FOSTER SCHOOL OF BUSINESS
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Master of Professional Accounting

Mapping Business Risk to Financial Statement Risk[i]

Keywords: Business risk, financial statement risk, audit risk.

Key standards: Audit Planning (AS 2101); Risk Assessment; Performance Assessment; Risk of Material Misstatement (AS 2110); Audit Risk (AS 1101); Materiality (AS 2105).

Introduction

Audit planning is an essential part of the audit process. The audit planning process is largely a function of knowing the business and operational risks and how they map into financial statement risks. There are many different tools and approaches to undertaking this task. In this case, we will discuss planning the audit in a public company setting, focusing on understanding the business, mapping business to financial reporting risk, and the audit planning process.

> **"The objective of the auditor is to plan the audit so that the audit is conducted effectively."**
> **PCAOB AS 2101.02**

Understanding the Business

Understanding the business of a client is key to an effective and efficient audit. A good understanding of the business allows the auditor to detect and identify the types of transactions and events that are expected to have a significant impact on the financial statements. More broadly, understanding the business is central to all business activities including management decisions, advisory engagements, accounting judgments and forecasting. We will consider various analytical frameworks that help the auditor understand the business of their client.

PESTLE ANALYSIS, an acronym for Political, Economic, Social, Technological, Environmental and Legal can be used as a starting point to identify potential threats to any entity. PESTLE analysis is one approach that can be used as part of a Strengths, Weaknesses, Opportunities and Threats, or **SWOT analysis**. A SWOT analysis provides a simple framework to identify internal strengths and weaknesses of a company and the external opportunities and threats to the company's operations. PESTLE analysis helps assess threats by considering six potential threat categories. For each category a list can be created to identify potential threats. **Examples of Political factors** include threats from legislative stability, stability of the government, corruption, trade restrictions, foreign trade policy, competition regulation, government funding, incentives, subsidies and sanctions.[ii] **Examples of Economic factors** include changes in economic growth (including the stage of the business cycle), taxation, interest rates, employment rates, inflation rates, availability of credit, costs of labor and materials. **Examples of Social factors** include cultural or shared beliefs about health, working conditions, leisure, religion, taboos, money and wealth; lifestyle trends, shifts in culture and beliefs, and changes in demographics (both from intergenerational shifts and migration). **Examples of Technology factors** include information technology (IT) infrastructure, the invention of disruptive technology, automation, artificial intelligence and machine learning, the pace of research and innovation, and reliance on existing or obsolete technology.

Examples of Legal factors include the structure of legal protection for civil rights, consumer protection, health, safety and labor rights, antitrust, intellectual property rights, corruption and copyright, data protection, discrimination, and threats to changes to these legal protections. **Examples of Environmental factors** include the impact of climate change, pollution, impact on endangered species, availability and quality of common resources including air and water, availability, quality and cost of energy.

PESTLE analysis provides a good starting point to assessing a company, but don't think each of these categories are distinct. In many cases the risks will overlap. For example, environmental factors will be affected by both legal protections afforded to the environment, which can affect the cultural stance towards the environment. Legal protection is often also related to political factors, including legislation and sanctions, that in part reflect a response to earlier cultural beliefs about the importance of the environment. A complex web of causes and effects indeed!

THE DISCLOSURE OF RISK FACTORS is a required component of the 10-K. In their document "How to read a 10-K" the SEC provides the following description of the content of this section:

> "Item 1A - "Risk Factors" includes information about the most significant risks that apply to the company or to its securities. Companies generally list the risk factors in order of their importance. In practice, this section focuses on the risks themselves, not how the

> company addresses those risks. Some risks may be true for the entire economy, some may apply only to the company's industry sector or geographic region, and some may be unique to the company."
>
> (Sourced from: https://www.sec.gov/fast-answers/answersreada10khtm.html)

