<i>Resources/Commodities</i>	72 (67)	12 (7)	64 (46)	76 (75)	66 (64)	64 (37)	76 (75)
<i>Precious Metals</i>	<i>Resources/Commodities</i>	74 (70)	5 (1)	61 (68)	77 (77)	75 (46)	68 (60)	77 (77)

Source: Citi Research

Methodology

Utilizing all the Resources of Citi Research

The overall basis of the thematic portfolio construction is to utilize the all the resources available within Citi Research. The themes are decided amongst the equity quantitative, strategy and product management teams at Citi. After the themes have been identified, Citi analysts across the globe are polled as to whether any of stocks under their coverage fit the overall investment theme. We do not put in any bounds on what proportion of a company's business fits the theme; just that it has some exposure to the theme. Portfolios are constructed by equally weighting the stocks that have exposure to this theme, as advised by our analysts, and the performance of the portfolios is measured over time. In addition, other financial metrics are constructed from the stock-level up to provide aggregate metrics on the relative attractive of the theme portfolios.

Annual Theme and Portfolio Review

Once a year we will conduct a strict review of the current themes and assess whether new investment themes need to be added. Removal of investment themes will be rare. The aim of selecting themes is that they are expected to last through time (i.e. multi-year). In addition to reviewing the current themes, we will also re-poll analysts on the constituents in the investment theme portfolios in order make sure they are still providing exposure to the underlying theme. This may involve removing stocks if they have exited certain businesses reflecting the theme, or for any other corporate restructure reason. Additionally, and probably less so, we will add new stocks to investment portfolios if they have made acquisitions or are a recently listed companies. Stocks that have been delisted will be removed automatically from the themes portfolios when this event occurs.

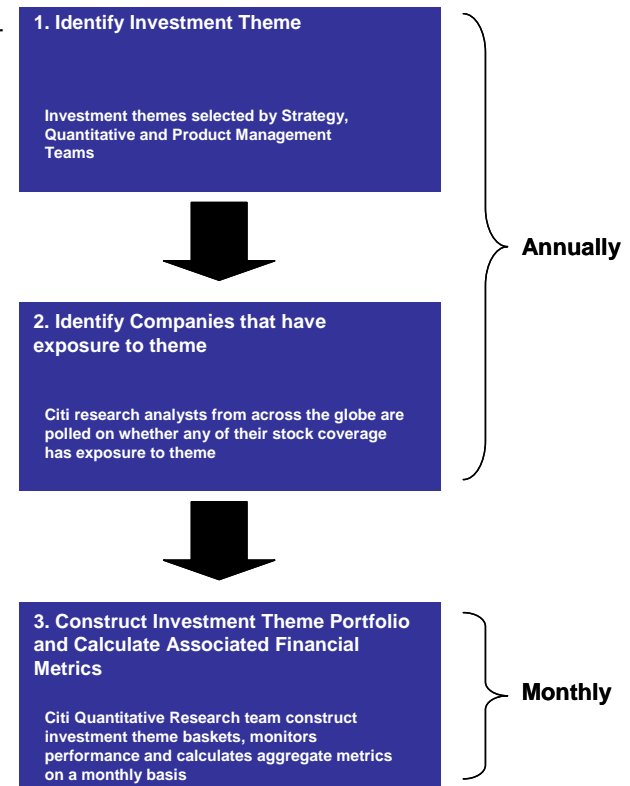
Portfolio Construction

Investment theme portfolios are constructed on an annual monthly basis. In order to form the portfolios, stock constituents are equally weighted and the rebalanced monthly to maintain an equal weighting across stock constituents. If a stock is removed, the weight of each remaining stock is grossed-up to maintain the equal weighting. Stock constituents and theme rankings are posted on [Citi Velocity](https://citivelocity.com) monthly.

Aggregate Financial Metrics

Various financial metrics are computed for all thematic baskets on an aggregate basis. Information on how we calculate these metrics can be found in the next section.

Figure 8. Themes Portfolio Methodology



Source: Citi Research

Calculation of Investment Styles

The basis for our style classification and choice of style descriptors comes from the Citi Style Addin Software². This style classification or framework has been in existence for nearly ten years and is an important investment tool used by the Citi Global Quantitative Research team. The overall stock universe is based on the MSCI AC World index but can be extended to most stock universes or indices around the world.

Aggregate style “scores” for each theme are constructed from the bottom-up using constituent stock data and/or fundamental metrics. For every stock a composite style factor is created based on an equal weighting of each style descriptor. A list of all the styles and descriptors can be found in the appendix of our first [Theme Machine](#) publication. A broad range of descriptors are used in order to provide a unbiased representation of the style we are aiming to mimic. For example, for Value we use a range of cyclical and defensive valuation factors. For Low Risk, we look at number of facets of company risk that aren't just restricted to price risk: we also consider balance sheet and earnings risk factors. In terms of interpretation of style ranks, all should be considered as “high” (e.g. High price Momentum, high rank), except Valuation and Risk whereby they are Low Risk and Low Valuation.

Figure 9. Investment Styles and Descriptors

Style	Descriptors	
Size	Market Capitalisation (log)	
Valuation	Earnings Yield (12 month forward)	Earnings Yield (12 month historical)
	Cash Flow To Price	Dividend Yield
	Book to Price Ratio	Sales to Price Ratio
	EBITDA / EV	Sales / EV
Growth	Earnings Growth (12 month forward)	S&P Growth-Value Score
	One Year Sales Growth	Long Term Earnings Growth
	One Year EPS Growth	One Year DPS Growth
Low Risk	Debt to Equity (Inverted)	Earnings Stability
	Beta against MSCI AC World (Low-High)	Beta against MSCI Country Index (Low-High)
Quality	Earnings Certainty	Return on Equity
	Net Profit Margin on Sales	Margin Growth
	Earnings Quality (Accruals) (Inverted)	Balance Sheet Quality (NOA) (Inverted)
Price Momentum	3 Month Volatility Adjusted Price Trend	12 Month Volatility Adjusted Price Trend
	First 11 Month Volatility Adjusted Price Trend	
Estimates	1 Month Change in Earnings Forecast	Earnings Revision
Momentum	Sales Revisions	Cash Revisions

Source: Citi Research, Thomson IBES, Worldscope and Datastream

² For more information on the Citi Style Addin please see the back page of any of our monthly “What Works in Equity Markets” publications. Or alternatively to down the addin go to the [Citi Velocity](#) web page.

How to use this Report

Brief description of the theme

Each theme is ranked according to an investment style and a composite of all styles. The rank in parenthesis represents the rank of the theme three months ago. For reference MSCI World ranks are provided for comparison. More information on the on the investment styles can be found in the Appendix.

Additional financial metrics for the theme are provided for reference and comparison with MSCI World as per the methodology and description in the previous section.

We provide a sample of some of the largest market cap stocks in the theme portfolio. In addition there is information on the current Citi recommendation, the analyst price target, the expected total return and lastly who the analyst is.



Citi Research

High-End Luxury Spend

This Theme is driven by growing consumerism, plutonomy (the rich getting richer), growth in the middle class and aspiration buying. Companies exposed to high end retail stand to benefit from these trends.

Theme Rank and Comparison

Figure 10. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
High-End Luxury Spend	15 (23)	21 (28)	21 (21)	37 (38)	23 (25)	31 (42)	30 (38)
MSCI WORLD	18 (21)	23 (22)	63 (66)	27 (26)	7 (10)	35 (40)	34 (35)

Source: Citi Research

Figure 11. Current Financial Metrics

	PE	Fwd PE	P/B Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
High-End Luxury Spend	15.8	13.6	1.8	2.4%	15.1%	11.3%	51.8%	-2.8%	15.8
MSCI WORLD	15.1	13.6	2.0	2.4%	10.4%	14.4%	60.9%	-3.5%	15.1

Source: Citi Research, Thomson IBES, Workscope, Datastream

Current Stock Constituent Sample

Figure 12. Examples of Largest Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (31 May 2013)	12-Month Price Target	ETR	Analyst
204625	APPLE	UNITED STATES	Information Technology	422,143	Neutral	449.73	430.00	6.94%	Glen Young +1-415-951-1885
677172	SAMSUNG ELECTRONICS	SOUTH KOREA	Information Technology	200,537	Buy	1,538,000.00	1,970,000.00	49.43%	Henry H Kim, CFA +82-2-3705-0720
405780	L'OREAL	FRANCE	Consumer Staples	102,129	Neutral	130.35	127.00	5.76%	Toby McQuillagh +44-20-7986-4125
B2PZNO	MSA 'A'	UNITED STATES	Information Technology	92,268	Neutral	178.14	181.00	1.64%	Donald Fandetti, CFA +1-212-816-2971
406141	LVMH	FRANCE	Consumer Discretionary	89,934	Buy	136.65	145.00	22.38%	Thomas Chauvet +44-20-7986-4147
200608	AMERICAN EXPRESS	UNITED STATES	Financials	83,178	Buy	75.71	74.00	2.16%	Donald Fandetti, CFA +1-212-816-2971
552902	DAIMLER	GERMANY	Consumer Discretionary	68,120	Neutral	49.22	48.00	16.31%	Philip Watkins +44-20-7986-3949
B12155	MASTERCARD	UNITED STATES	Information Technology	66,638	Buy	570.25	590.00	3.36%	Donald Fandetti, CFA +1-212-816-2971
549710	WOLKSWAGEN	GERMANY	Consumer Discretionary	63,178	Neutral	165.20	150.00	6.31%	Philip Watkins +44-20-7986-3949
251738	UNITED PARCEL SER.'B'	UNITED STATES	Industrials	62,250	Neutral	85.90	86.00	3.36%	Christian Wetherbee +1-212-816-9051

Source: Citi Research Note: Market Capitalisation is in USD, while prices are in local currency.

Fundamental Theme Insights – Health Care

Value Healthcare Spend

This Theme is driven by the rise in patients and providers looking for more economic healthcare solutions. Driven by a combination of fiscal and private debt burdens, ageing populations and increased healthcare inflation, companies offering lower cost solutions stand to be relative beneficiaries. Citi has used the term the "Value Imperative" to help describe some of these trends.

Theme Rank and Comparison

Figure 10. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Value Healthcare Spend	3 (3)	61 (68)	18 (56)	7 (3)	13 (13)	3 (21)	15 (11)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 11. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Value Healthcare Spend	18.3	16.1	2.2	2.2%	12.9%	11.8%	78.1%	-0.8%	0.79
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 12. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

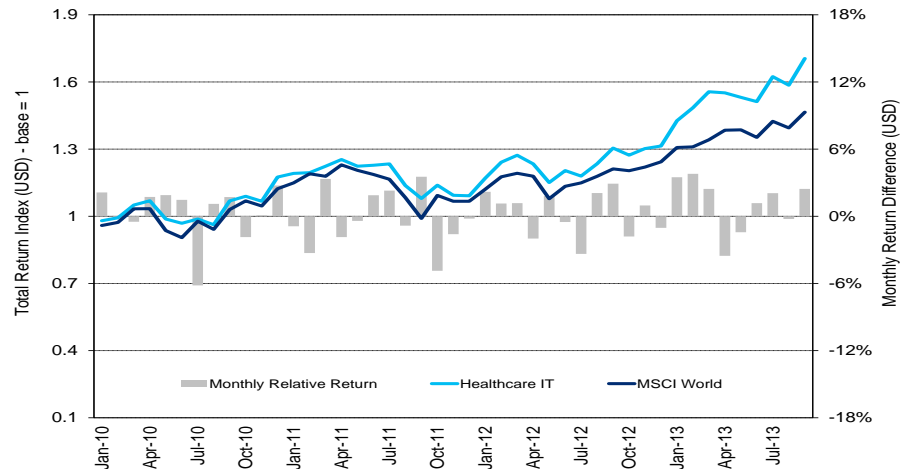
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
B1XJ6M	QRXPHERMA	AUSTRALIA	Health Care	106	Buy	0.78	2.52	233.77%	Alex Smith +61-2-8225-4833
B3Q1YB	BR PHARMA ON NM	BRAZIL	Consumer Staples	898	Buy	7.80	18.00	126.54%	Julio R. Zamora +1-212-816-6039
B3LQWH	UNIVERSAL AMERICAN	UNITED STATES	Health Care	652	Buy	7.62	12.00	55.64%	Carl McDonald, CFA +1-617-247-6312
698538	ASTELLAS PHARMA	JAPAN	Health Care	23,285	Buy	5,000.00	6,900.00	44.31%	Hidemaru Yamaguchi +81-3-6270-4742
79737	SERCO GROUP	UNITED KINGDOM	Industrials	4,418	Buy	5.46	7.45	41.29%	Ed Steele +44-20-7986-2154
643904	HOGY MEDICAL	JAPAN	Health Care	906	Buy	5,440.00	6,800.00	35.24%	Hidemaru Yamaguchi +81-3-6270-4742
B29GJQ	TRIPLE-S MANAGEMENT 'B'	UNITED STATES	Health Care	461	Neutral	18.39	24.00	31.51%	Carl McDonald, CFA +1-617-247-6312
221270	MOLINA HLTHCR.	UNITED STATES	Health Care	1,626	Buy	35.60	47.00	29.41%	Carl McDonald, CFA +1-617-247-6312
257760	CVS CAREMARK	UNITED STATES	Consumer Staples	69,710	Buy	56.75	70.00	25.50%	Deborah L. Weinswig +1-212-816-1860
710306	NOVARTIS 'R'	SWITZERLAND	Health Care	207,996	Buy	69.50	83.00	25.20%	Andrew S. Baum +44-20-7986-4498

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

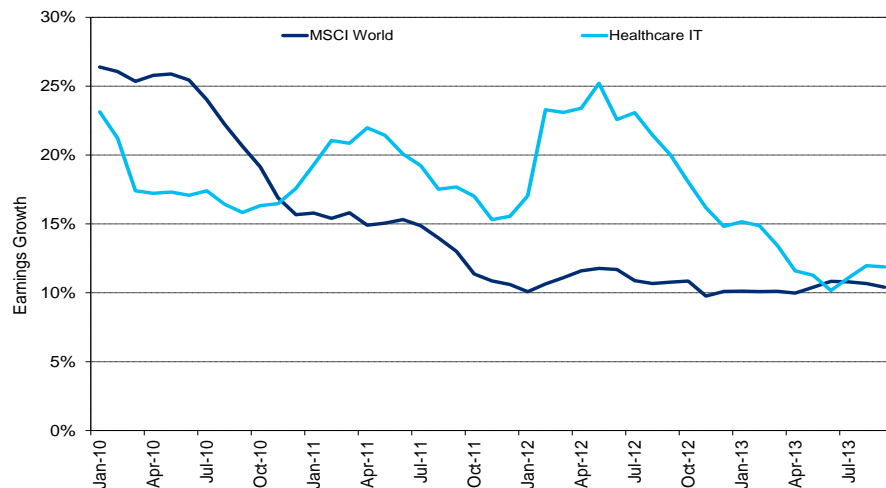
Value Healthcare Spend

Figure 13. Performance of Thematic Basket



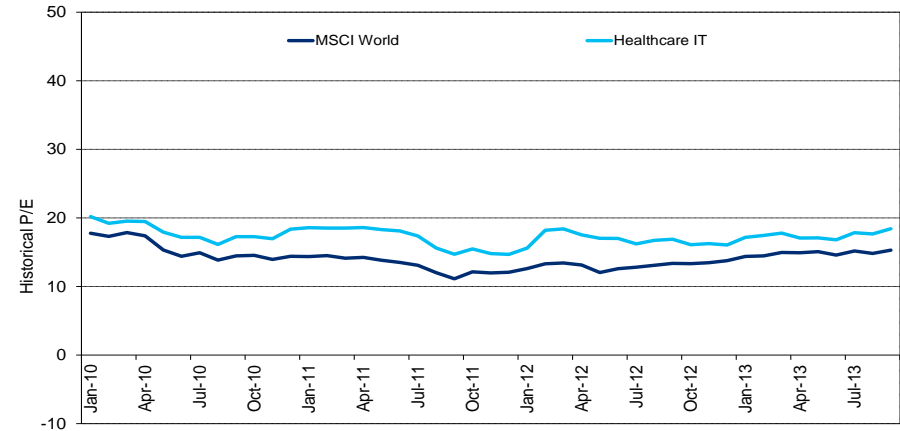
Source: Citi Research

Figure 15. 12 Month Forward Rolling Earnings Growth



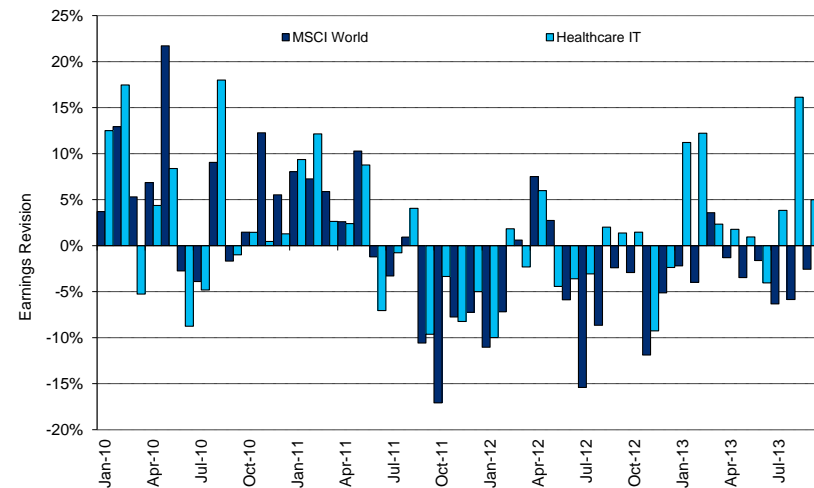
Source: Citi Research

Figure 14. Historical P/E



Source: Citi Research

Figure 16. Earnings Revision



Source: Citi Research

Value Healthcare Spend

- Healthcare cost inflation could weigh heavily on the US economy. The US \$2.8 trillion pa healthcare investment represents 18% of US GDP, or the equivalent to the GDP of France. US spending is already significantly above other OECD levels, with no better outcomes, & the situations looks to get worse. Radical changes have to occur.
- In a significant pharma note, Andrew Baum said the pressures on US pharmaceutical pricing & utilization initially look alarming. The absence of price controls has meant that primary care pharmaceutical drugs in the US can carry a list price at a 50-75% premium to the European prices. The US accounts for c.60% of pharma companies EBITDA.
- Andrew examines the economic impact of potential mandatory rebates & the “Three Furies” for the industry in the US: shared savings models; drug pathways; & ACO (Accountable Care Organizations).

Citi Research
Equities

29 November 2012 | 120 pages
Drugs (Citi)
Global

Pharma: I Pay, You Pay, He Pays, Won't Pay?

