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Accounting & Valuation (Citi)
Global

Accounting for Global Aerospace & Defence

Inconsistencies Distort Global Comps

- Industry Overview

- **Opaque and inconsistent accounting in a complex sector** — Numerous inconsistencies in approach across the Aerospace & Defence sector arise both from differences between IFRS and US GAAP, and flexibility within each set of rules. Significant accounting issues include long-term contracts; Rolls Royce's TotalCare Agreements; Boeing's program accounting; capitalisation of R&D and other intangibles; pension costs; and JVs. In this report, we investigate these issues and attempt to normalise earnings.

- **Earnings depend on management judgment** — Many accounting techniques in the sector rely heavily on management estimates or policy choices, and therefore investor confidence in management is crucial. Our analysis suggests that earnings at Bombardier, Safran, MTU, Meggitt, Rolls Royce, and Boeing are flattered most by current policies.

- **New accounting standards matter, but won't resolve most issues** — New or amended IFRSs on Pensions (in 2013), Joint Ventures (in 2014), and Revenue (2015 or later) will affect the sector. New pension rules should reduce earnings for most IFRS reporters, while we expect the JV standard will reduce sales and operating profit for Thales, EADS, MTU and Safran. However we think the new Revenue standard is unlikely to have a major impact or improve comparability significantly.

- **An Analyst's View** — While this research does not change our fundamental view of any of the companies under coverage, it is extremely useful in highlighting inconsistencies across the sector. Many accounting policies that influence EPS rely heavily on management judgment, which is a potential concern. Cash flow-based valuations circumvent many of the issues highlighted in this report. However, we acknowledge that forecasting cash flows can be difficult. We believe the most interesting accounting issues from an investor's standpoint to be: 1) varying levels of capitalised R&D; 2) Rolls Royce's TotalCare accounting; 3) EADS vs. Boeing and the impact of program accounting; and 4) GKN's pension partnership scheme.

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

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A&D Accounting - An Analyst's View…

A variety of different accounting approaches adds an unwelcome layer of complexity and opacity to what is, in our view, an already complicated sector.

In this note, we look broadly at the different accounting practices used across the Aerospace & Defence (A&D) sector globally. A variety of accounting policies add a layer of complexity and opacity to what is, in our view, an already complicated sector.

From the standpoint of a sell- or buy-side aerospace analyst, we would make the following general observations:

- There are numerous inconsistencies in approach across the Aerospace and Defence sector that reduce the comparability of company earnings vs. other sectors, other A&D stocks, and the same company's historical pre-IFRS earnings.

- Many of the more controversial accounting techniques in the sector (e.g. Long-term contracts, program accounting, R&D capitalisation, Rolls Royce's TotalCare accounting) are essentially smoothing mechanisms based around the accounting principle of "matching" (revenues and costs). However…

The thing that struck us most was the level of management judgment involved when calculating earnings. The quality of management is therefore of paramount importance.

- …all these approaches increase the level of management judgment involved when calculating earnings. Therefore, investor confidence in management is of paramount importance. A poor track record on contract execution and cash conversion is unlikely to be rewarded with a high P/E ratio.

- For many A&D stocks, cash flows can ostensibly bear little relation to profits. Although cash flows can be hard to predict, we still believe cash flow-based valuations are more appropriate than earnings multiples on account of accounting differences.

- Forthcoming accounting changes are unlikely to materially improve comparability of earnings across the sector. Additionally there are a large number of discrepancies between each company's definition of "underlying earnings".

This note contains no changes to EPS forecasts or stock recommendations. A detailed review of accounting policies has not thrown up any significant surprises, but it is nonetheless a useful exercise that highlights some of the risks associated with valuing and investing in Aerospace and Defence stocks.

Net Capitalised R&D

R&D capitalisation involves considerable management judgment. Adjusting underlying EPS forecasts for Safran, Meggitt and MTU for net capitalised R&D and other intangibles materially lowers earnings

We believe that current accounting policies are most flattering for the aftermarket-exposed European civil aerospace stocks, largely due to the capitalisation of R&D, certification costs and program participation Costs. When valuing these stocks, many investors adjust net capitalised R&D from company earnings to improve comparability.

Capitalisation of R&D is relatively high across the sector at the moment due to the fact that most companies are developing new aircraft and engine products. Adjusting for net capitalisation would lower Citi 2012E underlying EPS by 34% for Safran, 14% for MTU and Meggitt and <10% for Rolls Royce (although RR's earnings are also impacted by the accounting for TotalCare contracts, as discussed below).

Capitalisation of R&D involves considerable management judgment and additionally, where capitalisation exceeds amortisation, cash conversion is lowered (all other things being equal). Where cash conversion is consistently weak, investors start to question the ability of a company to generate cash in the medium-to long-term, in our view.

We have no particular issue with net capitalised R&D per se, as long as companies are investing into successful programs that offer future growth and where the IRR of the project exceeds the WACC. We believe that a DCF-based valuation approach circumvents the issues associated with capitalised R&D with EV/EBIT and P/E valuation methods.

Rolls Royce – TotalCare

We accept that Rolls Royce's complex accounting makes it something of a black box, but the bear arguments about aggressive accounting are certainly not new and the aggregate EPS impact is not dissimilar to other stocks in the sector.

Rolls Royce is the stock on which we generally receive the most questions on accounting, due to the net capitalisation of R&D and "TotalCare" service contracts (linked sales of goods and services) where engines that are often sold at low margins or an initial loss are contractually linked to 8-12 year "power by the hour" service agreements. We understand that Rolls Royce smoothes the profitability of such engines over the life of the service period, releasing an increasing amount of margin as the engine matures and the contract de-risks. The relevant balance sheet entry is the TotalCare receivable (TCP) of £1,124m in 1H12A. The TCP debtor has grown considerably over the past decade as the installed fleet grows and as the proportion of engines under long-term service agreements rises.

In Appendix 1, we deduct the movement of the TotalCare receivable from Rolls Royce's definition of underlying EBIT and estimate that on average this accounting policy has flattered Rolls Royce's underlying EPS by c10% on average since 2005A, although it has been highly volatile. In the same period, its capitalisation policies have flattered EPS by c20% on average, giving a total impact of c30%. However, the impact of capitalisation and TotalCare is less now than it has been previously: in 2011A we estimate that the combined EPS impact was 17% and we forecast c10% in 2012E and beyond. Rolls Royce's accounting appears less aggressive than that of Safran, in our view. For more details see Appendix 1 on page 28.

Investor concerns around Rolls Royce's accounting practices are certainly not new and are probably best left to another more detailed note. We value Rolls Royce using a DCF approach, which we believe circumvents many of the accounting issues. However, we accept that external visibility remains relatively low and Rolls Royce remains rather a "black box". We continue to like Rolls Royce's organic sales growth prospects (to double over 10 years), its program exposure, and the fact that CEO John Rishton is cognisant of and plans to improve cash conversion and margins.

EADS vs. Boeing – Program accounting

The fact that Boeing employs program accounting and EADS does not hampers comparability of margins and earnings

We are also often asked about the relative valuation of EADS vs. Boeing and the impact of program accounting. (On a consensus basis, EADS is trading at an 8-12% P/E discount to Boeing in 2013E and 2014E, although Citi's EPS forecasts for EADS are 9-19% ahead of consensus). However, whereas Boeing employs program accounting, EADS does not. Operating margins and earnings would not be comparable without adjustment.

Program accounting smoothes costs over the program life, so that a constant margin is reported over time — a company applying program accounting is likely to report more stable operating margins and earnings. Earnings will be more dependent on management judgment when program accounting is used (in particular the estimation of future sales). Program accounting should increase margins and earnings during the early stages of a program, and understate them later on.

In 2010A, Boeing Commercial Airplanes (BCA) reported a margin of 9.0% vs. 10.6% had program accounting not been employed. In 2011A, program accounting raised BCA's margin from 6.1% to 10%. And in 1H12A, BCA has reported a margin of 10.0% using program accounting and -1% without, which we believe is due to the dilutive impact of early 787 and 747-8 deliveries.

EADS targets a margin of 10% in its Airbus Commercial business before the dilutive impact of early A350XWB deliveries by 2015 vs. a margin before one-off items of 1.6% in 2011A. We would make the following observations of EADS' margins: 1) we still expect an underlying margin increase to a c9% margin in 2015 at an FX rate of $1.23/€ due to higher production volumes, an FX tailwind and reduced losses on A380; 2) margins so far in 2012 have actually been higher at Airbus than at Boeing using consistent accounting methodology; and 3) softer underlying margins at BCA highlight the potential risk of margin dilution from 2H14 when the Airbus releases the A350XWB.

GKN – Pension Partnership Issues

GKN's pension partnership scheme is similar to that of M&S, which has recently come under scrutiny from the UK financial reporting regulator

Finally, GKN's pension partnership is also interesting from an accounting perspective. GKN has contributed assets to a partnership with the pension scheme for 20 years. The pension scheme gets an income stream, such as rental or royalty income, and some additional security as the pension fund has a charge over the assets. While GKN's transfer is not unusual, amongst major UK-listed companies only GKN and Marks & Spencer treat the partnership as a plan asset, reducing the accounting (IAS 19) deficit. Recently, following discussions with the UK financial reporting regulator, M&S reclassified the obligation from equity into financial liabilities, increasing net debt[1]. GKN records the pension scheme's asset as a minority interest of the group, which means that the transaction is EV-neutral, but recognition within equity does affect net debt.

[1] Refer to *The Standards: June Update* (6 June) for more details of the M&S accounting change.

Accounting Issues in the Aerospace & Defence Industry

Inconsistent accounting practices reduce comparability across sector

Companies in the Aerospace & Defence sector apply a variety of accounting practices that reduce the comparability of earnings and balance sheets. In this report, we discuss the current accounting methods used in the sector, and assess the extent to which these may be affected by future accounting developments.

For example, recent work by the IASB highlighted inconsistent cost accounting practices across the sector, as shown in Figure 1.

Figure 1. Cost accounting practices vary across the industry

	Example	Accounting practice applied	Balance sheet asset created
US GAAP reporter 1	Boeing	Report expected margin for the total program	Know-how asset
US GAAP reporter 2	GE	Loss (cost of sales in excess of selling price)	No asset
IFRS reporter 1	Rolls Royce	Zero margin (cost of sales = revenue)	Customer relationship asset
IFRS reporter 2	Airbus	Partial loss	Know-how asset

Source: IASB, Citi Research.

In our view, the most significant accounting issues include:

- Revenue recognition, particularly long-term contract accounting and linked sales/contracts with multiple deliverables
- Program accounting (in US GAAP)
- R&D (IFRS only)
- Capitalisation of other intangible assets (IFRS)
- Pension accounting
- Joint ventures (IFRS)

Long-term contract accounting

Results in A&D sector sensitive to long-term contract assumptions and estimates

Companies in this sector may have significant long-term contracts, for example long-term maintenance and service contracts, or construction contracts. Within the sector, these contracts are most common amongst defence contractors, for example, large multi-year programs such as the Astute class nuclear submarine for BAE Systems. Companies identifying long-term contract accounting as a critical accounting policy and/or source of significant accounting judgment/estimates include BAE Systems, Bombardier, EADS, Finmeccanica, General Dynamics, Lockheed Martin, Northrop Grumman, QinetiQ, Raytheon, Rolls Royce and Safran.

In most cases, such contracts will be accounted for on a percentage of completion basis[2], whether the company reports under IFRS or US GAAP. That is, revenues and costs are recognised by reference to the stage of completion. Typically, this is based on the costs incurred to date compared to the total estimated costs to completion (cost-to-cost basis), but may be based on technical milestones, units of delivery, or other criteria. Based on our review of the A&D sector, a majority of the companies mention the cost-to-cost basis, but a significant minority refer to technical milestones, or a combination of methods (ie costs for some contracts and milestones or other criteria for other contracts).

[2] For example, Lockheed Martin specifies that 95% of its sales are accounted for on a percentage of completion basis.

When estimated contract profitability changes, the effect is recognised prospectively rather than retrospectively (ie prior year results are not restated). There are two possible methods for recognising the change. The reallocation method recognises the impact of revisions in estimates over the remaining contract term. The cumulative catch-up method recognises the impact of a change in estimated profit immediately. Most US Aerospace & Defence companies use the cumulative catch-up method, although General Dynamics uses the reallocation method. The cumulative catch-up method may on average give more volatile earnings than the reallocation method. IFRS does not specify a method for accounting for changes in estimate and the accounting policy note of IFRS reporters rarely states this.

If the outcome of a contract cannot be estimated reliably (eg in the early stages of a construction contract), costs are expensed and revenue is recognised only to the extent that the costs are recoverable.

Risk of large write-downs

Long-term contract accounting involves considerable management judgment. Revenues and profits are recognised based on estimates and the ultimate profitability of the contract may only be determined years after some profits have been recognised on the contract. Long-term contracts may therefore be subject to large write-downs. Once a contract has become assessed as onerous (loss making), the company should recognise the expected loss.

