



Europe Economics

Ex ante Impact Assessment of IFRS 16

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Europe Economics
Chancery House
53-64 Chancery Lane
London WC2A 1QU

Tel: (+44) (0) 20 7831 4717
Fax: (+44) (0) 20 7831 4515

www.europe-economics.com



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Abstract

The current accounting treatment for operating leases is to treat them like rental expenditure. Leasing obligations do not appear as liabilities, and thus are often described as off-balance sheet financing. IFRS 16 would mean that lessees need to treat such leases similarly to how a standard loan is treated now. This means that recorded assets and liabilities would expand, very materially in many retailers and airlines. There may also be temporary profit and loss account effects.

Europe Economics has investigated the expected economic and behavioural impacts. We found the main driver of compliance costs to be changes to lessees' IT and accounting systems. Users of financial reports would benefit due to increased transparency and comparability, but these would be limited in scope since most public capital market users and, to a lesser extent, users at lenders / lessors already undertake work similar to IFRS 16's expected effect. We also find that a small minority of lessees can be expected to seek amendments to leasing contracts to maintain the existing off-balance sheet treatment.

Any consequent reduction in demand for leasing from listed companies should not be significant. We have not found a credible pathway by which unlisted companies, such as SMEs, would be affected by the implementation of IFRS 16 Leases on listed companies.

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1 Executive Summary

1.1 Introduction

Currently, there is a distinction between a finance lease and an operating lease. The former is treated similarly to a standard loan and has to be accounted for in the company's balance sheet. Operating leases, on the other hand, are treated like rental expenditure. As such, they do not appear as liabilities in standard financial statements, and thus are often described as off-balance sheet financing.

IFRS 16 would eliminate, for lessees, the classification of leases as either finance or operating, and treat nearly all leases similarly to how finance leases are treated currently (there are exceptions around leases of low-value assets or agreements with less than one year to run). This means that the assets and liabilities recorded on balance sheets will expand. There may also be temporary profit and loss account effects.

The role of Europe Economics, an independent economics consultancy, has been to provide economic and behavioural expertise to the European Financial Reporting Advisory Group (EFRAG) in its ex ante impact analysis of IFRS 16 *Leases*. This will be an input to EFRAG's endorsement advice to the European Commission on whether endorsement of IFRS 16 would be conducive to the European public good.

1.2 Our approach

EFRAG is required to consider whether it would be conducive to the European public good to endorse IFRS 16. This study was commissioned to contribute to this determination. In particular, it is intended to contribute to answering the following questions:

- What impact could IFRS 16 have on the behaviour of lessees listed on Regulated Markets, investors and lenders and the impact of any anticipated behavioural changes on the European Union (EU) economy?
- What economic costs and benefits could arise from the endorsement of IFRS 16?
- What is the potential impact of endorsing IFRS 16 on the European Union leasing industry?
- How could the implementation of IFRS 16 impact upon the financing available to unlisted SMEs?
- What other unintended consequences could arise due to the implementation of IFRS 16?

Our approach to answering these questions has involved desktop research, primary data gathering, and data analysis. The primary data gathering involved YouGov's market research (with 186 lessees and 90 lenders / lessors interviewed) and additional stakeholder interviews conducted by Europe Economics. We used financial reporting and capital market data to describe the scale of accounting adjustments (i.e. estimating how balance sheets and profitability could be affected by IFRS 16) and also to test the current debt capital market treatment of operating leases.

All these components have been subsequently synthesised to bring all the evidence strands together. The outcome is an ex ante cost and benefit analysis of IFRS 16, including the analysis of wider impacts and potential behavioural changes.

1.3 The current leasing landscape

Leasing and hire purchase agreements are common methods of business financing in Europe in the broadest sense (not just the EU and European Economic Area, EEA, countries). In particular, leasing is used to finance a wide range of assets, including cars, trucks, industrial machinery and equipment, IT and other office equipment, planes, and real estate to name but a few. In the global leasing landscape defined in its widest

sense (i.e. including hire purchase), Europe plays a major role, accounting for 38 per cent of total volume, with Germany and UK being the largest markets.

Across the EEA, the estimated total value for new leasing agreements was €216 billion across all types of client in 2015, with outstanding lease obligations standing at €566 billion at the end of that year.¹ The largest markets for leasing — again across all clients — are Germany and France. About ninety per cent (by value) of lease issuance in a year relates to plant and equipment, including vehicles. Real estate leases have a longer duration such that operating leases related to property account for about 35 per cent of the value of outstanding lease obligations.

Leasing companies can be banks, bank-owned subsidiaries, independent companies or the financing arms of manufacturing companies, known as captive lessors. Although bank owned leasing companies are the major players in Europe, the large variety of parties involved in the market results in a range of business models that differ according to the leasing company's strategy and market position, as well as corresponding distribution channels. The most popular distribution channels used by European leasing companies are direct sales and the banking networks. The vendor channel is also particularly used for small companies. Other channels include dealer point-of-sale and brokers.

When we consider only listed companies, those with headquarters in the UK, Germany and France have the largest operating lease obligations currently outstanding. In aggregate, we believe that companies with a primary listing in the EEA account for at least half of the new leases entered into in Europe.

Amongst the different types of leases, operating leases are particularly important within the overall European leasing context, not least for listed companies. Companies in the Airlines, Telecommunications and Retail sectors are substantially more reliant on operating leasing than other sectors. Companies enter into leases for a mix of reasons. Balance sheet presentation is an important factor for at least some lessees. Indeed, it was cited as the single most important factor for using operating leasing by 13 per cent of those with a property lease and eight per cent of those with a plant and equipment lease. Operational flexibility was the most frequently cited single most important factor for leasing plant and equipment (23 per cent of lessees), with risk sharing being the most commonly identified such factor in property leasing (16 per cent of property lessees).

1.4 Impact analysis

1.4.1 Accounting impacts

The main impact of IFRS 16 will be to bring assets held under operating leases and the lease liabilities onto balance sheets. Profitability and leverage ratios would also be affected. We have simulated these effects on EU / EEA companies listed on a Regulated Market in the EU / EEA, as if they applied IFRS 16 in 2015 to their existing leases. We stress that there are limitations inherent in the nature of this simulation, e.g. around the length of asset lives, that could materially affect these results — i.e. this is not a prediction, rather a tool for assessing the approximate potential scale of impacts, and the number of companies that could be affected.

The total simulated lease liability of these companies is around €576 billion, representing 15 per cent of total debt of lessees if we exclude banks, insurance and financial services companies.² Amongst the three most operating lease-intensive sectors (i.e. Airlines, Retail and Travel & Leisure), the simulated liabilities represent at least 40 per cent of total debt. The associated right of use (ROU) asset value for the lessees in our

¹ The value of new lease agreements reaches €229 billion (€592 billion in outstanding value) including also Switzerland.

² The total debt variable is defined by Bloomberg LLP. It includes both short-term and long-term debt.

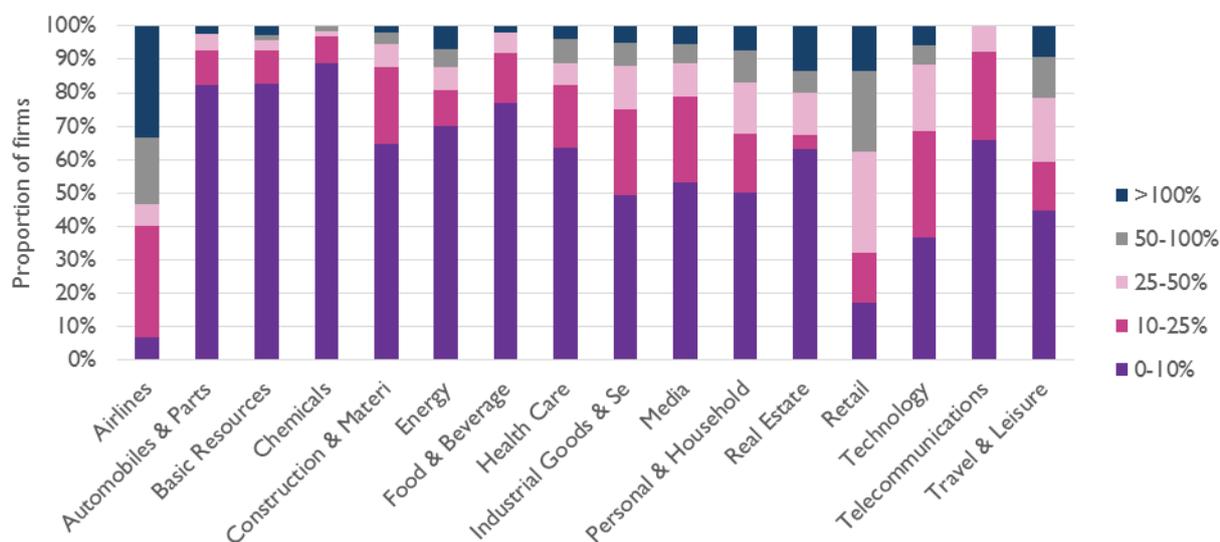
simulation is €528-551 billion,³ representing 14-15 per cent of the total net book value (NBV) of property, plant and equipment.

Over the life of a lease there should be no profitability impact due to IFRS 16. However this need not hold in any given year. Hence, all profit impacts simulated are indicative only of potential short-term changes. We considered different profitability measures to gain a holistic picture on the overall impact, and results confirm our hypothesis:

- Around 26 per cent of companies has an EBT/turnover impact above one per cent.
- The overall EBITDA impact on current lessees is an increase of around 10 per cent. In total, 55 per cent of companies experience an EBITDA increase of less than ten percent.

There are wide sector variations. For instance, amongst the Airlines industry, one-third of companies in our simulation experience an EBITDA impact larger than 100 per cent. The proportion is lower for other operating-lease-intensive industry (around 10 per cent). Those with a significant deterioration in profitability — and without automatic mechanisms to adjust for the change in IFRS — are likely, for example, to have more significant dialogue around revising remuneration schemes and/or debt covenants.

Figure I.1: EBITDA impact by sector



Source: Bloomberg LLP and Europe Economics calculations.

Leverage ratios are used together with other financial metrics to assess a company's ability to meet its financial obligations. Overall, leverage ratios are expected to increase slightly. The Debt/Equity ratio has increased from 0.8 to 1 and Debt/Asset ratio increased from 28 per cent to 32 per cent.⁴ Again, the increase is the most significant in the Airlines, Retail and Travel & Leisure industries. This could trigger the renegotiation of financial covenants, or even — if a user of the financial statements had not appreciated the significance of operating leases — reports change perceptions of a company's creditworthiness. We return to both these issues below.

1.4.2 Direct compliance costs

To understand the burden of compliance due to IFRS 16, we have analysed possible impacts on lessees and lessors / lenders. We have constructed cost models which estimate the total one-off implementation cost of compliance in the EEA as €182–221 million and the annual ongoing costs as € 40–46 million (directly borne

³ The simulated assets are sensitive to asset life assumptions. For details, see Appendix 7.

⁴ Aggregate results exclude banks, insurance and financial services sectors for reasons of comparability.

by the approximately 2,300 lessees reporting operating lease commitments in the EEA). This is almost negligible compared to these companies' aggregate profit before tax, being 0.05 per cent of the pre-tax income. We note that a few large companies have commented that delays in the endorsement would increase the cost of implementation significantly.

The majority of these costs would be incurred by lessees. Table I.1 shows the breakdown of the one-off and ongoing costs for lessees.

Table I.1: One-off and ongoing costs of compliance on lessees

	Number of companies	Average one-off costs per company (€000)	Average ongoing costs per company (€000)	Total one-off costs (€m)	Total ongoing costs (€m)
Turnover band					
Less than €500m	1248	13-16	2-3	16-20	3-4
€500m-€5bn	746	75-91	19-22	56-68	14-16
Above €5bn	300	337-404	76-88	101-120	23-26
Total				173-208	40-46
Breakdown by category					
Accounting systems				162-186	40-46
Renegotiation of debt				7-8	NA
Remuneration schemes				5-15	NA
Total				173-208	40-46

Source: Europe Economics.

For lessees, IT and accounting system implementation accounts for around 90 per cent of the total one-off compliance costs. The main one-off costs are expected to relate to the analysis of existing contracts, the purchase of additional IT systems, and potential process changes. This equates to €162–€186 million across all lessees. We found that the expected cost varies significantly between companies. This stems from the diversity in the number and type of operating leases and differences in the current IT systems and processes. Companies with more operating leases would need more time to incorporate their contracts onto their new system. Similarly, if the lease portfolio contains dissimilar assets and / or variant terms and conditions, companies would need to spend more time in establishing processes and valuation methodologies for each type, which could increase the cost of implementation, and likely trigger increased reliance on external expertise.

The average ongoing cost for lessees is smaller than the implementation cost. This is to be expected as subsequent to the actual implementation, the revised processes can be absorbed into business-as-usual. Similarly, the objective of at least some of the one-off spending is to achieve process automation, i.e. promoting a lower incremental ongoing cost. Indeed, about one-fifth of the lessees did not expect to incur additional ongoing costs due to IFRS 16. The main driver for ongoing costs is the monitoring of capitalised operating leases and any IT maintenance costs. The ongoing costs are likely to be higher for lessees that have more frequent lease changes. These changes would trigger the need to reassess and re-measure the lease liability and ROU assets. We estimate the total ongoing costs for lessees to be around €40-46 million.

In terms of renegotiation of debt covenants, we expect about 30 per cent of lessees to be involved in the renegotiation of existing debt covenants to adjust for changed accounting metrics. The majority of these expect a relatively trivial exercise — but a notable minority of this group anticipate that this process would be significant. The cost of renegotiation would depend on the number of lease contracts, the terms of these contracts (e.g. whether or not there is an automatic adjustment), and the significance of changes in affected financial metrics. Such costs have been considered from both the lessees' and lenders' perspective. Overall the total one-off cost of renegotiating debt covenants for the lessees is expected to be around €6.8–7.8

million. Although the direct cost of renegotiation is low, any such debt renegotiation would be important to a company to ensure that its operational headroom is not compromised.

IFRS 16 would change companies' profitability and leverage ratios, some more than others. The more significant changes are likely to trigger renegotiations of remuneration incentive schemes and/or debt covenants. We have quantified the cost of each of these in turn. About 69 per cent of lessees who are familiar with IFRS 16 said that they are likely to renegotiate their remuneration schemes in consequence of its implementation. We have constructed a model to quantify the cost of reviewing employment contracts and communicating the changes to the relevant employees. Based on our assumptions, the total one-off cost of this knock-on effect would be around €5–€15 million. Given that there will be a transitional period of up to two years before companies are obliged to implement IFRS 16, some of these costs may be capable of being spread over a longer time period, and perhaps, in part, avoided altogether.

Implementation costs for lenders and lessors are expected to be much lower than for lessees. This is because most lenders are already making adjustments for operating leases when evaluating a company's creditworthiness. We found that the total one-off IT implementation cost would be around €5.6–€8.9 million. Interestingly, of those who are currently making adjustments, about half indicated that they would either cease to make adjustments or do so with less intensity. However, this does not mean that costs incurred to analyse client creditworthiness will change in a material way. Given that research and adjusted data relating to operating leases only constitute a small proportion of all the research and adjustments credit agencies make, most credit agencies we interviewed do not expect there to be significant cost reductions in the short run. Based on the proportion of lessees who need to renegotiate terms, we estimated that the renegotiation cost to lenders would be around €3.2–€4.0 million, slightly less than that for lessees (with a total combined cost for this activity, across both lessees and lenders, of €10.0–€11.8 million).

1.4.3 Benefits

To the extent that operating leases (with the exception of short-term and low value leases) are similar in nature to debt obligations, bringing them on to the face of the financial statements is likely to have a number of benefits for users of financial statements:

- It could facilitate any assessment of a lessee's financial position and credit risk.
- It would limit companies' ability to manipulate the lease contracts to some extent so that they are classified as off-balance sheet debt.
- Finally, including the information on operating leases on the balance sheet and income statement would mean that this information would be easily available to all investors to enable accurate estimation of a company's liabilities and not only to the more sophisticated investors.

Lessees do anticipate enhanced investor sentiment as a result of the altered financial statements. Our research indicates that the current practice of equity analysts in many markets is to make adjustments to approximate the capitalisation of operating leases, at least for the larger listed companies — in which case, changes in actual investor sentiment should be limited (i.e. the net benefit is likely to be small). The expectations of lessees around improving investor sentiment are negatively correlated with size, i.e. smaller lessees are more likely to expect an improvement in investor sentiment.

In corporate bond markets, analysts at the major credit rating agencies also make numerous adjustments to the financial statements of corporate issuers to increase comparability and to better reflect credit risks. Analysis of corporate bond yields further confirms that fixed income markets are largely cognisant of the economics of operating leases, and therefore the benefit in terms of enhanced understanding by capital markets or improved comparability will be limited. On the other hand, it also indicates that the scope for unpleasant surprises around the creditworthiness of lessees is also quite limited.

In private capital markets, a majority of lessors and lenders expect benefits to arise in terms of enhanced comparability and reduced subjectivity. All these outcomes suggest that IFRS 16 could contribute towards fairer competition in the market — with easier and more equal access to the relevant information about the way lease contracts are structured. The extent to which these benefits materialise depends on whether market participants are currently inefficient or limited in estimating the effect of off-balance sheet obligations. As we have described in Chapter 4, there is a substantial minority for whom IFRS 16 would represent a material change in approach. A cautionary note is that some stakeholders are concerned that IFRS 16 may introduce some elements of subjectivity due to differences in the approach adopted by lessees in determining lease term, etc.

A further possibility is that, if IFRS 16 reduces any information asymmetry between borrowers and lenders, then pricing risk (i.e. the risk of pricing a loan incorrectly) could be reduced. The above findings, particularly round reducing subjectivity, show that some contribution to reducing information asymmetry is anticipated by a majority of lenders — albeit with a substantial minority that do not expect this (and may even anticipate a worsening situation, e.g. because of regulatory arbitrage around revised leasing terms).

1.4.4 Behavioural effects and wider impacts

In addition to these compliance costs we have also identified how:

- A non-negligible proportion of lessees could be willing to switch to short-term or variable payment types of leases despite a higher cost associated with these types of leases. This might represent about 2–3 per cent of plant and equipment lessees, and 11–13 per cent of property lessees — amongst those required to implement IFRS 16 — being motivated to switch a substantial part of their leasing portfolios to (sufficiently) shorter-term leases or leases incorporating variable payment structures — and also to be likely to find a willing lessor. The increase in financing costs associated with these is not large, €2.3–€5.1 million but the trend towards forms of lease that remain off-balance sheet under IFRS 16 could limit the benefits experienced by the users of financial statements.
- The one-off compliance costs are expected to be treated as a sunk cost and we do not expect companies to take these into account when making financing decisions. However, the ongoing cost may be considered together with other factors affecting the cost of financing of leases, at least to some extent. In consequence, listed lessee companies could seek more competitive lease pricing or seek to substitute other debt products for leasing in order to compensate for the additional compliance costs incurred.
- We do not expect this to have materially deleterious impacts on the leasing industry, or on its sustainability. Bearing in mind that the majority of the leasing industry is owned by larger banking groups, any effects would seem likely to be experienced most by independent or niche operators.
- In terms of unlisted SMEs, there could be minor knock-on effects on the availability or the pricing, of leasing to other lessees. First, if there is a small reduction in demand by listed companies for leasing, then we would expect lessors to adopt a mix of strategies, potentially including price changes for some other lessees — including but not limited to — SMEs. The volume of leasing that lessors were willing to make available to SMEs would as likely increase (to a small extent) as fall. Second, if there is increased pricing pressure from listed lessees, we would expect lessors to seek to recoup additional revenues from other clients. This may well require additional efforts at market segmentation by lessors. SME demand for leasing could adjust in such circumstances, dependent on the availability of substitutes. However, given that our analysis suggests that any increase (or a decrease) in the cost of operating leases would most likely be a few basis points, at worst, then the impact on the overall cost of capital should be negligible.

Our analysis shows that, as long as the ongoing compliance costs are fully reflected in the cost of operating leases, we can expect an increase in the cost of financing via operating leases to be in the range of 3-3.5bps. Given the magnitude of the increase, lessors and lenders might choose to absorb all or part of this increase in operating costs as overheads. This implies an ongoing cost of up to €46 million. Alternatively, lessors and

lenders might decide to pass this additional cost on lessees. The survey responses suggested that some lessees might be sensitive to such price change. Accounting for differences between plant & equipment and property lessees in terms of price sensitivity and the value of annual operating lease obligations, we estimated that overall up to 5 per cent of leases would be switched to an alternative funding option.

1.5 Overall views on the costs and benefits of IFRS 16

We found the main driver of compliance costs to be changes to lessees' IT and accounting systems. Users of financial reports would benefit due to increased transparency and comparability, but these would be limited in scope since most public capital market users and, to a lesser extent, users at lenders / lessors already undertake work similar to IFRS 16's expected effect. We also find that a small minority of lessees can be expected to seek amendments to leasing contracts to maintain the existing off-balance sheet treatment.

It is common in any policy change for there to be some incremental costs and indirect market effects. In this case we are not able to quantify the associated benefits of IFRS 16, although as we have set out in 5.4 these are likely to be somewhat limited in public capital markets (and regulatory arbitrage activity by lessees could limit these further), but do appear to be tangible in private capital markets. We consider the overall trade-off between the benefits identified and the costs, and other impacts, to be a fine one.

2 Introduction

2.1 Background and scope of the study

Currently, there is a distinction between a finance lease and an operating lease. The former is treated similarly to a standard loan and has to be accounted for in the company's balance sheet. Operating leases, on the other hand, are treated like rental expenditure. As such, they do not appear as liabilities in standard financial statements, and thus are often described as off-balance sheet financing.

IFRS 16 would eliminate the classification of leases as either finance or operating, and treat nearly all leases similarly to how finance leases are treated currently (there are exceptions around small-value leases or agreements with less than one year to run). As a result, all the liabilities (and the associated assets) related to operating leases would have to be reported in the financial statements along with the finance leases. For companies with substantial amounts of operating leases, this would mean a significant increase in their assets and liabilities as reported in the balance sheets. An entity shall apply IFRS 16 for annual periods beginning on or after 1 January 2019. Earlier application is permitted for entities that apply IFRS 15 'Revenue from Contracts with Customers' at or before the date of initial application of IFRS 16.

Moreover, the IFRS 16 would also change the treatment of operating leases in a company's income statement. Under the current IAS 17 standard, lease obligations are reported as straight-line operating expenses. According to the IFRS 16 proposal, these expenses would be reported in a way analogous to finance leases, i.e. as depreciation and an interest expense. As a result the company's operating costs would decline and the earnings before interest tax depreciation and amortisation (EBITDA) would increase. The fact that the reported depreciation would increase implies that the operating profit (EBIT) would also be higher than under the previous reporting standard. While depreciation charges are often even (i.e. calculated on a straight line basis) interest expenses are normally higher at the beginning of the lease agreement and would decline over the life of the lease as the payments are made. This implies a more front-loaded profile of finance costs.

The role of Europe Economics is to provide economic and behavioural expertise to EFRAG in its ex ante impact analysis of IFRS 16 Leases. This will be an input to EFRAG's endorsement advice to the EC on whether IFRS 16 would be conducive to the European public good.

As we have noted above, our focus is upon how the implementation of IFRS 16 would impact upon those companies under an obligation to apply all IFRS. In a European context this is essentially those companies with a listing on a Regulated Market (certain Multilateral Trading Facilities (MTFs) have listing rules that also require the application of extant IFRS to financial reporting). During the course of our work, several stakeholders have put forward pathways by which SMEs could still be affected by IFRS 16. In brief, these are of two types:

- First, the idea that national standard setters may well adopt IFRS 16 into local GAAP either independently or following some future adaptation of IFRS for SMEs.
- Second, that lessors, banks or other lenders would either encourage SMEs (or, at least, larger unlisted companies) to adopt IFRS 16 or else seek to treat them (in say assessing creditworthiness) as if they had adopted it. The latter approach already applies to a majority, but not all, lenders.

Whilst the first pathway is clearly out of our scope, and the second arguably so, we do discuss both possibilities in Chapter 5 below.

2.2 How IFRS 16 might affect economic behaviour

An important element in an economic analysis is to understand how the behaviour of market participants might change or evolve in consequence of the policy change. There is an argument that if information on operating leases is publically available to all relevant market participants then a change in the financial reporting of past transactions should not have any real effects on the economic behaviour of lessors or lessees. This is because the fundamental cash flows would not be changed.

In reality, however, access to the necessary information is subject to frictions. For example, the existing disclosure on operating leases (the prior year's cost and commitments aggregated according to a few duration-based bands) could limit the transparency of the underlying effects. There are a number of possible economic impacts:

- Effects related to debt capital. As the balance sheet and profit and loss account adjust, so lenders (including but not limited to lessors) could re-evaluate the risk and creditworthiness of the companies. In an immediate way, pre-existing financial covenants (e.g. interest cover, gearing) would need to be adjusted, potentially re-negotiated. Loan agreements may have automatic adjustment mechanisms or "frozen GAAP" clauses to cater for accounting policy changes. There is also empirical evidence, e.g. from the USA, that lenders (particularly larger lenders) price in the effect of operating leases in sophisticated ways that largely pre-empt the effects of capitalisation.⁵ Similarly, credit rating agencies seem to make these adjustments.⁶ If the change in the accounting standard affects the quality of information available to market participants, companies might face either higher or lower borrowing costs as lenders would be able to better assess the risk associated with the transaction (although any risk premium related to uncertainty about the true position should reduce or even be eliminated). A further impact here could be that debt choice adjusts (e.g. more companies prefer asset purchase to leasing than previously). This could simply be a distributional effect, but even so could incur transitional costs (e.g. from the renegotiation of outstanding leases). A possible positive effect on lessees is that by putting all leases on the balance sheet it will make lessees focus more on the real cost of leasing vis-à-vis other financing options because it would level the playing field increasing focus on the pecuniary cost without more subjective consideration of the value of balance sheet presentation.
- Effects on capital investment. If the incentives to use leases instead of other sources of financing change such that the marginal cost of debt increases, the marginal capital investment could also change (although modern finance theory indicates otherwise, i.e. the weighted average cost of capital should be unchanged, at least absent frictions). Companies relying on leases due to limited access to other types of financing might not be able to finance all their planned investments.
- Effects related to management incentives and remuneration schemes. The impacts on the reported financial performance of some companies could, in turn, impact upon remuneration schemes and incentive arrangements if these do not have suitable adjustment mechanisms built in. If not, then some element of re-negotiation or re-statement could be necessary.
- Effects related to investor perspectives. If investors do not fully understand the impact of the financing decisions on reporting outcomes, then this could result in a realignment of views on a company's worth. There is evidence from bond markets that operating leases are treated by bond investors, for example, in an equivalent way to finance leases.⁷ There could be a (positive) level playing effect. Whilst there is evidence that some investment analysts are adjusting performance outcomes to account for leasing

⁵ Altamuro et al. (2014) "Operating leases and credit assessments".

⁶ Cotten, Brett D. and Schneider, Douglas K. and McCarthy, Mark G. (2013) "Capitalisation of Operating Leases and Credit Ratings" *Journal of Applied Research in Accounting and Finance (JARAF)*, Vol. 8, No. 1, 2013.

⁷ Sengupta, P and Z Wang (2011) "Pricing of off-balance sheet debt: how do bond market participants use the footnote disclosures on operating leases and postretirement benefit plans?"

commitments, this is not universal. It might be, for example, that retail investors are less likely to do this. Improved decision-making could result.

The economic analysis of these effects is not straight-forward. We set out our methodology for achieving this in the next chapter.

2.3 Introduction to our report

This is our final report to EFRAG assessing the potential economic impacts of the implementation of IFRS 16 in the EU. The remainder of this report is structured as follows:

- Chapter 3 sets out our methodology for conducting our work.
- Chapter 4 describes the existing leasing landscape and also sets out relevant elements of the counterfactual against which we will assess the potential impacts of implementing IFRS 16.
- Chapter 5 describes the economic and behavioural impacts expected to arise due to the endorsement of IFRS 16.
- Appendix 6 describes empirical analysis undertaken testing how operating leases are incorporated into the pricing of corporate bonds by capital markets.
- Appendix 7 provides a detailed analysis of how we estimate IFRS 16 would impact upon the financial statements of lessee companies with a primary listing on a European exchange.

3 Methodology

3.1 What questions we are seeking to answer?

EFRAG is required to consider whether it would be conducive to the European public good to endorse IFRS 16. This study was commissioned to contribute to this determination. In particular, it is intended to contribute to answering the following questions:

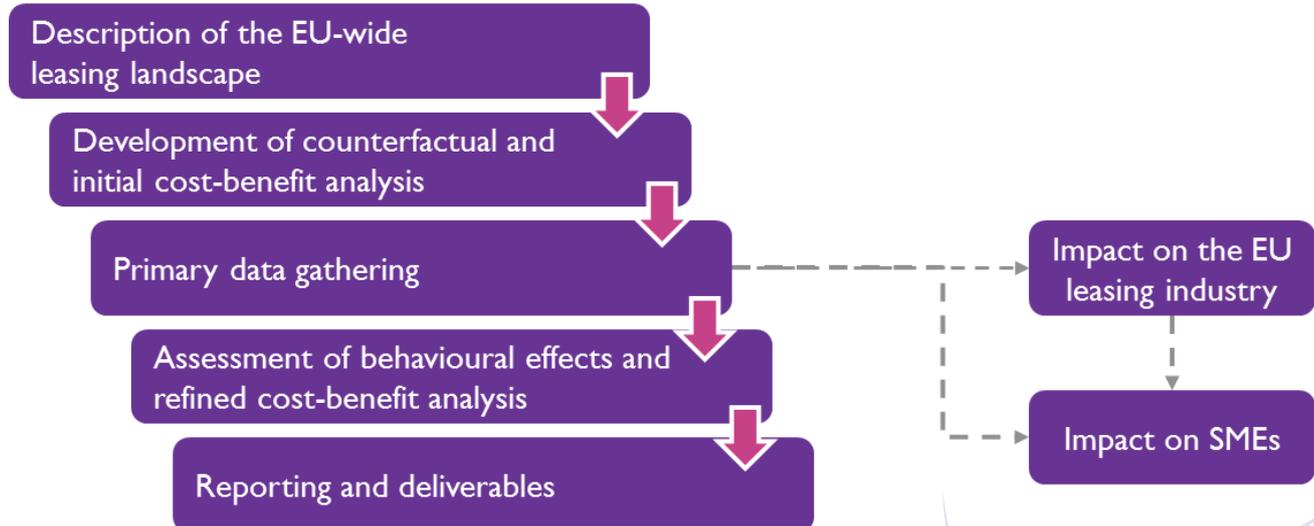
- What impact IFRS 16 might have on the behaviour of lessees, investors and lenders and what the impact of any anticipated behavioural changes might be on the European economy?
- What economic costs and benefits could arise from the endorsement of IFRS 16?
- What is the potential impact of endorsing IFRS 16 on the European leasing industry?
- How could the implementation of IFRS 16 impact upon the financing available to unlisted SMEs?
- What, if any, other unintended consequences could arise due to the implementation of IFRS 16?

EFRAG has also asked the ECB to consider whether IFRS 16 is likely to endanger financial stability in Europe.

3.2 The methodology adopted to answer these questions

We set out below an overview of our approach for the study.

Figure 3.1: Overview of our Methodology



Our approach consists of three main components, i.e. desktop research, primary data gathering, and data analysis. The purpose of the desktop research is to provide the context of our analysis of the expected effects of IFRS 16. The objective was to understand the EU-wide leasing landscape, as well as to develop the counterfactual and scope how IFRS 16 could have economic impacts on different participants (i.e. develop mechanisms of effect — chains of reasoning as to why we might expect to see particular behaviours).

The primary data gathering comprises YouGov’s market research and some additional stakeholder interviews conducted by Europe Economics. These are described further below.

We used financial reporting and capital market data to describe the scale of accounting adjustment (i.e. estimating how balance sheets and profitability could be affected by IFRS 16) and also to test the current debt capital market treatment of operating leases.

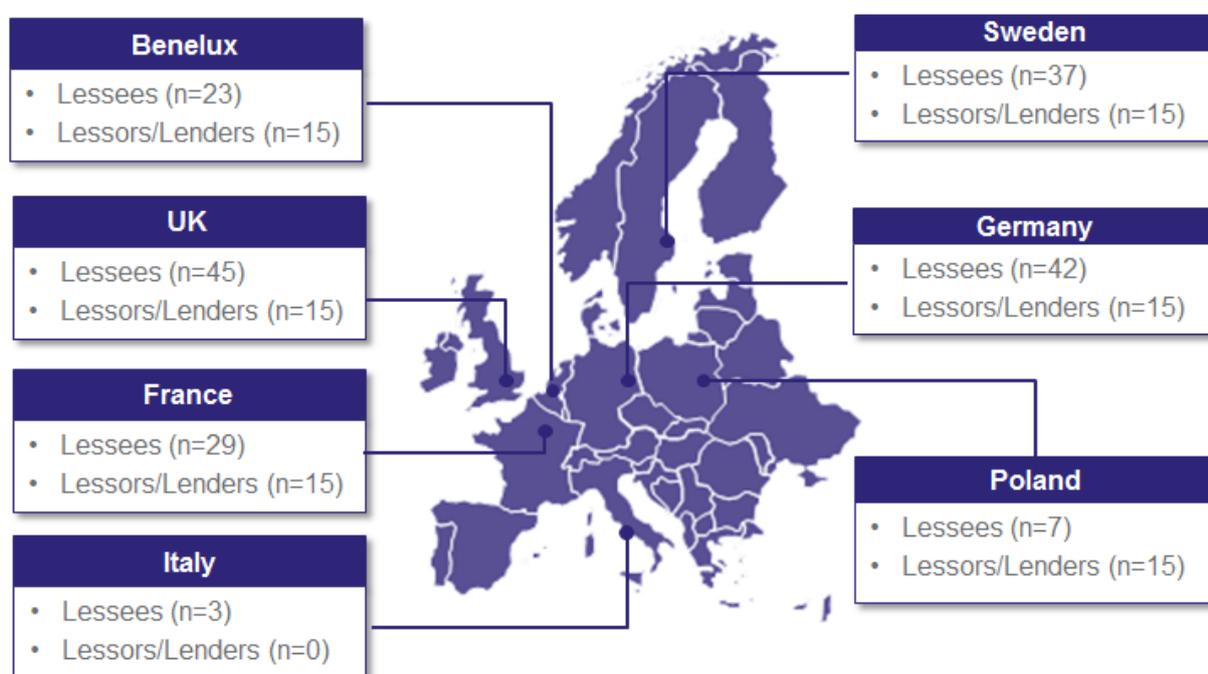
All these components have been subsequently synthesised to bring all the evidence strands together. The outcome is an ex ante cost and benefit analysis of IFRS 16, including the analysis of wider impacts and behavioural changes.

