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Exploring investor views on accounting for R&D costs under IAS 38

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ABSTRACT

Research and development (R&D) is increasingly significant in the global economy and its accounting treatment has always been, and remains, a contentious area. The standard governing its accounting treatment under International Financial Reporting Standards is IAS 38 Intangible Assets. This was issued in 1998 and remains in force today. This study contrasts the thinking of the standard setters in the historical development of the standard with evidence through interviews with contemporary buy-side and sell-side equity investors. Specifically, we examine the decision-usefulness of R&D accounting information to them, and especially that of the capitalisation of development costs. This unique insight reveals that investors find R&D accounting information useful for decision making, are supportive of the principle of the mandatory capitalisation of development costs, subject to meeting specified conditions, and are very much opposed to a US expense all treatment. However, they do not regard such assets as providing an adequate signal of future value creation to them, which was the expectation of the standard setters. This is attributed to the perceived vagueness and subjectivity of the conditions currently in the standard. The theoretical framing of dissonant translation is employed to unpick these tensions. The study makes significant contributions to the standard setting and R&D strands of the financial accounting literature and the findings raise important policy implications.

1. Introduction

The objective of decision-usefulness to users in International Accounting Standards Board (IASB) 2018 Conceptual Framework has remained unchanged from the prior frameworks (International Accounting Standards Committee (IASC), 1989a,b and IASB, 2010) and underpins all issued accounting standards. Further, Georgiou, (2018, p. 1297) highlights the importance of investors and analysts as "primary users of financial reports by standard setters" (and see Allini et al., 2018; Drake et al., 2019). Moreover, in relation to the accounting treatment of development costs, which is the focus of this study, this objective is reflected on the IASC's expectation that the mandatory recognition of investments in intangible assets would enable the

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measurement of an enterprise's performance and send an *adequate signal*, both for internal control purposes and for *external* purposes (emphasis added) (see IAS 38 Intangible Assets, BCZ, 39, bi and ii, d and Section 2.1). This accounting treatment enshrined in IAS 38 (issued in 1998), first included in IAS 9 (Research and Development Costs) (issued in 1993), was and remains a contentious area among preparers, users and standard setters. Although IAS 38 is now the predominant standard applied globally, historically, many countries adopted significantly different approaches such as the expense all treatment under US accounting standards (see in Horwitz and Kolodny (1980) and Nix and Nix (1992) for details).

The aim of this study is to capture the views of investors, as represented by sell and buy-side equity analysts, regarding (a) the usefulness of R&D accounting information, including the prescribed accounting treatment in IAS 38 to them, against the expectations/thought processes of the standard setters in the historical development of IAS 38, and (b) their perceptions in relation to the potential need for reform, given the standard's longevity. To inform these, we examine the following specific research questions: (1) How equity investors incorporate R&D accounting information and related disclosures in their work? (2) How the use and usefulness of R&D accounting treatment by equity investors relate to those expected by standard setters? (3) Do equity investors propose any potential revisions in the standard? To address these questions, first, we drew on archival information that details the historical development of IAS 9 and subsequently IAS 38, shedding light on the IASC's thinking behind the accounting treatment of development costs over that period. Second, we undertake 17 semi-structured interviews with senior investment sell and buy-side equity analysts who follow large R&D active and international firms reporting under IFRS.

Investment in R&D is of fundamental importance for companies, facilitating future growth and the development of corporate value (Lev, 2019; Curtis et al., 2020). More widely, R&D is increasingly important for today's global economies. For example, according to the World Bank, the R&D expenditure to GDP ratio has grown from 1.78% (2.20%) in 1996 to 2.18% (2.58%) in 2017 across EU countries (OECD countries). Further, the number of researchers per million people shows a similar increasing trend across both EU and OECD countries (see Appendix A). However, there is a significant gap in time between the issuance of IAS 38 and the growing importance of R&D. Consequently, this raises questions as to whether the standard reflects contemporary user (i.e., investor) needs in relation to the accounting treatment of R&D related expenditure. This is particularly important given the general absence of investor engagement in the standard setting process in the 1980s and 1990s (Harding and McKinnon, 1997; Weetman et al., 1996). Indeed, Lev (2018, p. 465-466) critically reports "a widespread dissatisfaction with the relevance and usefulness of corporate financial reporting to investors . . . and a largely uninformative balance sheet". This, he argues, is based upon a failure of global standard setters not adjusting asset recognition rules directly relevant to intangible assets such as development costs and hence "ignoring the most important value-creating resources of modern enterprises" (ibid, p. 474).

Against this backdrop, our study responds to a call to study "controversial linkages (or the absence of linkages) between users and standard-setting processes" (Durocher and Gendron 2011, p. 236). Indeed, Georgiou (2018, p. 1297) laments that standard setters invoke "the imagined demands of an imagined user" in relation to "how accounting should be done and used, and hence what practices are to be considered valuable" (and see Georgiou et al., 2021; Stenka and Jaworska, 2019; Pelger and Spieß, 2017; Young 2006), which may be perfectly describing the situation in relation to the ongoing treatment of R&D. In particular, we provide evidence to the call for research by Georgiou (2018, p. 1326) as to "how do standard setters' intentions *translate into* the practice of analysing financial reports?" (emphasis added).

A number of key themes emerged from the interviews. Firstly, the investors confirmed their use of R&D accounting information to help measure company performance, to evaluate management and, in a wider context, governance and stewardship. Secondly, the large majority of investors supported, in principle, the mandatory capitalisation of development costs and were opposed to an 'expense all' accounting treatment. Third, despite this support, the investors had mixed views on the signalling effect of capitalised development costs. This is attributed to their widely held criticisms regarding the lack of clarity and guidance and resultant subjectivity of the conditions/criteria in IAS 38, which can be vulnerable to managerial manipulation. This impairs the adequacy of the signal conveyed, its comparability and decision-usefulness to them. Due to this, the investors resort to cash spend as a more objective measure of R&D investment. Finally, the investors advocated greater general disclosure surrounding R&D. These findings, whilst in support of the principle behind IAS 38, nonetheless, evidence that the thinking of IASC that capitalisation would be decision-useful, enabling the measurement of performance and providing an adequate signal, is not translated in practice to satisfy the needs of the users.

Directly reflecting on the call from Georgiou (2018), we employ dissonant translation (Hutter, 2015) as an interpretive theoretical framework of these findings. Dissonance more broadly has been used, albeit occasionally, in accounting research to highlight a fundamental disagreement (see Mennicken and Power, 2015 on brand accounting) or a discordant emphasis (see Georgiou, 2018 on fair value accounting) between parties. Indeed, Chenhall et al., (2013), and more recently, Durocher and Fortin (2021), highlight the scope for future research to examine dissonance in accounting. Dissonant translation is pertinent in this study because translations, derived from the French term traduction, between author and user are subject to degrees of freedom (Latour, 2005) serving to highlight "the subsequent effect of creative products on their users" (Hutter, 2015, p. 60) from the original intent of the author. In our setting, dissonant translation occurs between the authors (i.e., standard setters from the late 1980s) and users (investors) today relevant to an accounting standard that remains in force. These illustrate the ex-post realisation and questioning of aspects of IAS 38 in the eyes of users.