Most of the companies do not provide enough quantitative information for us to assess the contribution of long-term contracts to the results. We are not able to quantify the sensitivity to the key contract accounting assumptions. However, this is clearly a key accounting issue for the sector and underscores the importance of management track record for investors.

Potential risks for investors

External visibility into contract progress is generally limited, which means that investors are reliant on management guidance

From an investors' perspective, we believe that there are 3 principal issues with accounting for long-term contracts.

1. As external visibility into the progress of any given contract is generally rather limited, investors are beholden to management guidance. For example, in 1H12 BAE System's Platform's & Services (UK) division reported a 15.8% margin vs. 10.2% in the same period last year due to a release of profits on the Typhoon and Type 45 contracts, which given weaker-than-expected results in the other divisions ensured that BAE did not lower its FY12 guidance. In our view, it is genuinely difficult to determine whether this high margin is repeatable or exceptional in nature.

2. If a number of significant charges are taken against long-term contracts, the reliability and validity of the results of prior periods are brought into question, as prior year results are not retrospectively restated. For example, if a company has historically booked significant "one-off" charges in multiple years, investors should probably take a more prudent view of that company's "underlying profitability", in our view. Examples include Thales, Finmeccanica, EADS and Boeing, which have both been prone to booking large charges during the development phase of new aircraft programs (e.g. A380, 787).

Charges against long-term contracts in A&D can decimate earnings and cast doubt on margins reported in prior periods as these are not retrospectively adjusted

3. Not only is it rather difficult to predict the timing of potential charges, but charges on programs that are a relatively small percentage of a company's sales can decimate group earnings. Examples include EADS (A380), Thales (in 2009 and 2010) and BAE Systems (Astute and Nimrod in 2003).

Linked sales and contracts with multiple elements

Judgment may be needed in determining accounting for contracts with multiple elements

In the aerospace and defence industry, sales of products and services may be included in the same contract, or negotiated as part of a single commercial package.

For example, the sale of goods (eg an engine) may be linked to ongoing services (eg ongoing repair and overhaul), such as Rolls Royce's "TotalCare Agreements". Most Aerospace and Defence companies derive revenues from both the sale of original equipment (OE) and aftermarket services, but in our view this issue is probably most relevant for the civil aerospace engine companies and component suppliers.

These arrangements may be accounted for as a single contract where the components are negotiated as a single package and are so closely interrelated that they are considered to form a single project with an overall profit margin. Determining whether "linked sale" accounting is appropriate may involve management judgment. If however the company provides the customer with the sale of a good and of subsequent services, but without a contractual obligation linking the two, the transactions are accounted for separately (ie the profit margin is likely to differ).

Similarly, a single contract containing multiple elements should be reviewed to determine if the individual deliverables should be accounted for as separate "units of account" (ie if the revenue should be allocated). US GAAP emphasises the allocation on the basis of stand-alone selling prices whereas in IFRS the emphasis tends to be on the concept of "fair value", although the outcome may be similar in many cases.

Although a number of companies mention this issue in their accounting policies notes (eg Rolls Royce, Bombardier, etc), there is usually no quantification of the affected contracts and therefore we are unable to assess the sensitivity to these assumptions.

Rolls Royce: TotalCare Accounting

We believe that Long Term Service Agreements, similar to those employed by Rolls Royce, will become increasingly prevalent across the sector, which will undoubtedly have accounting implications

Around 90% of Rolls Royce's larger and higher value Trent engines are sold as part of a "TotalCare" service agreement, which are typically around 10 years in duration. Rolls Royce has been actively pursuing the sale of engines into such Long Term Service Agreements (LTSA) for the past decade and we see signs that this is becoming increasingly common elsewhere in the industry, for example Safran noted that >50% of the new LEAP-X engines for 737MAX and A320NEO will be on long-term service agreements. The rationale and implications for LTSA are as follows:

- Smoother revenue profile. On a TotalCare agreement, Rolls Royce bills the customer on a monthly basis, rather than on ad hoc basis when servicing is required. This is particularly relevant because many engines do not need servicing for the first time until they are 5-9 years old.

- Risk is transferred from the airline to the engine company. The airline pays a fixed monthly bill on a "power by the hour" basis, depending on how much the engine is used. This makes budgeting easier for airlines and means that they are not landed with a large bill in the event of unreliability. If the engine proves more reliable than is initially anticipated when the service contract is priced, then the engine company benefits. However, the reverse is also true.

Rolls Royce smoothes the profitability of engines sold into TotalCare agreements across the life of the contract (usually 10 years). It is our understanding that Rolls Royce takes a prudent view on margins initially, and then releases more profit as the reliable engine approaches the end of its LTSA. Like the accounting practices discussed in this note, the investor is 1) reliant on the fact that Rolls Royce has accurately assessed how much each engine will be used and how much it will cost to service in future when the initial contract is drawn up; 2) creates a disconnect between cash and profits.

In Appendix 1, we look at the combined impact of TotalCare and capitalisation of R&D, PPCs and recoverable engine costs on Rolls Royce's underlying EBIT and EPS since 2005A.

Program accounting – US GAAP

Boeing applies program accounting rule

Program accounting is an accounting method that exists in US GAAP but not IFRS. It is generally only applied to the Aerospace & Defence industry due to the long-term product programs. Of the Aerospace & Defence companies covered by Citi Research, only Boeing applies program accounting.

Normally, production costs are accounted for at the level of an individual unit, individual contract, or a batch of units produced together. When program accounting is used, a batch of units to be produced for both existing and anticipated contracts is considered together (known as a program). When a sale is made, the cost of sales reported is not the actual cost of that unit, but rather the cost of sales is derived by multiplying the sale revenue by the estimated cost of sales percentage for the program.

The actual costs per unit produced in a program will generally fall over time, for example due to "learning curve" effects. Program accounting smoothes costs over the program life, so that a constant margin is reported over time. The excess actual costs over the recorded cost of sales are capitalised as deferred production costs (initial tooling costs are also capitalised and amortised). These are reported within Inventories on the balance sheet.

Reported profitability depends on company's estimate of future sales

One important aspect of program accounting is that the profitability reported (and also the asset deferred on balance sheet) depends on the company's estimation of future sales for both existing and anticipated contracts. So if a company over-estimates future sales, current earnings would be overstated.

If a program is expected to be loss-making, then the company must immediately expense the expected loss, known as "reach-forward losses". This would not apply to a company that does not use program accounting, although provisions might have to be recorded for future losses on specific onerous contracts.

When comparing a company that applies program accounting with a competitor that does not, operating margins and earnings will not be comparable without adjustment. In particular, the company applying program accounting is likely to report more stable operating margins and earnings. The impact of program accounting will vary depending on the stage in the product cycle. Program accounting will increase margins and earnings during the early stages of a program, and understate them during the late stages of a program. In addition, earnings will be more dependent on management judgment when program accounting is used (in particular the estimation of future sales), therefore understanding a management team's track record is particularly important.

The accumulated asset on the balance sheet arising from program accounting (ie deferred production costs/unamortised tooling costs) represents the amount by which a company's past profits have been overstated relative to an otherwise identical competitor that does not apply program accounting. Boeing's program accounting assets are reported within the category of inventories on the balance sheet (subheading "commercial aircraft programs").

In Figure 2, we show Boeing's operating profit under program accounting and under unit cost accounting, according to information provided by the company[3].

Figure 2. Boeing Commercial Airplanes operating profit under program and unit cost accounting, 2004 – H1 2012 ($m)

	2004	2005	2006	2007	2008	2009	2010	2011	H1 2012	Total
GAAP (program accounting)	753	1,432	2,733	3,584	1,186	-583	3,006	3,495	2,292	15,606
Unit cost	751	1,759	2,795	3,099	947	1,184	3,380	2,217	-282	16,133
Difference	-1	327	62	-484	-239	1,766	374	-1,278	-2,574	527

Source: Company Reports, Citi Research

Program accounting does not exist in IFRS. However, certain costs may be capitalised as intangible assets (recoverable engine costs, certification costs, program participation costs, etc), as discussed on pages 15-17.

Program accounting: EADS vs. Boeing

From an investor's perspective, we believe that the comparison of Boeing and EADS is probably most interesting. Boeing employs program accounting in its Boeing Commercial Airplane (BCA) division, whereas EADS does not in its Airbus Commercial division. Airbus and Boeing are both competitors in a duopolistic market with roughly equal market shares and broadly similar products. We would make the following observations about Airbus vs. Boeing:

- Management has more ability to influence margins at Boeing under program accounting rules than at Airbus in any one given period. Over the long-term, program accounting should only serve to smooth rather than inflate or deflate margins. However, margin assumptions are based on management's assumption of future revenue and costs that may not come to fruition.

- Historically margins have been much more volatile at Airbus Commercial than at Boeing Commercial. On Boeing's website, the company publishes what the EBIT margins would have been had program accounting not been employed. Quarterly margins are particularly volatile, e.g. in 2Q12 Boeing Commercial reported 10% EBIT margins under program accounting, which would have been -1% had BCA reported under unit cost accounting. Although quarterly data from 2010 shows that program accounting margins are generally higher than unit cost accounting, the reverse is also true; eg in 3Q10 BCA reported 12% EBIT margin under program accounting, while it would have been 14% under unit cost accounting. It is for this reason that we believe Boeing investors should pay attention to cash flow generation in addition to earnings.

Program accounting currently flatters Boeing's margins, which we believe is due to the ramp-up of production of the low-margin 787 aircraft, and deliveries on the 747-8 program, which is in a forward loss position, but this has not always been the case. In 2010A Boeing Commercial's margin using program accounting was 9% vs. 10.6% had program accounting not been employed. In 2011A, program accounting raised BCA's margin from 6.1% to 10%. In 1H12A, BCA has reported a margin of

[3] Quarterly information for 2010-2012 is provided on Boeing's website at www.boeing.com/companyoffices/financial/bca_income.html.

10% using program accounting and -1% without. This suggests that early 787 deliveries are very margin dilutive. There is an interesting read-across here for Airbus: EADS has guided that it aims to achieve a 10% margin at Airbus Commercial in 2015 before the dilutive impact of the A350 (Citi 9%). The example of Boeing suggests that A350 could potentially be more dilutive than anticipated.

R&D accounting

US GAAP expenses all R&D; IFRS capitalises some development costs

Accounting for Research & Development costs also differs between US GAAP and IFRS. In US GAAP, almost all R&D costs (with limited exceptions generally not applicable to A&D companies) are expensed directly through the P&L. For example, Boeing expenses all R&D.

In IFRS, all research costs must be expensed, but development costs are capitalised if they meet certain criteria[4]. These criteria are that the company can demonstrate:

- Technical feasibility of completing the asset
- Intention to complete the asset
- Ability to use or sell the asset
- Probable future economic benefits from the asset
- Adequate resources to complete development
- Ability to measure costs reliably.

Meeting these criteria can be a matter of judgment (for example, whether technical feasibility has been reached, and if future economic benefits are probable). The proportion of R&D capitalised will depend on a company's R&D policy (eg the proportion of research vs late stage development), the stage in the product cycle, and also company management's interpretation of the accounting standard.

IFRS R&D capitalisation rates vary from 0% to 77%

Figure 3. R&D capitalisation rates vary widely across the sector

	2008	2009	2010	2011	Total
Bombardier[1]	66%	75%	76%	84%	77%
Meggitt	40%	53%	50%	50%	48%
Embraer[2]	0%	65%	47%	59%	44%
Safran	31%	23%	27%	33%	29%
Rolls Royce	23%	26%	22%	18%	22%
GKN	7%	13%	21%	28%	19%
Rheinmetall	12%	21%	18%	17%	17%
MTU	6%	14%	13%	21%	14%
Thales	25%	18%	7%	2%	13%
Finmeccanica	11%	13%	8%	4%	9%
QinetiQ	2%	12%	3%	2%	4%
EADS	3%	2%	5%	3%	3%
Cobham	0%	0%	0%	0%	0%

Source: Company Annual Reports. Note: BAE Systems does not split out capitalised development costs separately from other intangible assets. [1] Bombardier capitalises program tooling costs as intangibles. Our understanding is that these are akin to development costs (see page 17). [2] Embraer 2008 figures under US GAAP.

As shown in Figure 3, R&D capitalisation in the sector varies between virtually no R&D being capitalised (eg Cobham) through to 77% capitalised (Bombardier). On average, the European A&D companies capitalise about 11% of total R&D costs. In

[4] IAS 38 paragraph 57

our view, the amount of R&D capitalised in this sector, given the nature of the R&D, is relatively low on average when compared to, for example, the European Autos sector which capitalises 35% on average.

