

Consumer Staples – Our Take on Valuation

We don't think the sector is expensive, even after its strong run in the last 12 months

- **We're comfortable with current valuations** — Although the current P/Es, typically 17-20x CY2014E EPS, are still high relative to history, even after the recent declines, we think they are reasonable-to-under-valued, both fundamentally and relative to other assets.
- **Valuation is a key question for staples** — Consumer stocks' earnings are highly predictable compared with other sectors, so the question is just as much about what P/E they should be on as about their precise earnings. Between June 2012 and April the sector rose about 25%, but since April it has fallen a little, hit by a declining market, sector rotation, softening in EM demand, and currency issues. Nonetheless valuation remains one of the main questions in calling their next move in our view.
- **Relative valuation looks fair vs other equities and very good value vs bonds with similar risk profiles** — Staples' equities have never looked cheaper relative to their own corporate bonds. We don't think they're stretched relative to other equities.
- **We provide a new twist on DCF valuations** — We do reverse DCFs, but we reverse out the cost of capital implied in current valuations. To mitigate the complaint on DCFs of excessive complexity, we also make the simplifying assumption that our companies are already mature.
- **On this approach the sector looks under valued** — The market is currently discounting WACCs (for most of the staples companies) of between 9-10½%. In other words, current prices are fair if investors are happy with returns to all sources of capital, over an indefinite period, of 9-10½%. As that is well over the typical WACC hurdle of 8%, we conclude the stocks are under valued on this measure.
- **In fact P/Es would need to reach at least 25x before they looked expensive on this approach** — That's not to say we are predicting a bull run, as we expect the sector to continue being driven by macro factors and rotation. But it is saying that valuation alone isn't a good reason to sell in our view. We think the sector would have to rise another 30% before that was the case.
- **Broadly supports our Buy-rated names, especially Reckitt and Danone** — This report considers whether valuation is acceptable for the sector as a whole; our approach is not designed for fine judgment calls between stocks and therefore we don't put much weight on the differences it throws up. Still we were pleased to see that our process suggests there is particular value in most of our existing Buys. The stocks that look most expensive? Heineken and CCH. However if Heineken can improve its growth and CCH its margins, even these names don't look expensive in an absolute sense.

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

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Contents

Valuation Relative to Other Assets	12
Fundamental Values	19
Company by Company Calculations	34

Figure 1. European Consumer Staples — Recommendation Summary

	Current Price	Rating	Target Price	Share Performance	
				Last 12 months	1 April 2013
BAT	3,492	Buy	4,000	11%	-1%
Imperial Tobacco	2,345	Neutral	2,500	-2%	2%
ABI	70.3	Buy	83.0	25%	-9%
SAB	3,240	Buy	4,000	33%	-6%
Heineken	51.7	Neutral	59.0	36%	-12%
Carlsberg	522	Neutral	640	20%	-9%
Pernod Ricard	88.6	Neutral	96.0	11%	-9%
Coca Cola Hellenic	1,588	Neutral	1,900	51%	-3%
Nestlé	62.3	Buy	74.0	11%	-10%
Unilever NV	30.3	Neutral	33.5	18%	-5%
Danone	56.9	Buy	67.0	9%	5%
L'Oréal	124.9	Neutral	127.0	35%	1%
Reckitt Benckiser	4,589	Buy	5,450	33%	-3%
Henkel	73.9	Neutral	74.0	43%	-2%
Beiersdorf	66.9	Buy	82.0	27%	-7%

Source: dataCentral. Note: Share prices correct on 14 Jun 2013

Investment Summary

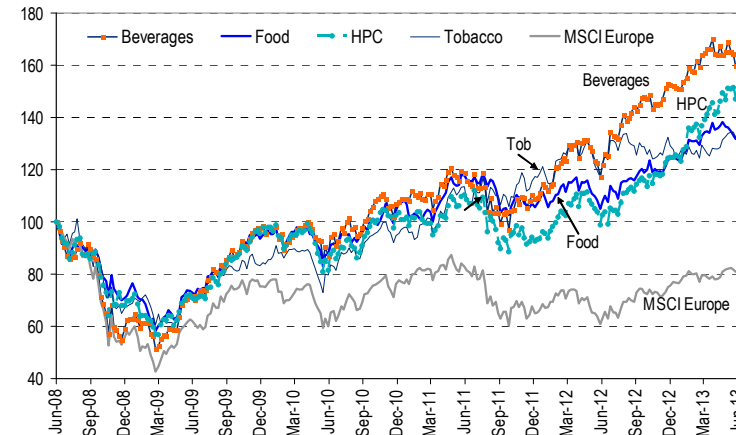
- **Consumer stocks look more expensive than they have been since 2002 when measured on P/Es** – Between October 2009 and the beginning of 2012, the MSCI European Food, Bevs & Tobacco index traded at between 14x and 15x 12-month forward P/E. It now trades at 17x, even following the pullback since April
 - **This is worrying many investors** – The increase in P/Es appears strange given that global GDP trends aren't particularly encouraging at the moment. Many of our companies had disappointing 1Q results, and there has been a sell-off since the beginning of April. For us one of the central question in staples at the moment is: Are valuations too high? Should we be sufficiently worried about the P/Es to underweight the sector?
- **We're comfortable with the valuations.** Although P/Es are stretched relative to recent history, valuations relative to the other measures look acceptable in our view.
 - This means that we believe that most consumer staples' shares can increase over time in line with earnings. As the typical consumer company is growing EPS at about 10% — and more in the case of beverages — this means we think share prices can grow at around 10% over time, with dividends on top.
 - That said we think it is quite possible the current downdraft will continue for a while, possibly another month or two. Since 2008, the market has been driven by macro factors more than anything else, and now sector leadership appears to be broadening away from consumer defensives. This may or may not continue, but the key point of this report is that we don't think the current P/Es should be used as a reason to sell the staples sector.
 - Our strategists remain bullish on the market as a whole, and continue to advise overweighting staples.
- **This report addresses valuations in two ways** – (1) We look at fundamental valuations, in what we hope is a novel and useful way and (2) we compare consumer staples equities to other assets (both equities and bonds).
 - **Fundamental valuations look attractive** – We have performed reverse DCFs where we have backed out the WACCs and Costs of Equity (K_e)¹. On conservative growth assumptions, these give WACCs of 9-10½% and K_e s of 11 - 13%. In other words the current share prices are justified if investors are willing to see returns across all sources capital of 9-10½% indefinitely and returns to equity holders of 11 - 13% indefinitely. That seems quite attractive to us as they are well above the rates of return that investors usually demand (typically about 8% for the WACC and about 9% for the returns to equity holders.)
 - **Relative to other assets** – Compared to other equity sectors, the increase in P/Es for consumer staples during the last 12 months look normal. Relative to bonds with similar risks (ie food/bev/tobacco corporate bonds), the equities look exceptionally under valued.
- **Reckitt and Danone look most attractive on our valuation methodology, while Heineken and CCH look least attractive** – Henkel, Pernod, ABI and BAT also come out well. (However we note there is no rule that says companies have to trade in line with their fundamental value.)

¹ It is important to remember WACCs and Cost of Equity are not costs in the usual meaning of the term. Rather they are required rates of return. The Capital Asset Pricing Model (CAP-M) provides a theoretical method of measuring (indirectly) their historic averages, but the required rates of return are not objective inputs.

Why the valuation debate matters

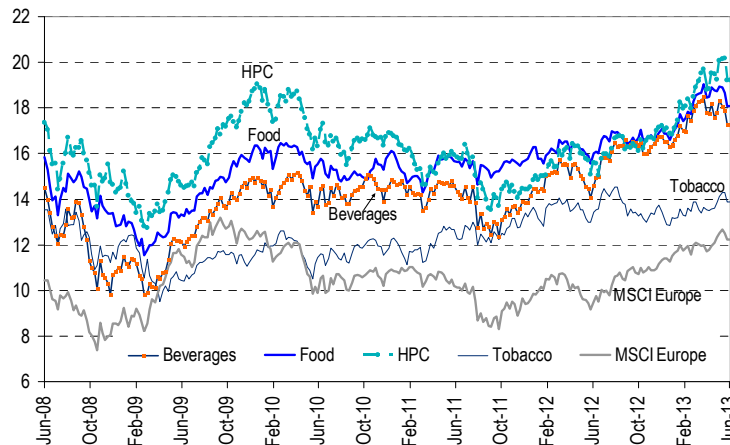
- **Consumer staples companies' earnings are very predictable, but their share prices are less so** – Calling the right “P/E” matters at least as much as predicting the “E”.
- **Consumer staples sectors have outperformed notably since Oct 11** – Since then, the MSCI Developed Europe Food, Beverage and Tobacco (FBT) index is up 32% while the market is up 24%.
- **Recent pullback is relatively modest** – Since 1 April, the US\$ FBT index has fallen 1%, although bevs (in \$) have fallen 4%. This has been driven by a combination of sector rotation and weakness in EMs in 1Q13. We continue to believe that having a view on valuations is key to determining which way to play the sector in the current context.
- **The central concern is P/Es** – Currently around 17-19x for 12 months forward. Since April 2012, many P/Es in food, bevs and HPC have been tightly clustered.

Figure 2. Sector Performance – Last Five Years (MSCI Developed Europe)



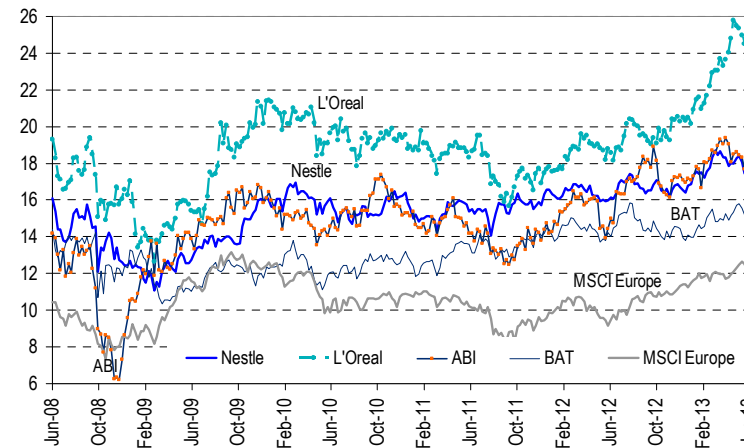
Source: DataStream

Figure 3. Sector P/Es – Last Five Years (MSCI Developed Europe)



Source: DataStream

Figure 4. Company P/Es – Last Five Years

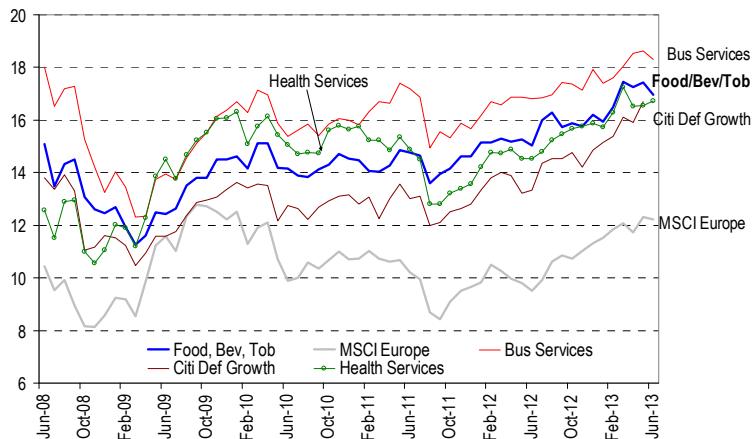


Source: DataStream

Relative valuations: Not expensive relative to other equities; under-valued relative to bonds

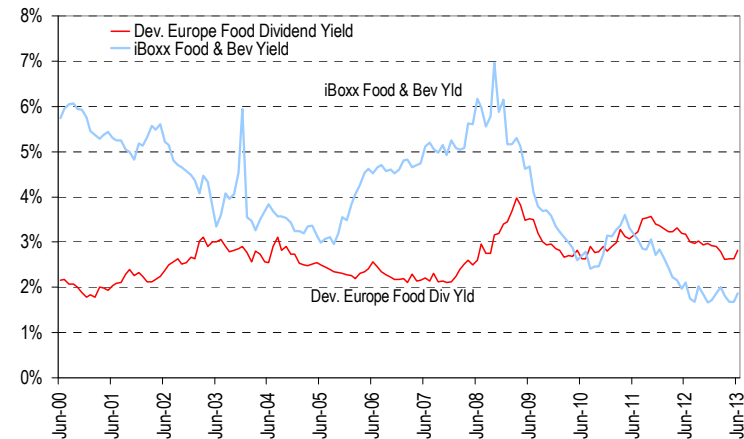
- **Relative to other equity sectors, the expansion of consumer P/Es since July last year has not been unusual** — Figure 5 shows the P/E expansion of the MSCI food/bev/tobacco index has been no more dramatic than the expansion seen in other “defensive growth” sectors, and in the market as a whole.
 - Equally the decline since the peak in April has been similar to that seen in sectors like Business Services
- **Relative to bonds with similar risk profiles, consumer staples stocks are more under-valued than they have been for many decades**
 - **Dividend yields vs Bond Yields:** Figure 6 shows that the dividend yield on the food sector is now actually higher than the yield on food and bev bonds, even though we expect the dividend stream to grow by about 10% annually, whereas the bond income is fixed
 - **P/Es vs Bonds Yields:** Figure 18 (page 15) effectively compares the food sector P/E with the bond yield, and again on this measure the sector is cheaper than it's been for decades
 - Both points hold true for the other consumer sectors, as we show on pages 15-18

Figure 5. Food-Bev-Tobacco P/Es vs Other Categories (Developed Europe)



Source: Citi Research

Figure 6. Food Sector Dividend Yield vs iBoxx Food/Bev Bond Yield (Developed Europe)