The study makes significant contributions to three strands of the financial accounting literature relevant to R&D, standard setting and the role of accounting information more widely. Firstly, with the exceptions of the dated studies by Goodacre and McGrath (1997) and Entwistle (1999), which looked partly at similar issues albeit under significantly different settings (dif-

ferent accounting standards and focusing on specific countries), the R&D literature under IFRS is dominated by archival studies (e.g., Dargenidou et al., 2021; Dinh et al., 2016; Kreß et al., 2019; Mazzi et al., 2019b). This is the first study to directly canvass opinion of users on their use, and the decision-usefulness to them, of R&D accounting information and the capitalisation of development costs under IAS 38, even though the standard was first adopted almost 30 years ago. Second, studies directly engaging with investors' views on accounting standards and the underlying thinking of standard setters, remain scarce in the accounting literature (see Georgiou, 2018; Georgiou et al., 2021; Durocher and Georgiou 2021; Durocher and Fortin, 2021). While the evidence in this study does not reveal a situation of complete disharmony between users and standard setters on the principle of capitalisation of development costs,[1] it reveals a discordant meaning/interpretation to R&D related assets by users. This is due to their perceived low quality of the wording (i.e., the authorship) of the standard, and a lack of clarity and guidance in its application.[2] This site of contention is interpreted through the lens of dissonant translation between author intention and end-user, so also contributing to the prior literature employing dissonance as a framing in accounting (e.g., Georgiou, 2018; Mennicken and Power, 2015). Thirdly, and in a broader context, we provide evidence that R&D related accounting information is used by investors for stewardship purposes but its verifiability and informativeness is impaired due to the loose nature of the criteria and lack of mandated disclosure. As such, this finding advances the literature on the role of accounting information in firms' monitoring and governance processes (e.g., Bushman and Smith, 2001; Cascino et al., 2016; Lambert, 2010).

Our findings raise important policy implications. First, the continued need for standard setters to more actively promote and consider user views in the agenda consultation phase and standard setting/revision process (see also Durocher and Fortin, 2021). Indeed, despite recent efforts by the IASB, user comment on standards remains at low levels compared to preparers and auditors (Bhimani et al, 2019; Jorissen et al., 2012; Pelger and Spieß, 2017). Second, and reflective of dissonant translation, the original expectations of the standard setters may not translate into practice, due to the vagueness of the wording in standards. Indeed, issues of translation between standard setter expectations and investors' use in practice may also be highly relevant to other and particularly dated standards that may lack specific guidance and remain open to managerial judgement (e.g., IAS 19 Employment Benefits and IAS 37 Provisions, Contingent Liabilities and Contingent Assets).

More widely, the issue of intangible assets remains a point of debate among standard setters and regulators. The IASB (2016) feedback statement on the 2015 agenda consultation reported the creation of a research pipeline of future research projects on which work would be carried out in advance of the next agenda consultation in 2021. Significantly, "the Board narrowed the scope of one of those projects [on intangible assets, R&D and extractive industries] to cover only extractive activities, without a broader review of intangible assets and of research and development (R&D)" (ibid, p. 30). This was despite prior support for such a review by the European Securities and Markets Authorities (ESMA).[3] However, the IASB, in its request for information on what the Board's priorities should be over the next five years, includes revisiting IAS 38 as one of its potential projects (IASB, 2021, Table 5). Relevant to this, the European Financial Reporting Advisory Group (EFRAG) has noted that "due to the age of IAS 38 there are concerns about adequacy when identifying, recognising and measuring internally generated assets. . ..[such that] that a fundamental overhaul of the Standard was necessary" (EFRAG, 2019, p. 1–2). Further, in the UK, the Financial Reporting Council (FRC), (FRC, 2021, p. 4) highlights "the limitations of the current reporting framework in capturing and presenting clearly the nature and value of intangibles" and notes strong support from investors. Our findings are very timely and speak directly to these developments.

The remainder of the paper is structured as follows. In Section 2, we first outline the historical development of IAS 38 and influences on the mandatory capitalisation of development costs, followed by a review of the relevant literature on R&D and the theoretical framework of dissonance employed in this study. The research methods are presented in Section 3, followed by the findings and their discussion in Sections 4 and 5, respectively. Finally, concluding comments and areas to inform future research are discussed in Section 6.

2. Development of IAS 38 and related literature

2.1. Development of IAS 38 and influences on mandatory development costs' capitalisation

IAS 38 was issued in 1998 and remains in effect today. This Section outlines the history of the development of IAS 38 and, importantly, sheds light on the evolution of the requirement for development costs to be capitalised when certain criteria are met (summarised in Table 1).

IAS 9 Research and Development Costs, the precursor to IAS 38, was issued in 1978 (effective from 1 January 1980). In relation to IAS 9, in 1974, the IASC's steering committee suggested that it followed the US (Statement of Financial Accounting Standards 2) and the UK Exposure Draft (ED) 14 on Research and Development, which both required all R&D expenses to be written off (Hope and Gray, 1982). However, following comments and pressure on the UK Accounting Standards Committee (ASC), notably influenced by preparers in the aerospace and electronics sectors, the ASC issued ED 17 Research and Devel-

[1] This is in contrast to the evidence on users' perceptions on accounting for goodwill (Durocher and Georgiou, 2021).
[2] This is in line with the evidence in Durocher and Fortin (2021) about analysts' attitudes on accounting standards more broadly.
[3] https://www.esma.europa.eu/sites/default/files/library/2015-1740_-_esma_cl_to_the_iasb_agenda_consultation.pdf.

Table 1
Development of IAS 38 and related influential factors for the accounting treatment of development costs.