In our view, the issue of R&D capitalisation is most relevant to civil aerospace-exposed companies, particularly those with aftermarket activities (eg engine makers) where it is easier to argue the right to a future economic benefit, as opposed to the defence contractors. Civilian aircraft tend to remain in production and in service for prolonged periods, eg production of the Boeing 777 started in 1997 and continues today, with each aircraft likely to remain in active service for 25-30 years.

Thales helpfully discusses that its capitalised development costs mainly relate to Aerospace and Security activities, for which the products are relatively generic and can be sold to a larger number of potential customers. Development costs linked to Defence activities are for more specific and restricted markets and Thales argues that the specific features of the products developed “make it more difficult to share development work and therefore harder to capitalise the associated costs”.

For Bombardier, Meggitt, and Safran, R&D cost in P&L is well below actual spending

We conclude that the majority of Aerospace & Defence companies use relatively conservative capitalisation policies. Interestingly, Thales specifically notes that it has adopted stricter criteria for capitalising development costs (eg higher internal rate of return required, more prudent commercial assumptions, etc) since late 2009, and its capitalisation rate has fallen from 25% in 2008 to 2% in 2011 (as a result its R&D cost in the P&L now exceeds the R&D cash spending). Capitalisation of development costs is most significant for Bombardier[5] (77% average rate over 2008-2011, 84% in 2011), followed by Meggitt (48% average rate over 2008-2011, 50% in 2011), Embraer (44% average over 2008-2011, 59% in 2011), Safran (29% average over 2008-2011, 33% in 2011) and Rolls Royce (22% average over 2008-2011, 18% in 2011). As a result, these companies have a P&L R&D cost that is significantly lower than the actual R&D spending in the year (see Figure 4).

Figure 4. R&D cost in P&L as a % of actual R&D spending

	2008	2009	2010	2011	Total
Bombardier	97%	61%	35%	22%	44%
Meggitt	66%	57%	63%	64%	78%
Safran	74%	83%	80%	73%	81%
Rolls Royce	82%	80%	83%	89%	84%
GKN	97%	91%	81%	74%	84%
MTU	94%	86%	87%	80%	86%
Rheinmetall	93%	86%	88%	90%	89%
Embraer	100%	77%	112%	85%	92%
Finmeccanica	93%	91%	95%	100%	95%
Thales	86%	90%	103%	106%	96%
EADS	99%	103%	96%	101%	100%
Cobham	102%	100%	100%	100%	100%
QinetiQ	124%	149%	117%	115%	122%

Source: Company Annual Reports. Note that BAE Systems does not provide separate disclosure of capitalised development costs.

We note that amortisation policies also vary. Although most of the companies specify that they amortise the development asset over its useful economic life, most note maximum amortisation periods, which vary from 1-4 years up to 20 years. This is shown below in Figure 5. The wide range of maximum amortisation periods

[5] We have included Bombardier’s programme tooling costs (capitalised as intangible assets), which we understand are akin to development costs.

reflects the fact that most Aerospace & Defence companies produce a wide range of different products for different platforms for both civil aerospace and defence end markets.

Figure 5. Maximum amortisation periods vary widely

Company	Amortisation policy
BAE Systems	Amortised over up to 10 years
Cobham	Amortised over 2 to 10 years
EADS	Amortised over estimated number of units produced
Finmeccanica	Amortised over up to 10 years
GKN	Amortised over up to 15 years for Aerospace, 7 years for Automotive
Meggitt	Amortised over up to 10 years
MTU	Amortised over expected product life cycle
QinetiQ	Amortised over 1-4 years
Rheinmetall	Amortised over 5-7 years
Rolls Royce	Amortised over up to 15 years
Safran	Amortised over up to 20 years
Thales	Amortised by reference to expected future quantities/revenues. If cannot be determined reliably, linear amortisation adopted

Source: Company Annual Reports.

European Civil Aerospace – Adjusting for Capitalised R&D

Many investors adjust European civil aero aftermarket earnings for net capitalised R&D to aid comparability.

As capitalisation and amortisation policies vary, when valuing European Civil Aerospace aftermarket stocks, many investors adjust EBIT and EPS for net capitalised R&D (=capitalised less amortised R&D), and other intangibles including program participation costs (PPCs) and certification costs. This improves comparability between companies, as summarised below. We discuss PPCs on page 15.

- **Meggitt** — We calculate that if we were to adjust for net capitalised intangibles, it would lower Meggitt's 2011A underlying EPS by 13% and Citi 2012E EPS by 14%. The impact on Underlying Operating profit (EBIT) is similar. An EPS adjustment of this magnitude would raise Meggitt's current 2012E P/E ratio from c11x to c13x (Citi).

- **MTU** — We calculate that if we were to adjust for net capitalised intangibles, it would lower MTU's underlying EPS by 12-14% in 2011A and 2012E (Citi). An EPS adjustment of this magnitude would raise MTU's current 2012E P/E ratio from c14x to c16x (Citi).

- **Rolls Royce** — If we were to adjusting RR's Underlying EPS for R&D, PPCs and the capitalisation of recoverable engine contracts (see page 15), it would lower 2011A underlying EPS by 14% and Citi 2012E by 4%, which is relatively low in comparison to its peers and Rolls Royce's own historical average of c20%. An EPS adjustment of this magnitude would raise RR's current 2012E P/E ratio from c15x to c15.5x (Citi). (The impact of TotalCare is discussed on page 4).

- **Safran** — Safran appears to have the most aggressive net capitalisation in the sector. If we were to adjust EPS for net capitalisation, it would lower underlying EPS by 20% in 2011A and 34% in 2012E (Citi). An EPS adjustment of this magnitude would raise Safran's current 2012E P/E ratio from c14x to c21x.

High level of net capitalisation reduces cash conversion

There are 2 primary concerns raised by investors in European A&D in respect of the net capitalisation of R&D and PPCs. Firstly, where capitalised R&D exceeds amortisation, cash conversion is lowered, ceteris paribus. In our experience, most investors are relatively sanguine if cash flows do not match profits in a given year, but if cash conversion is consistently weak due to high levels of net capitalised

R&D, then investors start to question the ability of the business to generate cash in the medium- to long-term. An example is Rolls Royce, where cash conversion has been low as a result of high capex and R&D requirements. New CEO John Rishton has acknowledged this concern by focusing on "Cash, Customers and Costs".

R&D capitalisation involves considerable management judgment

The second concern is that the capitalisation of R&D also involves considerable management judgment. When Safran issued guidance for 2012 earlier this year, it guided for c20% EBIT growth vs. €1,189m in 2011A. At the same time, the company guided that R&D would increase by c€200m in 2012 vs. 2011A, all of which would be capitalised. This relates to investment in the LEAP-X program for the C919, A320NEO and C919 aircraft, as well as Silvercrest business jet engine development. If this R&D were to be expensed rather than capitalised, 2012 EBIT would probably be broadly flat vs. 2011A rather than 20% higher. EBIT is a constituent in the formula that is used to determine management compensation. Safran commented that this increased capitalisation in 2012 is what was required by their auditors to meet the IFRS standard. However, given the level of the management discretion involved, it is difficult to envisage any audit firm preventing a company taking a more prudent approach, in our view.

High levels of net capitalised R&D investment in new civil aerospace platforms

Our view is that the relatively high levels of net capitalised R&D across the sub-sector reflects the fact that most civil aerospace stocks are currently in an investment phase and are developing new products that will remain in service for a considerable period of time, e. new airframes (787, A350XWB, G650, A320NEO, 737MAX, C919, C-Series, MRJ) and the associated engines and other equipment. We have no issue with capitalisation where companies are investing into successful programs that offer future growth and where the IRR of the project exceeds the WACC. We note that while many investors strip out net capitalised R&D from civil aerospace earnings, none make the same adjustment for capex and depreciation. We believe that a DCF-based valuation approach circumvents the issues associated when using capitalised R&D with EV/EBIT or P/E valuation methods.

Client-funded R&D

Many of the A&D companies undertake client-funded R&D in addition to company-funded R&D. Client-funded R&D is usually reported as both an income and a cost in the P&L, ie the client-funded R&D is shown as revenue and an equal cost of sales. This income is simply a pass-through, as generally no margin is charged on this work. Client-funded R&D is not capitalised as an asset on the balance sheet. Investors screening on sales-based metrics (such as EV/Sales) should be aware that this zero-margin business can represent a material percentage of reported sales.

There is a risk that client funded R&D could reduce for the defence contractors

Defence contractors are the principal beneficiaries of client-funded R&D from the MOD or DoD. Given budgetary pressure, in our view, the principal risk from an investors' perspective is government funding of R&D is reduced, which could pressure the margins of the defence contractors. The Pentagon's strategy, as outlined in the 2010 quadrennial defence review is to focus on acquiring proven off-the-shelf technology rather than the relentless pursuit of technical excellence. Declining customer-funded R&D is not a trend that we have observed to date. However, this could have a material impact on sector margins, eg BAE Systems in 2011A spent 6.0% of sales on R&D, of which 4.8% was funded by the customer and 1.2% was funded by the company. We believe that the statistics are probably similar for the US prime defence contractors.

Other Intangible Assets

Most of the intangible assets in the sector arise from acquisitions, such as goodwill. However, some companies have recognised other intangible assets that are neither development costs nor acquired intangibles. We discuss these below.

Capitalisation of recoverable engine costs

Rolls Royce and Meggitt capitalise upfront losses or participation fees as intangible assets

Rolls Royce capitalises "recoverable engine costs". These arise when the company sells equipment to customers below cost on the basis that this will be recovered from future aftermarket sales to the customer. This does not apply when the initial and future sales are regarded as a "linked contract" (in which case the initial accounting would reflect the overall contract profitability) and is therefore a separate issue to the TotalCare accounting for Rolls Royce discussed earlier. These relate to engines sold without a contractual TotalCare agreement at the time of sale.

Rolls' accounting means that although on a cash flow basis the company makes a loss when these engines are sold, the P&L reflects a break-even basis, as the loss (excess of costs over revenue) is capitalised as an intangible asset on the balance sheet. This intangible asset is then amortised on a straight-line basis over the expected "period of utilisation" by the customer.

Rolls Royce argues that as it "has a contractual right to supply aftermarket parts to the customer and its intellectual rights, warranty arrangements and statutory airworthiness requirements provide reasonable control over this supply, these arrangements are considered to meet the definition of an intangible asset".

Although there is often no contractual obligation to buy spares or services from the original equipment manufacturer, in practice the ability for customers to buy from elsewhere can be limited due to regulatory reasons (certification of parts) and due to the technical complexity of the parts. From an accounting perspective, most A&D companies do not "link" the sale of goods and services and simply book profits as the work is performed.

The only other A&D company that applies a similar approach to Rolls is Meggitt, which capitalises "program participation costs" (see below), including the supply of initial manufactured parts on a free of charge or deeply discounted basis.

We think most companies in other industries would not capitalise equivalent losses (for example, most telecoms companies sell handsets at a loss, which they expect to recoup from subsequent monthly subscriptions, but these losses are not capitalised).

Certification Costs and Participation Fees

We view certification costs and program participation fees to be similar to other capitalised R&D

Rolls Royce also capitalises "certification costs", which are costs incurred in "meeting regulatory certification requirements for new civil aero-engine/aircraft combinations and payments made to airframe manufacturers for this". Although it is difficult to verify, we believe that other companies also capitalise similar payments but that they are not separately disclosed. However, it appears reasonable that these costs meet the definition of an intangible asset as set out in IAS 38 and can be capitalised.

A number of companies in the sector, including Rolls Royce and Meggitt, capitalise "participation fees" or "program participation costs". These are incentives given to Original Equipment Manufacturers (OEMs) in connection with their selection of the company's products for installation in new aircraft, once the company has obtained principal supplier status. In the case of Rolls Royce, these incentives are cash fees

paid to the manufacturers, while Meggitt also includes the supply of initial manufactured parts on a free of charge or deeply discounted basis within this heading. These costs are capitalised and amortised over the program life or period expected to benefit, generally up to 15 years.

These program participation costs relate to Risk and Reward Sharing Partnerships (RRSPs) entered into by suppliers with the airframers or engine companies, which are becoming increasingly common across the industry. In a RRSP, a supplier pays a participation fee to the airframer or engine maker and in exchange is guaranteed a percentage of that program's future revenues, so in effect the supplier is taking an equity stake in the program. There is a risk that if the program proves unsuccessful that the intangible asset would be written down, but we believe that this is relatively uncommon. From a valuation perspective, we view the impact of PPCs to be similar to capitalised R&D (see earlier).

Finmeccanica: "non recurring costs" and issues around state aid

Finmeccanica capitalises "non recurring costs" as intangible assets

Finmeccanica reports in its balance sheet an intangible asset of €716m of "non recurring costs"[6]. The annual report describes these as "costs incurred in designing, prototyping and upgrading to the technical and functional specifications of clearly identified potential clients, if they are financed under Law 808/1985 governing State aids to support the competitiveness of entities operating in the Aeronautics and Defence segments". The assets are shown net of any state aid provided. As we understand it, this asset appears similar to capitalised development costs, but it is disclosed as a separate asset simply because it has been funded by Law 808/1985 grants, as opposed to by the company.