Thus Item 1A of the 10-K, which requires the disclosure of risk factors, can potentially provide insight into the risks perceived by the company. Due to the broad nature of the disclosure, many disclosed risks will overlap with the risks identified using a PESTLE analysis. Nonetheless, reading through the disclosed risk factors allows the auditor further opportunity to assess the business risks facing the firm. In addition, the SEC requires management to draft a **Management Discussion and Analysis (MD&A)** section of their financial reports with the following objectives:

- "To provide a narrative explanation of a company's financial statements that enables investors to see the company through the eyes of management;
- To enhance the overall financial disclosure and provide the context within which financial information should be analyzed; and
- To provide information about the quality of, and potential variability of, a company's earnings and cash flow so that investors can ascertain the likelihood that past performance is indicative of future performance."

Thus, the MD&A is another potential qualitative source of information about both the business risks and the financial reporting risks, especially due to SEC encouragement of top-level management involvement and avoidance of uninformative, boilerplate disclosures. Note that the SEC also requires discussion of critical accounting estimates and/or policies (i.e., CAPs), judgment in the policies and likelihood of material reporting differences under different assumptions. Together, PESTLE and the 10-K can provide a good starting point for a comprehensive qualitative analysis of the business risks facing the company.

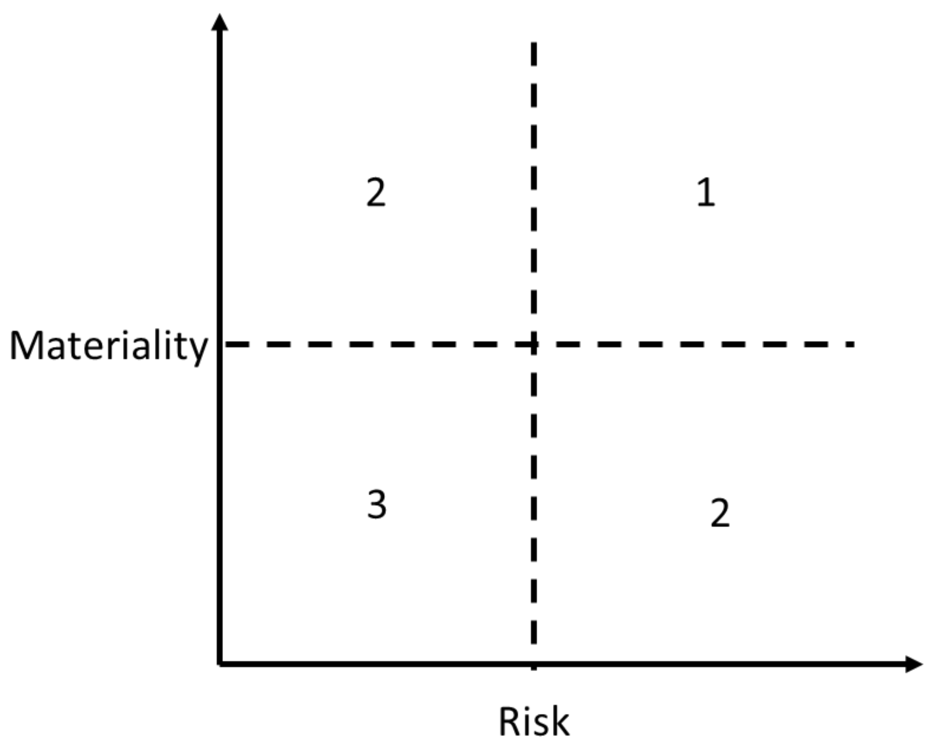
MAPPING BUSINESS TO FINANCIAL RISKS

In this section, we outline the mapping of business risk to financial misstatement risk. Questions to keep in mind include: Are all business risks financial reporting risks? Are the business risks and financial risks affecting the same accounts?

AS 2110 from the PCAOB, *Identifying and Assessing Risks of Material Misstatement*, requires that the auditor identify and assess the risks of material misstatement at the financial statement level and the assertion level. In identifying and assessing the risks of material misstatement, the auditor should among other factors, identify significant accounts and disclosures and their relevant assertions (AS 2110.59).