Year	IASC/IASB		Background and developments in other standard setters/countries
	Milestone	Accounting treatment	
1974	IASC's steering committee *recommendation*	All R&D expenses to be written off	United States (SFAS 2): All R&D expenses to be written off. UK ED 14 Research and Development: All R&D expenses to be written off.
1975			UK ED 17 Research and Development: Requirement for the capitalisation of development costs meeting specific criteria.
1977			UK SSAP 13 Accounting for Research and Development) was issued in December: Optional capitalisation of development costs, subject to meeting specific criteria. However, the wording in SSAP 13 discouraged capitalisation (see Coopers and Lybrand, 1990).
1978	IAS 9 Research and Development Costs (effective from 1 January 1980)	Optional capitalisation of development costs, subject to meeting specific criteria.	
1989	ED 32 (E32) Comparability of Financial Statements	E32 dealt with twenty-nine issues where existing IASs allowed a choice of accounting treatment. In general, a single accounting treatment was to be recommended. However, the IASC favoured that R&D costs should be expensed but could be capitalised where criteria met.	IOSCO argued that the standards, including IAS 9, allowed too much choice that could impair the comparability of financial statements over time and between entities.
1989	Statement of Intent: Comparability of Financial Statements	The IASC supported mandatory capitalisation of development costs to be recognised as an asset when they met the criteria in paragraph 17 of the original IAS 9.	
1991	E37 Research and Development Activities	The recommended practice in the Statement of Intent was formally proposed for adoption.	
1993	IAS 9 Research and Development Costs (revised), (effective from 1 January 1995)	The recommended practice in the Statement of Intent and E17 were formally adopted.	The accounting treatment of mandating the capitalisation of R&D was effectively that applicable under the Canadian standard (see Nix and Nix (1992) and CICA Handbook Section 3450 (1978) for details), which relied upon managerial decision making and resulted in a bias towards expensing
1997	E60 Intangible Assets	Proposal to combine the requirements relating to all internally generated intangible assets in one standard and withdrawing IAS 9 (revised).	IOSCO sought further change such that IASC should reconsider the required treatment of capitalisation of development costs or consider providing more objective criteria and advocated the recognition of all such costs as an expense (in line with US GAAP treatment) with enhanced disclosure to provide more useful information to investors.
1998	IAS 38 Intangible Assets (effective from 1 July 1999)	Treatment of all internally generated intangible assets into one standard. An intangible asset arising from development (or from the development phase of an internal project) should be recognised if, an enterprise can demonstrate all of the six criteria listed in paragraph 57.	IASC concerns over consistency with the Conceptual Framework for the recognition of an asset on the balance sheet consequently distorting performance measurement and a lack of signalling to users.

opment, in 1975, which regarded such a single accounting treatment (i.e. expensing) as "too rigid" (Weetman, 1977, p. 172). In fact, ED 17 *required* the capitalisation of development costs meeting specific criteria but, again after preparer pressure, was subsequently amended by the ASC under Statement of Standard Accounting Practice (SSAP) 13 to permit managerial choice (Hope and Gray, 1982). However, it was generally viewed in practice as discouraging capitalisation and promoting expensing (Coopers and Lybrand, 1990).

Following the reaction that the ASC received to ED 14, and the subsequent amendment to allow capitalisation, the IASC, under IAS 9, also permitted capitalisation subject to specified criteria (see Appendix B) and was, in effect, heavily influenced by preparer comments in the UK. It is notable that investors, as users of accounting information, commonly did not lobby in the standard setting process or respond to EDs (Hope and Gray, 1982; Weetman et al., 1996; Harding and McKinnon, 1997).

The IASC's ambition of increased internationalisation through countries adopting IAS (Camfferman and Zeff, 2007, Chapter 10), faced criticism in the late 1980s, particularly from the International Organisation of Securities Commissions (IOSCO) that the standards, including IAS 9, allowed too much choice that could impair the comparability of financial statements over time and between entities. Against this backdrop, the IASC issued Exposure Draft 32 (E32) Comparability of Financial Statements, in January 1989. E32 dealt with 29 issues where existing IASs allowed a choice of accounting treat-

ment. In general, a single accounting treatment was to be recommended as IASC sought to encourage IOSCO to endorse IASs through greater comparability of accounting treatment across standards (Pelger and Spieß, 2017). Interestingly, despite this pressure for a single treatment, the IASC favoured that R&D costs should be expensed (what they called 'benchmark treatment') but could be capitalised where criteria met (what they called the 'allowed alternative treatment') (see Cairns, 1999, p. 287). Commentators' views "were evenly divided" (Cairns, 1999, p. 287, citing IASC News July 1990, p. 9). On the one side, commentators supported mandatory capitalisation subject to meeting the criteria, on the basis that this would be consistent with the Conceptual Framework (for the recognition of an asset). On the other side, commentators argued that "the criteria were too subjective and allowed too much scope for manipulation" (Cairns, 1999, p. 288) and hence all costs should be expensed.

Subsequent to E32, A Statement of Intent was issued by the IASC in 1989. This reported that "comment letters [on E32] were virtually unanimous in supporting the objective of greater comparability of financial statements" (para 7). On development costs, the IASC believed that a managerial-led free choice regarding capitalisation would undermine the comparability of financial statements (IAS 38, BCZ 41). The IASC confirmed the *required* treatment of development costs to be recognised as an asset when they met the criteria in paragraph 17 of the original IAS 9 (Statement of Intent, Appendix B). Significantly, this deviated from the existing IAS 9 by removing explicit managerial choice over capitalisation. This was formalised through E37 (1991) 'Research and Development Activities' and incorporated into IAS 9 (revised in 1993), effective from 1 January 1995.

It is worth noting that, at that time, Australia and Canada required mandatory capitalisation of development costs (Nix and Nix, 1992). Indeed, in the revisions to IAS 9, the accounting treatment of mandating the capitalisation of R&D was effectively that applicable under the Canadian standard (see Nix and Nix (1992) and CICA Handbook Section 3450 (1978) for details). Interestingly, the wording in the CICA 1978 Handbook that accompanied the criteria for capitalisation explicitly stated that "management must make the determination of when a project has met the above criteria in order to capitalise" (Smith, 1999, p. 10). As Smith (1999, p. 10) further explains, "this determination is what gives Canadian managers discretionary decision-making power concerning [the capitalisation of] development costs".[4] This was an implicit feature of IAS 9 and subsequently IAS 38.

Despite the revision in IAS 9, IOSCO sought further change such that IASC should reconsider the required treatment of capitalisation of development costs or consider providing more objective criteria and advocated the recognition of such costs as an expense with enhanced disclosure to provide more useful information to investors (Cairns, 1999, p. 390). However, any such move towards a single treatment of development costs was not in the IASC's thinking, when in August 1997 it published proposals for revised treatments for intangible assets in E60 Intangible Assets (IAS 38, BCZ, 106). E60 proposed to combine the requirements relating to all internally generated intangible assets in one standard and withdrawing IAS 9 (revised) (IAS 38, BCZ, 107). In relation to R&D, it proposed that an intangible asset arising from development (or from the development phase of an internal project) should be recognised if, an enterprise can demonstrate all of the six criteria listed below. These remain unchanged in IAS 38 (para 57) since then:

1. the technical feasibility of completing the intangible asset so that it will be available for use or sale;
2. the intention to complete the intangible asset;
3. the ability to sell (or use) the intangible asset;
4. the availability of adequate resources, technical, financial or other, to complete the asset;
5. the ability to reliably measure the expenditure and;
6. the ability to justify that the asset will generate future economic benefits.

Although the criteria are, *in the main*, consistent with those set out in the original and the revised IAS 9, nonetheless, Davies et al. (1999, p. 916) explain that for IAS 38 "these are more restrictive because in order to demonstrate to fulfil criterion d [6] above, an enterprise needs to assess the future economic benefits to be received from the asset using the principles in IAS 36 Impairment of Assets". Although a minority of commentators argued that E60's proposed recognition criteria were too general to be effective in practice, the majority supported most of the proposals in E60 (IAS 38, BCZ, 109). Subsequently the IASC merged the treatment of all intangibles into one standard, IAS 38, effective from 1 July 1999.