Source: DataStream

Fundamental valuations: Approached with a new twist

1. **We perform highly simplified DCFs, backing out the implied WACCs and Costs of Equity (Ke)** – This is unusual because all the other reverse DCFs we have seen aim to reverse out the implied growth rates. We think it is much more interesting (and useful) to back out the WACCs, because in fact we can make good forecasts for the growth rates, but there is little objective agreement for the WACCs and Ke's.
 - **DCF's are equations that link 4 elements:** (1) cash flows, (2) growth rates, (3) a required rate of return, and (4) valuation. If you provide estimates for 3 of these elements you can calculate the implied value for the fourth.
 - **For consumer staples companies we have a good idea of 3 of these elements** – We can estimate the cash flows quite accurately, and have a reasonably good idea of their growth. We also know the current market value.
 - **The cost of capital is the aspect investors know least about**, because
 1. **Costs of Capital are not an objective measures** – They are required rates of return. They are not costs in the ordinary sense of the word
 2. **There is no way to measure them directly** – To select the WACC, investors typically use calculations based on the capital asset pricing model (CAP-M). The trouble is that CAP-M is a only theoretical model for analyzing historic costs of equity/ required rates of return, and it has several flaws when applied in practice.
 - **The current debate arises because share prices have risen in the past 12 months, but the outlook for the companies hasn't got any better.** The only elements of the equation that have changed materially are the valuation and the implied cost of capital. Our approach means we don't have to make a set of new assumptions about growth rates, or test what the market is saying about growth rates.
2. **Our reverse DCFs make one (big) assumption: all our companies are mature**, in other words we can use the formula

$$EV = \frac{FCF}{WACC - g}$$
 starting from 2013. We think this is a useful assumption too, although it requires a number of caveats.
 - **It simplifies the DCFs**, and gets away from the multi-stage growth models many analysts use that make many (often hidden) assumptions.
 - **In business terms the companies are as mature as they are likely to get**, as their brands are decades old already and while are all innovating and evolving, this process will continue indefinitely
 - **However, they are not mature (and never will be) in a financial sense**, because there is on-going change in their financial ratios – ie in their margins, return on capital and asset utilization.
 - **For g we use a range of rates that are typically slightly lower than the companies' current organic sales growth rates.** In the near-term, all the companies are growing FCFs at rates well above their organic sales growth as they are growing margins, and even if the sales growth slows in the long-term, this early excess growth broadly offsets that slowdown
 - **We discuss 3 contentious issues further on pages 9-10** – (1) the appropriate "mature" growth rates, (2) how we estimate the ROIC_{inc}s and (3) the relationship between the WACCs and Ke's

Fundamental valuation: We find the implied required rates of return are attractive

■ At current prices, the implied WACCs are typically about 9-10½% and the implied Kes are typically 11-13%

- Figure 7 shows what we regard as reasonable ranges for the various companies based on the current share prices.
- At the recent peaks in April and May, these figures were little different

■ We think these “implied required rates of return” are attractive – They mean current prices are justified if investors are willing to receive:

- Returns across all sources capital of 9-10½% indefinitely; by contrast most investors usually expect WACCs of about 8%.
- Returns to equity investors in the low double digits indefinitely; by contrast most investors target about 9% (≈5% typical cost of debt + 4% equity risk premium)
- While it is certainly possible to argue that the precise numbers are wrong, there is sufficient margin of error for us to be satisfied that the broad conclusion – that the implied WACCs are attractive – is correct

■ We think P/E multiples could rise to 25x before they would be expensive on this analysis — To get an implied WACC of 8% (which we would regard as just about acceptable), you would need P/Es of around 25x-30x – and currently they are about 17x

■ The reason these values are high is that (1) we expect the stocks to continue steady growth indefinitely; and (2) they are very cash positive – We can't emphasize enough that without these expectations our analysis would yield completely different results.

Figure 7. Implied WACCs and Ke's at Current Share Prices

	Lastest Share Price	WACC	Cost of Equity	Growth
ABI	70.3	9.5 - 10.5%	11.2 - 12.6%	5.0 - 6.1%
SAB	3,240	9.4 - 10.0%	11.5 - 12.3%	5.8 - 6.7%
Heineken	51.7	7.8 - 8.9%	9.1 - 10.7%	3.5 - 4.8%
Carlsberg	522	8.8 - 9.4%	10.5 - 11.3%	3.5 - 4.0%
Pernod	88.6	10.2 - 10.9%	12.2 - 13.2%	5.5 - 6.0%
CCH	1,588	7.8 - 8.9%	9.0 - 10.6%	5.3 - 6.0%
BAT	3,492	9.7 - 10.5%	11.5 - 12.5%	3.5 - 4.4%
Imperial	2,345	9.3 - 10.2%	11.0 - 12.2%	2.0 - 3.0%
Nestle	62.3	9.7 - 10.3%	12.1 - 12.9%	5.0 - 5.4%
Unilever NV	30.3	9.6 - 10.3%	12.0 - 12.9%	5.0 - 5.6%
Danone	56.9	10.2 - 11.1%	12.5 - 15.5%	5.5 - 6.5%
L'Oreal	124.9	9.0 - 9.6%	10.8 - 11.6%	5.0 - 5.5%
Reckitt	4,589	10.0 - 11.1%	13.0 - 14.4%	4.5 - 5.5%
Beiersdorf	66.9	9.0 - 9.6%	10.7 - 11.6%	5.0 - 5.4%
Henkel	73.9	10.2 - 10.7%	12.4 - 13.1%	5.0 - 5.4%

Note: This is the same data as Figure 9 but presented in a table. Shares as of 14 Jun 2013. Source: Citi Research

Figure 8. Implied WACCs and Ke's at April 1 Share Prices

	April 1 Share Price	WACC	Cost of Equity	Growth
ABI	77.3	10.0 - 10.4%	11.9 - 12.4%	5.0 - 6.1%
SAB	3,464	9.7 - 10.3%	11.9 - 12.7%	5.8 - 6.7%
Heineken	58.8	7.9 - 9.1%	9.3 - 10.8%	3.5 - 4.8%
Carlsberg	566	8.5 - 9.8%	10.2 - 11.9%	3.5 - 4.0%
Pernod	97.2	9.7 - 10.3%	11.5 - 12.4%	5.5 - 6.0%
CCH	1,586	7.8 - 8.7%	9.0 - 10.2%	5.3 - 6.0%
BAT	3,527	9.6 - 10.4%	11.4 - 12.5%	3.5 - 4.4%
Imperial	2,299	9.8 - 9.8%	11.6 - 11.6%	2.0 - 3.0%
Nestle	68.7	9.7 - 10.3%	12.1 - 12.9%	5.0 - 5.4%
Unilever NV	32.0	9.8 - 10.1%	12.3 - 12.6%	5.0 - 5.6%
Danone	54.3	10.9 - 11.2%	15.2 - 15.7%	5.5 - 6.5%
L'Oreal	123.7	9.4 - 9.6%	11.4 - 11.6%	5.0 - 5.5%
Reckitt	4,718	10.4 - 11.1%	13.5 - 14.4%	4.5 - 5.5%
Beiersdorf	72.0	8.9 - 9.4%	10.6 - 11.3%	5.0 - 5.4%
Henkel	75.1	10.1 - 10.6%	13.0 - 12.9%	5.0 - 5.4%

Source: Citi Research

Company conclusions: Reckitt and Danone look especially attractive on our methodology; CCH and Heineken look most expensive

- **There are 2 important caveats before using this report for stock picking:** (1) The methodology is designed to form a view on the sector's valuation; it is not designed to differentiate between the individual names, and (2) stocks don't have to trade in-line with their fundamental value, even supposing there were such a thing.
- **Many of the consumer staples names look similarly attractive** – Perhaps this is not surprising given the market is quite efficient, and they operate in similar industries. However it is also true that a few of the stocks stand out from Figure 9

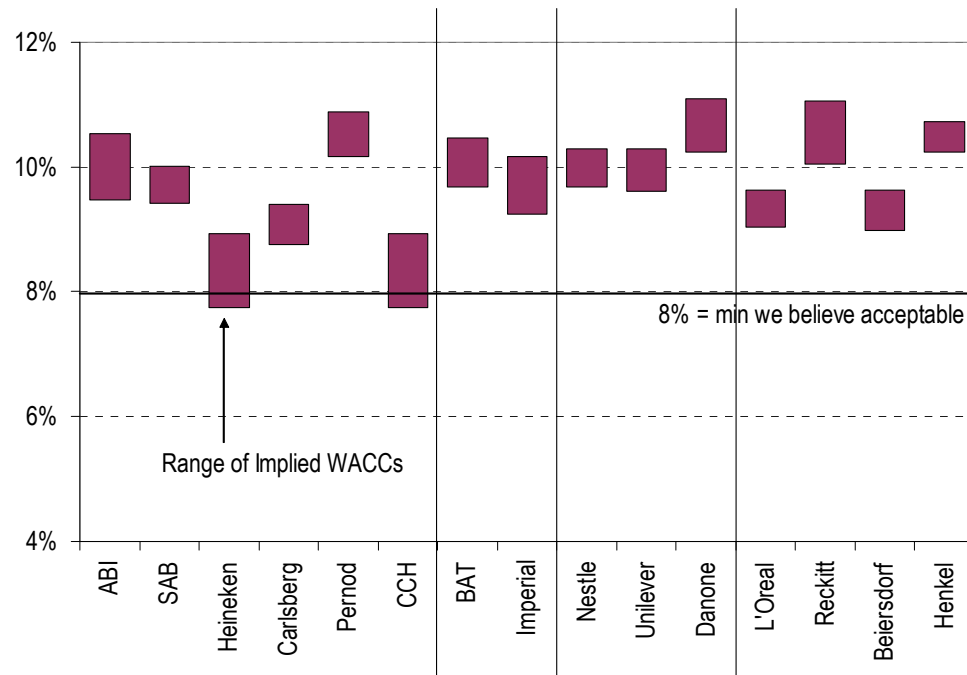
Stocks that look especially good value

- **Danone** (Buy) – Danone does well thanks to the combination of best in class organic sales growth, solid returns on tangible assets (which means we expect decent ROIC_{inc}s in future), and reasonable EV/NOPAT multiple.
- **Reckitt** (Buy) – Reckitt has strong return on tangible assets (over 100% currently), much better than its food/HPC peers, and so we believe its ROIC_{inc} will also be very high. Despite this its organic growth rate is now roughly in-line with its peers; even if this slows, we think the valuation looks good
- **Other stocks that look good value: Henkel** (Neutral), **Pernod** (Neutral) and to a lesser extent, **ABI** (Buy), **BAT** (Buy)

Stocks that look least attractive

- **Heineken** (Neutral) and **CCH** (Neutral) are the only stocks that have a range of implied WACCs that go below 8%. – Both these names have relatively high EV/NOPATs, but relatively low returns on tangible assets (11% for CCH; 23% for Heineken). The bottom end of the respective ranges for WACCs assumes no improvement in either Heineken's growth or CCH's margins. if we assume they do improve, (as we have at the top of the range) then the implied WACCs look much better. However even there they look less attractive than their peers. We note there is a fairly wide range of possible outcomes for both of them.

Figure 9. Implied WACCs for European Consumer Staples Companies



Note: See Figure 7 for data behind this chart. Source: Citi Research

Three potential concerns: (1) Growth, (2) ROICs, and (3) Costs of Equity

1. Growth: The rates we use for perpetual growth, g , are slightly below the current organic sales growth, typically by $\frac{1}{2}$ pp

- **Currently almost all the main European consumer staples companies are producing organic sales growth of about 5-6% —** The main exceptions are Imperial (1-2 $\frac{1}{2}$ %), and Carlsberg and Heineken (both 2- 3 $\frac{1}{2}$ %). In the last 3 years the growth has also been poor at Beiersdorf (3%) and CCH (2%), though we expect both to improve
- **In the medium term, we expect our companies to grow their cash flows faster than organic sales** because they are growing their margins, and to a lesser extent they are reducing working capital
 - This is particularly true of the beverage and tobacco names, as these companies are (and have been) growing their margins much faster than the food/ HPC companies (and this is the core reason why we expect faster EBIT and EPS growth from the beverages names relative to the food/HPC names).
 - For most beverages companies, EBIT is currently growing about two percentage points faster than sales; for food/HPC companies, EBIT it is currently about 1 percentage point faster
 - As a consequence our analysis (in some ways) penalizes the beverages companies
- **In the long-term, it is possible the growth will be lower than the current organic sales growth although we don't think the drop-off will be dramatic –** We think most of the names will be able to achieve in the very long-term nominal growth of about 4-5% (= global real GDP of 3-4% + 2% inflation – 1%). We include the final -1% because staples spending is likely to grow more slowly than some other sectors.
- **In broad terms these two effects cancel each other out —** The DCF value of a firm is the same
 - if the FCF grows at 5.5% consistently (our base case)
 - If the FCF grow at 6.5% for 10 years, but then fades to 5% (??a food company)
 - If the FCF grows at 7.5% for 5 years, but then fades to 5% (??a beverages company)

These periods of accelerated growth seem conservative to us: We think Nestlé (for example) can grow its margins 20bps a year for a decade, taking its margins from ~15% to ~17%. Equally, we think it will be at least 5 years before the margin expansion at (say) Pernod and SAB can continue for at least 5 years, before their FCF grows only at the rate of sales growth.
- **To be conservative, when we do our estimates of the implied WACCs in Figure 7 and Figure 8 they tend to be based on growth rates that are typically about 0.5% percentage points slower than the current organic growth**

Sensitivities around g

- **Even if we flex our assumptions on growth by 1.0 percentage point , this impacts the implied WACC by about 0.9 percentage points**
- **For us to conclude the stocks were expensive,** we would have to assume that the FCF grows (starting from today) at about 1 $\frac{1}{2}$ -2 points below the current sales growth rates. Bearing in mind we believe every company can grow margins for many years to come, this seems too conservative. Another way of putting this is to say that for us to conclude the stocks were expensive, we would have to assume the growth rates from year 20 onwards were about 3-4 points below the current growth rates. This is because, if we assume only the long-term (20-year-plus) growth needs changing, then a 1.0pp change in the long-term growth has about a 0.4pp impact on the implied WACC. As we've said before, the vital assumption is that these companies can grow indefinitely, which we think is right (with the possible exception of tobacco).

Three potential concerns: (1) Growth, (2) ROICs, and (3) Costs of Equity (continued)

2. $ROIC_{inc}$: We believe it is best to view future ROICs as returns on tangible assets, excluding brand values

- Value depends not only on growth, g , but also on the required investment to obtain that growth – which is why valuations often involve ROICs
 - The relevant ROIC measure is incremental return on incremental investment ($ROIC_{inc}$), not return on historic investment ($ROIC_{hist}$) (Appendix 1, page 44)
- It is often assumed that the best estimate for $ROIC_{inc}$ is $ROIC_{hist}$, but we think this is wrong — $ROIC_{hist}$ includes the value of goodwill and (sometimes) other brand values in the invested capital
- We believe the best (or easiest) way of thinking about the likely future $ROIC_{inc}$ is return on tangible assets (RoTA)—This works with the flow of accounting rules, and therefore is much simpler.
 - The (organic) items that are capitalized in company accounts are the investments in tangible PPE (property, plant and equipment) and in working capital, whereas the (organic) investments in brand equities are not capitalized. It is easy to see how much tangible asset value is being capitalised
 - We could recreate the financials to capitalize the brand values, but it would involve numerous assumptions, including removing A&P from the income statement (boosting margins and NOPAT in the process) and then amortizing the brand asset over an arbitrary number of years.
 - Mathematically we would get to the same result for the implied WACCs whether we include brand values in the incremental IC or not – This is because our analysis is (ultimately) based on DCFs, in other words on cash measures not accounting ones, and to the extent we expand “capex” to include intangibles, there will be an offsetting change in NOPAT².
- This analysis makes no attempt to factor in whether companies are likely in future to make acquisitions, adding or subtracting value in the process – it is designed to form a rough opinion on the value of the current assets in the firms, given their likely organic growth.