3.2.1 Evidence base — YouGov’s sampling and surveying methodology

Europe Economics designed surveys for lessees and lessors/ lenders with input from YouGov and EFRAG. These designs drew on the mechanisms of effect developed based upon the desk-top research with the intention of confirming or rejecting the hypotheses developed.

There was a soft launch of the surveys to test answerability with the interviews going live between 14 October and 18 November 2016, with an additional 30 lessee interviews held between 3–20 January.⁸ The interviews were conducted by telephone with senior executives.⁹ There were a total of 276 respondents, 186 lessees and 90 lenders / lessors, which were distributed as set out below.

Figure 3.2: Summary of YouGov’s sample



Source: YouGov.

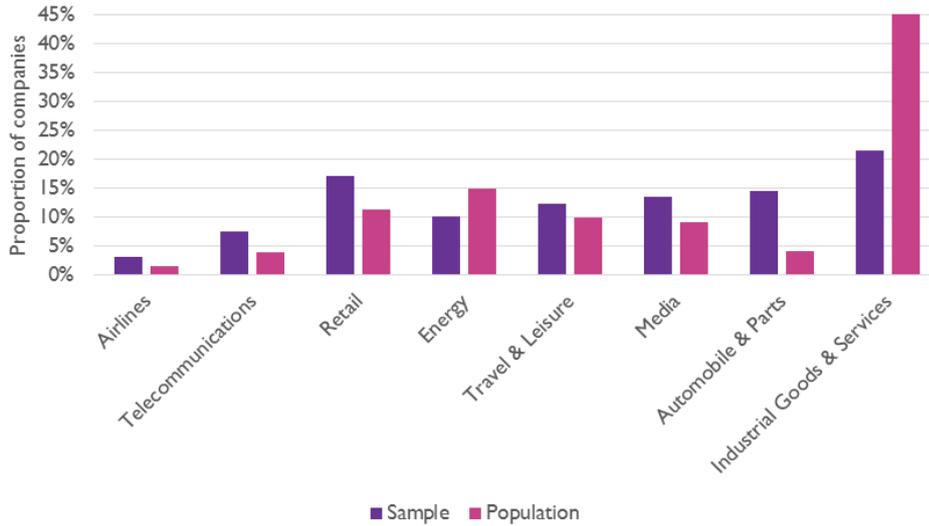
The lessees in the sample were selected at random by YouGov from all of the listed companies identified as having outstanding operating lease obligations in the market sectors selected for the exercise. The motivation for choosing the sectors was twofold: first, sectors were chosen where the intensity of operating lease use was highest (e.g. Retail, Airlines) and, second, those sectors that had, in aggregate, the largest outstanding operating lease obligations (e.g. Telecommunications). The companies in the sectors chosen for the survey have together about 70 per cent of the outstanding value of operating leases of the whole population (described in Chapter 7). As noted, the lessees in the sample were chosen from a restricted set of industries.

⁸ There were two main motivations for the extension in sample. First, a desire to capture more large lessees (whilst the lessees interviewed in October–November 2016 were randomly selected they displayed a greater weight towards smaller companies than the overall population. Second, a desire to extend the geographic scope to include at least some Italian lessees.

⁹ The typical interviewee at lessees was a Chief Financial Officer (or equivalents such as Finance Director or Head of Finance), these titles representing two-thirds of lessee respondents. The modal interviewee at lenders and lessors was the Head of Corporate Lending / Leasing respectively (54 per cent of these respondents).

The proportion of the sample drawn from the Industrials Goods & Services segment was restricted so that we could better consider intra-sectoral differences. This meant that for most sectors, we had data from 20–30 companies (Airlines were an important exception, where we had six interviewees out of the 15 companies in the overall population). The key conclusion from this analysis was that whilst the size of the company was a significant important driver of the impacts, the sector from which it was drawn was not *per se*.

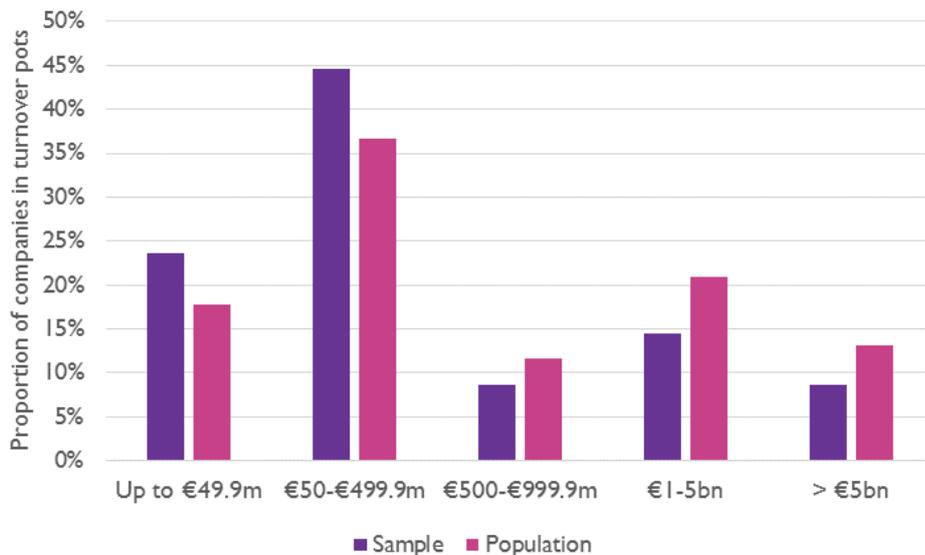
Figure 3.3: Comparison of industry of lessee companies in the sample to overall population



Note: The proportions for the population are calculated relative to the total number of companies in the eight sectors we focus our analysis, rather than the total number of companies across all industries.
 Source: YouGov and Europe Economics analysis.

Notwithstanding the fact that the sample was drawn from only part of the population, the lessees in the sample from these Member States have a broadly similar profile in terms of turnover to the overall population (from across all of the EU). Even so, in most of our analysis we have segmented the sample and population by company size when calculating and extrapolating potential impacts, increasing the representative validity of the sample.

Figure 3.4: Comparison of turnover of lessee companies in the sample to overall population



Source: YouGov and Europe Economics analysis.

In the sample, 143 companies made substantial use of operating leases related to property and 74 made substantial use of operating leases on plant and equipment acquisitions (with over 30 doing both).

3.2.2 Evidence base — other fieldwork and data accessed

Europe Economics conducted interviews with credit and investment analysts, leasing associations, and SME trade bodies are intended to complement this and complete the fieldwork undertaken by YouGov.

The financial reporting and bond market data were obtained via our Bloomberg LLP subscription. The base population covers all EU companies with non-zero operating lease obligations based on the data reported for 2015. Where appropriate, our analysis is based on a selected sample of the population.

3.3 Methodological challenges and caveats

There were two main challenges in the conduct of this study. First, as in any *ex ante* study, there is a risk that the information gathered from market participants is prone to biases, and based on insufficient or inadequate information. To mitigate this risk, where possible we strived to cross-check the information obtained in primary data gathering exercises with other primary or secondary sources utilised in this study. In addition, in the survey, we ascertained the degree of prior familiarity of the respondents with IFRS 16 so that we could assess whether this was an influence on the results obtained.

Second, the views and opinions provided by the respondents in primary data gathering exercises, are not always fully compatible (at least superficially). The challenge then is to synthesise the internally inconsistent responses based on the evidence from other strands of the study and more in-depth data analysis.

As any research, our study also has some caveats. Primary data is only obtained from a sample of market participants. As such, there is a risk that the responses we obtained are a reflection of the views in this particular sample rather than the population. That said, the YouGov's research covers a substantial proportion of the population in terms of lease obligations — the sample of lessors captures about 20 per cent of the leasing obligations outstanding in Europe, while the sample of lessees covers about eight per cent of the population. The confidence intervals applied to the quantifications in Chapter 5 are calculated at a 95 per cent significance level.¹⁰ In addition, our econometrics analysis is based on a sample of bonds issued by companies with non-zero operating lease obligations. We limited the number of bonds per company to five bonds, which were selected randomly. As with the YouGov's survey, there is a risk that the results are reflecting the phenomena particular for the sample rather than the population. That said, random sampling usually ensures that the results are representative of the population the sample was drawn from. Finally, as we note elsewhere, our analysis of the scale of the accounting changes is based upon a number of assumptions and, as such, is only a rough guide to the expected changes not an exact prediction of what will happen.

¹⁰ This means that the actual \pm interval itself varies dependent upon the number of responses obtained on any given topic.

4 Defining the Counterfactual and the Current Leasing Landscape

4.1 Introduction

An impact assessment is conducted against a counterfactual. For the purpose of this study, we need to consider the state of the market and market participants' behaviour as it currently stands, and any expected evolution of these that could be expected in the absence of IFRS 16. This would involve assessing the current use of leasing (and other forms of finance) by the relevant companies, i.e. listed companies using IFRS. The major change is the recognition of assets and liabilities for leases currently accounted for as operating leases under IAS 17.

In order to understand to what extent changes to IFRS are going to affect the economic behaviour of market participants, we need to clearly identify and describe the leasing and financing landscape in Europe, and the interaction between this and the listed companies that will need to apply IFRS 16.

In this chapter we describe the main characteristics of the European leasing industry such as its size, geographic coverage and main players involved. Within the European leasing market, we then identify those sectors and countries where operating leases obligations are more relevant. We also consider the extent to which SMEs are reliant on leasing as a source of finance as well as whether they use leasing proportionality more or less than larger companies. Finally, we consider certain other aspects of the leasing and financing landscape, such as the treatment by lenders and lessors of operating leases in establishing the client creditworthiness.

4.2 The European leasing landscape

Leasing and hire purchase agreements are common methods of business financing. Europe accounts for about 38 per cent of global leasing volume and 28 European countries feature in the world's top 50 countries for new leasing business. The largest EU markets for leasing defined in its widest sense (i.e. including hire purchase) are Germany and the UK. These two together account for 42 per cent of the European market and 16 per cent of the world market, taking into consideration both listed and unlisted companies (The White Clarke Group, 2015).¹¹

4.2.1 Market size across all clients

IFRS 16 impacts primarily on companies listed on a Regulated Market in the EEA. However, we also need to understand the context, in particular the scale of the leasing industry across all types of client — e.g. unlisted companies and retail consumers, as well as listed companies.

¹¹ White Clarke Group (2015) "Global Leasing Report 2015".

We estimate (using data from Leaseurope¹²) that, across all customer types in 2015,¹³ EU28 countries accounted for €282 billion-worth of new leasing and hire purchase agreements, and €661 billion in terms of the outstanding value of leased assets. The respective figures for EU / EEA countries were €287 billion and €674 billion.¹⁴

If we consider leasing defined in its widest sense (i.e. including hire purchase, finance leases and operating leases), the UK is the largest European market in 2015, with new volume worth around €81 billion, followed by Germany and France. The majority of European leasing markets experienced good growth in 2015 compared to 2014, although, Norway and Greece were among the countries where the new volumes stalled or saw a downturn (Leaseurope 2016).

Now focusing only on the leasing element (i.e. excluding hire purchase, but including some finance leasing and other rental agreements) — but still considering all types of customer — and assuming that leasing is defined consistently with IAS 17, the EU had new leasing agreements of about €211 billion in 2015 (with €553 billion outstanding).¹⁵ For the EEA group of countries, the estimated total value for new leasing agreements was €216 billion in 2015 and outstanding lease obligations stood at €566 billion at the end of that year, of which €368 billion was for plant and equipment leases (65 per cent).¹⁶ The geographic distribution of outstanding lease obligations across the EEA countries is shown in Figure 4.1 below. This order of magnitude for the European leasing market is confirmed by other recent publications.¹⁷ The most important markets in terms of new lease obligations were Germany (€52 billion of new leasing agreements in 2015), France (€44 billion), Italy (€21 billion) and the UK (€17 billion).

¹² Leaseurope is the European Federation of Leasing Company Associations and brings together 46 member associations in 34 European countries representing the leasing, long term and/or short term automotive rental industries.

¹³ Leaseurope (2016) “Annual Survey 2015”.

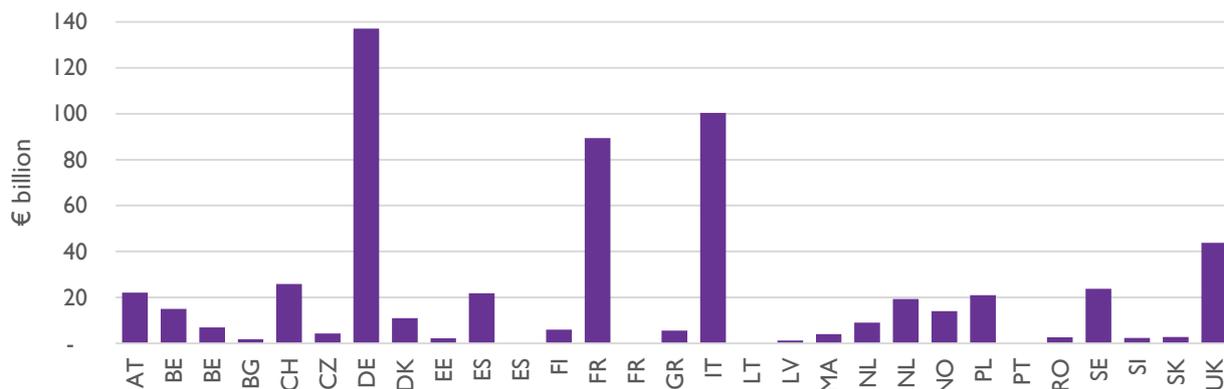
¹⁴ The reported figures are adjusted for the fact that — as per Leaseurope’s estimates — its membership represented approximately 93.4 per cent of the European hire purchase and equipment leasing market. Therefore, we scaled the raw numbers provided in Leaseurope (2016) by the approximate market share of Leaseurope’s members in each country. This applies to all the subsequent figures attributed to Leaseurope. Leaseurope defines new business / volumes as the total lease production for that year excluding VAT and finance charges. Outstanding leasing obligations are defined as the initial value of assets minus depreciation to date or, if unavailable, amount of outstanding capital due on contracts. Because of missing data in Leaseurope for 2015, figures related to EU28 members do not include Croatia, Cyprus, Hungary, Ireland and Luxemburg, while the EEA figures do not include Lichtenstein and Iceland.

¹⁵ Leaseurope’s EU members wrote new business worth €201 billion in 2015 (with €523 billion outstanding at the end of that year). We have applied the market shares by Member State identified by Leaseurope for its member organisations to generate the total estimated values. We note that the only market shares disclosed are for leasing and hire purchase.

¹⁶ The value of new lease agreements reaches €229 billion (€592 billion in outstanding value) including also Switzerland.

¹⁷ White Clarke Group (2015) estimates new business volumes of €247 billion in Europe in 2014.

Figure 4.1: Total outstanding lease obligations by country

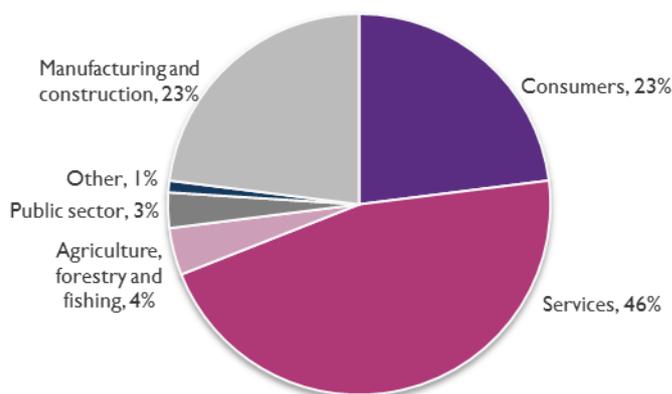


Source: Leaseurope (2016), Europe Economics calculations.

EU lessors granted new equipment leases to an estimated value of €282 billion (including hire purchase) in 2015. We estimate the leasing element only of those equipment leases at around €196 billion in EU and €202 billion in the EEA in 2015. The value of new real estate leases was €17 billion in 2015.¹⁸ The duration of real estate leases is substantially longer, such that the total outstanding lease values are less far apart (i.e. outstanding values are split about 65:35 in favour of plant and equipment, against 90:10 for the value of new leases per annum).

In terms of client categories, about three quarters of new equipment leasing volume (including vehicles) was made to the private sector, particularly to the service sector that accounted for nearly half of the lease agreements in 2014, and the manufacturing sector (23 per cent). Another 23 per cent was granted to consumers, a client category that has been steadily increasing since 2010, and three per cent to public authorities, as shown in Figure 4.2.

Figure 4.2: New equipment leasing volumes per client category in 2014



Source: Leaseurope (2014).

This indicates that the corporate leasing market would be approximately 73 per cent of the total for plant and equipment, implying new corporate leasing agreements in the EU at about €143 billion and €147 billion in the EEA.

¹⁸ It is not clear whether the proportion of the total leasing market covered by Leaseurope’s membership is in similar proportions in plant & equipment leasing and in property leasing. We have assumed this to be the case.

4.2.2 Market structure

The member associations comprising Leaseurope include about 1,400 leasing companies and 500 short term rental companies. Leasing companies can be banks, bank-owned subsidiaries, independent companies (also known as third party lessors) or the financing arms of manufacturing companies, known as captive lessors. According to Leaseurope and KPMG (2012),¹⁹ 50 per cent of European leasing companies were bank related, 18 per cent captives, and 32 per cent independent in 2010.²⁰ However, in terms of the share in new production volume, about 90 per cent of the European leasing market is in the hands of bank-owned leasing companies.²¹

Bank-owned or independent lessors typically work with a range of asset suppliers, either with manufacturers or with their distribution networks and dealers. They generally develop a close partnership that enables mutual added-value exchanges, such as information on asset values for the lessor, or back-office functions such as collections management for the suppliers. Lessor-vendor relationships often generate bulk discounts or subsidies for the lessors from manufacturers, which can in turn be passed to clients in the form of lower rentals.

Captive leasing companies are subsidiaries or divisions of manufacturers with over 50 per cent of the asset base generated through financing products of the parent. They support their parent company's sales, and can cooperate with third party leasing companies for the provision of certain services, including funding, if that will better suits their clients' needs (Deloitte & Leaseurope, 2012).²²

The large variety of parties involved in the leasing industry results in a range of business models that differ according to the leasing company's strategy and market position, as well as the corresponding distribution channels. This is summarised in Table 4.1.

Table 4.1: Business models within the European leasing industry

Basic business model	Function	Features	Distribution channel
Specialised finance	Alternative source of finance to banks/ bank loans	Independent finance companies or bank owned leasing companies	Direct/Brokers
Vendor	Supports manufacturer sales	Leasing company (independent or bank owned) accompanies the development of their manufacturer and dealer clients by providing sales finance support	Point of sale
Product	Additional service for bank clients	Leasing is part of a range of financial solutions provided by a bank to its clients, when this is the product that best suits the clients financing needs	Banking networks
Captive	Support a brand	Financing arm of a manufacturer	Point of sale
Asset specialist	Specialises in asset risk managements	Focuses its businesses on specific asset categories, building asset expertise and taking on residual value risk	Direct/Point of sale

Source: Deloitte & Leaseurope (2012).

¹⁹ Leaseurope and KPMG (2012), European Leasing, New Edition 2012. [http://www.leaseurope.org/uploads/EuropeanLeasing_extract\(secured\)%20\(3\).pdf](http://www.leaseurope.org/uploads/EuropeanLeasing_extract(secured)%20(3).pdf).

²⁰ Percentage of European leasing companies according to shareholder type.

²¹ Mignerey J.M. (2012), Banking Regulation, A "EUR 50 billion leasing crunch" for SMEs in Europe, Leaseurope inside, no. 16, 13 April 2012.

²² Deloitte & Leaseurope (2012), "European leasing: An Industry 'Prospectus'".

This mix of business models, as well as the leasing companies' capacity to combine them, should allow matching of product offers to client needs in very flexible way. Moreover, lessors can decide to focus on leasing specific assets, such as vehicles or IT equipment, or rather remain generalists and provide a wide range of assets.

The most popular distribution channels used by European leasing companies are the direct sales and banking networks, with the vendor channel particularly used for dealing with small companies. Other channels include dealer point of sale and brokers. These different distribution channels can be grouped into a more general categorization of channels through which customers access leasing:

- **The vendor channel.** A potential lessee approaches the manufacturer of (or dealer in) an asset and accesses the lease through it. The manufacturer (or dealer) may have an arrangement with a third party lessor, or may provide the finance directly itself. The lessee accesses the lease at the point of sale.
- **The customer channel.** This involves initiating contact between the lessee and the provider of the lease in a number of ways, e.g. through the bank branch of the customer, directly through the sales network of a lessor or through a broker that may provide a range of financial services, including leasing.

4.3 The importance of operating leases to listed companies

The previous section explored the prevalence of operating leases within the overall EU leasing context. We now focus on the use of operating leases by companies listed on a Regulated Market. Specifically, we identify the sectors with a relatively high level of operating leases (e.g. total commitments relative to total assets) and the most important factors driving the use of operating leasing in these sectors.

There are almost 2,300 listed companies in Europe that reported operating lease obligations in their 2015 accounts.²³ Combined, these companies have €755 billion in outstanding lease obligations.²⁴ Our calculated present value (PV) of operating leases to total borrowings (including this PV) ratio ranges from 44 per cent in the Airline sector, to less than one per cent in the Banking sector. Companies in the Energy (€97.8 billion in outstanding lease obligations, or 13 per cent of the total of the 2,300 listed companies of interest), Telecommunications (€70.6 billion, 9 per cent) and Retail (€135.6 billion, 18 per cent) sectors have substantially higher levels of aggregate lease obligations compared to other sectors (Table 4.2).

Bloomberg LLP's figures on outstanding leases obligations are not directly comparable with Leaseurope's statistics because of differences in the calculation of the present value. However, the order of magnitude of figures in Table 4.2 already shows that listed companies account for a significant portion of the EU leasing market.²⁵ Nonetheless, the role played by unlisted companies, in particular SMEs, in shaping the European leasing landscape needs to be further investigated as they are the backbone of Europe's economy, and representing 99 per cent of all businesses in the EU.

²³ Based on Bloomberg LLP data.

²⁴ Bloomberg LLP reports the outstanding lease obligations as the total of the Future Minimum Operating Lease Obligations (Year 1 + Year 2 + Year 3 + Year 4 + Year 5 + Beyond Year 5 – sublease income).

²⁵ The data we accessed from Bloomberg LLP related to listed companies whose headquarters is located in the EU, i.e. it excludes companies with a primary listing or headquarters location outside of the EU.

Table 4.2: Operating leases obligations by sector (2015)

Sector	PV of operating leases to total borrowing	Number of companies	Aggregate operating lease obligations (€m)
Airlines	44%	15	33,502
Retail	43%	114	135,581
Travel & Leisure	41%	101	58,694
Personal & Household Goods	23%	141	46,508
Industrial Goods & Services	18%	466	84,612
Technology	18%	232	12,056
Media	15%	93	21,909
Real Estate	15%	130	28,513
Health Care	15%	162	29,058
Telecommunications	13%	39	70,595
Energy	10%	150	97,833
Construction & Materials	9%	116	16,242
Food & Beverage	7%	114	14,546
Chemicals	7%	65	8,988
Insurance	7%	39	12,598
Financial Services	4%	129	12,161
Basic Resources	4%	71	9,966
Automobiles & Parts	3%	42	17,477
Banks	1%	75	40,986
Total	8%	2,294	751,827

Note: The sectoral classification is based on ICB classification.

Source: Bloomberg LLP, Europe Economics' calculations.

Similarly, data on the country of domicile can be used to determine the geographical distribution of the companies that are likely to be more affected by changes to IFRS 16. Data reported in Table 4.3 confirm that the largest aggregate lease obligations amongst companies with a listing on a Regulated Market in the EU are those headquartered in the UK, France and Germany. Companies domiciled in these three countries account for about 71 per cent of total outstanding commitments (Table 4.3). Lessees based in the Member States included in the YouGov survey work represent over 80 per cent of the total.

Table 4.3: Operating leases obligations by country of headquarters (2015)

Country	Number of companies	Aggregate lease obligations (€m)	Average lease obligations (€m)
United Kingdom	496	287,616	580
France	234	127,889	547
Germany	367	122,763	335
Sweden	238	40,391	170
Norway	120	34,246	285
Netherlands	88	29,417	334
Spain	71	27,960	394
Italy	42	17,742	422
Denmark	90	17,467	194
Finland	113	10,929	97
Poland	122	5,878	48
Belgium	61	5,806	95
Portugal	19	5,626	296
Greece	84	5,336	64
Ireland	17	4,691	276
Austria	46	4,230	92
Others	86	3,839	45
Total	2,294	751,827	328

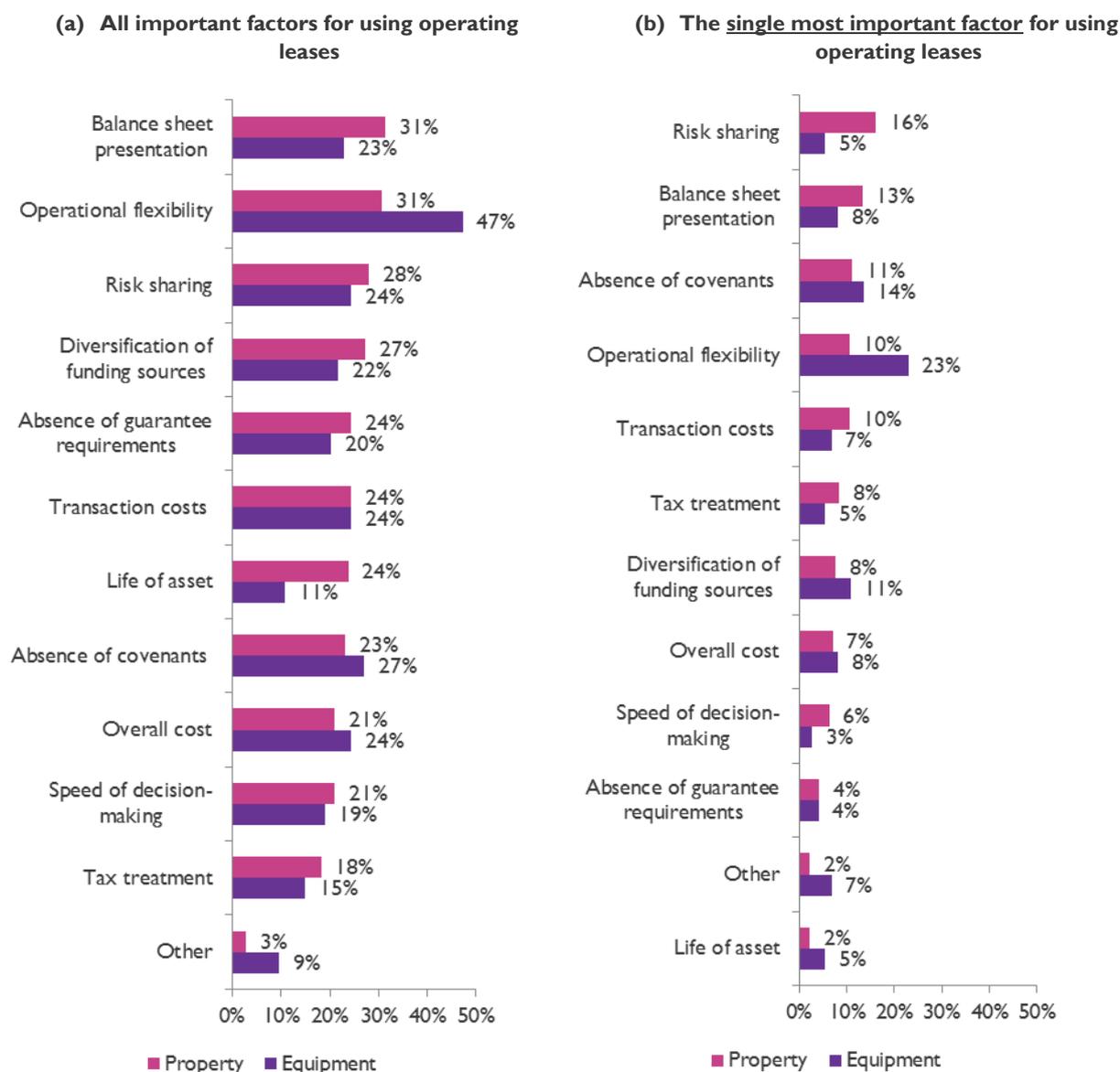
Source: Bloomberg, Europe Economics' calculations.

For the purpose of this study, the YouGov survey directly looked into the use of operating leases by listed companies. The lessees interviewed (all of them using operating leasing) report that they are more likely to use operating leasing for property (74 per cent) than plant and equipment (40 per cent). Specifically, two thirds of lessees using operating leases for property report that 100 per cent of expenditure on property is financed by operating leases, while this happens for under half of those using operating leases for plant and equipment.

The factors most frequently cited as being important for currently deciding (i.e. pre-IFRS 16) to use operating leases for property are balance sheet presentation and operational flexibility, whereas for those using such leases for plant and equipment, operational flexibility stands out as by far the most commonly identified decision variable. Figure 4.3(a) shows lessees' views about all the factors they consider important for using operating leasing while Figure 4.3(b) shows lessees' preferences about the *most* important factor (i.e. a single factor was identified). Whilst balance sheet presentation is the factor most directly affected by IFRS 16, lessees regard it as only one of a range of important factors that have an influence on the use of operating leases and in terms of absolute relevance, being less commonly cited than risk-sharing for those using leasing for property.

We have also tested whether lessees who identify balance sheet presentation as being important are more or less price sensitive than those who do not identify balance sheet presentation as an important factor.²⁶ We found that those who identify balance sheet presentation as an important — or the most important — decision factor are statistically more price sensitive than those who do not. This is somewhat counterintuitive as we would expect those who identify balance sheet presentation as an important motivation for choosing leasing as an option (i.e. they “value” it most) to be more willing to pay a higher price for maintaining the current off balance-sheet presentation compared to those who do not. However, the survey results indicate that those who place importance on balance sheet presentation tend to place less (rather than more) economic value on maintaining access to such an accounting treatment.

²⁶ In the survey, we obtained data on what scale of price movement would persuade a lessee to reconsider its current (i.e. pre-IFRS 16) financing choice from an operating lease to the next best source of finance. This exercise was repeated for both property and plant and equipment operating leases.

Figure 4.3: Important factors for using operating leases


Source: YouGov.

Note: Percentages do not sum up to 100% because alternatives are not mutually exclusive.

4.4 The importance of leasing by listed companies to the leasing industry

The other side of this is the importance of leasing by listed companies to the leasing industry. The production and outstanding operating lease values by the European leasing industry are reasonably well-defined, as discussed above at 4.2. On the lessee side it is more complex. Whilst we know the total leasing obligations of listed companies based in the countries identified above, some of these leases will be entered into outside of Europe. Similarly, there will (presumably) also be leases entered into locally (i.e. in Europe) by subsidiaries of companies listed outside of the EU.

As a first order approximation, if we take the new corporate leasing production figure of €141 billion for plant and equipment and €18 billion as an estimate of the new property leasing in a year, we have a combined figure of approximately €159 billion. Considering those listed companies with a European headquarters, approximately €128 billion in operating lease obligations fall due within one year. This would imply a share of 75 per cent, i.e. listed companies are of very considerable significance. However, operating leases are often

entered into locally and we have therefore explored segmental reporting data from lessees. This indicates that about 65 per cent of activity is located within Europe.²⁷ This implies about €83 billion in annual leasing demand from listed companies — i.e. about 52 per cent of total corporate leasing.

We also note that in the YouGov survey participating lessors' SME clients were about 40-45 per cent of the total number of customers, with a corresponding share of aggregate value outstanding of leases of around 10 per cent of the total. Whilst the sample of lessors was only 56 (i.e. only about four per cent of the total), this number is not inconsistent with the above (larger, unlisted companies would also be expected to have a substantive share in the leasing market).

4.5 The importance of leasing for SMEs

The importance of SMEs to the European economy is widely acknowledged as well as the fact that most of these companies finance themselves, to a significant extent, through internal sources such as the business owner's funds or using retained profits. Many SMEs, however, use external financing sources like debt and equity capital to finance their activities.

According to a recent survey prepared for Leaseurope, no single reason stands out particularly in explaining the choice of SMEs in using leasing.²⁸ Nonetheless, the price of financing an asset via leasing relative to other forms of finance seems to be the most popular reason to use leasing in 2013. Better cash flow management, ability to adapt the length of the contract and transparency of lease payments also rank as important benefits. Overall, the survey shows that some of the benefits of leasing are valued across all industrial sectors, in particular price competitiveness and, to a large extent, cash flow management benefits, but at the national level attitudes appear somewhat different.