Global Pharma – An Unlikely Survivor. Buy.

- Can Pharma really continue to monetize drugs at current levels? We believe historic R&D productivity can double (*Shrink, Smarten, Spend*), but we have been alarmed by the imperative & consequences of US healthcare cost containment, given EU decline.
- Remarkably, US pricing and access trends set to continue until at least 2017. Unlike MedTech, “fee for service” should continue to dominate pharmacy mid term. We reiterate our positive stance. Sector discounts ~5% decline in terminal growth.
- We initiate coverage of the US Majors; this report explores the challenge, pace of change, and winners & losers in the global pharmaceutical market. We like Buy rated Pfizer, Lilly in the US and Bayer, Sanofi and Novo in the EU. pp 58-102.
- Beware the “Three Furies”: Drug pathways, Shared Savings Models (SSM), ACO's will begin to dominate commercial & Medicare plans post '17, putting end-of-life drugs at risk in our view. Preventative drugs (vaccines, diabetes, osteoporosis) should benefit. pp 25 to 37
- Sequestration risk to Medicare part D drugs spend small. Medicaid rebate on dual eligible drugs would only hit multinational EPS by 1-2% pa on our estimates. IPAB will likely result in Government mandated Medicare Part D cuts. pp 38 to 42
- Increasing private insurance in China & India should drive innovative drug sales. Opportunity still exists near-term for Western branded generics in EM. pp 46 to 54

Radical changes to US Healthcare Delivery Only Likely to Impact Pharma EPS Post '17

Source: Citi Research

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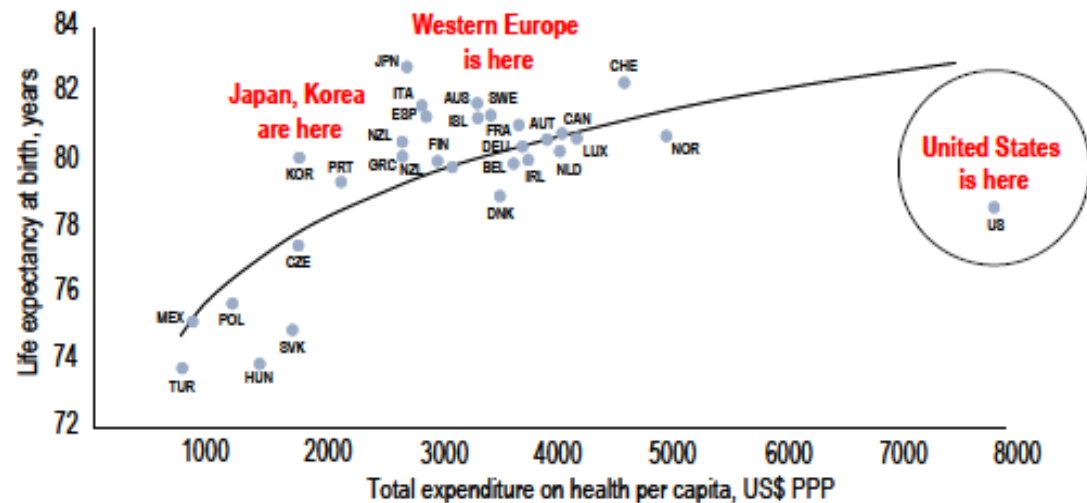
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Figure 28. US healthcare spend appears unsustainable given macro-economic pressures

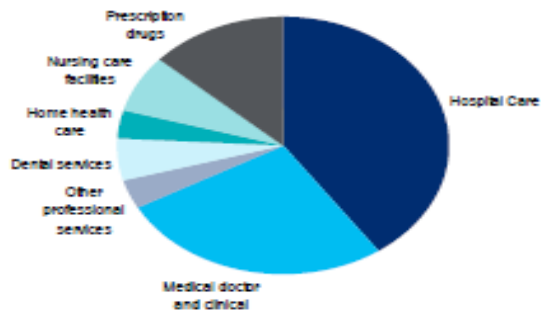


Source: Citi Research, The Atlantic

Value Healthcare Spend

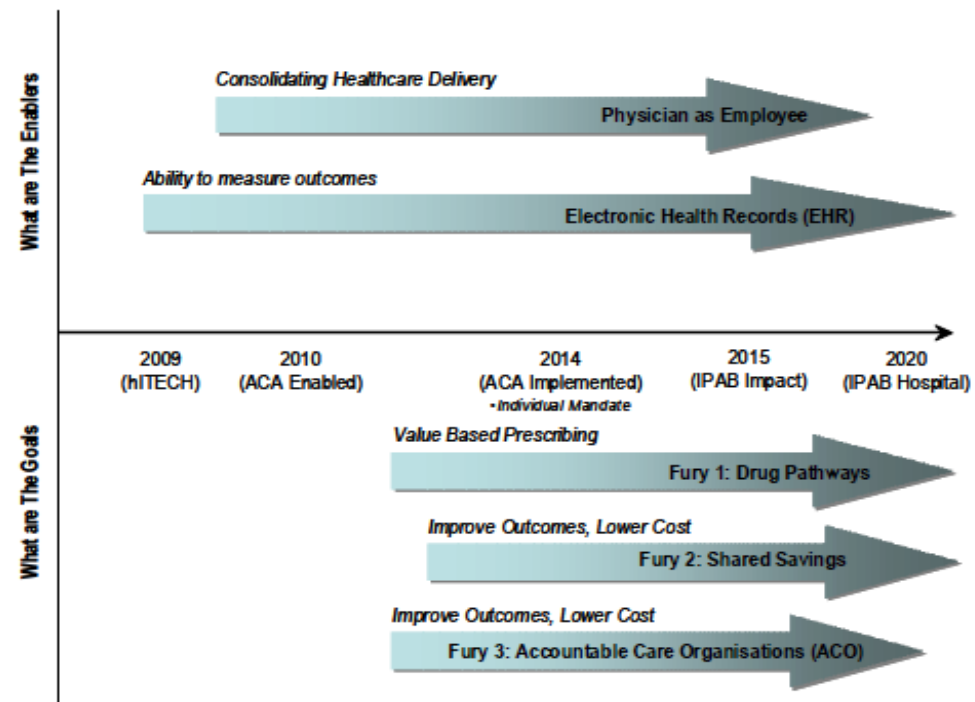
- Andrew concludes that the pharma industry (only 13% of HC costs) has time (an estimated 6-7 years) to demonstrate materially higher R&D productivity before key structural reimbursement headwinds materially impact earnings.
- We believe the industry should be able to aggressively price differentiate specialty drugs in the US until 2017. The market's assumption of negative terminal growth is too pessimistic, but we do see greater risk to non-pharmacy costs.
- We also consider the positive outlook for innovative pharma companies in Japan, the 2nd largest market, & the critical growth from emerging markets of China and Brazil. Andrew identified global winners among both therapeutic areas (preventative drugs = vaccines, diabetes, osteoporosis) & companies (Pfizer, Lilly, Bayer, Sanofi, & Novo).

Figure 11. Pharmacy accounted for 13% of total US healthcare spending by service in 2009 (US\$ billion)



Source: Citi Research; Congressional Budget Office (CBO)

Figure 12. Radical changes to US Healthcare Delivery only Likely to Impact Pharma EPS Post '17



Source: Citi Research

Unlocking Healthcare R&D

This Theme is driven by healthcare companies looking to improve R&D productivity. Many pharmaceutical companies for example are seeking to reduce capacity and radically re-engineer R&D spending. This includes re-allocation of capital away from fixed cost research infrastructure and improving cycle times. Companies positively exposed to this re-engineering should benefit from this trend.

Theme Rank and Comparison

Figure 17. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Unlocking Healthcare R&D	10 (53)	77 (77)	2 (39)	22 (18)	37 (69)	6 (20)	14 (37)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 18. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Unlocking Healthcare R&D	-	46.0	2.6	2.1%	16.6%	2.4%	57.5%	-3.4%	0.90
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 19. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

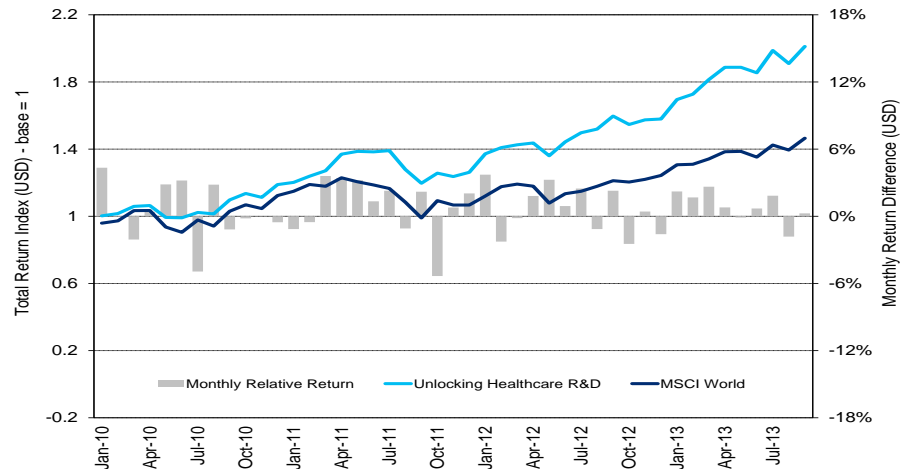
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
293342	VICAL	UNITED STATES	Health Care	108	Buy	1.25	3.00	138.10%	Jonathan Eckard Ph.D. +1-212-816-1441
B6ZL96	CHEMOCENTRYX	UNITED STATES	Health Care	238	Buy	5.56	11.00	101.10%	Yaron Werber, MD +1-212-816-8836
B0T4N7	CYNOSURE 'A'	UNITED STATES	Health Care	509	Buy	22.81	41.00	82.47%	Matthew J Dodds +1-212-816-6928
B1YY66	ALMIRALL	SPAIN	Health Care	2,191	Buy	9.36	16.50	72.71%	Joanne Jerman +44-20-7986-4207
666010	ONO PHARM.	JAPAN	Health Care	7,242	Buy	6,030.00	10,000.00	70.23%	Hidemaru Yamaguchi +81-3-6270-4742
669875	GLENMARK PHARMACEUTICALS	INDIA	Health Care	2,298	Buy	530.95	785.00	46.04%	Prashant Nair, CFA +91-22-6175-9855
B1VRDX	ALGETA	NORWAY	Health Care	1,690	Buy	232.00	330.00	45.37%	Joanne Jerman +44-20-7986-4207
698538	ASTELLAS PHARMA	JAPAN	Health Care	23,285	Buy	5,000.00	6,900.00	44.31%	Hidemaru Yamaguchi +81-3-6270-4742
293103	VERTEX PHARMS.	UNITED STATES	Health Care	17,652	Buy	75.82	110.00	42.56%	Yaron Werber, MD +1-212-816-8836
567173	SANOFI	FRANCE	Health Care	134,658	Buy	74.97	101.00	39.48%	Andrew S Baum +44-20-7986-4498

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

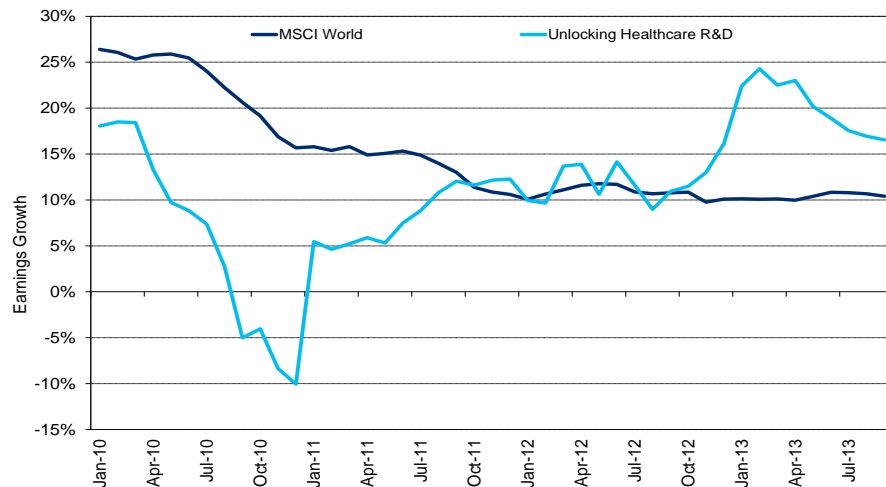
Unlocking Healthcare R&D

Figure 20. Performance of Thematic Basket



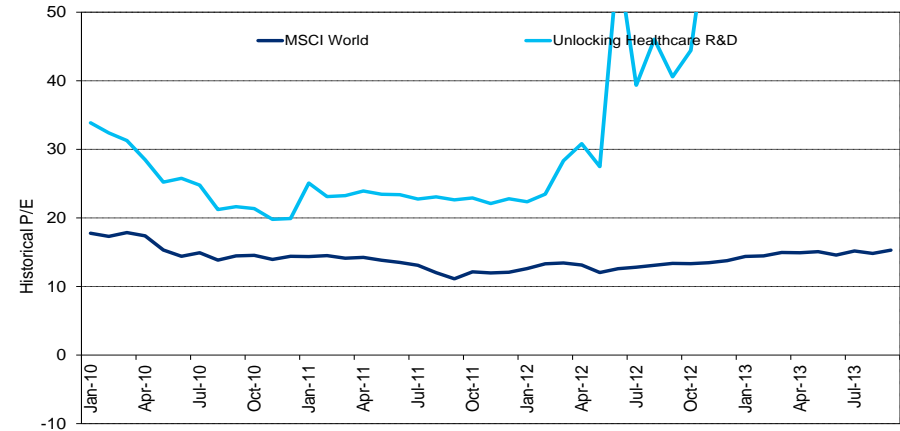
Source: Citi Research

Figure 22. 12 Month Forward Rolling Earnings Growth



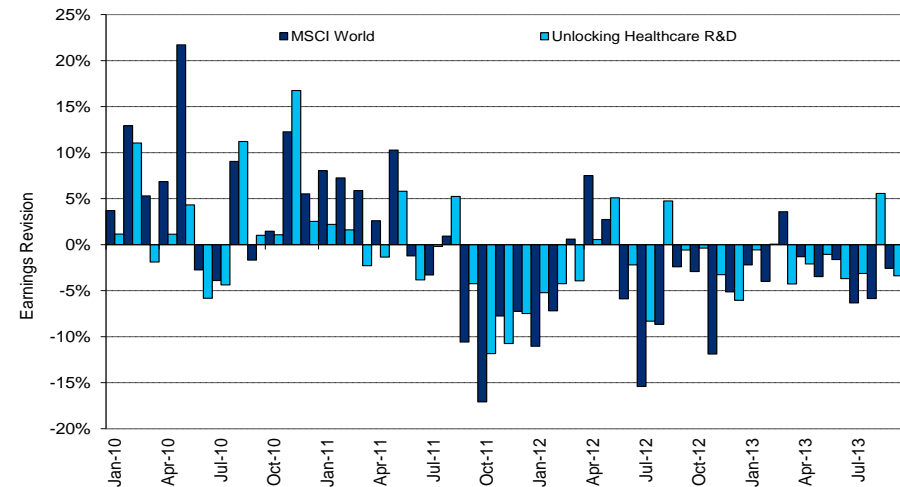
Source: Citi Research

Figure 21. Historical P/E



Source: Citi Research

Figure 23. Earnings Revision



Source: Citi Research

Unlocking Healthcare R&D

- In a report titled “White House Calls for FDA to take More Risk”, pharma analyst Andrew Baum argues “R&D ROI will double.” PCAST’s report follows political concern over the industry’s & VC’s disinvestment in R&D & PCAST’s stated goal is to “double the output of innovative new drugs by the FDA.”
- The proposals look to lower hurdle rates & improve development times. Companies with pipelines addressing serious or unmet medical needs will benefit the most from these proposals, including Roche & Novartis. Approval time for early stage breast cancer could be accelerated by 4 years, which would have a dramatic impact on EVA.
- This build’s on Andrew’s previous “Shrink, Smarten, Spin” report arguing that regulators & governments are keen to help improve R&D productivity for pharma companies (e.g. via UK’s patent box or other European tax incentives).