PCAOB Auditing Standards identify an account or disclosure as significant if there is a reasonable possibility that the account or disclosure could contain a misstatement that, individually or when aggregated with others, has a material effect on the financial statements, considering the risks of both overstatement and understatement. The determination of whether an account or disclosure is significant is based on inherent risk, prior to the mitigating effect of internal controls. For materiality, SAB 99 defines an item as material "if there is a substantial likelihood that a reasonable person would consider it important." AS 2105 goes on to describe how materiality should be assessed for the financial statements as a whole and then potentially adjusted downward for specific accounts or disclosures. Figure 2 displays a way to consider whether an account is subject to significant misstatement risk. The account must be both material and be subject to inherent risk.

Figure 1
Account-Level Misstatement Risk



Notes: This figure presents one approach to developing an audit risk map. Each quadrant aims to represent the relative significance of inherent misstatement risk. This is a subjective process but allows for the identification of specific accounts and disclosures where the inherent risk of material misstatement is elevated. The risks perceived as most significant are classified into quadrant (1). The accounts with the lowest inherent misstatement risk are those in area (3), with accounts in the areas marked (2) having medium levels of inherent misstatement risk.

For your firm, where does each of the accounts end up? Usually, the largest accounts associated with CAPs will end up in quadrant (1), but what about the other accounts? Where would you place them on this figure?

AS 2110.60 provides guidance on identifying significant accounts and disclosures and their relevant assertions, stating:

> "To identify significant accounts and disclosures and their relevant assertions, the auditor should evaluate the qualitative and quantitative risk factors related to the financial statement line items and disclosures. Risk factors relevant to the identification of significant accounts and disclosures and their relevant assertions include:
>
> - Size and composition of the account;
> - Susceptibility to misstatement due to error or fraud;
> - Volume of activity, complexity, and homogeneity of the individual transactions processed through the account or reflected in the disclosure;
> - Nature of the account or disclosure;
> - Accounting and reporting complexities associated with the account or disclosure;
> - Exposure to losses in the account;
> - Possibility of significant contingent liabilities arising from the activities reflected in the account or disclosure;
> - Existence of related party transactions in the account; and
> - Changes from the prior period in account and disclosure characteristics."

Keep in mind that "the components of a potential significant account or disclosure might be subject to significantly differing risks" (AS 2110.63) and that risk factors should be assessed "based on the consolidated financial statements" (AS 2110.64). The MD&A CAPs can highlight financial reporting areas that management considers inherently risky because of the high degree of judgment and complexity.

Finally, AS 1105.11, *Audit Evidence*, provides guidance on the financial statement assertions, which states that:

> "In representing that the financial statements are presented fairly in conformity with the applicable financial reporting framework, management implicitly or explicitly makes assertions regarding the recognition, measurement, presentation, and disclosure of the various elements of the financial statements and related disclosures. Those assertions can be classified into the following categories:
>
> - Existence or occurrence – Assets or liabilities of the company exist at a given date, and recorded transactions have occurred during a given period.
> - Completeness – All transactions and accounts that should be presented in the financial statements are so included.
> - Valuation or allocation – Asset, liability, equity, revenue, and expense components have been included in the financial statements at appropriate amounts.
> - Rights and obligations – The company holds or controls rights to the assets, and liabilities are obligations of the company at a given date.
> - Presentation and disclosure – The components of the financial statements are properly classified, described, and disclosed."

THE AUDIT PLANNING PROCESS

AS 2110 also states that the auditor should obtain an understanding of the company and its environment to understand the events, conditions, and company activities that might reasonably be expected to have a significant effect on the risks of material misstatement. AS 2110.7 goes on to state that "obtaining an understanding of the company includes understanding:

- Relevant industry, regulatory, and other external factors;
- The nature of the company;
- The company's selection and application of accounting principles, including relevant disclosures;
- The company's objectives and strategies and those related business risks that might reasonably be expected to result in risks of material misstatement; and
- The company's measurement and analysis of its financial performance."