In 2008, the EU formally requested Italy, under EC Treaty state aid rules, to ensure that loans granted under Law 808/85 in favour of R&D activities in the aeronautical sector are fully reimbursed. The main beneficiaries of the loans are Finmeccanica and Avio. Finmeccanica's balance sheet shows a total of €589m of current and non-current liabilities in respect of Law 808/85 that we classify as debt in our calculation of Enterprise Value. Disclosure on this issue is poor, in our view.

Government aid is an issue across the sector. In October 2004, the EU and US filed challenges against each other before the WTO, each alleging the other of providing WTO-inconsistent subsidies to their aerospace national champions Airbus and Boeing. The WTO's verdict has so far been mixed since it has upheld some aspects of the challenges while turning down others, enabling each side to claim victory in this long-running battle. For Instance, the EU alleged US of providing $19.1bn subsidies to Boeing, of which the WTO admitted only $5.3bn to be in contravention of WTO rules. Similarly, Boeing alleged EU to have extended $24bn in incompatible subsidies to Airbus, of which the WTO upheld $18bn to be incompatible. Both sides followed with challenges to the WTO's initial verdicts but the Appellate body largely upheld these verdicts. With the Appellate decision now delivered, both sides have exhausted the WTO procedures, although the future course of action still remains unclear. Legal experts argue that unless the two sides negotiate on what does and does not constitute permissible subsidies, the dispute is likely carry on for several more years.

MTU's "program assets"

MTU Aero Engines' balance sheet includes "program assets" of €892m. We believe that the majority of this amount relates to assets obtained as part of the acquisition of MTU from Daimler Chrysler in 2003 (for €1.1bn). We understand that this mainly

[6] Gross asset €1,312m, net of amortisation/impairment of €596m at 31 December 2011.

relates to the purchase price allocation (PPA) adjustments when KKR purchased MTU, rather than capitalisation of ongoing costs.

Bombardier's "aerospace program tooling"

Bombardier capitalises program tooling as an intangible asset

Bombardier, the Canadian company, has reported using IFRS since 2011 (previously it applied Canadian GAAP). Under both Canadian GAAP and IFRS, it reported substantial internally generated intangible assets on balance sheet – "aerospace program tooling". Program tooling represents the intangible costs of developing a new product, such as prototype design and testing costs, which meet IFRS criteria for development costs capitalisation. Therefore we believe these intangible assets should be regarded as capitalised development costs.

Overall we find the disclosure about intangible assets quite limited in the Aerospace & Defence sector, so in many cases it is unclear which intangible assets have been acquired through business combinations, and it is difficult to obtain comparable data on intangible assets across the sector.

Capitalising internally-generated intangibles has increased earnings significantly at Bombardier, Finmeccanica, Rolls, Safran, and Meggitt

For Bombardier, Finmeccanica, Rolls Royce, Safran, and Meggitt we believe the capitalisation of internally-generated intangible assets (either development costs or other assets such as those discussed above) has a material effect on the reported profits. In Figure 6 below, we show the impact on reported profits if all internally-generated intangible assets were expensed through the P&L rather than capitalised. If these costs had been fully expensed, 2011 profits would have been reduced by between 18% (Rolls) and 90% (Bombardier). For Safran, the disclosure on intangible assets is not sufficient to be able to make an equivalent analysis, so we've only included capitalised development costs below.

Figure 6. Policy on capitalisation of intangible assets has a significant impact on earnings

	Addition to intangibles* through P&L	Amortisation charge	Difference	PBT	%
Bombardier, $m					
2010	741	157	584	997	59%
2011 (11 months)	1,078	140	938	1,040	90%
Finmeccanica, EUR m					
2010	450	193	257	866	30%
2011	679	198	481	-2,452	nm
Rolls Royce, £m					
2010	325	130	195	702	28%
2011	367	169	198	1,105	18%
Safran, EUR m[1]					
2010	179	48	131	494	27%
2011	282	54	228	695	33%
Meggitt, £m					
2010	74	32	42	173	24%
2011	102	37	65	226	29%

Source: Citi Research. *This analysis only includes internally generated intangible assets, ie excludes intangibles acquired through a business combination. [1] Capitalised development costs only.

Pension accounting

The Aerospace & Defence sector has higher-than-average pension liabilities, and most North American Aerospace & Defence companies have higher pension exposure than the European companies, with the exception of BAE Systems.

Sector exposed to pension costs

The most exposed companies in terms of size of the pension plan (relative to market cap) are BAE Systems, Huntingdon Ingalls, Northrop Grumman, Bombardier, Lockheed Martin, Boeing and Raytheon. Conversely, we note that

Embraer does not have any pension liabilities, because the company is under no obligation to maintain a defined pension benefit plan (and confirmed that it does not have one). We include screens of pension exposure for the sector in Appendix 2 on page 30.

US GAAP and IFRS have fairly similar balance sheet accounting for pensions and from 2013 both accounting systems will require all pension deficits to be reported on balance sheet[7]. Most of the European A&D companies we cover, with the exception of MTU, Safran, and Thales, already report the full pension deficit on balance sheet[8].

Significant differences between US GAAP and IFRS

However, the P&L treatment differs between the two accounting systems, resulting in significant differences in the calculation of the pension cost under IFRS and US GAAP.

In US GAAP, the main components of the pension charge are:

- **Service cost** (the value of the pension benefits earned in the year).
- **Expected return on plan assets** (the long run % expected return multiplied by the opening pension assets).
- **Interest on pension liabilities** (unwinding of pension liability discounting).
- Amortisation of past actuarial gains and losses.

Although the first three components also apply in IFRS, amortisation of actuarial gains and losses does not affect the majority of IFRS reporters (those which do not apply the "corridor" smoothing method to the balance sheet)[9].

Many US GAAP reporters have significant accumulated actuarial losses, which are being smoothed through the pension expense, reducing profits. On the other hand, North American companies tend to assume much higher expected returns on pension assets than the European companies, reducing the pension expense and flattering profits. The higher expected return assumption somewhat offsets the effect of the actuarial losses amortisation.

In order to improve comparability of pension costs across our A&D sector universe, we have normalised the pension cost as follows:

- Adding back current pension expense
- Deducting pension service cost
- Deducting a notional interest charge/income on any pension deficit/surplus.

This calculation of pension cost is also consistent with the amended IAS 19, which will be mandatory for IFRS reporting companies from 2013. This is discussed further on page 26.

[7] US GAAP already requires pension deficits to be on balance sheet, IFRS rules will require this for accounting years starting on or after 1 January 2013.

[8] ie they do not use the optional "corridor" off-balance sheet treatment, which will be discontinued from next year.

[9] Note from 2013 no IFRS reporters will include amortisation of actuarial gains/losses

Figure 7 below shows the impact of applying our normalised pension cost calculation. This shows that current pension accounting flatters earnings at Huntingdon Ingalls, Textron, BAE Systems, Northrop Grumman and Bombardier.

Figure 7. Calculation of normalised pension cost and impact on reported profit before tax (m)

Name	RIC	Curr	LYE	Reported PBT	Add: core actual pension cost[1]	Less: actual service cost	Less: notional interest charge	Revised PBT	Difference %
Huntington Ingalls Industries	HII.N	USD	12/11	6	91	-125	-15	-43	-819%
Textron Inc.	TXT.N	USD	12/11	337	138	-129	-75	271	-20%
BAE Systems	BAES.L	GBP	12/11	1,466	158	-180	-186	1,258	-14%
Northrop Grumman Corp.	NOC.N	USD	12/11	3,083	238	-520	-100	2,701	-12%
BOMBARDIER	BBDb.TO	USD	12/11	1,040	185	-201	-87	937	-10%
EADS	EAD.PA	EUR	12/11	1,393	420	-265	-259	1,289	-7%
Rockwell Collins, Inc.	COL.N	USD	09/11	855	3	-8	-58	792	-7%
Rheinmetall AG	RHMG.DE	EUR	12/11	295	39	-24	-29	281	-5%
GKN Plc	GKN.L	GBP	12/11	351	55	-38	-32	336	-4%
Meggitt Plc	MGGT.L	GBP	12/11	226	13	-11	-11	217	-4%
QinetiQ	QQ.L	GBP	03/12	332	14	-21	-7	318	-4%
Rolls Royce	RR.L	GBP	12/11	1,105	165	-153	-47	1,070	-3%
Cobham	COB.L	GBP	12/11	234	3	-4	-4	229	-2%
General Dynamics Corp.	GD.N	USD	12/11	3,718	336	-245	-171	3,638	-2%
Precision Castparts Corp.	PCP.N	USD	04/12	1,827	19	-37	2	1,811	-1%
Thales	TCFP.PA	EUR	12/11	659	127	-69	-62	655	-1%
Finmeccanica	SIFI.MI	EUR	12/11	-2,452	56	-53	-16	-2,465	-1%
Embraer	ERJ.N	USD	12/11	248	0	0	0	248	0%
Safran	SAF.PA	EUR	12/11	695	15	-9	-5	696	0%
MTU Aero Engines	MTXGn.DE	EUR	12/11	231	35	-10	-23	232	1%
Boeing Co.	BA.N	USD	12/11	5,393	2,035	-1,406	-522	5,500	2%
Lockheed Martin Corp.	LMT.N	USD	12/11	3,631	1,739	-974	-574	3,822	5%
Raytheon Co.	RTN.N	USD	12/11	2,690	1,060	-471	-231	3,048	13%

Source: DataStream, Company annual reports, Citi Research. [1]Core pension cost defined as sum of current service cost, expected return on plan assets, interest on plan liabilities, and amortisation of unrealised actuarial losses.

In addition, pension costs may be presented differently in the income statement. US companies report the total pension cost within employee costs (ie operating expense). IFRS permits pension cost to be either split between operating and financing components or shown in total within operating costs like US GAAP. Amongst the Aerospace & Defence companies, EADS uses the US GAAP presentation of pension cost (which actually reduces its operating profit) but all the other IFRS companies split pension between operating and financing components.

We believe that only pension service cost should be deducted in calculating operating costs (other components of pension expense should be considered financial expense). In Figure 8, we show normalised operating profit by recalculating the pension cost in this way.

Figure 8. Impact of pension income statement presentation on EBIT (m)

Name	RIC	Curr	LYE	Reported EBIT	Other pension cost/ (income) in EBIT	Adjusted EBIT	Difference %
Huntington Ingalls Industries	HII.N	USD	12/11	110	-22	88	-20%
Northrop Grumman Corp.	NOC.N	USD	12/11	3,276	-282	2,994	-9%
Rockwell Collins, Inc.	COL.N	USD	09/11	874	-24	850	-3%
Precision Castparts Corp.	PCP.N	USD	04/12	1,817	-14	1,803	-1%
BOMBARDIER	BBDb.TO	USD	12/11	1,202	0	1,202	0%
BAE Systems	BAES.L	GBP	12/11	1,580	0	1,580	0%
Rheinmetall AG	RHMG.DE	EUR	12/11	336	0	336	0%
Meggitt Plc	MGGT.L	GBP	12/11	263	0	263	0%
QinetiQ	QQ.L	GBP	03/12	375	0	375	0%
Rolls Royce	RR.L	GBP	12/11	1,189	0	1,189	0%
Cobham	COB.L	GBP	12/11	262	0	262	0%
Finmeccanica	SIFI.MI	EUR	12/11	-2,386	0	-2,386	0%
GKN Plc	GKN.L	GBP	12/11	374	0	374	0%
Embraer	ERJ.N	USD	12/11	318	0	318	0%
Thales	TCFP.PA	EUR	12/11	726	0	726	0%
MTU Aero Engines	MTXGn.DE	EUR	12/11	286	0	286	0%
Safran	SAF.PA	EUR	12/11	835	0	835	0%
General Dynamics Corp.	GD.N	USD	12/11	3,826	48	3,874	1%
Textron Inc.	TXT.N	USD	12/11	583	24	607	4%
EADS	EAD.PA	EUR	12/11	1,613	159	1,772	10%
Boeing Co.	BA.N	USD	12/11	5,844	937	6,781	16%
Raytheon Co.	RTN.N	USD	12/11	2,857	602	3,459	21%
Lockheed Martin Corp.	LMT.N	USD	12/11	3,980	847	4,827	21%

Source: dataCentral, DataStream, Company annual reports, Citi Research

Pension cost recovery from contracts

US Defence companies can recover pension costs on government contracts

US Defence companies can recover some pension costs on government contracts. The costs are recovered as part of contract billings. CAS (Cost Accounting Standards) are used for US government contract cost accounting, which determine what costs are allowable to be billed to the government. CAS has been harmonised closer to US GAAP with effect from 2014[10]. The cash contribution to pension funds is determined separately from the cost recovery calculations.