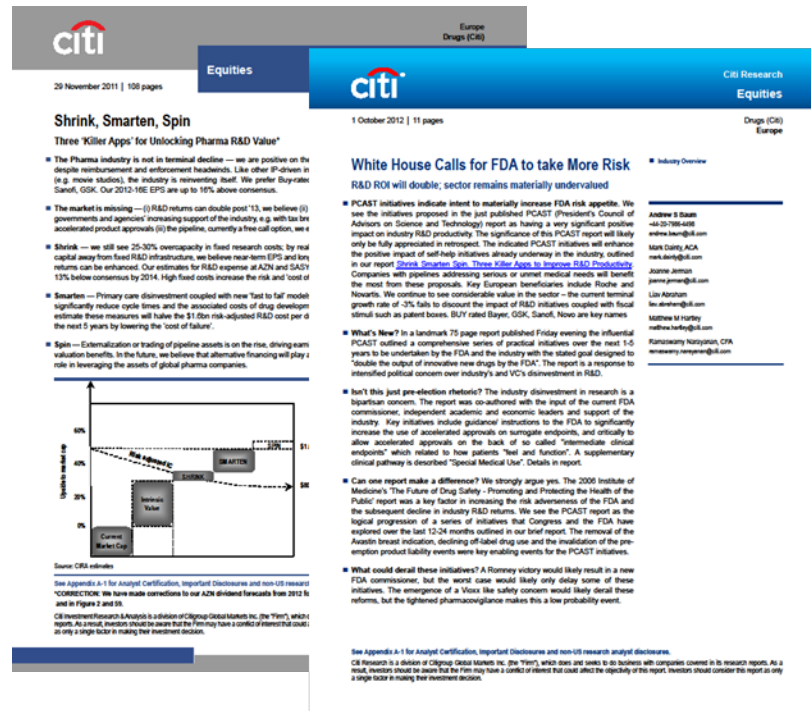
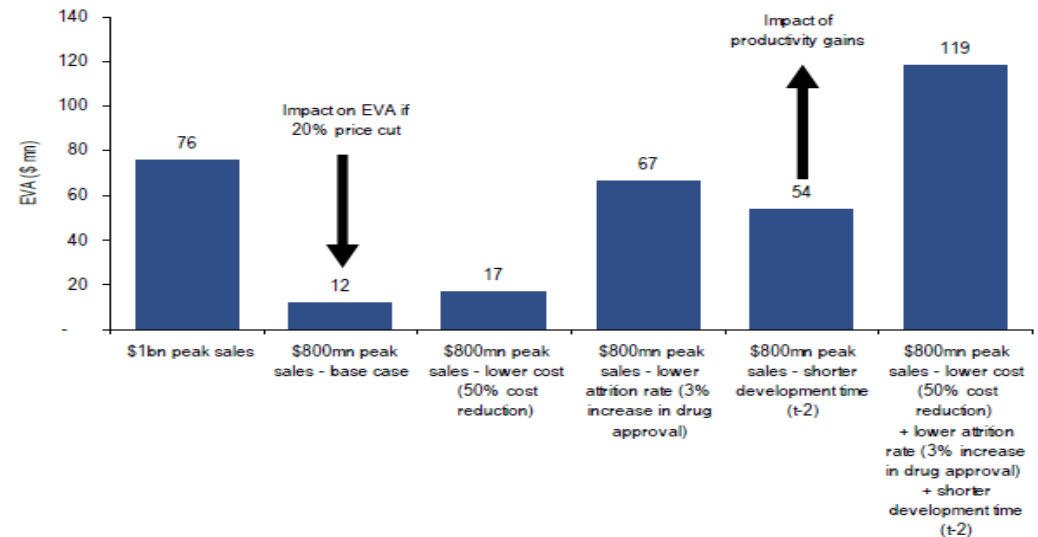


Figure 2. Shorter development time has a dramatic positive development on EVA (Citi Risk adjusted EVA R&D model)

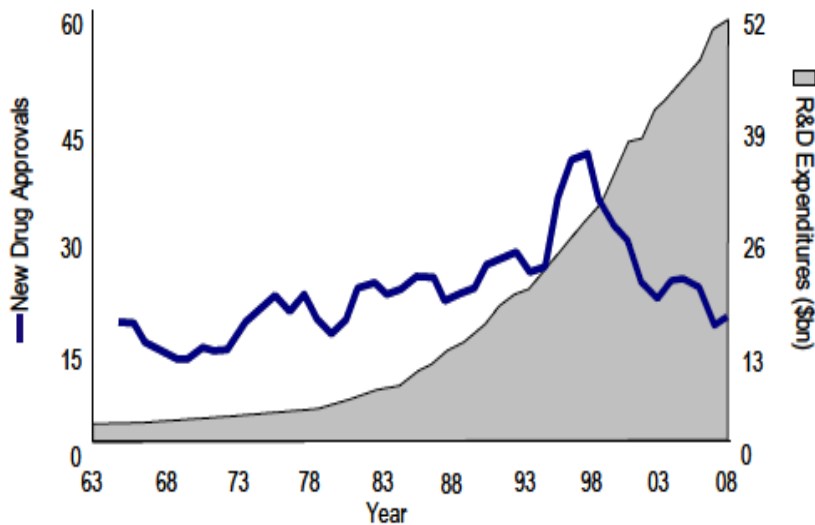


Source: Citi Research estimates

Unlocking Healthcare R&D

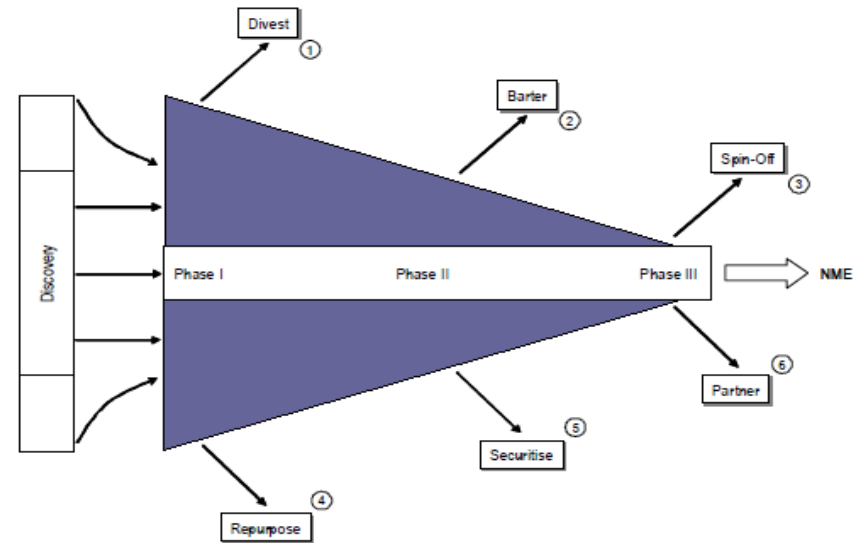
- Despite top line pressures, the industry is out of denial and Andrew Baum argues can halve the \$1.6bn capitalised drug development cost through capacity removal and radical R&D re-engineering.
- Shrink is the re-allocation of capital away from fixed research infrastructure (we see 25-30% overcapacity in fixed research costs). Smarten is improving cycle times via re-engineering. Spin is putting the pipe back into investors valuations through externalization and alternative financing strategies (given pipelines look like free call options).
- This trend should be positive for third party providers such as CROs who can fulfill R&D functions (just 35% is outsourced to date).

Figure 13. R&D is not scalable. We estimate excess pharma R&D capacity of \$20bn per annum.



Source: Citi Investment Research and Analysis and Tufts Center for the Drug Development

Figure 39. Six ways to externalise and unlock value



Source: Citi Investment Research and Analysis

Immunotherapy

This Theme is driven by a surge in approaches to utilize immune systems to destroy cancer cells. Cancer is the cause of death in a quarter of Western individuals³. The economic cost of cancer was estimated in 2008 at \$200bn per annum, including \$80bn of total Healthcare costs. Immunotherapy is likely to become the treatment backbone in the majority of cancers over the next 10 years compared to <3% in 2013. This theme seeks to highlight companies building immunotherapy solutions.

Theme Rank and Comparison

Figure 24. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Immunotherapy	19 (56)	68 (67)	11 (76)	38 (66)	7 (2)	16 (64)	37 (22)
MSCI World	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 25. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Immunotherapy	-	39.2	3.8	3.5%	6.9%	7.5%	35.0%	-14.6%	0.92
MSCI World	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	15.3

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 26. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
293342	VICAL	UNITED STATES	Health Care	108	Buy	1.25	3.00	138.10%	Jonathan Eckard Ph.D. +1-212-816-1441
710306	NOVARTIS 'R'	SWITZERLAND	Health Care	207,996	Buy	69.50	83.00	25.20%	Andrew S Baum +44-20-7986-4498
202360	AMGEN	UNITED STATES	Health Care	84,319	Buy	111.92	136.00	24.08%	Yaron Werber, MD +1-212-816-8836
212633	BRISTOL MYERS SQUIBB	UNITED STATES	Health Care	76,192	Buy	46.28	55.00	21.16%	Andrew S Baum +44-20-7986-4498
92528	GLAXOSMITHKLINE	UNITED KINGDOM	Health Care	123,231	Neutral	15.57	18.10	20.18%	Andrew S Baum +44-20-7986-4498
711038	ROCHE HOLDING	SWITZERLAND	Health Care	189,500	Buy	243.90	280.00	19.46%	Andrew S Baum +44-20-7986-4498
98952	ASTRAZENECA	UNITED KINGDOM	Health Care	65,222	Neutral	32.15	35.00	15.35%	Andrew S Baum +44-20-7986-4498
277884	MERCK & CO.	UNITED STATES	Health Care	139,322	Neutral	47.61	44.00	-5.46%	Andrew S Baum +44-20-7986-4498

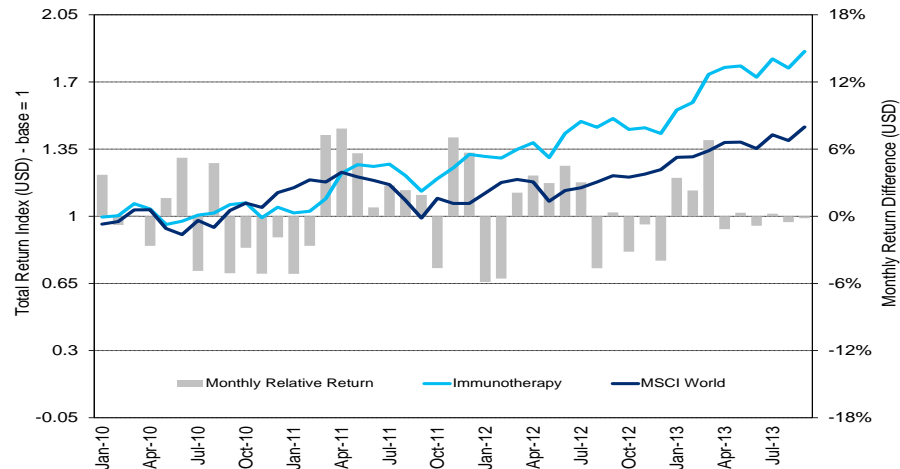
Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

³ For more information and Immunotherapy, see: Citi Research, [Immunotherapy – The Beginning of the End for Cancer](#), May, 2013.

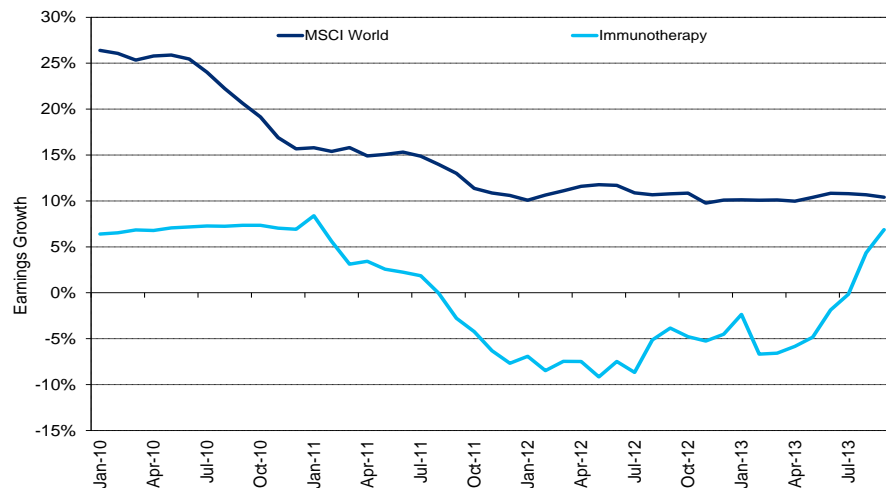
Immunotherapy

Figure 27. Performance of Thematic Basket



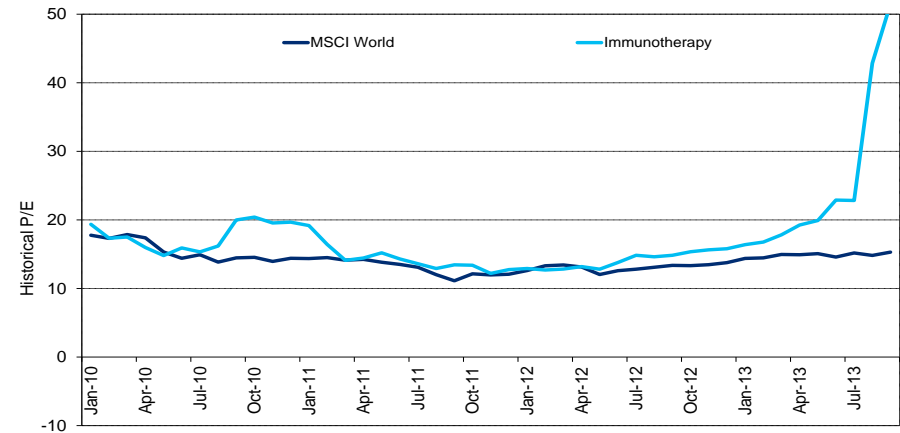
Source: Citi Research

Figure 29. 12 Month Forward Rolling Earnings Growth



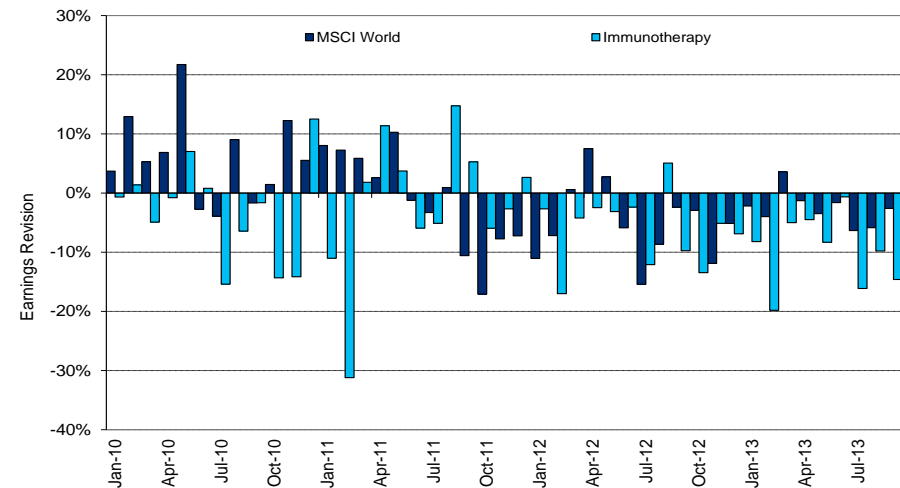
Source: Citi Research

Figure 28. Historical P/E



Source: Citi Research

Figure 30. Earnings Revision



Source: Citi Research

Immunotherapy

- Despite the focus in DM Healthcare to meet the “Value Imperative” Andrew Baum has consistently argued the FDA’s attempt to increase the output of innovative new drugs can have a dramatic effect on ROICs.
- In a Must C report titled “Immunotherapy – The Beginning of the End for Cancer” Andrew believes “the current explosion in all ongoing approaches to utilise the immune system to see & destroy cancer cells marks a watershed,” which will see accelerated time to market. Cancer is the cause of death in quarter of Western individuals. The economic cost of cancer was estimated in 2008 at \$200bn pa, including \$80bn for total Healthcare costs.
- Andrew believes immunotherapies are likely to “become the treatment backbone in up to 60% of cancers over the next 10 years compared to <3% today,” with \$35bn pa in potential revenues, exceeding other mega-blockbuster classes.

31 May 2013 | 41 pages

PARP Inhibitors For Cancer Hit Prime Time

Tesaro is Best Pure Play; BioMarin Offers More Modest Exposure But Spreads Risk Across Its Deep and Promising Pipeline

Conclusions — We have conducted a deep dive on the market potential of PARP inhibitors for ovarian and breast cancer. We believe that this is an exciting but overlooked new class of drugs that provides a good investment potential. PARP inhibitors have shown very exciting results in clinical trials that target patients with mutations in the “breast cancer gene” (BRCA-1/2). BRCA-1 recently garnered public attention following a high-profile announcement that the head of a double-breasted stock exchange who has the BRCA-1 gene mutation that confers a high risk of developing breast cancer. We believe that Tesaro (TSCR) and BioMarin (BMRN) are best positioned to play the PARP inhibitor theme. Of the two, Tesaro is a pure play while BioMarin offers a more modest exposure but spreads the risk across its deep pipeline.

PARP Inhibitors’ Clinical Profile — PARP inhibitors are highly active as single agents in specific well-defined subsets of cancer patients with BRCA-1/2 gene mutations. These drugs should offer superior potency and much better tolerability compared to traditional chemotherapy. PARP inhibitors should generate premium pricing (\$12.5b-\$15k/mo) and offer attractive margins. Their clinical profile should support broad and rapid uptake following approval.

Key Differentiation Points Are Not Just Clinical — BMRN-673 is the most potent PARP inhibitor based on cell culture assays, but it is slightly earlier in development compared to Tesaro’s and Tesaro. At this stage, all PARP inhibitors look very similar in terms of clinical efficacy and we do not anticipate that data at the upcoming ASCO meeting will necessarily differentiate them based on potency. Instead, time to market, development strategy and profitability impact on each stock lead on to favor Tesaro and BioMarin.

What’s On The Horizon? — AstraZeneca’s sipuleucel is the most advanced PARP. We expect approval in Europe in H2 14 based on p2 data in ovarian cancer. The race to market for both ovarian and breast cancer is tight with AstraZeneca, Tesaro and BioMarin leading the pack with approval expected in 2017 in US/EU. Clovis Oncology is employing a different strategy that is based on developing a new assay that will likely delay approval until 2018 but will provide some differentiation if that new assay is needed. At this point, for ovarian cancer, Clovis looks all drugs offer similar potency to time to market is key and it is not clear that a new diagnostic assay will provide an edge. BioMarin is currently only focusing on breast cancer while Clovis is focusing on ovarian cancer. Clovis AZN and Tesaro are focusing on both segments.

PARP Inhibitor Has Shown Solid Potency in Ovarian and Breast Cancers — The data shows that PARP inhibitors should work as maintenance therapy in ovarian cancer and should be able to show superiority to chemo in breast cancer. We model ~\$35b in peak global sales among the 4 drugs.

Playing the PARP Game — Tesaro (TSCR) and BioMarin (BMRN) are our best ideas for this new market. Of the two, Tesaro is more of a pure play while BioMarin has exposure but is more diversified. We value Tesaro at \$45.14 (\$1.10 as we added \$1.10 in probability-adjusted sales in ovarian and breast cancer for reports to our model. We valued BioMarin at \$79.14 (\$1.10 as we added our DCF analysis and add \$400m in peak probability-adjusted sales for BMRN-673 in breast cancer).

Credit Call: PARP Expect Tesarowin @ 15MM ET — #719-457-6623, jared.11112013

See Appendix A-1 for Analyst Certification, Important Disclosures and non-CD research analyst view. Citi Research is a division of Citigroup Global Markets Inc. (the “Citi”), which does and seeks to do business with companies covered in its research reports. As a result, Citi 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.

22 May 2013 | 12 pages

Immunotherapy – The Beginning of the End for Cancer.

Transforming Cancer into Chronic Disease. Winners and Losers

Immunotherapies — \$270b potential, will likely become the treatment backbone in up to 60% of cancers over the next 10 years compared with <3% today. The current explosion in all ongoing approaches (including checkpoint agents, vaccines and cell therapy) to utilize the immune system to seek and destroy cancer cells marks a watershed, analogous to the impact of HIV drugs transforming life expectancy in HIV. In our view, Evolution of Immunotherapy and a pro-science FDA should translate into rapid acceleration in development and approval. The new paradigm should continue to increase given dramatic improvements in survival, multiple lines of therapy, and migration towards combined immunotherapy strategies. We prefer B2 over US names. We have upgraded BMY, PT, BIL and Roche to BUY, PT, BIL, BIL. Our featured global names are BIL-rated BMY, Roche, Novartis and Sanofi.