AS 2110.8 through AS 2110.17 elaborate on these factors. Audit guidance for understanding the company's objectives, strategies, and related business risks is provided in paragraphs 14 and 15.

THE GOALS OF THE PLANNING PHASE OF THE AUDIT can be best understood in the context of the Audit Risk Model:

$$AR = IR \times CR \times DR \tag{1}$$

Where AR is Audit Risk, IR is inherent Risk, CR is Control Risk, and DR is detection Risk.

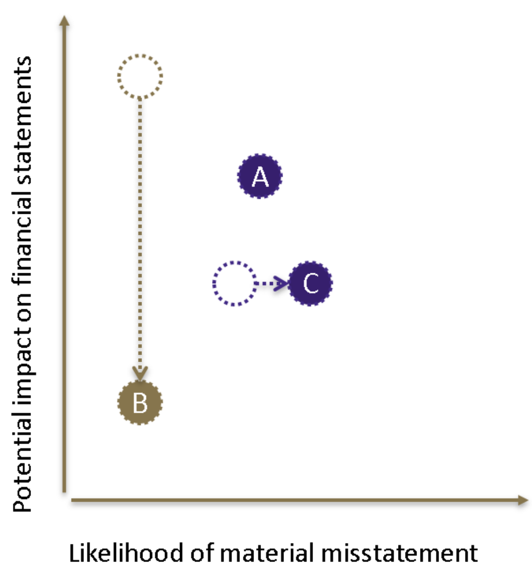
For a material misstatement to occur, three events must happen. First, the misstatement must be recorded in the accounting system. The likelihood that this occurs increases with the inherent risk of the account. Second, internal controls must fail to prevent or detect the misstatement (with this event increasing with control risk). Third, the misstatement must remain uncorrected after the auditor performs substantive tests (with this event increasing with detection risk).

During the planning phase of the audit, the auditor must consider all three components of the audit risk model. Inherent risk is the probability that a financial statement assertion is misstated before considering the effects of internal controls. This risk is affected by many of the firm characteristics we discussed earlier. Control risk is the likelihood that internal controls will not prevent a material misstatement (independent of the audit process). This component of the audit risk model highlights the importance of implementing and maintaining strong control systems. Finally, detection risk is the likelihood that the auditor's procedures fail to detect a misstatement. During the planning phase of the engagement, the auditor designs tests and procedures based on the first two components of the audit risk model to lower detection risk to an acceptable level.

Substantive tests may fail to detect a material misstatement because the auditor has not applied the proper procedures (due to inadequate planning), procedural errors caused by poor supervision, improper corrective actions, or simply due to sampling omission. In most cases, it is not cost-effective for auditors to examine every single transaction. Thus, the audit risk model recognizes that there is a small amount of residual risk even after the auditor has performed his or her substantive tests. With modern auditing systems improving over time, the ability to import all transactions has become feasible, greatly lowering the risk of making a sampling omission error.

A DYNAMIC AUDIT PLANNING APPROACH provides the auditor with an analytical tool to avoid the "same as last year," or SALY, psychological pitfall that can easily affect audit planning.[iii] Taking a dynamic audit approach focuses the auditor on assessing how audit risks have changed since the prior year, or in other words, asks the question **what is different from last year?**

Figure 2
Dynamic Audit Planning Visualization Example



Notes: This figure provides an example of a dynamic audit risk map. Each circle identifies a key account with the solid circles being the current riskiness of the account and the dashed circles representing the prior year. Color can be used to indicate different levels of risk. For example, purple could be used for material risks, and gold for important risks that are unlikely to be material. Arrows are used to emphasize the shifting nature of the risk associated with each account. This approach differs from the quadrant approach as instead of using defined categories risk is judged on a continuous map with the highest risks being those closest to the top right-hand corner.