Nevertheless, we do not think that the pension obligations should be ignored, as, firstly, not all pension costs can be recovered (for example, for Boeing only 30-35% of pension costs are recoverable, although for pure defence names this would be higher). Secondly, those companies with a better pension position (eg those that have taken action to reduce pension costs) should have a competitive advantage when bidding for government contracts.

GKN pension partnership accounting

GKN is one of a number of UK companies that have contributed assets (in GKN's case, property and trademarks) to a partnership with the pension scheme. The pension scheme gets an income stream, such as rental or royalty income, and some additional security as the pension fund has a charge over the assets. The GKN partnership arrangements are for 20 years.

GKN's accounting reduces pension deficit and appears relatively aggressive

While GKN's asset transfer is not unusual (many companies have transferred property, TUI Travel has contributed brands), GKN's accounting appears relatively aggressive. Of major listed companies with pension partnership structures, only GKN and Marks & Spencer treat the partnership as a plan asset, reducing the accounting (IAS 19) measure of the pension deficit.

[10] For more detail on the harmonization refer to *FAS/CAS – Why You Should Care* (16 March 2012), Citi Research US Aerospace & Defence

The partnership asset must meet the IAS 19 definition of a plan asset in order to reduce the deficit. According to IAS 19, plan assets cannot be available to the reporting company's own creditors and cannot be returned to the company unless the remaining assets are sufficient to meet all the pension obligations. In addition, plan assets do not include any non-transferable financial instruments issued by the group.

Marks & Spencer had previously recorded this partnership obligation to the pension fund as equity in the group accounts. However, following discussions with the UK financial reporting regulator, M&S recently reclassified the obligation from equity into financial liabilities, increasing net debt[11]. GKN records the pension scheme's asset as a minority interest of the group, which means that the transaction is EV-neutral, but recognition within equity does affect net debt. It remains to be seen if GKN will follow M&S's lead in amending its pension accounting.

Joint Venture accounting

Current IFRS allows a choice of accounting for JVs

Aerospace & Defence businesses may operate through joint ventures (JVs). IFRS currently allows a choice of accounting methods for JVs: either proportionate consolidation or the equity method. US GAAP generally does not permit proportionate consolidation except for certain specific circumstances, ie the equity method is usually required.

The equity method means that investments are initially measured at cost, and adjusted for the owner's share of the change in the net asset value of the partially owned entity, with the share of income recorded in one line of the income statement (this is also the accounting method used for associates). Only dividends received are recorded in the cash flow statement. The proportionate consolidation method means that the group includes its share of the JV assets, liabilities, income and expenses, and cash flows, line-by-line in the financial statements.

Figure 9. Equity method vs proportionate consolidation for JVs

Company	Current method
BAE	Equity method
Cobham	Equity method
GKN	Equity method
Meggitt	n/a
QinetiQ	Equity method
Rolls Royce	Equity method
EADS	Proportionate consolidation
Finmeccanica	Proportionate consolidation
MTU	Both methods
Rheinmetall	Equity method
Safran	Proportionate consolidation
Thales	Proportionate consolidation
Bombardier	Proportionate consolidation
Embraer	Proportionate consolidation

Source: Annual Reports, Citi Research

Since the current IFRS standard permits a choice of accounting method for JVs, we assume that companies choose the method that flatters their reported operating results/margin, balance sheet or cash flow. However, the choice of proportionate consolidation or equity method has no impact on EPS or net asset value. The significance of proportionately consolidated JVs is shown below in Figure 10.

[11] Refer to *The Standards: June Update* (6 June) for more details of the M&S accounting change.

Figure 10. Significance of proportionately consolidated JVs

	% of 2011 sales	% of 2011 profit
EADS	4%	15%
Finmeccanica	16%	n/a
MTU	5%	9%
Safran	4%	7%
Thales	21%	26%

Source: Annual Reports, Citi Research. Notes: Profit % based on net income for EADS and MTU, EBIT for Safran and Thales. Profit calculation not applicable for Finmeccanica as it was loss making in 2011.

A new IFRS standard on JVs has been published, to take effect by 2014, as discussed on page 27. Many UK aerospace companies including BAE Systems, Cobham and GKN account for JVs using the equity method in their financial statements. However, their "underlying" or "management" adjusted definitions of sales and earnings account for JVs using proportional consolidation. As these "underlying" measures are unaudited and are not required to comply with any accounting rules, we have no reason to believe that they will be impacted by the forthcoming accounting standard change in 2014.

Removing accounting differences to improve comparability

In order to better compare results across our global A&D coverage universe, we have made the following adjustments to 2011 reported operating profit and pre-tax profit to remove the effect of the major accounting differences we have identified.

To adjust operating profit to improve comparability we:

- Fully expense all R&D costs through the P&L - this affects some of the European companies, particularly Meggitt, Safran, and Rolls Royce, as well as Bombardier
- Fully expense additions to other intangible assets (excluding those acquired in a business combination) ie fully expense engine losses, participation fees, etc - this affects Rolls Royce, Meggitt, MTU, and Finmeccanica
- Add back total pension expense and deduct only the pension service cost -this affects the US companies particularly Huntingdon Ingalls and Northrop Grumman (negatively) and Boeing, Raytheon and Lockheed Martin (positively).
- Adjust for program accounting (ie estimated adjustment to unwind the capitalisation of program costs) — this affects Boeing.
- Adjust for proportionately consolidated JVs (removing proportionately consolidated operating profit) – this affects EADS, Finmeccanica, MTU, Safran, and Thales (Bombardier and Embraer have not disclosed impact of proportionate consolidation so we assume this is immaterial).

This analysis is based on reported EBIT and PBT, rather than management / underlying numbers. However, we believe that the results to be representative of the impact on underlying earnings

When performing this analysis, we have started with the reported operating and pre-tax profit numbers as opposed to the management adjusted or "underlying" numbers. There are a large number of inconsistencies across the sector in the calculation of "underlying" earnings. While the impact to "underlying" earnings would probably be less than to reported earnings (which are generally lower), we believe that the results would be relatively similar in terms of identified which companies could be most impacted.

Figure 11. Adjusting 2011 operating profit for accounting comparability (m)

Name	RIC	Curr	Reported EBIT[1]	Capitalised R&D	Capitalised other intangibles	Other pension cost adj	Program accounting	Prop consol JVs[2]	Adjusted EBIT	Diff %	Reported EBIT margin	Adjusted EBIT margin
BOMBARDIER	BBDb.TO	USD	1,202	-948	0	0	0	nd	254	-79%	6.6%	1.4%
Safran	SAF.PA	EUR	835	-228	0	0	0	-56	551	-34%	7.2%	4.9%
MTU Aero Engines	MTXGn.DE	EUR	286	-34	-22	0	0	-21	209	-27%	9.7%	7.5%
Thales	TCFP.PA	EUR	726	33	0	0	0	-192	567	-22%	5.6%	5.5%
Huntington Ingalls Industries	HII.N	USD	110	0	0	-22	0	0	88	-20%	1.7%	1.3%
Meggitt Plc	MGGT.L	GBP	263	-30	-12	0	0	0	220	-16%	18.0%	15.1%
Rolls Royce	RR.L	GBP	1,073	-57	-102	0	0	0	914	-15%	10.7%	8.2%
Finmeccanica	SIFI.MI	EUR	-2,386	-7	-175	0	0	-81	-2,649	-11%	-13.8%	-18.1%
GKN Plc	GKN.L	GBP	374	-37	0	0	0	0	337	-10%	6.5%	5.9%
Northrop Grumman Corp.	NOC.N	USD	3,276	0	0	-282	0	0	2,994	-9%	12.4%	11.3%
Rheinmetall AG	RHMG.DE	EUR	336	-21	0	0	0	0	315	-6%	7.5%	7.1%
Boeing Co.	BA.N	USD	5,566	0	0	937	-1,278	0	5,225	-6%	8.5%	7.6%
Rockwell Collins, Inc.	COL.N	USD	887	0	0	-24	0	0	863	-3%	18.2%	18.0%
EADS	EAD.PA	EUR	1,449	19	0	159	0	-207	1,420	-2%	3.3%	3.0%
Precision Castparts Corp.	PCP.N	USD	1,817	0	0	-14	0	0	1,803	-1%	25.2%	25.0%
BAE Systems	BAES.L	GBP	1,449	nd	0	0	0	0	1,449	0%	8.9%	8.2%
Embraer	ERJ.N	USD	319	nd	0	0	0	nd	319	0%	5.5%	5.5%
Cobham	COB.L	GBP	252	0	0	0	0	0	252	0%	14.1%	13.6%
QinetiQ	QQ.L	GBP	375	2	0	0	0	0	377	1%	25.5%	25.6%
General Dynamics Corp.	GD.N	USD	3,826	0	0	48	0	0	3,874	1%	11.7%	11.9%
Textron Inc.	TXT.N	USD	583	0	0	24	0	0	607	4%	5.2%	5.4%
Raytheon Co.	RTN.N	USD	2,857	0	0	602	0	0	3,459	21%	11.5%	13.9%
Lockheed Martin Corp.	LMT.N	USD	3,648	0	0	847	0	0	4,495	23%	8.6%	9.7%

Source: Company Reports, DataStream, Citi Research. Notes: [1] Excludes associate and joint venture income accounted for under equity method. [2] MTU, Finmeccanica, and EADS provide disclosure of net income from proportionately consolidated JVs. We have grossed up net income to include tax, applying each groups' 2011 effective tax rate.

To adjust pre-tax profit, we make the same adjustments listed above except for the JV adjustment, but in addition adjust for notional interest cost/income on any pension deficit/surplus. For companies who include all pension costs in operating expenses, we deduct the notional interest. For those who include the pension financial expense in finance costs, we add back the reported cost/income and deduct notional interest on the deficit.

The accounting choice for JVs has only a small impact at the pre-tax profit level: equity method accounted JVs are included net of tax whereas proportionately consolidated JVs are included gross of tax, with the share of tax included in the tax line of the income statement. There is no impact at the net income or EPS level. For simplicity, and due to the lack of information in some cases, we have therefore not adjusted for JV accounting in this pre-tax profit calculation.

We have not been able to make any adjustment for long-term contract accounting as we do not have sufficient information to be able to apply a cash accounting basis, nor is it clear if that would improve comparability across the sector.

The results of the above adjustments are shown in Figure 12 below. This concludes that current accounting practices at Bombardier, Safran, MTU, Meggitt, Rolls Royce, and Boeing are flattered most by current accounting policies – in most cases due to the capitalisation of R&D. We believe that this reflects significant investment in new programs at the moment but for more details on those individual companies, see our earlier commentary. We believe that the impact on reported PBT at Huntingdon Ingalls is potentially misleading due to a low base of profitability.

Figure 12. Adjusting 2011 profit before tax for accounting comparability (m)

Name	RIC	Curr	LYE	Reported PBT	EBIT Adjustments	Reverse JV adjustment	Pension financial expense adj	Adjusted PBT	Difference
Huntington Ingalls Industries	HII.N	USD	12/11	6	-22	0	-15	-31	-619%
BOMBARDIER	BBDb.TO	USD	12/11	1,040	-948	nd	-103	-11	-101%
Safran	SAF.PA	EUR	12/11	695	-284	56	-5	462	-34%
MTU Aero Engines	MTXGn.DE	EUR	12/11	231	-77	21	-1	175	-24%
Meggitt Plc	MGGT.L	GBP	12/11	226	-43	0	-9	174	-23%
Rolls Royce	RR.L	GBP	12/11	1,105	-159	0	-35	911	-18%
Boeing Co.	BA.N	USD	12/11	5,393	-341	0	-522	4,530	-16%
GKN Plc	GKN.L	GBP	12/11	351	-37	0	-15	299	-15%
BAE Systems	BAES.L	GBP	12/11	1,466	0	0	-208	1,258	-14%
Textron Inc.	TXT.N	USD	12/11	337	24	0	-75	286	-15%
Northrop Grumman Corp.	NOC.N	USD	12/11	3,083	-282	0	-100	2,701	-12%
Rheinmetall AG	RHMG.DE	EUR	12/11	295	-21	0	-14	260	-12%
Rockwell Collins, Inc.	COL.N	USD	09/11	855	-24	0	-58	773	-10%
Finmeccanica	SIFI.MI	EUR	12/11	-2,452	-263	81	-13	-2,647	-8%
EADS	EAD.PA	EUR	12/11	1,393	-29	207	-259	1,312	-6%
QinetiQ	QQ.L	GBP	03/12	332	2	0	-13	320	-3%
General Dynamics Corp.	GD.N	USD	12/11	3,718	48	0	-171	3,595	-3%
Cobham	COB.L	GBP	12/11	234	0	0	-6	229	-2%
Precision Castparts Corp.	PCP.N	USD	04/12	1,827	-14	0	2	1,814	-1%
Embraer	ERJ.N	USD	12/11	248	0	nd	0	248	0%
Thales	TCFP.PA	EUR	12/11	659	-159	192	-16	676	3%
Lockheed Martin Corp.	LMT.N	USD	12/11	3,631	847	0	-574	3,904	8%
Raytheon Co.	RTN.N	USD	12/11	2,690	602	0	-231	3,061	14%

Source: dataCentral, DataStream, Company annual reports, Citi Research

GKN's accounting appears relatively aggressive due also to net capitalised R&D, but there is the additional issue of the pension partnership accounting (see earlier) to consider. We would also highlight that current accounting practices flatter earnings by 16% at Boeing vs. 6% at EADS, which should be considered by investors when comparing the P/E ratios of the two stocks.