Summarising the background to the IASC's proposals and the development of IAS 38, Rivat and Nulty (1998, p. 252), IASC research managers at the time, noted that a key driver to the decisions taken was to provide more relevant information to users of financial statements and consistency with the Conceptual Framework. Specifically, there was the perception that "there have been massive investment in intangible assets in the last two decades" and that "complaints have been received the traditional balance sheet is becoming meaningless because it does not reflect some of the main sources of an enterprise's revenues". The Basis for Conclusions of IAS 38 maintains this view and reports complaints with respect to:

(i) the non-recognition of investments in intangible assets in the financial statements distorts the measurement of an *enterprise's performance* and does not allow an accurate assessment of returns on investment in intangible assets; and

[4] Due to the geographic and cultural proximity of Canada and the US, there was a tendency for Canadian firms to act relatively more consistently with their American counterparts (Ding et al., 2004), thus exercising the inherent flexibility provided by the wording in Canadian GAAP and opting for expensing R&D costs. This is confirmed by Entwistle (1999), Smith (1999) and Callimaci and Landry (2004).

(ii) if enterprises do not track the returns on investment in intangible assets better, there is a risk of over- or under-investing in important assets. An accounting system that encourages such behaviour will become an increasingly *inadequate signal*, both for internal control purposes and for external purpose". (IAS 38, BCZ, 39, bi and ii) (emphasis added)

Moreover, the IASC reflected on evidence from mainly US based archival studies which "establish that capitalisation of research and development expenditure yields value-relevant information to investors" and maintained the view that "the fact that some uncertainties exist about the value of an asset does not justify a requirement that no cost should be recognised for the asset" (IAS 38, BCZ, c and d).

Despite the IASC's intentions, various factors may impair the usefulness of the development costs capitalised. Primarily and reflective of IOSCO's earlier criticisms regarding comparability, satisfying the conditions, although as discussed not explicitly acknowledged, is susceptible to managerial judgement which is compounded by a lack of specific guidance in the standard (PricewaterhouseCoopers, 2010; KPMG, 2007). Indeed, Davies et al. (1999, p. 916) commented that the recognition criteria are "rather tortuously worded". For instance, the inherent uncertainty of future economic benefits, coupled with an inability to reliably measure such benefits, raises difficulties in separating out the identifiable development costs (Zéghal and Maaloul, 2011; KPMG, 2007; Barker and Penman, 2020). Following this, it could be argued that, in essence, reporting enterprises still have a largely free choice as to how much, if any, of such costs are capitalised due to managerial judgement on meeting the conditions (Camfferman and Zeff, 2007, Chapter 9, and see Chen et al., 2017; Mazzi et al., 2019a). In fact, Rivat and Nulty (1998, p. 256) acknowledged that "some users of financial statements are [were] suspicious of the recognition of internally generated IA [Intangibles Assets] in the balance sheet. Some have [had] concerns that the IASC's proposed definition and recognition criteria which require management and auditors to exercise judgement, are too subjective and undermine the comparability of financial statements". Ahmed and Falk (2006, p. 234) have commented that "standards setters [in this case FASB] imply that they believe the cost of possible misstatement to exceed the benefits of signalling" and this is why a standard would require full expensing of all R&D expenditure. However, judging by their decision (and IAS 38 Basis for Conclusions referred to earlier), the IASC was of the view that the cost of misstatement does not exceed the benefit from signalling.

In relation to disclosure, and following on from IAS 9 (revised), IAS 38 specifies that the relevant R&D expense or capitalised amount (where material) be reported separately (Mazzi et al., 2019b). Further, if development costs are capitalised and amounts are deemed material, a reconciliation of the carrying amount at the beginning and end of the period needs to be disclosed. Prior to IAS 9 (revised) and IAS 38, the preamble to IAS 9 stated that this disclosure "enables the users of financial statements to consider the significance of such activities in relation to those of other enterprises" (para 13). However, the preamble to IAS 9 continued by indicating "further information which might usefully be provided. . .could include a general description of the project, the stage which the project has reached, and the estimated future costs to complete it" (para 14). It is notable that this potential disclosure, which would also be in support of IOSCO's preference for more enhanced disclosures (Cairns, 1999, p. 390), is largely absent from IAS 38 and the current reporting of development costs. Hence, there are minimal mandatory disclosure requirements with users being reliant on voluntary disclosure to fulfil the resultant information gap (Stark, 2008; Wyatt, 2008; Lev, 2018).

2.2. Investor related literature on R&D capitalisation

Prior research on the accounting for R&D under IFRS has been dominated by archival market-based studies, reflecting a lack of direct user engagement studies. From these archival studies, two prominent themes are identified: the value relevance, and hence signalling effect of capitalisation, and the use of capitalisation as an earnings management tool.

The signalling effect is premised on the grounds that through capitalisation, preparers send an informed and credible positive signal on future economic benefits to investors and other users (Healy et al., 2002; Lev et al., 2008; Lev, 2019). Indeed, amounts capitalised under IFRS are found to be value relevant, both for equity and debt holders (e.g., Tsoligkas and Tsalavoutas 2011; Shah et al., 2013; Dinh et al., 2016; Kreß et al., 2019). Further, in terms of disclosures, Chen et al. (2017), in an Israeli context, find that voluntary disclosure of forward-looking information on product pipeline development and its expected consequences is value-relevant over and above the capitalised R&D asset.

However, due to the subjectivity within an R&D environment, and the inherent managerial discretion in relation to meeting the criteria for capitalisation under IAS 38, there is a recognised potential for related earnings management (Dinh et al., 2016; Kreß et al., 2019). As such, related literature has considered this feature when examining the signalling effect of capitalisation and/or capitalised development costs. Specifically, Dinh et al. (2016) find that market values are not associated with capitalised R&D for their overall sample of IFRS reporting German firms. In fact, they find that market values are negatively associated with capitalised R&D for firms which are likely to use capitalisation for benchmark beating (about one third of their overall sample). On the other hand, the market values R&D assets positively for well-performing firms, for which capitalising does not contribute to beating an earnings benchmark (about half of their overall sample). Furthermore, Mazzi et al. (2019a) show that that capitalisation is more widespread in countries with higher levels of corruption and that the capitalised amounts in such countries have a lower contribution to future earnings in the long-run. Moreover, they find that market participants appear unable to discern the benefits associated with the amounts of development costs capitalised in the short-term (irrespective of whether companies are located in countries with high or low levels of corruption). However, in the long-run, capitalisers outperform expensers. This finding is not surprising as it takes time for the benefits of R&D

investments to unravel (Lev and Sougiannis, 1996; Nadiri and Prucha, 1996) and more information becomes available more broadly.[5]