3. Cost of Equity: We focus on WACCs more than Ke 's because current bond yields mean all companies tend to have high Ke 's currently

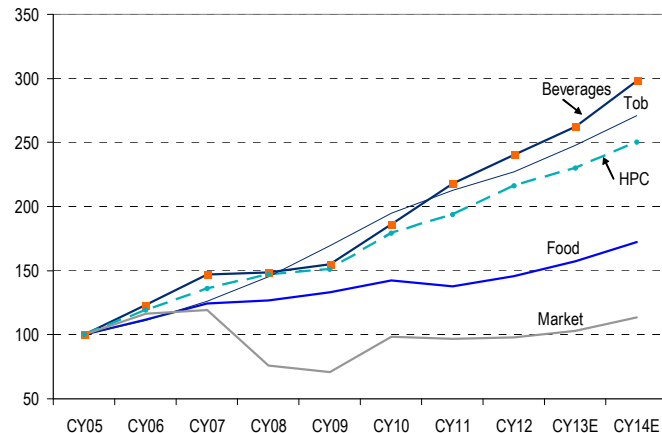
- The low cost of debt currently means that for any given WACC, the Ke has to be relatively high (as WACC is simply an weighted average of the cost of debt and cost of equity, and if the cost of debt is low, the cost of equity must be high)
- Our strategists say that historically WACCs stay relatively stable, which is another way of saying that when bond yields fall (which means the cost of debt falls), then costs of equity rise to compensate.
 - In CAP-M terms this is saying that typically there is an increase in the equity market risk premium when the cost of debt falls. (There is no rule that says the equity market risk premium is fixed over time)
- Our conclusion: It is true that the Ke 's are particularly high at the moment, but it is probably better to focus on the WACCs, which are more normal (but still attractive)

² Please call the author for a further discussion on this point, if needed.

The structural case for owning large cap consumer staples remains in place

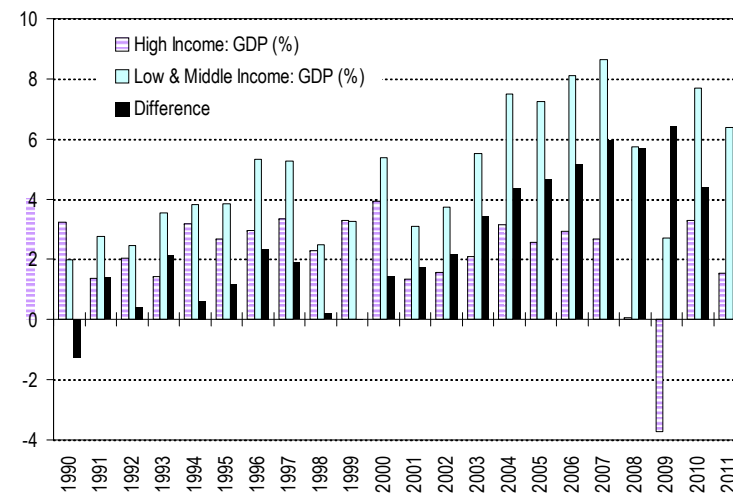
- **All the large cap staples companies are a play on growing consumer demand in EMs** — Some depend on more lower income groups joining the modern economy (eg Unilever NV with expanding usage of toilet cleaners and shampoo in BRICs) whereas others depend on growth in the small number of consumers who can afford luxuries in EMs – eg Pernod with cognac/ whisky in China.
- **And one of the defining economic features of our age is the increased gap in GDP growth between EMs and DMs** – This is even more true when looking at nominal growth, which is what drives sales growth. Staples companies quote organic growth, which is flattered by countries with higher inflation
 - Although there have been some wobbles around EM growth in the last quarter, and EM currencies in the last weeks, the fundamental long-term opportunity remains intact
 - Looking forward, even if investment in China slows, potentially hitting industrial and commodity exports to China we still expect good growth in consumer demand in EMs
- **Consumer staples companies' EPS have clearly grown faster than the market** – We expect the staples sector will continue to show good EPS growth

Figure 10. Consumer Staples EPS Growth Relative vs Market



Note: MSCI sectors started in 1995. Source: Company Reports and Citi Research Estimates

Figure 11. Global GDP Growth (% Real Terms) — DMs vs EMs



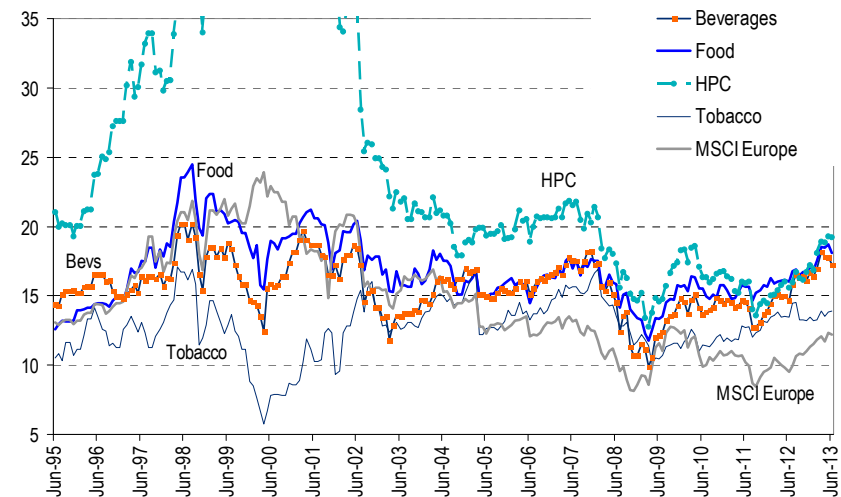
Source: DataStream

Valuation Relative to Other Assets

P/Es look less exceptional in a longer term context

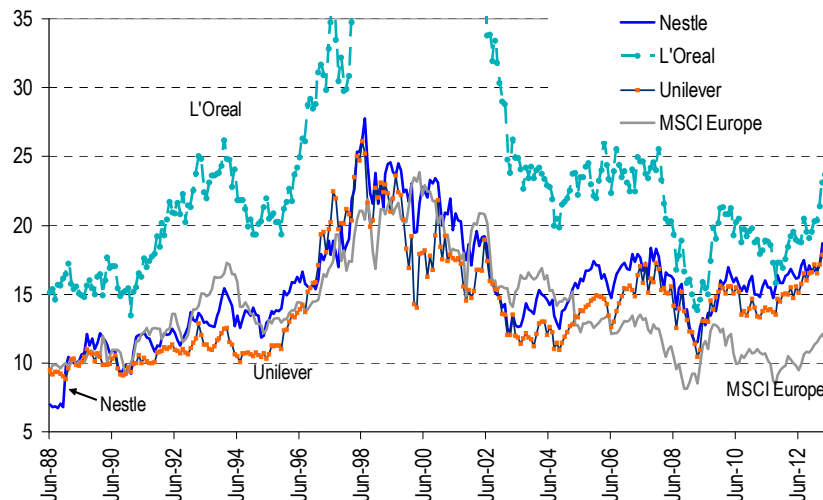
- The central concern on valuations is the current level of P/Es relative to recent history, as we said on page 4
- But between 1998 and 2002 food and beverages P/Es were higher – Some HPC stocks remained above 20x P/E right until 2008

Figure 12. Sector P/Es – 1995 to Present



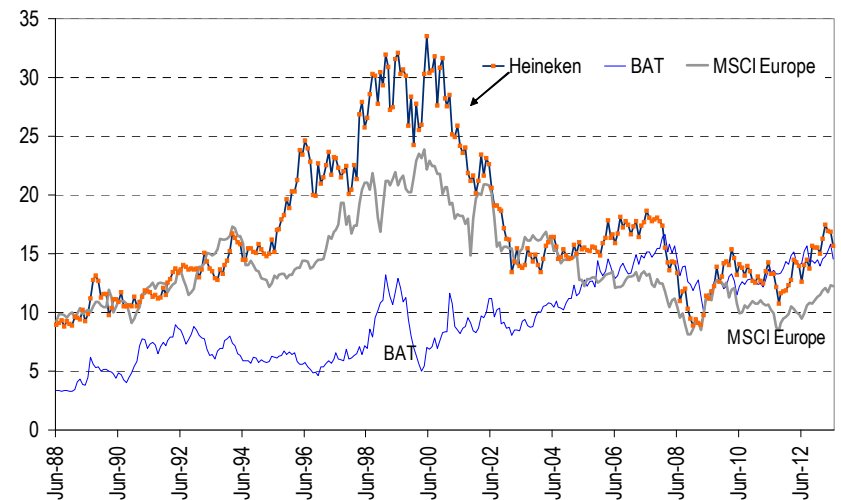
Note: MSCI sectors started in 1995. Source: DataStream

Figure 13. Company P/Es – 1988 to Present



Source: DataStream

Figure 14. Company P/Es – 1988 to Present

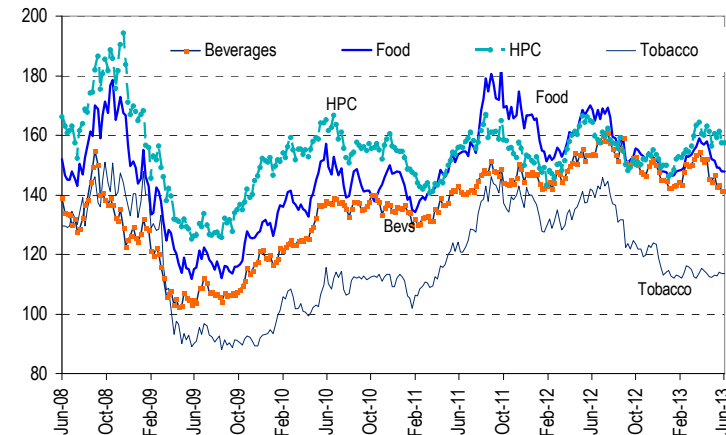


Source: DataStream

Staples P/Es don't look expensive relative to other (equity) assets

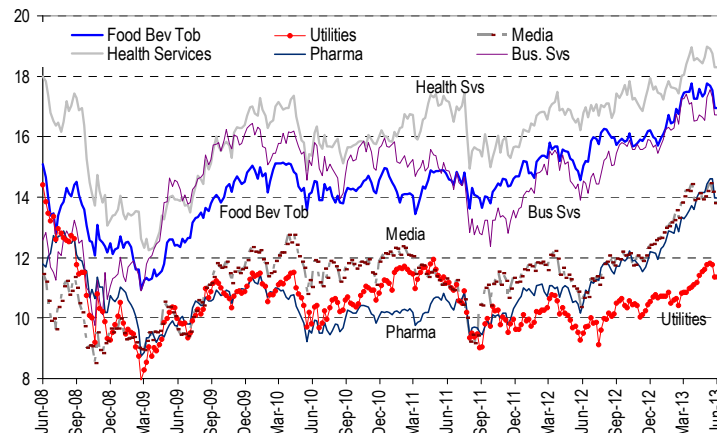
- The food/beverages/tobacco sector PE has followed a similar trajectory to similar, quality sectors
 - Business services and health services
 - Pharma and media have also been rerated
- The market appears to be rerating “defensive growth” more than simply “quality”

Figure 15. Sector P/E Relative – Last Five Years (MSCI Developed Europe)



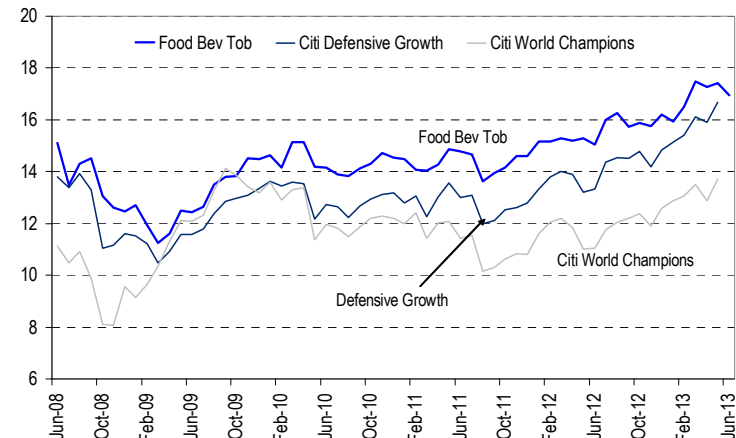
Source: DataStream

Figure 16. Food/Bev/Tob P/E vs Other Sectors, Last Five Years (MSCI Developed Europe)



Source: DataStream

Figure 17. Food/Bev/Tob P/E vs Citi “Defensive Growth” and “World Champions” Baskets

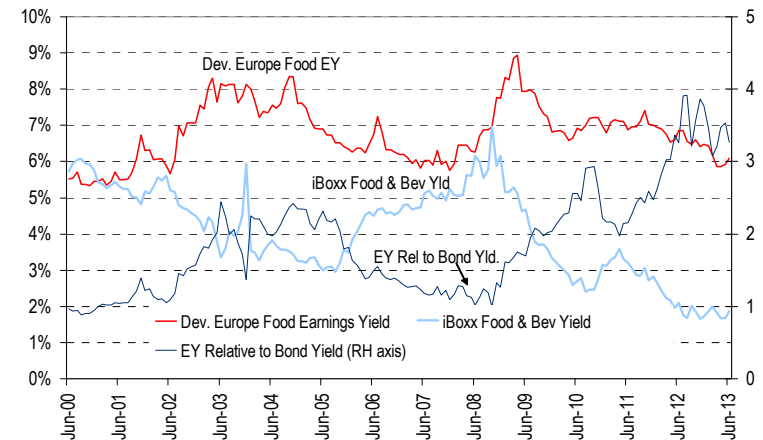


Source: Citi Research

Staples P/Es don't look expensive relative to bond assets with same risk profile

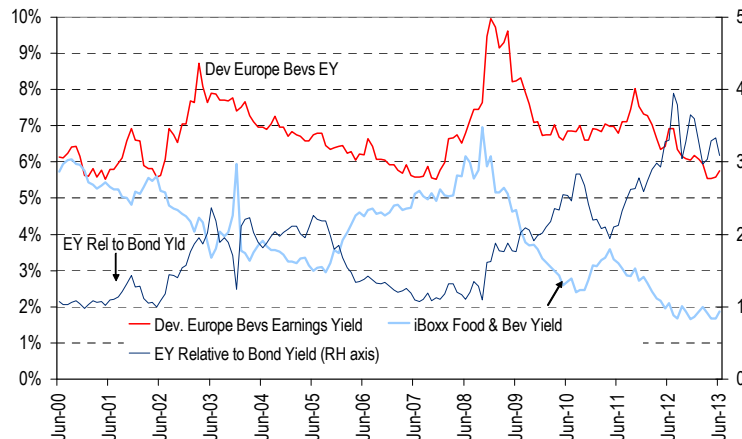
- When comparing consumer staples to bonds, we think it is most relevant to look at bonds with the same risk – ie food/ beverages/ tobacco bonds
- When we compare the earnings yield to bond yields, shares' valuations are lower than they have been for many decades
 - Earnings yield is the inverse of P/E
 - A high EY relative equates to a low P/E relative