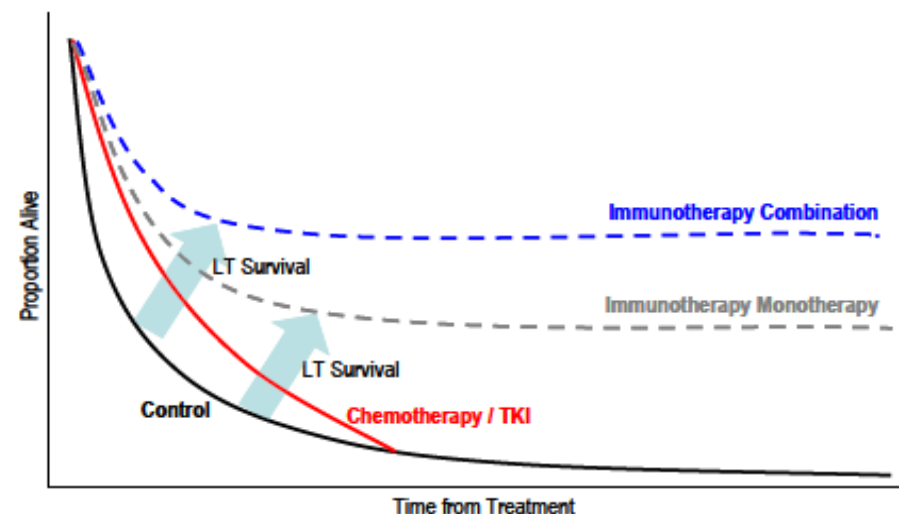
Building an Immunotherapy Basket — We have conducted an immunotherapy basket for investors. Details about the basket and performance data can be found under the Bloomberg ticker CIBIMM. We use BMY and Roche as best positioned in this emerging area given their advanced checkpoint agents and developmental expertise in cancer. We are more optimistic over AZN’s early checkpoint portfolio than CSCO’s later stage therapeutic vaccine program. While MMR has tislelizumab (an anti-PD1) in phase I/II trial, we note reports of drug-related anorexia and the company’s limited oncology experience. We remain bullish over Novartis’s cell therapy approach in treatment refractory patients. Other names in the basket include Amgen (Abiraterone), Regeneron (IGF1R inhibitor).

Cannabis is not reflecting the use of checkpoint agents, which should extend well beyond the initial indications, driving up to \$200b peak revenue. We believe market forecasts currently neglect (i) the potential for anti-PD1/1 antibodies outside the initial melanoma, renal and NSCLC drug indications; (ii) combination therapy with other agents will likely result in significant checkpoint agent efficacy in multiple solid and blood cancers; (iii) combination pricing — we expect the market to move quickly towards PD1/PD1.1 combinations with novel immune-inhibitors such as AXL-1, anti-KIR (both BMY), and immune-stimulators such as anti-CD137 (BMY, PFZ) and anti-CD40 (AZN), and we also think (iv) duration of therapy under approved given both increased survival and remission rate.

Is up to EVolving from accelerated time to market — The likely dramatic efficacy benefits of these agents within pre-selected population allow for smaller, shorter and less expensive clinical trials. Separately, the increasingly supportive FDA continues to look for novel development programs to accelerate time to market.

See Appendix A-1 for Analyst Certification, Important Disclosures and non-CD research analyst view. Citi Research is a division of Citigroup Global Markets Inc. (the “Citi”), which does and seeks to do business with companies covered in its research reports. As a result, Citi 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.

Figure 3. Immunotherapy responders can experience a dramatic impact on survival compared with conventional chemotherapy due to durability of response.



Source: Citi Research

PARP Inhibitors For Cancer Hit Prime Time - Tesaro is Best Pure Play; BioMarin Offers More Modest Exposure But Spreads Risk Across Its Deep and Promising Pipeline

Immunotherapy – The Beginning of the End for Cancer.

Immunotherapy

- Andrew believes commercial potential is significantly underappreciated given: high demand; rising therapy duration; rising price given combination therapy; potential for use in multiple lines; & expansion of use into others cancers.
- Andrew sees BMJ & Roche as best positioned in this emergent area, but also constructs a fuller immunotherapy basket (CGRBIMMU on Bloomberg). He increased the 2017 EPS forecast on BMJ by 31%, 27% above consensus & upgraded the stock to Buy. BMJ has an 18-mth lead, but estimates were also raised 21% on Buy rated Roche.
- Yaron Werber also deep dives on PARP inhibitor potential for ovarian & breast cancers, an exciting but overlooked new class of drug with superior potency & much better tolerability compared to traditional chemotherapy. We expect: approval for AstraZeneca in 2H14; \$3bn peak sales in the class; Tesaro (pure play) & BioMarin to be best positioned.

Figure 10. Immunotherapy could accelerate the decline in cancer mortality rates, thereby negatively impacting hospitals that continue to operate under a fee for service model



Source: CDC, Citi Research

Figure 9. Citi Immunotherapy Basket (CGRBIMMU)

Company	Immunotherapy	Treatment modality	Potential approval	Revenue potential
Bristol Myers Squibb	Yervoy, nivolumab, others	Checkpoint agent	Yervoy approved, others 2015+	\$7bn
Roche	MPDL3280A	Checkpoint agent	2016	\$7bn
Merck	lambrolizumab	Checkpoint agent	2017	\$3bn
AstraZeneca	tremelimumab, anti-PD1, anti-OX40	Checkpoint agent	2018	\$4bn
Glaxosmithkline	MAGE-A3 vaccine, anti-PD1	Therapeutic vaccine, Checkpoint agent	2015 for CART, 2018 for PD1	\$3bn
Novartis	CART-19	Adoptive T cell therapy	2015	\$3bn+
Amgen	blinatumomab, Tvec	Bi-specific antibody, therapeutic vaccine	2017	\$2bn+
Vical	Allovectin	Gene therapy	2014	\$1bn
Incyte	IDO360	small molecule IDO inhibitor	2017	\$2bn+

Source: Citi Research

Note: Details about the basket and performance data can be found under the Bloomberg ticker CGRBIMMU

Obesity

This Theme is driven by the growth in obesity. More people across the world now die from overweight / obesity related illness than from starvation. Emerging markets are seeing increased cases of obesity from both the “westernization” of lifestyles and increased access to healthcare. Childhood obesity in the west is also a growing issue. A number of companies could be beneficiaries of the fight against obesity and its consequences.

Theme Rank and Comparison

Figure 31. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Obesity	6 (22)	64 (73)	6 (65)	24 (11)	12 (32)	4 (34)	20 (7)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 32. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Obesity	25.9	20.5	2.4	2.9%	14.3%	9.2%	66.6%	-4.9%	0.93
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 33. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

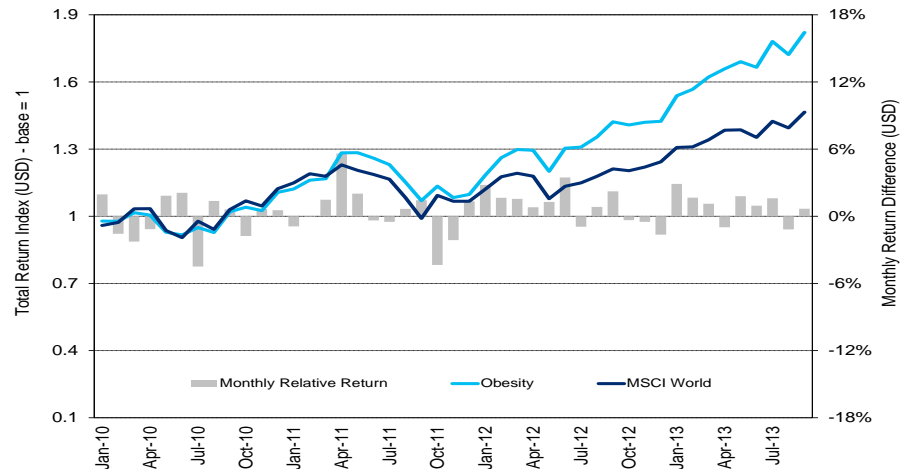
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
B0T4N7	CYNOSURE 'A'	UNITED STATES	Health Care	509	Buy	22.81	41.00	82.47%	Matthew J Dodds +1-212-816-6928
230193	AMARIN ADR 1:1	UNITED STATES	Health Care	1,088	Buy	6.32	11.00	59.63%	Jonathan Eckard Ph.D. +1-212-816-1441
567173	SANOFI	FRANCE	Health Care	134,658	Buy	74.97	101.00	39.48%	Andrew S Baum +44-20-7986-4498
707752	NOVO NORDISK 'B'	DENMARK	Health Care	75,176	Buy	936.00	1,150.00	27.94%	Joanne Jerman +44-20-7986-4207
708842	AXA	FRANCE	Financials	55,456	Buy	17.12	21.00	26.85%	Farooq Hanif +44-207-986-3975
B574ZG	DELTA LLOYD GROUP	NETHERLANDS	Financials	4,084	Buy	15.73	18.50	26.07%	Farooq Hanif +44-207-986-3975
257760	CVS CAREMARK	UNITED STATES	Consumer Staples	69,710	Buy	56.75	70.00	25.50%	Deborah L Weinswig +1-212-816-1860
710306	NOVARTIS 'R'	SWITZERLAND	Health Care	207,996	Buy	69.50	83.00	25.20%	Andrew S Baum +44-20-7986-4498
622166	RESMED CDI.	AUSTRALIA	Health Care	7,505	Buy	5.65	7.00	24.17%	Alex Smith +61-2-8225-4833
202360	AMGEN	UNITED STATES	Health Care	84,319	Buy	111.92	136.00	24.08%	Yaron Werber, MD +1-212-816-8836

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

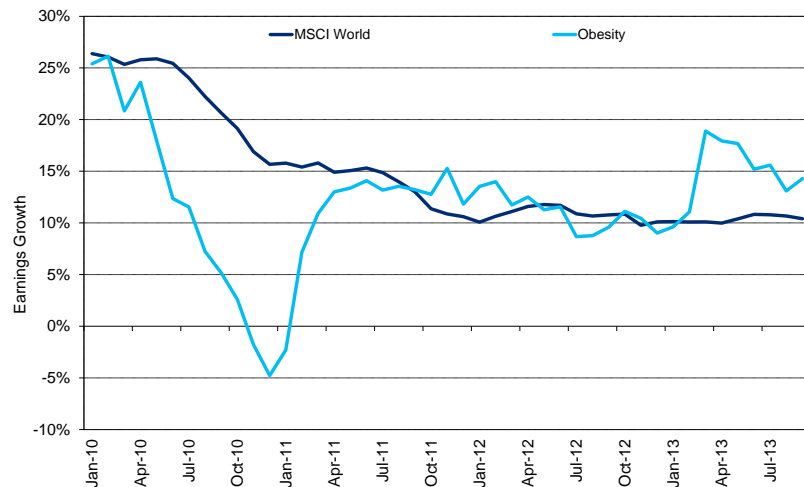
Obesity

Figure 34. Performance of Thematic Basket



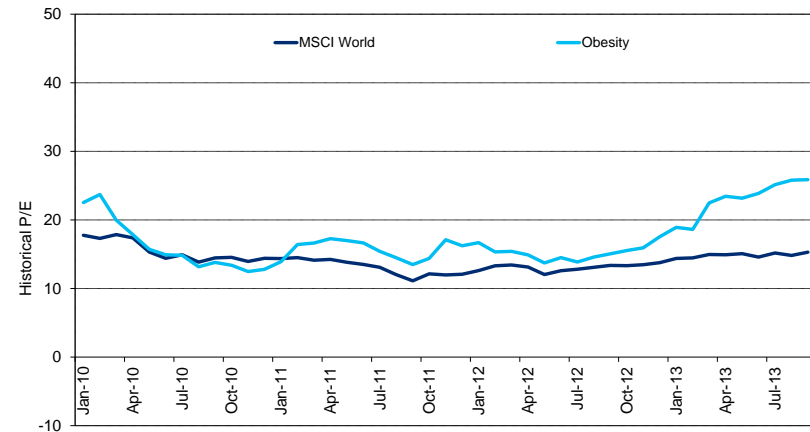
Source: Citi Research

Figure 36. 12 Month Forward Rolling Earnings Growth



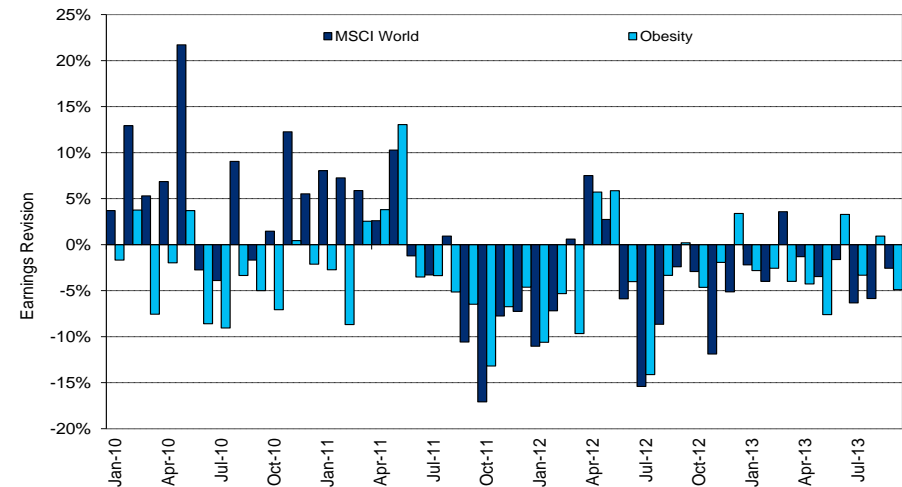
Source: Citi Research

Figure 35. Historical P/E



Source: Citi Research

Figure 37. Earnings Revision



Source: Citi Research

Obesity

- “More people across the world die from overweight / obesity related illness than from Starvation” says Andrew Baum in a large Global Diabetes publication. Citi sees the diabetes market reaching \$63bn by 2020 (12-20 CAGR 10%).
- Emerging market growth should contribute at least 1/3rd of global volume growth, through the westernisation of lifestyles & increasing access to healthcare. The number of treated diabetics with access to good care in EM could increase 5-fold by 2030. China’s diagnosed population is c.28m vs 64m others who are said to go untreated.
- Childhood obesity in the US could double the number of adults under 40 with diabetes. This alone could add 100bps annually to US volume growth through 2030.

Novo Nordisk A/S (NOVO.CO)
Buy: Victoza To Drive More Positive Momentum

3 August 2012 | 15 pages

■ Buy: Further To Go — We believe there is a likelihood that H1 results will continue the first phase 3 data on the first combination of Victoza + dapagliflozin compared to its individual components. We expect positive data which could add further tail to negative, 30-50% of additional sales or 15% to 2014 EPS.

■ Victoza + Dapagliflozin Data at H1 — We believe there is a likelihood that H1 results will continue the first phase 3 data on the first combination of Victoza + dapagliflozin compared to its individual components. We expect positive data which could add further tail to negative, 30-50% of additional sales or 15% to 2014 EPS.

■ Obesity Expectations Increasing — The market appears to have gradually moved to our view that Victoza is more appropriate in obesity than initially assumed, but we continue to believe the phase 3 data in early 2013 will be a catalyst. Physician feedback is generally positive with Victoza being a second-order choice drug in a market characterized by cost containment and high switching.

■ Opportunity at \$1.50, up to 30% on 30-day EPS — Our diligence suggests that only 30% of current US obesity prescriptions are reimbursed, hence ability to sell pay is key. Management's hope for a \$2.00 price for Victoza is probably too optimistic. However, measures of \$1.20 are achievable despite cost competition. We include nothing but \$1.00 in our 12-15% NPV or 20% to 2014 EPS.

■ Victoza + Dapagliflozin Data at H1 — We believe there is a likelihood that H1 results will continue the first phase 3 data on the first combination of Victoza + dapagliflozin compared to its individual components. We expect positive data which could add further tail to negative, 30-50% of additional sales or 15% to 2014 EPS.

■ Novo Nordisk — 10/12 10 August, Novo Nordisk (NOVO) approved Sept. FDA/EMA 6 November

Year to End	2010	2011	2012E	2013E	2014E
Revenue (\$Bn)	10,763	12,043	13,284	14,527	15,767
Operating Profit (\$Bn)	2,336	2,609	2,846	3,087	3,327
Operating Profit Margin (%)	21.7	21.6	21.4	21.2	21.1
EPS (\$)	11.1	12.3	13.5	14.7	15.9
EPS Growth (%)	23.3	10.8	9.7	8.9	8.2
Dividend (\$)	1.00	1.00	1.00	1.00	1.00
Dividend Yield (%)	9.0	8.1	7.4	6.8	6.3

See Appendix A for a list of important disclosures, important disclosures and non-ESG research analyst disclosures.

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Citi Global Markets

Citi Research Equities

20 November 2012 | 52 pages

Global Pharma: The Sweet Spot
Thinking Big In Diabetes

■ The Sweet Spot — Buy Novo, Sanofi, Lilly — In this thematic report on Global Healthcare and Diabetes, we conclude that the diabetes market will grow more sustainably than consensus expects and will have pricing power in the US for longer than expected too. We see the global market reaching \$63bn by 2020, a 12-20 CAGR 10% of which insulin will be \$22bn, Oral \$22bn and GLP-1 \$19bn. This supports our Buy on Novo Nordisk, Sanofi and Lilly. We highlight 3 areas where we differ from consensus:

■ 1) Emerging Markets & Childhood Obesity Underestimated — More people across the world die from overweight/obesity related illness than from starvation. Our analysis shows that emerging markets through westernization of lifestyle and increasing access to healthcare will provide material support to global growth in insulin through 2030. Furthermore childhood obesity in the US could more than double the number of adults under 40 with diabetes. This alone could add 100bps annually to US volume growth through 2030.

■ 2) Price Increases in the US Should be Persistent — In our accompanying sector report "Play, Stay, Pay, Wait, Pay?" we conclude that the majority of the impact from the Affordable Care Act will be on service providers and not drug manufacturers. Furthermore we expect price rises to remain above inflation and beyond 2017. Diabetes drugs may also see volume increases through efforts to increase diagnosis and compliance rates by Patient Centred Medical Care Network.

■ 3) Lower Costs on Novo and Lilly's Lantus Copy — We believe the market is overly worried about the label for Novo's Lantus and missing the benefits of biosimilars. We also see the market as too small for Sanofi, Novo & Lilly at \$17bn by 2020s. We are less concerned about the impact of a Lantus copy from Lilly. Sanofi can defend Lantus through contracting, removing patient and pharmacist incentives, Lantus new formulation & the Lantus combination.

■ 4) GLP-1 Analogues & DPP-4 Inhibitors Could Show CY Benefits — We forecast three classes to be \$8bn and \$18bn respectively by 2020. CY volume data will start reporting in 2013 for DPP-4s and in 2014 for GLP-1s. A positive result looks possible which could increase our forecasts for both by 10%. Novo's Victoza (GLP-1) and Lilly's Trandate (DPP-4) have the most favorable trial designs.