Particularly relevant for the present study are the findings by Shah et al. (2013) and Dargenidou et al. (2021). Both studies focus on the UK and both cover periods before and after the implementation of IFRS. This allows a direct contrast of firms' reporting behaviour, and the market's response to such behaviour, from a reporting regime that allowed managerial choice (SSAP 13) to the IFRS regime that mandates capitalisation. First, Dargenidou et al. (2021) show that, on transition to IFRS, the number of UK R&D active firms that capitalised development costs increased significantly (from around 11% capitalisers in the pre-IFRS period to about 47% capitalisers in the post-IFRS period) and the number of capitalisers has remained at similar levels since then. Further, they report that the amount of development expenditure capitalised is higher in the post-IFRS period (significant at 10%). This would support the IASC's thinking that mandatory capitalisation would result in larger and more frequent recognition of intangible assets on companies' balance sheets (Rivat and Nulty, 1998) although it is not widespread across the majority of R&D active firms (consistent with Lev's 2018; 2019 concerns).[6] Second, Dargenidou et al. (2021) find that capitalisation of development costs results in current returns incorporating more future earnings information than expensing under UK Generally Accepted Accounting Principles (GAAP) but not under IFRS. This result holds irrespective of a firm's earnings management incentives or strength of corporate governance for the period under IFRS. This suggests a loss of reliability (and hence impairing the potential signalling) of the capitalised amounts. These findings help to explain those by Shah et al. (2013) who show that R&D assets reported under UK GAAP are positively related to share prices but this association decreases in the post-IFRS period.

Stark (2008) conjectures that IAS 38 limits managers' ability to convey information about the success of R&D because it does now allow the same explicit level of exercise of managerial judgement in the accounting treatment and hence impairing the signal associated with capitalisation. Further, Dargenidou et al. (2021) argue that, under IFRS, capitalisation comes with greater uncertainty regarding the realisation of future economic benefits associated with the development costs capitalised, which is resolved only in the long term. As such, Dargenidou et al. (2021) align with Stark (2008, p. 282) who comments that "that IAS standards should be changed to allow the discretion, previously allowed under SSAP 13, as to whether or not to capitalise qualifying development expenditures". This echo's earlier concerns raised by Ahmed and Falk (2006, p. 261) that "it is unlikely that mandating European firms to follow IAS will enhance the value relevance of the firm's R&D reporting [...] Leaving the accounting policy for R&D expenditure to management's discretion is likely to enhance their accounting reports' value relevance." The findings from Dinh et al. (2016), who report that R&D capitalisation under IAS 38 in Germany increases analysts' forecast errors lends support to these arguments.

In contrast to this plethora of market-based studies, there are no studies that have directly examined the views of users on the treatment of R&D under IFRS. To our knowledge, only two such studies exist, albeit both relate to the period prior the adoption of IFRS when firms were reporting under national GAAP.

Within a UK setting under SSAP 13, Goodacre and McGrath (1997), in their experimental study with an analysts cohort, use three simulated sets of financial statements. The only difference in the statements was in relation to the accounting for R&D, with respective accounts representing a full 'capitaliser', an 'expenser', and an equivalent investment in tangible fixed assets. They report no significant difference of imputed market value between expensers and capitalisers, in support of the so called 'no effects hypothesis'. Hence, they asserted that analysts were not concerned about the accounting treatment but rather that R&D is occurring.[7]

In a Canadian context, Entwistle (1999) conducted interviews with preparers and analysts, the latter comprising 12 sell-side and three buy-side analysts in 1995. Despite the mandatory capitalisation of development costs under Canadian GAAP (Nix and Nix, 1992; Ding et al., 2004), the study reported on the capitalisation of such costs as a "deferral option" (Entwistle, 1999, p. 328; and see discussion in Section 2.1 and reference to Smith, 1999). The findings showed that 11 out of the 15 analysts were opposed to capitalisation. Consistent with this, Entwistle (1999) reported the analysts' preference for conservative accounting to minimise the possibility of future impairments and their concerns regarding earnings manipulation associated with capitalisation. They also raised doubts regarding the ability of firms to predict the future adequately and hence not being able to satisfy the relevant capitalisation criteria.

The context in which these studies were conducted is very relevant for the interpretation of their findings. The analysts and preparers involved in the studies would only be exposed to a reporting environment and accounting treatments permitted under UK and Canadian GAAP, respectively. As discussed earlier, SSAP 13 in the UK provided an option to capitalise or expense development costs expenditure, where relevant criteria are met. However, expensing was the prevalent practice that was encouraged by SSAP 13 (Coopers and Lybrand, 1990; Stark, 2008; Dargenidou et al., 2021). Similarly, Canadian GAAP enshrined managerial discretion regarding the capitalisation decision with prior literature all reporting the prevalence of expensing in Canada (Entwistle, 1999, Smith, 1999; Callimaci and Landry, 2004). However, under IAS 38, more companies

[5] In a debt-markets context, Kreß et al. (2019) inter alia show that capitalised development costs are value relevant only for firms with no incentives to capitalise development costs as an earnings management tool.

[6] Mazzi et al. (2019b) and Kreß et al. (2019), using large global samples of R&D active firms, report similar levels of capitalisation rates to that of Dargenidou et al. (2021) for the post-IFRS periods. However, Mazzi et al., (2019b) also show that greater levels of development costs capitalisation would be expected at a global level, based on firm and country characteristics. Hence, this tension/argument regarding levels of capitalisation holds beyond the UK setting in particular.

[7] Consistent with this, Nixon (1997, p. 273), albeit in a study with preparers from the UK, reports that preparers perceive that the immediate expensing of R&D has no consequences with respect to market value.

do capitalise development costs (Dargenidou et al., 2021; Mazzi et al., 2019b) as envisaged by the IASC (see Rivat and Nulty, 1998). Effectively, the explicit mandatory treatment on meeting the conditions specified in the standard has resulted in a lower threshold for asset recognition in the IFRS era (Barker & McGeachin, 2015). Finally, as discussed earlier, intangibles and particularly R&D spending are more prominent in today's economies.

These user-based studies also sought views on R&D disclosure practice and its potential importance to them vis a vis the accounting treatment. The studies, reported a low level of disclosure content and usefulness to users, highlighting this as an area for greater consideration by standard setters to reduce information asymmetry. For instance, Entwistle (1999, p. 334) concluded that analysts' preference for expensing "should be of particular interest to accounting standard setters [and suggests that] disclosure may be the preferred means for communicating relevant R&D information" rather than signalling through capitalisation. Goodacre and McGrath (1997) commented that disclosure adequacy might be a more useful goal for accounting regulators than treatment prescription.