Forthcoming accounting changes

New accounting standards may affect this sector

The IASB and FASB (the International and US accounting standard setters respectively) have committed to converge their rules on revenue recognition. An initial draft was issued in June 2010 followed by an updated draft in November 2011. A final converged standard is currently expected to be published in Q1 2013, with an effective date of 2015 or later (2016 is most likely in our opinion).

Other new accounting standards which may have some impact are revised IFRS pension accounting rules, effective from 2013, a new JV IFRS, effective from 2014, and new hedge accounting rules, effective from 2015. We do not expect any changes in the short or medium term to accounting rules covering R&D or other intangible assets.

New revenue accounting standard

As we have seen, the Aerospace & Defence sector has relatively difficult revenue recognition problems, and companies' existing revenue accounting policies may not be fully comparable. Therefore the sector may be more affected than average by the forthcoming accounting changes. However, in our view the impact may be less than some investors expect, and significant accounting inconsistencies will remain even after the new standard takes effect.

Long-term contract accounting

Probably relatively little change to "percentage of completion" accounting, but better disclosure

The IASB/FASB Revenue project was originally expected to make major changes to long term contract accounting, eg abolition of "percentage of completion" methods and revenue being reported at contract completion in many cases. However, the revised draft continues to allow percentage of completion methods and we expect that in the Aerospace & Defence industry there will be little change in this respect. Some companies may need to review the methods they apply to recognise the revenue over time, for example the "units of delivery" method may not be considered appropriate under the new accounting standard in some cases where it is currently applied.

However, we anticipate that the new standard will improve the associated disclosures, which may improve investor understanding of the long-term contract accounting position.

Bundled sales of goods and services

New guidance on bundled contracts

The Revenue project addresses the issue of bundled goods and services. The exposure draft requires that the total consideration paid by the customer should be allocated according to the relative fair value of the components, where there are distinct performance obligations. This may be relevant to situations where a company supplies a good such as an engine together with ongoing services such as repair and overhaul, as discussed earlier.

The new standard may require separate profit margins to be recognised on different elements (distinct performance obligations) of the contract. For example, some aftermarket services may be higher margin than other components of the contract. This may make profit recognition "lumpier" than at present. Performance obligations are distinct if the entity regularly sells the good or service separately, or the customer can benefit from the good or service either on its own or together with other resources.

No change to accounting for most contract related intangible assets

The new revenue standard will not change the accounting for intangible assets. Therefore, the capitalisation of assets such as recoverable engine losses, certification costs, participation fees and other intangibles described on pages 15-17 is likely to continue.

Program accounting

Program accounting excluded from revenue project

We do not expect the new Revenue accounting standard to affect program accounting. The IASB and FASB have decided to exclude the accounting for inventory and intangible assets from the scope of the revenue project. The project will however affect the accounting for some types of contract related costs.

Program accounting is therefore likely to remain as an accounting inconsistency between US GAAP and IFRS for several years.

Pre-contract costs

Pre-contract costs may be capitalised in future

The ED proposes that the incremental costs of obtaining a contract should be capitalised as an asset (and amortised over the life of the asset). However, we do not expect this to be very material in the Aerospace & Defence sector. We do not think that the new Revenue standard will affect the capitalisation of other contract related intangible assets (eg engine losses) although this may depend on management judgment.

Pension accounting changes

A modified version of the IFRS pension accounting standard IAS 19 takes effect from 2013, for financial years starting on or after 1 January 2013. The main effect will be a change to the calculation of pension expense in the income statement.

The P&L pension cost, as calculated currently, usually has 3 main components[12]:

- **Pension service cost** — The value of the pension benefits earned by employees in the year.
- **Expected return on plan assets** — The long-run expected return on assets multiplied by the opening pension assets.
- **Interest on pension liabilities** — Unwinding of pension liability discounting.

The revised IAS 19 abolishes the expected return on plan assets and interest on pension liabilities and instead replaces this with a notional interest charge/income on the pension deficit or surplus, i.e. equal to the discount rate multiplied by the pension deficit or surplus. This is the same as setting the expected rate of return on the pension assets equal to the discount rate (under IAS 19 the discount rate is based on AA corporate bond yields of appropriate currency and duration).

The current IAS 19 accounting requirement usually flatters the earnings of companies with large pension schemes. This is because the percentage expected return on pension assets is usually higher than the discount rate, particularly for companies with higher-risk asset allocations. Therefore, on average the revised IAS 19 rules should reduce earnings, although the scale of the change is dependent on the pension scheme size and the gap between the expected return on assets and discount rate. This change only applies to IFRS reporting companies and at this stage the US FASB has no specific plan to adopt a similar change.

We show below in Figure 13 the anticipated impact of the pension accounting change on 2013 profits for the IFRS reporting Aerospace & Defence companies.

Figure 13. Estimated impact of IAS 19 pension P&L changes (m)

Name	RIC	Curr	LYE	Market cap	Liabilities	Assets	Deficit	Exp'd return %	Disc rate %	Cons PBT FY13/14	Est'd impact	Impact on PBT %
BOMBARDIER	BBDb.TO	USD	12/11	6,680	9,242	6,395	2,847	6.9%	4.4%	1,228	-157	-13%
QinetiQ	QQ.L	GBP	03/12	1,096	1,139	1,108	32	5.8%	4.8%	120	-11	-9%
Rheinmetall AG	RHMG.DE	EUR	12/11	1,621	1,778	1,046	732	6.2%	4.0%	338	-23	-7%
BAE Systems	BAES.L	GBP	12/11	10,182	23,146	17,577	4,604	5.7%	4.8%	1,773	-112	-6%
GKN Plc	GKN.L	GBP	12/11	3,505	3,561	2,693	868	5.5%	4.7%	586	-23	-4%
Thales	TCFP.PA	EUR	12/11	5,276	4,787	3,227	1,560	5.7%	4.7%	818	-33	-4%
Finmeccanica	SIFI.MI	EUR	12/11	1,835	1,798	1,575	223	5.5%	4.0%	694	-23	-3%
EADS	EAD.PA	EUR	12/11	25,026	10,639	5,135	5,504	6.4%	4.7%	2,943	-89	-3%
Meggitt Plc	MGGT.L	GBP	12/11	3,168	850	585	265	6.3%	4.7%	383	-9	-2%
Cobham	COB.L	GBP	12/11	2,434	600	529	71	5.1%	4.9%	292	-1	-1%
MTU Aero Engines	MTXGn.DE	EUR	12/11	3,232	558	27	535	6.5%	4.2%	366	-1	-0%
Safran	SAF.PA	EUR	12/11	11,885	486	358	128	5.1%	4.8%	1,486	-1	-0%
Embraer	ERJ.N	USD	12/11	4,690	0	0	0	0.0%	0.0%	697	0	0%
Rolls Royce	RR.L	GBP	12/11	15,952	8,765	10,016	397	3.5%	4.7%	1,672	40	2%

Source: dataCentral, DataStream, Company annual reports, Citi Research. Market data as of 8 August 2012.

[12] In some cases the current pension cost includes other elements, such as income or costs arising from "corridor rule" smoothing, and gains or losses on changes to pension plans (settlements and curtailments).

Joint venture accounting rules

IFRS 11 changes JV accounting…

As noted on page 21, IFRS currently allows a choice of accounting for JVs, either proportionate consolidation or the equity method. The IASB has issued a new accounting standard IFRS 11 (Joint Ventures) which removes this choice. In future most joint entities will have to be accounted for using the equity method. However, a proportionate consolidation approach will be required for certain types of joint arrangement. The key point is that the accounting method will depend on the nature of the joint arrangement rather than simply being an accounting choice at the option of the reporting company. For more details on IFRS 11, see our report *The Standards: New IFRS on JVs*, dated 13 May 2011.

IFRS 11 was issued with an effective date of 1 January 2013. However, we expect that EU listed companies will not be required to apply the new standard until financial years starting on or after 1 January 2014.

…affecting Finmeccanica, Thales, EADS, MTU and Safran

UK Aerospace & Defence companies already use the equity method for JV accounting, and so are less likely to be affected significantly by IFRS 11, although Rolls Royce notes that some of its JVs may be classified as joint operations under IFRS 11, resulting in proportionate consolidation. Outside the UK, most IFRS reporting A&D companies covered by Citi use proportionate consolidation, with the exception of Rheinmetall (and MTU uses both equity method and proportionate consolidation). Companies likely to be most affected by this accounting change are Finmeccanica, Thales, and to a lesser extent EADS, MTU and Safran.

New hedge accounting rules

The IASB is expected to issue new hedge accounting rules in H2 2012, which may take effect in 2015. Hedging can be significant amongst the European companies particularly due to foreign currency exposure, however, current rules on hedge accounting are restrictive and therefore some companies (such as Rolls Royce) do not apply hedge accounting to activities they regard as cash flow hedging. It is anticipated the new standard will be more flexible and therefore more companies may choose to apply hedge accounting. This may lead to more stable reported earnings.

Other Issues

This report outlines the major accounting issues which we believe undermine comparability in the A&D sector. However, other concerns could include

- **Sales subject to guarantees** — for example sales of aircraft are often subject to asset value guarantee commitments. This can result in the sale being classified as an operating lease arrangement. Alternatively the seller may have to record a provision or disclose a contingent liability for any potential loss arising from such guarantees. This could be an issue for Boeing or EADS.

- **Rolls Royce's "Risk and Revenue Sharing Partnerships"** — Rolls Royce reports "other operating income" from payments by such partners, who also receive undisclosed amounts (reported within cost of sales) for their contribution (eg development or parts) to the joint projects.

- **Hedge accounting** — many A&D hedge future exposure eg to FX movements. However, not all apply hedge accounting and the inconsistent application of hedge accounting may also reduce comparability of results across the sector.

Appendix 1: Impact of TotalCare and expense capitalisation on Rolls Royce

Figure 14. Impact of cost capitalisation and TotalCare accounting on Rolls Royce earnings, 2005A – 2014E (£m)