■ 5) Insulin + GLP-1 Combos Underestimated — Sanofi has a good opportunity to at least double the price per patient in up to 20% of Lantus sales. We expect Lantus to sell \$10n vs. consensus \$200n. Novo's Cologis should also do well but may take longer to ramp-up given Novo's smaller basal franchise.

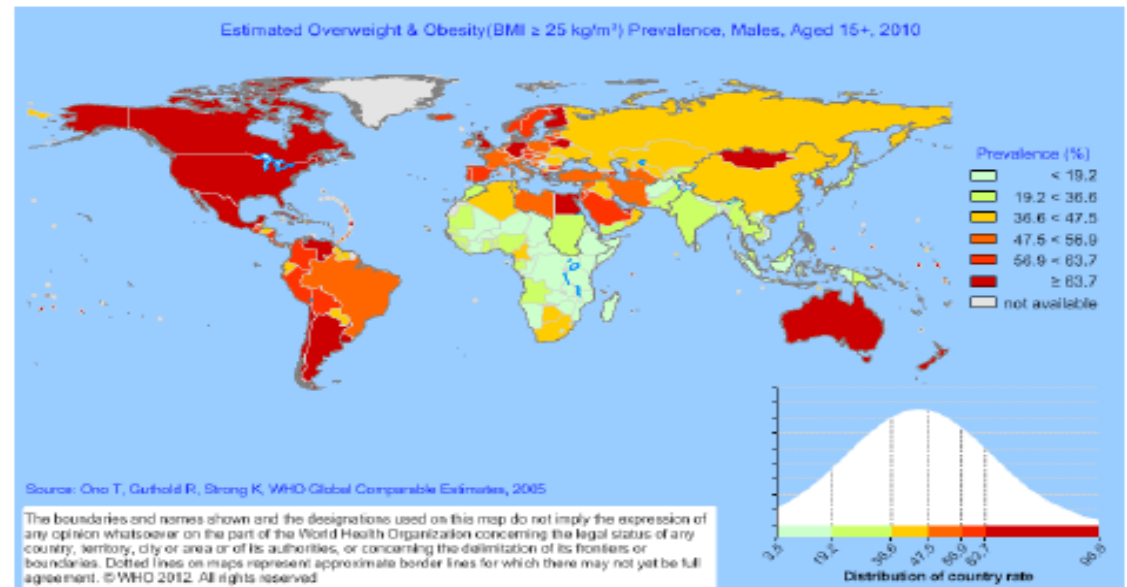
■ Our comprehensive proprietary global diabetes model is available on request.

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Citi Global Markets

Figure 12. Prevalence of Overweight/Obesity (BMI>25) In 2010

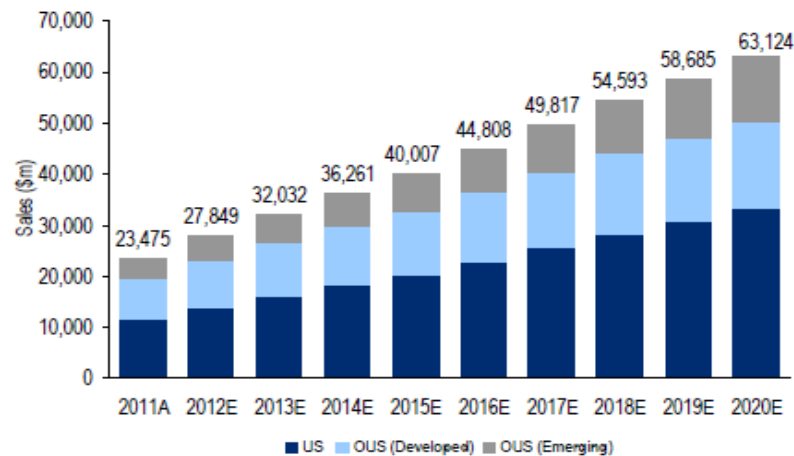


Source: WHO

Obesity

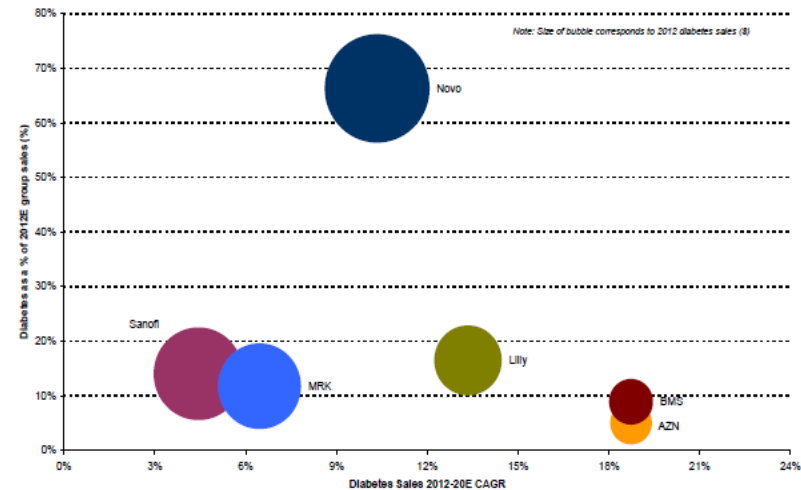
- The negative view on obesity & positive view on the growth of the diabetes markets supports Buy ratings on Novo Nordisk, Sanofi & Lilly. Novo & Sanofi are best placed in EM markets given their broader reach. Novo has by far the largest mix in diabetes (c.70%) and is the world leader in diabetes with 27% value share globally. In insulin, its main specialty, it has 46% of global volume share.
- For Novo we forecast a 2014-19E EPS CAGR of 14% versus 9% for the EU pharma sector. We believe the superior earnings growth, oligopoly nature of the business and the scope for margin and sales upside to consensus justify a P/E premium vs. the peer group.
- For Sanofi, Citi is much more positive than the market on Lantus sales.

Figure 4. US To Remain Most Important Region



Source: Citi Research

Figure 2. Company Exposure & Growth In Diabetes



Source: Citi Research

Generics

This Theme is driven by generic drugs that offer similar characteristics to branded drugs which are no longer under patent protection. Companies positively exposed to this growth in generics should benefit from this trend.

Theme Rank and Comparison

Figure 38. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Generics	11 (34)	47 (55)	36 (68)	34 (12)	22 (11)	10 (15)	10 (65)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 39. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Generics	16.4	14.3	1.9	1.8%	14.9%	11.6%	28.4%	0.7%	0.83
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 40. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

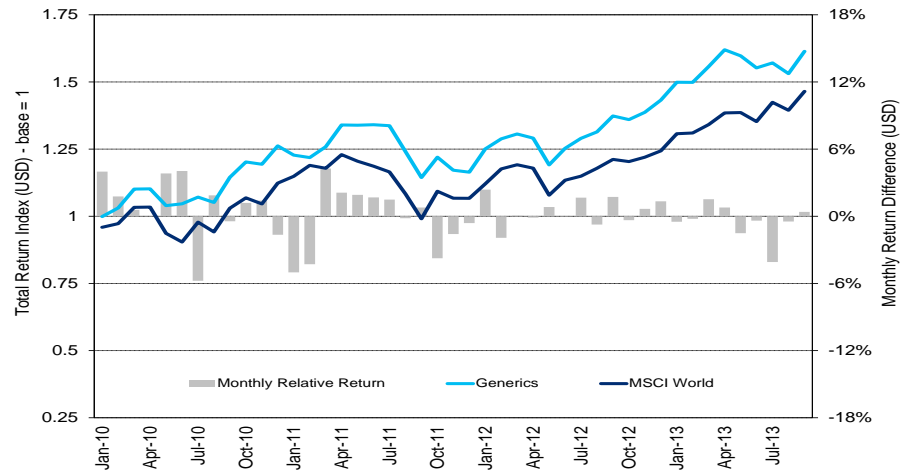
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
B10SSN	JUBILANT LIFE SCIS.	INDIA	Health Care	204	Buy	80.00	200.00	155.37%	Prashant Nair, CFA +91-22-6175-9855
B3Q1YB	BR PHARMA ON NM	BRAZIL	Consumer Staples	898	Buy	7.80	18.00	126.54%	Julio R. Zamora +1-212-816-6039
669875	GLENMARK PHARMACEUTICALS	INDIA	Health Care	2,298	Buy	530.95	785.00	46.04%	Prashant Nair, CFA +91-22-6175-9855
B0CMCH	RANBAXY LABS.	INDIA	Health Care	2,232	Buy	330.30	520.00	43.69%	Prashant Nair, CFA +91-22-6175-9855
B19HDX	LIPPO KARAWACI	INDONESIA	Financials	2,172	Neutral	1,090.00	1,490.00	36.52%	Felicia Asrinanda Barus +62-21-5290-8298
B02YZ0	WALMEX 'V'	MEXICO	Consumer Staples	46,161	Buy	34.42	44.50	35.12%	Julio R. Zamora +1-212-816-6039
674125	BIOCON	INDIA	Health Care	1,079	Buy	337.70	425.00	28.29%	Prashant Nair, CFA +91-22-6175-9855
257760	CVS CAREMARK	UNITED STATES	Consumer Staples	69,710	Buy	56.75	70.00	25.50%	Deborah L Weinswig +1-212-816-1860
710306	NOVARTIS 'R'	SWITZERLAND	Health Care	207,996	Buy	69.50	83.00	25.20%	Andrew S Baum +44-20-7986-4498
B0YZFP	KYORIN HOLDINGS	JAPAN	Health Care	1,600	Neutral	2,095.00	2,500.00	23.58%	Hidemaru Yamaguchi +81-3-6270-4742

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

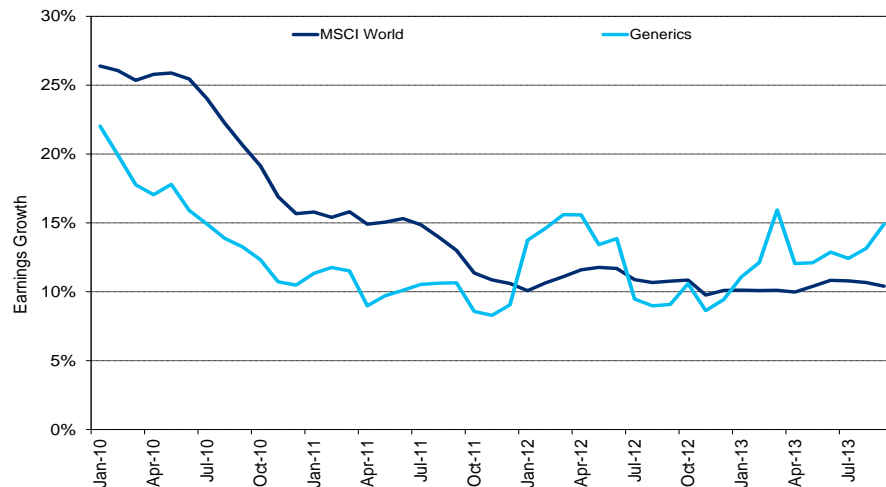
Generics

Figure 41. Performance of Thematic Basket



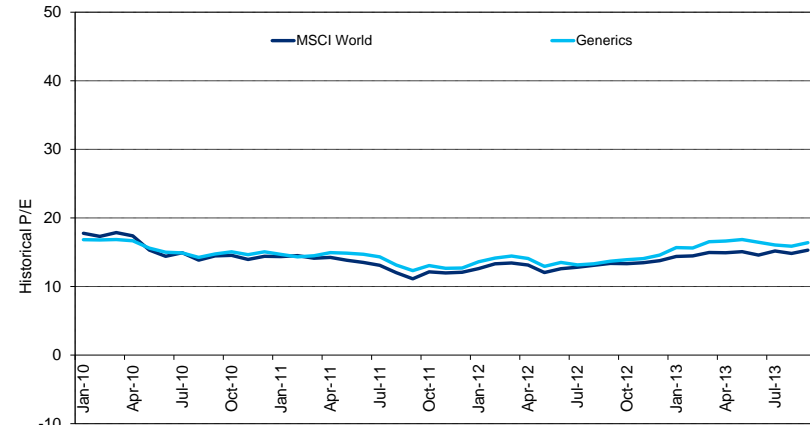
Source: Citi Research

Figure 43. 12 Month Forward Rolling Earnings Growth



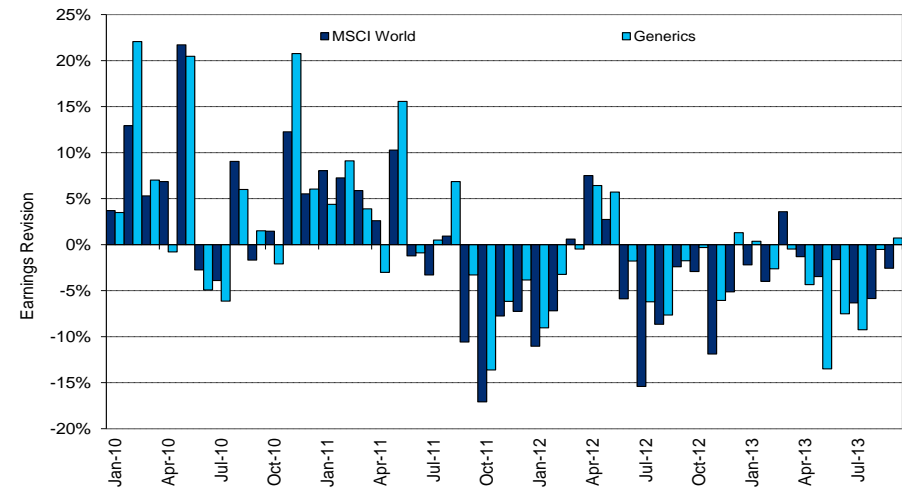
Source: Citi Research

Figure 42. Historical P/E



Source: Citi Research

Figure 44. Earnings Revision



Source: Citi Research

Medical Tech

This Theme is driven by an Aging population in the west, increasing medical spending in emerging market, cost reduction and advancements in innovation / technology. Companies positively exposed to the growth in Medical Technology should benefit from these trends.

Theme Rank and Comparison

Figure 45. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Medical Tech	5 (7)	72 (71)	5 (40)	10 (16)	5 (25)	23 (14)	7 (10)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 46. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Medical Tech	20.6	17.2	2.2	2.0%	15.8%	10.7%	74.0%	0.5%	0.84
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 47. Examples of Largest Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

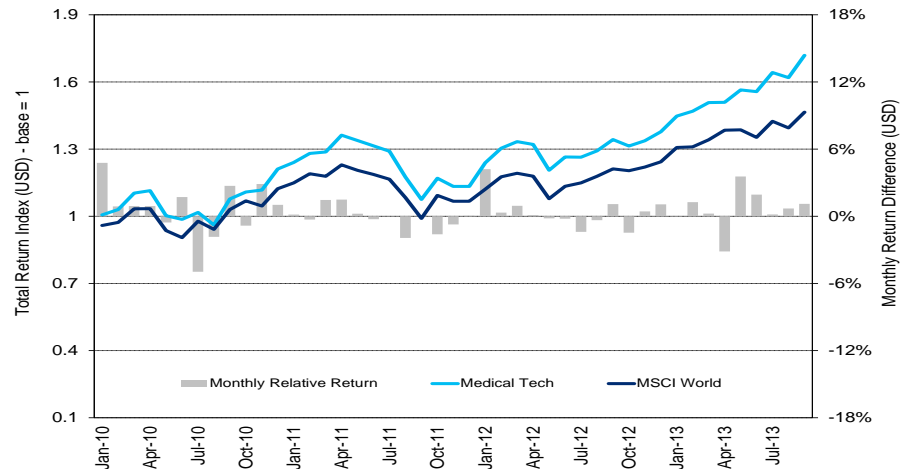
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B0T4N7	CYNOSURE 'A'	UNITED STATES	Health Care	509	Buy	22.81	41.00	82.47%	Matthew J Dodds +1-212-816-6928
B19HDX	LIPPO KARAWACI	INDONESIA	Financials	2,172	Neutral	1,090.00	1,490.00	36.52%	Felicia Asrinanda Barus +62-21-5290-8298
231879	ORASURE TECHS.	UNITED STATES	Health Care	334	Buy	6.01	8.00	36.52%	Amit Bhalla +1-212-816-4069
643904	HOGY MEDICAL	JAPAN	Health Care	906	Buy	5,440.00	6,800.00	35.24%	Hidemaru Yamaguchi +81-3-6270-4742
598662	PHILIPS ELTN.KONINKLIJKE	NETHERLANDS	Industrials	30,253	Buy	23.83	30.00	31.74%	Natalia Mamaeva +44-20-7986-4077
715683	STRAUMANN HLDG.	SWITZERLAND	Health Care	2,848	Buy	164.30	200.00	25.65%	Jonathan Beake +44-20-7986-5441
662332	NAGAILEBEN	JAPAN	Health Care	621	Buy	1,593.00	1,900.00	24.39%	Hidemaru Yamaguchi +81-3-6270-4742
622166	RESMED CDI.	AUSTRALIA	Health Care	7,505	Buy	5.65	7.00	24.17%	Alex Smith +61-2-8225-4833
721247	ESSILOR INTL.	FRANCE	Health Care	23,189	Buy	79.50	95.80	24.05%	Jonathan Beake +44-20-7986-5441
238049	GENERAL ELECTRIC	UNITED STATES	Industrials	243,291	Buy	23.89	29.00	23.57%	Deane M. Dray, CFA +1-212-816-4030