2.3. Theoretical framework

To help analyse the expectations of the standard setters against the views of investors in their use in practice of IAS 38, the theoretical framing of dissonance is employed. Dissonance involves "sites and moments of dispute and contention" (Hutter and Stark, 2015, p. 10) or discord arising between two parties. Mennicken and Power (2015) reflect that such sites of dissonance are evident in the pluralistic nature of accounting. As such, Hutter and Stark (2015, p. 1) assert that products carry inherent symbols of meaning or worth and this extends specifically to assets on the balance sheet of a company relevant to international accounting standards. Indeed, a small body of prior work in accounting has employed dissonance to help theorise differing views in varying contexts: between standard setters and users (Georgiou, 2018; Mennicken and Power, 2015); between institutional investors and responsible investment advocacy (Clune and O'Dwyer, 2020); and between management and stakeholders analysing the different understandings of performance measurement systems (Chenhall et al., 2013). Three discrete forms of dissonance are evident in the prior literature.[8]

First is where fundamental disagreement exists between parties, such that "there is principled disagreement about what counts" (Stark 2009, p. 17). For instance, Mennicken and Power (2015) report on the dissonance occasioned by brand accounting in the 1980s in the UK concerning the recognition of such intangible assets on the balance sheet. Brand accounting was opposed by standard setters (ASC at the time) who argued that the valuation of brands was too subjective and hence not reliable, and brands were not separable from the underlying physical product. This was in direct contrast to preparers' and auditors' actual recognition of brand values in financial statements. Such dissonance is referred to by Mennicken and Power (2015, p. 215) as "a collision between two managerial 'orders of worth' (Boltanski and Thévenot 2006)". Although not drawing on dissonance as a framework, but rather employing framing, Durocher and Georgiou (2021) focus on accounting for goodwill arising from business combinations. They report that claims by standard setters about the value relevance of goodwill impairments are not experienced in practice and users question the benefits of standard setters working in this area. They interpret their findings as a collision of frames and an intractability between users and standard setters.

Second is where there exists a difference of emphasis between parties or "a principled disagreement [between actors] about what counts or is worthy. . .whilst [nonetheless] recognising alternative conceptions of value" (Stark, 2009, p. 17). For instance, examining fair values, Georgiou (2018) contrasts the emphasis of standard setters as to its anticipated use in valuation compared to the emphasis of investors and analysts who focus on its use in performance measurement. Hence, their actual understanding of the meaning of fair value (and its limitations) is not of central dispute, and further that "different evaluations of fair values do not mean that either side is getting the worth of fair values wrong" (Georgiou, 2018, p. 1323). Rather, the relationship between standard setters and users "is dissonant as accounting is not used in practice in the ways expected by standard setters" (Georgiou, 2018, p. 1322) where each 'world' privileges particular modes of evaluation (see Stark, 2009).

Similarly, reflecting on the debates concerning the current emphasis on decision-usefulness vis a vis stewardship in the more recent IASB Conceptual Frameworks (2010; 2018), there is difference of emphasis or dissonance with stewardship subservient to decision-usefulness as the prime objective of financial reporting information to users. However, Pelger (2020, p. 38) observes "theoretical works have repeatedly questioned whether information needed for valuation decisions in capital markets are the same as for stewardship decisions (e.g. see Gjesdal, 1981; Kuhner & Pelger, 2015; Paul, 1992)" i.e. to serve the respective needs and the difference of emphasis of users. Hence, despite the re-introduction of stewardship in the Conceptual Framework (2018), Van Mourik and Katsuo Asami (2018, p. 171) comment "this increased prominence [of stewardship] is in name only" such that dissonance of emphasis remains.

Third, apposite to this study's findings, are sites of dissonant translation between authors, who as "actors create or produce a product and users as those actors who subsequently interpret and experience the product" (Hutter, 2015, p. 61). In such sites, alternative conceptions arise, opening "the wide scope of new variations and new interpretations" (Hutter, 2015,

[8] The separate field of literature relating to cognitive dissonance is not relevant to this study. Cognitive dissonance occurs whenever *one* party "simultaneously holds two inconsistent cognition (ideas, beliefs, opinions)" (Jermias, 2001, p. 143) (and see Kim and Bay, 2017). Cognitive dissonance is induced when individuals feel responsible for negative outcomes that conflict with their own self-perceptions for instance by managers concerned with governance in an earnings management context (Rennekamp et al., 2015).

p. 86). Here, the issue of concern is not emphasis between authors and users, but rather the possibility for interpretation (Stark, 2009) that arises in relation to the subject matter itself and its subsequent use by, and value to, users.

As Hutter (2015, p. 60) outlines, "the notion of "translation" is frequent in inquiries that investigate certain kinds of value transfer. . .one assumes that something expressed in the idiom of the original source is translated into another idiom. The assumption implies a high degree of regularity. . ..[However,] the variability of translation in creating new symbolic products is much larger". Through translation to users "value change is perceived as an instance of dissonance" (p. 61) due to different interpretations and understandings between authors and users. Hence, whilst such products may be expected to be viewed uniformly, their actual meaning or worth is subject to multiple translations or interpretations by the "persons exposing themselves to its use" (ibid, p. 59) and "the critical judgements of those who experiences [sic] the product" (ibid, p. 62).

Chenhall et al. (2013) examining performance measurement systems highlight the consequences of multiple interpretations on organisational priorities and resource allocations. They cite Nahapiet's (1988) study of changes to a resource allocation formula in the UK's National Health Service in which stakeholders strongly contested the formula's loose design and its subsequent multiple interpretations consistent with dissonant translation highlighting the need for greater operational guidance and consequential clarity and consistency of use in practice. Indeed, of direct relevance to a financial accounting context, Mennicken and Power (2015, p. 211) comment that "valuation practices may eventuate in single figures". . .but that they are "inherently malleable. . .delineating the complex and contested nature of specific accounting valuation practices" whose subsequent interpretation by users belies the apparent precision of recognised assets on the balance sheet.

3. Method

To answer our research questions and gain rich qualitative insights, we employed semi-structured interviews (see for instance Abraham and Bamber, 2017; Taffler et al., 2017; Georgiou, 2018; Slack and Tsalavoutas, 2018; Dulige et al., 2019; Georgiou et al., 2021). Georgiou (2018, p. 1301) comments that interviews with investor related groups enables the capture of "*perceptions*, *observations*, and *thoughts* about the worth and impact" (emphasis added) of accounting information relevant to their decision making. Further, as reported in Georgiou et al. (2021, p. 12-13), our approach is "important given the lack of interpretive studies that directly engage with financial statement users (Durocher, 2009)" and provides us with an interface to "real users in real markets" (Power, 2010, p. 208).

Specifically, we consider the views of both buy-side and sell-side analysts to capture the emergent similarities and differences in the usefulness of such information to them and their reflections on development costs capitalisation. In our findings, we collectively refer to these two groups as 'investors'. Sell-side analysts, commonly employed by investment banks and advisory firms, analyse financial statements, and other public information sources, to provide detailed research reports with associated equity recommendations. Their reports are used by the buy-side and fund managers (a distinction blurred in practice as noted by Georgiou, 2018) as part of their equity investment decision-making informed by their own in-house analysis.

In preparation for the interviews, initial discussions were held by the research team with a senior partner in one of the Big 4 firms and a senior member of a global accounting professional body. Beyond having considerable expertise on financial reporting, both have extensive networks and interactions with users of accounting information. This helped us to further develop the interview questions and overall framing around the use and usefulness of R&D related accounting information, and capitalisation of development costs in particular.