A number of surveys on access to finance point out that bank loans and overdrafts are the most widespread debt financing methods for SMEs, even though alternative methods like leasing and factoring have become more common, especially in recent years. The intrinsic value of leasing lies in it being a readily accessible form of finance, particularly for SMEs, as the lessor retains ownership of the asset and thus does not require any additional collateral. This advantage of leasing for young SMEs and other enterprises that are considered to have comparably high credit risk is stressed by low rejection rates. Despite an increase during the period 2007-2010, leasing remained the financing source with the lowest rate of unsuccessful applications, especially for the so called gazelles, i.e. the young high-growth enterprises, and all SMEs (OECD 2012).²⁹

According to a European Commission survey on access to finance in 2015, EU28 SMEs identify bank credit lines or overdraft and bank loans as the most relevant sources of external financing, whilst leasing and hire purchase are considered to be third most relevant.³⁰ In particular, 49 per cent of surveyed SMEs mentioned leasing as relevant for their financing in 2015, while credit lines or overdrafts and bank loans are mentioned by more than half of the respondents. Figure 4.4 presents the percentage of surveyed enterprises that actually used the different types of financing in the six months previous to the survey (April-September 2015).

²⁷ Segmental reporting on turnover is available for about 1600 companies, and on assets for a much smaller sample. However, the European share is not dissimilar at about 50 per cent. If we assume that the remaining companies' activities are largely local (i.e. segmental reporting on geography is not material and hence not required) then our analysis indicates about 65 per cent of activity is within Europe.

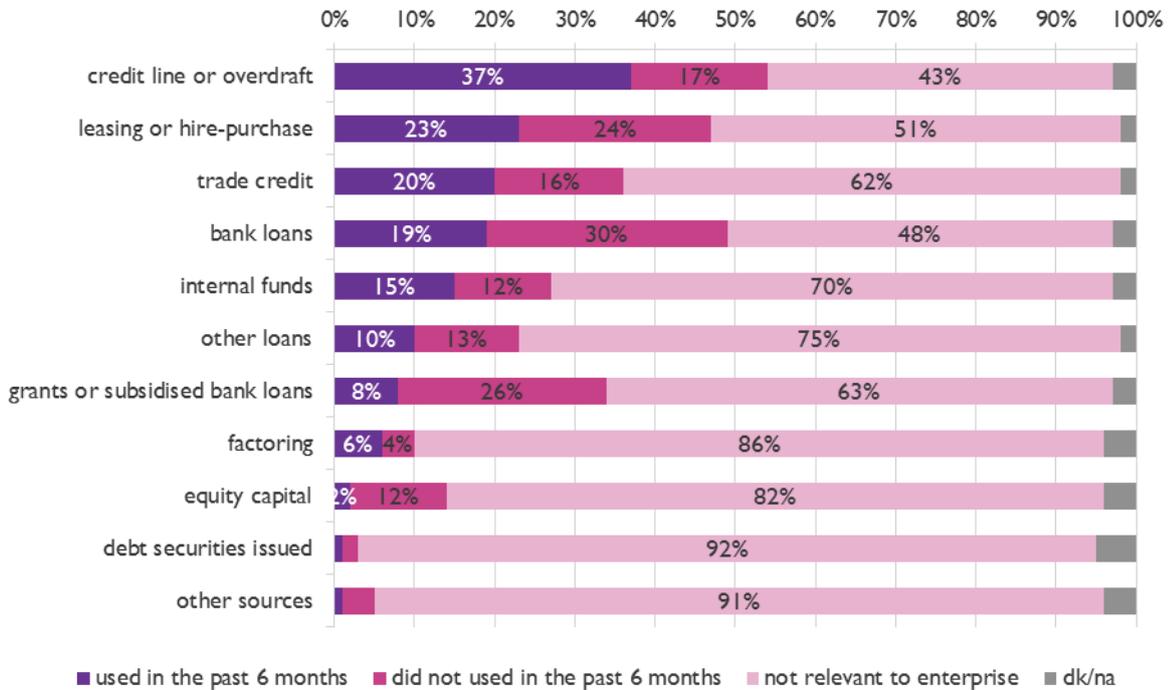
²⁸ Oxford Economics & Leaseurope (2015) "The Use of Leasing Amongst European SMEs". The report is based on a survey about the use of leasing conducted amongst almost 3,000 SMEs across eight EU Member States and nine industrial sectors in July 2011. The eight countries (France, Germany, Italy, Netherlands, Poland, Sweden, Spain and the UK) represent 78% of new leasing volumes in 2010. The split of companies across countries, sectors and size classes was intended to correspond to the industrial structure of the SME sector in each of these countries.

²⁹ OECD (2012) "Entrepreneurship at a glance 2012" OECD Publishing, 6 June 2012.

³⁰ European Commission (2015) "SME's Access to Finance Survey 2015". This report is based on a survey of about 17,000 companies randomly selected according to three main criteria: country (28 EU member states); enterprise size (micro, small, medium-size and large); sector of industry (Industry, Construction, Trade, Services).

Specifically, 37 per cent of all EU28 SMEs used credit line, bank overdraft or credit cards overdraft in the past six months. Leasing or hire-purchase (23 per cent) and trade credit (20 per cent) were the second and third most often used type of financing. Bank loans were used by 19 per cent of the SMEs.

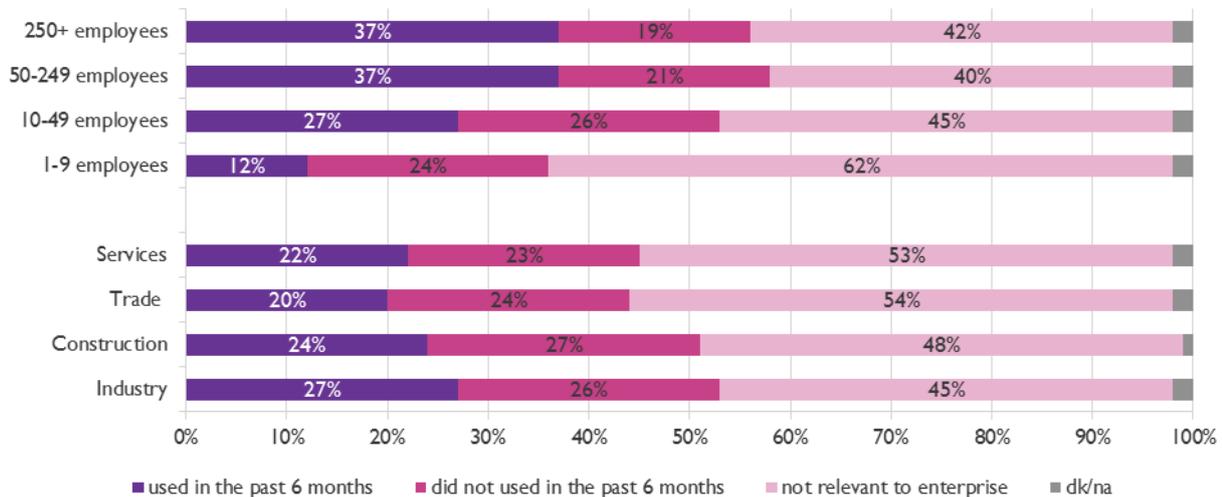
Figure 4.4: Different sources of financing for SMEs in the EU28 (2015)



Source: EC (2015). Q4 of the survey: Are the following sources of financing relevant to your enterprise that is, have you used them in the past or considered using them in the future? Have you obtained new financing of this type in the past six months?

Figure 4.5 shows a breakdown of the results by economic sector and enterprise size. Between April and September 2015, SMEs in industry most often used leasing or hire-purchase while SMEs in trade used this type of financing the least often. The use of leasing or hire-purchase varies greatly by size. Use is most prevalent among medium (50 to 249 employees) and large enterprises (with at least 250 employees), and lowest among micro enterprises (1 to 9 employees).

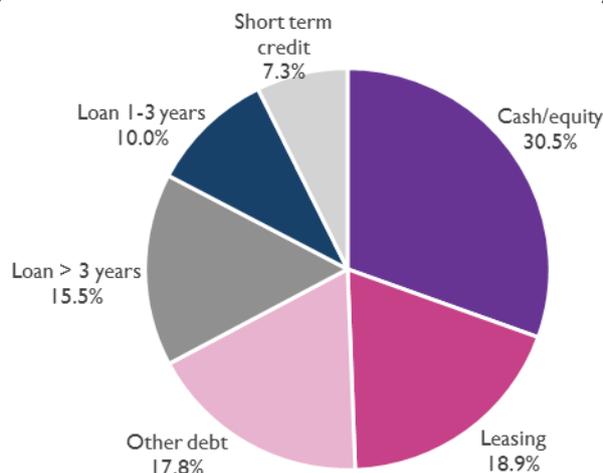
Figure 4.5: Use of leasing or hire-purchase for large companies and SMEs in the EU28 in 2015, by sector and size



Source: EC (2015).

The relatively high importance of leasing and hire purchase for the external financing of SMEs is also confirmed by Leaseurope's survey. Overall, 42.5 per cent of the SMEs surveyed used leasing in 2013 (50.7 per cent estimated for 2014).³¹ However, they also show that the share of investments actually financed by leasing was 18.9 per cent in 2013, whereas bank loans of all maturities plus other forms of bank loans financed the largest portion of SMEs' investments (32.8 per cent, Figure 4.6).

Figure 4.6: SMEs' fixed asset investment financed by different sources (2014)



Source: Oxford Economics & Leaseurope (2015).

According to Leaseurope, SMEs overall leasing volume across Europe is estimated at €103.6bn in 2013,³² about half of total leasing to businesses (Leaseurope 2013) with about 9.2 million European SMEs using leasing.³³ The estimated leasing volumes display significant differences across countries, with the larger economies being naturally the main markets for SME leasing. In particular, Germany and France held the leading positions in 2013 with an estimated new SME leasing volume of about €19–20 billion each, followed by the UK with about €16 billion (Figure 4.7).

In terms of distribution channels, Leaseurope survey also shows that the vendor channel is the most popular one for SMEs (78.6 per cent in 2013). This channel turns out to be particularly important for micro companies, where the use of vendor leasing increased significantly in 2013. Access to leasing directly from the vendor reached 40.4 per cent, while the use of the banking channel by SMEs remained stable at 58.6 per cent in 2013.³⁴

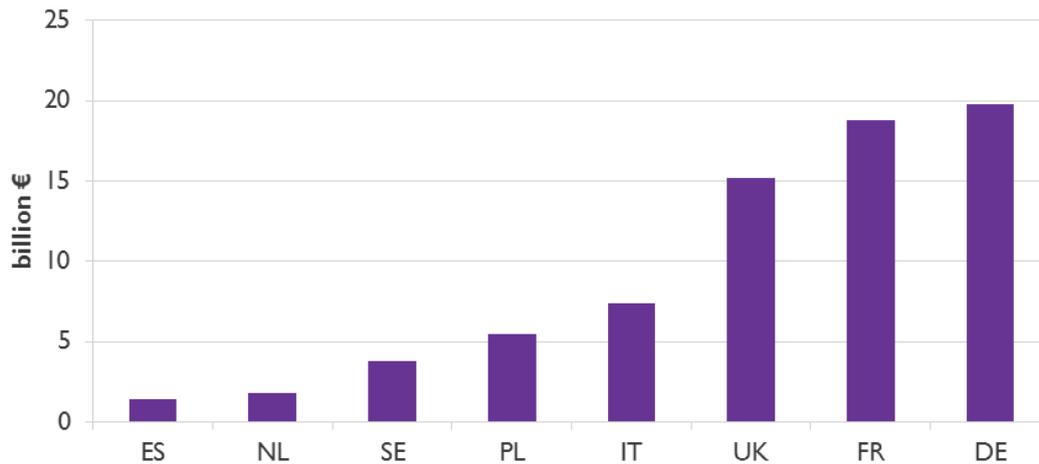
³¹ Differences between Oxford Economics & Leaseurope (2015) and EC (2015) can be attributed to the different size of the sample, the country base and definitions of the financial variables considered in the analysis. However, the main findings concerning the relative importance of the leasing industry are similar.

³² Oxford Economics & Leaseurope (2015) estimated a total value of leasing of €73.6 billion (6.6 million SMEs) in the 8 countries surveyed, with a large proportion accounted for by micro firms' leasing activity. According to Eurostat, the 8 countries covered by their survey account for 71 per cent of investment in the EU, so they scaled their estimate up to the EU level assuming that the penetration rate for Europe-8 is applicable to the remaining 29 per cent of investment from other countries.

³³ Leaseurope (2013) "Annual Survey 2013". They reported a total value of new leasing volumes of €252 billion in 2013. As such, SME leasing accounted for 41 per cent of EU total leasing in 2013, or 50 per cent when adjusted to exclude leasing to consumers and the public sector.

³⁴ Percentages do not sum up to 100 per cent because preferences over channel alternatives are not mutually exclusive.

Figure 4.7: Estimated new SME leasing volumes by country in 2013 (billion €)



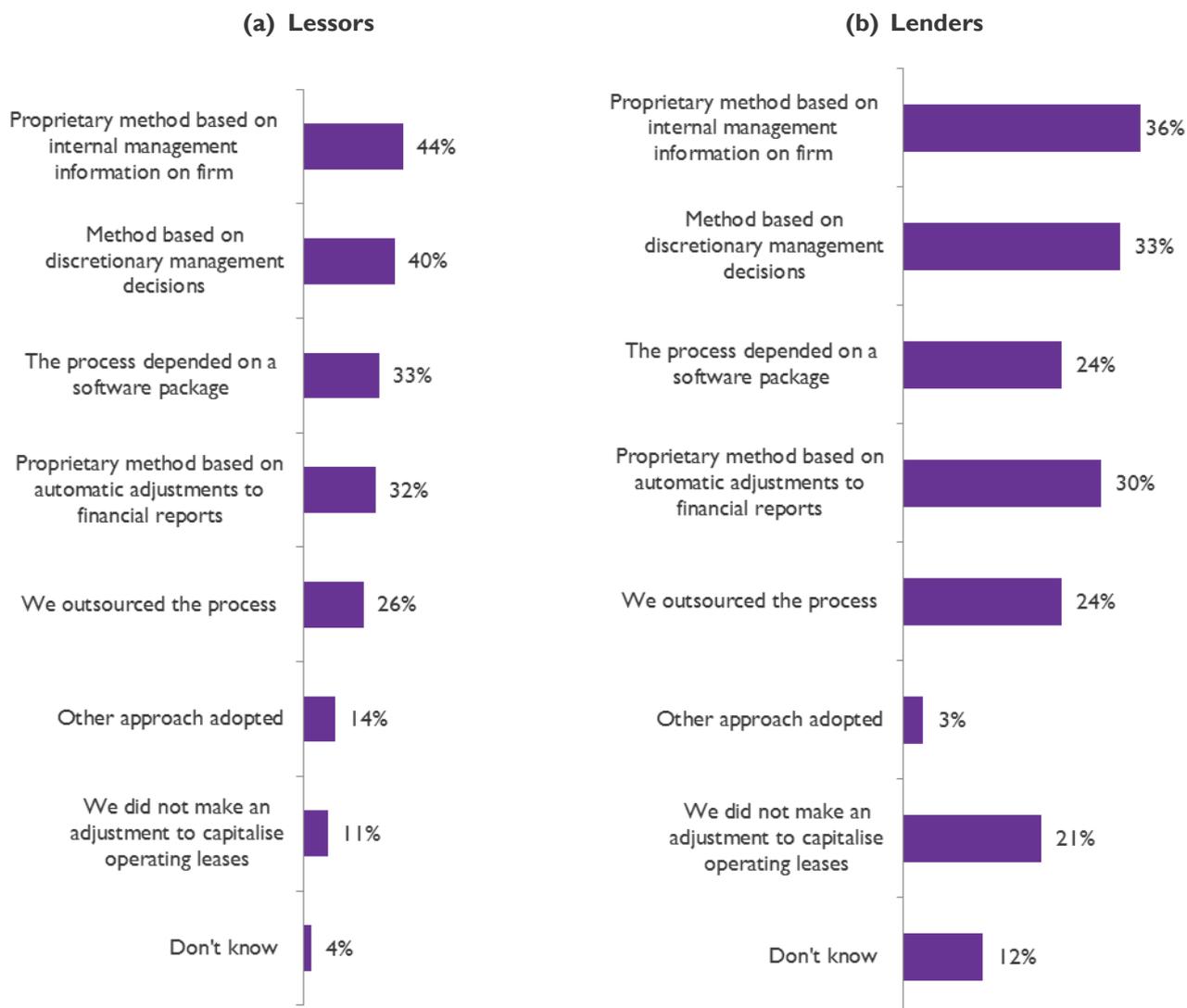
Source: Oxford Economics & Leaseurope (2015).

4.6 Other aspects of the leasing and financing landscape relevant to the counterfactual

4.6.1 Treatment of operating leases by lenders and lessors

The majority of lenders and lessors make adjustments to financial information to reflect the de facto capitalisation of operating leases. Overall, this is the case for 77 per cent of surveyed lenders/lessors (i.e. 69 out of 90). Figure 4.8 provides a breakdown between lessors and lessees. The most commonly used methods were proprietary methods based on internal management information and methods based on discretionary management decisions.

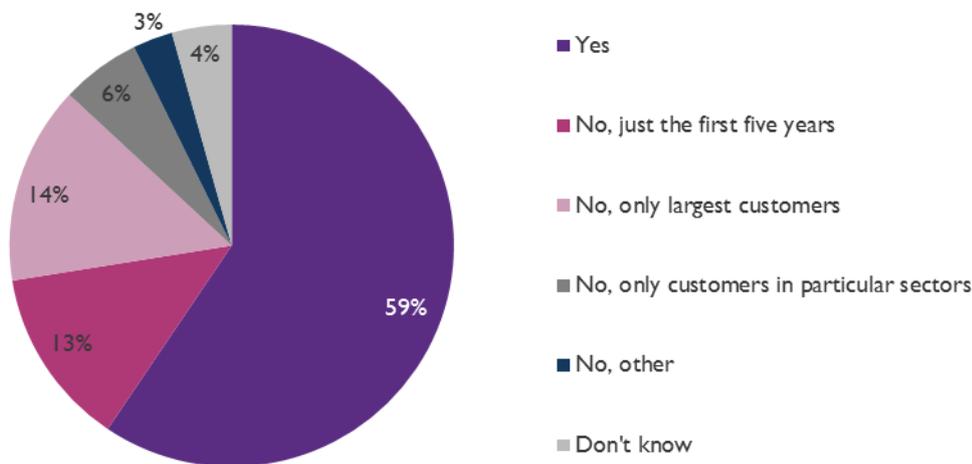
Figure 4.8: Methods used for treating operating leases



Note: Percentages do not sum up to 100 per cent because alternatives are not mutually exclusive.
 Source: YouGov.

The majority of lenders that make adjustments reflect all the outstanding obligations reported in the clients’ financial statements. However, there are significant minorities of lenders that do not apply the adjustments homogenously to all outstanding obligations, e.g. make them either only for obligations due within five years or only for the largest customers (Figure 4.9).

Figure 4.9: Did adjustments reflect all outstanding obligations?



Source: YouGov.

Those lenders and lessors not currently making adjustments tend to be smaller in terms of outstanding leasing obligations while the largest ones making such adjustments. Specifically, 95 per cent of those not making adjustments have less than €2bn of outstanding obligations, 70 per cent of which have loan books below €0.5bn. Overall, about 13 per cent of the total loan/leasing book relates to lessors not making any type of adjustments.

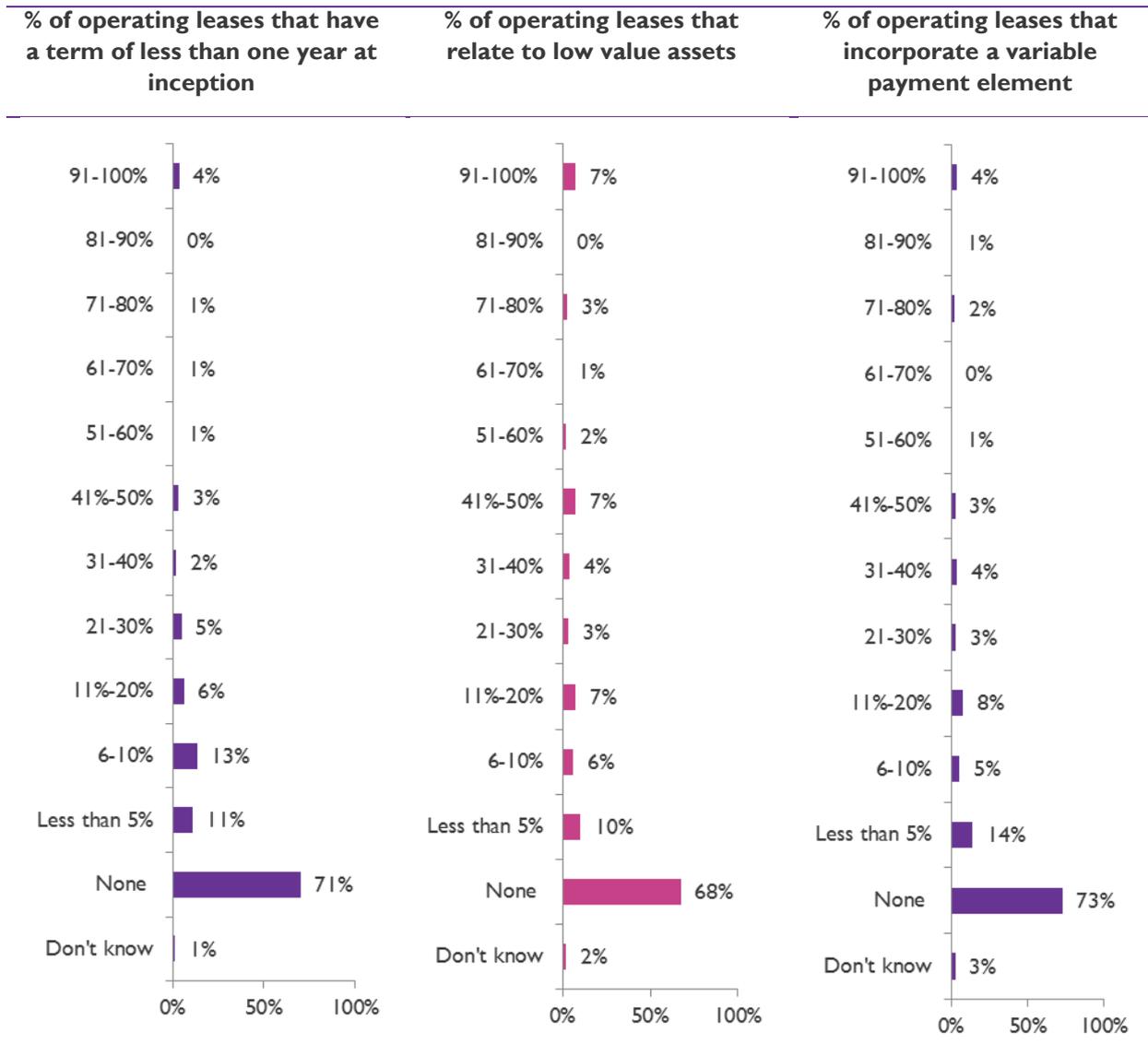
Notwithstanding this, a mix of different adjustment approaches is adopted by lenders / lessors, i.e. there is scope for information asymmetries currently existing with smaller clients and more leasing-reliant companies in atypical sectors here — as well as with clients of those lenders/ lessors not currently making adjustments. There is no clear relation between the proportion of SME clients and the likelihood of making an adjustment.

Debt agreements can incorporate “frozen GAAP” clauses, or “automatic” adjustment mechanisms, in order to reflect an updated GAAP. The size of the loan book is a notable influence on the lenders’ approach here, e.g. those with loan books above €1bn tend to have automatic adjustment mechanisms, or expect no effect.

4.6.2 Current usage of short-term, low value or variable payment leasing

The current penetration of short-term, low value or variable payment leasing is low. In particular, the YouGov survey shows that around three in five lessees report that none of their operating leases has a term of less than one year, relates to low value assets or incorporates variable payment elements. However, Table 4.4 shows that a substantial minority of lessees have at least some experience with short-term/ variable payment leases, albeit mostly at a low level.

Table 4.4: Penetration of short term, low value and variable payment operating leases



Source: YouGov.

5 Impact Analysis

5.1 Introduction

IFRS 16 could have a major impact on a lessee's balance sheet and income statement. Under the new standard, liabilities (and the associated assets) related to operating leases would have to be reported on-balance sheet, subject to exceptions such as for short-term leases and leases of low value assets. This treatment of operating leases would largely mirror that currently employed for finance leases. For companies with substantial financing through operating leases, this would mean a significant increase in both their reported assets and liabilities. Moreover, the annual rental cost would be replaced by an interest expense and a depreciation charge for the leased assets in a company's income statement. As a result the company's earnings before interest, tax, depreciation and amortisation (EBITDA) and earnings before interest and tax (EBIT) would increase compared to accounting under the previous standard (IAS 17). While depreciation charges may be evenly spread (i.e. calculated on a straight line basis), the calculated interest expense is expected to be higher at the beginning of the lease agreement, declining over the life of the lease as payments are made. This implies a profile of finance costs that is front-loaded.³⁵ This means that, whilst over the life of an individual lease there should be little or no profit impact under IFRS 16 relative to IAS 17, in any given year there could be.

In this chapter we set out our findings on the behavioural and economic impacts expected to arise due to the implementation of IFRS 16 by listed lessees. The main sections into which it is divided are:

- An analysis of the expected adjustment to financial statements implied by IFRS 16.
- An analysis of the compliance costs expected to be incurred by the different stakeholders, mainly lessees, lessors and lenders. This includes a description of the mechanisms of effect through which we expect economic impacts to be realised, the relevant evidence from YouGov and elsewhere, as well as our analysis.
- An analysis of the expected benefits arising due to IFRS 16.
- An analysis of the wider effects and possible unintended consequences implied by IFRS 16.

5.2 Analysis of adjustment to financial statements

The main impact of IFRS 16 will be to bring assets held under operating leases and the lease liabilities onto balance sheets. In this section we describe the exercise we undertook to estimate the nature and scale of the impact of this on the financial statements of lessees as if they had applied IFRS 16 in 2015. Further details are available at Appendix 7.

5.2.1 European companies with operating lease obligations

We identified around 2,300 European-headquartered listed companies with outstanding leasing obligations at the end of 2015. Of these, we were able to identify complete disclosure data on 2212 companies, with, in aggregate, disclosed operating lease obligations equal to €745 billion. This accounts for 99 per cent of the total operating lease obligations of the full population.

³⁵ The front-loading of interest is more likely to have a material impact on companies with only a small number of large leases. For lessees with numerous lease contracts, the differences in expense associated with individual leases might well even out across the portfolio of leases, at least if the asset / lease acquisition profile is relatively stable.

Table 5.1 shows the sector coverage of our sample. In to our sample, Airlines, Retail and Travel & Leisure are the most operating-lease-intensive industries. These sectors are most likely to experience significant impacts from IFRS 16.

Table 5.1: Sector coverage of the sample

Sector	Average operating lease obligations to total assets	Number of companies	Total operating lease obligations (€m)	Coverage (restricted sample/sample)
Airlines	71.3%	15	33,502	100.0%
Retail	46.2%	112	135,548	100.0%
Travel & Leisure	39.5%	98	58,689	100.0%
Health Care	19.3%	154	29,019	99.9%
Personal & Household Goods	14.4%	136	46,467	99.9%
Real Estate	13.9%	125	28,264	99.1%
Industrial Goods & Services	10.1%	448	84,011	99.3%
Technology	9.2%	226	12,026	99.7%
Media	8.5%	90	21,892	99.9%
Telecommunications	8.0%	38	70,595	100.0%
Food & Beverage	4.4%	111	14,340	98.6%
Automobiles & Parts	4.7%	40	17,476	100.0%
Energy	6.3%	147	97,797	100.0%
Construction & Materials	3.9%	112	15,986	98.4%
Chemicals	3.0%	63	8,988	100.0%
Financial Services	4.0%	119	12,044	99.0%
Basic Resources	3.1%	70	9,966	100.0%
Insurance	1.1%	37	12,541	99.5%
Banks	0.4%	71	35,617	86.9%
Total	12.4%	2,212	744,766	99.1%

Source: Bloomberg LLP and Europe Economics calculations.

We then constructed a model to simulate the impact of IFRS 16 on lessees' balance sheet, profitability and on key financial metrics (e.g. debt / EBITDA). The underlying assumptions drew on a literature review and also analysis of the available information on our sample. In this section, we will briefly summarise the key findings. Further details of our methodology, sensitivity analysis and results can be found in Appendix 7.

5.2.2 Results

Balance sheet impacts

The total simulated lease liability is around €574 billion, representing 8 per cent of total debt, or 15 per cent if we exclude banks, insurance and financial services companies.³⁶ However, the total does not capture the wide range of impacts. The company-specific impact depends on the existing debt level and the intensity of use of operating leases. For companies with little debt, the balance sheet impact would be much larger than those with significant amount of debt. Equally, the balance sheet impact would be bigger for companies with more operating leases. Amongst the three operating-lease-intensive sectors we identified (i.e. Airlines, Retail and Travel & Leisure), the simulated liabilities represent at least 40 per cent of total debt.

The associated right of use (ROU) asset value is €526–549 billion³⁷, representing approximately 15 per cent of the total net book value (NBV) of property, plant and equipment. The value of ROU assets is around 91-

³⁶ The total debt variable is defined by Bloomberg LLP. It includes both short-term and long-term debts. The total debt variable referred to in this section includes capitalised operating leases.

³⁷ The simulated assets are sensitive to asset life assumptions. For details, see Appendix 7.

96 per cent of the value of simulated liabilities. Again, operating lease intensive sectors are affected more than others.

Profitability impacts

Over the life of a lease, there should not be a profitability impact due to IFRS 16, i.e. the rental expense should equal the depreciation and interest cost. However, this need not be true in any given year of the lease under IFRS 16, e.g. because the financing cost will tend to be higher earlier in the lease — nor need it be the case looking across any given company's total leasing portfolio.

Our simulation results confirm this hypothesis. The overall EBITDA impact on current lessees is around 10.5 per cent. The apparent EBT impact is estimated to be between -0.6 per cent and 2.6 per cent. In total, 55 per cent of companies experience an EBITDA impact less than ten percent. However, there are wide sector variations. Amongst the Airlines industry, one third of companies experience an EBITDA impact larger than 100 per cent. The proportion is lower for other operating-lease-intensive industry: 13 per cent and 9 per cent respectively for Retail and Travel & Leisure industries respectively. Table 5.2 shows the EBITDA impact by sector. According to our model, about 25 per cent of lessees would experience EBITDA impact larger than 25 per cent. If these lessees' whose remuneration are linked to EBITDA, they might require some renegotiation. We have excluded Financial Services, Banks and Insurance companies from Figure 5.2.: Bloomberg does not typically report EBITDA data on the companies in these sectors as the nature of the business undertaken makes it a less meaningful metric.

Table 5.2: EBITDA impact by sector

Sector	0-10%	10-25%	25-50%	50-100%	>100%
Airlines	7%	36%	7%	21%	29%
Automobiles & Parts	83%	10%	5%	0%	3%
Basic Resources	83%	10%	3%	1%	3%
Chemicals	88%	8%	2%	2%	0%
Construction & Materials	64%	23%	7%	4%	2%
Energy	70%	11%	7%	5%	7%
Food & Beverage	77%	15%	6%	0%	2%
Health Care	64%	18%	7%	7%	4%
Industrial Goods & Se	49%	26%	13%	7%	5%
Media	53%	26%	10%	6%	6%
Personal & Household	50%	18%	16%	9%	7%
Real Estate	64%	4%	13%	6%	13%
Retail	17%	15%	30%	24%	13%
Technology	36%	32%	20%	6%	6%
Telecommunications	66%	26%	8%	0%	0%
Travel & Leisure	45%	15%	19%	13%	9%
Total	55%	20%	12%	7%	6%

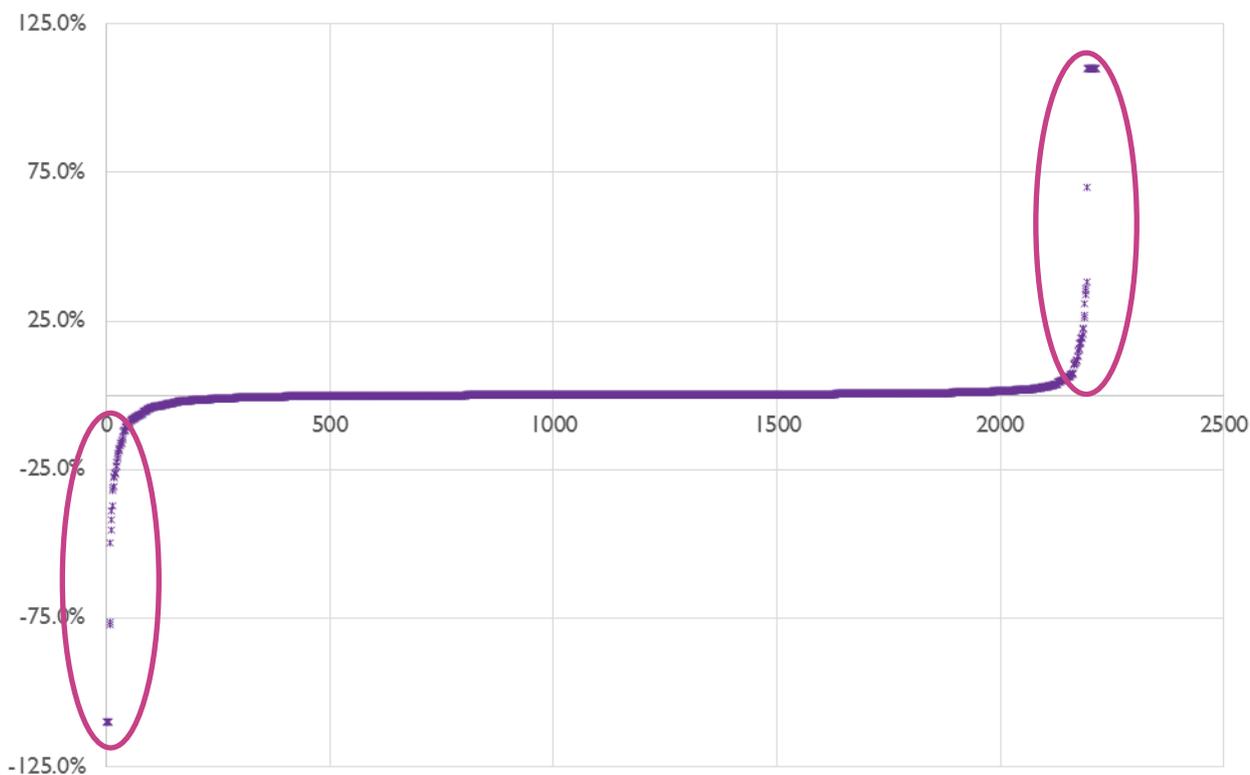
Source: Bloomberg LLP and Europe Economics calculations.