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

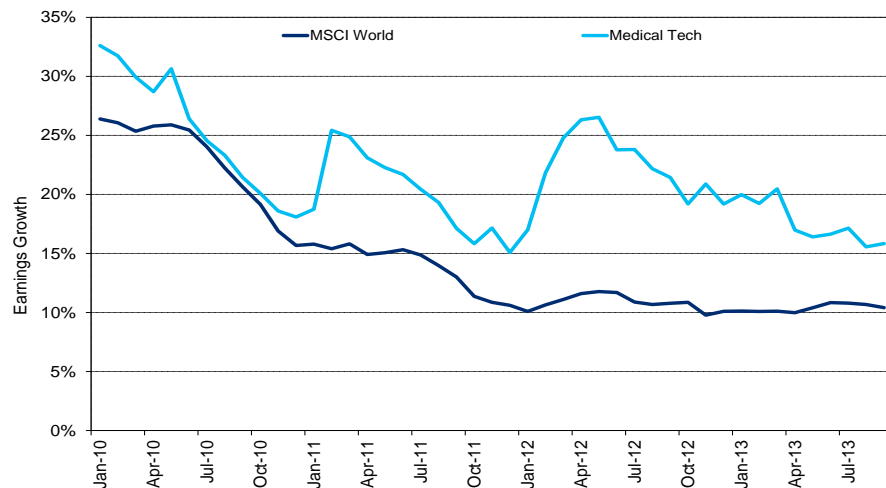
Medical Tech

Figure 48. Performance of Thematic Basket



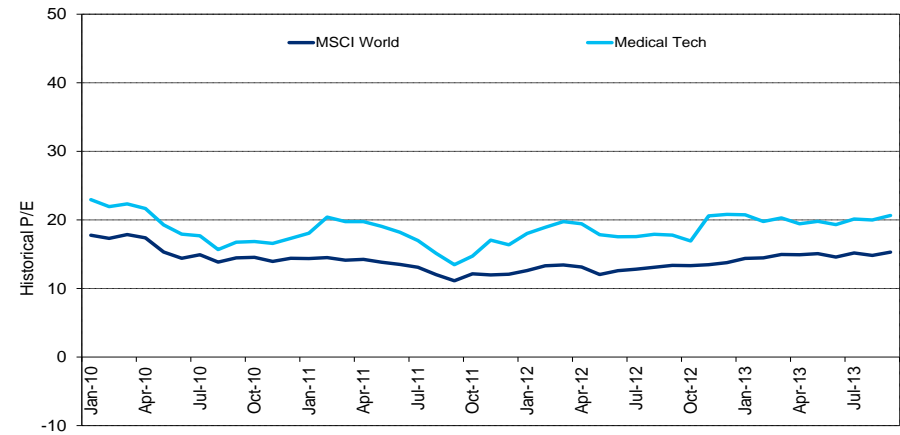
Source: Citi Research

Figure 50. 12 Month Forward Rolling Earnings Growth



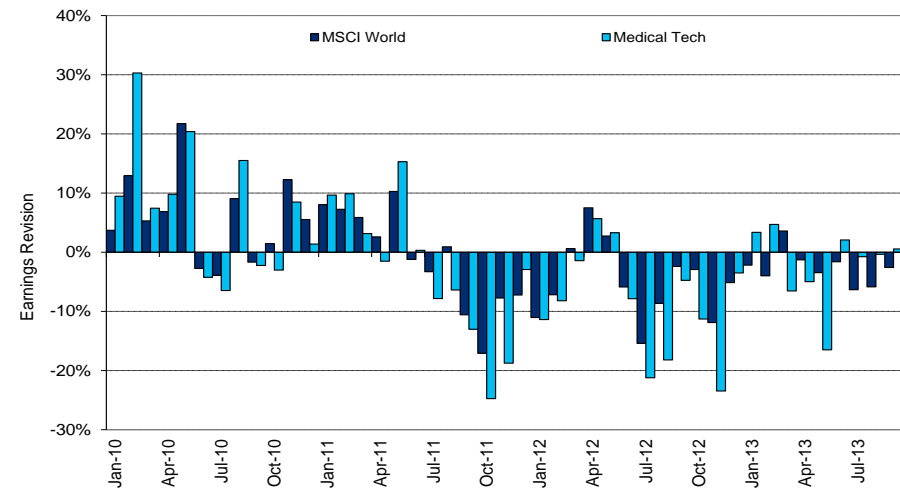
Source: Citi Research

Figure 49. Historical P/E



Source: Citi Research

Figure 51. Earnings Revision



Source: Citi Research

Aging Demographic Healthcare Spend

This Theme is driven by Aging demographics who consume a disproportionate amount of healthcare in their later years. Along with the growth of healthcare spending in emerging markets, Aging demographics are a key driver for unit growth in many healthcare segments, but also bring forward questions of affordability of this spending. This theme seeks to highlight companies positively exposed to unit growth from ageing demographics.

Theme Rank and Comparison

Figure 52. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Aging Demographic HCare Spend	17 (23)	69 (74)	21 (56)	33 (6)	26 (35)	8 (13)	19 (27)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 53. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Aging Demographic HCare Spend	25.5	20.9	2.3	2.2%	14.1%	8.9%	57.5%	-2.9%	0.86
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 54. Examples of Largest Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

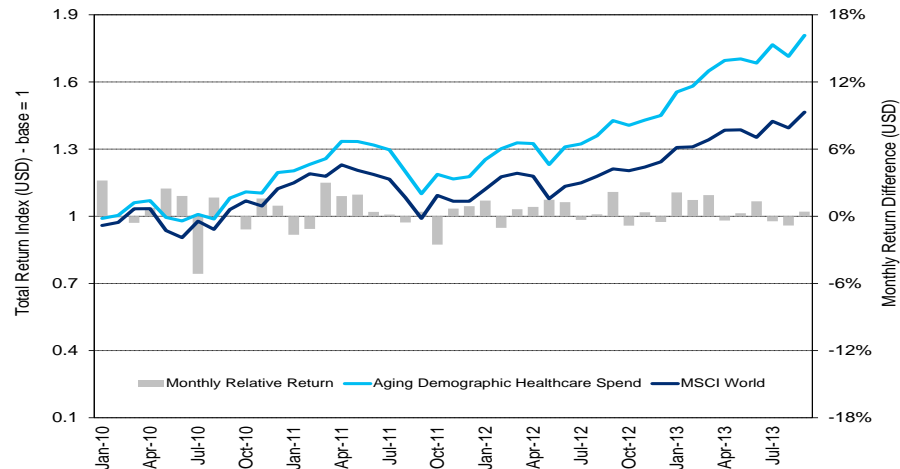
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
B1XJ6M	QRXPHERMA	AUSTRALIA	Health Care	106	Buy	0.78	2.52	233.77%	Alex Smith +61-2-8225-4833
293342	VICAL	UNITED STATES	Health Care	108	Buy	1.25	3.00	138.10%	Jonathan Eckard Ph.D. +1-212-816-1441
B3Q1YB	BR PHARMA ON NM	BRAZIL	Consumer Staples	898	Buy	7.80	18.00	126.54%	Julio R. Zamora +1-212-816-6039
B0T4N7	CYNOSURE 'A'	UNITED STATES	Health Care	509	Buy	22.81	41.00	82.47%	Matthew J Dodds +1-212-816-6928
B1YY66	ALMIRALL	SPAIN	Health Care	2,191	Buy	9.36	16.50	72.71%	Joanne Jerman +44-20-7986-4207
666010	ONO PHARM.	JAPAN	Health Care	7,242	Buy	6,030.00	10,000.00	70.23%	Hidemaru Yamaguchi +81-3-6270-4742
230193	AMARIN ADR 1:1	UNITED STATES	Health Care	1,088	Buy	6.32	11.00	59.63%	Jonathan Eckard Ph.D. +1-212-816-1441
B3LGWH	UNIVERSAL AMERICAN	UNITED STATES	Health Care	652	Buy	7.62	12.00	55.64%	Carl McDonald, CFA +1-617-247-6312
669875	GLENMARK PHARMACEUTICALS	INDIA	Health Care	2,298	Buy	530.95	785.00	46.04%	Prashant Nair, CFA +91-22-6175-9855
B1VRDX	ALGETA	NORWAY	Health Care	1,690	Buy	232.00	330.00	45.37%	Joanne Jerman +44-20-7986-4207

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

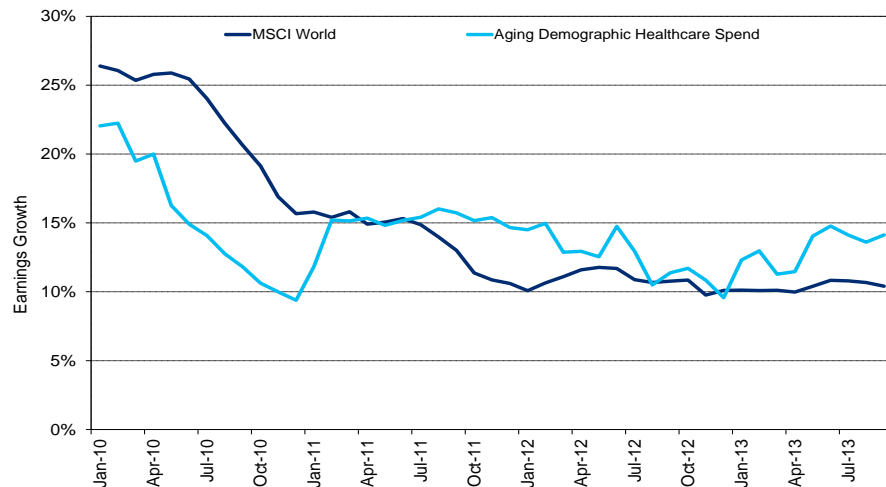
Aging Demographic Healthcare Spend

Figure 55. Performance of Thematic Basket



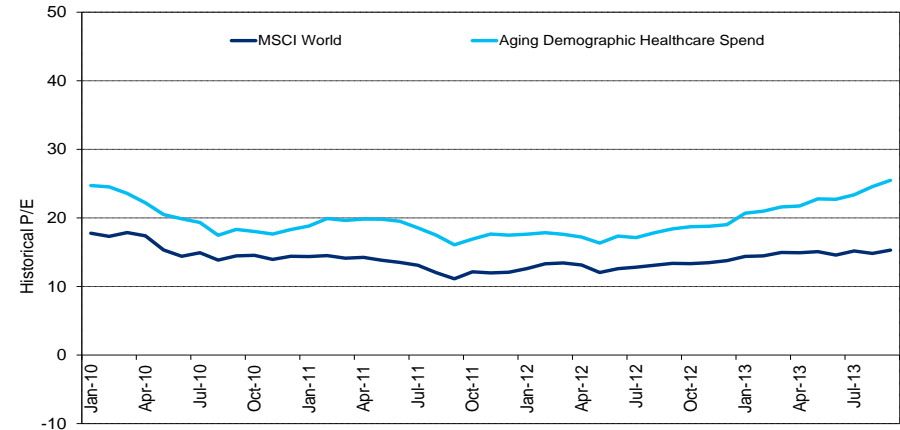
Source: Citi Research

Figure 57. 12 Month Forward Rolling Earnings Growth



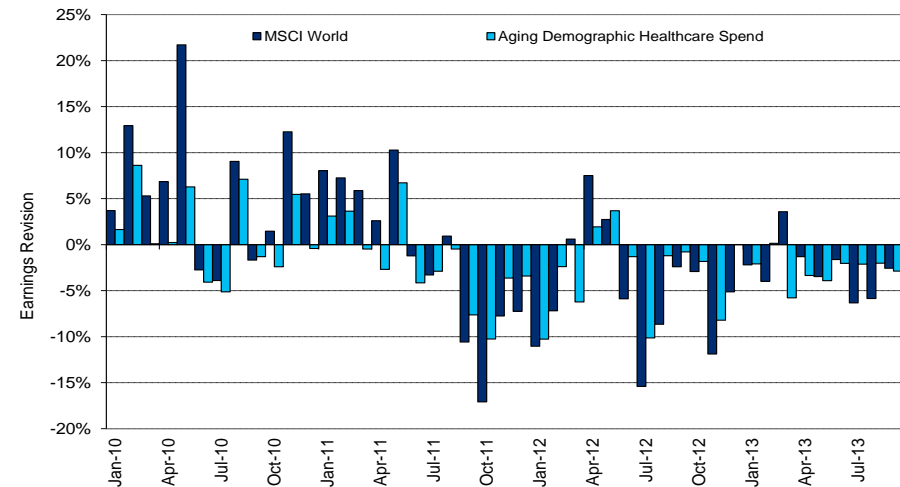
Source: Citi Research

Figure 56. Historical P/E



Source: Citi Research

Figure 58. Earnings Revision



Source: Citi Research

Biotech

This Theme is driven by the use of biotechnology in agriculture, food production and medicine. Biotechnology involves the use of living systems and organisms to develop or make useful products. While brewing was an early application of biotechnology, this theme largely centres on healthcare related companies.

Theme Rank and Comparison

Figure 59. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Biotech	16 (55)	75 (76)	20 (73)	16 (17)	21 (56)	18 (32)	25 (39)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 60. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Biotech	37.8	26.7	2.4	2.4%	16.4%	6.4%	64.2%	-4.5%	0.96
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 61. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

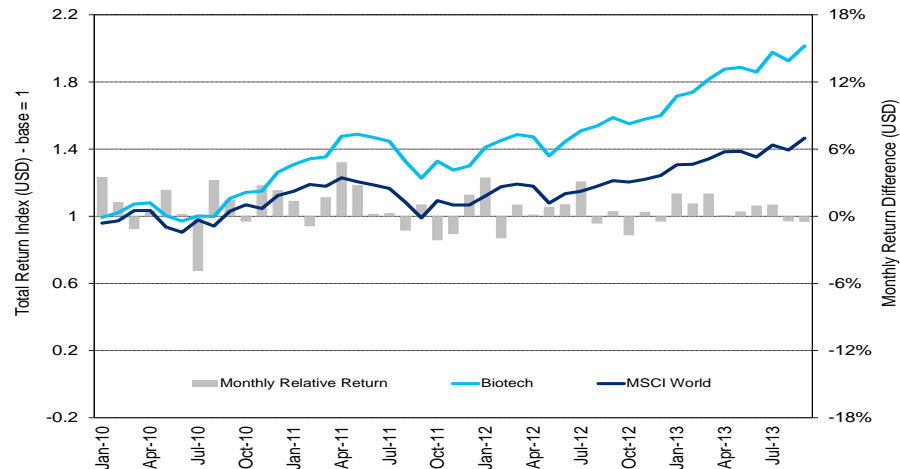
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
B1XJ6M	QRXPHERMA	AUSTRALIA	Health Care	106	Buy	0.78	2.52	233.77%	Alex Smith +61-2-8225-4833
293342	VICAL	UNITED STATES	Health Care	108	Buy	1.25	3.00	138.10%	Jonathan Eckard Ph.D. +1-212-816-1441
B1YY66	ALMIRALL	SPAIN	Health Care	2,191	Buy	9.36	16.50	72.71%	Joanne Jerman +44-20-7986-4207
666010	ONO PHARM.	JAPAN	Health Care	7,242	Buy	6,030.00	10,000.00	70.23%	Hidemaru Yamaguchi +81-3-6270-4742
230193	AMARIN ADR 1:1	UNITED STATES	Health Care	1,088	Buy	6.32	11.00	59.63%	Jonathan Eckard Ph.D. +1-212-816-1441
B1VRDX	ALGETA	NORWAY	Health Care	1,690	Buy	232.00	330.00	45.37%	Joanne Jerman +44-20-7986-4207
698538	ASTELLAS PHARMA	JAPAN	Health Care	23,285	Buy	5,000.00	6,900.00	44.31%	Hidemaru Yamaguchi +81-3-6270-4742
567173	SANOFI	FRANCE	Health Care	134,658	Buy	74.97	101.00	39.48%	Andrew S Baum +44-20-7986-4498
206662	ARIAD PHARMS.	UNITED STATES	Health Care	3,406	Buy	18.40	25.00	35.28%	Jonathan Eckard Ph.D. +1-212-816-1441
B01D1K	VECTURA GROUP	UNITED KINGDOM	Health Care	608	Buy	1.11	1.42	28.80%	Joanne Jerman +44-20-7986-4207

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

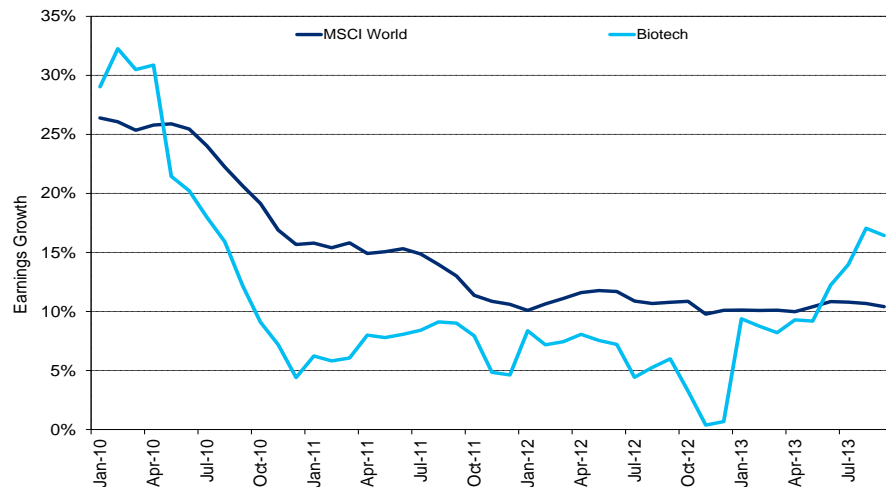
Biotech

Figure 62. Performance of Thematic Basket



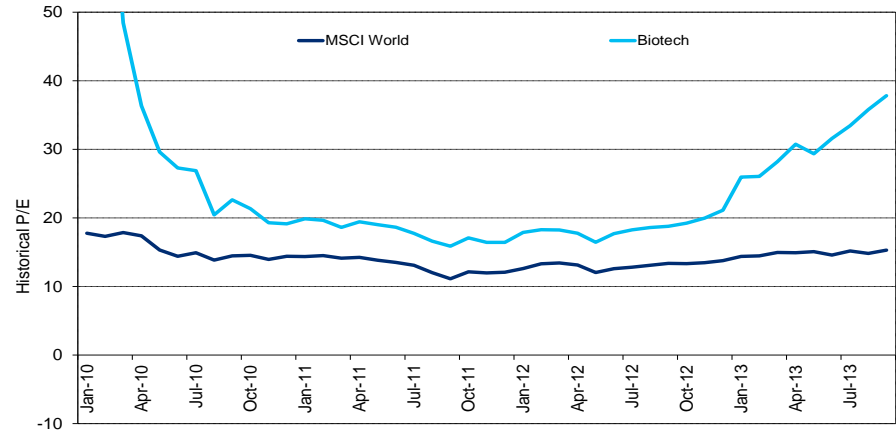
Source: Citi Research

Figure 64. 12 Month Forward Rolling Earnings Growth



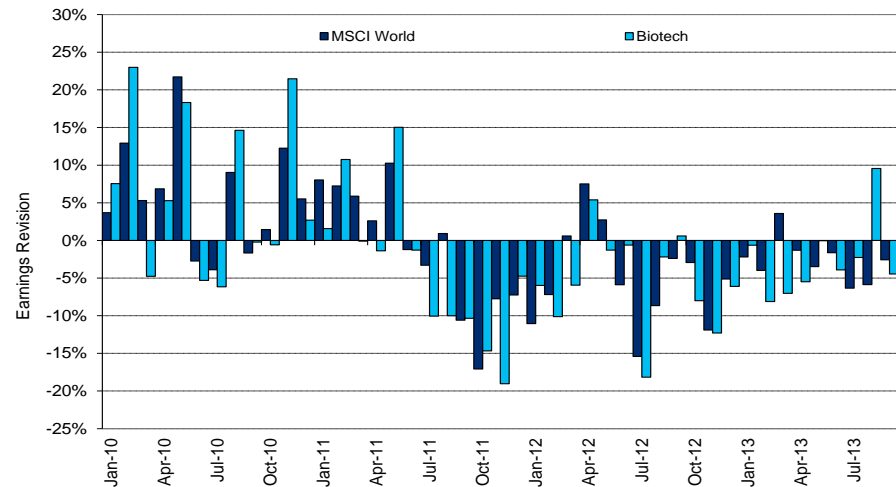
Source: Citi Research

Figure 63. Historical P/E



Source: Citi Research

Figure 65. Earnings Revision



Source: Citi Research

DNA/Genetics

This Theme is driven by the use genetics (or heredity or DNA) to improve healthcare. Improvements in both technology and costs to deciphering human DNA offer large opportunities to use an individual's genetic makeup to better tailor medical treatment. This field of personal medicine is still in the early innings of development, but the theme tries to capture companies exposed to these trends.