	2005A	2006A	2007A	2008A	2009A	2010A	1H11A	2H11A	2011A	1H12A	2H12E	2012E	2013E	2014E
Summary Financials														
Sales	£6,458	£7,353	£7,817	£9,147	£10,108	£10,866	£5,463	£5,814	£11,277	£5,757	£6,003	£11,760	£15,110	£16,160
Growth	9%	14%	6%	17%	11%	7%	4%	4%	4%	5%	3%	4%	28%	7%
Underlying EBIT	£679	£748	£832	£919	£983	£1,010	£619	£587	£1,206	£668	£777	£1,445	£1,860	£2,050
Margin	10.5%	10.2%	10.6%	10.0%	9.7%	9.3%	11.3%	10.1%	10.7%	11.6%	12.9%	12.3%	12.3%	12.7%
Underlying EPS	24.5p	29.8p	34.1p	36.7p	39.7p	38.7p	23.9p	24.6p	48.5p	26.5p	30.5p	57.1p	68.3p	75.5p
Growth	57%	22%	14%	8%	8%	-2%	28%	23%	25%	11%	24%	18%	20%	11%
Free Cash Flow	£786	£603	£149	£406	£303	£649	£89	£448	£537	-£222	£651	£429	£1,001	£1,138
Per share	45.2p	34.6p	8.3p	22.3p	16.4p	35.2p	4.8p	24.2p	29.0p	-12.0p	35.2p	23.2p	54.1p	61.5p
Conversion (vs. EPS)	185%	116%	24%	61%	41%	91%	20%	98%	60%	-45%	115%	41%	79%	81%
1) Net Capitalisation														
Net Capitalised R&D	-£57	-£25	-£73	-£87	-£92	-£84	-£33	-£24	-£57	£10	-£10	£0	-£7	-£19
Net Capitalised PPCs	-£1	-£85	-£123	-£49	-£51	-£44	-£4	-£25	-£29	£1	-£11	-£10	-£11	-£15
Net Capitalised Recoverable Engine Costs	-£4	-£34	-£9	-£51	-£77	-£56	-£33	-£40	-£73	-£3	-£37	-£40	-£48	-£47
Total	-£62	-£144	-£205	-£187	-£220	-£184	-£70	-£89	-£159	£8	-£58	-£50	-£67	-£82
% Sales	-1.0%	-2.0%	-2.6%	-2.0%	-2.2%	-1.7%	-1.3%	-1.5%	-1.4%	0.1%	-1.0%	-0.4%	-0.4%	-0.5%
Underlying EBIT, adjusted for R&D, PPCs and RECs	£617	£604	£627	£732	£763	£826	£549	£498	£1,047	£676	£719	£1,395	£1,792	£1,968
Margin	9.6%	8.2%	8.0%	8.0%	7.5%	7.6%	10.0%	8.6%	9.3%	11.7%	12.0%	11.9%	11.9%	12.2%
Difference*	-9%	-19%	-25%	-20%	-22%	-18%	-11%	-15%	-13%	1%	-7%	-3%	-4%	-4%
Underlying EPS, adjusted for R&D, PPCs and RECs	21.9p	23.8p	25.4p	29.0p	30.2p	31.2p	21.1p	20.8p	41.9p	26.9p	28.1p	55.0p	65.5p	72.2p
Difference*	-10%	-20%	-25%	-21%	-24%	-19%	-12%	-16%	-14%	1%	-8%	-4%	-4%	-4%
2) TotalCare Receivables														
TotalCare Receivable per Balance Sheet	£367	£393	£550	£848	£970	£920	£909	£956	£956	£1,124	£1,023	£1,023	£1,101	£1,206
Movement	-£22	£26	£157	£298	£122	-£50	-£11	£47	£36	£168	-£101	£67	£79	£105
Underlying EBIT, adjusted for TCP debtor	£701	£722	£675	£621	£861	£1,060	£630	£540	£1,170	£500	£878	£1,378	£1,781	£1,945
Margin	10.9%	9.8%	8.6%	6.8%	8.5%	9.8%	11.5%	9.3%	10.4%	8.7%	14.6%	11.7%	11.8%	12.0%
Difference*	3%	-3%	-19%	-32%	-12%	5%	2%	-8%	-3%	-25%	13%	-5%	-4%	-5%
Underlying EPS, adjusted for TCP debtor	25.4p	28.7p	27.4p	24.4p	34.4p	40.8p	24.3p	22.6p	47.0p	19.5p	34.7p	54.3p	65.0p	71.2p
Difference*	4%	-4%	-19%	-34%	-13%	5%	2%	-8%	-3%	-27%	14%	-5%	-5%	-6%
3) Total Impact (=1+2)														
Underlying EBIT, fully adjusted	£639	£578	£470	£434	£641	£876	£560	£451	£1,011	£508	£820	£1,328	£1,713	£1,863
Margin	9.9%	7.9%	6.0%	4.7%	6.3%	8.1%	10.3%	7.8%	9.0%	8.8%	13.7%	11.3%	11.3%	11.5%
Difference*	-6%	-23%	-44%	-53%	-35%	-13%	-10%	-23%	-16%	-24%	6%	-8%	-8%	-9%
Underlying EPS, fully adjusted	22.8p	22.7p	18.8p	16.6p	24.9p	33.3p	21.5p	18.7p	40.4p	19.8p	32.3p	52.2p	62.3p	67.9p
Difference*	-7%	-24%	-45%	-55%	-37%	-14%	-10%	-24%	-17%	-25%	6%	-9%	-9%	-10%

Source: Company reports and Citi Research

The above table looks at the impact on Underlying EBIT and Underlying EPS (as defined by Rolls Royce) on 1) the capitalisation of R&D, Program Participation Costs (PPCs) and Recoverable Engine Costs (RECs) and; 2) the movement in the TotalCare Receivable (TCP). We deduct net capitalisation and the year-on-year movement in the TotalCare Receivable to arrive at fully adjusted EBIT and EPS numbers.

We estimate that the capitalisation of R&D, PPCs and RECs has flattered management's definition of Underlying EPS by c20% on average since 2005A (range 10-25%). However, in 2011A the impact was lower at 14% and in 1H12A deducting net capitalised R&D would actually have added 1% to Underlying EPS (because amortisation exceeded capitalisation). The impact of net capitalisation for Rolls Royce is less than its European peers, particularly Safran.

We have estimated the impact of TotalCare accounting by deducting the annual movement in the TotalCare debtor from management's definition of Underlying EPS. On average, we estimate that Rolls Royce's approach has flattered EBIT by c10% since 2005A. However, this has been highly volatile with the impact on EPS ranging from +5% to -34%. In 1H12A the TotalCare Receivable rose to £1,124m (+£168m vs. £956m at 31 Dec 2011), which is the largest movement in any period since 2008A.

We estimate that the aggregate impact of RR's net capitalisation and TotalCare accounting has flattered EPS by c30% on average since 2005A. We calculate an impact of 17% in 2011A, which we expect to fall to 9-10% in 2012E and beyond, although this is difficult to forecast. This is lower than the impact of net capitalisation at peers including Safran, Meggitt and MTU.

Appendix 2: Pension Exposure

The most exposed companies in terms of size of the pension plan (relative to market cap) are BAE Systems, Huntingdon Ingalls, Northrop Grumman, Bombardier, Lockheed Martin, Boeing and Raytheon. These companies are most exposed to trends such as lower discount rates or longer life expectancy.

Largest pension plans at BAE, Huntingdon Ingalls, Northrop Grumman, and Bombardier

Figure 15. Pension liabilities as a percentage of market cap (m)

Name	RIC	Curr	LYE	Market cap	Pension Liabilities	Liabilities as % mkt cap
BAE Systems	BAES.L	GBP	12/11	10,182	23,146	227%
Huntington Ingalls Industries	HII.N	USD	12/11	1,990	4,123	207%
Northrop Grumman Corp.	NOC.N	USD	12/11	16,773	24,129	144%
BOMBARDIER	BBDb.TO	USD	12/11	6,680	9,242	138%
Lockheed Martin Corp.	LMT.N	USD	12/11	29,486	40,616	138%
Boeing Co.	BA.N	USD	12/11	56,084	67,651	121%
Raytheon Co.	RTN.N	USD	12/11	18,510	21,613	117%
Rheinmetall AG	RHMG.DE	EUR	12/11	1,621	1,778	110%
QinetiQ	QQ.L	GBP	03/12	1,096	1,139	104%
GKN Plc	GKN.L	GBP	12/11	3,505	3,561	102%
Finmeccanica	SIFI.MI	EUR	12/11	1,835	1,798	98%
Thales	TCFP.PA	EUR	12/11	5,276	4,787	91%
Textron Inc.	TXT.N	USD	12/11	7,453	6,325	85%
Rolls Royce	RR.L	GBP	12/11	15,952	8,765	55%
Rockwell Collins, Inc.	COL.N	USD	09/11	7,236	3,518	49%
General Dynamics Corp.	GD.N	USD	12/11	22,553	10,242	45%
EADS	EAD.PA	EUR	12/11	25,026	10,639	43%
Meggitt Plc	MGGT.L	GBP	12/11	3,168	850	27%
Cobham	COB.L	GBP	12/11	2,434	600	25%
MTU Aero Engines	MTXGn.DE	EUR	12/11	3,232	558	17%
Precision Castparts Corp.	PCP.N	USD	04/12	23,170	1,919	8%
Safran	SAF.PA	EUR	12/11	11,885	486	4%
Embraer	ERJ.N	USD	12/11	4,690	0	0%

Source: dataCentral, DataStream, Company annual reports, Citi Research. Market data as of 8 August 2012.

Largest deficits at BAE Systems, Lockheed Martin, Rheinmetall, and Huntingdon Ingalls

The companies with the largest pension deficits (relative to market cap) are BAE Systems, Lockheed Martin, Rheinmetall, Huntingdon Ingalls, and Bombardier. This means that these companies have the largest pension underfunding which is likely to require additional cash contributions.

Figure 16. Pension deficits as a percentage of market cap (m)

Name	RIC	Curr	LYE	Market cap	Pension Liabilities	Assets	Deficit	Deficit as % mkt cap
BAE Systems[1]	BAES.L	GBP	12/11	10,182	23,146	17,577	4,604	45%
Lockheed Martin Corp.	LMT.N	USD	12/11	29,486	40,616	27,292	13,324	45%
Rheinmetall AG	RHMG.DE	EUR	12/11	1,621	1,778	1,046	732	45%
Huntington Ingalls Industries	HII.N	USD	12/11	1,990	4,123	3,238	885	44%
BOMBARDIER	BBDb.TO	USD	12/11	6,680	9,242	6,395	2,847	43%
Raytheon Co.	RTN.N	USD	12/11	18,510	21,613	15,552	6,061	33%
Boeing Co.	BA.N	USD	12/11	56,084	67,651	51,051	16,600	30%
Thales	TCFP.PA	EUR	12/11	5,276	4,787	3,227	1,560	30%
GKN Plc	GKN.L	GBP	12/11	3,505	3,561	2,693	868	25%
EADS	EAD.PA	EUR	12/11	25,026	10,639	5,135	5,504	22%
Rockwell Collins, Inc.	COL.N	USD	09/11	7,236	3,518	2,111	1,407	19%
General Dynamics Corp.	GD.N	USD	12/11	22,553	10,242	6,250	3,992	18%
Textron Inc.	TXT.N	USD	12/11	7,453	6,325	5,013	1,312	18%
Northrop Grumman Corp.	NOC.N	USD	12/11	16,773	24,129	21,340	2,789	17%
MTU Aero Engines	MTXGn.DE	EUR	12/11	3,232	558	27	535	17%
Finmeccanica	SIFI.MI	EUR	12/11	1,835	1,798	1,575	223	12%
Meggitt Plc	MGGT.L	GBP	12/11	3,168	850	585	265	8%
Cobham	COB.L	GBP	12/11	2,434	600	529	71	3%
QinetiQ	QQ.L	GBP	03/12	1,096	1,139	1,108	32	3%
Rolls Royce	RR.L	GBP	12/11	15,952	8,765	10,016	397	2%
Safran	SAF.PA	EUR	12/11	11,885	486	358	128	1%
Precision Castparts Corp.	PCP.N	USD	04/12	23,170	1,919	1,719	200	1%
Embraer	ERJ.N	USD	12/11	4,690	0	0	0	0%

Source: dataCentral, DataStream, Company annual reports, Citi Research. Market data as of 8 August 2012. [1] BAE attributes portion of deficit to other companies; we include 100% of assets and liabilities but include the adjusted deficit as reported

Companies with the greatest equity exposure via the pension plan are BAE Systems, Huntingdon Ingalls, QinetiQ, Bombardier, Lockheed Martin, and Northrop Grumman. We calculate this by measuring the value of the equities in the pension asset portfolio as a percentage of the company's market cap. A downturn in the equity market could increase the pension deficit materially for these companies.

Companies with the greatest equity exposure via the pension plan are BAE Systems, Huntingdon Ingalls, QinetiQ, and Bombardier

Figure 17. Equity exposure from pension funds (m)

Name	RIC	Curr	LYE	Market cap	Assets	Equity %	Bond %	Other %	Exposure*
BAE Systems	BAES.L	GBP	12/11	10,182	17,577	51%	40%	9%	88%
Huntington Ingalls Industries	HII.N	USD	12/11	1,990	3,238	43%	42%	15%	70%
QinetiQ	QQ.L	GBP	03/12	1,096	1,108	53%	34%	13%	53%
BOMBARDIER	BBDb.TO	USD	12/11	6,680	6,395	46%	41%	13%	44%
Lockheed Martin Corp.	LMT.N	USD	12/11	29,486	27,292	45%	39%	16%	42%
Northrop Grumman Corp.	NOC.N	USD	12/11	16,773	21,340	31%	46%	24%	39%
Raytheon Co.	RTN.N	USD	12/11	18,510	15,552	45%	31%	25%	37%
Textron Inc.	TXT.N	USD	12/11	7,453	5,013	50%	30%	20%	34%
GKN Plc	GKN.L	GBP	12/11	3,505	2,693	32%	47%	21%	25%
Boeing Co.	BA.N	USD	12/11	56,084	51,051	26%	53%	21%	24%
Thales	TCFP.PA	EUR	12/11	5,276	3,227	32%	55%	13%	20%
General Dynamics Corp.	GD.N	USD	12/11	22,553	6,250	64%	33%	3%	18%
Rockwell Collins, Inc.	COL.N	USD	09/11	7,236	2,111	60%	37%	3%	18%
Finmeccanica	SIFI.MI	EUR	12/11	1,835	1,575	20%	37%	42%	17%
Rheinmetall AG	RHMG.DE	EUR	12/11	1,621	1,046	23%	15%	62%	15%
Meggitt Plc	MGGT.L	GBP	12/11	3,168	585	47%	40%	13%	9%
EADS	EAD.PA	EUR	12/11	25,026	5,135	38%	47%	15%	8%
Cobham	COB.L	GBP	12/11	2,434	529	33%	49%	18%	7%
Rolls Royce	RR.L	GBP	12/11	15,952	10,016	11%	89%	0%	7%
Precision Castparts Corp.	PCP.N	USD	04/12	23,170	1,719	41%	23%	36%	3%
Safran	SAF.PA	EUR	12/11	11,885	358	33%	49%	18%	1%
MTU Aero Engines	MTXGn.DE	EUR	12/11	3,232	27	64%	29%	8%	1%
Embraer	ERJ.N	USD	12/11	4,690	0	0%	0%	0%	0%

Source: dataCentral, DataStream, Company annual reports, Citi Research. *Value of equity assets in pension fund as percentage of market cap. Market data as of 8 August 2012.