We can also consider profitability in relative terms. For instance, one can look at EBT as a percentage of turnover, or purely the change in in EBT in percentage terms. Figure 5.1: shows the change in pre-tax income divided by total turnover on the y-axis. Each dot represents one company. For the majority of companies, the impact is less than one per cent. Around 26 per cent of companies are simulated to have a profitability impact above this level. We emphasize that the EBT impact is highly sensitive to assumptions made about the blend and maturity of lease portfolio. In addition, some companies display large variations in this ratio because they have low turnover, so even a small absolute change may be a large percentage change. That said, we have investigated the 'outliers' carefully, and have reasons to believe at least for some companies, perhaps only a handful, the change (enhancement or deterioration) is likely to be material.

It needs to be borne in mind that such profit changes relative to the current accounting treatment are essentially timing differences, not changes in long-run profitability. Even so, companies may need to educate

investors in advance of IFRS 16 taking effect. Likewise, if these companies do not have automatic mechanisms to adjust for the change in IFRS, they would be likely, for example, to have more significant dialogue around revising debt covenants.

Figure 5.1: Percentage change in EBT / turnover



Source: Bloomberg LLP and Europe Economics calculations.

Debt financing capacity impact

Leverage ratios are used together with other financial metrics to assess a company's ability to meet its financial obligations. Overall, leverage ratios are expected to increase slightly. The Debt/Equity ratio has increased from 0.8 to 1 and Debt/Asset ratio increased from 28 per cent to 32 per cent.³⁸

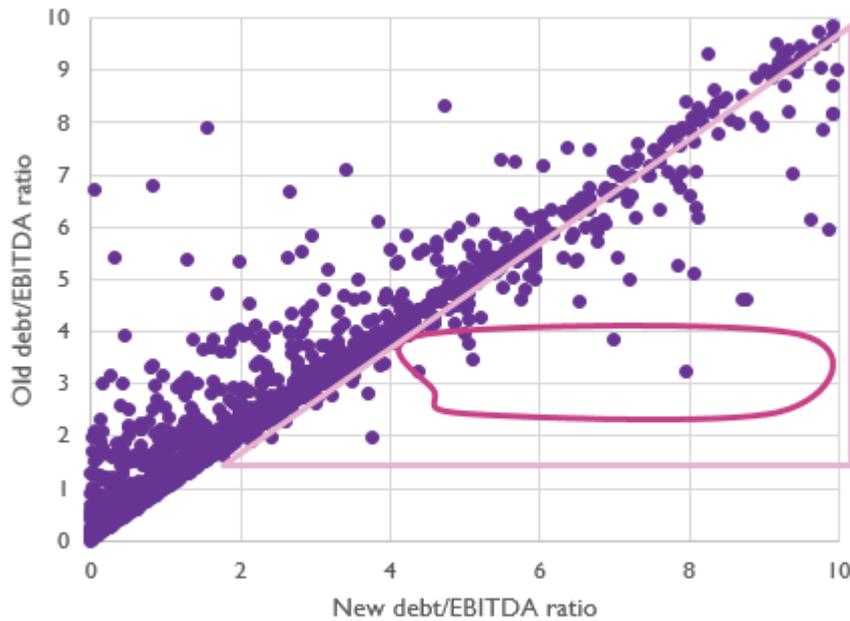
The increase in leverage ratios (measured by debt to asset and debt to equity) is the most significant in Airlines, Retail and Travel & Leisure industries. Typically, a debt to equity ratio greater than 2.0 is considered risky by investors. While most industries do not hit the 2.0 benchmark, for Airlines, the adjustment increases the debt to equity ratio from 1.6 to 3.0. We expect some airlines to experience significant impacts due to IFRS 16.

The change in debt level would affect borderline companies most. For example, if a company previously had a debt / EBITDA ratio of 3, and post-IFRS 16 this increased to 8, then, superficially at least and to the extent that some lenders do not factor in lease obligations, this could have an impact on the company's ability to borrow. Figure 5.2: plots the old debt to EBITDA ratio on the vertical axis and the new ratio on the horizontal axis. Any points below the 45 degree line represent an increase in the ratio (highlighted with light pink triangle). Amongst these companies, those that cross some threshold in terms of external perceptions of creditworthiness are likely to be more affected. For instance, say, if a lender's debt/EBTIDA threshold is set

³⁸ Aggregate results exclude banks, insurance and financial services sectors.

around four, then, the companies that are most likely to be affected are those dots circled in dark pink below. There are approximately 40 companies in this category.

Figure 5.2: Scatterplot of change in Debt/EBITDA ratio



Source: Bloomberg LLP and Europe Economics calculations.

In conclusion, the simulated accounting adjustment shows that there would be an increase in the on-balance sheet liabilities and assets. EBITDA will change significantly. However, since there is no change to the company's fundamental cash flow, the profitability impact must be zero in the long run. Nevertheless, there is likely to be short-run impacts on EBT, particularly in operating lease intensive industries such as Airlines, Retail and Travel and Leisure.

5.3 Analysis of direct compliance costs

There are a number of ways in which lessees, lessors and lenders could be directly affected by the adoption of IFRS 16.

- IFRS 16 will require implementation into the accounting system of lessees. This may involve one-off costs (e.g. reviewing existing lease agreements) and also acquiring or modifying accounting systems (which could generate both one-off and ongoing costs).
- Lessees' remuneration and incentive schemes could be affected, and require renegotiation and / or amendment.
- More significantly, perhaps, some lessees expect the covenants on other borrowings to require renegotiation due to changes in reporting (this also being anticipated by lenders).
- Lenders and lessors will likely need to mend their records and systems to reflect the change.

This section assesses the direct compliance costs associated with the implementation of IFRS 16. We first describe the mechanisms of effects qualitatively. We then discuss main cost components and factors affecting each of the above items. Where data is available, we would also provide quantifications of these costs. Numbers were aggregated up to obtain the total direct cost of implementation for the whole industry.

5.3.1 Mechanisms of effect for compliance costs

The changes proposed in IFRS 16 would mostly affect lessees. The higher the ratio of assets held under operating leases against total assets, or the greater the dependence on operating leases for financing, the larger the impact is likely to be. This means that sectors more heavily relying on operating leases, such as retail or aviation, would be expected to be affected the most. We give such sectors particular attention in our analysis.

The IFRS 16 requirements could be expected to impose some compliance costs, mostly on lessees. The costs may have to cover one-off setting up of systems and processes, communication and education of staff, and developing and implementing on an ongoing basis procedures for identifying contracts containing leases, separating between lease and non-lease components (such as services),³⁹ determining the term of each lease contract and the appropriate discount rate. An important driver here could be the scale of pre-existing experience of *finance* leases by the lessee. Since the accounting rules are mostly unchanged for lessors, any significant direct costs are unlikely to arise. (There could be costs related to reporting and providing information on a lessors' exposure to asset risk.)

It should also be noted that the IFRS 16 rules inevitably would require some judgement from lessees in terms of identifying which contracts contain leases, separating between lease and non-lease components of each contract, determining the term of a lease, and setting the appropriate discount rate to measure the value of a lease. On the one hand, the ability to apply some judgement enables companies to apply the new rules in a manner that better reflects their own circumstances (e.g. by providing flexibility to not to separate the service component of the contract including a lease). On the other hand, rules that require judgement might increase the complexity and thus costs for lessees as more senior staff might have to be involved. Furthermore, too much flexibility in the rules could hinder effectiveness as well as increase monitoring costs to competent authorities. It is worth keeping in mind that while judgement might be required when applying some of the IFRS 16 rules, it will be no longer required to distinguish operating leases from finance leases. In addition, the application of IAS 17 and related Interpretations also requires judgement in the areas mentioned – albeit perhaps to a different extent.

The new accounting rules, even though not related to any fundamental changes in a company's financing (i.e. its financing cash flows should be unchanged), could impact on the market and the leasing industry. First, they would affect a range of financial ratios, including leverage and any metrics calculated relative to total assets, EBIT or EBITDA. In response, market participants would have to revisit their analytical approaches. For lessors and other debt providers that could mean inefficiencies and increased costs in the short term. In the longer term, as market participants adjust, those costs are likely to fade away. The required adjustments and associated costs would be more substantial for those market participants which currently do not make capitalisation-style adjustments for operating lease obligations in assessing a company's creditworthiness. For instance, to the extent that regulatory capital requirements are based on financial statements (rather than defined independently), the relevant competent authorities (i.e. regulators and supervisors) might have to adjust their policies affected by the new accounting standard when monitoring financial institutions with substantial operating leases (e.g. a bank that held much of its branch network under operating leases).⁴⁰

In debt capital markets, if the methodologies used by credit rating agencies are not capturing off-balance sheet financing well, the change in the accounting standard might ultimately affect the lessee's credit rating (and

³⁹ In the context of separating between lease and non-lease components, Ernst & Young (2016) argued that the kind of information lessees would require from lessors to achieve that could be proprietary and thus not disclosed by the lessors. This would increase the costs to lessees as well as introduce some inefficiencies in the new accounting standard.

⁴⁰ However, IFRS Foundation (2016) notes that, based on a sample of 20 European banks, IASB estimated the effect of IFRS 16 on reported equity. For all banks in the sample the decline in equity was less than 0.5 per cent, and for almost half of the sample it was less than 0.2 per cent.

thus the cost of borrowing). Similarly, in equity capital markets, whilst the listed company's cash flows are unchanged (pending any future behavioural shifts), its reported financial metrics may alter. Analysts and investors that do not currently make adjustments for such off-balance sheet financing may have to reflect upon whether the accounting changes add to their information set on the respective company's prospective performance.

Second, the increase in balance sheet liabilities might result in a breach of some debt covenants, or at least revision of covenants such that the degree of headroom remains broadly equivalent (this is important to the operational flexibility of the companies with the leases and loans). However, this would apply only to those covenants which are directly based on financial statements, and which do not include measures such as "frozen GAAP"⁴¹ or clauses requiring automatic renegotiation of covenants when accounting standards change. The downside of "frozen GAAP" is that the lessee will need to keep two sets of records (one for the purpose of financial statements, and one for the purpose of satisfying covenant agreements).⁴²

A somewhat similar effect is possible with incentive schemes, if these are linked to key performance ratios. If the agreement's wording does not adequately allow for change, such agreements could require re-negotiation.

IFRS 16 could also have tax implications. PricewaterhouseCoopers (PwC) (2016)⁴³ argue that there could be consequences on applicable depreciation rules, specific rules limiting the tax deductibility of interest, and existing transfer pricing agreements, sales/indirect taxes and existing leasing tax structures. The specific impact would vary from one tax jurisdiction to another. If any of the tax implications were to materialise, the affected jurisdictions might elect to review their tax treatment of leases, interest and depreciation in light of the new accounting standard.

5.3.2 Direct compliance costs — accounting and IT systems

We consider the implied changes and costs in the accounting and IT systems costs for lessees and, separately, for lessors and lenders.

Lessees

The main one-off costs for lessees are expected to relate to the analysis of existing contracts, the purchase of additional IT systems, and potential process changes.

- **Analysis of existing contracts.** Companies need to understand the implication of IFRS 16 for their existing leases thoroughly before deciding on the strategy of implementation. Indeed, all cost components ultimately relate to this analysis. The survey data show that 55 per cent of lessees expect that "time spent investigating existing operating leases" will drive additional costs when IFRS 16 is implemented.⁴⁴
- **IT costs.** About 36 per cent of survey respondents indicate that IT costs would constitute a majority of their one-off costs.⁴⁵ Such costs include the purchase and / or development, implementation and testing of new IT tools. For larger companies with multiple systems, additional interfaces may be required to facilitate communication between systems. Where sufficiently detailed contract data are not currently available (or at least not available in suitable format in the relevant accounting and reporting department),

⁴¹ "Frozen GAAP" refers to the agreement where financial covenants are based on the accounting principles applying at the time of negotiation.

⁴² Reinhart Law (2016) "Got leases? New Accounting Standard Could Trigger Breaches of Bank Covenants", <http://www.reinhartlaw.com/knowledge/got-leases-new-accounting-standard-trigger-breaches-bank-covenants/>. Accessed 28 September 2016.

⁴³ PwC (2016) "IFRS 16: The leases standard is changing. Are you ready?" January 2016.

⁴⁴ YouGov lessee survey.

⁴⁵ YouGov lessee survey.

companies would also need to spend time collecting and entering data related to operating leases. The scale of such IT costs are likely to be influenced by the length of time available for transition and the strength of (internal) competition for IT resources at particular companies.

- **Potential process changes.** 48 per cent of lessees in our sample identified process change as a significant driver for one-off costs.⁴⁶ This could include costs incurred when trying to determine new processes related to controls, valuation and lease management. In addition, some companies may incur higher audit fees as a result of auditors reviewing companies' valuation assumptions for items which come onto the system for the first time. The need to employ external consultants (other than auditors) may further increase this cost.

The implementation costs for lessees have a very wide range. YouGov's data indicate a range of €0–€700,000.⁴⁷ The upper limit appears to be somewhat higher than this. Several lessees responding to EFRAG's consultation (which closed in early December 2016) expected the implementation of IFRS 16 to cost a few million euros. This is higher than the YouGov survey results. Our interpretation of this is that whilst there are some large companies that will likely incur such costs, the absence of such findings in the survey indicate that this is not typical. Our final range estimate reflects various factors that may affect the cost of implementation:

- **Number and type of operating leases.** The number and complexity of existing contracts will naturally make it more costly to analyse these contracts and on-board them to the new systems. Based on the YouGov data, it appears that the number of leases held is usually higher for companies who only use operating leases for plant and equipment (P&E), the cost of implementation is also likely to be higher. In the YouGov dataset, the average cost of implementation for lessees with only P&E leases is €19,500, while the average cost for lessees with only property leases is €8,600. Companies which use operating leases for both P&E and properties have the highest average cost, €77,500. These differences are statistically significant, and — as a proxy for complexity — is in our sample at least as an important driver of higher expected costs than company size alone. (In our modelling of costs below we seek to take into account both such scale and complexity effects). Similarly, if the lease portfolio contains dissimilar assets and / or variant terms and conditions, companies would need to spend more time in establishing processes and valuation methodologies for each type, which could increase the cost of implementation, and likely trigger increased reliance on external expertise. Where lease contracts contain both lease and service terms it may cause further complexity in the decision-making around the applicability of IFRS 16.
- **Structure of the IT system and processes.** Companies with decentralised and discretionary lease logging systems and processes are likely to incur extra manual implementation costs than those with already highly centralised operations. Half of the lessee respondents considered that “centralising treatment of operating leases” would drive additional costs.⁴⁸ Where lease contract data are available in sufficient detail in a pre-existing electronic format, the cost of implementation could be lower than those which require manual conversion. Last, if the choice of IT providers is curtailed in one way or another (e.g. because lessees consider themselves unable to replicate what is available from external vendors), it would reduce bargaining power and increase costs.
- **Timeline.** The cost of implementation also depends crucially on the timeline. A tighter timeline means more external resources need to be employed. This often implies that if there is any delay in the endorsement of IFRS, the industry may need to incur higher costs of implementation.

Our analysis of the implementation costs strongly suggests two broad groups: the majority (66 per cent) of lessees expecting a “straight-forward” implementation — characterised by low costs — and a minority

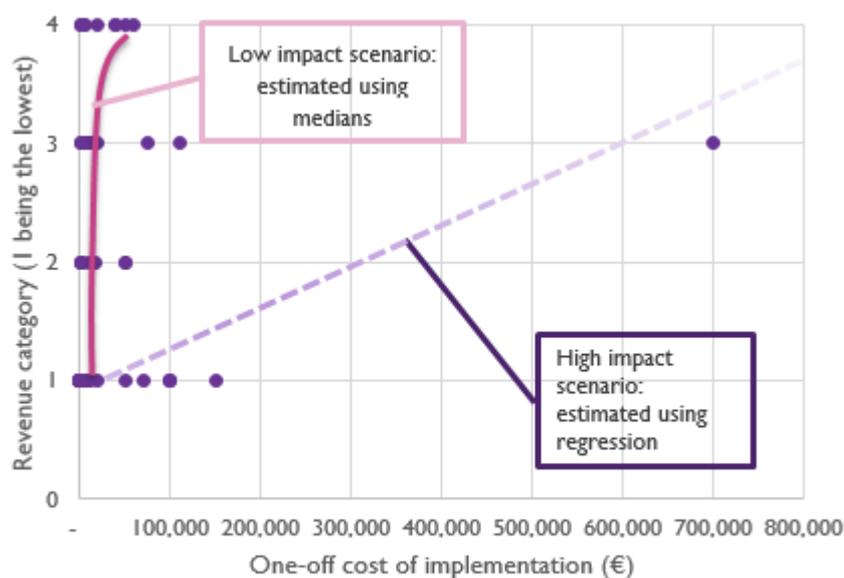
⁴⁶ YouGov lessee survey.

⁴⁷ This is based on quantitative estimates from 91 lessees.

⁴⁸ YouGov lessee survey.

expecting a more complex transition — characterised by much higher costs, that are also notably heterogeneous.

Figure 5.3: One-off implementation costs



Source: YouGov Survey and Europe Economics analysis (based on 90 observations).

Therefore we modelled two scenarios for lessees' expected implementation costs, drawing on the survey data. The first is a higher-impact scenario where companies incur a substantial cost due to the heterogeneous characteristics described above. A simple linear regression was used for this group of companies. We found that the turnover band is a significant factor that influences the level of cost and the regression acts so as to extrapolate the costs based on company sizes. The second is a lower-impact (standard) scenario where companies' implementation costs are relatively homogeneous and lower. Given the relatively homogeneous nature, costs are estimated by taking the median within each turnover band.⁴⁹

The results are shown in Table 5.3 below. In recognition of the consultation responses received by EFRAG, we have substituted €0.9–€1 million in the complex impact scenario for the largest companies, i.e. those with annual turnover above €5 billion (replacing €0.8–€0.9 million).⁵⁰

Table 5.3: Estimated one-off costs for standard and complex impact scenarios

Turnover	Standard impact (€)	Complex impact (€)
< 500m (revenue category 1)	1,700 – 1,900	29,000 – 33,000
500 - 1000m (revenue category 2)	2,200 – 2,600	82,000 – 95,000
1 - 5bn (revenue category 3)	3,500 – 4,100	269,000 – 310,000
> 5bn (revenue category 4)	12,000 – 13,000	908,000 – 1,045,000

Source: YouGov Survey (based on 90 observations) and Europe Economics calculations.

To estimate the impact across all European lessees, we have scaled these by the number of companies in each of these turnover bands (see Chapters 4 and 7). This gives a total one-off cost of **€162-186 million**.

⁴⁹ In this case, the mean and median are very similar.

⁵⁰ The replacement estimate incorporates the consultation responses into our calculations by assuming that the very high impact cases identified in the consultation represent about 10 per cent of the high-impact population for companies with turnover larger than €5bn, and with an average cost equal to €2m. For the rest of the 90 per cent of such high-impact companies, the average cost is what we have estimated using our regression model, i.e. €863,000. The complex estimate used combines both in the appropriate proportion.

These results are of course sensitive to the proportions of companies experiencing standard or complex impacts. For instance, if we assume the proportion of the standard scenario is around 75 per cent, then the total one-off costs would be between €121-140 million. On the other hand, a 60 per cent assumption would yield a total cost of €189-218 million.

The main driver for ongoing costs is the monitoring of capitalised operating leases and any IT maintenance costs. The ongoing costs are likely to be higher for lessees that have more frequent changes in leases. These changes would trigger the need to reassess and re-measure the lease liability and ROU assets.

The average ongoing cost is smaller than that of one-off costs. This is expected as subsequent to the actual implementation, such processes can be absorbed into business-as-usual. Similarly, the objective of at least some of the one-off spending is to achieve automation of these processes, i.e. promoting a lower incremental ongoing cost. Indeed, 21 percent of the lessees did not expect to incur additional ongoing costs due to IFRS 16. We have conducted a similar exercise for ongoing costs as we did for one-off costs. This takes into account those companies who do not expect to incur any ongoing costs. Under the complex impact scenario, on average, the ongoing cost is about 20 per cent of the one-off cost.

Table 5.4: Estimated ongoing costs for standard and complex impact scenarios

Turnover	Standard impact (€)	Complex impact (€)
< 500m	110 - 130	6,000 – 7,000
500 - 1000m	450 - 510	19,000 – 21,000
1 - 5bn	1,100 – 1,300	61,000 – 71,000
> 5bn	3,500 - 4,100	186,000 – 214,000

Source: YouGov Survey (90 observations) and Europe Economics calculations.

Scaling these estimates up (in terms of ongoing costs, a greater proportion of companies expect a non-standard cost effect, 40 per cent), the total annual ongoing cost is €40–€46 million.

Fully 97 per cent of lessees in the YouGov data do not expect any cost savings as a result of IFRS 16.⁵¹ This is not surprising as the process of lease capitalisation cannot be automated to the same extent as the process of current operating lease accounting. There are also more parameters which require analysis and judgement.⁵² The presence of these manual elements significantly limits the potential cost saving in the future.

Lessors and lenders

Lenders and lessors may also incur transitional IT costs and staff costs due to the adoption of IFRS 16. These should be on a much reduced scale relative to lessees. Most lenders are already making adjustments for operating leases when evaluating a company's creditworthiness, be it via proprietary methods, discretionary decisions or outsourced solutions. We also discuss below the scope for lessors and lenders effecting a reduction in such expenditure.

About 75–80 per cent of lessors and lenders would be affected by a need to update client records to reflect the revised treatment of operating leases under IFRS 16 (the remainder believed that their existing record-keeping approach would be fully adequate already). The majority considered manual adjustment (through own or outsourced staff) to be the preferred route to updating records (albeit some re-design of IT systems could also be necessary in some cases). To capture the effect of IFRS 16, we assume that 2–3 days per client would be required at each lender / lessor in order to update such records and to process any impact of this. This implies (assuming each listed company would have a relationship with 1.5 banks and 2.5 lessors) that the associated one-off cost would be €5.6–€8.9 million.

Lessors and lenders invest considerable resource in external systems to support their analysis of creditworthiness, and ultimately assist the fundamental task of making credit decisions. These systems

⁵¹ YouGov lessor / lender survey.

⁵² EFRAG Consultation Response.

combine data from financial reports with data from other sources to provide a consistent “house view” of clients’ financials.

Table 5.5: Current costs of maintaining systems to support analysis of client creditworthiness

	Lessors	Lenders
Up to €250k pa	78%	53%
251-500k pa	7%	35%
501-€1m pa	15%	12%

Source: YouGov (44 observations).

Of those lessors making adjustments to client’s financial information with respect to operating leases when considering its creditworthiness, about 25 per cent considered it likely they would cease to make such adjustments subsequent to the implementation of IFRS 16. A further 25 per cent would continue to do, but at a reduced level. The situation is similar with lenders, with again half expecting to continue with the same resource intensity in terms of analysing operating leases, and with 30 per cent expecting to discontinue such effort — and 20 per cent expecting to reduce intensity.

However, this does not mean that the costs incurred to analyse client creditworthiness will change in a material way — these systems are making adjustments for multiple business and financial elements at the clients. Data, at least on listed companies, may be accessed through credit rating agencies which are again making multiple adjustments (e.g. for pension scheme liabilities). Accordingly researching and adjusting data related to operating leases makes only a marginal contribution. Credit rating analysts interviewed by Europe Economics did not expect to reduce the intensity of effort applied to understanding operating leases for several years post-IFRS 16, i.e. they would wish to wait until it was suitably bedded down before making a judgement whether or not to curtail such efforts. Therefore, any reduction in such costs would, at best, be only realisable at relatively remote future date.

5.3.3 Direct compliance costs — lessees’ remuneration and incentive schemes

One of the potential impacts that we identified was a potential need to adjust or even renegotiate remuneration and incentive schemes. The survey results indicate a sizeable proportion indeed expected IFRS 16 changes to have such further consequences on remuneration policies or incentive schemes. On average 53 per cent lessees reported such impacts as likely to occur.⁵³ Interestingly, the percentage was much higher (69 per cent) among those respondents who were most familiar with the proposed IFRS 16 changes. Those who started the CAT interviews as being most aware of the proposed changes are likely to have a better grasp of the full extent of potential consequences. This suggests that the knock-on effects might in fact apply to more than 53 per cent, but simply some of the companies are not aware of this yet. We cannot reject the possibility that companies which are more familiar with IFRS 16 are those which — ex ante — were more likely to be affected, it does seem unlikely that it was concerns around remuneration/incentive policies that drove the process of becoming familiar with the IFRS 16 proposals.

We designed a simple model to estimate the potential cost arising from the need to review employment contracts and communicate the changes to the relevant employees. We note that not all employment contracts involve incentive schemes and thus not all would have to be reviewed after the IFRS 16 implementation. In general, senior staff (company managers, executives and board members) are more likely to have variable remuneration elements in their contracts.

Since there is no comprehensive publicly available data regarding the number of senior management functions in each company, we made the following assumptions in order to estimate the size of this group. First, the number of company managers, executives and board members is broadly proportional to the total number

⁵³ Six per cent said such impacts are very likely, and 47 per cent said they are quite likely.

of employees with the exception of smaller companies where the proportion is likely to be higher. We assumed that the maximum number of contracts to review (i.e. the maximum number of company managers, executives and board members) is 250.⁵⁴ For the remaining companies, we scaled the number of contracts to be reviewed by the number of employees so that the proportion of management functions to the number of employees remained constant. For companies for which this number was smaller than the number of board members / executives⁵⁵ (obtained via Bloomberg LLP) we used the number of board members / executives as the basis for our further analysis. Based on the above assumptions this indicates around 17,500 such contracts across the EU. Our past work gives an estimated cost of redesigning and revising a single scheme (and communicating those changes) of €475–€550, which would roughly correspond with one day of work.⁵⁶ The responses to YouGov survey suggest that the time required might be slightly higher —the median is two person-days, which would translate into the cost of €950-€1 100. However we also note that this was based only on 12 lessees' views.

If we take the proportion of companies affected to be 62–76 per cent, then the total one-off cost of this knock-on effect would be between €5.2million (with the cost of €475 per contract and 62 per cent of lessees affected) and €14.6 million (with the cost of €1 100 per contract and 76 per cent of lessees affected).

Given that there will be a transitional period of up to two years before companies are obliged to implement IFRS 16, some of these costs may be capable of being spread over a longer time period, and perhaps, in some part, avoided. We do not envisage any incremental ongoing cost.

This impact only affect lessees.

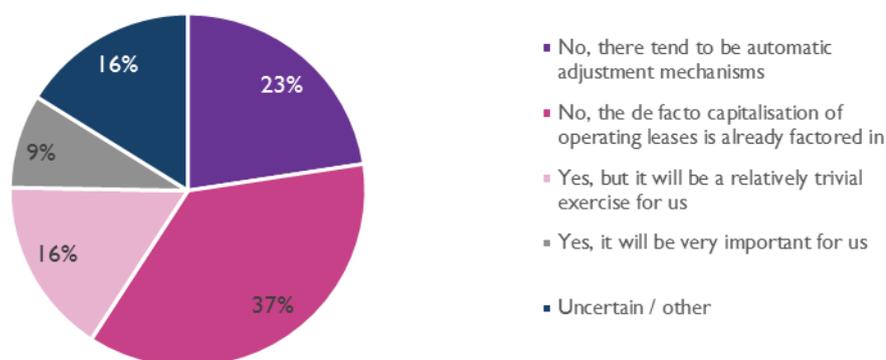
5.3.4 Direct compliance costs — renegotiation of covenants

By bringing previously off-balance sheet items onto the balance sheet, various key ratios and metrics (e.g. EBITDA, leverage ratios) may be affected. As we note at 4.6, loan agreements can incorporate automatic adjustment mechanisms or apply frozen GAAP formulae such that the commercial basis of the loan is unaffected. Even so, this does not cover all situations, so changed accounting metrics may trigger a need for the renegotiation of existing debt covenants. Equally, companies may need to put in place the capacity to generate adjusted data (i.e. data that adjusts what is available for financial reporting purposes).

⁵⁴ This assumption is informed by data Europe Economics collected in relation to a different study in 2014 undertaken for the UK's Financial Conduct Authority, "Cost Benefit Analysis of the New Regime for Individual Accountability and Remuneration".

⁵⁵ For each company we collected information on the number of executives / company managers, and the size of the board. The two numbers are not always identical, and depending on the management model for some the board size is larger than the number of executives while for others it is the other way around. The analysis is based on the larger of the two.

⁵⁶ Europe Economics (2014) "Cost Benefit Analysis of the New Regime for Individual Accountability and Remuneration".

Figure 5.4: The importance of debt covenant renegotiation

Source: YouGov Survey (186 observations) and Europe Economics calculations.

About 25 per cent of lessees in the survey expect to have to renegotiate existing debt covenants to adjust for changed accounting metrics (with a further group uncertain). The majority of these expect a relatively trivial exercise — but a notable minority of this group anticipate that this process would be significant, and important to get right. We have seen in the accounting adjustment exercise that a small minority of companies will likely see very significant changes in some metrics. Most of these companies are focused in particular sectors (e.g. retail), but this is not exclusively the case. Where such more affected companies also have to renegotiate covenants (due to the absence of suitable automatic adjustment mechanisms), it is clearly very important to obtain equivalent operational leeway within such new covenants as with those that would be replaced. (It is worth noting, of course, that such companies (and, indeed, the bankers of such companies) have some time before IFRS 16's expected implementation in January 2019 to consider how best to adjust.)

Whilst IFRS 16 would not change the fundamental cash flows of a company, a lender could use this as an opportunity to renegotiate contracts with riskier companies to its favour (particularly if its appreciation of the leasing obligations was not complete). We believe the extent of this actually resulting in the withdrawal of facilities is likely to be very limited — again, because the cash flows do not change: operating leases are off-balance sheet, not off-financial statements.

The cost of renegotiation would depend on the number of lease contracts, the terms of these contracts (e.g. if there is automatic adjustment), and the significance of changes in financial metrics. Such costs are considered from both the lessees' and lenders' perspective.

Lessees

Amongst respondents to YouGov's survey, 36 per cent of lenders expect to renegotiate at least some covenants manually. This is not necessarily in contradiction to the lessees own estimate (i.e. that 25 per cent would need to re-negotiate), however, considering *both* lessee and lender perspectives we have preferred an estimate that 30 per cent of lessees will be affected. We have estimated the expected cost of renegotiating debt covenants for lessees based on the survey results.

Similar to the analysis of implementation costs, two scenarios, high (one-third of those affected) and low impact (two-thirds), were constructed, distinguishing between companies with turnover less and more than €500 million. The median days required for renegotiation was used.⁵⁷ It would only take 4-6 days to renegotiate the debt covenant in the low cost scenario and 27.5 to 120 days in the high cost scenario. (Respondents have provided a wide range of estimates for the person-days required for covenants

⁵⁷ In any event, the mean is not significantly different from the median.

renegotiation, from as low as 2 days to as high as 1,000 days.) Assuming a cost per man day equal to €400, this only amounts to a one-off cost of €16,000 under the high cost scenario even for large companies.

Table 5.6: Debt covenant renegotiations for lessees

	Company size	Number of days	Total renegotiation costs per lessee
Low	< 500m	4	€ 1,600
	> 500m	6	€ 2,400
High	< 500m	27.5	€ 11,000
	> 500m	120	€ 48,000

Source: YouGov Survey (42 observations) and Europe Economics calculations.

Overall the one-off cost of renegotiation debt covenants for the lessees is expected to be around **€6.8–7.8 million**. Although the direct cost of renegotiation is very low, the consequence of debt renegotiation for an individual company could be material for it if the terms of its covenants deteriorate such that its degree of operational headroom is affected. This would depend on the company's financial situation, bargaining power and the lenders' risk appetite — but it is also worth recalling that the accounting implementation of IFRS 16 would not affect a company's actual underlying cash flows.

Lessors and lenders

Our estimate that 30 percent of lessees would need to renegotiate terms implies that almost 700 companies would be affected. Typically, a smaller company would need only one lender, whereas larger companies may have multiple facilities with a panel of banks. On average, we assume each lessee has 1.5 lenders, i.e. there would be approximately 1,000 debt renegotiations. The lender survey suggests an average eight-ten days spent with a typical customers on covenant renegotiation, i.e. equivalent to 8,000 man days in total. Under the same day-rate assumption (i.e. €400 per man-day), the cost to lenders amount of **€3.2–€4.0 million**, which is not dissimilar to that for lessors.

Overall, the one-off cost of renegotiation across both sides would be €10.0–€11.8 million.

5.4 Analysis of benefits

To the extent that operating leases (with the exception of short-term and low value leases) are similar in nature to debt obligations, bringing them onto the balance sheet is likely to have a number of benefits for users.