Theme Rank and Comparison

Figure 66. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
DNA/Genetics	4 (51)	56 (65)	14 (74)	21 (37)	2 (23)	1 (7)	24 (62)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 67. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
DNA/Genetics	19.7	18.5	2.2	2.6%	5.6%	11.4%	39.0%	-4.1%	0.83
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 68. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

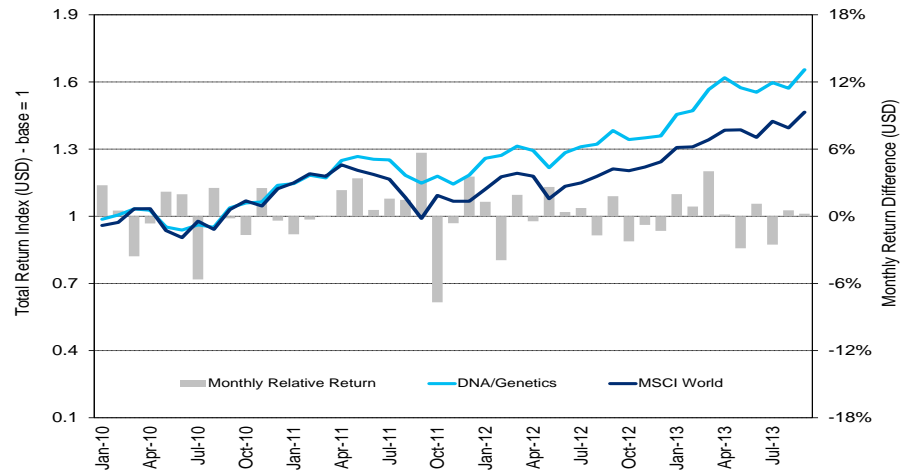
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
666010	ONO PHARM.	JAPAN	Health Care	7,242	Buy	6,030.00	10,000.00	70.23%	Hidemaru Yamaguchi +81-3-6270-4742
698538	ASTELLAS PHARMA	JAPAN	Health Care	23,285	Buy	5,000.00	6,900.00	44.31%	Hidemaru Yamaguchi +81-3-6270-4742
231879	ORASURE TECHS.	UNITED STATES	Health Care	334	Buy	6.01	8.00	36.52%	Amit Bhalla +1-212-816-4069
257760	CVS CAREMARK	UNITED STATES	Consumer Staples	69,710	Buy	56.75	70.00	25.50%	Deborah L Weinswig +1-212-816-1860
710306	NOVARTIS 'R'	SWITZERLAND	Health Care	207,996	Buy	69.50	83.00	25.20%	Andrew S Baum +44-20-7986-4498
238049	GENERAL ELECTRIC	UNITED STATES	Industrials	243,291	Buy	23.89	29.00	23.57%	Deane M. Dray, CFA +1-212-816-4030
92528	GLAXOSMITHKLINE	UNITED KINGDOM	Health Care	123,231	Neutral	15.57	18.10	20.18%	Andrew S Baum +44-20-7986-4498
619640	CHUGAI PHARM.	JAPAN	Health Care	11,487	Neutral	2,014.00	2,300.00	19.94%	Hidemaru Yamaguchi +81-3-6270-4742
687044	TAKEDA PHARMACEUTICAL	JAPAN	Health Care	37,300	Buy	4,635.00	5,300.00	19.78%	Hidemaru Yamaguchi +81-3-6270-4742
617232	CANON	JAPAN	Information Technology	42,544	Buy	3,130.00	3,600.00	19.74%	Masahiro Shibano +81-3-6270-4784

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

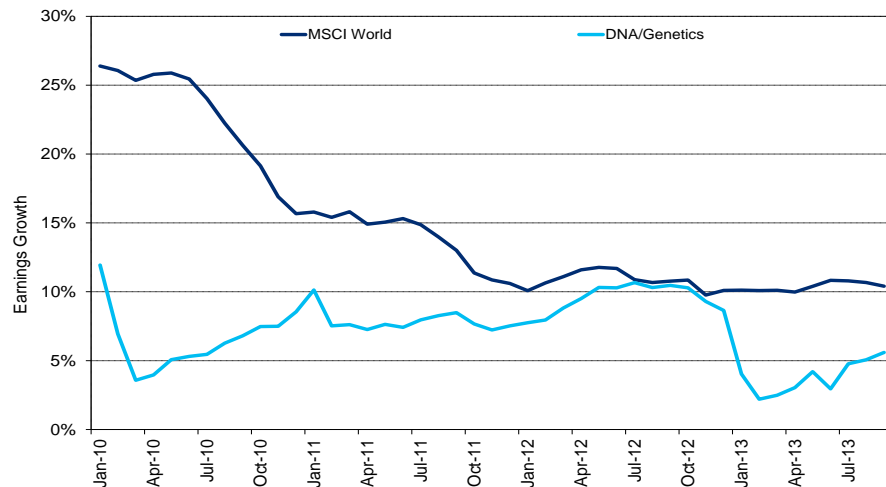
DNA/Genetics

Figure 69. Performance of Thematic Basket



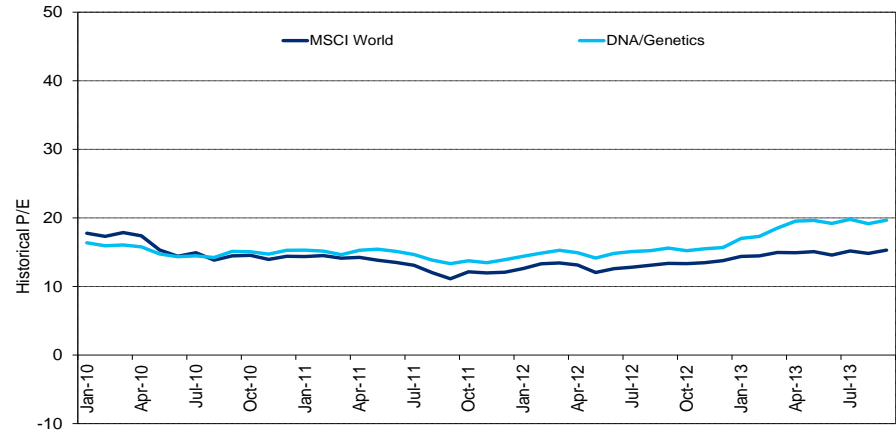
Source: Citi Research

Figure 71. 12 Month Forward Rolling Earnings Growth



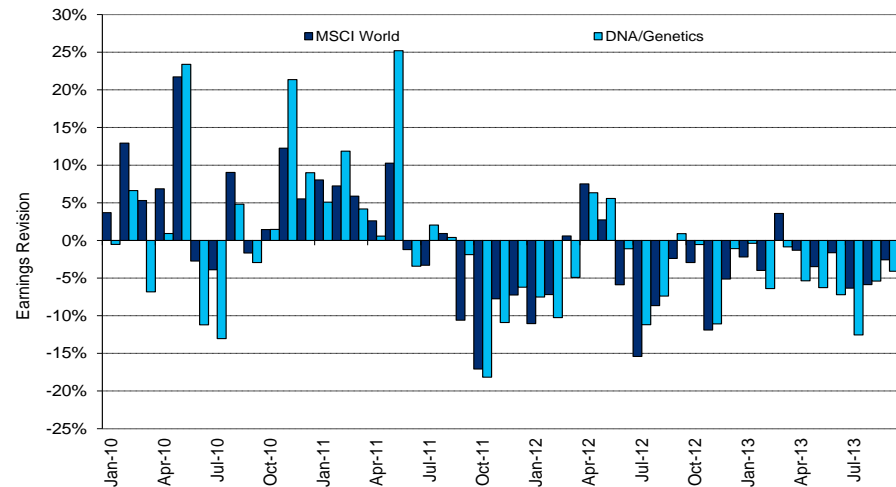
Source: Citi Research

Figure 70. Historical P/E



Source: Citi Research

Figure 72. Earnings Revision



Source: Citi Research

Healthcare IT

This Theme is driven by the growth in Healthcare IT spending, aimed at improving the quality, safety and efficiency of healthcare spending. Payers improving ability to access real world outcomes through Electronic Health Records should lead to an increased rationalisation of healthcare spending. Companies positively exposed to the growth in Healthcare IT should benefit from this theme.

Theme Rank and Comparison

Figure 73. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Healthcare IT	1 (17)	63 (59)	9 (63)	3 (21)	3 (14)	5 (1)	2 (41)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 74. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Healthcare IT	18.4	16.5	2.3	2.0%	11.9%	12.6%	45.3%	5.0%	0.86
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 75. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

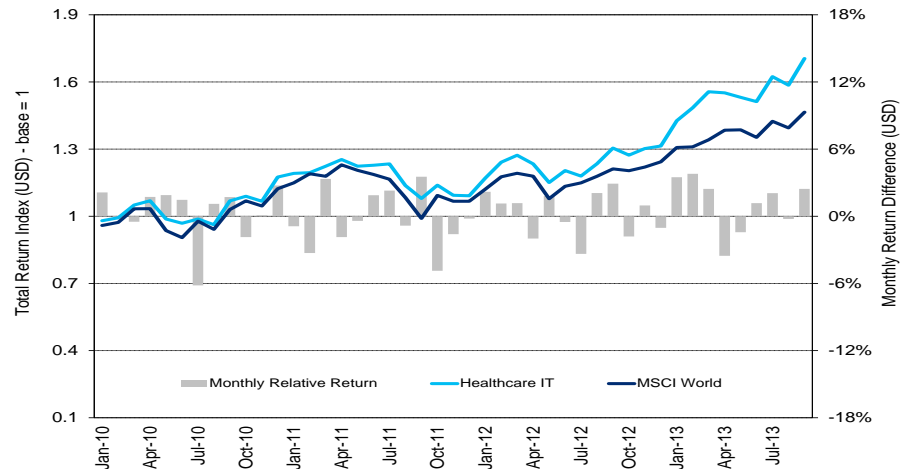
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
B3Q1YB	BR PHARMA ON NM	BRAZIL	Health Care	898	Buy	7.80	18.00	126.54%	Julio R. Zamora +1-212-816-6039
252209	LOCKHEED MARTIN	UNITED STATES	Industrials	40,935	Buy	127.55	149.00	25.47%	Jason Gursky +1-415-951-1672
238049	GENERAL ELECTRIC	UNITED STATES	Industrials	243,291	Buy	23.89	29.00	23.57%	Deane M. Dray, CFA +1-212-816-4030
B17MSX	SIRONA DENTAL SYSTEMS	UNITED STATES	Health Care	3,683	Buy	66.93	83.00	22.13%	Jonathan Beake +44-20-7986-5441
678209	MEDIPAL HOLDINGS	JAPAN	Health Care	3,018	Neutral	1,211.00	1,400.00	21.75%	Hidemaru Yamaguchi +81-3-6270-4742
236516	GENERAL DYNAMICS	UNITED STATES	Industrials	30,620	Buy	87.52	101.00	20.14%	Jason Gursky +1-415-951-1672
B4BNMY	ACCENTURE CLASS A	UNITED STATES	Information Technology	51,110	Buy	73.64	86.00	20.13%	Ashwin Shirvaikar, CFA +1-212-816-0822
225087	DANAHER	UNITED STATES	Industrials	48,217	Buy	69.32	80.00	17.81%	Deane M. Dray, CFA +1-212-816-4030
620512	INFOSYS	INDIA	Information Technology	27,500	Buy	3,013.00	3,500.00	17.48%	Surendra Goyal, CFA +91-22-6175-9870
635652	FUJIFILM HDG.	JAPAN	Information Technology	12,346	Buy	2,354.00	2,600.00	16.50%	Masahiro Shibano +81-3-6270-4784

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

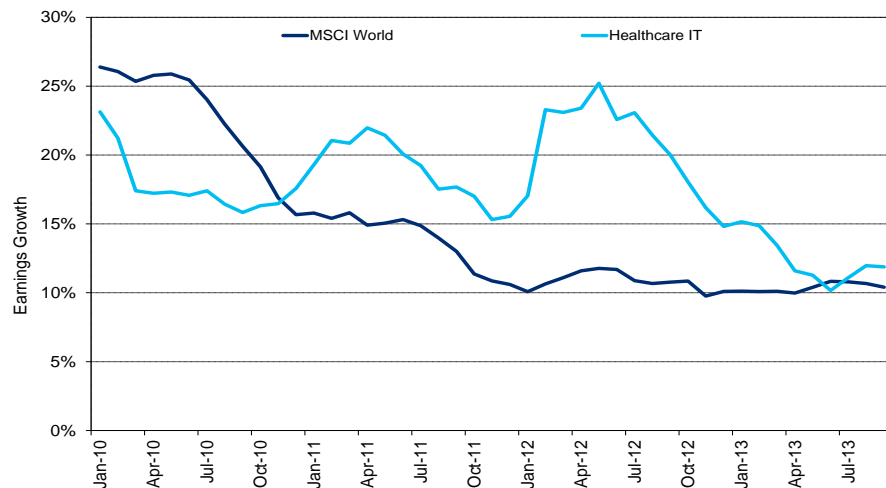
Healthcare IT

Figure 76. Performance of Thematic Basket



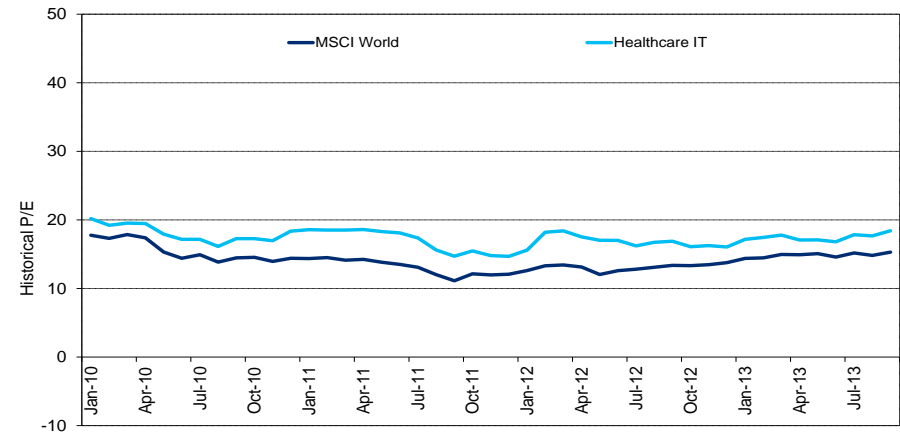
Source: Citi Research

Figure 78. 12 Month Forward Rolling Earnings Growth



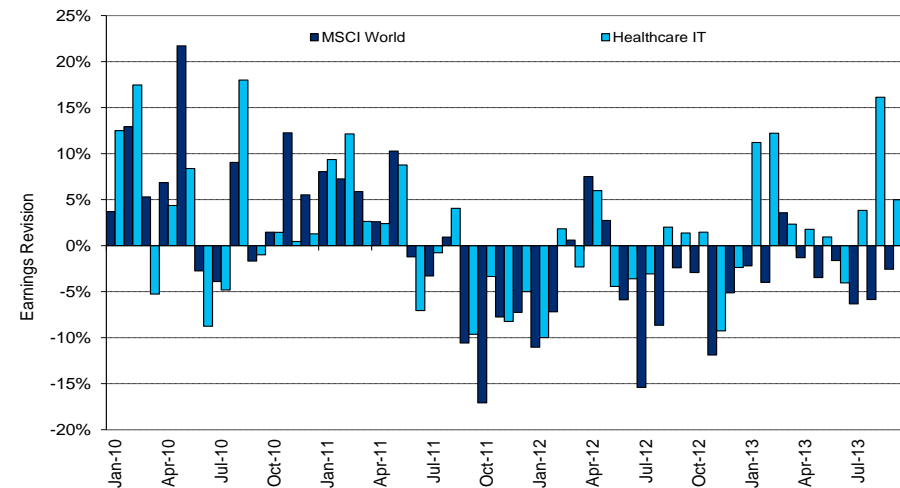
Source: Citi Research

Figure 77. Historical P/E



Source: Citi Research

Figure 79. Earnings Revision



Source: Citi Research

Medical Tourism

This Theme is driven by the opportunity offered from lower cost healthcare locations. The continued rise in developed market healthcare costs versus the continued advancement in care and service in other regions has led to some patients travelling abroad for treatment. This theme seeks to highlight companies positively exposed to Medical Tourism trends.