Figure 18. Food Sector Earnings Yield vs iBoxx Food/Bev Bond Yield (Developed Europe)



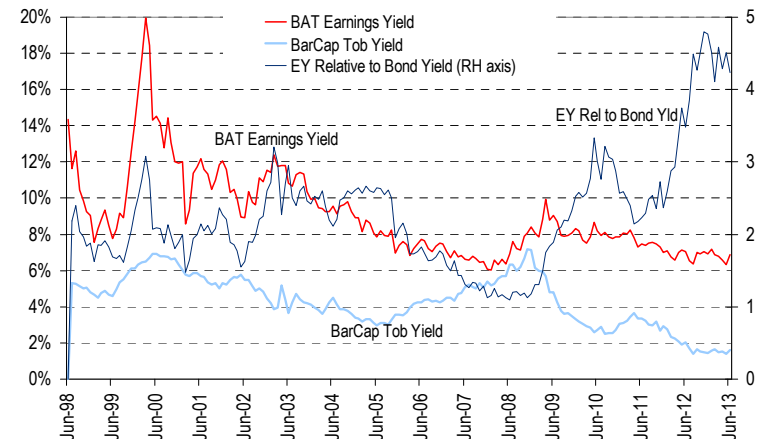
Source: DataStream

Figure 19. Beverages Sector Earnings Yield vs iBoxx Food/Bev Bond Yield (Developed Europe)



Source: DataStream

Figure 20. BAT Earnings Yield vs Tobacco Bond Yield

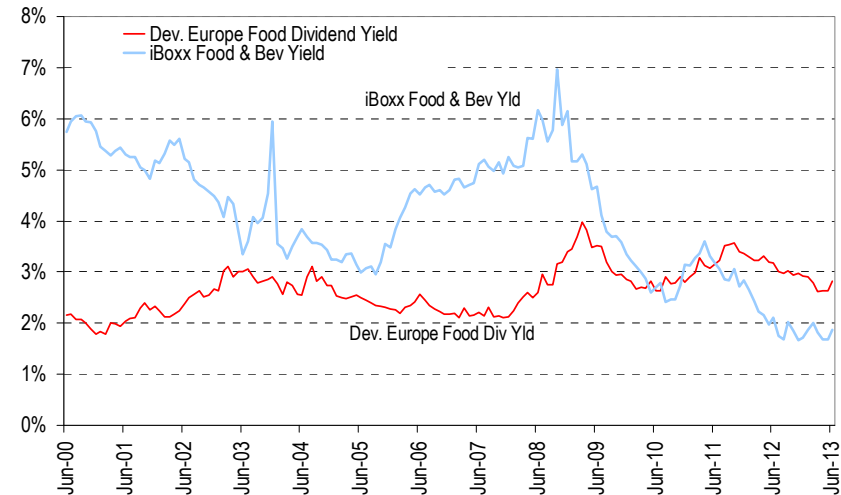


Source: DataStream

Looking at dividend yields vs bond yields makes this point even more clearly

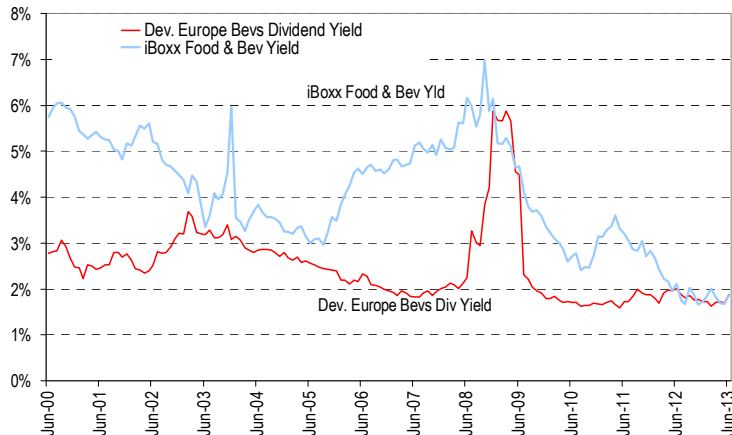
- Historically food and beverages dividend yields were lower than the corresponding bond yields
- Now they are above for food and in-line for beverages – This makes little sense given that we are projecting steady growth in the DPS of almost 10%, and see little risk of dividend cuts
 - Interest payments on the bonds are fixed
- The dividend yield argument is equally compelling for tobacco

Figure 21. Food Sector Dividend Yield vs iBoxx Food/Bev Bond Yield (Developed Europe)



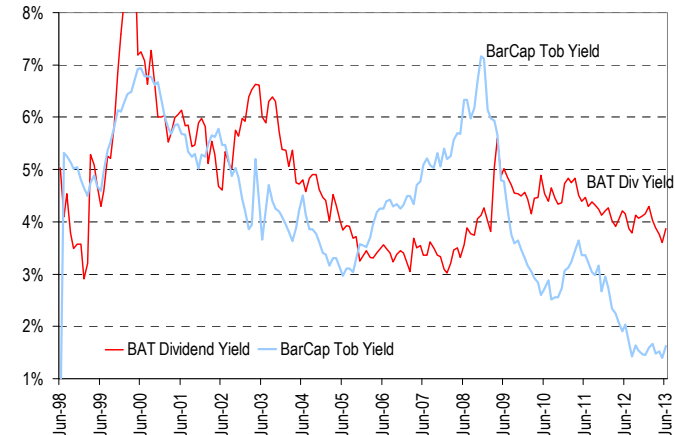
Source: DataStream

Figure 22. Beverages Sector Dividend Yield vs iBoxx Food/Bev Bond Yield (Developed Europe)



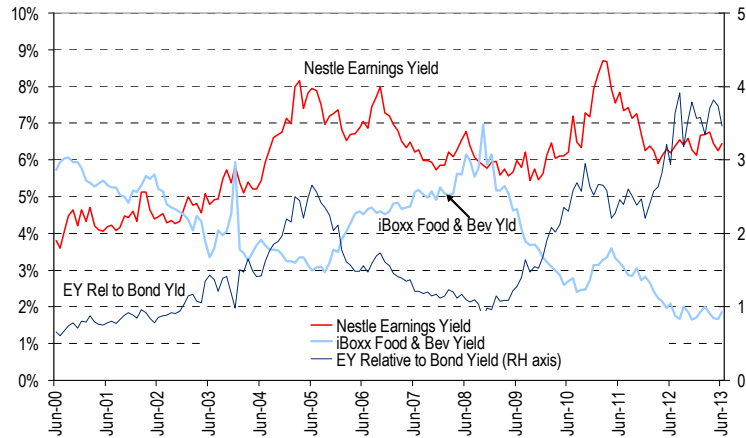
Source: DataStream

Figure 23. BAT Dividend Yield vs Tobacco Bond Yield



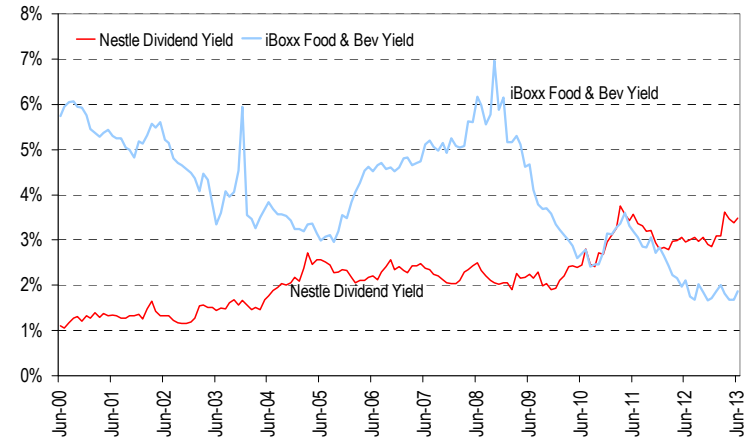
Source: DataStream

Figure 24. Nestle – Earnings Yield vs iBoxx Food& Bevs Bond Yield



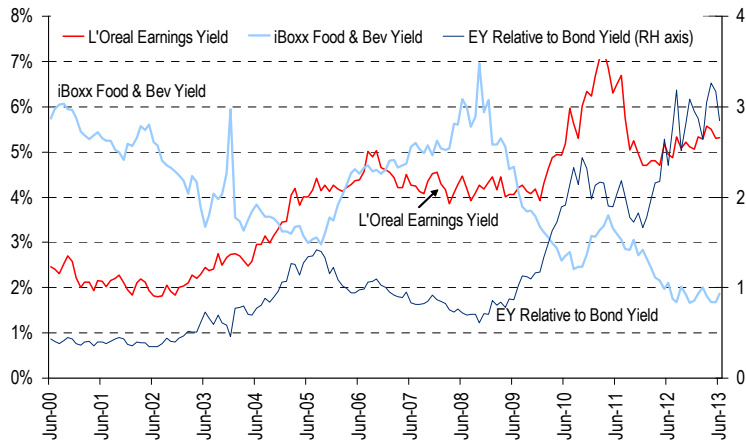
Source: DataStream

Figure 25. Nestle – Dividend Yield vs iBoxx Food& Bevs Bond Yield



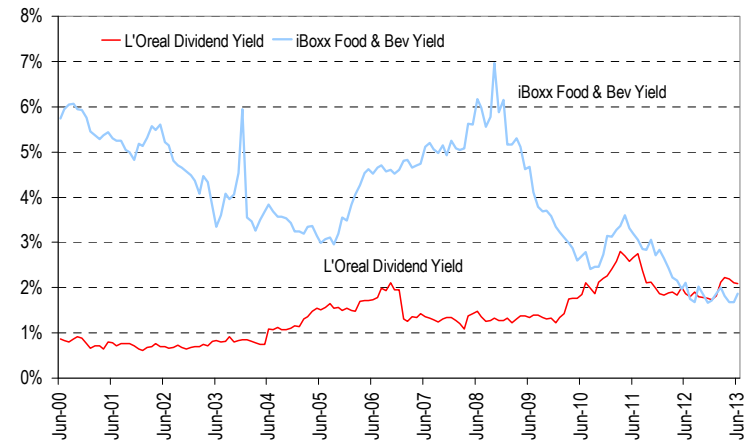
Source: DataStream

Figure 26. L'Oreal – Earnings Yield vs iBoxx Food& Bevs Bond Yield



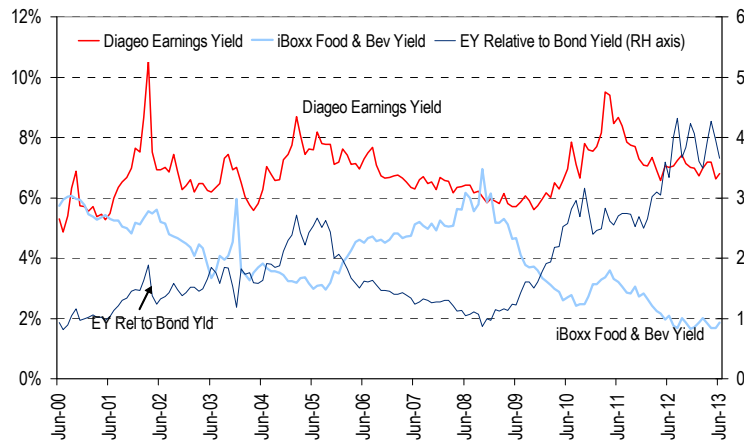
Source: DataStream

Figure 27. L'Oreal – Dividend Yield vs iBoxx Food& Bevs Bond Yield



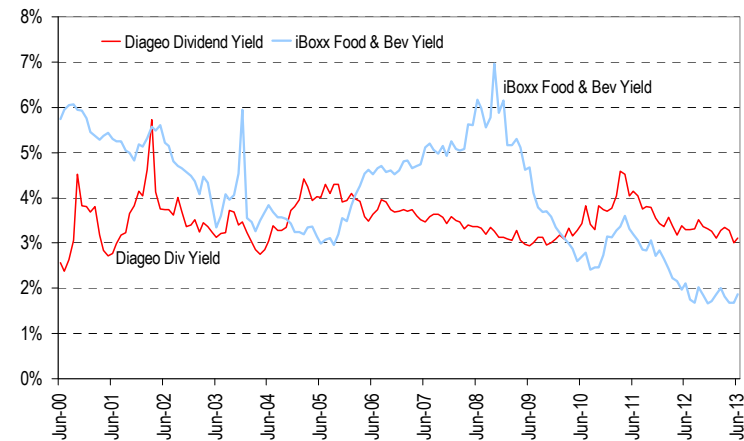
Source: DataStream

Figure 28. Diageo – Earnings Yield vs iBoxx Food& Bevs Bond Yield



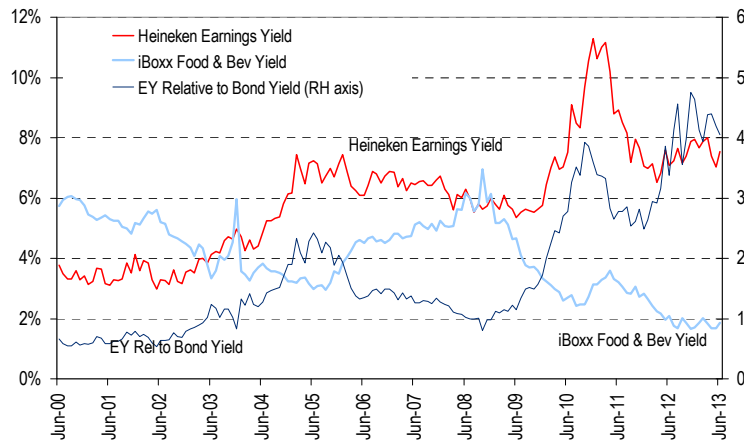
Source: DataStream

Figure 29. Diageo – Dividend Yield vs iBoxx Food& Bevs Bond Yield



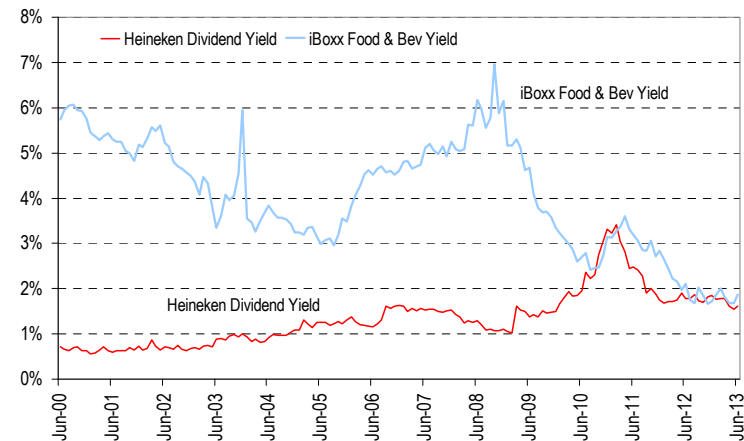
Source: DataStream

Figure 30. Heineken – Earnings Yield vs iBoxx Food& Bevs Bond Yield



Source: DataStream

Figure 31. Heineken – Dividend Yield vs iBoxx Food& Bevs Bond Yield



Source: DataStream

Fundamental Values

Our approach: We analyse “fundamental value” using reverse DCFs, backing out the implied WACCs