Appendix 3: Global Aerospace & Defence valuation table

Figure 18. Global Aerospace & Defence coverage universe valuation

Company	Rating	Price	Target Price	ETR	Market Cap	P/E			EV/Sales			EV/EBIT			FCF Yield			Dividend Yield			Net Debt/EBITDA		
						12E	13E	14E	12E	13E	14E	12E	13E	14E	12E	13E	14E	12E	13E	14E	12E	13E	14E
BAE	Neutral	313p	290p	-1%	£10,182	8.0x	8.1x	8.3x	0.7x	0.7x	0.7x	7.3x	7.4x	7.2x	7.5%	8.3%	8.1%	6.2%	6.4%	6.6%	0.6x	0.5x	0.4x
BBA Aviation	Buy	183p	220p	28%	£877	10.7x	10.0x	9.2x	0.5x	0.4x	0.4x	9.4x	7.1x	6.4x	17.3%	19.2%	22.5%	4.9%	5.2%	5.4%	1.5x	1.3x	1.0x
Chemring	Buy	301p	360p	25%	£581	5.8x	6.6x	6.4x	1.1x	1.1x	1.1x	7.3x	7.8x	7.2x	12.5%	16.7%	16.5%	5.7%	5.7%	5.7%	1.4x	1.2x	0.9x
Cobham	Buy	226p	265p	21%	£2,434	9.6x	9.0x	8.6x	1.6x	1.4x	1.3x	7.9x	7.1x	6.3x	9.0%	10.6%	12.2%	3.9%	4.3%	4.7%	0.9x	0.5x	0.1x
EADS	Buy	€ 30.25	€ 40.00	35%	€ 25,026	14.2x	10.6x	7.9x	0.6x	0.5x	0.5x	12.2x	9.1x	6.6x	0.4%	6.0%	9.6%	2.3%	3.1%	4.2%	-2.5x	-2.2x	-2.0x
Finmeccanica	Sell	€ 3.17	€ 2.40	-24%	€ 1,835	4.6x	4.0x	3.6x	0.4x	0.4x	0.4x	6.0x	5.5x	5.0x	0.0%	5.5%	10.9%	0.0%	0.0%	0.0%	2.0x	1.8x	1.6x
Meggitt	Neutral	405p	400p	2%	£3,168	11.4x	10.5x	9.9x	2.5x	2.2x	2.1x	10.0x	8.9x	8.1x	5.6%	6.1%	6.8%	2.9%	3.1%	3.5%	1.2x	0.9x	0.7x
MTU	Neutral	€ 62.15	€ 62.00	2%	€ 3,232	14.1x	13.0x	12.2x	1.1x	1.0x	0.9x	9.9x	9.0x	8.3x	2.3%	4.9%	5.7%	2.3%	2.4%	2.7%	0.0x	-0.2x	-0.4x
QinetiQ	Neutral	166p	na	na	£1,096	11.0x	11.4x	11.2x	0.8x	0.7x	0.7x	8.8x	8.0x	7.4x	9.1%	9.4%	9.6%	1.9%	2.0%	2.2%	0.3x	-0.2x	-0.7x
Rheinmetall	Neutral	€ 40.95	na	na	€ 1,621	7.7x	6.9x	6.3x	0.5x	0.5x	0.5x	7.1x	6.3x	5.7x	9.1%	9.9%	11.3%	3.9%	4.4%	4.9%	0.1x	-0.1x	-0.2x
Rolls Royce	Buy	852p	980p	17%	£15,952	14.9x	12.5x	11.3x	1.4x	1.0x	0.9x	11.2x	8.4x	7.5x	2.7%	6.3%	7.2%	2.3%	2.5%	2.7%	0.0x	-0.4x	-0.5x
Safran	Buy	€ 28.50	€ 30.00	8%	€ 11,885	13.9x	11.8x	10.6x	1.1x	1.0x	0.9x	10.1x	8.6x	7.6x	3.8%	5.3%	6.5%	2.9%	3.4%	3.8%	0.4x	0.2x	0.1x
Senior	Buy	199p	230p	18%	£820	11.8x	11.0x	10.3x	1.3x	1.2x	1.0x	10.3x	9.2x	8.1x	7.2%	8.3%	9.0%	2.2%	2.4%	2.5%	0.5x	0.1x	-0.3x
Thales	Buy	€ 26.08	€ 28.00	11%	€ 5,276	8.6x	7.9x	7.3x	0.4x	0.4x	0.3x	6.2x	5.4x	4.6x	8.0%	10.1%	11.7%	3.3%	3.6%	4.2%	-0.9x	-1.2x	-1.4x
Euro - Civil/Commercial				16%		12.3x	10.8x	9.7x	1.1x	1.0x	0.9x	10.0x	8.3x	7.3x	6.0%	8.3%	9.8%	3.0%	3.3%	3.7%	0.2x	0.0x	-0.2x
Euro - Defence				6%		8.0x	7.8x	7.6x	0.8x	0.8x	0.7x	7.3x	6.8x	6.3x	7.7%	10.1%	11.5%	3.5%	3.7%	3.9%	0.7x	0.4x	0.2x
European Average				11%		10.1x	9.3x	8.6x	1.0x	0.9x	0.8x	8.6x	7.6x	6.8x	6.9%	9.2%	10.7%	3.2%	3.5%	3.8%	0.4x	0.2x	0.0x
Boeing	Buy	$74.60	$89.00	22%	$56,084	15.0x	12.7x	11.5x	0.9x	0.9x	0.8x	12.9x	11.1x	9.9x	5.8%	8.6%	11.9%	2.5%	2.5%	2.4%	0.5x	0.2x	-0.2x
Bombardier	Buy	C$3.76	C$6.70	81%	C$5,416	7.2x	6.7x	5.1x	0.3x	0.4x	0.4x	6.8x	8.3x	8.1x	-24.5%	-6.9%	7.5%	2.5%	1.6%	2.0%	1.0x	1.1x	0.5x
DigitalGlobe	Neutral	$20.04	$17.00	-15%	$938	26.4x	18.2x	13.6x	3.1x	2.8x	2.5x	17.7x	13.6x	8.9x	2.1%	2.3%	3.8%	0.0%	0.0%	0.0%	1.5x	1.2x	0.9x
Embraer	Neutral	$25.91	$27.00	8%	$4,690	11.9x	10.0x	8.9x	0.8x	0.8x	0.7x	9.4x	8.3x	7.5x	-11.9%	6.6%	8.1%	2.8%	4.0%	4.5%	1.9x	1.6x	1.3x
General Dynamics	Buy	$63.93	$88.00	41%	$22,553	8.9x	8.3x	7.8x	0.7x	0.7x	0.6x	6.0x	5.3x	4.6x	9.8%	13.5%	12.1%	3.2%	3.3%	3.3%	0.2x	-0.2x	-0.5x
Huntington	Buy	$40.23	$47.00	17%	$1,990	11.7x	10.1x	8.1x	0.4x	0.4x	0.4x	7.6x	6.4x	4.7x	6.3%	12.6%	22.2%	0.0%	0.0%	0.0%	1.5x	0.9x	0.1x
Lockheed Martin	Buy	$90.89	$103.00	18%	$29,486	11.0x	9.8x	8.9x	1.1x	1.0x	1.0x	12.0x	10.6x	9.6x	10.8%	9.7%	10.9%	4.5%	4.5%	4.5%	0.3x	0.2x	0.1x
Northrop Corp	Buy	$67.85	$69.00	5%	$16,773	9.2x	9.6x	9.7x	0.9x	0.9x	0.8x	7.3x	7.3x	7.3x	12.8%	11.6%	11.2%	2.4%	2.3%	2.2%	0.0x	-0.1x	-0.1x
Precision Cast	Buy	$159.43	$189.00	19%	$23,170	15.9x	13.4x	12.1x	2.7x	2.2x	1.9x	10.4x	8.3x	6.9x	5.4%	6.4%	7.4%	0.1%	0.1%	0.1%	-0.5x	-1.0x	-1.5x
Raytheon	Buy	$55.75	$64.00	18%	$18,510	10.4x	9.2x	7.8x	0.8x	0.8x	0.7x	6.9x	6.2x	5.3x	7.8%	9.8%	11.3%	3.5%	3.7%	3.6%	0.4x	0.4x	0.2x
Rockwell Collins	Neutral	$50.90	$56.00	12%	$7,236	11.8x	12.6x	11.7x	2.0x	2.0x	2.0x	10.0x	10.5x	9.7x	6.1%	6.5%	7.3%	2.2%	0.0%	0.0%	0.6x	0.8x	0.6x
Textron Inc	Neutral	$26.53	$27.00	2%	$7,453	11.5x	11.0x	10.1x	0.7x	0.6x	0.5x	7.6x	7.1x	6.2x	6.7%	7.6%	8.8%	0.0%	0.0%	0.0%	1.6x	0.5x	0.0x
United Tech	Neutral	$77.48	$78.00	3%	$70,645	14.4x	12.0x	10.3x	1.4x	1.3x	1.1x	9.6x	8.2x	7.0x	9.2%	9.5%	12.0%	2.7%	3.0%	3.3%	1.5x	1.0x	0.7x
US - Civil/Commercial				21%		12.5x	11.2x	10.0x	1.2x	1.2x	1.1x	9.5x	8.8x	7.9x	-0.5%	5.5%	9.0%	1.8%	1.6%	1.7%	0.9x	0.6x	0.2x
US - Defence				14%		12.9x	10.9x	9.3x	1.2x	1.1x	1.0x	9.6x	8.2x	6.7x	8.3%	9.9%	11.9%	2.3%	2.3%	2.3%	0.6x	0.4x	0.1x
US Average				17%		12.7x	11.0x	9.6x	1.2x	1.1x	1.0x	9.5x	8.5x	7.3x	3.9%	7.7%	10.4%	2.0%	1.9%	2.0%	0.8x	0.5x	0.1x
Global - Civil/Commercial				18%		12.4x	11.0x	9.8x	1.2x	1.1x	1.0x	9.8x	8.6x	7.6x	2.8%	6.9%	9.4%	2.4%	2.4%	2.7%	0.5x	0.3x	0.0x
Global - Defence				10%		10.4x	9.4x	8.4x	1.0x	0.9x	0.9x	8.4x	7.5x	6.5x	8.0%	10.0%	11.7%	2.9%	3.0%	3.1%	0.7x	0.4x	0.1x
Global Average				14%		11.4x	10.2x	9.1x	1.1x	1.0x	0.9x	9.1x	8.1x	7.0x	5.4%	8.4%	10.6%	2.6%	2.7%	2.9%	0.6x	0.4x	0.1x

Source: dataCentral, Citi Research. Market data as of 8 August 2012.

Notes

Notes

Appendix A-1

Analyst Certification

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

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DigitalGlobe Inc. may be deemed to be controlled by or under common control with Morgan Stanley due to ownership,board or other relationship. Citigroup may be deemed to control Morgan Stanley Smith Barney LLC,and Morgan Stanley Smith Barney LLC is a joint venture between Morgan Stanley and Citigroup.

An employee of Citi serves on the board of Raytheon Co.

Due to Citi's involvement as an advisor to Goodrich Corp. on the announced pending sale to United Technologies Corp,CIRA suspended its rating and target price on United Technologies Corp. on September 21,2011 (the 'Suspension Date') . Please note that the Company price chart that appears in this report and available on CIRA's disclosure website does not reflect that CIRA did not have a rating or target price between the Suspension Date and March 18,2012 when CIRA resumed full coverage. Citigroup Global Markets Inc. is acting as a joint bookrunner on United Technologies Inc.'s announced offering of equity units as component of financing for the Goodrich acquisition.

Citigroup Global Markets Inc. or its affiliates beneficially owns 1% or more of any class of common equity securities of Finmeccanica, Textron Inc.. This position reflects information available as of the prior business day.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of BOMBARDIER, Rockwell Collins, Inc., Embraer, Lockheed Martin Corp., Raytheon Co., Safran, Textron Inc., United Technologies Corporation.

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