Theme Rank and Comparison

Figure 80. Composite Style Exposure Rankings

	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Medical Tourism	2 (16)	67 (69)	3 (68)	19 (13)	4 (8)	2 (7)	6 (36)
MSCI WORLD	8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)

Source: Citi Research

Figure 81. Current Financial Metrics

	PE	Fwd PE	P/Book	Dividend Yield	EPS Growth	Return on Equity	Price Momentum	Earnings Momentum	Beta
Medical Tourism	18.0	16.6	2.5	1.9%	8.5%	13.7%	44.2%	-4.3%	0.64
MSCI WORLD	15.3	13.8	2.0	2.5%	10.4%	14.5%	50.4%	-2.6%	1.00

Source: Citi Research, Thomson IBES, Worldscope, Datastream

Current Stock Constituent Sample

Figure 82. Examples of Portfolio Constituents (a full list of theme portfolio constituents can be found on Citi Velocity)

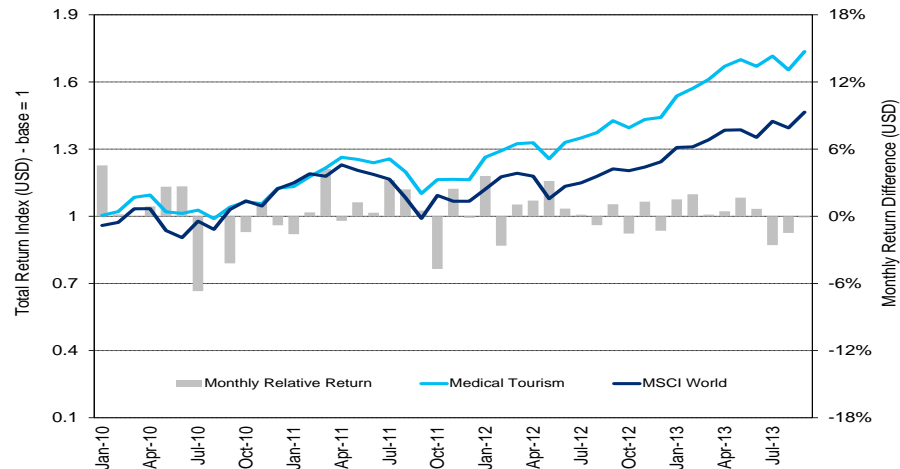
SEDOL	Stock Name	Country	Sector	Market Capitalisation	Citi Investment Rating	Current Price (30 Sep 2013)	12-Month Price Target	ETR	Analyst
B3Q1YB	BR PHARMA ON NM	BRAZIL	Health Care	898	Buy	7.80	18.00	126.54%	Julio R. Zamora +1-212-816-6039
B0T4N7	CYNOSURE 'A'	UNITED STATES	Health Care	509	Buy	22.81	41.00	82.47%	Matthew J Dodds +1-212-816-6928
643904	HOGY MEDICAL	JAPAN	Health Care	906	Buy	5,440.00	6,800.00	35.24%	Hidemaru Yamaguchi +81-3-6270-4742
B68SQD	COVIDIEN	UNITED STATES	Health Care	28,032	Buy	60.94	72.00	20.44%	Matthew J Dodds +1-212-816-6928
247583	JOHNSON & JOHNSON	UNITED STATES	Health Care	244,299	Buy	86.69	101.00	19.29%	Matthew J Dodds +1-212-816-6928
257546	MEDTRONIC	UNITED STATES	Health Care	53,115	Buy	53.25	62.00	18.72%	Matthew J Dodds +1-212-816-6928
688507	TERUMO	JAPAN	Health Care	9,733	Neutral	5,030.00	5,500.00	15.79%	Hidemaru Yamaguchi +81-3-6270-4742
688380	SYSMEX	JAPAN	Health Care	6,609	Neutral	6,260.00	7,000.00	10.98%	Hidemaru Yamaguchi +81-3-6270-4742
207790	C R BARD	UNITED STATES	Health Care	9,118	Neutral	115.20	123.00	7.61%	Matthew J Dodds +1-212-816-6928
627358	APOLLO HOSPS.ENTERPRISE	INDIA	Health Care	2,066	Buy	929.65	960.00	6.50%	Prashant Nair, CFA +91-22-6175-9855

Note: Market Capitalisation is in USD, while prices are in local currency.

Source: Citi Research

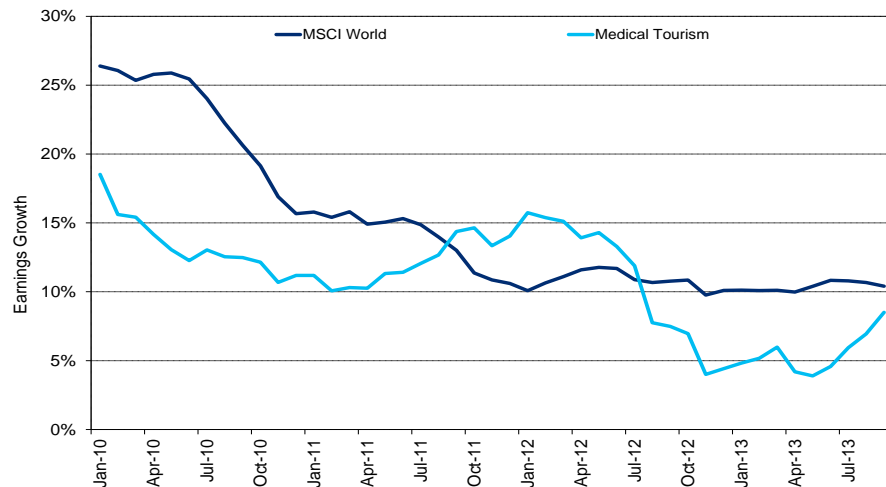
Medical Tourism

Figure 83. Performance of Thematic Basket



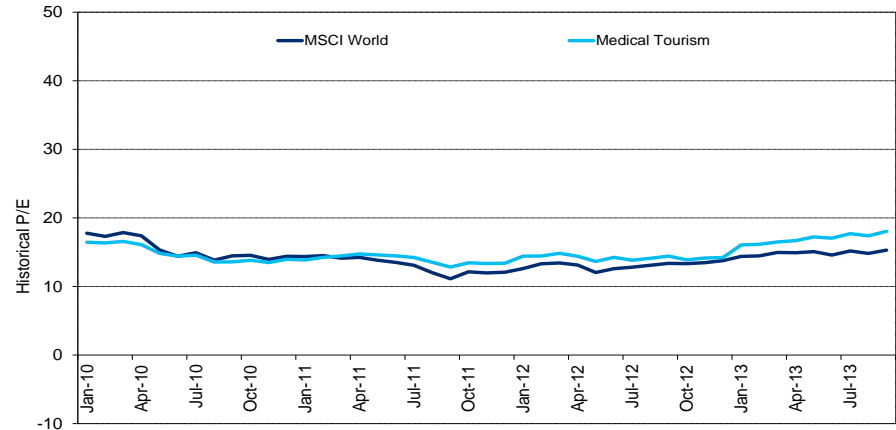
Source: Citi Research

Figure 85. 12 Month Forward Rolling Earnings Growth



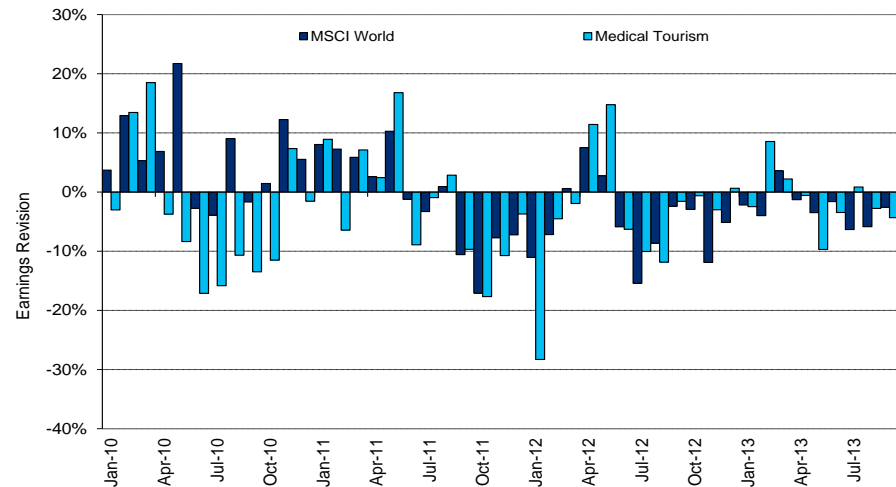
Source: Citi Research

Figure 84. Historical P/E



Source: Citi Research

Figure 86. Earnings Revision



Source: Citi Research

Appendix – All Theme Rankings

Figure 87. Overall Theme Ranking, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
MSCI World		8 (9)	26 (25)	38 (64)	20 (23)	14 (6)	17 (28)	35 (26)
Healthcare IT	Healthcare	1 (17)	63 (59)	9 (63)	3 (21)	3 (14)	5 (1)	2 (41)
Medical Tourism	Healthcare	2 (16)	67 (69)	3 (68)	19 (13)	4 (8)	2 (7)	6 (36)
Value Healthcare Spend	Healthcare	3 (3)	61 (68)	18 (56)	7 (3)	13 (13)	3 (21)	15 (11)
DNA/Genetics	Healthcare	4 (51)	56 (65)	14 (74)	21 (37)	2 (23)	1 (7)	24 (62)
Medical Tech	Healthcare	5 (7)	72 (71)	5 (40)	10 (16)	5 (25)	23 (14)	7 (10)
Obesity	Healthcare	6 (22)	64 (73)	6 (65)	24 (11)	12 (32)	4 (34)	20 (7)
Software as Service	Information Technology	7 (32)	33 (59)	7 (45)	39 (50)	41 (22)	12 (9)	8 (29)
Services Offshoring	Trade/Globalisation/Construction	9 (24)	71 (33)	12 (50)	18 (56)	18 (27)	32 (2)	1 (23)
Unlocking Healthcare R&D	Healthcare	10 (53)	77 (77)	2 (39)	22 (18)	37 (69)	6 (20)	14 (37)
Generics	Healthcare	11 (34)	47 (55)	36 (68)	34 (12)	22 (11)	10 (15)	10 (65)
US Onshoring	Trade/Globalisation/Construction	12 (47)	62 (66)	39 (24)	8 (38)	9 (38)	41 (45)	5 (44)
DM Aging Demographics Spend	Consumption	13 (14)	48 (42)	26 (55)	36 (8)	23 (15)	15 (21)	18 (46)
World Champs	Miscellaneous	14 (33)	74 (72)	1 (66)	17 (24)	8 (1)	7 (37)	60 (40)
Patents/IP	Information Technology	15 (42)	66 (75)	4 (6)	31 (48)	36 (65)	22 (30)	9 (4)
Biotech	Healthcare	16 (55)	75 (76)	20 (73)	16 (17)	21 (56)	18 (32)	25 (39)
Top Brands	Consumption	17 (11)	45 (57)	10 (31)	30 (1)	15 (12)	24 (41)	52 (43)
Aging Demographic Healthcare Spend	Healthcare	17 (23)	69 (74)	21 (56)	33 (6)	26 (35)	8 (13)	19 (27)
Immunotherapy	Healthcare	19 (56)	68 (67)	11 (76)	38 (66)	7 (2)	16 (64)	37 (22)
Online Security	Information Technology	20 (4)	23 (35)	8 (18)	65 (41)	34 (19)	20 (5)	28 (20)
3D Printing	Industrial Trends	21 (10)	73 (61)	17 (43)	4 (7)	1 (10)	45 (68)	39 (1)
Cloud Computing	Information Technology	21 (19)	20 (33)	34 (9)	52 (52)	33 (44)	27 (11)	13 (13)
Private Label	Consumption	23 (40)	29 (58)	43 (71)	25 (4)	10 (5)	11 (40)	64 (73)
Value-oriented Spend	Consumption	24 (28)	27 (27)	37 (60)	45 (5)	19 (21)	19 (42)	40 (60)
Health/Fitness Spend	Consumption	25 (20)	53 (44)	35 (53)	32 (2)	30 (34)	9 (9)	32 (48)
Defence	Industrial Trends	25 (37)	58 (30)	50 (52)	6 (28)	6 (28)	55 (57)	16 (25)
Frontiers	Trade/Globalisation/Construction	27 (43)	41 (56)	15 (20)	41 (33)	24 (37)	25 (51)	46 (35)
Online/OnDemand Media	Information Technology	28 (1)	10 (29)	30 (14)	51 (19)	42 (41)	33 (7)	27 (15)
Clean Water	Resources/Commodities	29 (46)	35 (50)	44 (34)	13 (29)	20 (36)	21 (49)	62 (52)
Electric Automotive Technology	Industrial Trends	30 (30)	65 (37)	13 (1)	5 (45)	40 (55)	70 (59)	3 (2)
Mobile Network Transition (e.g. LTE)	Information Technology	31 (5)	9 (13)	41 (13)	48 (36)	43 (31)	35 (34)	29 (14)
E-Commerce	Information Technology	31 (36)	21 (6)	28 (48)	43 (22)	28 (60)	26 (11)	59 (61)
Factory Automation	Industrial Trends	33 (35)	59 (38)	31 (25)	1 (34)	11 (48)	62 (49)	43 (8)
EM Food Spend	Consumption	34 (44)	46 (63)	22 (74)	55 (15)	17 (9)	14 (30)	69 (66)
Data Storage (Big Data 1)	Information Technology	35 (8)	31 (10)	33 (11)	57 (51)	39 (33)	47 (37)	17 (5)
Pension Shortfalls	Miscellaneous	36 (2)	36 (12)	72 (18)	2 (10)	35 (4)	77 (76)	4 (12)

Source: Citi Research

Figure 88. Overall Theme Ranking, shaded column, previous ranking in parenthesis

Portfolio	Theme	Overall	Valuation	Growth	Price Momentum	Quality	Low Risk	Earnings Momentum
Hydro Energy	Energy	37 (73)	1 (4)	77 (50)	73 (72)	57 (61)	13 (69)	12 (71)
Small-item Luxury Spend	Consumption	38 (21)	50 (43)	27 (15)	49 (20)	25 (16)	31 (30)	53 (57)
Social Media	Information Technology	38 (27)	14 (52)	32 (9)	72 (26)	38 (45)	38 (3)	41 (53)
EM in DM	Miscellaneous	40 (45)	32 (27)	16 (58)	26 (25)	48 (7)	39 (71)	75 (58)
Smart Mobile Devices Demand	Information Technology	41 (12)	17 (32)	45 (4)	53 (35)	44 (51)	43 (16)	38 (24)
EM Consumer	Consumption	41 (25)	34 (24)	25 (27)	54 (39)	29 (17)	30 (17)	68 (55)
EM Internet Usage	Information Technology	43 (29)	7 (19)	42 (32)	62 (47)	46 (24)	28 (24)	57 (45)
Manufacturing Offshoring	Industrial Trends	43 (31)	42 (23)	49 (22)	12 (32)	27 (40)	61 (44)	51 (33)
Internet-driven business models (inc. Online Travel)	Information Technology	45 (13)	52 (62)	19 (21)	37 (9)	49 (49)	36 (4)	50 (30)
Auto Fuel Efficiency	Industrial Trends	46 (38)	57 (25)	23 (8)	14 (55)	68 (42)	63 (56)	21 (16)
Battery Technology	Industrial Trends	47 (41)	55 (49)	46 (4)	9 (42)	73 (66)	40 (46)	26 (18)
Video Games	Information Technology	48 (6)	37 (46)	29 (3)	66 (27)	56 (54)	51 (18)	11 (6)
Alternative Energy	Energy	49 (75)	16 (51)	63 (43)	15 (53)	51 (74)	56 (61)	55 (54)
Biofuels	Energy	50 (54)	40 (48)	47 (34)	28 (31)	32 (58)	49 (58)	67 (34)
Asset Mgmt Share Shift	Trade/Globalisation/Construction	51 (18)	15 (11)	54 (61)	47 (14)	31 (18)	60 (77)	58 (3)
TiO2	Resources/Commodities	52 (58)	24 (20)	58 (72)	29 (64)	16 (3)	71 (54)	71 (74)
Solar Energy	Energy	53 (63)	54 (64)	60 (2)	11 (61)	45 (77)	67 (64)	36 (32)
Hi-end Luxury Spend	Consumption	54 (39)	44 (17)	24 (17)	59 (57)	54 (29)	52 (39)	42 (47)
Natural Gas	Energy	55 (59)	30 (18)	68 (59)	61 (60)	61 (53)	34 (52)	22 (42)
Wind Energy	Energy	56 (70)	2 (13)	75 (26)	63 (59)	52 (68)	29 (71)	56 (64)
Pollution	Climate Change	57 (76)	51 (54)	56 (40)	23 (63)	69 (75)	50 (74)	30 (38)
Energy Efficiency	Climate Change	58 (48)	28 (9)	48 (37)	35 (54)	53 (30)	54 (53)	66 (56)
US Construction	Trade/Globalisation/Construction	59 (60)	43 (40)	52 (12)	27 (49)	47 (52)	72 (73)	44 (50)
Regulatory Change in Financials	Trade/Globalisation/Construction	60 (26)	11 (20)	74 (15)	42 (30)	65 (67)	76 (25)	23 (19)
P&C pricing	Trade/Globalisation/Construction	61 (15)	3 (3)	76 (29)	60 (46)	63 (26)	48 (47)	49 (21)
Climate Change	Climate Change	62 (65)	8 (47)	55 (7)	58 (43)	72 (73)	46 (67)	61 (59)
Inflation hedges	Miscellaneous	63 (62)	6 (30)	70 (22)	74 (68)	67 (57)	53 (43)	31 (63)
Deepwater	Energy	63 (64)	25 (8)	51 (70)	67 (65)	60 (20)	65 (69)	33 (69)
Fuel Cells	Energy	65 (57)	38 (40)	62 (30)	40 (74)	77 (72)	44 (23)	47 (28)
Shale	Energy	66 (52)	60 (38)	65 (37)	44 (40)	70 (47)	37 (64)	34 (31)
Energy Demand	Energy	67 (68)	22 (22)	67 (48)	70 (67)	64 (63)	42 (49)	48 (51)
Infrastructure	Trade/Globalisation/Construction	68 (69)	13 (16)	71 (61)	64 (70)	62 (59)	59 (32)	45 (68)
Urbanisation	Trade/Globalisation/Construction	69 (66)	19 (36)	57 (27)	68 (69)	55 (62)	66 (26)	54 (70)
Global Trade	Trade/Globalisation/Construction	70 (61)	49 (44)	66 (46)	50 (62)	50 (71)	57 (18)	63 (49)
Mining Capex	Resources/Commodities	71 (74)	4 (2)	73 (77)	69 (73)	58 (50)	69 (54)	74 (76)
Agricultural Tech	Resources/Commodities	72 (67)	12 (7)	64 (46)	76 (75)	66 (64)	64 (37)	76 (75)
Agriculture Demand	Resources/Commodities	73 (48)	18 (5)	69 (53)	71 (58)	71 (39)	58 (27)	73 (67)
Precious Metals	Resources/Commodities	74 (70)	5 (1)	61 (68)	77 (77)	75 (46)	68 (60)	77 (77)
Clean Tech	Climate Change	75 (72)	76 (70)	40 (34)	46 (71)	76 (76)	75 (66)	65 (17)
Timber	Resources/Commodities	76 (50)	70 (52)	59 (37)	56 (44)	59 (43)	73 (75)	70 (9)
Resource Scarcity	Resources/Commodities	76 (77)	39 (15)	53 (42)	75 (76)	74 (70)	74 (61)	72 (72)

Source: Citi Research

Additional Stocks discussed: BioMarin Pharmaceutical (BMRN.O; US\$66.69; 1); Tesaro (TSRO.O; US\$37.05; 1H); Eli Lilly (LLY.N; US\$48.73; 1); Bayer AG (BAYGn.DE; €86.95; 1); Pfizer (PFE.N; US\$28.71; 1)

Global Quantitative Teams

Figure 89. Citi Quantitative Teams *For Informational Purposes Only*

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Appendix A-1

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A member of the household of Alex Smith, Analyst, holds a long position in the securities of QRxPharma Limited.
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