We are approaching fundamental valuations in two unusual ways

1. **We perform highly simplified DCFs, backing out the implied WACCs and Costs of Equity (Ke)** – This is unusual because all the other reverse DCFs we have seen aim to reverse out the implied growth rates. We think it is much more interesting (and useful) to back out the WACCs, because in fact we can make good forecasts for the growth rates, but there is little objective agreement for the WACCs.
 2. **Our reverse DCFs make one (big) assumption: all our companies are mature**, in other words we can use the formula $EV = \frac{FCF}{WACC - g}$ starting from 2013. We think this is useful as it simplifies the DCFs, and it gets away from the multi-stage growth models many analysts use that assume that our stocks will somehow be more mature in (say) ten years time than they are now.
- **We are NOT performing forward DCFs to come out with allegedly precise absolute valuations** — We are trying to check whether current valuations are reasonable; we’re not trying to set ultra precise new price targets for each company³.
 - **This report makes no attempt to compare consumer staples to other parts of the market** – But the key point is that few other sectors offer predictable cash positive growth, prospectively into perpetuity (although some certainly do, eg certain business and health services). Most other sectors are either cyclical (eg banks, engineering) or have time-limited assets (mining)

³ In fact DCFs can never be precise, because they rely on so many arbitrary assumptions, the most important of which is the choice of WACC.

Why our approach helps the investment debate: We believe it is both unusual and useful

1. We think it is useful to have a reverse-DCF that backs out implied the cost of capital

- **We have never seen a reverse DCF that backs out WACCs before** – Reverse DCFs are fairly common, but we have only ever seen them used to back out an implied growth rate. In other words, our approach is innovative.
- **We believe it is more informative to back out implied WACCs than implied growth rates or target valuations** – This is because the WACC is the element of the DCF equation that we know least about, and so it is useful to find out what the market is assuming.
 - **DCFs are equations that link 4 elements:** (1) cash flows, (2) growth rates, (3) a required rate of return, and (4) valuation. If you provide estimates for 3 of the elements of the equation you can calculate the implied value for the fourth.
 - **For consumer staples companies we have a good idea of 3 of these elements** – We can estimate the cash flows quite accurately, and have a reasonably good idea of their growth. We also know the current market value.
 - **The aspect investors know least about is the cost of capital**, because
 1. **Costs of Capital are not an objective measures** – They are required rates of return. They are not costs in the ordinary sense of the word
 2. **There is no way to measure them directly** – To select the WACC, investors typically use calculations based on CAP-M. The trouble is that CAP-M is a only theoretical model for analyzing historic costs of equity/ required rates of return, and it has a number of flaws when applied in practice.
 - **The current debate arises because share prices have risen in the past 12 months, but the outlook for the companies hasn't got any better.** The only elements of the equation that have changed materially in the last 12 months are the valuations and the implied cost of capital. Our approach means we don't have to make a set of new assumptions about growth rates, or test what the market is saying about growths rates.

Why our approach helps the investment debate (continued)

2. We think it is useful to assume that all consumer staples companies are mature

- **It makes our DCFs simple and transparent** — One of the problems with DCFs (or reverse DCFs) is that they are full of assumptions, typically with different growth rates in the near-term, over the medium-term, and in the terminal period. Some of the most important (but undiscussed) series of assumptions is how long each of these growth phases last for
- **In operating terms our companies are as mature as they are going to get**
 - The consumer staples companies generally use brands that are decades old
 - It is not clear why they should be any more mature in 5, or 10, years than they are now – we still expect them to innovate just as aggressively in 2024 as we do in 2104
- **It avoids (some) arbitrary assumptions** — We believe it makes sense to avoid an assumption that these stocks will have an accelerated period of growth for (say) the next 5 years, followed by lower to growth in the following (say) ten years, followed by negligible growth.
- **But we recognize our approach is “wrong” because our companies are not mature in financial terms**
 - For financial modeling “mature” means that all a company’s financial ratios stay the same – in terms over time there is no change in margins, returns on capital, balance sheet to sales measures, investment rates and in terms of the year to year growth rate
- **Nonetheless we think it is a useful starting point**, because in reality we expect FCF to grow faster than sales in the early years and this is likely to roughly offset any slowdown in the sales growth in the out years
- **Furthermore we think there is no effective way of modeling the long-term growth precisely**
 - We believe the financials will never be mature, in the sense we expect margins and returns will continue to vary over time
 - Furthermore we think it is impossible to predict how long the current process of increasing margins will last for. Will the brewers margins max out in 2 years? 5 years? 10 years? How long can Unilever NV grow margins for? No-one can say.

For the perpetual growth rate, g , we use a growth rate that is slightly lower than the current organic growth rates

- Our reverse DCFs are (in the first place), based on the idea that the best estimate for the perpetuity growth rate is the current organic sales growth rate, or something slightly lower
 - By “current” we mean both the (1) the average for the last 3 reported years, or (2) the average for the first three projected years.
 - For almost all the companies this is about 5-6%, with the exception of Imperial (1-2 ½%), and Carlsberg and Heineken (both 2- 3½%). In the last 3 years the growth has also been poor at both Beiersdorf (3%) and CCH (2%), though we expect both to improve in 2013-15.
 - The reason for this is that we expect higher growth in the near term to offset the eventual slowdown in FCF as margins eventually plateau
1. **In the medium term, we expect our companies to grow their cash flows faster than sales** because they are growing their margins, and to a lesser extent they are reducing working capital
 - This is particularly true of the beverage and tobacco names, as these companies are (and have been) growing their margins much faster than the food/ HPC companies (and this is the core reason why we expect faster EBIT and EPS growth from the beverages names relative to the food/HPC names).
 - For most beverages companies, EBIT is currently growing about two percentage points faster than sales; for food/HPC companies, EBIT it is currently about 1 percentage point faster
 - As a consequence our analysis is (in some ways) penalizes the beverages companies
 2. **In the long-term, it is possible the growth is lower than the current organic sales growth** – Although the companies’ current organic growth is about 5-6% it is possible that they may slow down.
 - **We find it easy to argue they will continue to growth at 4-5% indefinitely however.** Global real GDP typically grows at about 3½%. We see no particular reason why the global companies can’t grow their sales in real terms at no worse than a point less than GDP (to account for the trend to services). This implies the growth in real terms should be about 2½ -3 ½% (We note that Nestlé’s typical RIG is 3% — bang in the middle of this range). However on top of this inflation must be added, as our analysis is done in nominal terms. We take the long-term inflation rate in the home currencies of our companies to be about 2%, implying that the long-term sales growth should be about 4½ -5½% — which is only ½ a percentage point slower than the current rates
 - **We have seen lots of DCFs with 2% terminal growth rates, but we believe this is much too low** – If only because we expect inflation of 2% in future.

For the perpetual growth rate, g , we use a growth rate that is slightly lower than the current organic growth rates (*continued*)

■ In broad terms the early rapid growth cancels out the likely long-term slow

- if the FCF grows at 5.5% consistently (our base case)
- If the FCF grow at 6.5% for 10 years, but then fades to 5% (??a food company)
- If the FCF grows at 7.5% for 5 years, but then fades to 5% (??a beverages company)

These periods of accelerated growth seem conservative to us: We think Nestlé (for example) can grow its margins 20bps a year for a decade, taking its margins from ~15% to ~17%. Equally, we think it will be at least 5 years before the margin expansion at (say) Pernod and SAB can continue for at least 5 years, before their FCF grows only at the rate of sales growth.

■ The exact balance will vary by company, and specifically how they grow over time. The bottom-line is that our DCFs (like all DCFs) are inevitably a bit inaccurate. However they are good enough for the purposes of saying that broadly the sector is over- or under-valued. We're not trying to use DCFs to provide pin-point valuations for each stock.

- At one level this is an admission that multiphase growth models would be a (potentially) more accurate; however in practice we don't think they would be, and as we have said they are full of hidden assumptions

■ However, to be conservative when we do our estimates of the possible implied WACCs in Figure 7 and Figure 8, we have tended to use growth rates that typically are about 0.5% percentage points slower than the current organic growth.

Sensitivities around g

■ Even if our assumptions on growth are a percentage point too high, this affects implied WACC by only about 0.9 percentage points.

■ For us to conclude the stocks were expensive, we would have to assume that the FCFs grow (starting from today) at about 1-1½ points below the current sales growth rates. And bearing in mind we believe every company is can grow margins for many years to come, this seems too conservative

- As we've said before, the vital assumption is that these stocks can grow indefinitely, not what the precise growth rate is

What we have done:

- Our reverse DCFs are ultimately based on the terminal formula $EV = \frac{FCF}{WACC - g}$
- We use this formula in a way that is restated into two forms that relate a company's WACC to its $EV/NOPAT$ and growth rate. One is written in terms of IRs (investment rates) and the other in terms of $ROIC_{inc}$

$$WACC = \frac{(1 - IR)}{\left(\frac{EV}{NOPAT}\right)} + g \quad \text{Version 1, where } IR = InvestmentRate = \frac{NetInvestment}{NOPAT} = \frac{[Capex - (Dep'n + Amort'n)] + [\Delta WorkCap]}{NOPAT}$$

$$= \frac{\left(1 - \frac{g}{ROIC_{inc}}\right)}{\left(\frac{EV}{NOPAT}\right)} + g \quad \text{Version 2, where } ROIC_{inc} = \frac{IncrementalReturn}{IncrementalInvestment}$$

We derive these equations in Appendix 1 on page 44. In theory the two approaches are identical, because in a mature company. $g = ROIC_{inc} \times IR$ In practice this equation doesn't quite hold, because as we have said, the returns and investment rates do vary over time.

- However the implied WACCs calculated in the two ways aren't significantly different, which is reassuring. Nonetheless we do the calculation in the two ways because they reflect different potential growth paths for the companies
 - IRs show how the companies are investing now (which may or may not be sustainable)
 - $ROIC_{inc}$ shows our best estimate of the returns they can achieve, but this is based on past returns, and so it may not be a good guide for the future

As we say the implied WACCs calculated in the two ways aren't very different⁴. We generate a range of values because the financial ratios of our companies aren't quite mature, so it is (to a certain extent) a matter of choice of what inputs to use, for example on growth.

⁴ For example, for the brewers, a reverse DCF based on our estimate of their existing ROIC would lead to a lower valuation than one based on their current IR. . We think the one based on the existing ROIC would be too low because we believe that future $ROIC_{inc}$ will be better than the historic ROIC. But we think the one based on the current IR would be too high because we believe they will have to increase their IRs eventually. Therefore we do both types of reverse DCF, as we think the "true" value must lie somewhere between the extremes.

Our findings: Assuming the current organic sales growth continues, the sector is under valued when looked at in this way

- **On this page we show the implied WACCs and Ke's based on the current organic growth rates** – By contrast the WACCs and Ke's we showed at the front of the report in Figure 7 were calculated using growth rates that are slightly lower than the current organic growth rates. In Figure 32 the assumptions in the different columns are based on
 - **Approach 1: Actual IRs and actual organic sales growth** for the last three reported years (2010, 2011 and 2012 for calendar year companies)
 - **Approach 2: Projected IRs and projected sales growth** for the next three years (2013, 2014 and 2015 for calendar year companies)
 - **Approach 3: Estimated ROIC_{inc} and projected sales growth** for the next three years.
- **Conclusions from Figure 32.**
 - The implied WACCs and Ke's are high, in general, and in fact few are really materially different from those shown in Figure 7. In short, based on these reverse DCFs our companies are under valued currently
 - For each individual company there isn't that much variation in the results between the different methods, which is reassuring

Figure 32. Implied WACCs and Ke's assuming current growth rates continue

	WACC				Ke				Growth Rates Used	
	Approach 1: Hist IR, Hist g	Approach 2: Proj IR, Proj g	Approach 3: Est ROIC, Proj g	Range	Approach 1: Hist IR, Hist g	Approach 2: Proj IR, Proj g	Approach 3: Est ROIC, Proj g	Range	Historic	Future
ABI	10.7%	11.2%	10.5%	10.5-11.2%	12.7%	13.5%	12.6%	12.6-13.5%	5.4%	6.1%
SAB	9.9%	10.5%	10.0%	9.9-10.5%	12.1%	13.0%	12.3%	12.1-13.0%	6.4%	6.7%
Heineken	7.8%	8.2%	7.6%	7.6-8.2%	9.1%	9.6%	8.9%	8.9-9.6%	1.8%	3.5%
Carlsberg	8.9%	9.0%	8.7%	8.7-9.0%	10.6%	10.8%	10.4%	10.4-10.8%	2.1%	3.5%
Pernod	10.5%	10.6%	10.2%	10.2-10.6%	12.6%	12.7%	12.2%	12.2-12.7%	5.9%	6.0%
CCH	6.7%	10.0%	7.8%	6.7-10.0%	7.6%	12.0%	9.0%	7.6-12.0%	1.7%	5.3%
BAT	10.4%	10.2%	10.5%	10.2-10.5%	12.4%	12.2%	12.6%	12.2-12.6%	4.4%	4.4%
Imperial	9.3%	8.1%	8.2%	8.1-9.3%	11.0%	9.4%	9.5%	9.4-11.0%	2.5%	0.8%
Nestle	10.9%	9.6%	10.1%	9.6-10.9%	13.7%	12.0%	12.6%	12.0-13.7%	6.5%	5.4%
Unilever NV	10.4%	10.2%	10.3%	10.2-10.4%	13.0%	12.7%	12.9%	12.7-13.0%	5.8%	5.6%
Danone	11.9%	11.3%	11.1%	11.1-11.9%	16.6%	15.7%	15.5%	15.5-16.6%	6.7%	6.5%
L'Oreal	9.5%	9.4%	9.4%	9.4-9.5%	11.5%	11.3%	11.3%	11.3-11.5%	5.4%	5.3%
Reckitt	11.6%	11.4%	11.2%	11.2-11.6%	15.1%	14.9%	14.6%	14.6-15.1%	6.5%	5.4%
Beiersdorf	9.5%	9.4%	8.3%	8.3-9.5%	11.6%	11.2%	9.9%	9.9-11.6%	3.3%	5.4%
Henkel	12.3%	11.2%	10.7%	10.7-12.3%	15.1%	13.7%	13.1%	13.1-15.1%	5.5%	5.4%

Note: Historic g is organic growth for last 3 reported years; projected g is our forecast for organic sales growth for the next three years. Source: Citi Research

What happens if we change the growth rate?