The interviews covered the following key areas to help ensure a clear focus of discussion and responses relevant to our research questions:

- The importance of R&D and how investors use R&D related accounting information (e.g., measures of R&D effectiveness such as the relationship between R&D and future earnings). These issues were explored in the context of the usefulness of R&D disclosures provided within the annual report.
- The accounting treatment of R&D and specifically their views on the capitalisation of development costs. This included whether development cost capitalisation is associated with a signalling effect, the possibility of accounting manipulation through earnings management, and the conditions for capitalisation specified in IAS 38.
- Suggestions for improvements in the standard.

To secure access to senior and experienced investors, we used personal and professional body contacts and subsequent snow-balling following on from the initial preparatory discussions noted above. Such an approach is consistent with that used in other interview-based research, such as by Taffler et al. (2017) and Georgiou (2018). As part of the interview process, and in compliance with university research ethical procedures for this research, all of the participants were informed that their responses would be anonymised by name and institution. This also enabled them to speak freely without concern as to expressing their personal and professional views. Their consent to record and transcribe the interview was further confirmed at the commencement of any interview.

In total, the interview cohort comprised 17 interviews with experienced and senior analysts from global investment houses of which the majority were based in London. All of the interviewees had considerable experience of equity investment decisions following international firms and their accounting under IFRS, across a range of sectors enabling us to capture

the views of those with an "experienced eye" (Carrington and Catasús 2007, p. 47). Specifically, all interviewees had experience in following companies that capitalise and expense development costs and hence were able to provide informed comment on the accounting treatment of R&D costs and its implications to them as users.

A first tranche of eight face-to-face interviews was conducted in March and April 2018. On reflection, this initial tranche of interviews highlighted the need for both greater investor coverage and a more balanced composition of the final sample covering both buy-side and sell-side investors.[9] This led to the exclusion of a single interview with a private portfolio investor from the final sample. Accordingly, additional planning was undertaken and agreement reached with a further ten participants. The research instrument was unchanged. However, due to the outbreak of Covid-19 in early 2020 and the uncertainty surrounding face to face interviews, it was agreed with all the participants that interviews would be conducted on-line and scheduled for autumn 2020 with the possibility that face-to-face interviews may be conducted by that time. Due to the ongoing Covid-19 pandemic, all of the second tranche of interviews were delayed to October and November 2020 and necessarily conducted on-line via Zoom or Skype.

Although all the interview questions remained consistent across the entire cohort, one evident consequence of this enforced format change was the fact that the interviews became more formal, in a dedicated standard time slot of usually 30 min. This facilitated their focus but very little informal "chit-chat" and rapport with the interviewees. Indeed, it is observed in other disciplines that face-to-face interview format can be up to 33% longer than the equivalent media-based format (Krouwel et al., 2019).

Across the interviews, we generated 609 min of recordings with a mean (median) of 36 (36) minutes (similar to that of Georgiou et al., 2021 who report an average of 30 min), with the longest lasting 55 and the shortest 23 min towards the end of interviews. Consistent with the ethical procedures regarding personal and organisational anonymity, the transcripts are referred to in the findings as I1 to I17 with a suffix for S or B, denoting sell-side and buy-side respectively. Table 2 provides summary information.

Overall, the final sample of interviews generated appropriate comment and insights to enable us to address our research questions (Dai et al. 2019; Georgiou et al. 2021). As the interviews progressed with both sell-side analysts and the buy-side, common themes to their responses emerged, with no new observations coming to light (Dai et al., 2019) that would require additional interviews to further probe any such issues. Based upon this and subsequent detailed reading of the transcripts, we felt confident that we had achieved a level of data saturation (Strauss and Corbin 1998, Guest et al. 2006; Corbin and Strauss 2008; Malsch and Salterio, 2016; Dai et al., 2019). The total number of interviews in our study is comparable to other interview-based research with capital market participants (see for instance, Campbell and Slack (2011) with 19 participants, Solomon et al. (2011) with 20 participants, Georgiou (2018) with 23 participants, of which 13 were sell-side or buy-side analysts and Georgiou et al. (2021) with 17 sell-side analysts).

In analysing the data, we followed an iterative method similar to that outlined in Smith-Lacroix et al. (2012) and commonly applied to interview-based work (Abraham and Bamber, 2017; Georgiou, 2018) during which we reflected on our contextual understanding of the data (Wells et al., 2019). Firstly, the research team independently read all of the interview transcripts and micro-analysed the transcribed data (Imam and Spence, 2016; Dulige et al., 2019). This enabled each researcher to thematically order the data, informed by these readings and to which the prior literature and our initial pre-interview discussions had sensitised us (Ahrens and Chapman, 2006). Secondly, as part of this reading process, each researcher highlighted illustrative verbatim excerpts relevant to each emergent theme such that agreement and a common interpretation could be reached (Malsch and Salterio, 2016) on the coding. This involved scrutinising both sell-side and buy-side interview transcripts to identify the common themes emergent between them and any differences that were noted to be reported in the findings. Finally, we then met as a research team to discuss and agree the common themes and quotations to be used in the analysis. This discussion was informed by the highlighted quotes enabling a consensus view of the emergent presentation of the findings. Finally, we again returned to all of the transcripts to ensure that no significant issues had been overlooked in the process. The themes and related verbatim quotes from our interviews around the corresponding three research questions that we examine are now presented.

4. Findings and discussion

4.1. How equity investors incorporate R&D accounting information and related disclosures in their work?

As a starting point, all of the investors confirmed the significant importance of R&D investment to them. They highlighted the role of R&D in relation to the "future pipeline of revenue and growth" (I1-S) and as "future life blood. [And] it determines for many companies, whether it will be around in the future." (I10-B); and "R&D is absolutely fundamental to the future of any commercial organization (I13-B).[10]

Due to its importance and the time lag between R&D and future revenue streams, as has also been demonstrated by prior relevant literature (e.g., Lev & Sougiannis, 1996; Chan et al., 2003), the interviewees confirmed that they use R&D related

[9] We would also like to thank both anonymous reviewers and the Editor for their initial feedback and encouragement to extend the sample of investors so as to more fully explore the issues raised in the research.

[10] In fact, some interviewees opined the general superiority of investment in R&D compared to that of tangible capital investment (c.f., Goodacre and McGrath, 1997).

Table 2
Investor interview details.