It might facilitate any assessment of a lessee's financial position and credit risk. Investors and analysts should be able to assess the company's financial position more accurately, using less time and resources to do so than previously. While information on operating leases is already available in financial statements, and is commonly taken into account by market analysts, the method of incorporating this data might be inaccurate and is not consistent across market participants. As such, there might be scope for new information to become available after IFRS 16 implementation. Moreover, since there would be no need to estimate the assets and liabilities associated with operating leases, the comparison between different companies is likely to be easier.

Another potential benefit of the IFRS 16 rules would be that it would limit companies' ability to manipulate the lease contracts so that they are classified as off-balance sheet debt.⁵⁸

⁵⁸ Franzen et al. (2009) argue that the remarkable increase in off-balance sheet financing over the last 27 years is "consistent with the contentions of regulators and popular press that companies intentionally structure leases to qualify for OBS accounting treatment." See Franzen et al. (2009) "Capital Structure and the Changing Role of Off-Balance-Sheet Lease Financing" August 2009.

Finally, including the information on operating leases on the balance sheet would mean that not only the more sophisticated investors can accurately estimate the scale of company's liabilities — this information would be easily available to all investors.

5.4.1 Mechanisms of effect for benefits

The main rationale for introducing the new rules is to increase the transparency and accuracy of financial statements. A survey conducted by Beattie et al. (2006) indicated that both users and preparers of financial statements “agreed that the current standard was open to manipulation, lacked uniformity, did not portray the substance of transactions, was incomplete, inconsistent and lacked clarity”.⁵⁹ On top of that, users “agreed significantly more strongly than preparers that users’ assessments of companies would be improved”.⁶⁰

To the extent that operating leases (with the exception of short-term and low value leases) are similar in nature to debt obligations, bringing them to the face of the financial statements is likely to have a number of benefits:

- It would facilitate any assessment of a lessee's financial position and credit risk. Investors and analysts should be able to assess the company's financial position more accurately, using less time and resources to do so than previously.
- The new rules would limit companies' ability to manipulate the lease contracts so that they are classified as off-balance sheet debt.⁶¹
- Finally, including the information on operating leases on the balance sheet would mean that not only the more sophisticated investors can accurately estimate the scale of a company's liabilities — this information would be easily available to all investors.

All these outcomes could contribute to fair competition in the market — with investors having easier and more equal access to the relevant information. Also, the way lease contracts are structured would be less important. The extent to which these benefits materialise would depend on whether the market and its participants are currently inefficient or limited in estimating the off-balance sheet obligations.

Existing research provides somewhat mixed results. Some papers suggest that credit rating agencies, as well as the market as a whole (captured, for example, by the stock market prices), incorporate operating leases in their analyses of equity risk.⁶² On the other hand, as noted by Goodacre (2003), the studies up to the date

⁵⁹ Beattie et al. (2006) “International lease-accounting reform and economic consequences: The views of U.K. users and preparers” *The International Journal of Accounting*, 41 (2006) 75-103.

⁶⁰ See also Goodacre (2003) for a review of literature on this topic.

⁶¹ Franzen et al. (2009) argue that the remarkable increase in off-balance sheet financing over the last 27 years is “consistent with the contentions of regulators and popular press that companies intentionally structure leases to qualify for OBS accounting treatment.” See Franzen et al. (2009) “Capital Structure and the Changing Role of Off-Balance-Sheet Lease Financing”.

⁶² For example, Sengupta & Wang (2011) “Pricing of off-balance sheet debt: how do bond market participants use the footnote disclosures on operating leases and postretirement benefit plans?” *Accounting & Finance*, Volume 51, Issue 3, pp 787–808, September 2011; Cotten et al. (2013) “Capitalisation of Operating Leases and Credit Ratings” *JARAF*, Volume 8 Issue 1 2013; Andrade et al. (2014) “The Impact of Operating Leases and Purchase Obligations on Credit Market Prices” Draft: March 2014. Moreover, based on previous studies Goodacre (2003) argued that “there is both general and lease-specific evidence that users in aggregate (i.e., the stock market) are not misled by such presentational issues. In particular, there is quite strong evidence for both the UK (Beattie, Goodacre and Thomson, 2000b) and the US (Ely, 1995; Imhoff, Lipe and Wright, 1993) that the market already incorporates footnote operating lease disclosures in its assessment of equity risk.” For more details, see Goodacre (2003) “Assessing the potential impact of lease accounting reform: a review of the empirical evidence” *Journal of Property Research*, 20(1), March, 2003, pp. 49-66.

of his work were generally unable to determine whether the size of the adjustment was ‘correct’, i.e. reflecting the actual obligations as they would have been perceived under perfect information.⁶³

Chu et al. (2007) find that the extent to which banks include operating leases in setting the spreads is consistent with the amount of lease obligations up to five years out, as reported in the financial statements. The authors argue that accounting only for the first five years is insufficient, and thus the new rules are likely to improve the accuracy of the estimates.⁶⁴ Furthermore, other studies indicate that, even if sophisticated market participants can estimate off-balance sheet obligations with sufficient precision, other users and investors may be unable to do that. For example, Ge (2006) shows that controlling for current earnings, greater off-balance sheet debt is associated with lower future earnings — but investors do not correctly estimate the implications of off-balance sheet obligations in their assessments of future earnings.⁶⁵

Improving the transparency of financial reporting (meaning analysts would have access to better quality information) could also result in costs of corporate borrowing that are more accurately reflective of underlying creditworthiness. It is not necessarily the case that borrowing costs would increase for companies with the highest operating lease obligations — depending on the current estimation techniques the actual obligations could be either higher or lower. Indeed, Deloitte (2016) pointed out that the accuracy of the techniques used for estimation of the value of lease obligations could vary depending on lessee’s characteristics. Taking airlines as an example, a 7x multiple method⁶⁶ — even if a useful heuristic on average — will overestimate the lease obligations for lessees with shorter-term lease contracts relative to the lease obligations measured under the new rules. The opposite is true for lessees with longer-term lease contracts.⁶⁷

IFRS 16 rules should leave less room for manipulating lease contracts so that the obligations could be classified as off-balance sheet debt. As a result, socially inefficient activities aimed at regulatory arbitrage should be reduced. (However, there may be scope for such arbitrage with respect to some aspects of the IFRS 16, as we discuss further below). Furthermore, we might expect increased comparability of companies in terms of financial ratios and risk exposure, with differences in financial positions that are associated with the actual obligations rather than the estimation methodology. This could facilitate comparisons of the research output of different analysts or investors.

For competent authorities (e.g. market regulators and accounting enforcement bodies) a consistent reporting framework across listed companies might mean better and/or less costly oversight of outstanding liabilities as well as improved understanding of the developments in the credit market as a whole. Competent authorities are perhaps more likely to rely on disclosure by credit institutions in any event (where reporting is essentially unchanged).

Moreover, there could be impacts on capital structure. Some studies have suggested that operating leases are used in addition to debt rather than as a substitute for it. Goodacre (2003) argues that operating leases appear to absorb less debt capacity than finance leases.⁶⁸ If bringing operating leases on the balance sheet

⁶³ Goodacre (2003) “Assessing the potential impact of lease accounting reform: a review of the empirical evidence” *Journal of Property Research*, 20(1), March, 2003, pp. 49-66.

⁶⁴ Chu et al. (2007) “Does the Current Accounting Treatment of Operating Leases Provide Sufficient Information on the Lease Liabilities?”

⁶⁵ Ge (2006) “Off-balance sheet activities, earnings persistence and stock prices: Evidence from operating leases”.

⁶⁶ This multiple method is a way of approximating the total debt relating to current leasing obligations. It is calculated by multiplying the annual operating lease cost by a factor.

⁶⁷ Deloitte (2016) “IFRS industry insights: Aviation sector. Implications of the new leasing standard”.

⁶⁸ Based on previous research Goodacre (2003) argues as follows: “Survey results suggest that managers believe that overall ‘debt capacity’ can be increased by using leases; (UK: Drury and Braund, 1990; US: Bathala and Mukherjee, 1995; Gopalakrishnan and Parkash, 1996). Further, regression-based analyses confirm that companies behave as if lease finance is complementary to (US: Ang and Peterson, 1984), or only a partial substitute for debt finance (US: Marston and Harris, 1988; Krishnan and Moyer, 1994; UK: Adedeji and Stapleton, 1996; Beattie, Goodacre and Thomson, 2000a; Belgium: Deloof and Verschueren, 1999); in both situations the use of leases allows an increase in

affects lenders' and/or lessors' perception of debt capacity, IFRS 16 — all else being equal — might lead to lower levels of debt for companies which currently heavily rely on off-balance sheet financing.

Similarly, bringing operating leases onto the balance sheet (also resulting in a revised income statement) could be an opportunity for lessees to re-optimize their financing strategies. Specifically, companies which currently take on lease obligations in a decentralised manner (i.e. lease contracts are made independently by various teams or departments) would be able to re-evaluate whether leasing assets is the optimal way of financing their operations.

5.4.2 Public capital market effects

First, we need to consider how equity and debt capital markets currently take into account a company's operating lease obligations, e.g. is there already an established track record of constructive operating lease capitalisation? We consider investment analysts (as a proxy for equity providers) and credit rating analysts (as a proxy for public debt capital providers). Our analysis draws on interviews conducted by Europe Economics with these groups, and for debt capital markets is complemented by analysis of the influence of operating leases on corporate bond yields.

The current practice of equity analysts in many markets is to make adjustments to approximate the capitalisation of operating leases, at least for the larger listed companies. The Chartered Financial Analyst (CFA) Program's preferred approach has been to capitalise operating leases, and it is supportive of the principles behind IFRS 16. The CFA's textbook recommends capitalisation but is not prescriptive about how this is done, and equity analysts can each have their own approach. We interviewed analysts in the sectors expected to be most affected, e.g. retail and leisure, and the typical approach — rather than fully capitalise operating leases — is to multiply the operating lease expense in the financial statements by a given multiple. Furthermore, this multiple can vary by industry and by analyst.

The primary focus of these adjustments is on the balance sheet impact of operating leases, i.e. how these effect perceptions of a company's total indebtedness and key metrics such as Enterprise Value (EV) / EBITDA. However, making year-to-year adjustments to net profitability are less common (i.e. rental is taken to equal depreciation and interest expensed).

However we also received views from representatives of small capitalisation listed companies that were much less supportive of IFRS 16, being concerned with subjectivity in determining asset lives leading to potential — possibly severe — limitations in comparability between companies and, more generally, questioning the value of bringing operating leases onto balance sheets. The perceived increasing cost of IFRS 16 was even seen as a driver to de-list or downgrade to a junior market without an IFRS requirement. This reasoning was partly attributed to IFRS 16 itself and partly IFRS 16 being the “straw that broke the camel's back”.

Turning to corporate bonds, analysts at the major credit rating agencies (CRAs) also make numerous adjustments to the financial statements of corporate issuers to increase comparability and to better reflect credit risks. This includes long-standing policies at the CRAs to bring operating leases onto adjusted balance sheets. Similarly other items such as pension liabilities, securitization and factoring arrangements, capitalised interest, and hybrid capital instruments can be adjusted for by the CRAs. It is also worth noting that data feeds that incorporate such adjustments are available to market participants on a subscription basis. Whilst these approaches to operating leases vary, all incorporate a present value of minimum lease commitments (but with calculation differences and also the use of a multiple of annual rent expense as an alternative

overall 'borrowing'. In the UK, Adedeji and Stapleton (1996) estimated that £1 of finance leasing displaced about £0.55 of debt. Most studies have investigated only finance leases, but *Beattie, Goodacre and Thomson (2000a) found that £1 of leases (mainly operating leases) displaced approximately £0.23 of debt for UK companies.* [Italics — EE] See Goodacre (2003) “Assessing the potential impact of lease accounting reform: a review of the empirical evidence” *Journal of Property Research*, 20(1), March, 2003, pp. 49-66.

measure). As with the equity analysts, reclassification of the rent expense is to interest and depreciation expense (with zero net effect in each year).

The credit rating agency analysts that we interviewed saw IFRS 16 as being conceptually similar to the existing analytical adjustments made. As such, opinions of a company's underlying creditworthiness would generally not be expected to change in response to the adoption of IFRS 16. The main differences expected between IFRS 16 and the existing analytical adjustments are first that IFRS 16 will affect reported profit and loss (P&L) (i.e. depreciation and the interest expense need not equal the rental expense), and second that IFRS 16 will align approaches.

Standard financial metrics (such as debt / EBITDA, etc.) could change materially. This may take time for investors to internalise and adjust to. On the other hand, it is worth noting that financial metrics potentially affected by changes in operating leasing capitalisation account only for a fraction of a company's rating, alongside qualitative views on the issuer's performance, prospects and management. This means even a material impact in a relevant ratio (e.g. debt / EBITDA) might be insufficient in itself to result in a credit rating moving a notch.

This suggests that credit ratings largely reflect the impact of operating lease capitalisation already. More broadly, we examined the bond yields of various companies to assess whether operating leases are a significant determinant of those yields, and also whether their impact on yields is comparable to the impact of other forms of debt. Our regression analysis of 760 bonds from over 200 non-financial companies shows that operating leases are a significant determinant of bond yields. A positive and significantly different than zero⁶⁹ coefficient on capitalised operating lease variable indicates that higher operating lease liabilities would, as expected, be associated with higher bond yields. We set out in Appendix 6 the past academic literature adopted in this area, and further detail on the conduct of this work. The results are summarized below.

Table 5.7: Summary of yield analysis

	Coefficient	95% Confidence Interval	
Capitalised operating lease	5.19**	1.95	8.43
Debt	5.97***	4.51	7.43
Interest coverage	-0.01*	-0.01	0.00
Margin	-0.75**	-1.28	-0.21
Sector dummies	<i>Jointly significant***</i>		
Country dummies	<i>Jointly significant***</i>		
Bond characteristics	<i>Jointly significant ***</i>		

Note: * p<0.05, ** p<0.01, *** p<0.001. Number of observations = 732.

Source: Bloomberg, EE's analysis.

Further, the difference between the coefficients on operating leases and debt is not statistically significant, i.e. the impact of one unit of operating lease on the yield is equal to the impact of one unit of debt. This can be taken as indicating that the corporate bond market already reflects the capitalisation of operating leases, and this has been the finding of at least the more recent academic research in this area (see Appendix 6). On the other hand, alternative specifications based around current disclosure display similar explanatory power of the yields, i.e. models which use total operating lease obligations as reported in financial statements instead of operating leases capitalised in line with IFRS 16 explain the variation in bond yields almost as well as the above model with capitalised operating leases.

This indicates that fixed income markets are largely cognisant of the economics of operating leases, and therefore the additional benefit in terms of enhanced understanding by capital markets or improved comparability will again be limited. On the other hand, it also indicates that the scope for unpleasant surprises

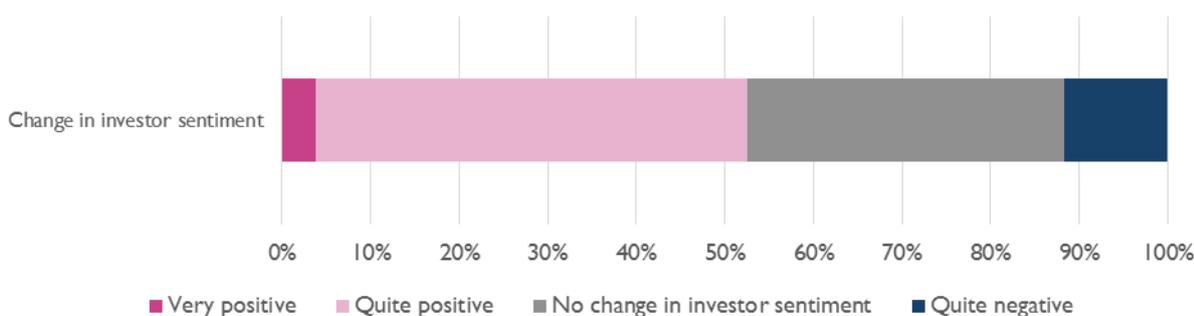
⁶⁹ We take the standard approach to determining significance, i.e. since the model predicts that with 95 per cent the coefficient on capitalised operating lease is within 1.95 to 8.43 range, we conclude that it is significantly different than zero.

around the creditworthiness of lessees is also quite limited. About ninety per cent of lessees expected unchanged credit ratings as a result of IFRS 16.

A recurrent point stressed both by equity and credit rating analysts relates to the existence of an effective ‘transition period’ between now and the time when new standard would enter into force (i.e. January 2019). This is expected to give the market some time to settle, and lessees and lessors of different sizes and sectors to get familiar with IFRS 16 and engage key stakeholders to explain its implications. However, they also agree about the missed opportunity for a full convergence with US GAAP. Whilst both standards bring operating leases on balance sheet, US GAAP will retain the distinction in the Income Statement, continuing to recognise a straight-line rental expense.

Lessees themselves broadly agreed there could be a positive impact from IFRS 16 on investor sentiment (52 per cent agreed or strongly agreed).⁷⁰ This is shown below. The 13 per cent of lessees who expected a negative shift in investor sentiment about themselves were relatively evenly spread by sector and country — all sectors had a net positive standpoint and all countries bar Poland (where there were only five lessees in the sample, one of whom expected a negative change against the others anticipating no change) also had a net positive expectation.

Figure 5.5: IFRS 16 benefits — summary of lessees’ view

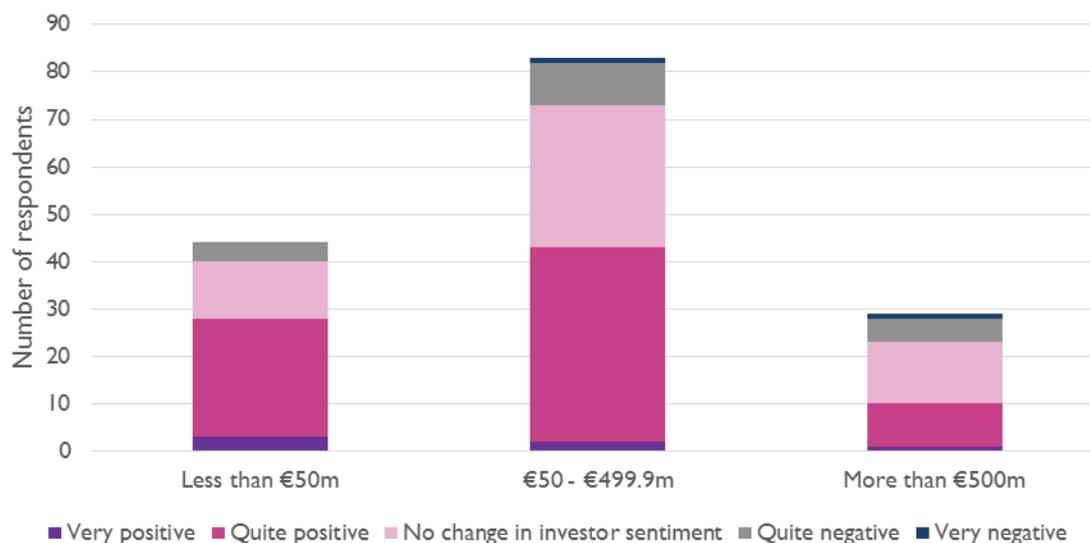


Lessees (156) “How, if at all, do you expect investor sentiment to change due to changes to financial reporting as a result of IFRS 16?”
Source: YouGov survey.

Whilst a slight majority (51 per cent) of lessees did not expect the changes to financial statements implied by IFRS 16 would be significant enough to require specific explanation to investors, 47 per cent stated that the changes would be sufficiently material. Positive, neutral and negative expectation regarding investor sentiment were similarly distributed among those who expect the changes to be material and those who expect them to be immaterial. Of those companies that foresaw a likely need to explain the changes to investors, less than 20 per cent already had a plan in place to do so.

If many equity analysts are already making relatively accurate adjustments, then changes in actual investor sentiment should be limited (i.e. the net benefit is likely to be small). The expectations of lessees around improving investor sentiment are negatively correlated with size, i.e. smaller lessees are more likely to expect an improvement in investor sentiment. This is illustrated below. It is worth noting that smaller listed companies are generally subject to less equity research effort than larger ones, and may not be covered by credit rating agencies at all.

⁷⁰ Four per cent expect the effect to be very positive, 48 per cent to be quite positive.

Figure 5.6: IFRS 16 benefits — summary of lessees' views by turnover

Note: Base: Lessees (156) “How, if at all, do you expect investor sentiment to change due to changes to financial reporting as a result of IFRS 16?”
Source: Europe Economics / YouGov survey.

Somewhat similarly, there could be a levelling effect whereby retail investors have access to information more similar to that available to larger, more sophisticated (i.e. institutional) investors. On the other hand, such investors will still likely have access to less information (i.e. reduced access to analysts’ reports and trading information). There may also be a need for such investors used to the previous presentation to “re-educate” themselves (in terms of key metrics, etc.). This may limit — perhaps materially — any benefit experienced by this group.

5.4.3 Private capital market effects

We have described how the implementation of IFRS 16 could materially affect — at least for a minority of lessees — ratios that feed into loan covenant calculations and the understanding of credit analysts of a company’s creditworthiness. Based on the above, corporate bond markets appear well-prepared to take the transition towards IFRS 16 in their stride. We now turn to private capital markets, particularly banks and similar non-bank loan providers — specifically whether these anticipate particular benefits to be achievable through IFRS 16.

Indeed, the survey shows that lessors and lenders broadly agree that the implementation of IFRS 16 will facilitate comparisons between prospective borrowers (63 per cent agreed or strongly agreed) and create a more level playing field (61 per cent agreed or strongly agreed). Lessors appeared to be slightly more inclined to agree with improved comparability than lenders whereas the views of both groups were very similar regarding creating level playing field.

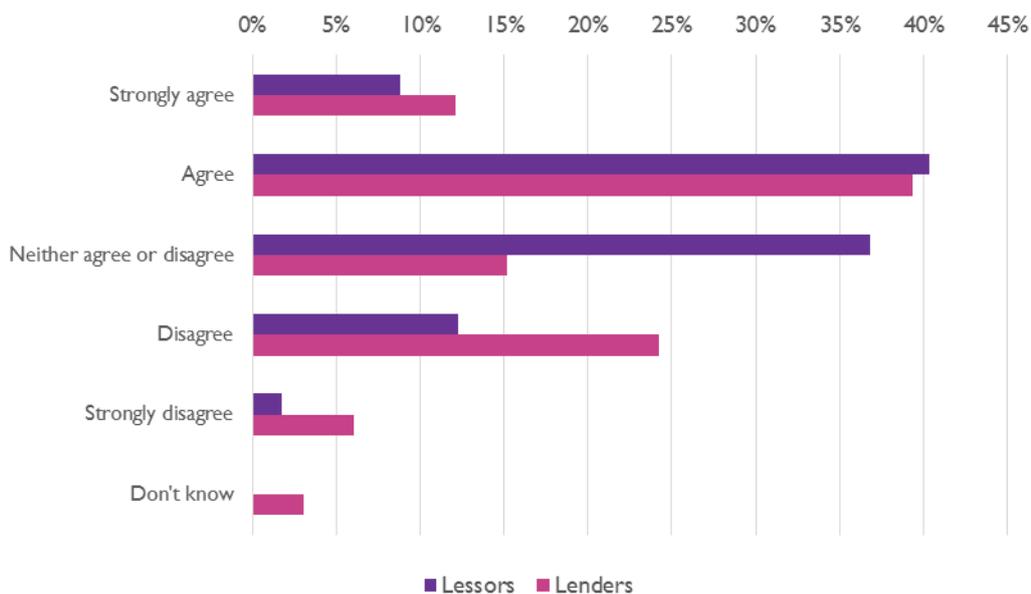
Figure 5.7: Facilitating comparison



Base: Lessors (57), Lenders (33); “To what extent, if at all, do you either agree or disagree that the implementation of IFRS 16 will alter your understanding of potential lessees'/borrowers' financial positions in any of the following ways? They will facilitate comparisons.”
 Source: YouGov survey.

Moreover, 50 per cent of our respondents (both lenders and lessors) either agreed or strongly agreed with the statement that IFRS 16 rules will remove subjective elements from operating lease capitalisation. As illustrated in Figure 5.8, lenders appeared to have stronger opinion in this respect than lessors — 52 per cent of lenders agreed with the statement but also a relatively large proportion disagreed (30 per cent). Lessors seemed more uncertain with 37 per cent of lessors stating that they neither agree nor disagree with the statement (compared to 15 per cent among lenders), but broadly expecting a positive impact (49 per cent either agreed or strongly agreed).

These results were not strongly linked to the size or SME-focus of lenders and lessors. Similarly, the net view (i.e. agree less disagree) of lenders and lessors from each Member State covered by the survey was positive.

Figure 5.8: Removing subjective elements from operating lease capitalisation

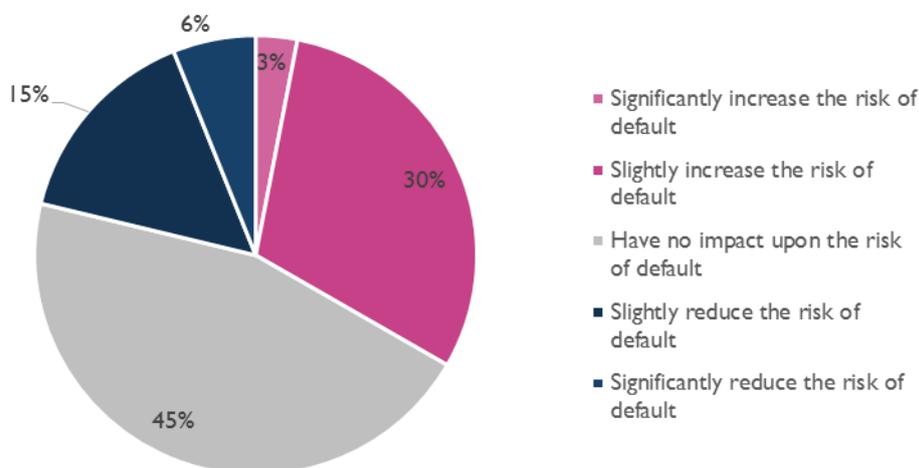
Base: Lessors (57), Lenders (33); " To what extent, if at all, do you either agree or disagree that the implementation of IFRS 16 will alter your understanding of potential lessees'/borrowers' financial positions in any of the following ways? They will remove subjective elements from operating lease capitalisation."

Source: YouGov survey.

All these outcomes suggest that IFRS 16 could contribute towards fairer competition in the market — with easier and more equal access to the relevant information about the way lease contracts are structured. The extent to which these benefits materialise depends on whether market participants are currently inefficient or limited in estimating the effect of off-balance sheet obligations. As we have described in Chapter 4, there is a substantial minority for whom IFRS 16 would represent a material change in approach. A cautionary note is that some stakeholders are concerned that IFRS 16 may *introduce* some elements of subjectivity due to differences in the approach adopted by lessees in determining asset life, etc.

A further possibility is that, if IFRS 16 reduces any information asymmetry between borrowers and lenders, then pricing risk (i.e. the risk of pricing a loan incorrectly). The above findings, particularly around reducing subjectivity, showed that some contribution to reducing information asymmetry is anticipated by a majority of lenders — albeit with a substantial minority that do not expect this (and may even anticipate a worsening situation).

A lender to a company is not reliant solely on the company's financial statements. It can access internal management and financial information, which can complement the existing disclosure around operating leases already contained in the financial statements. As we have noted elsewhere, operating leases are off-balance sheet but not off-financial statements. At least as a result of implementation, operating and financing cash flows will be unchanged by an adjustment in accounting treatment. As such the default risk should be unchanged. However, when asked directly about the anticipated impact of IFRS 16 upon default risk, a majority of lenders expected a change with more lenders expecting default risk would increase than reduce.

Figure 5.9 Lenders' perception on the risk of default due to IFRS 16

Base: 33 lenders.
Source: YouGov Survey.

A way of, perhaps, reconciling this with the views expressed by lenders would be to recognise that recognised earnings would likely be less even under IFRS 16 than now (an advantage of IAS 17 is that the rental expense is generally relatively stable, whereas the profit and loss impact of leases under IFRS 16 will vary from year to year — although with sufficient information disclosure the latter variation should be reasonably predictable by users). This could mean that the lenders perceive there would be an increased likelihood over time of a technical default (i.e. due to a breach of a covenant) rather than a change in underlying creditworthiness (i.e. the likelihood of ultimately repaying the debt on time and in full).

We have discussed at 5.3.2 the scope for cost savings to be made by lenders that would no longer consider adjustments to financial statements to be necessary.

5.5 Behavioural changes and potential unintended consequences

There might be a number of potential changes in a company's decisions related to leases. For example, current lessees might prefer to (raise debt and) buy rather than lease an asset going forward. Since both debt and leases would be treated equally in financial statements, lessees might thus have stronger incentives to own. However, Beattie et al. (2006) report that preparers seem to disagree with this conclusion. This might suggest that either operating leases would still be an attractive financing method⁷¹ or that companies do not always have the choice between buying and leasing.

Alternatively, lessees might try to renegotiate the terms of current and future leases so that they are classified as short-term (which do not have to be reported on the balance sheet). This would mean shifting the risk towards lessors as they would bear the risk of lessees not renewing the contracts and the relevant assets not being fully utilised. In their survey, Beattie et al. (2006) report an agreement among users and preparers that lease terms would shorten to minimise lessees' balance-sheet obligations. Likewise, lessees could seek

⁷¹ IFRS Foundation (2016) argue that there are a number of benefits associated with lease contracts, e.g. financing of assets without any supplementary guarantees, source of finance independent of bank loans or credit lines, ability to use assets without legal ownership, a way of sharing risk and profits between a lessee and lessor, operational flexibility, ability to use an asset for only the needed proportion of the asset's total economic life. See IFRS Foundation (2016) "IFRS 16 Leases. Effects Analysis".

leases which are based on variable payments or which could be interpreted as services, as opposed to asset leases.

As a result of the above, there could be consequences not only for lessees but for the structure and business strategies in the broader leasing / business financing market. In this respect, taking the property market as an example, Goodacre (2003) argues that shorter term and more flexible lease contracts “may result in increased market rents to compensate landlords for the reduction in the security that long-term leases currently offer”.⁷²

The distribution of this higher cost between lessees and lessors could depend on the characteristics of the particular market (in prime sites lessees would be more likely to bear the costs, but where the demand for property is weaker lessors would have less bargaining power to impose additional costs on lessees). Moreover, Moore Stephens (2016) argue that the combination of higher gearing and shorter lease terms could have an adverse impact on the market values of the leased properties.⁷³ Nevertheless, Goodacre (2003) suggests that in the long-term investors would be compensated for the higher risk with greater returns and, thus, a material decline in investors’ appetite to invest in real estate is unlikely.

Clearly, lessees would be more incentivised to seek solutions that minimise the value of operating leases reported in financial statements if the market is not informationally efficient, i.e. if companies take advantage of market participants failing to adequately account for off-balance sheet debt in their analyses. However, to some extent, it is also possible that such outcomes would occur in an efficient market as long as lessees believe that the off-balance sheet information is not processed efficiently by market participants.⁷⁴

There are two broad ways in which lessee companies might change their future financing behaviour:

- They could seek to maintain off-balance sheet presentation by adjusting leasing terms. Any pricing premium sought by lessors could act as counterweight to such a move.
- They could accept the balance sheet presentation implied by IFRS 16 but reconsider the residual advantage of operating leases against other forms of finance. If an alternative is cheaper, then they will switch.

5.5.1 Adjusting lease terms

A company may enter into an operating lease for a mix of reasons. For example, a company is more likely to lease (and reap the benefits of the inherent operational flexibility) when its long-term funding needs are unclear.⁷⁵ Another important factor is off-balance sheet presentation and IFRS 16 will significantly affect the latter, by bringing a liability and ROU asset onto the balance sheet.⁷⁶

As a result, a company’s decision-making may alter. Since both debt and leases would be treated equally in financial statements, lessees might have stronger incentives to buy rather than lease an asset going forward.

⁷² Goodacre (2003) “Assessing the potential impact of lease accounting reform: a review of the empirical evidence” *Journal of Property Research*, 20(1), pp. 49-66.

⁷³ Moore Stephens (2016) “IFRS 16 Leases — The impact for property investors”, <http://www.moorestephens.co.uk/news-views/february-2016/ifrs-16-leases-the-impact-for-property-investors>, accessed at 23/09/2016.

⁷⁴ See Goodacre (2003) for further references.

⁷⁵ In the case of property, for instance, leasing may also allow companies to avoid directly involvement in property management.

⁷⁶ Similarly the IFRS Foundation (2016) argue that there are a number of benefits associated with lease contracts, e.g. financing of assets without any supplementary guarantees, source of finance independent of bank loans or credit lines, ability to use assets without legal ownership, a way of sharing risk and profits between a lessee and lessor, operational flexibility, ability to use an asset for only the needed proportion of the asset’s total economic life. See IFRS Foundation (2016) “IFRS 16 Leases: Effects Analysis”.

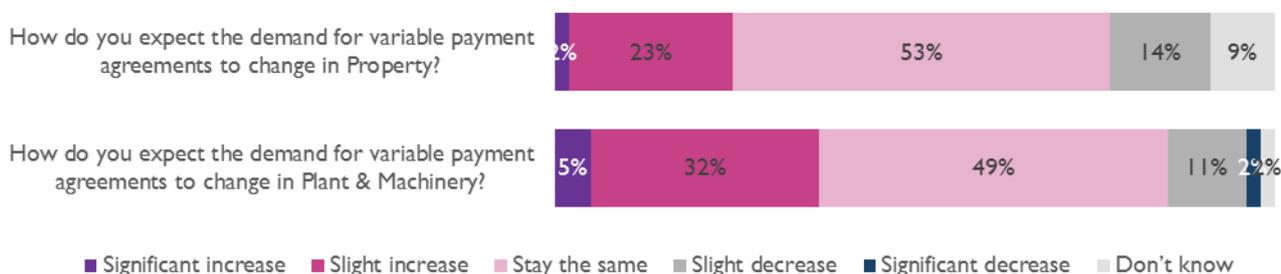
The final decision between leasing and purchasing, however, will ultimately depend on the main reason a company chose to lease. This would be particularly the case where off-balance sheet presentation was an important variable in the leasing decision, but operating leases would still be an attractive financing method for companies, e.g. those that have restricted funding sources or else facing some ambiguity surrounding future asset demand.