- The calculations on the previous page (Figure 32) assume growth continues indefinitely at roughly the current rates – Either based on the last 3 years, or our projections of the next 3
- In Figure 33 we show how these would be affected at different growth rates – Essentially each 1 percentage point of growth adds about 0.9 points to the implied WACC
- Current growth rates for Imperial, Heineken and to a lesser extent Carlsberg look low to us — therefore we think it is would be reasonable to think about an implied WACC of maybe a percentage point or so higher than shown in Figure 32
 - Imperial's growth rate is being held back by the problems in Europe and its company specific issues in the US and Russia. It is guiding to 2-4% org sales growth, and although we doubt it can achieve the upper end of this range, we think a 2% long-term sales growth rate is certainly achievable
 - For Heineken, current growth is being held back by the decline in consumer spending in S Europe. Long-term we think growth of 4-5% is likely
 - With Carlsberg too we expect a mild acceleration as it pivots towards Asia.

Figure 33. Implied WACCs on Different Growth Assumptions

	Implied WACC on Current Assumptions (Approach 3 - ROIC)		1% Faster Growth		1% Slower Growth	
	g	WACC	g+1%	Implied WACC	g-1%	WACC
ABI	6.1%	10.5%	7.1%	11.5%	5.1%	9.6%
SAB	6.7%	10.0%	7.7%	10.9%	5.7%	9.1%
Heineken	3.5%	7.6%	4.5%	8.4%	2.5%	6.8%
Carlsberg	3.5%	8.7%	4.5%	9.4%	2.5%	8.0%
Pernod	6.0%	10.2%	7.0%	10.9%	5.0%	9.2%
CCH	5.3%	7.8%	6.3%	8.4%	4.3%	7.1%
BAT	4.4%	10.5%	5.4%	11.5%	3.4%	9.6%
Imperial	0.8%	8.2%	1.8%	9.1%	-0.2%	7.3%
Nestle	5.4%	10.1%	6.4%	10.9%	4.4%	9.2%
Unilever NV	5.6%	10.3%	6.6%	11.2%	4.6%	9.4%
Danone	6.5%	11.1%	7.5%	12.0%	5.5%	10.2%
L'Oreal	5.3%	9.4%	6.3%	10.3%	4.3%	8.4%
Reckitt	5.4%	11.2%	6.4%	12.2%	4.4%	10.2%
Beiersdorf	5.4%	8.3%	6.4%	9.0%	4.4%	7.7%
Henkel	5.4%	10.7%	6.4%	11.4%	4.4%	9.6%

Source: Citi Research

Implied Costs of Equity and the Sensitivity to Capital Structure

- **So far our focus has been the implied WACCs** – We have mentioned implied Costs of Equity in passing. The main point is that the costs of equity – which are not really costs, but rather implied rates of return to equity holders) are higher than the WACCs
- **To calculate these we have to make an assumption about the capital structure, and for the sake of simplicity we have assumed all companies will have a 75%-25% equity/ debt split** – We think this is a reasonable long-term assumption, but in fact the current split is not always this.
- **In Figure 34 we show**
 - The implied WACC and the cost of equity both on the 75/25 split we used in Figure 32. (Approach 1) and
 - The implied cost of equity if we used the current capital structure

Conclusions

- **The differences in capital structure make relatively little difference to the broad conclusion to this report** – which is the stocks are under valued currently (ex CCH and Heineken)
- **Broadly the HPC and food names are more conservative currently than our assumed 75/25 split**
 - **For the food companies the implied cost of equity is about 1 percentage point lower at current capital structures than at our assumed structure**
 - **For the HPC companies the implied cost of equity is about 1-2 percentage points lower at current capital structures than at our assumed structure**
 - **However we suspect that over time the food and HPC companies will get a bit more leveraged** — This was a major theme from our report [Food & HPC 2013 - Reappraise, Restructure, Releverage](#).

Figure 34.Costs of Equity Assuming 75/25 Equity Debt Structure and Current Structure

	Implied WACC (Approach 1)	Standard Capital Structure		Actual Current Capital Structure	
		Equity / Debt	Implied Cost of Equity	Equity / Debt	Implied Cost of Equity
ABI	10.7%	75%, 25%	12.7%	78%, 22%	12.4%
SAB	9.9%	75%, 25%	12.1%	84%, 16%	11.1%
Heineken	7.8%	75%, 25%	9.1%	71%, 29%	9.4%
Carlsberg	8.9%	75%, 25%	10.6%	72%, 28%	11.0%
Pernod	10.5%	75%, 25%	12.6%	74%, 26%	12.7%
CCH	6.7%	75%, 25%	7.6%	76%, 24%	7.6%
BAT	10.4%	75%, 25%	12.4%	86%, 14%	11.4%
Imperial	9.3%	75%, 25%	11.0%	71%, 29%	11.4%
Nestle	10.9%	75%, 25%	13.7%	88%, 12%	12.0%
Unilever NV	10.4%	75%, 25%	13.0%	92%, 8%	11.0%
Danone	11.9%	75%, 25%	16.6%	82%, 18%	14.9%
L'Oreal	9.5%	75%, 25%	11.5%	100%, 0%	9.6%
Reckitt	11.6%	75%, 25%	15.1%	91%, 9%	12.6%
Beiersdorf	9.5%	75%, 25%	11.6%	99%, 1%	9.5%
Henkel	12.3%	75%, 25%	15.1%	88%, 12%	13.4%

Source: Citi Research

Company by Company comments

- Overall our Buys come out rather well, when looking at implied WACCs, except BEI and to a lesser extent Nestlé
- RB and Danone look most attractive.
- Within brewers ABI is best value on implied WACC, followed by SAB, and tobacco, BAT beats IMT (because its growth is better)

ABI

- **One of the features of ABI is just how capital efficient it is, and this means it tends to come out fairly well of the implied WACC analysis** -- Currently ABI is withdrawing tangible capital as it reduces working capital and its capex is only slightly higher than D&A. This means it has a negative IR, which clearly can't continue indefinitely and therefore we think the best way to look ABI's implied WACC is via a target ROIC_{inc}. However its RoTA is well in excess of the other brewers (65% vs 23-36%), so even on this measure, it has an implied WACC that looks better than its brewing peers
- For the WACC in Figure 7 – We assume that in the very long term, ROIC_{inc} returns to the historic RoTA. On the one hand it is clearly committed to exploiting its strong market shares to grow margins over time; on the other hand its margins are already high so one may wonder how long this can continue for.

SAB

- **SAB comes out well from this analysis, but its lower capital efficiency means the analysis shows more value in ABI** – SAB's RoTA is 36%, compared with 65% for ABI and 23% for both Heineken and Carlsberg. However it needs to invest heavily in Africa to grow, and it does not extract as much from working capital as some of the other names. As a result even though it has the highest growth rate, the implied WACC is a bit lower than ABI's
- For the WACC in Figure 7 – At the top end we assume its growth will remain good, but at a cost of no improvement in its ROIC_{inc}. At the bottom end we assume its growth will fall over time to much nearer the level of the other brewers, but its ROIC_{inc} will move halfway to ABI's level.

Heineken

- **Heineken has the joint least attractive implied WACC** – In the period 2010-12, during Hunt for Cash Heineken had a negative investment rate as both capex was less than D&A, and the movement in working capital was an inflow. However, partly because of relatively low margins in Europe, its RoTA is 23%, which is lower not only than ABI (65%) and SAB (36%) but also Nestlé (38%) and Unilever NV (56%). We think this reflects the point that brewing is capital intensive, and so return on capital is modest, unless you can operate with very high margins. Heineken is our least preferred brewing stock.
- For the WACC Figure 7 – We assume that in the long-term both its growth rates improves, as EMs become a bigger part of its portfolio and Europe stabilizes. At the top end we assume its ROIC_{inc} reaches SAB's current level.

Carlsberg

- **Although Carlsberg looks relatively under valued on P/Es, and generates plenty of cash, it doesn't appear especially under valued on our implied WACC measure, at least relative to our Buy-rated stocks** – This is because its RoTA is “only” 23%. As with many of the other brewers, it had a negative investment rate in the period 2010-12. We are also forecasting relatively subdued organic growth, partly due to its exposure to W Europe, but also because we are unexcited about the likely growth in Russia. To improve on this measure (and indeed accelerate EPS) it needs to generate higher margins. As always the central question revolves around its ability to expand margins in Russia from around 22-23% to say 27-8%, and maintain them there. If it could do that, not only would EPS surge, but in addition its return on capital would be much more impressive.
- For the WACC in Figure 7 – We assume that in the long-term its growth rates improves, as the contribution from Asia increases. At the top end we assume the ROIC_{inc} increases as well.

Pernod

- **Pernod's implied WACC looks very attractive** – Unlike the brewers it has consistently had net investment, principally in its working capital, which comes down to what it calls strategic inventories of Cognac and Scotch. The other point worth noting is we expect strong margin expansion for the next few years, thanks to the growth in China of premium cognac, and this means the growth we expect in NOPAT for the next decade is in excess of the organic sales growth. (Although we recently lowered our forecasts for China, the growth there is still projected to be strong.)
- For the WACC in Figure 7 – We assume its long-term growth will remain strong as we believe penetration of western spirits in EMs still has a very long runway. We expect the ROIC_{inc} to remain broadly at current levels.

CCH

- **CCH has (jointly) the least attractive implied WACC of all the companies in this report** – CCH is not a brand owner, and arguably the entire point of its existence is to take capital off Coca-Cola's (KO's) balance sheet. As a result its RoTA (11%) is less than half that of any other company (with the exception on Beiersdorf, which is 14%). However in addition to its low sales to tangible assets ratio, it also has the problem that its margins went fell to just 6.4% in 2012. Finally it comes out of the exercise poorly because it is an expensive stock on EV/NOPAT at 23.5x (similar to L'Oréal but above the 19-21x range for most other beverage companies.)
- For the WACC in Figure 7 – We assume its long-term growth will remain strong, thanks to its exposure to Russia and Nigeria. At the bottom end we assume the ROIC_{inc} remains in line with the historic RoTA, but at the top end we assume it will increase, reflecting a long-term margin target of 10-11%. Interestingly, because the ROIC is lower, differences in projected growth actually make a bit less difference to CCH than to the other companies. Figure 32 implies that each 1% change in the long-term growth means 0.6% change to the implied WACC, whereas for most companies the sensitivity is about 0.9%.

BAT

- **BAT's implied WACC looks relatively strong** – Partly this is because its EV/NOPAT is lower than other companies, but in addition its RoTA is much higher, and so is its $ROIC_{inc}$. In addition we assume it (and Imperial) will continue growing indefinitely. In our view, if there is any subsector within staples where this assumption is open to debate it is tobacco, However for the purposes of this report we assume it does continue to grow!
- For the WACC in Figure 7 – We assume its $ROIC_{inc}$ will remain roughly steady, and its long-term NOPAT growth varies between 3.5% and 4.4% (its recent levels).

Imperial Tobacco

- **Imperial's implied WACC looks OK, but it is a little less attractive than BAT's on our assumptions** – This reflects the point that its EV/NOPAT is lower than BAT's and indeed all the other companies in this report, but this is offset by low growth rates. (As with BAT, we still assume growth into perpetuity) Historically Imperial has had exceptional RoTA, but in recent years it has increased its investment rate significantly, even as its growth has slowed. Interestingly, both Imperial and BAT have had higher IRs in recent years than the brewers, although IMT's is now falling, reflecting the need to "Hunt for Cash".
- For the WACC in Figure 7 – We assume its $ROIC_{inc}$ in future will be somewhere between its RoTA and the current returns it appears to be achieving, and that the growth of NOPAT in the very long term will be between 2% and 3%.

Nestlé

- In total the implied WACC reflects a combination of our expectations of good long-term growth for Nestlé, offset by its high investment rates: capex is significantly higher than D&A, and working capital is typically a use of cash. We are projecting the IR to increase in the next couple of years, but this is because 2012 was an exceptional year in terms of working capital providing a cash inflow which isn't our expectation looking forward. While capex investment should moderate somewhat, we still think it will remain elevated relative to the brewers and some of the HPC companies for the next several years
- For the WACC in Figure 7 -- at the top of the range we are assuming a significant improvement in incremental returns over the long-term time, to Unilever's lever, on the basis of higher margins and scaled back capex relative to depreciation. If it wasn't for this, Nestlé would come out looking worse in comparison to many of the other stocks. At the bottom end we are assuming the incremental returns remain pretty much as they are.

Unilever NV

- Unilever's IR has typically been in the low teens in the past few years, and has been steadier than Nestle's. This reflects Unilever consistently extracting cash from working capital. We think it likely that Unilever's capital structure will become more efficient over time but that returns will probably remain inferior relative to less capital intensive staples peers, as Unilever's growth is more orientated towards volume growth.
- For the WACC in Figure 7 – We are assuming its returns in the long-term vary in a range roughly in line with the existing and historic range.

Danone

- Has the highest implied WACC of the food sector and in fact joint best across all consumer staples (with Reckitt). The top end of the range reflects a low IR for 2010-12, which in turn reflects the fact working capital was a significant source of cash for Danone over 2010-12. Looking forward we're expecting it to be about neutral in 2014 and beyond which may be conservative.
- For the WACC in Figure 7 – We are assuming its returns in the long-term vary in a range roughly in line with the existing and historic range; and our range of growth rates reflect its exposure to EM categories (water, infant formula) where we expect excellent long-term growth.