Figure 3 provides a visualization of the audit risk map for a hypothetical company. The circle A reflects a material risk that has not changed in terms of materiality or likelihood of being misstated since the prior year. An example could be the estimates of warranties and provisions for a large manufacturer in a year where the business was relatively stable, and the accounting did not change. Circle B reflects an account that was considered as a higher risk in the prior year and dropped due to a decline in the potential impact on the financial statements (i.e., the effect of a misstatement has been judged as not significant this year). An example could be the estimate of an intangible that appeared overstated but has since been subject to a significant impairment charge. Finally, circle C reflects a material risk with an increasing likelihood of misstatement. An example could be the measurement of lease liabilities for a firm with many complex lease agreements increasing due to changes in the leasing standard.

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Endnotes

[i] **Acknowledgements:** This case was first prepared by Asher Curtis and Andy Kitto in the Autumn of 2017. This version was revised and edited by Beth Blankespoor in 2019. Parts of the auditing section makes use of and extends a prior case written by Zoe-Vonna Palmrose.

[ii] Some authors and other commentators may refer to a government as pro- or anti- business. This simplification is inconsistent with a PESTLE analysis (and a more realistic worldview) as it assumes that businesses are isolated from the political consequences on the economy, society, technology, legal system and environment. Reality is generally complex and has hidden interdependencies.

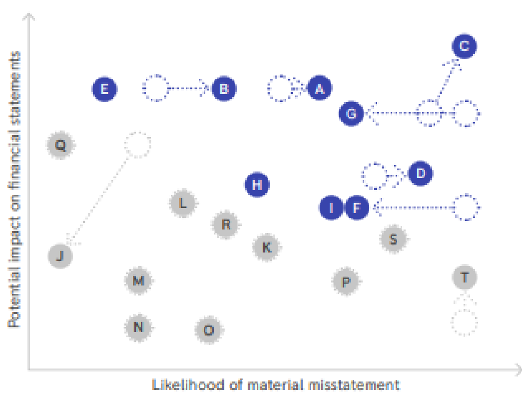
[iii] Remember the rush to solve bias from orientation? Taking a SALY approach disregards any information about the evolution of business and operating risks and instead favors speed. Especially given the rapidly changing environment faced by most modern businesses, a SALY approach is likely to be more time consuming in the future when dealing with audit problems such as litigation and PCAOB deficiencies.

APPENDIX – DYNAMIC AUDIT PLANNING

Figure 3 is drawn from the real-world disclosure of Rolls Royce's auditors in the 2017 Rolls Royce annual report (https://www.rolls-royce.com/~/media/Files/R/Rolls-Royce/documents/annual-report/2017/2017-full-annual-report.pdf). See below for excerpts.

Dynamic Audit planning tool

(Relative significance of audit risks before taking account of controls)



- (A) The pressure on and incentives for management to meet revenue, profit and cash targets
- (B) The basis of accounting for revenue and profit in the Civil Aerospace business
- (C) The measurement of revenue and profit in the Civil Aerospace business
- (D) Recoverability of intangible assets in the Civil Aerospace business
- (E) Consequences of deferred prosecution and leniency agreements in connection with alleged bribery and corruption in overseas markets
- (F) The presentation of 'underlying profit'
- (G) Disclosure of the effect on the trend in profit of items which are uneven in frequency or amount
- (H) Gains resulting from the acquisition of a controlling interest in Industria De Turbo Propulsores SA
- (I) Disclosure of the impact of adopting IFRS 15
- (J) Liabilities arising from sales financing arrangements (see page 130)
- (K) Measurement of revenue and profit on long-term contracts outside the Civil Aerospace business (see pages 124 and 125)
- (L) Determination of development costs to be capitalised (see page 124)
- (M) The basis of accounting for contractual aftermarket rights (see page 122)
- (N) Determination of the amortisation period of development costs and contractual aftermarket rights (see pages 128 and 129)
- (O) The basis of accounting for Risk and Revenue Sharing Arrangements (see pages 123 and 124)
- (P) Estimating provisions for warranties and guarantees (see page 125)
- (Q) Valuation of derivatives and hedge accounting (see pages 127 and 128)
- (R) Measurements of post-retirement benefits (see page 125)
- (S) Accounting for uncertain tax positions and deferred tax assets (see page 125)
- (T) Valuation of goodwill (see page 124)