However, lessees might seek to retain the off-balance sheet nature of this financing method, by seeking to:

- Modify the terms of current and future leases so that they are classified as short-term. This however would mean shifting the risk primarily towards lessors as they would be exposed to lessees not renewing the contracts and thus assets not being fully utilised.⁷⁷ This could mean lessees benefit from additional operational flexibility (e.g. leasing plant that is subject to ongoing rapid technological change) but would also be compensating lessors for this. Even aside from a reduced ability to lock-in favourable prices, such additional flexibility could equally create planning challenges (particularly with property leasing). Similarly, Goodacre (2003) argues that shorter term and more flexible lease contracts in the property market “may result in increased market rents to compensate landlords for the reduction in the security that long-term leases currently offer”.
- Enter into leases which are based on variable payments, or which could be interpreted as services rather than as leases. Again, this would affect the risk-sharing implicit in the agreement.

The ultimate aim of the above would be to minimise the impact of IFRS 16. A majority of lessees (i.e. roughly 60 per cent in the YouGov data) were identified as being likely to at least consider such a shift. Some lessors also have similar expectations, as can be seen in Figure 5.10 and Figure 5.11 below, respectively.

Figure 5.10: Lessors’ expected future demand for variable payment agreements



Source: YouGov.

Figure 5.11: Lessors’ expected demand for shorter lease terms



Source: YouGov.

The above shows that both lessees and lessors anticipate some dialogue around changing lease terms. We have noted already that any such change in leasing terms would affect the risk-sharing between the lessor

⁷⁷ In their survey, Beattie at al. (2006) find that users and preparers both agreed that lease terms would shorten to minimise lessees’ balance-sheet obligations.

and lessee within a lease. We would expect this to be reflected in revised financial terms. We now explore this, starting with data available from the YouGov survey of lessors. Indeed, the majority of lessors expect to seek additional compensation for making such changes.

Table 5.8: Number of lessors per anticipated basis point increase

	0-5bp	6-10bp	11-20bp	+ 20bp
Variable payment agreements for plant and machinery	5	7	2	2
Variable payment agreements for property	4	6	2	0
Shorter lease periods for plant and machinery	6	8	2	2
Shorter lease periods for property	5	6	6	3

Source: YouGov.

However, most lessees are — understandably — resistant of price increases (see Figure 5.12 below) and appear reluctant to pay a premium in order to maintain off-balance sheet financing. We illustrate this through an exercise based on lessees’ stated preferences around the reduction in the cost difference (between leasing and the next best source of alternative financing, in terms of basis points) that would be sufficient to trigger a switch.⁷⁸ The rationale for this exercise is that we can infer lessees’ sensitivity to the pricing of operating leases by examining how much cheaper an alternative financing option needs to become in order to trigger a switch, and compare that sensitivity to the increases suggested to be required by lessors. Where there is divergence between the preferences of lessees and lessors this suggests that the former may find it difficult to identify a matching lessor in order to adjust terms and so maintain off balance-sheet presentation.

This is particularly the case for property leases, where nearly half of respondents stated that a reduction in the price differential compared to alternative financing options of 0-5 basis points would be necessary to trigger a switch. The stated pricing preferences across lessees and lessors (see Figure 5.12 below) indicate that many lessees who might wish as a first preference to vary lease terms may find the premium required by lessors prohibitive.

Figure 5.12: Lessees’ price sensitivity

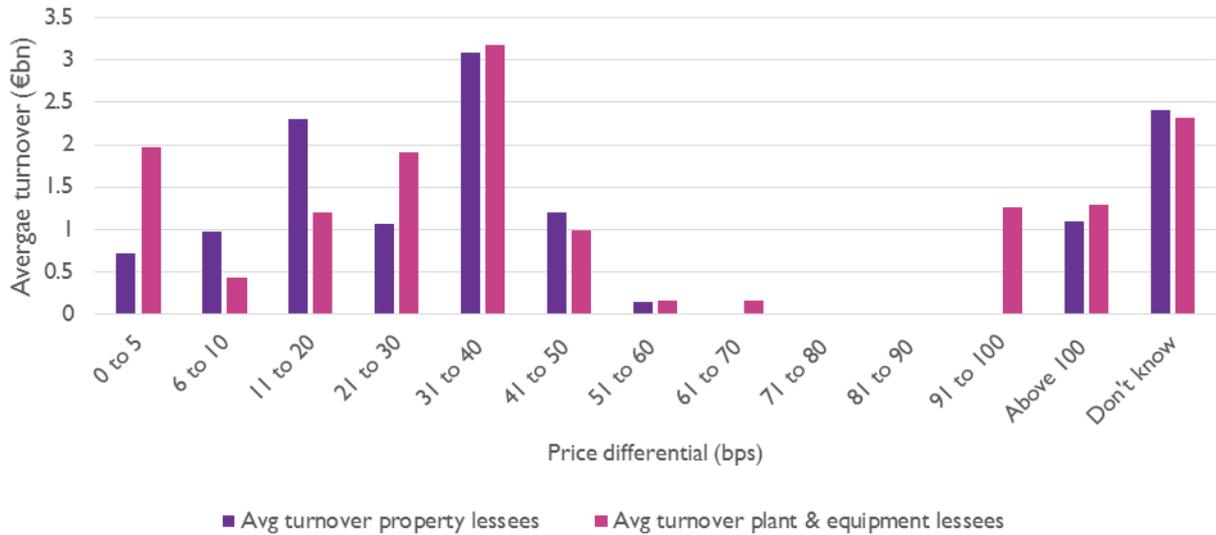


Source: YouGov.

⁷⁸ This exercise aims at conducting a high-level analysis of potential dichotomies in lessees’ and lessors’ stated pricing preferences as reported in the YouGov survey data. As such, it does not account for all the dynamics in the property and plant & equipment markets.

The higher sensitivity in property leasing is mainly driven by smaller and medium-sized lessees (in the context of listed companies), with an average turnover of roughly €0.7 billion. In contrast plant & equipment lessees who would require a 0-5 basis point price change to consider switching away from operating leasing appear considerably larger in size, with an average turnover of about €2 billion. The fact that smaller property lessees and larger plant & equipment lessees are more price sensitive will have an impact on the scale of the switching away from leasing on the leasing industry (see Section 5.5.2).

Figure 5.13: Lessees’ price sensitivity by lessees’ average turnover



Source: Europe Economics research based on YouGov survey data.

These results persist when we substitute the PV of all leasing obligations currently recognised by lessees for lessee turnover (see sections 7.2.1 and 7.3.1 in the Appendix) as an alternative proxy for impact, as can be seen below:

Figure 5.14: Lessees’ price sensitivity by lessees’ average PV leasing



Source: Europe Economics analysis based on YouGov survey data.

In order to further explore lessees’ price sensitivity we engaged in a modelling exercise, combining the above data from both lessees and lessors. More specifically, the price sensitivity of lessees was combined with their motivations for having an operating lease, i.e. whether balance sheet presentation was cited as an important

factor in this decision. The main rationale for augmenting the exercise in this way is to see whether there is a correlation between the extent of lessees' price sensitivity and the main reason (or reasons) for using operating leasing in the first place.

We considered various scenarios. We start with those lessees with a property lease, balance sheet presentation was frequently cited as an important motivation (31 per cent of such lessees) or the single most important motivation (13 per cent of lessees). The majority of these lessees (i.e. roughly six per cent of all lessees in the sample) appear willing to switch away from leasing in the event of 0-5bp closing of the gap with alternative financing options. The majority of lessors on the other hand would require a premium of 6-10bp and 6-20bp for variable lease payments and shorter terms, respectively.

Figure 5.15: Price sensitivity of property lessees likely to switch and motivated by balance sheet presentation



Source: Europe Economics analysis based on YouGov survey.

This implies that many of the lessees would find it difficult (or even impossible) to locate a matching lessor to develop a lease that would enable the continuation of off balance-sheet presentation. On the other hand, these lessees would clearly be highly motivated to try. We also constructed a scenario capturing the price sensitivity of property lessees for which the existing balance sheet presentation is among the main but not the most important reason for operating lease selection. As can be seen in the following figure, the results are not dissimilar with a majority of such lessees potentially priced out of making such a switch.

Figure 5.16: Price sensitivity of property lessees likely to switch and regarding balance sheet presentation as primary but not the most important reason for operating lease selection



Source: Europe Economics analysis based on YouGov survey.

By contrast, we now focus on those lessees whose most important reason for operating lease selection is operational flexibility. These lessees are less numerous, but apparently also less price sensitive than those motivated by balance sheet presentation, as the majority of respondents (i.e. roughly 4 per cent of all lessees in the sample) would only consider a switch provided a price shift above 21 bp. These lessees clearly would be able to accommodate the scale of price change anticipated by lessors — but it is not clear that they would be motivated to do so.

Figure 5.17: Price sensitivity of property lessees likely to switch and motivated by operational flexibility



Source: Europe Economics analysis based on YouGov survey.

Amongst plant and equipment lessees, price sensitivity is generally less marked — as is balance sheet presentation as a motivating factor. An equivalent exercise considering those lessees at least partly motivated by balance sheet presentation indicates that most will likely be able to secure some form of re-negotiated leasing agreements.

Figure 5.18: Price sensitivity of plant and equipment lessees likely to switch and motivated by balance sheet presentation



Source: Europe Economics analysis based on YouGov survey.

Overall, the results indicate that lessees that engage in operating leases primarily for balance sheet presentation purposes are not less price sensitive relative to lessees engaging in operating leases primarily for other reasons. This limits their anticipated appetite to change the basis of their leasing towards terms that would circumvent IFRS 16. Our analysis suggests that about 2–3 per cent of plant and equipment lessees, and 11–13 per cent of property lessees would be motivated to switch substantial elements within their leasing portfolio to shorter-term leases or leases incorporating variable payment structures — and also be likely to find a willing lessor. This would likely not mean many lessees switching 100 per cent of their leasing portfolio in this way — on the other hand, nor does it preclude other lessees seeking to alter the terms on a few, important leases.

Given the above analysis and taking the above estimates as the best available approximation of the overall effect — and combining these with the total annual operating lease obligations described in Section 4.4 — then this implies the value of operating leases that would move to short-term or variable payment leases might be in the range of €3.8–€5.1 billion.⁷⁹ If we take it that lessors would most likely require a premium of 6-10bps, this switch would cost lessees at least €2.3 million in the best case scenario (i.e. where only €3.8 billion of operating leases switch to short-term/variable terms at a cost of 6bps), and up to €5.1 million (where €5.1 billion worth of operating leases switch at a cost of 10bps).

It is important to note that, whilst there would be increased financing costs here and also costs on both sides due to the (re-)negotiation process, these would not be compliance costs as such — as these costs would be incurred largely for the purpose of regulatory arbitrage (i.e. avoiding compliance).

5.5.2 Switching to other forms of finance

Based on the figures derived in Sections 4.4 and 5.3, we can estimate the increase in the cost of financing using operating leases. With the total operating lease obligations due within one year being around €128 billion and the total annual ongoing cost being around €40-46 million, then — if these costs are fully attributed by lessees only to the costs of operating leases — this is equivalent to an increase in the cost of financing via operating leases in the range of 3-3.5bps. Alternatively, it could be that the lessees treat such ongoing costs as effectively sunk costs (and, indeed, we already assume that the one-off costs would be treated as sunk costs, and so not have any effect on the ongoing pricing of the operating lease contracts). This approach

⁷⁹ €3.8 billion = 2% * €115 billion + 11% * €13 billion; €5.1 billion = 3% * €115 billion + 13% * €13 billion.

assumes that the additional ongoing annual cost would be indeed attributed to the cost of former operating leases by lessees rather than absorbed as overheads or spread across other business areas as well. This may be an extreme assumption. It would require the affected companies to monitor and track such additional accounting costs, rather than absorbing such costs into business-as-usual expenses.

Faced with higher leasing costs, lessees would have various choices other than simply absorbing those costs. In particular, lessees could seek a compensating price adjustment (i.e. requiring lessors to adjust the cost of leasing) or to switch to alternative sources of finance. In turn, whilst lessors would clearly prefer the lessees to bear the additional cost, given the small magnitude of the cost increase, it might be reasonable for lessors to accept slightly lower margins by increasing lease prices. Alternatively, lessors might be unwilling (or even unable) to accept a reduction in margin, in which case some volume effect would come into play.

Below we examine these two basic possibilities in four different scenarios — two assuming a pricing impact, and two analysing a potential volume impact.

- Scenario A — High impact price effect.
- Scenario B — Low impact price effect.
- Scenario C — High impact volume effect.
- Scenario D — Low impact volume effect.

Price effect

Lessors may be willing and able to negotiate compensatory pricing adjustments. These are Scenario A and B, whereby A reflects a compensating price change broadly equal to €40–46 million (as above) whereas in Scenario B the price effect is less (e.g. because lessees are viewing the incremental costs as largely sunk). In both cases, this would transfer cost to the lessors (reducing their margin) but avoid — or at least mitigate — any demand reduction from listed lessees.

Volume effect

As discussed in the previous section, if lease pricing does not change then a 3-3.5bps price change (relative to the next most attractive source of finance) might trigger some proportion of lessees to at least *consider* switching to a different funding option (see Figure 5.12). In particular, 45 per cent of property lessees and 24 per cent of plant & equipment lessees stated they would consider other funding options if the price advantage of leasing reduced by 0-5bps. In terms of scale, these represent around 32 per cent of property leasing and 36 per cent of plant & equipment leasing in the YouGov sample.

Since preferences which are simply stated by respondents (as opposed to preferences revealed in market choices) are subject to biases and may overestimate the actual volume of switching, we can expect that the number of lessees that would actually switch is lower. In particular, we assume that among those who said to consider switching as a result of a 0-5 bps price difference, the group that would be most likely to actually switch are those who also said that the overall cost is an important reason for choosing operating leases. Based on the survey, the proportion of plant & equipment lessees for whom the overall cost of financing is an important factor and who would be sensitive to 0-5bps price changes is seven per cent. The equivalent proportion of property lessees is ten per cent. Part of this group would be those lessees where balance sheet presentation is an important motivating factor, but which have been too price sensitive to secure an adjustment in lease terms in the way described at 5.5.1 above. This latter group of lessees may be motivated to switch, absent any price reduction, once the apparent “advantages” around balance sheet presentation are removed.

We assume that for some of those respondents a price difference in the range of 3-3.5bps might not be enough to justify the switch,⁸⁰ and thus we assume that only half of them would actually switch away from

⁸⁰ It is more plausible that among those who said that a 0-5bps price difference would trigger a switch to an alternative finance option, a majority is closer to the upper bound of the 0-5bps range rather than the lower bound.

leasing, i.e. 3.5 per cent of plant & equipment lessees, and five per cent of property lessees. In terms of scale, these lessees represent 4.5 per cent of plant & equipment leasing and 5.5 per cent of property leasing in the YouGov sample. These figures are our high impact volume effect scenario (Scenario C).

Given the volume of the total demand from listed companies for operating lease obligations per year being €115 billion for plant & equipment leases and €13 billion for property leases, this would imply a total decline in the volume of operating leases around €5.9 billion (€5.2 billion for plant & equipment leases and €0.7 billion for property leases). Since we are predominantly interested in the impact on the EU / EEA leasing market, we also consider the proportion of the total operating lease obligations that fall within the EU / EEA. Based on our analysis of the reports segmented by geographic regions available from Bloomberg, we assume that 65 per cent would be sourced from EU / EEA lessors. This implies that the maximum reduction in demand from EU / EEA lessors would be €3.8 billion.

In Scenario D (low impact volume effect) we assume that among those who said to consider switching as a result of a 0-5 bps price difference, a group that would actually switch are those who said that the overall cost is a *single* most important reason for choosing operating leases. The analysis of the survey responses shows that a little over one per cent of plant & equipment lessees and four per cent of property lessees would be in this group. In terms of scale, these lessees represent 0.05 per cent of plant & equipment leasing and 0.5 per cent of property leasing. These figures represent our low impact volume effect scenario (Scenario D). We analyse Scenario D in an analogous way, with the only difference being that we assume 0.5 per cent of property leases and 0.05 per cent of plant & equipment leases would switch. The overall decline in the volume of annual operating lease obligations in the EU / EEA would be less than 0.1 per cent.

We note the views of the stakeholders that participated in our fieldwork were that no major changes in the demand for operating leases were expected. We consider all of the four scenarios outlined above are consistent with that view.

5.6 Wider impacts

The implementation of IFRS 16 will only directly impact on those companies listed on EU-based Regulated Markets (and certain MTFs) with operating leases and those financial institutions financing these companies (i.e. lessors and lenders). Other stakeholders could be indirectly affected.

There could also be level-playing field effects for those companies without operating leases as their financial statements' comparability with those using such leases would increase.

A further group that could be affected would be unlisted companies, including SMEs, which use operating leases as a source of financing. There are a number of ways in which this could work. First, listed companies account for a significant share of the leasing market. Impacts in that segment of the market could spill-over to other segments. For example, if listed companies, in aggregate, demanded less leasing, the leasing industry could deploy various strategies to recoup any lost revenues, if it wished to (it is worth recalling that, as described in Chapter 4, the majority of leasing in the EU / EEA is through subsidiaries of banks, i.e. probably the most likely providers of alternative financing). Lessors could seek to substitute this with a greater volume of leasing with unlisted companies and SMEs (implicitly by reducing prices to those customers). On the other hand, lessors might reduce pricing with listed customers (to at least recover lost volume) whilst seeking to increase revenues elsewhere (either again through increased volumes, at more competitive pricing, or through increased prices — if some form of additional market segmentation is possible). In an extreme case, if the viability of some lessors were affected, then the availability of leasing as a product could be impacted (at least in some niche segments such as property or aviation leasing).

We also note that IFRS 16 was developed in collaboration with the US FASB (Financial Accounting Standards Board).⁸¹ While some differences remain, both IASB and FASB agreed on the main proposal to bring operating leases on the balance sheet and income statement. As a result, IFRS 16 should not create major discrepancies between the accounting standards in Europe and the US. However, for those companies with multiple listings, any such difference could add to reporting costs.

The basic scope of the IAS Regulation is to affect the consolidated financial statements of listed companies. Corporate taxation is normally at the company level, which may apply national GAAP or local tax rules. However IFRS can be applied in individual accounts and in these cases there could be timing differences for individual companies in terms of the payment of corporate taxation due. The Anti-Tax Avoidance Directive (ATAD) includes a group rule where IFRS could be more generally relevant. We discuss this further below.

5.6.1 Wider impacts — impacts on the funding of listed lessees

The overall demand and supply of bank credit in the EU to corporates is currently relatively stable, with signs of increasing demand, at least from larger corporates. In the Euro Area, the European Central Bank's (ECB's) survey of credit conditions as at Q3 2016 found that credit availability was broadly unchanged from earlier in the year, with any easing of credit standards applicable only to larger enterprises, and very small in scale.⁸² This was largely driven by competitive pressure amongst banks (albeit this was experienced unevenly across the countries comprising the Euro Area). Net demand for loans to enterprises continued to increase in Q3 of 2016. Again, this was not evenly experienced, with net demand increasing in France, the Netherlands and Germany but decreasing in Spain and Italy. Somewhat similarly, the Bank of England's Q3 2016 Credit Conditions survey found credit availability to corporates to be unchanged for the tenth consecutive quarter. The Bank of England found that whereas credit demand from larger corporates was increasing and expected to continue to increase, demand from SMEs was declining — and expected to continue to track downwards.

Overall, they do not expect significant changes in capital allocation for lessees. Although IFRS 16 has a clear impact on the disclosure of total indebtedness, a change in the reporting methods of the existing leases (all else being equal) should not impact a company's business operations or risks and hence should not change the economic cost of capital.

5.6.2 Wider impacts — taxation impacts

Under the IAS Regulation IFRS 16 would apply mainly to consolidated financial statements. Taxes are generally levied on companies' individual taxable profits, so a change in the reporting of leases in the consolidated financial statements should not have a significant taxation impact. Nonetheless some impacts are possible and these are discussed below.

Generally, the tax treatment of operating leases is to allow the rental paid in full as a deductible against profit. (There are exceptions to this: in the UK, long funding lease provisions result in a hybrid treatment whereby part of the rent is deductible and part is replaced by the capital allowance system⁸³).

If there is a switch towards following the accounting treatment more closely then corporate taxation could be impacted in two ways. The first way is through timing differences in payment. To illustrate let us compare the amounts deductible from income for tax purposes each year in two tax treatments of operating leases:

- Scenario A — lessee can deduct the full amount of rental payments each year.

⁸¹ EY (2016) "Leases. A summary of IFRS 16 and its effects".

⁸² ECB (2016) "The euro area bank lending survey", downloadable [here](#).

⁸³ This is explained — briefly — in the HMRC's consultation paper on IFRS 16, downloadable at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/544654/Lease_accounting_changes-tax_response-consultation_document.pdf.

- Scenario B — lessee can deduct the amount based on the accounting entries, i.e. finance element of rentals and right of use asset depreciation.

Let us assume the asset cost is €60,000, lease term is five years, expected residual value in five years is €20,000, annual rent is €9,496, and the implicit interest rate is six per cent. In scenario A, a lessee would be able to deduct €9,496 each year for the lease term. In scenario B, a lessee would be eligible to deduct the sum of the right of use asset depreciation and finance element of rentals. In our example, that would be

Table 5.9: Scenario B — illustration of tax deductions

	Year 1	Year 2	Year 3	Year 4	Year 5
Right of use asset depreciation	8,000	8,000	8,000	8,000	8,000
Finance element of rentals	2,400	1,974	1,523	1,045	537
Tax deductible	10,400	9,974	9,523	9,045	8,537

Source: HMRC (2016), “Lease Accounting Changes: Tax Response”.

While the total amount deductible from income in both scenarios is the same, but — compared to scenario A — the tax treatment in scenario B would allow the lessee to pay lower taxes in the first three years and higher taxes in the following two years. This shows that even if after the implementation of the IFRS 16 the tax authorities aim to remain neutral in terms of the total amount brought to charge for tax and the total relief available to lessees, there might be timing differences in payments that could affect both lessees and lessors.

Second, and again only if and to the extent that tax authorities decided to follow the accounting treatment, then this could intermesh with proposals that limit debt interest’s deductibility as a business expense. In response to the OECD’s Base Erosion and Profit Shifting (BEPS) proposals,⁸⁴ the European Commission has prepared the ATAD. The ATAD covers all taxpayers that are subject to corporate tax in one or more Member State with the exemption of fully standalone entities and financial undertakings (including financial undertakings which are part of a consolidated group). The Directive includes the fixed ratio rule where the exceeding borrowing costs⁸⁵ can be deducted up to 30 per cent of EBITDA. The fixed ratio rule would not apply to companies with “exceeding borrowing costs” up to €3m. The directive also includes two alternative group rules, which allow group members to deduct interest expenses above the fixed ratio if they satisfy certain conditions.

- First, based on an equity to total assets ratio. This would allow a group member to fully deduct the net interest as long as its equity to total assets ratio is no higher than the equivalent ratio for the entire group, subject to a condition that intragroup interest payments do not exceed 10 per cent of the group’s total net interest expense.
- Second, based on the ratio of net interest to EBITDA at the group level. This would allow a group member to deduct exceeding borrowing costs up to the level of the group’s ratio of net interest to EBITDA. The group’s ratio would be determined by dividing the exceeding borrowing costs of the group vis-à-vis third-parties over the EBITDA of the group.

There are also some transitional rules. In particular, Member States may exclude from the scope exceeding borrowing costs incurred on loans concluded before 17 June 2016 and on loans used to fund long-term public infrastructure projects. The Directive also allows for provisions enabling companies to carry forward and back exceeding borrowing costs and carry forward unused interest capacity, which cannot be deducted in the current tax period.

⁸⁴ OECD (2015) “Limiting Base Erosion Involving Interest Deductions and Other Financial Payments. ACTION 4: 2015 Final Report”.

⁸⁵ Exceeding borrowing cost is the difference between the deductible borrowing costs and taxable interest revenues and other economically equivalent taxable revenues.

Whilst IFRS 16 would apply mainly to consolidated financial statements (and, as we have noted already above, taxes are calculated on the level of individual companies), the group rules available under ATAD might create an interaction between IFRS 16 and the interest deductibility limits.

IFRS 16 rules might increase the amount companies could deduct from income for tax purposes because of the impact IFRS 16 would have on EBITDA and total assets. This would critically depend on the tax rules that would be adopted or already in place⁸⁶ in each Member State. However, as long as the interest deductibility limit is defined relative to EBITDA some of the interest expenses which would otherwise fall above the specified threshold would now become deductible as EBITDA increases as a result of IFRS 16. Similarly, the impact on total assets might increase the relevance of the group rule included in ATAD. As such, bringing interest and depreciation into the income statement might create a *benefit* for companies.

In order to estimate whether there could be any *negative* consequences of the interaction between IFRS 16 and ATAD, we examined the results of our model illustrating the accounting adjustments necessary to comply with IFRS 16. It showed that there are only 18 companies (less than one per cent of the population) which had the interest to EBITDA ratio below 30 per cent in 2015, but would likely see the ratio to grow above 30 per cent after the implementation of IFRS 16 and interest expenses to exceed the €3 million threshold. A large majority of those companies (16 out of 18) had a negative EBITDA in 2015,⁸⁷ which indicates that the implementation of the ATAD is unlikely to pose significant difficulties for the EU companies with non-zero operating lease obligations.

5.6.3 Wider impacts — impact on the leasing sector

In this section, we discuss how the above could interact with the leasing sector, specifically whether the latter's sustainability could be affected.

Potential changes in demand for leasing

The off-balance sheet accounting approach applicable to operating leases is a significant decision variable for at least some lessees. As we have discussed above, this could drive increased interest in varying lease terms such that off-balance sheet presentation could be maintained. However, the latter would change the economic terms of the lease (i.e. lessors would be obliged to take on more risk). Whilst the appetite of lessors to take this additional risk may be there, any such change would be expected to be reflected in the pricing of the lease — and this may well restrict how many leases are subject to such variation in reality.

Those lessee companies prioritising other features of leasing (e.g. increased operational flexibility) may be unconcerned about the new accounting treatment in itself, or at least unwilling to pay any premium to sustain an off-balance sheet approach. These companies will then be faced with an existing funding option with broadly the same accounting treatment as any alternative funding options available to it (e.g. bank lending, and it is worth recalling that the majority of leasing companies are banking subsidiaries, as noted in Chapter 4). This could promote increased competition, at least at the margin, and could see some switching from leasing towards other funding channels.

It looks likely that leasing of property and the leasing of plant and equipment will experience these pressures differently. In plant and equipment leasing, balance sheet presentation is — overall — less important than features such as operational flexibility and, indeed, overall pricing. Balance sheet presentation is more critical in property leasing (although, given the apparent price sensitivity of lessees here, the appetite to pay a marked premium for this is quite constrained). In Section 5.5.2, our scenario analysis showed that the expected reduction in the overall volume of annual operating lease obligations for listed companies in the EU / EEA

⁸⁶ As in the case of Germany, where interest expense deductibility limit has already been introduced.

⁸⁷ On aggregate, the pre-tax income of those 18 companies was around -€ 2.15bn in 2015 (i.e. they were loss-making in aggregate).

could be in the order of 6 per cent, which corresponds to an estimated total reduction in new leasing volume of €8 billion — or about €5 billion in Europe.

Moreover, we need to consider the impact on the leasing industry (i.e. including lessees such as unlisted companies, consumers and public bodies — not just corporate leasing). The annual total volume of new leasing is overall more than double that of listed companies. Therefore, a decline of €5 billion represents about two per cent of the European leasing industry experiencing a smaller reduction in volumes that is close to three per cent, and possibly lower.

This should not be a material or significant reduction in volumes in the context of the whole European leasing industry. (Indeed, as we have noted in the previous section, it is possible that lessors would seek to avoid any reduction in volume by reducing pricing with affected customers. In this case, of course, we would also expect lessors to seek compensating price adjustments in other market segments available to them — such as unlisted lessees).

In terms of the sustainability of the leasing industry, none of the scenarios described at 5.5.2 above would be likely to affect this in aggregate. The majority of leasing companies are banking subsidiaries, so any switch from leasing to borrowing would — at least to some extent — be a transfer between different parts of banks, and not impact on the desirability to the bank of maintaining a leasing business. Even so, lessors — particularly those that are independently owned — are likely to be differently affected depending on the extent to which they are “specialist” in either property or plant and equipment. As a result, there could be (likely limited) pressure for concentration amongst such specialist participants.

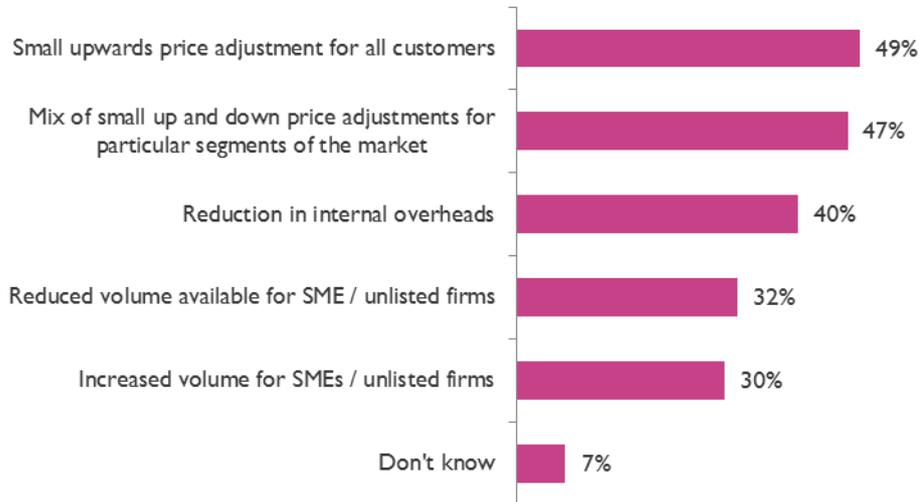
Any effects for other market participants might emerge due to a range of potential reactions of lessors even to a small reduction in demand by listed lessees (ranging from price adjustments to changing willingness to supply). Evidence in this respect is provided in the Section below.

Strategic response of the leasing industry to change in demand

The survey obtained lessors’ views about what their strategic response would be should the implementation of IFRS 16 lead to either a small reduction as well as to more a substantial reduction in demand for leasing. Our estimated reduction in leasing demand is more likely to fall in the former scenario (small reduction) rather than the latter, or at least in between of the two (depending on the interpretation given by lessors to “small” and “substantial” reductions).

If there is a small reduction in leasing demand, a mix of strategic responses were identified. As illustrated below, the most commonly cited responses anticipated by lessors are small upwards price adjustments for all customers and a mix of small up and down adjustments for particular segments of the market. Any upwards price change might require additional segmentation of its customer base by any given lessor, or involve some combination of price increase and additional service offering with the lease. These strategies are not necessarily mutually exclusive (i.e. a lessor might consider both an across-the-board price adjustment in conjunction with increased leasing volume available to SMEs and unlisted companies. If lessors were unable to achieve additional market segmentation, then the emphasis would likely fall more on efforts to reduce overheads.

Figure 5.19: Business strategies expected to be adopted if the implementation of IFRS 16 led to a small reduction in demand for leasing by listed lessees (NB Answers are not mutually exclusive, and so do not sum to 100 per cent)

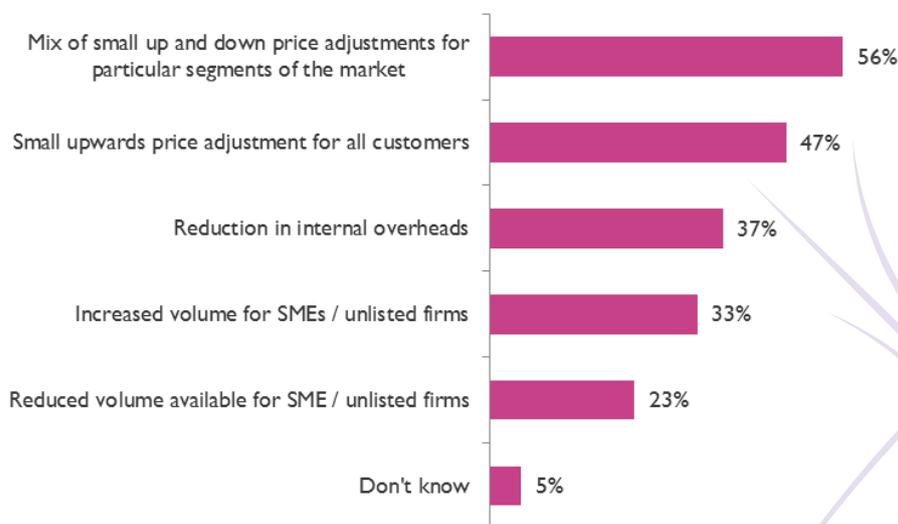


Source: YouGov.

Larger lessors tended towards targeting a reduction in overheads, whilst smaller lessors were most likely to contend that a mix of small up and down price adjustments (dependent on market conditions in a given sector) would be their behavioural response. The share of SME customers in a given lessor’s book was an influence here.

Likewise, in a scenario where there was a substantial reduction in leasing demand from listed lessees, the most commonly anticipated business strategies that would be adopted would be through price adjustments (Figure 5.20). However, we note that we do not consider the possible changes in leasing volume identified above as substantial.

Figure 5.20: Business strategies expected to be adopted if the implementation of IFRS 16 led to a substantial reduction in demand for leasing from listed lessees



Source: YouGov.