L'Oréal

- **Relatively richly valued** Implied WACC of 9.0-9.4% is similar to Beiersdorf, but we see less opportunity for a material acceleration in the top line or further material margin expansion to drive improved returns. Working capital continues to be a drag, which we do not see changing in the near-term whilst the impact of capital structure on the returns profile is likely to be determined by the outcome of Nestlé's decision on its holding, possibly in 2014.

Reckitt Benckiser

- **Most attractively valued on our analysis** Reckitt comes out as the most attractively valued company in our large cap peer group. Part of this is due to its relatively low valuation, as measured on an EV / NOPAT basis, but largely due to its high margin, low capital intensity model delivering the highest returns in the sector, which we expect to be sustainable as the company expands into Consumer Health.
- For the WACC in Figure 7 – We assume the ROICinc will be assuming a significant slowdown both in ROIC, and, at the bottom end, in growth

Beiersdorf

- **Plenty of room for improvement** Beiersdorf's low implied WACC reflects the highest EV / NOPAT valuation in the sector and poor returns on tangible assets, given relatively low margins and a very inefficient balance sheet structure. We expect execution of its Blue Agenda turnaround programme to deliver faster revenue growth and also margin expansion – closing the gap with peers – which should both lead to better returns than has been achieved in the recent past, whilst deployment of the balance sheet into earnings-generating acquisitions should provide further upside.

Henkel

- **Attractive implied WACC.** Based on our reverse DCFs, Henkel's implied WACC is amongst the most attractive in Staples. Returns are very respectable, especially in light of its material exposure to Adhesives, and have been improving in recent years, driven by margin expansion and significant improvements in working capital management.

Company by Company Calculations

Implied WACC calculations

On pages 36-43 we show our calculations for each of the companies. However as the tables are quite complicated we thought it would be worth explaining them here

Figure 35. Nestlé (Example)

Name	Nestlé	NESN.CH					
RIC	NESN.VX						
Latest Share Price	62.3						
EV calculation							
MktCap - Local	204,063						
MktCap -Euro	165,714						
MktCap -US\$	219,772						
Mkt Cap	204,063						
EV ex Mkt Cap	7,635						
Adjustments	-6,460						
Total EV	205,238						
NOPAT Calculation		2010	2011	2012	2013E	2014E	2015E
Adjusted EBIT(A)		14,038	13,223	13,960	15,258	16,391	17,596
Adj Tax rate		27.0%	27.1%	28.4%	27.0%	27.0%	27.0%
NOPAT		10,252	9,637	9,997	11,139	11,966	12,845
EV/NOPAT (current yr)	18.4						
Net Investment							
Capex - D&A		(1,394)	(1,854)	(2,123)	(2,125)	(2,197)	(2,065)
Change in WC		(632)	(1,837)	2,015	(766)	(498)	(520)
Net investment		(2,026)	(3,691)	(108)	(2,891)	(2,696)	(2,585)
IR (=Net Investment/NOPAT)		19.8%	38.3%	1.1%	26.0%	22.5%	20.1%
WACC calculations	ROIC based	IR based: Av of Hist 3 Yrs		IR based: Av of Projected 3 Yrs			
EV/NOPAT	18.4	18.4		18.4			
IR	14.3%	19.5%		22.7%			
g	5.4%	6.5%		5.4%			
ROIC _{inc}	38%	33%		24%			
Implied WACC	10.1%	10.9%		9.6%			

Source: Company Reports and Citi Research Estimates

Mainly net debt + pensions
We use average for current year

Net of adjustments for associates
(which are negative) and for
minorities (positive)

Based on current EV and current
year NOPAT. (For CY companies
that is CY13)

Here positive numbers mean a
source of cash; negative means a
use of cash

This line is positive if cash is being
invested in the business

Takes the EV/NOPAT calculated
to the WACC calculations

Long-term IR implied from the g
and ROIC_{inc}.

ROIC_{inc} implied from the g's and
IR's.

This is our estimate of ROIC_{inc}.
It equals NOPAT over tangible assets, excluding
goodwill etc. and so it often looks very high as it
excludes brand values

These are based on the last 3 reported years.
- IR is sum of last 3 yrs net investment over sum
of NOPAT
- g is average organic sales growth

These are based on the next 3 projected years.
- IR is sum of next 3 yrs net investment over sum
of NOPAT
- g is average organic sales growth

Implied WACC calculations – ABI and SAB

Figure 36. ABI and SAB – Calculation of Implied WACCs based on current EV/NOPAT and growth rates, using ROIC and IRs

Name	ABInBev ABI.BE	SABMiller SAB.L
RIC	70.32	32.4
Latest Share Price		
EV calculation		
MktCap - Local	113,843	52,561
MktCap -Euro	113,843	61,787
MktCap -US\$	150,984	82,209
Mkt Cap	150,984	82,209
EV ex Mkt Cap	39,556	5,341
Adjustments	46,366	4,428
Total EV	236,906	91,978
NOPAT Calculation		
	2010 2011 2012 2013 2014 2015	2011 2012 2013 2014 2015 2016
Adjusted EBIT(A)	11,165 12,607 12,765 14,262 16,727 18,207	3,783 4,260 4,872 5,237 5,768 6,306
Adj Tax rate	24.8% 20.7% 16.3% 19.4% 21.0% 22.0%	28.6% 27.5% 28.5% 28.5% 28.5% 28.5%
NOPAT	8,396 9,997 10,681 11,497 13,214 14,202	2,700 3,089 3,485 3,745 4,124 4,509
EV/NOPAT (current yr)	20.6	24.6
Net Investment		
Capex - D&A	581 (506) (343) (841) (402) (453)	(338) (614) (732) (422) (300) (319)
Change in WC	226 1,409 1,099 900 1,580 920	40 304 17 103 124 63
Net investment	807 903 756 59 1,178 468	(298) (310) (715) (319) (176) (256)
IR (=Net Investment/NOPAT)	-9.6% -9.0% -7.1% -0.5% -8.9% -3.3%	11.0% 10.0% 20.5% 8.5% 4.3% 5.7%
WACC calculations	ROIC based	ROIC based
EV/NOPAT	20.6	24.6
IR	9.5%	18.7%
g	6.1%	6.7%
ROIC	65%	36%
Implied WACC	10.5%	10.0%

Source: Citi Research

Implied WACC calculations – Heineken and Carlsberg

Figure 37. Heineken and Carlsberg – Calculation of Implied WACCs based on current EV/NOPAT and growth rates, using ROIC and IRs

Name	Heineken	HEIN.NL						Carlsberg	CARLB.DK					
RIC	HEIN.AS							CARLB.CO						
Latest Share Price	51.65							522						
EV calculation														
MktCap - Local	30,556							83,185						
MktCap -Euro	30,556							11,152						
MktCap -US\$	40,524							14,790						
Mkt Cap	30,556							83,185						
EV ex Mkt Cap	11,895							25,284						
Adjustments	3,167							15,348						
Total EV	45,618							123,817						
NOPAT Calculation		2010	2011	2012	2013	2014	2015		2010	2011	2012	2013	2014	2015
Adjusted EBIT(A)		2,415	2,457	2,699	3,068	3,323	3,589		10,101	9,636	9,685	10,050	10,818	11,465
Adj Tax rate		27.2%	26.8%	26.1%	28.0%	28.0%	28.0%		26.0%	26.3%	23.4%	24.8%	24.5%	24.5%
NOPAT		1,758	1,799	1,995	2,209	2,392	2,584		7,475	7,100	7,416	7,559	8,168	8,656
EV/NOPAT (current yr)	20.6							16.4						
Net Investment														
Capex - D&A		352	240	(51)	(222)	(159)	(47)		1,251	(270)	1,283	(651)	(804)	(967)
Change in WC		454	251	101	(11)	88	116		716	(992)	329	(433)	157	173
Net investment		806	491	50	(233)	(72)	69		1,967	(1,262)	1,612	(1,084)	(647)	(793)
IR (=Net Investment/NOPAT)		-45.8%	-27.3%	-2.5%	10.5%	3.0%	-2.7%		-26.3%	17.8%	-21.7%	14.3%	7.9%	9.2%
WACC calculations	ROIC based	IR based: Av of Hist 3 Yrs			IR based: Av of Projected 3 Yrs			ROIC based	IR based: Av of Hist 3 Yrs			IR based: Av of Projected 3 Yrs		
EV/NOPAT	20.6	20.6			20.6			16.4	16.4			16.4		
IR	15.4%	-24.3%			3.3%			15.2%	-10.5%			10.4%		
g	3.5%	1.8%			3.5%			3.5%	2.1%			3.5%		
ROIC	23%	n/m			106%			23%	n/m			34%		
Implied WACC	7.6%	7.8%			8.2%			8.7%	8.9%			9.0%		

Source: Company Reports and Citi Research Estimates

Implied WACC calculations – Pernod & CCH

Figure 38. Pernod-Ricard and Coca-Cola Hellenic – Calculation of Implied WACCs based on current EV/NOPAT and growth rates, using ROIC and IRs

Name	Pernod- Ricard PERP.PA PERP.FR	Coca Cola CCH.L CCH.CH
RIC		
Latest Share Price	88.55	15.88
EV calculation		
MktCap - Local	23,493	5,686
MktCap -Euro	23,493	6,685
MktCap -US\$	31,422	8,866
Mkt Cap	23,493	6,685
EV ex Mkt Cap	8,930	1,743
Adjustments	-8	-84
Total EV	32,415	8,344
NOPAT Calculation	2011 2012 2013 2014 2015 2016	2010 2011 2012 2013E 2014E 2015E
Adjusted EBIT(A)	1,909 2,114 2,250 2,358 2,550 2,758	687 523 453 494 551 625
Adj Tax rate	22.0% 23.5% 26.9% 27.0% 27.0% 27.0%	24.2% 25.2% 22.9% 23.5% 23.5% 23.5%
NOPAT	1,489 1,617 1,644 1,721 1,862 2,014	521 391 350 378 421 478
EV/NOPAT (current yr)	18.8	22.1
Net Investment		
Capex - D&A	(50) (71) (29) (75) (52) (65)	(60) (12) (4) (4) (17) (20)
Change in WC	15 (94) (242) (40) (185) (188)	64 61 84 (28) 45 52
Net investment	(35) (165) (270) (115) (237) (253)	4 50 80 (32) 28 32
IR (=Net Investment/NOPAT)	2.4% 10.2% 16.4% 6.7% 12.7% 12.6%	-0.7% -12.7% -22.9% 8.3% -6.6% -6.7%
WACC calculations	ROIC based IR based: Av of Hist 3 Yrs IR based: Av of Projected 3 Yrs	ROIC based IR based: Av of Hist 3 Yrs IR based: Av of Projected 3 Yrs
EV/NOPAT	18.8 18.8 18.8	22.1 22.1 22.1
IR	17.7% 9.9% 10.8%	46.3% -10.6% -2.2%
g	6.0% 5.9% 6.0%	5.3% 1.7% 5.3%
ROIC	34% 60% 56%	11% n/m n/m
Implied WACC	10.4% 10.7% 10.8%	7.8% 6.7% 10.0%

Source: Citi Research

Implied WACC calculations – BAT and Imperial

Figure 39. BAT and Imperial — Calculation of Implied WACCs based on current EV/NOPAT and growth rates, using ROIC and IRs

Name	Brit Am Tobacco BATS.GB							Imperial Tobacco IMT.GB						
RIC	BATS.L							IMT.L						
Latest Share Price	34.915							23.45						
EV calculation														
MktCap - Local	66,860							23,121						
MktCap -Euro	78,606							27,548						
MktCap -US\$	104,250							36,249						
Mkt Cap	66,860							23,121						
EV ex Mkt Cap	6,727							9,691						
Adjustments	-6,776							142						
Total EV	66,811							32,954						
NOPAT Calculation														
Adjusted EBIT(A)	4,984 5,519 5,681 6,188 6,615 7,027							3,067 3,103 3,161 3,185 3,312 3,419						
Adj Tax rate	30.2% 31.2% 30.6% 30.6% 30.6% 30.6%							25.8% 24.3% 23.0% 23.0% 23.0% 23.0%						
NOPAT	3,479 3,795 3,945 4,298 4,594 4,880							2,275 2,350 2,434 2,452 2,550 2,633						
EV/NOPAT (current yr)	15.5							13.4						
Net Investment														
Capex - D&A	(81) (119) (356) (382) (410) (330)							(42) (146) (93) (131) (118) (80)						
Change in WC	90 (88) (244) (80) (40) (40)							214 (6) (505) 100 30 30						
Net investment	9 (207) (600) (462) (450) (370)							172 (152) (598) (31) (88) (50)						
IR (=Net Investment/NOPAT)	-0.3% 5.5% 15.2% 10.8% 9.8% 7.6%							-7.6% 6.5% 24.6% 1.3% 3.4% 1.9%						
WACC calculations	ROIC based	IR based: Av of Hist 3 Yrs		IR based: Av of Projected 3 Yrs				ROIC based	IR based: Av of Hist 3 Yrs		IR based: Av of Projected 3 Yrs			
EV/NOPAT	15.5	15.5		15.5				13.4	13.4		13.4			
IR	4.7%	7.1%		9.3%				0.7%	8.2%		2.2%			
g	4.4%	4.4%		4.4%				0.8%	2.5%		0.8%			
ROIC	93%	62%		47%				120%	30%		36%			
Implied WACC	10.5%	10.4%		10.2%				8.2%	9.3%		8.1%			

Source: Company Reports and Citi Research Estimates

Implied WACC calculations – Nestlé and Unilever NV

Figure 40. Nestle and Unilever NV — Calculation of Implied WACCs based on current EV/NOPAT and growth rates, using ROIC and IRs