(A) The pressure on and incentives for management to meet revenue, profit and cash targets

Refer to pages 21 to 41 (Business review) and pages 99 and 100 (Audit Committee report – Financial reporting)

The risk *(Subjective estimates)* – The continuing pressure on and incentives for management to meet targets increases the inherent risk of manipulation of the Group financial statements. The financial results are sensitive to significant estimates and judgements, particularly in respect of revenues and costs associated with long-term contracts, and there is a broad range of acceptable outcomes of these that could lead to different levels of profit and revenue being reported in the financial statements. Relatively small changes in the basis of those judgements and estimates could result in the Group meeting, exceeding or falling short of forecasts, guidance or targets. The Group's incentive schemes include targets related to profit and to cash generation.

The significance of this risk increased somewhat during the year as (1) the Group has been impacted by the increasing cost and challenge of managing significant in-service engine issues on the Trent 1000 and Trent 900 programmes and so there could be motivation to overstate financial performance to downplay the impact of these on the Group and (2) there have been significant changes in the Executive Leadership Team in the last year and so there could be motivation to establish credibility.

Our response – Our procedures included:

- ***Personnel interviews:*** We have made specific enquiries designed to assess whether judgements and estimates exhibited unconscious bias or whether management had taken systematic actions to manipulate the reported results and whether sector management received instruction from Group to make changes in estimates that failed to consider appropriately all relevant information in determining the estimate;
- ***Test of details:*** Compared the results to forecasts, guidance and targets, and challenged variances at a much lower level than we would otherwise have done based on our understanding of factors affecting business performance with corroboration using external data where possible;
- ***Our sector experience:*** Applied an increased level of scepticism throughout the audit by increasing the involvement of the senior audit team personnel, with particular focus on audit procedures designed to assess whether revenues and costs have been recognised in the correct accounting period, whether central adjustments were appropriate and whether the segmental analysis has been properly prepared. In particular:
  - when considering the risk relating to *The measurement of revenue and profit in the Civil Aerospace business* ((C) refer to pages 185 and 186), we challenged the basis for changes in the estimated revenues and costs in long-term contracts, with a heightened awareness of the possibility of unconscious or systematic bias with particular emphasis on the treatment of the additional costs estimated to have to be incurred as a consequence of the in-service engine issues on the Trent 1000 and Trent 900 programmes;
  - when considering the risk relating to *Recoverability of intangible assets in the Civil Aerospace business* ((D) refer to pages 186 and 187), we challenged, with a heightened awareness of the possibility of unconscious or systematic bias, the basis of cost estimates in particular those relating to the development of the Trent 900 modifications required to give improvements to time on wing and fuel burn; and
- ***Assessing transparency:*** When considering the risk relating to *The presentation of underlying profit* ((F) refer to pages 188 and 189) and the risk relating to *Disclosure of the effect on the trend in profit of items which are uneven in frequency or amount*

(G refer to pages 189 and 190), we sought to identify items that affected profit (and/or the trend in profit) unevenly in frequency or amount (especially those where management had a greater degree of discretion over the timing or scale of transactions entered into) at a much lower level than we would otherwise have done and to assess the balance and transparency of disclosure of these items.

Our findings – Our testing did not identify any indication of manipulation of results *(2016 audit finding: none)*. We found the degree of caution/optimism adopted in estimates to be balanced overall *(2016 audit finding: balanced)*. We found that there was ample unbiased disclosure of items affecting the trend in profit.