The implementation of IFRS 16 could also have an effect on innovation in leasing. Post-IFRS 16 companies may re-consider whether and how they lease assets. For example, the penetration of short-term, low value or variable payment leasing is currently relatively low. As noted above, our fieldwork shows that some lessees are likely to at least consider renegotiating new / existing leases towards variable payment structures in response to IFRS 16. This possibility might affect incentives and potentially even divert management resources away from customer-driven innovation towards innovation driven by regulatory arbitrage). On the other hand some past innovation has been around arbitrage around the boundary between finance and operating leases — this should be eliminated.

Our stakeholder interviews highlighted “servitised” or service-based leasing, which is gaining particular relevance in countries such as the Netherlands, i.e. those countries with a large number of leased cars in comparison to owned cars. Stakeholders held mixed views as to whether IFRS 16 might promote this trend, whilst others anticipated a retarding effect on servitisation.

5.6.4 Wider impacts — impact on funding of unlisted SMEs

The impact on funding of unlisted SMEs depends on a range of factors:

- The extent to which lessors would adjust their supply in response to demand reduction.
- The availability of substitute sources of finance.

These are in turn described below.

5.6.5 Scale of expected response from lessors

As we have discussed above, lessors would adopt a “mixed economy” approach in the event that there is a decline in demand for leasing from listed companies. This would combine some price changes alongside volume shifts as lessors aim to recoup lost revenues and profits.

Overall, the survey indicated that lessors would be as likely to respond by increasing the volume available to SMEs as to reduce it. The scale of any given response was moderated. This makes sense given the focus on a small reduction in demand from listed lessees (albeit the latter may account for a substantial fraction of the industry’s overall volume) and given the current low interest rate regime would likely limit any scope for price adjustments even with increased segmentation of customers (Table 5.10).

Table 5.10: Scale of the anticipated strategic responses in the event of a small reduction in demand for leasing

Expected increase / decrease in variables 1–4	1. Small upwards price adjustment for all customers	2. Reduced volume available for SMEs	3. Increased volume available for SMEs	4. Reduction in internal overheads
1-5%	36%	22%	29%	30%
6-10%	32%	39%	41%	48%
11-15%	21%	17%	6%	9%
16-20%	4%	0%	24%	4%
20%+	4%	11%	0%	0%
Don't know	4%	11%	0%	9%
	100%	100%	100%	100%

Source: YouGov (17–28 observations, dependent on column).

5.6.6 Availability of substitute finance

As we have noted above, the overall supply of bank credit in the EU / EEA to corporates is currently relatively stable, including to SMEs. Similarly, the majority of the EU28 SMEs surveyed in 2015 by the EC expect to experience growth in turnover in the next two to three years. Less than half (41 per cent) of SMEs perceive no limitations in their access to future financing. Those that do perceive such limitations most often cite insufficient collateral or guarantees, and interest rates and prices of financing being too high.⁸⁸

Some signs of declining demand for bank credit from SMEs are however present, at least in some countries, e.g. the UK. If demand from SMEs for finance was generally in decline, clearly the ability of lessors to increase the volume of leasing available to SMEs may be restricted.

5.6.7 Overall impact on SMEs

The fieldwork conducted by YouGov indicated that SMEs accounted for about 10 per cent of lessors' outstanding lease obligations. If we take this as the appropriate order of magnitude for the importance of SMEs, then this means that the capacity to recoup lost revenues and profits only from SMEs would likely be quite limited, dependent on the availability of substitute finance to the lessee (i.e. lessors would be expected to make an assessment of their ability to pass-through price changes).

Instead, we see the likeliest corollary for the funding of SMEs due to the implementation of IFRS 16 for listed companies is as follows:

- First, if there is a small reduction in demand by listed companies for leasing, then we would expect lessors to adopt a mix of strategies, potentially including price changes for some other lessees — including but not limited to — SMEs. The volume of leasing lessors were willing to make available to SMEs would as likely increase to a small extent as fall.
- Second, if there is increased pricing pressure from listed lessees, we would expect lessors to seek to recoup additional revenues from other clients. This may well require additional efforts at market segmentation by lessors. Given the relative scales of the groups, an across-the-board price change of about two–three basis points would likely compensate for the impacts described in 5.5.2. SME demand for leasing could adjust in such circumstances, dependent on the availability of substitutes.

5.6.8 Adoption into local GAAP

IFRS is applied by companies listed on Regulated Markets (and some MTFs). The vast majority of unlisted companies apply local GAAP (although such companies may substitute IFRS for local GAAP on a voluntary basis in some jurisdictions). As such IFRS 16 will not be generally applicable to such companies as and when IFRS 16 becomes mandatory. The review of local GAAP is an ongoing process. In the UK, for example, such adoption into UK GAAP would not be possible prior to 2022 (if it happened at all).

Although there is the potential for some European countries to adopt IFRS accounting standards into local GAAP or at least to comply with them, our engagement of stakeholders stressed that there are divergent views on this. Specifically, some of them expect a full compliance after few years while others do not expect such extended adoption. Notwithstanding, the analysis of this potential effect is out of the scope of our study and the gathered evidence is not supportive of one specific position.

A number of listed SMEs were included in our sample. However it must be acknowledged that a listed SME has (or at least is likely to have) a more sophisticated accounting function — at least for financial reporting — than an unlisted SME. This is because it will be subject to more strict timing publication requirements and

⁸⁸ European Commission (2015) “SME's Access to Finance Survey 2015”.

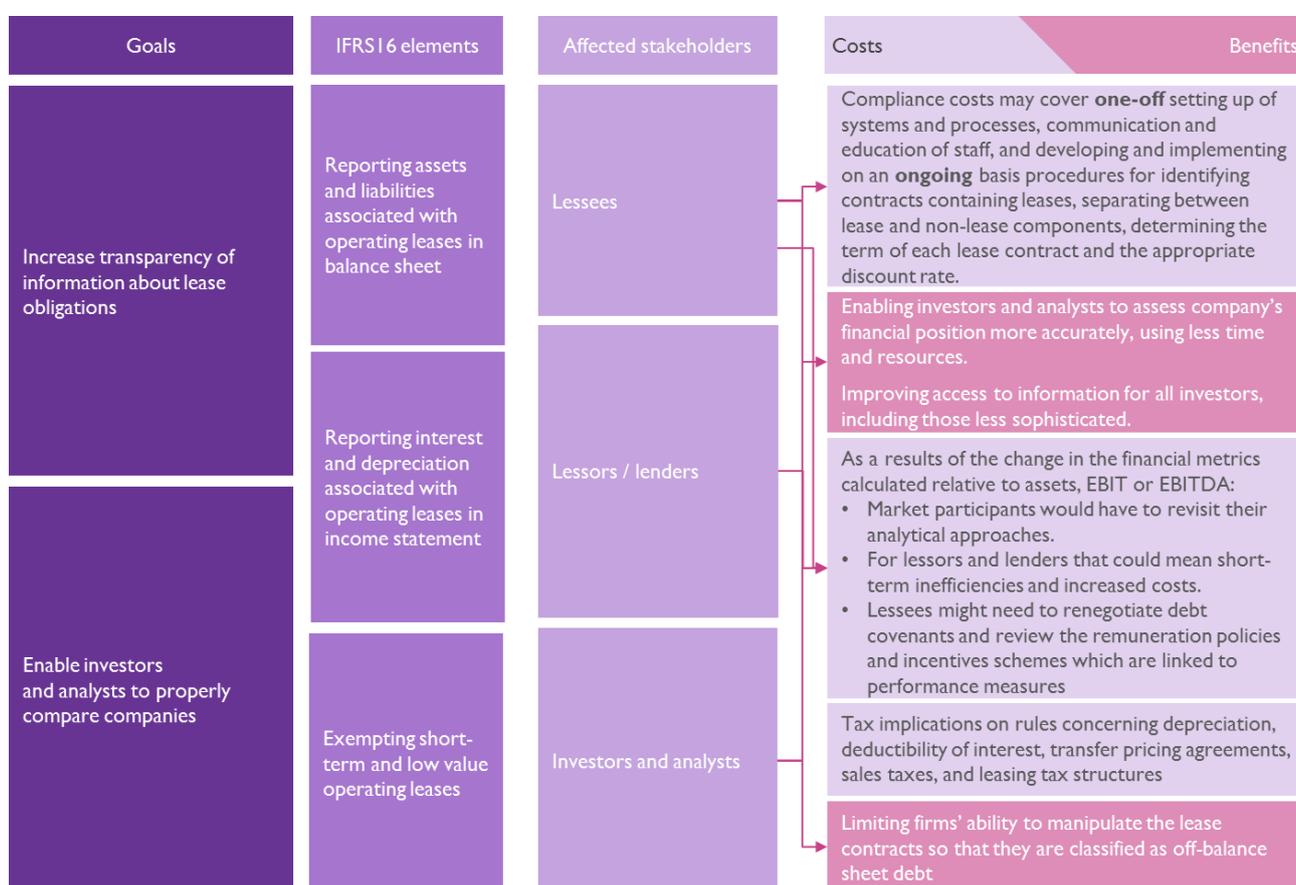
increased disclosure. Therefore, it seems likely that any impacts on listed SMEs should not be interpreted as reliable guides to the likely impacts on unlisted SMEs.

Another mechanism by which this effect could be achieved is through lessors, banks or other lenders would either encourage SMEs (or, at least, larger unlisted companies) to adopt IFRS 16 or else seek to treat them (in say assessing creditworthiness) as if they had adopted it. We have seen no evidence to support this hypothesis.

5.7 Overall conclusions

In this chapter, we have described the mechanism through which we anticipate the financial reporting changes described above could have economic consequences. We summarise these below, before describing them in further detail in the remainder of this section.

Figure 5.21: Summary of mechanisms of effect



Drawing on the evidence collected we have described how these mechanisms would be expected to have impacts, i.e. compliance costs and benefits that would be expected to result from IFRS 16. We have also identified how:

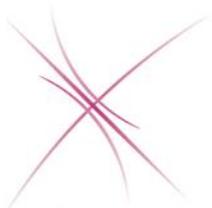
- A non-negligible proportion of lessees could be willing to switch to short-term or variable payment types of leases despite a higher cost associated with these types of leases.
- Listed companies could seek more competitive lease pricing or seek to substitute other debt products for leasing in order to compensate for the additional compliance costs incurred.
- Whilst we do not expect this to have materially deleterious impacts on the leasing industry. There could be knock-on effects on the availability or the pricing of leasing to other market participants (including SMEs). Any change in the cost of capital for SMEs would be proportional to the extent to which these

companies rely on operating leases for funding, and the pricing and availability of substitute sources of funding. However, given that our analysis suggests that the increase in the cost of using operating leases would most likely be equal only to a few basis points, at worst, and that operating leases represent only a fraction of financing sources, then the overall capital cost impact should be negligible.

It is common in any policy change for there to be some incremental costs and indirect market effects. In this case we are not able to quantify the associated benefits of IFRS 16, although as we have set out in 5.4 these are likely to be somewhat limited in public capital markets (and regulatory arbitrage activity by lessees could limit these further), but do appear to be tangible in private capital markets. We consider the trade-off between the benefits identified and the costs, and other impacts, to be a fine one.



Appendices



Europe Economics

6 Appendix: Methodology Adopted in Yield Analysis

6.1 Introduction

Sengupta & Wang (2011)⁸⁹ examine whether bond yields reflect the de facto capitalisation of operating leases. The paper answers the following two questions:

- Do rating agencies / bond analysts incorporate information on operating lease obligations?
- Is the treatment of operating lease obligations the same as the treatment of financial leases?

Sengupta & Wang (2011) approach involves regressing bond ratings and bond yields on a measure of operating lease obligations and a number of control variables. The regressions take the following form:

$$rating = \alpha + \beta \cdot operating\ leases + control\ variables$$

$$bond\ yield = \alpha + \beta \cdot operating\ leases + control\ variables$$

Control variables, i.e. variables other than leases that affect bond ratings and bond yields, are selected to account for issuer characteristics, issue characteristics, market conditions and fixed year effects.⁹⁰ The first equation is estimated using an ordered probit regression, the second using the standard linear regression. Testing whether the coefficient on the measure of operating lease obligations (β) is significantly different than zero provides the answer to the first question. In order to answer the second question a measure of financial leases is added to the regressions as one of the control variables. Testing whether the coefficients on the measure of operating leases and on the measure of financial leases are equal indicates whether there is a difference in the treatment of the two types of leases.

The results of the analysis suggest that operating leases are already priced in and treated in the same way as financial leases.

The purpose of Cotten et al. (2013)⁹¹ is to determine whether operating leases are treated in the same way as debt by credit rating agencies when assigning the credit rating. To that aim the paper compares the actual credit rating with two synthetic credit risk measures — “initial synthetic rating”, which is the rating implied by the reported accounting data, and “adjusted synthetic rating”, which is the rating implied by adjusting the

⁸⁹ Sengupta & Wang (2011) “Pricing of off-balance sheet debt: how do bond market participants use the footnote disclosures on operating leases and postretirement benefit plans?” *Accounting & Finance*, Volume 51, Issue 3, pp 787–808, September 2011.

⁹⁰ The control variables where rating is the dependent variable are: log of total assets; book value of long-term debt divided by total assets; total liabilities excluding long-term debt, divided by total assets; ratio of market value of common equity to book value of common equity; profit margin (income before extraordinary items divided by net sales); the sum of pretax income and interest expense, divided by interest expense; standard deviation of daily stock returns over the fiscal year; research and development expense divided by the market value of common equity; ratio of free cash flows to sales. The control variables where yield is the dependent variable are: log of size of issue; log of years to maturity; the years to first call divided by the years to maturity; yield on constant maturity US Treasury bill of approximately equal maturity to the date of issue; average yield on Moody’s AAA bonds for the month of issue minus the average yield on 30-year US Treasury bill for the month of issue.

⁹¹ Cotten et al. (2013) “Capitalisation of Operating Leases and Credit Ratings”, *JARAF*, Volume 8 Issue 1 2013.

reported accounting data so that it reflects the treatment of operating leases in the lease accounting standard proposed in FASB (2012)⁹².

To construct the synthetic credit ratings Cotten et al. (2013) use interest coverage ratios, which are then linked to numerical equivalents of credit ratings. The actual interest coverage is defined as EBIT divided by interest expense, while the adjusted interest coverage is calculated using the following formula:

$$\text{Adjusted Coverage} = \frac{\text{EBIT} - (\text{cost of debt} * \text{PV of leases})}{\text{Interest Expense} + (\text{cost of debt} * \text{PV of leases})}$$

Present value of operating leases is estimated by discounting the operating lease commitments by company's cost of debt. For commitments beyond five years (which are reported as a single number), Cotten et al. (2013) divide the total commitments beyond five years by the average commitments for the first five years. This gives the number of years across which the average lease commitments would be spread after year five.

The differences between actual and synthetic ratings is tested by using matched-pairs t-tests and Wilcoxon signed-rank tests.

Cotten et al. (2013) find that the mean and median differences between the actual rating and the initial synthetic rating are significantly different, and equivalent to a difference of a full rating (i.e. the difference between A and BBB). This means that reported accounting data cannot fully explain the assigned credit ratings. The paper also shows that the mean and median differences between the actual rating and the adjusted synthetic rating, while statistically different, were for practical purposes identical (i.e. would translate into the same rating). This suggests that credit rating agencies attempt to incorporate the information on off-balance sheet debt obligations. However, Cotten et al. (2013) argue that given the current reporting requirements, credit rating agencies are unable to adequately account for the effect of operating leases (as they have to estimate the size and timing of lease commitments beyond five years).

Kraft (2014)⁹³ analyses the impact of credit rating agency's adjustments on spreads. The reasoning behind this analysis is that if the adjustments made by the rating agency improve the accuracy of credit risk assessments, then the adjustments should be associated with the market's assessment of credit risk, for example spreads. Indeed, Kraft (2014) shows that models based on adjusted accounting numbers (which account for a range of factors, the most substantial of which was the recognition of off-balance sheet debt) better explain credit spreads than models based on reported numbers.

The following model is estimated in Kraft (2014) using Ordinary Least Squares (OLS):

$$\text{Spr5y}_{i,t} = \alpha + \beta \text{ADJ}_{i,t} + \text{control variables} + \epsilon_{i,t}$$

where *Spr5y* is the logarithm of the 5-year CDS spread, *ADJ* is either capturing the net adjustment to total debt (mostly due to off-balance sheet debt) (OFFBSD), the difference between the actual rating and the hypothetical rating based on adjusted financials (SOFT), or the difference between the actual rating and the hypothetical rating based on reported financials (TOTAL). The results of the analysis show that all three types of adjustments are associated with significantly higher spreads.⁹⁴

However, Kraft (2015) note that the results could be caused by circularity — first, credit spreads could be a function of ratings and thus indirectly a function of the adjustments, and second, ratings analysts could use credit spreads to guide their adjustments.

⁹² Financial Accounting Standards Board (FASB) (2012) "Accounting Standards Codification (ASC) 840, Leases".

⁹³ Kraft (2014) "Rating Agency Adjustments to GAAP Financial Statements and Their Effect on Ratings and Credit Spreads".

⁹⁴ One standard deviation increase in OFFBSD / SOFT / TOTAL is associated with 16 per cent / 39 per cent / 35 per cent increase in the credit spreads, respectively.

The aim of Chu et al. (2007)⁹⁵ is to test whether banks are able to consider lease obligations to determine interest rates on new private loans. The main hypothesis in the paper is based on the fact that lease contracts have higher priority than debt in bankruptcy. This implies that the impact of operating leases should be greater or at least equal to the impact of long-term debt. Moreover, the authors assume that companies are likely to continuously engage in leasing. As such, to estimate the present value of lease obligations Chu et al. (2007) discount the average minimum lease payment to perpetuity.

The estimated model has the following form:

$$AISpread_i = \alpha + \beta \cdot Leverage + control\ variables + year\ dummies + \epsilon_i$$

where *AISpread* is the interest rate on the loan, calculated as basis points above the LIBOR and including all recurrent and non-recurrent fees, *Leverage* is borrower's leverage ratio prior to the loan. To estimate the impact on operating leases on spreads Chu et al. (2007) replace *Leverage* with either *Lev_debt* (which is defined as long-term debt over assets plus capitalised operating leases), *Lev_cap* (which is calculated as the capital lease obligations over assets plus capitalised operating leases), or *Lev_oper* (which is the calculated operating lease obligations over total assets plus the operating lease obligations).

The analysis shows that capital lease obligations and long-term debt have a similar impact on the spreads. However, the impact of operating lease obligations is lower than long-term debt. This suggests that indeed banks set the spreads as an increasing function of operating leases. However, compared to spreads estimated in a model with perfect information, they fail to account for the full amount of operating lease obligations. Furthermore, Chu et al. (2007) also show that the extent to which banks include operating leases in setting the spreads is consistent with the amount of lease obligations reported in the financial statements (i.e. banks only account for the leases in the first five years). As a result, Chu et al. (2007) argue that the notes in the financial statements do not provide sufficient information to allow banks accurately set the spreads.

Andrade et al. (2014)⁹⁶ show that there is a positive relationship between credit spreads and two types of contracts: non-cancellable operating leases and unconditional purchase obligations. However, the impact of operating leases on spreads is larger than the impact of purchase obligations. Andrade et al. (2014) also find that the impact of increasing leverage due to higher present value of operating leases is identical to that of a corresponding increase in balance sheet debt.

The analysis is based on panel regressions of 5-year CDS⁹⁷ spreads on leverage measures. In order to obtain the present value of operating leases, Andrade et al. (2014) discount future leases using Standard & Poor's CreditStats method.⁹⁸

6.2 Sample

The sample selection process was as follows:

- We extracted the list of all companies currently traded in the EU / EEA with non-zero operating lease obligations, along with all their associated bonds. This was through our subscription to Bloomberg LLP. The number of bonds for each company varied significantly with some companies not having any publically

⁹⁵ Chu et al. (2007) "Does the Current Accounting Treatment of Operating Leases Provide Sufficient Information on the Lease Liabilities?"

⁹⁶ Andrade et al. (2014) "The Impact of Operating Leases and Purchase Obligations on Credit Market Prices", Draft: March 2014.

⁹⁷ Andrade et al. (2014) motivate the use of CDS rather than bond yields in the following way: "[...] similar to bond yield spreads, CDS spreads can be approximated by the probability of default times the expected loss given default. CDS spreads are particularly useful in empirical studies of credit risk pricing because they are supposedly less affected by non-default components (for example, liquidity and taxes) than bond yield spreads".

⁹⁸ This method is broadly the same as the method used in Sengupta & Wang (2011) and Cotten et al. (2013).

traded bonds, and some having a couple hundred different bonds. Since the main variables of interest (e.g. operating lease obligations, liabilities, etc.) are on a company level we limited the number of bonds per company to five.

- We excluded bonds which were not rated by any of S&P, Moody's or Fitch.
- We excluded bonds which would mature in 2016. Given that our analysis is based on average values for 2015, this means that all bonds are analysed at the point where they have more than one year to maturity. This is to avoid the increased volatility in yields that typically occurs close to the maturity date.

Our final sample consists of 302 companies and 912 associated bonds. Of those, 739 were issued by non-financial companies. The detailed distribution of companies across sectors is illustrated in the table below

Table 5.11: Sector coverage of the sample of non-financial companies

Sector	Number of bonds
Basic Resources	42
Industrial Goods & Services	116
Food & Beverage	35
Travel & Leisure	56
Retail	36
Chemicals	44
Real Estate	39
Utilities	96
Technology	15
Construction & Materials	37
Health Care	27
Personal & Household Goods	30
Automobiles & Parts	33
Oil & Gas	42
Telecommunications	69
Media	43

Source: Europe Economics (based on Bloomberg data).

The financial sectors comprise Banks, Insurance, and Financial Services.

In terms of geographic coverage, our sample of non-financial companies span across 14 countries. The detailed distribution of companies across countries is illustrated in the table below. Countries with fewer than 10 bonds were excluded from the final sample.

Table 5.12: Geographic coverage of the sample of non-financial companies

Country	Number of bonds
Austria	19
Belgium	29
Denmark	16
Finland	22
France	162
Germany	113
Italy	24
Luxembourg	16
Netherlands	41
Norway	18

Spain	22
Sweden	42
Switzerland	18
UK	198

Source: Europe Economics (based on Bloomberg data).

Since we excluded from the analysis companies without operating leases, all companies in our sample have non-zero operating lease obligations. The values for the liability associated with operating leases ranged from €0.8 million to €22.4 billion. The sample contains companies with both low and high intensity of use of leasing. The detailed distribution of the absolute value of operating lease liability and the proportion of operating lease asset in total assets (including the operating lease assets) are illustrated in the tables below.

Table 5.13: Distribution of operating lease liability in our non-financial sample

Percentiles	Operating lease liability (€ million)
1%	7.99
5%	26.72
10%	55.89
25%	224.11
50%	680.44
75%	1,761.65
90%	3,875.56
95%	7,092.57
99%	19,620.79

Source: Europe Economics (based on Bloomberg LLP data).

Table 5.14: Operating leases use intensity

Percentiles	Ratio of operating lease asset to total assets
1%	0.1%
5%	0.3%
10%	0.5%
25%	1.2%
50%	2.4%
75%	5.9%
90%	12.6%
95%	19.9%
99%	26.9%

Source: Europe Economics (based on Bloomberg LLP data).

6.3 Models for non-financial sectors

The main model we used in the analysis was as follows:

$$(1) \text{ yield} = \beta + \beta_1 \cdot \text{operating lease} + \beta_2 \cdot \text{debt} + \beta_3 \cdot \text{interest coverage} + \beta_4 \cdot \text{margin} + \beta_6 \cdot \text{maturity} + \beta_7 \cdot \text{callable} + \beta_8 \cdot \text{puttable} + \beta_9 \cdot \text{inflation linked} + \text{country dummies} + \text{sector dummies} + \epsilon,$$

where

- *yield* is the average yield on the bond in 2015;
- *operating lease* is the ratio of capitalised operating lease liability to the sum of total assets and capitalised operating lease asset;
- *debt* is the ratio of the sum of short-term and long-term debt to the sum of total assets and capitalised operating lease asset;
- *interest coverage* is the ratio of the sum of interest expenses and income to interest expenses;
- *margin* is the ratio of earnings before tax (EBT) to revenue;
- *maturity* is a natural logarithm of years to maturity;
- *callable* is a dummy which takes value one for bonds which are callable;
- *puttable* is a dummy which takes value one for bonds which are puttable;
- *inflation linked* is a dummy which takes value one for bonds which are linked to an index;
- *country dummies* is a set of thirteen dummies taking value one for bonds issued by companies in a given country; and
- *sector dummies* is a set of fifteen dummies taking value one for bonds issued by companies in a given sector.

Variables which will be affected by the new accounting standard, i.e. interest expense and earnings before tax, have been adjusted as per our analysis of the accounting adjustments. The liability and asset associated with an operating lease have been also calculated in the same way as in our accounting adjustments analysis (see reference to the relevant section).

We also examined whether models which do not account for operating leases (wholly or partially) are better fitted to explaining the yields as compared to our main model. For that purpose we run two separate regressions — one which included the information on operating lease obligations in the raw, non-discounted form, and another which omitted the information on operating lease obligations altogether. The specifications were as follows.

$$(2) \text{ yield} = \beta + \beta_1 \cdot \text{sum of operating lease obligation} + \beta_2 \cdot \text{debt}' + \beta_3 \cdot \text{interest coverage}' + \beta_4 \cdot \text{margin}' + \beta_6 \cdot \text{maturity} + \beta_7 \cdot \text{callable} + \beta_8 \cdot \text{puttable} + \beta_9 \cdot \text{inflation linked} + \text{country dummies} + \text{sector dummies} + \epsilon,$$

where

- *yield* is the average yield on the bond in 2015;
- *sum of operating lease obligations* is the ratio of the raw sum of the operating lease obligations in the coming years to the sum of total assets;
- *debt'* is the ratio of the sum of short-term and long-term debt to the sum of total assets;
- *interest coverage'* is the ratio of the sum of interest expenses and income to interest expenses;⁹⁹
- *margin* is the ratio of earnings before tax (EBT) to revenue;¹⁰⁰
- *maturity* is a natural logarithm of years to maturity;
- *callable* is a dummy which takes value one for bonds which are callable;
- *puttable* is a dummy which takes value one for bonds which are puttable;
- *inflation linked* is a dummy which takes value one for bonds which are linked to an index;
- *country dummies* is a set of thirteen dummies taking value one for bonds issued by companies in a given country; and
- *sector dummies* is a set of fifteen dummies taking value one for bonds issued by companies in a given sector.

⁹⁹ The interest expenses are unadjusted, i.e. as reported in the financial statements.

¹⁰⁰ The EBT is unadjusted, i.e. as reported in the financial statements.

$$(3) \text{ yield} = \beta + \beta_1 \cdot \text{debt}' + \beta_2 \cdot \text{interest coverage}' + \beta_3 \cdot \text{margin}' + \beta_5 \cdot \text{maturity} + \beta_6 \cdot \text{callable} \\ + \beta_7 \cdot \text{puttable} + \beta_8 \cdot \text{inflation linked} + \text{country dummies} + \text{sector dummies} + \epsilon,$$

where

- *yield* is the average yield on the bond in 2015;
- *debt'* is the ratio of the sum of short-term and long-term debt to the sum of total assets;
- *interest coverage'* is the ratio of the sum of interest expenses and income to interest expenses;¹⁰¹
- *margin* is the ratio of earnings before tax (EBT) to revenue;¹⁰²
- *maturity* is a natural logarithm of years to maturity;
- *callable* is a dummy which takes value one for bonds which are callable;
- *puttable* is a dummy which takes value one for bonds which are puttable;
- *inflation linked* is a dummy which takes value one for bonds which are linked to an index;
- *country dummies* is a set of thirteen dummies taking value one for bonds issued by companies in a given country; and
- *sector dummies* is a set of fifteen dummies taking value one for bonds issued by companies in a given sector.

6.4 Results

The results of the regression based on our main specification are illustrated in the table below. The coefficient on operating lease liability is positive and statistically significant suggesting operating leases are an important explanatory variable of bond yields. Moreover, we can confirm the hypothesis that the coefficient on the operating lease liability is equal to the coefficient on other debt (i.e. the difference between the two is statistically not different than zero). This indicates that the bond yield would be the same regardless of whether a company financed its investments with debt or operating leases.

Table 5.15: Regression results for our main model

	Coefficient	Std. Err.	t	P>t	[95% Confidence Interval]	
Operating lease	5.19**	1.65	3.15	0.00	1.95	8.43
Debt	5.97***	0.74	8.03	0.00	4.51	7.43
Interest coverage	-0.01*	0.00	-1.97	0.05	-0.01	0.00
Margin	-0.75**	0.27	-2.72	0.01	-1.28	-0.21
Bond characteristics						
Maturity	0.76***	0.11	7.10	0.00	0.55	0.97
Puttable	1.65*	0.70	2.36	0.02	0.28	3.02
Linked to index	-4.37***	0.80	-5.48	0.00	-5.94	-2.81
Callable	1.31***	0.20	6.44	0.00	0.91	1.71
Sectors						
Basic resource	3.56***	0.50	7.12	0.00	2.58	4.55
Industrial goods and services	0.82	0.42	1.95	0.05	-0.01	1.65
Food & beverage	0.22	0.52	0.43	0.67	-0.79	1.24
Travel & leisure	0.60	0.48	1.26	0.21	-0.34	1.53
Retail	0.55	0.55	1.01	0.31	-0.52	1.62

¹⁰¹ The interest expenses are unadjusted, i.e. as reported in the financial statements.

¹⁰² The EBT is unadjusted, i.e. as reported in the financial statements.

	Coefficient	Std. Err.	t	P>t	[95% Confidence Interval]	
Chemicals	0.47	0.52	0.90	0.37	-0.56	1.50
Real estate	0.52	0.61	0.86	0.39	-0.67	1.72
Utilities	0.52	0.44	1.18	0.24	-0.35	1.40
Technology	0.11	0.70	0.15	0.88	-1.26	1.48
Construction	1.19*	0.56	2.14	0.03	0.10	2.28
Health	-0.06	0.56	-0.11	0.91	-1.17	1.04
Personal & household goods	-0.22	0.54	-0.40	0.69	-1.27	0.84
Automobiles & parts	0.92	0.53	1.73	0.08	-0.12	1.96
Oil & gas	3.34***	0.53	6.35	0.00	2.31	4.37
Telecommunication	0.37	0.45	0.82	0.41	-0.51	1.25
Country dummies						
UK	0.81**	0.26	3.14	0.00	0.30	1.31
Belgium	0.06	0.47	0.13	0.89	-0.85	0.98
Germany	-0.12	0.29	-0.41	0.68	-0.68	0.45
Netherlands	0.51	0.40	1.30	0.20	-0.27	1.30
Finland	-0.05	0.52	-0.10	0.92	-1.08	0.97
Luxembourg	0.63	0.61	1.02	0.31	-0.58	1.83
Spain	0.02	0.55	0.03	0.97	-1.05	1.09
Italy	0.84	0.49	1.73	0.08	-0.12	1.80
Austria	-0.95	0.56	-1.72	0.09	-2.05	0.14
Sweden	0.36	0.42	0.87	0.38	-0.45	1.18
Denmark	-1.54**	0.60	-2.59	0.01	-2.71	-0.37
Norway	2.85***	0.58	4.90	0.00	1.71	3.99
Switzerland	-0.16	0.57	-0.28	0.78	-1.27	0.96
Constant	-1.82***	0.52	-3.53	0.00	-2.83	-0.81

Note: * p<0.05, ** p<0.01, *** p<0.001. While some of the country dummies are not significantly different than zero, jointly they are significant. The same applies to sector dummies.

Source: Europe Economics

In the next step we examined whether there are any material differences between our main model and two models which fully or partially fail to account for operating lease liability. First, we notice that in the second model (with unadjusted operating leases), as expected, the coefficient on operating lease is smaller than the coefficient on the operating leases in the first model (with adjusted operating leases). This is consistent with the fact that unadjusted operating leases (i.e. the raw sum of operating lease obligations) are larger than the adjusted discounted value of operating lease liability used in the first model. Second, we note that in terms of fitness there are no material differences between the models, i.e. the adjusted R² and RMSE are very similar (if not identical).

Table 5.16: Comparison of regression results for models with and without operating leases

	(1) With adjusted operating leases	(2) With unadjusted operating leases	(3) Without operating leases
Operating lease[†]	5.19**	1.92*	-
Debt[†]	5.97***	5.51***	5.19***

	(1) With adjusted operating leases	(2) With unadjusted operating leases	(3) Without operating leases
<i>Interest coverage</i> [†]	-0.01*	-0.02**	-0.02**
<i>Margin</i> [†]	-0.75**	-0.64*	-0.58*
Bond characteristics			
<i>Maturity</i>	0.76***	0.76***	0.75***
<i>Puttable</i>	1.65*	1.84*	1.87*
<i>Linked to index</i>	-4.37***	-4.30***	-4.24***
<i>Callable</i>	1.31***	1.34***	1.38***
Sector dummies			
<i>Basic resource</i>	3.56***	3.43***	3.35***
<i>Industrial goods and services</i>	0.82	0.76	0.74
<i>Food & beverage</i>	0.22	0.16	0.08
<i>Travel & leisure</i>	0.60	0.75	0.99*
<i>Retail</i>	0.55	0.45	0.92
<i>Chemicals</i>	0.47	0.37	0.25
<i>Real estate</i>	0.53	0.52	0.53
<i>Utilities</i>	0.52	0.48	0.39
<i>Technology</i>	0.11	0.22	0.12
<i>Construction</i>	1.19*	0.98	0.95
<i>Health</i>	-0.06	-0.07	-0.14
<i>Personal & household goods</i>	-0.22	-0.03	-0.06
<i>Automobiles & parts</i>	0.92	0.88	0.79
<i>Oil & gas</i>	3.34***	3.18***	3.16***
<i>Telecommunication</i>	0.37	0.31	0.37
Country dummies			
<i>UK</i>	0.81**	0.71**	0.82**
<i>Belgium</i>	0.06	0.01	0.05
<i>Germany</i>	-0.12	-0.15	-0.07
<i>Netherlands</i>	0.52	0.51	0.56
<i>Finland</i>	-0.05	0.02	0.05
<i>Luxembourg</i>	0.63	0.49	0.48
<i>Spain</i>	0.02	0.40	0.55
<i>Italy</i>	0.85	0.71	0.68
<i>Austria</i>	-0.95	-1.41*	-1.44*
<i>Sweden</i>	0.36	0.31	0.33
<i>Denmark</i>	-1.54**	-1.67**	-1.59**
<i>Norway</i>	2.85***	2.89***	3.02***
<i>Switzerland</i>	-0.16	-0.57	-0.55
<i>Constant</i>	-1.82***	-1.42**	-1.25*

	(1) With adjusted operating leases	(2) With unadjusted operating leases	(3) Without operating leases
Number of observations	732	699	699
R²	0.44	0.44	0.44
Adjusted R²	0.41	0.41	0.41
RMSE	2.16	2.19	2.20

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, [†] the variables across the three models are not the same. In the first model they are fully adjusted to capture operating lease capitalisation, but in the second and third column they are not. For details refer to Section 6.3.