Name	Nestlé NESN.CH	Unilever NV UNC.NL
RIC	NESN.VX	UNC.AS
Latest Share Price	62.3	30.26
EV calculation		
MktCap - Local	204,063	92,215
MktCap -Euro	165,714	92,215
MktCap -US\$	219,772	122,299
Mkt Cap	204,063	92,215
EV ex Mkt Cap	7,635	12,170
Adjustments	-6,460	2,711
Total EV	205,238	107,096
NOPAT	2010 2011 2012 2013E 2014E 2015E	2010 2011 2012 2013E 2014E 2015E
Adjusted EBIT(A)	14,038 13,223 13,960 15,258 16,391 17,596	6,031 6,289 7,062 7,399 7,954 8,536
Adj Tax rate	27.0% 27.1% 28.4% 27.0% 27.0% 27.0%	25.0% 26.6% 25.2% 25.0% 25.0% 25.0%
NOPAT	10,252 9,637 9,997 11,139 11,966 12,845	4,522 4,617 5,282 5,549 5,965 6,402
EV/NOPAT (current yr)	18.4	19.3
Net Investment		
Capex - D&A	(1,394) (1,854) (2,123) (2,125) (2,197) (2,065)	(708) (945) (957) (968) (978) (986)
Change in WC	(632) (1,837) 2,015 (766) (498) (520)	169 (177) 822 415 99 114
Net investment	(2,026) (3,691) (108) (2,891) (2,696) (2,585)	(539) (1,122) (135) (553) (880) (872)
IR (=Net Investment/NOPAT)	19.8% 38.3% 1.1% 26.0% 22.5% 20.1%	11.9% 24.3% 2.5% 10.0% 14.7% 13.6%
WACC calculations	ROIC based	ROIC based
EV/NOPAT	18.4	19.3
IR	14.3%	10.1%
g	5.4%	5.6%
ROIC	38%	56%
Implied WACC	10.1%	10.3%

Company Reports and Citi Research Estimates

Implied WACC calculations – Danone

Figure 41. Danone — Calculation of Implied WACCs based on current EV/NOPAT and growth rates, using ROIC and IRs

Name	Danone DANO.FR					
RIC	DANO.PA					
Latest Share Price	56.89					
EV calculation						
MktCap - Local	35,482					
MktCap -Euro	35,482					
MktCap -US\$	47,058					
Mkt Cap	35,482					
EV ex Mkt Cap	5,992					
Adjustments	-774					
Total EV	40,700					
NOPAT	2010	2011	2012	2013E	2014E	2015E
Adjusted EBIT(A)	2,578	2,843	2,958	3,059	3,336	3,638
Adj Tax rate	25.2%	25.8%	27.7%	29.5%	29.5%	29.0%
NOPAT	1,929	2,109	2,140	2,157	2,352	2,583
EV/NOPAT (current yr)	18.9					
Net Investment						
Capex - D&A	(287)	(301)	(376)	(345)	(353)	(362)
Change in WC	288	162	333	94	89	135
Net investment	1	(139)	(43)	(251)	(264)	(227)
IR (=Net Investment/NOPAT)	0.0%	6.6%	2.0%	11.6%	11.2%	8.8%
WACC calculations	ROIC based	IR based: Av of Hist 3 Yrs		IR based: Av of Projected 3 Yrs		
EV/NOPAT	18.9	18.9		18.9		
IR	14.0%	2.9%		10.5%		
g	6.5%	6.7%		6.5%		
ROIC	47%	229%		62%		
Implied WACC	11.1%	11.9%		11.3%		

Source: Company Reports and Citi Research Estimates

Implied WACC calculations – L'Oréal and Reckitt

Figure 42. L'Oréal and Reckitt — Calculation of Implied WACCs based on current EV/NOPAT and growth rates, using ROIC and IRs

Name	L'Oréal OREP.FR							Reckitt Benckiser RB.GB						
RIC	OREP.PA							RB.L						
Latest Share Price	124.9							45.89						
EV calculation														
MktCap - Local	74,327							32,667						
MktCap -Euro	74,327							38,406						
MktCap -US\$	98,575							50,936						
Mkt Cap	74,327							32,667						
EV ex Mkt Cap	-9,427							2,299						
Adjustments	-228							-676						
Total EV	64,672							34,290						
NOPAT														
Adjusted EBIT(A)	3,057							2,231						
Adj Tax rate	28.2%							25.8%						
NOPAT	2,195							1,656						
EV/NOPAT (current yr)	22.6							17.0						
Net Investment														
Capex - D&A	134							(228)						
Change in WC	133							(90)						
Net investment	267							(318)						
IR (=Net Investment/NOPAT)	-12.1%							19.2%						
WACC calculations														
EV/NOPAT	ROIC based	IR based: Av of Hist 3 Yrs		IR based: Av of Projected 3 Yrs				ROIC based	IR based: Av of Hist 3 Yrs		IR based: Av of Projected 3 Yrs			
IR	22.6	22.6		22.6				17.0	17.0		17.0			
g	9.3%	7.0%		8.1%				2.1%	13.7%		-2.2%			
ROIC	5.3%	5.4%		5.3%				5.4%	6.5%		5.4%			
Implied WACC	57%	77%		66%				265%	48%		n/m			
	9.4%	9.5%		9.4%				11.2%	11.6%		11.4%			

Source: Company Reports and Citi Research Estimates

Implied WACC calculations – Beiersdorf and Henkel

Figure 43. Beiersdorf and Henkel — Calculation of Implied WACCs based on current EV/NOPAT and growth rates, using ROIC and IRs

Name	Beiersdorf	BEIG.DE						Henkel	HNKG_p.DE					
RIC	BEIG.DE							HNKG_p.DE						
Latest Share Price	66.94							73.89						
EV calculation														
MktCap - Local	15,183							28,466						
MktCap -Euro	15,183							28,466						
MktCap -US\$	20,308							37,753						
Mkt Cap	15,183							28,466						
EV ex Mkt Cap	-2,225							3,415						
Adjustments	0							0						
Total EV	12,958							31,881						
NOPAT		2010	2011	2012	2013E	2014E	2015E		2010	2011	2012	2013E	2014E	2015E
Adjusted EBIT(A)		699	646	735	843	960	1,079		1,862	2,029	2,335	2,502	2,706	2,904
Adj Tax rate		36.5%	33.7%	36.1%	25.0%	25.0%	25.0%		26.6%	26.0%	24.8%	25.0%	25.0%	25.0%
NOPAT		444	428	470	633	720	809		1,368	1,501	1,755	1,877	2,029	2,178
EV/NOPAT (current yr)	20.5							17.0						
Net Investment														
Capex - D&A		125	187	(41)	(70)	(77)	(85)		238	19	(13)	(21)	(28)	(35)
Change in WC		102	17	(25)	(107)	(15)	(41)		20	(204)	626	10	51	(36)
Net investment		227	204	(66)	(177)	(92)	(125)		258	(185)	613	(11)	24	(71)
IR (=Net Investment/NOPAT)		-51.1%	-47.7%	14.0%	28.0%	12.7%	15.5%		-18.9%	12.3%	-34.9%	0.6%	-1.2%	3.3%
WACC calculations	ROIC based	IR based: Av of Hist 3 Yrs			IR based: Av of Projected 3 Yrs		ROIC based	IR based: Av of Hist 3 Yrs			IR based: Av of Projected 3 Yrs			
EV/NOPAT	20.5	20.5			20.5		17.0	17.0			17.0			
IR	39.3%	-27.2%			18.2%		12.6%	-14.8%			1.0%			
g	5.4%	3.3%			5.4%		5.4%	5.5%			5.4%			
ROIC	14%	n/m			29%		43%	n/m			n/m			
Implied WACC	8.3%	9.5%			9.4%		10.5%	12.3%			11.2%			

Source: Company Reports and Citi Research Estimates

Appendix 1. Mathematical relationship between WACC and EV/NOPAT

Assuming we are in the terminal growth period, it is possible to show the EV in terms of NOPAT, IR (the investment rate), the WACC and growth.

$$EV = \sum_{n=1}^{\infty} \frac{FCF_n}{(1+WACC)^n}$$

Basic DCF formula

$$= \frac{FCF_0}{(WACC - g)}$$

Assumes terminal growth

$$= \frac{NOPAT - NetInvestment}{(WACC - g)}$$

Where $NetInvestment = [Capex - (Dep'n + Amort'n)] + [\Delta WorkCap]$

$$= \frac{NOPAT - (NOPAT \times IR)}{(WACC - g)}$$

Where $IR = InvestmentRate = \frac{NetInvestment}{NOPAT}$

$$= \frac{NOPAT \times (1 - IR)}{(WACC - g)}$$

Multiplying both sides by $(WACC - g)$ gives

$$EV \times (WACC - g) = NOPAT \times (1 - IR)$$

Dividing both sides by EV gives

$$(WACC - g) = \frac{NOPAT}{EV} \times (1 - IR)$$

Adding g to both sides gives

$$WACC = \frac{NOPAT}{EV} \times (1 - IR) + g$$

Next we invert $\frac{NOPAT}{EV}$ to put it in the more recognizable form of $\frac{EV}{NOPAT}$

$$WACC = \frac{1}{\left(\frac{EV}{NOPAT}\right)} \times (1 - IR) + g \quad \text{or} \quad WACC = \frac{(1 - IR)}{\left(\frac{EV}{NOPAT}\right)} + g$$

This is the formula we use

However, there is also a relationship between return on investment and growth.

For any company, long-term growth must be related both to the InvestmentRate (IR) and the incremental return on incremental assets ($ROIC_{inc}$). It is simply not possible for a company to grow indefinitely without growing assets as well.

$$\begin{aligned}
 g &= \frac{\Delta NOPAT}{NOPAT} \\
 &= \frac{\Delta NOPAT}{NetInvestment} \times \frac{NetInvestment}{NOPAT} \quad \text{Note that } \frac{\Delta NOPAT}{NetInvestment} \text{ is Return on Incremental Capital } (ROIC_{inc}) \text{ not Return on Historic Capital } (ROIC_{hist}) \\
 &= ROIC_{inc} \times IR
 \end{aligned}$$

But $g = ROIC_{inc} \times IR$ can be reorganized as $IR = \frac{g}{ROIC_{inc}}$ and we can substitute this into the last equation on the previous page

$$WACC = \frac{(1 - IR)}{\left(\frac{EV}{NOPAT}\right)} + g \quad \text{from the previous page}$$

$$WACC = \frac{\left(1 - \frac{g}{ROIC_{inc}}\right)}{\left(\frac{EV}{NOPAT}\right)} + g \quad \text{This is the formula we use when we generate the WACC from the } ROIC_{inc}$$

ROICs and IRs in Consumer Staples

- As the equations above show, to perform our reverse DCFs, we need to make an assumption about the long-term values of IR or $ROIC_{inc}$
- An IR can be directly observed but a $ROIC_{inc}$ can't be, which suggests that IRs would be a better measure to use
- However we also use ROICs as there are problems with using observed IRs
 - **Currently some companies** (notably Carlsberg and Heineken) **have IRs are currently lower than we think is sustainable** . This means that their ROICs are increasing.
 - **It is possible for a company to have negative IRs for a period** (which means they are actually withdrawing invested capital) **and still grow**. This is precisely what ABI has been doing for a number of years. However no company can have an infinite $ROIC_{inc}$ over the long term.
 - **However, for some other companies the IRs are higher than appears necessary in the long-term**, which means returns are falling. Nestlé and Imperial (perhaps surprisingly) are in this camp.
- We assume that the $ROIC_{inc}$ will be the same as the historic RoTA (return on tangible assets) –We explain why on the next page

Figure 44. Calculation of RoTA for European Consumer Staples Companies (Last Reported Year)

	NOPAT	Net Fixed Assets	Working Capital Assets	Tangible Assets	RoTA
ABI	10,681	16,461	-334	16,461	65%
SAB	3,485	9,719	-1,801	9,719	36%
Heineken	1,995	8,792	-2,224	8,792	23%
Carlsberg	7,416	31,991	-6,409	31,991	23%
Pernod	1,644	1,954	2,870	4,824	34%
CCH	350	3,041	-242	3,041	11%
BAT	3,945	3,201	1,044	4,245	93%
Imperial	2,434	2,025	-2,029	2,025	120%
Nestle	9,997	26,346	-3,934	26,346	38%
Unilever NV	5,282	9,445	-3,668	9,445	56%
Danone	2,140	4,576	-2,624	4,576	47%
L'Oreal	2,750	2,963	1,840	4,803	57%
Reckitt	1,953	737	-3,454	737	265%
Beiersdorf	470	712	2,732	3,444	14%
Henkel	1,755	2,314	1,812	4,126	43%

Source: Citi Research

- **All the companies have very high returns on tangible assets** (typically 23-65% for most companies, but about 100% for the Imperial Tobacco and Reckitt). This is because their major assets are intangible (brands)
- **Reckitt** in particular stands out as have a strangely high RoTA – so we don't use this for our estimate of $ROIC_{inc}$
- **CCH has a low RoTA** partly because it is not a brand owner – and its very existence is in part to ensure that KO isn't asset intensive – but in addition in 2012 its EBIT margin (and hence its NOPAT margin) was unusually depressed.

We believe the best estimate of future $ROIC_{inc}$ is actual RoTA

- There is no certain way to estimate values for future $ROIC_{inc}$

■ **We use RoTA** because $ROIC_{inc} = \frac{\Delta NOPAT}{NetInvestment} = \frac{\Delta NOPAT}{\Delta TangibleAssets + \Delta WorkingCap}$ and $RoTA = \frac{NOPAT_{actual}}{NetTangibleAssets_{actual} + WorkingCap_{actual}}$

Therefore RoTA seems to us to be the best guide for the future $ROIC_{inc}$.

- We are using 2012 Return on Tangible Assets where we only add in working capital to the denominator if it is positive.
- **We do NOT use as asset base that has been inflated with capitalized brand values in this calculation.** For our companies we could in theory assume that A&P was a form of capital investment, capitalize it, and add it to the denominator of the $ROIC_{inc}$. However we don't for 3 key reasons:
 1. **The amount of brand value would be an arbitrary figure.** We don't know the annual A&P or marketing spend precisely for Reckitt, the brewers and tobacco companies, and even where we do know it, it is an arbitrary decision how many years' A&P to include. And even where management give us data on A&P spend, it isn't comparable from one company to the next
 2. **Capitalising brand value would hugely increase margins, making the current income statement hard to recognise** — If we were to treat A&P as a form of capex, then we would need to stop treating it as an expense, and suddenly the operating margins of the various companies would expand. In short the denominator of our $ROIC_{inc}$ calculation would be increased, but so would the incremental NOPAT.
 3. **Mathematically, the result is irrelevant** – How you treat brand values does NOT effect DCF values.
- **We do NOT use historic ROICs for the calculation.** One all-to-common approach is ignore the difference between $ROIC_{inc}$ (=incremental return on incremental invested capital) and $ROIC_{hist}$ (=return on historic invested capital), or to assume that $ROIC_{hist}$ is the best approximation for $ROIC_{inc}$. This is wrong because the $ROIC_{hist}$ has a capital base that has been increased by the goodwill associate with acquisitions – but to a different extent depending on the history of the companies
- **It is quite likely that the companies will make acquisitions in future, but we have to assume that they will be value neutral.** (In other words the price will match the cost of the invested capital.) Of course some investors will assume that some managements will systematically create or destroy value through acquisitions, but this a not a matter this report even attempts to address. We are trying to address the value of the existing asset base.

Appendix A-1

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