B The basis of accounting for revenue and profit in the Civil Aerospace business

Refer to pages 122 and 123 (Key areas of judgement – Introduction, Contractual aftermarket rights, Linkage of OE and long-term aftermarket contracts), page 126 (Significant accounting policies – Revenue recognition) and pages 99 and 100 (Audit Committee report – Financial reporting)

The risk *(Accounting treatment)* – The amount of revenue and profit recognised in a year on the sale of engines and aftermarket services is dependent, inter alia, on the appropriate assessment of whether or not each long-term aftermarket contract for services is linked to or separate from the contract for sale of the related engines as this drives the accounting basis to be applied. As the commercial arrangements can be complex, significant judgement is applied in selecting the accounting basis in each case. The most significant risk is that the Group might inappropriately account for sales of engines and long-term service agreements as a single arrangement as this would usually lead to revenue and profit being recognised too early because the margin in the long-term service agreement is usually higher than the margin in the engine sale agreement.

The significance of the risk increased during the year as more engines were delivered this year.

Our response – Our procedures included:

- ***Accounting analysis:*** We evaluated the appropriateness of the accounting bases the Group applies in the Civil Aerospace business by reference to accounting standards focusing on the substance of the transactions.
- ***Assessing transparency:*** We considered whether the disclosure included in the financial statements enables shareholders to understand how the accounting policies represent the commercial substance of the Group's contracts with its customers.
- ***Testing application:*** We made our own independent assessment, with reference to the relevant accounting standards, of the accounting basis that should be applied to each long-term aftermarket contract entered into during the year and compared this to the accounting basis applied by the Group.

Our findings – We found that the Group has developed a framework for selecting the accounting bases which is consistent with a balanced interpretation of accounting standards and has applied this consistently *(2016 audit finding: balanced)*. We found that the disclosure was ample *(2016 audit finding: ample)*. For the agreements entered into during this year, it was clear which accounting basis should apply.

C The measurement of revenue and profit in the Civil Aerospace business

Refer to pages 122 and 123 (Key areas of judgement – Measurement of performance on long-term aftermarket contracts), page 126 (Significant accounting policies – Revenue recognition and TotalCare arrangements) and pages 99 and 100 (Audit Committee report – Financial reporting)

The risk *(Subjective estimates)* – The amount of revenue and profit recognised in a year on the sale of engines and on aftermarket services is dependent, inter alia, on the assessment of the percentage of completion of long-term aftermarket contracts and the forecast cost profile of each arrangement. As long-term aftermarket contracts can typically span 15-25 years and the profitability of these arrangements typically assumes substantial life-cycle cost improvement over the term of the contracts, the estimated outturn requires significant judgement to be applied in estimating future engine flying hours, time on wing and other operating parameters, the pattern of future maintenance activity and the costs to be incurred. In addition unanticipated technical issues can emerge without prior indication and add many hundreds of millions of pounds to future cost estimates.

The nature of these estimates means that their continual refinement can have an impact on the profits of the Civil Aerospace business that can be significant in an individual financial year and the range of acceptable of judgements are such that the cumulative profit to date on the programs could vary by some hundreds of millions of pounds.

The Group has experienced significant in-service engine issues on both the Trent 1000 and Trent 900 programmes. Assessing the estimated cost of managing these issues, assessing which costs relate to long-term aftermarket contracts and which are development costs and assessing the extent to which the proposed engineering solutions will improve engine performance are all significant judgements which have a significant effect on profit recognition.

As a consequence of these in-service engine issues, the significance of the risk has increased significantly during the year.

Our response – Our procedures included:

- ***Controls:*** We tested the controls designed and applied by the Group to provide assurance that the estimates used in assessing revenue and cost profiles are appropriate and that the resulting estimated cumulative profit on these contracts is accurately reflected in the financial statements; these controls operated over both the inputs and the outputs of the calculations.
- ***Historical comparisons and our sector knowledge:*** We challenged the appropriateness of these estimates for each programme and assessed whether or not the estimates indicated any evidence of systematic or unconscious management bias in the context of the heightened pressure on and incentives for management to meet forecasts, guidance and targets discussed above. Our challenge was based on our assessment of the historical accuracy of the Group's estimates in previous periods in relation to both cost and revenue forecasts, identification and analysis of changes in assumptions from prior periods and an assessment of the consistency of assumptions within programmes as well as with our sector experience.