Source: Europe Economics.

6.5 Conclusions

Based on our analysis we can conclude that despite a different treatment of operating lease obligations for accounting purposes, market participants seem to capture this type of liability in their current decision-making. The liability associated with a fully capitalised operating lease is an important variable in determining bond yields, and the magnitude of this impact is statistically equivalent to the magnitude of the impact of debt liability.

On the other hand, we did not find evidence suggesting that this model performed better in terms of explanatory power than simply using the raw sum of operating lease obligations or even simply using financial statements as currently presented.

7 Appendix: Approach to Accounting Adjustment

This section considers the accounting impacts on the financial statements of listed companies with operating lease obligations. The section is organised as follows:

- It first outlines the sampling process and gives a description of the sample.
- It then describes the methodology and assumptions used to simulate the impact.
- Lastly, it presents the results of the simulation and discusses how the impact varies by sector.

7.1 Sub-population used in simulation

The process adopted was as follows:

- We first identified all listed companies to which IFRS 16 is expected to be applicable to: this drew on ESMA's database on shares admitted to trading on EU Regulated Markets under MiFID.¹⁰³ This study is focused upon such companies, which have in aggregate about €750 billion in outstanding leasing obligations. Some MTFs — in particular the UK's Alternative Investment Market (AIM) and the Premier segment within NASDAQ's First North platform — in the EU also require, as part of the listing rules that they have adopted, that at least some companies listed on those MTFs produce financial information in accordance with extant IFRS. Companies with an EU / EEA headquarters listed on either AIM or the First North Premier segment have total outstanding operating lease commitments of about €5.1 billion, i.e. less than one per cent of the obligations outstanding with companies listed on an EEA Regulated Market.
- We excluded duplicates, delisted companies as well as companies whose primary listing is not in the EU / EEA.
- We excluded companies with no operating lease data in 2015 on Bloomberg LLP. In total, there are 2294 listed companies with operating lease obligations.
- We excluded companies with incomplete information on the operating lease due within 12 months, 1-5 years and beyond 5 years. (These data points are essential for the simulation of operating lease profile.)

The final group contains 2212 companies. This sub-population's aggregate operating lease obligations were €744 billion as at 2015. This accounted 99 per cent of the total operating lease obligations (i.e. nearly all companies identified on Bloomberg LLP as having leasing obligations had the complete disclosure recorded). Table 5.17 shows the sector coverage of our sample. Airlines, Retail and Travel & Leisure are the most operating-lease-intensive industries. Companies in these sectors are the most likely to experience significant impacts from IFRS 16.

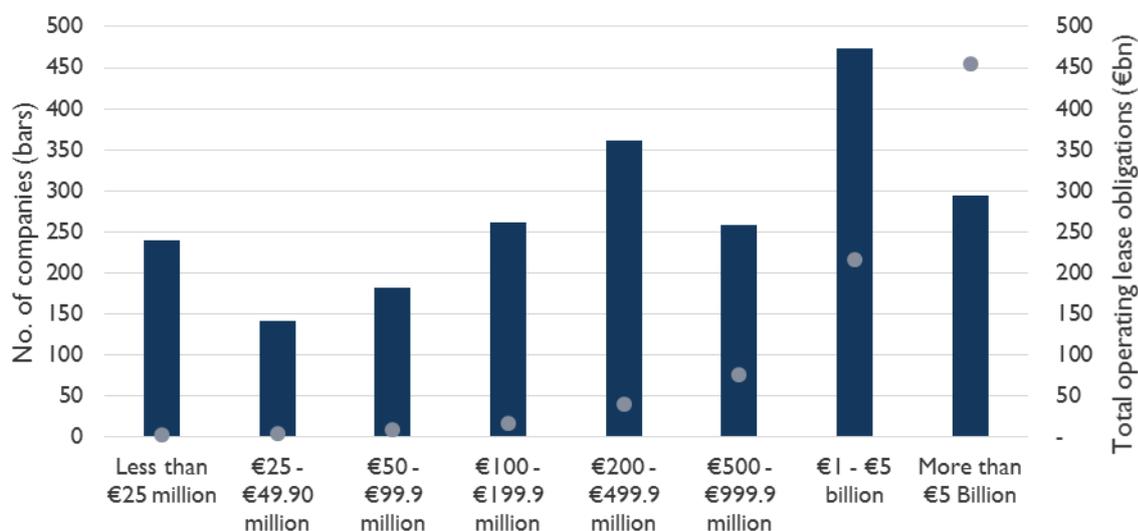
¹⁰³ ESMA – Shares admitted to trading on EU Regulated Markets [online] Available at: https://registers.esma.europa.eu/publication/searchRegister?core=esma_registers_mifid_sha [Accessed on

Table 5.17: Sample coverage

Sector	Average operating lease obligations to total assets	Average operating lease obligations (€m)	Number of companies	Total operating lease obligations (€m)	Coverage (restricted sample/sample)
Airlines	71.3%	2,233	15	33,502	100.0%
Retail	46.2%	1,210	112	135,548	100.0%
Travel & Leisure	39.5%	599	98	58,689	100.0%
Personal & Household Goods	14.4%	342	136	46,467	99.9%
Health Care	19.3%	188	154	29,019	99.9%
Real Estate	13.9%	226	125	28,264	99.1%
Industrial Goods & Services	10.1%	188	448	84,011	99.3%
Technology	9.2%	53	226	12,026	99.7%
Media	8.5%	243	90	21,892	99.9%
Telecommunications	8.0%	1,858	38	70,595	100.0%
Food & Beverage	4.4%	129	111	14,340	98.6%
Automobiles & Parts	4.7%	437	40	17,476	100.0%
Energy	6.3%	665	147	97,797	100.0%
Construction & Materials	3.9%	143	112	15,986	98.4%
Chemicals	3.0%	143	63	8,988	100.0%
Financial Services	4.0%	101	119	12,044	99.0%
Basic Resources	3.1%	142	70	9,966	100.0%
Insurance	1.1%	339	37	12,541	99.5%
Banks	0.4%	502	71	35,617	86.9%
Total	12.4%	337	2,212	744,766	99.1%

Source: Bloomberg LLP and Europe Economics analysis.

About one third of the companies in the sample have revenues more than €1 billion. They account for more than 80 per cent of the total operating lease commitments. About 17 per cent of all companies have less than €50 million in annual revenue (i.e. the threshold for an SME). These only account for 0.8 per cent of the total operating lease commitment. The chart below shows the distribution of our sample by revenue band in bars (purple colour) and the corresponding leasing obligations in dot (pink colour).

Figure 5.22: Distribution of the sample by revenue

Source: Bloomberg LLP and Europe Economics analysis.

7.2 Methodology and assumptions

7.2.1 Balance Sheet Adjustment — Simulated Liabilities

The simulated liability is the present value (PV) of all future leasing obligations currently recognised by the lessee. Companies currently report the lease commitment due in one year, 2-5 years and beyond five years. Although most companies do not disclose the profile of the yearly payments due, 191 companies (i.e. about nine per cent) do disclose the yearly payments due from year 2-5. None of the companies disclose any information on the obligations profile beyond year 5.

We set out below our assumptions on the profile of the existing obligations, the discount rate and proportion of low-value / short term leases (which would not require capitalisation under IFRS 16).

- Payments profile for year 2-5:
 - Past studies have adopted two main approaches. One is the straight-line constant approach, which assumes that the annual payment is the same for each year (see, for example, EFRAG (2016)). The other is the ‘discount factor’ approach, which assumes a decreasing payments profile at a constant rate (see Fulbier, Silva and Pferdehirt (2008) and Fito, Moy and Orgas (2013)).
 - Using the 193 companies which disclosed their annual payments for year 2-5, we found that a decreasing payments profile to be more consistent with the actual data. However, instead of using a constant ‘discount factor’, we used the proportional weighted average instead. The proportion we used for year 2, 3, 4, 5 is 32 per cent, 26 per cent, 22 per cent and 20 per cent respectively — these are derived directly from the experience of the 193 companies with the relevant real data.
 - We also tested the result with the straight-line approach. The results are not in fact overly sensitive to our assumptions on the payments profile for year 2-5.
- Payments profile beyond year 5:
 - We assumed the annual payment beyond year 5 is the same as the payment in year 5, unless year 5 is zero, in which case, it would be the last non-zero annual payment. In other words, if year 5 is zero, the annual obligation beyond year 5 would be the same as year 4. If year 4 is zero, the annual obligation beyond year 5 would be the same as year 3, so on and so forth.

- The constant payments continue until all lease obligations are taken into account.
- Discount rate:
 - We used the New York University Stern School of Business' data on sectoral discount rates for Western Europe. As the sectors used in the database are slightly different from the sectors we have (which are based on Bloomberg's), we have made some minor modifications to align the data Table 5.18 shows the discount rate by sector.

Table 5.18: Discount rate by sector

Sector	Discount rate
Airlines	3.07%
Retail	3.08%
Travel & Leisure	3.27%
Personal & Household Goods	3.07%
Health Care	3.15%
Real Estate	3.07%
Industrial Goods & Services	3.13%
Technology	3.33%
Media	3.11%
Telecommunications	3.11%
Food & Beverage	3.07%
Automobiles & Parts	3.07%
Energy	3.09%
Construction & Materials	3.07%
Chemicals	3.07%
Financial Services	3.07%
Basic Resources	3.25%
Insurance	3.03%
Banks	3.07%

Source: NYU Stern School of Business and Europe Economics calculations.

- Proportion of out-of-scope operating leases:
 - IFRS 16 only applies to “long-term” operating leases. It exempts short-term leases, low value assets and leases which incorporate variable payment elements. In this model, drawing on the data obtained through the survey conducted by YouGov, and our own analysis (at 5.5.1) of how lessees might seek to vary the volume of leases under such terms, we take the proportion of exempted operating leases to be 10 per cent of total operating leases.

7.2.2 Balance sheet adjustment — Simulated right of use assets

Fito, Moy and Orgas (2013) state that the ratio between simulated assets and simulated liability at any time during the lease period is calculated as:

$$\frac{RL}{TL} \times \frac{PV_{TL}}{PV_{RL}} = \frac{RL}{TL} \times \frac{[1 - (1 + i)^{-TL}]}{[1 - (1 + i)^{-RL}]}$$

Where:

RL is the remaining life of the lease;

TL is the total life of the lease;

PV_{RL} is the PV of future minimum lease payments over the remaining lifetime;

PV_{TL} is the PV of future minimum lease payments over the total lifetime.

The assumptions around total life and residual life are very important for the asset calculation. The results are highly sensitive to residual life assumptions. The EFRAG study used a baseline scenario where the residual life is 5 years and the total asset life is 8 years. We simulated four scenarios, with residual life as 5 and 6 years and the ratio between remaining life to total asset life as 1/2 and 5/8 respectively. The ratio of half is common in past literatures (see Fulbier, Silva and Pferdehirt (2008) and Fito, Moy and Orgas (2013)). In addition, we found in our sample that the ratio of net asset value to accumulated depreciation for the entire sample is close to one. If the composition of owned assets is similar to that for leased assets, then this implies that an assumption of remaining life to total asset life of 1:2 is a reasonable one, at least in the aggregate.

7.2.3 Profit and loss adjustments

By capitalising operating leases, a company no longer records the rental expense within the profit and loss account — with it being substituted by a depreciation charge and an appropriate interest expense. Hence, the impact on EBITDA is equal to the rental expense. We used operating lease obligation due within 12 months in 2015 as a proxy for the rental expense. In common with the past literature, this appears to be a more reliable measure than the actual profit and loss disclosure as the realised rental expenses includes lease contracts with duration of less than one year.¹⁰⁴

The EBT impact was calculated by adding back the operating lease commitment within 12 months (rental proxy) and deducting depreciation and interest. Depreciation is calculated as carrying amount of simulated ROU asset divide by assumed residual life (RL), and interest is calculated as the appropriate discount rate multiplied by the simulated lease liabilities.

7.3 Results

In examining the impacts, we focus on three key areas, namely, impacts on balance sheets, impacts on profitability and impacts on key ratios. All three have potential implications for companies' business decisions and ability to borrow. For instance, the remuneration schemes are commonly linked with the company's profitability and debt covenants are often linked with leverage ratios. Hence, changes in accounting standards could indirectly affect these other areas of businesses.

7.3.1 Balance sheet impact

The total simulated lease liability is around €574 billion, representing 8 per cent of total debt.¹⁰⁵ The associated ROU asset value is €526-549 billion, representing around 15 per cent of the total net book value (NBV) of property, plant and equipment. The value of ROU assets is around 91-96 per cent of the value of simulated liabilities.

The value of simulated liabilities is driven by the discount rate and payment profile assumptions. Table 5.19 shows our sensitivity analysis, using discount rates 3 per cent, 4 per cent, 5 per cent and NYU Stern sector-specific discount rates under both decreasing payments profile and constant payments profile. The results are not very sensitive to the payments profile assumptions. The total simulated liability is moderately sensitive to discount rate assumptions.

¹⁰⁴ Fulbier, Silva and Pferdehirt (2008) – Impact of lease capitalisation on financial ratios of listed German companies.

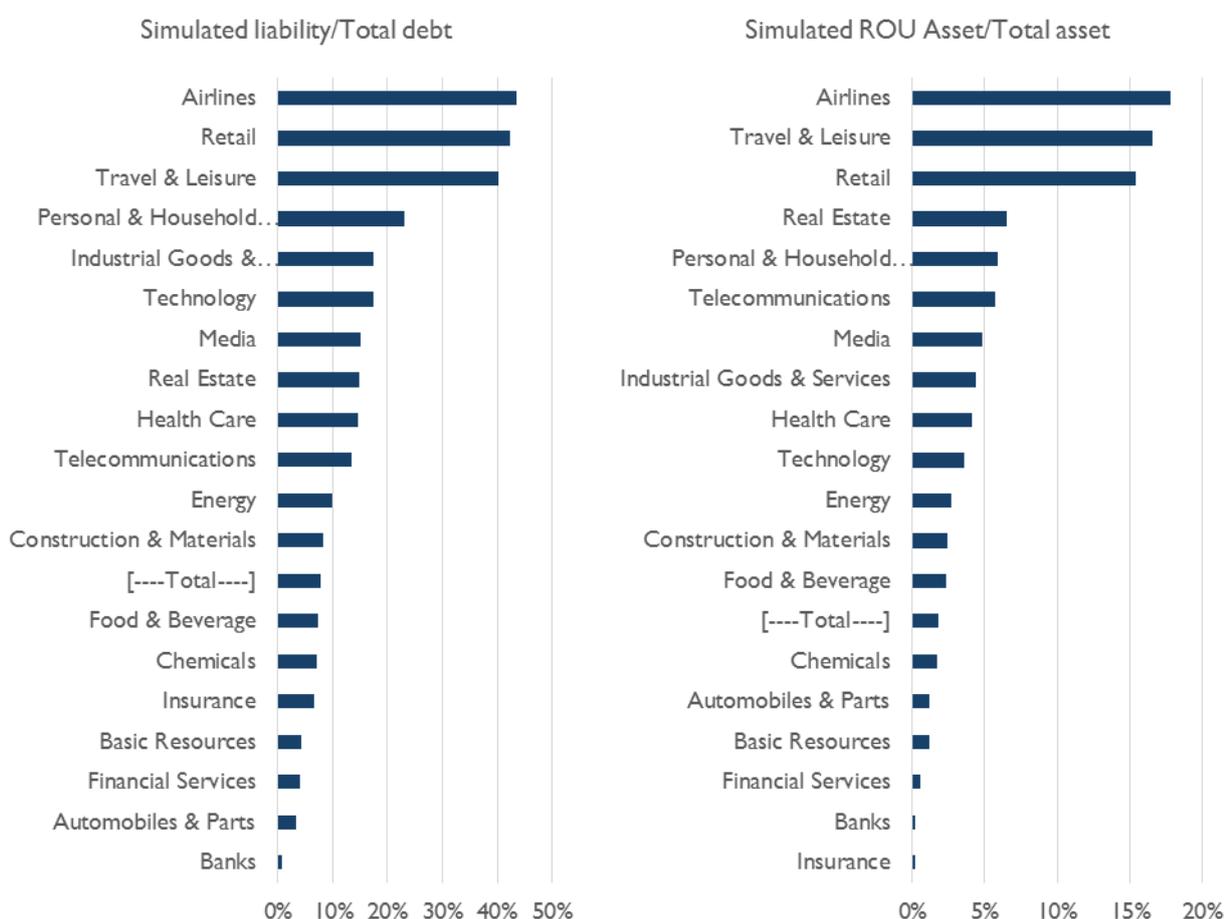
¹⁰⁵ The total debt variable is defined by Bloomberg LLP. It includes both short-term and long-term debts.

Table 5.19: Sensitivity analysis – Balance Sheet

Discount rate	Decreasing payments profile for year 2-5			Constant payments profile for year 2-5		
	Simulated liability (€m)	Simulated ROU Asset (€m)	Impacts on Equity	Simulated liability (€m)	Simulated ROU Asset (€m)	Impacts on Equity
3%	576,800	552,600	-0.13%	579,200	554,900	-0.13%
4%	550,900	520,700	-0.16%	553,600	523,200	-0.16%
5%	527,100	491,800	-0.18%	529,900	494,400	-0.18%
NYU	573,900	549,000	-0.13%	576,300	551,300	-0.13%

Source: Bloomberg LLP, NYU Stern and Europe Economics calculations.

Airlines, Retail industries and Travel & Leisure are the sectors most affected by IFRS 16. As can be seen in Figure 5.23, the simulated liabilities account for 40–44 per cent of the total debt (including the simulated leasing liability) in these industries; and simulated ROU asset represents 15–18 per cent of total NBV of assets (including the ROU assets).

Figure 5.23: Penetration of operating lease by sector

Source: Bloomberg LLP and Europe Economics calculations.

In absolute terms, besides the sectors mentioned above, the Energy and Telecommunications industries also have a substantial expected operating lease liability. This is shown in Table 5.20.

Table 5.20: Simulated liabilities and assets by sector

Sector	Simulated liability (€bn)	Simulated ROU Asset (€bn)
Airlines	26	25
Retail	101	97
Travel & Leisure	44	42
Personal & Household Goods	37	36
Health Care	22	21
Real Estate	21	20
Industrial Goods & Services	66	63
Technology	10	9
Media	17	16
Telecommunications	55	52
Food & Beverage	11	10
Automobiles & Parts	14	13
Energy	77	74
Construction & Materials	13	12
Chemicals	7	7
Basic Resources	8	7
Financial Services	9	9
Insurance	9	9
Banks	27	25
Total	574	549

Source: Bloomberg LLP and Europe Economics calculations.

7.3.2 Profitability impacts

There are different measures of profit. EBITDA approximates to the operating cash flow of a company before capital expenditure, interest and taxes. EBT measures the profit after all operating and financing costs are deducted. Both measures give an absolute value to a company's profits. We look each of these measures in this section to get a holistic view on the significance and extensiveness of profit impacts across sectors.

The overall EBITDA impact on current lessees is around 10 per cent. The apparent EBT impact is estimated to be between -0.6 per cent and 2.6 per cent.

As amortization depends on the assumptions on RL and TL, EBT impacts are sensitive to lease term assumptions. For instance, under the assumption that the RL is 5 years, the overall EBT impact is positive; if the RL is 6 years, the overall impact would be negative. That said, over the full life of a lease, EBT should be unaffected by IFRS 16. Table 5.21 shows the sensitivity analysis results.

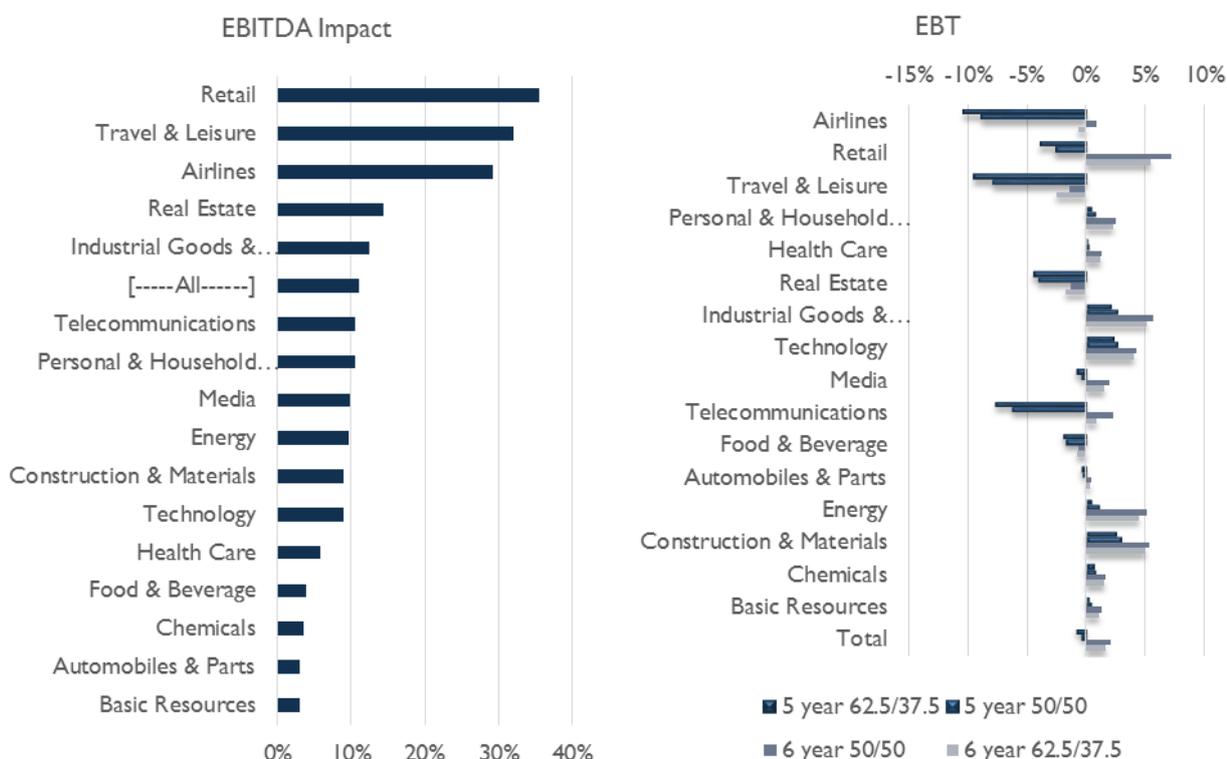
Table 5.21: Sensitivity analysis – profitability

	5 year 62.5/37.5	5 year 50/50	6 year 50/50	6 year 62.5/37.5
EBT	-0.6%	-0.2%	2.6%	2.2%

Source: Bloomberg LLP and Europe Economics calculations. For simulated ROU asset values, we have tested the four scenarios described above, i.e. 1) RL=5 years, and RL/(TL-RL)=62.5/37.5; 2) RL=5 years, and RL/(TL-RL)=50/50; 3) RL=6 years, and RL/(TL-RL)=50/50; 4) RL=6 years, and RL/(TL-RL)= 62.5/37.5.

EBITDA impacts are naturally higher in operating lease-intensive industries such as Retail, Travel & Leisure and Airlines (see Figure 5.24: left panel). Indeed, the corresponding EBITDA impacts average more than 30 per cent. On the other hand, EBITDA increases by less than 10 per cent for less operating lease-intensive sectors.

Figure 5.24: Profit and loss impacts



Source: Bloomberg LLP and Europe Economics calculations.

The right panel in Figure 5.24 presents the results for EBT. In the short run, EBT impacts could be significant in some sectors (we stress that there are limitations inherent in the nature of this simulation, e.g. around asset lives, that could materially affect these results — i.e. this is not a prediction, rather a tool for assessing the potential scale of impacts, and the number of companies that could be affected). For instance, under the assumption that the remaining asset life is five years, the EBT impact for Airlines and Travel & Leisure industries is simulated at more than 8 per cent.

As noted, the assumptions on asset life play a significant role on sectoral EBT impacts. The difference is more pronounced in some sectors than others. For instance, in the Retail sector, if we assume the RL is 6 years, and the RL/TL ratio is 1/2, the EBT impact is 7 per cent. If we assume the RL is 5 years and the RL/TL ratio is 5/8, then, the EBT impact would -4 per cent. That is an 11 per cent swing. Without access to detailed company-level data on the composition of assets and the associated leases we cannot be more definitive. Indeed, this high sensitivity could motivate companies to seek out assumptions which yield most favourable results to them.

7.3.3 Debt financing capacity

The leverage ratio is used together with other financial metrics to assess a company’s ability to meet its financial obligations. Overall, leverage ratios are expected to increase slightly. The Debt/Equity ratio has increased from 0.8 to 1 and Debt/Asset ratio increased from 28 per cent to 32 per cent.¹⁰⁶ These results are not sensitive to our assumptions.

Table 5.22 shows the change in leverage ratios and interest coverage by sector. As can be seen, other than Airlines, the change in leverage ratio is not that significant to trigger a reaction from lenders.

¹⁰⁶ Aggregate results exclude banks, insurance and financial services sectors.

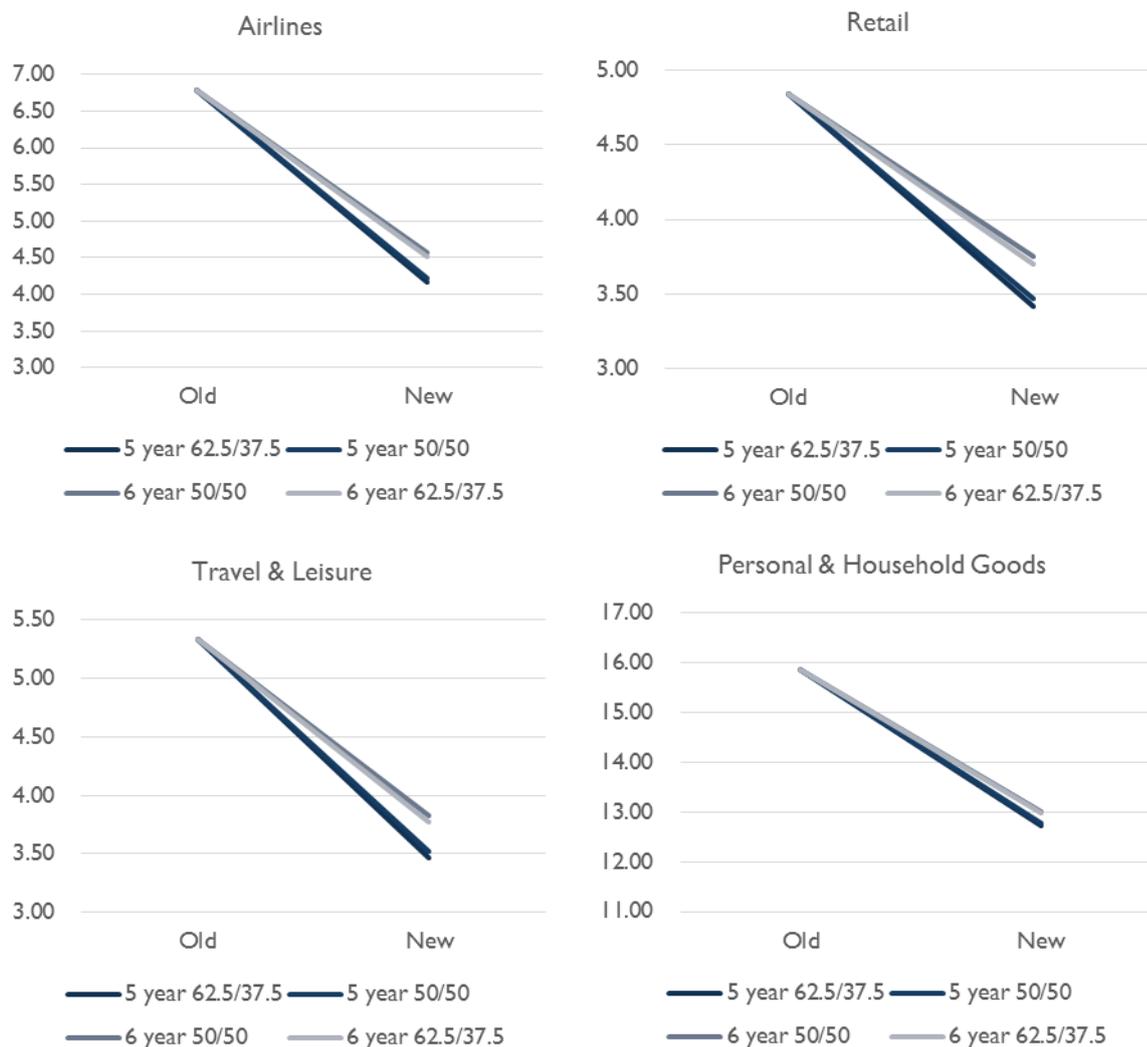
Table 5.22: Leverage ratio and interest coverage by sector

	Debt to Equity Ratio		Debt to Asset Ratio		EBIT to Interest Ratio	
	Old	New	Old	New	Old	New
Airlines	1.6	3.0	29%	43%	6.8	4.2
Retail	0.8	1.4	26%	38%	4.8	3.4
Travel & Leisure	0.9	1.5	31%	43%	5.3	3.5
Personal & Household Goods	0.5	0.7	22%	27%	15.9	12.7
Health Care	0.6	0.7	26%	29%	11.2	9.8
Real Estate	0.8	1.0	42%	46%	5.7	4.6
Industrial Goods & Services	0.7	0.9	23%	26%	7.1	6.3
Technology	0.4	0.5	18%	21%	15.4	12.9
Media	1.0	1.1	30%	34%	5.8	5.2
Telecommunications	1.3	1.5	41%	45%	2.6	2.3
Food & Beverage	0.8	0.9	32%	34%	6.9	6.4
Automobiles & Parts	1.3	1.4	36%	36%	11.7	10.9
Energy	0.8	0.9	26%	28%	3.3	3.1
Construction & Materials	0.9	1.0	28%	30%	4.5	4.3
Chemicals	0.6	0.6	24%	25%	8.3	7.9
Basic Resources	0.6	0.7	28%	29%	4.5	4.4
Total – excl. financial services	0.8	1.0	28%	32%	6.1	5.4

Source: Bloomberg LLP and Europe Economics calculations.

Since EBIT adjustments involve amortisation, interest coverage ratio is sensitive to the lease term assumptions. Figure 5.25 shows the adjustment under all four lease term scenarios for the four most impacted sectors. Note that the change in assumptions does not change the direction of the impact — in all four scenarios, the interest coverage number reduced. The extent of reduction is larger under the assumption that remaining life is 5 years.

Figure 5.25: Sensitivity analysis – interest coverage



Source: Bloomberg LLP and Europe Economics calculations.

Despite not affecting most companies, the change in debt level would affect a small proportion of borderline companies. We have chosen a debt/ EBITDA threshold of 4 to illustrate this. In total, there are approximately 40 companies whose ratio was increased from below 4 to above 4 due to the adjustment. Table 5.23 shows a breakdown by sector. The highest impact sectors are Retail and Travel & Leisure.

Table 5.23: Sectors whose debt/EBITDA ratio increased from below 4 to above 4

Sector	Number of companies
Chemicals	1
Energy	2
Health Care	5
Industrial Goods & Services	7
Media	2
Personal & Household Goods	1
Real Estate	3
Retail	11
Travel & Leisure	8

Source: Bloomberg LLP and Europe Economics calculations.

7.3.4 Comparison with other studies

We have compared our results with past studies. Our work found that the total simulated liability is about 15 per cent of total debt (excluding financials), which is similar to EFRAG's results (16 per cent). Profitability impacts are similar too. Our study found the EBT and EBITDA impacts are -0.6 per cent and 10.5 per cent. EFRAG's results are -0.6 per cent and 10.2 per cent.

On a sector basis, our study found that the largest impacts are in Airlines, Retail and Travel & Leisure, which is consistent with the IFRS's effect analysis of IFRS 16.¹⁰⁷ The PwC study also recognises Retail and Airlines are two of the most affected sectors.¹⁰⁸ PwC's study also identified professional services as the third largest impacted sector, and our data do not classify professional services as a separate category.

The balance sheet impact for the Retail sector is comparable between PwC's study and our study. However, our study identified a much larger impact in the Airlines. This could be due to the different sample selection — PwC used a global sample whereas our study uses only European companies. PwC's study is not explicit about its methodology so it is unclear whether differences here also contribute towards such differences. Likewise, the balance sheet impact is 2-3 percentage points higher for IFRS' study for these three sectors. This difference could be due to the different assumptions used for the maturity of obligations as well as difference in sample selection.

¹⁰⁷ See IFRS (2016) — Effect analysis of IFRS 16.

¹⁰⁸ See PwC (2016) — A study on the impact of lease capitalisation (IFRS 16: The new leases standard).