Code	Position	Category	Date	Interview duration
I1-S	Senior valuation equity analyst	Sell-side	7/3/18	51 min
I2-S	Managing director, equity research	Sell-side	8/3/18	36 min[+]
I3-S	Equity analyst	Sell-side	8/3/18	36 min[+]
I4-B	Fund manager, global equity	Buy-side	13/3/18	50 min[+]
I5-S	Equity research	Sell-side	13/3/18	50 min[+]
I6-S	Global equity valuation analyst	Sell-side	16/4/18	55 min
I7-S	Global equity research analyst	Sell-side	17/4/18	39 min
I8-B	Co-chief investment officer	Buy-side	9/10/20	34 min[*]
I9-S	Head of research: Europe	Sell-side	12/10/20	42 min[*]
I10-B	Head of global research	Buy-side	13/10/20	29 min[*]
I11-B	Global equities manager	Buy-side	14/10/20	37 min[*]
I12-B	Accounting analyst	Buy side	26/10/20	27 min[*]
I13-B	Fund manager	Buy-side	10/11/20	30 min[*]
I14-B	Investment manager	Buy-side	18/11/20	23 min[*]
I15–S	Investment manager	Buy-side	24/11/20	26 min[*]
I16-B	Investment manager	Buy-side	25/11/20	23 min[*]
I17-S	Asset stewardship director	Sell-side	27/11/20	24 min[*]

[+] Interviews were conducted in pairs.
[*] Interviews under Covid-19 restrictions, conducted remotely via Zoom or Skype.

information from companies' annual reports to construct measures of R&D efficiency and effectiveness in relation to future sales and/or earnings. For instance:

> "For forecasting companies' revenues, profits post the cost lines, obviously a big part of that is R&D." (I2-S);
> "[We look at] previous years of R&D and look at the incremental sales over the next two or three years." (I5-S);
> "I am trying to come up with a conversion factor of these expenditures into something which increases the value of the company. So typically, for example, I would try to look at an earnings growth regression on a three-to-five-year R&D. I care about it for the companies where there's a lot of R&D and these are what we have in the portfolio." (I8-B);
> "They [referring to other buy-side analysts] take R&D spend as the percent of revenue or as the percent of profit and they literally just build that into their forecasts." (I11-B);
> "There's the time lag, between the R&D expenditure and then the economic benefit R&D as a proportion of sales over time – where are we relative to history and relative to the peers?" (I6-S).

This latter quote also highlights another common theme in the responses of our interviewees: the importance of peer comparison in relation to levels of R&D investment and its conversion efficiency. For instance, I14-B mentioned the focus in companies with similar features in terms of R&D investment levels: "We look at R&D expense [expenditure] relative to total market cap to try and find which businesses were... now they may not have had massively productive R&D historically, but it would at least focus you on who are the companies that are actually saying they're investing in lots of R&D". Further, when talking about R&D spend relative to sales, I8-S noted that they would "never look at a company in isolation, you always look at it in the context of its industry, of its peers" (I10-B). Equally, I16-S commented on the importance of "compar[ing] it to peers on a like for like basis, [to] see the differences and then try and judge the difference in performance over time".

Interestingly, the interviewees explained that reflecting on these ratios and performance metrics of R&D efficiency, especially in relation to peer comparison and for over a period of time, enables their insights into a wider evaluation of governance and stewardship and on the quality of management (a theme that is subsequently linked to the actual accounting treatment of R&D costs – see Section 4.2). This is reflected in the following extracts:

> "From our perspective, every dollar spent on R&D, for you to have done that it has to have yield... you're expecting future benefits, so we make that assumption across the board...*It's still shareholders moneys that are being spent*. It's an opportunity or the opportunity costs of that. So, they should be held accountable for that." (I1-S);
> "Remember the point of returns calculations, it can be two-fold: How good have management done in the past? What's the return going to be in the future? ... It certainly comes down to thinking about the people and *the management financial track record*." (I6-S);
> "So, it's a communication capabilities story there for management, as well as their decisions around what they're spending on and how...it also gives you *a chance to look at management, and management effectiveness or not at spending on R&D*." (I11-B);
> "And I think one of the reasons that you're asking for the number is for a stewardship point of view, we want companies always investing in profitable R&D... So, we want to know what's being invested in. We want to know how much is being put into that" (I13-B).

From these reflections, we recognise that the R&D related accounting information used by the investors resonates with the aims of standard setters for it to provide decision-useful information to users. Furthermore, the interviewees' references to peer comparison, provides evidence for the need of the comparability of such information.

Despite their use of R&D related data in annual reports, when asked more specifically as to current disclosure usefulness to them, all of the investors criticised both the relative lack of contextual information and its specificity. This is perhaps not surprising given the lack of mandatory disclosure requirements in IAS 38, increasing the reliance on voluntary disclosures (Chen et al., 2017; Mazzi et al., 2019b; Wyatt, 2008). These views are reflected on the following quotes:

"The level of disclosure, the transparency, is so opaque I was having to make so many assumptions that the error bars [for forecasting] on everything just became so vast that it became meaningless." (I3-S);
There's very little in the way of actually good allocation of the R&D spend between the components... But in terms of actually 'Where are you deploying your money, what's your focus of your R&D spend, what do you think is going on in your industry and how are you deploying your R&D and how do you measure R&D productivity?' All of those are sort of fair game in terms of understanding what their strategy is and how they're allocating their capital. The annual report just says- that's what we've spent..." (I4-B);
"A lot of this stuff on R&D is pretty boiler plated. It's pretty standardised, there isn't a great deal that is going to get you excited. So, I think it gives you the numbers, you know, we know they are audited, some basic disclosure, it's done its job. I think the idea that it can be the key source of you understanding the research and development product project pipeline of a company, I think, is unrealistic..." (I9-S).

The overall sentiment towards current levels of disclosure is summed up by I6-S, I16-B and I11-B who candidly stated, respectively, that "it doesn't give a huge amount, it doesn't give a huge amount of insight", is "not very good" and that "the disclosures around it are inadequate, there's not enough information". The issue of disclosure content and its usefulness is revisited in Section 4.3, when we outline the investors' suggestions for changes to the standard.

Reflecting on these findings, it is apparent that both the sell-side and buy-side view R&D as a significant area of interest to them and use available accounting information in their analysis. However, if it was the intention of the IASB to make R&D financial reporting information more decision-useful to users and to enhance its comparability, the current level of related disclosure would seem to impair this.

4.2. How the use and usefulness of R&D accounting treatment by equity investors relate to those expected by standard setters?

Having gauged investors' views about the usefulness of R&D information, we explore the use and usefulness of the R&D accounting treatment (i.e., the mandatory capitalisation of development costs) to them. These views are contextualised in relation to the expectations of the standard setters. We also gauged their views as to whether they would find a model of full expensing, like that in the US, as being more useful to them.

The wider role of accounting and the related need for a standard was specifically highlighted by I10-B who commented that "I think the accounting is important. I don't want the 'Wild West' when it comes to accounting treatment." Specifically, as reflected in the quotes below, the majority of interviewees are in favour of having a framework like that under IAS 38 that supports the principle of development costs capitalisation and they are generally opposed to the full expensing approach that is set out under US standards.

"My problem with the US version and the idea of just expense the whole lot, that basically, because something's hard, We're just going to get rid of it... I don't think the IFRS... the IASB should go down that path. *I think attempting to have a development category is attempting to do the right thing...* My feeling would be, having a framework really helps. It's vulnerable because it's so judgmental to a negative... you know, to criticism. But I really think they're trying to do the right thing and it's embracing the complexity of the world rather than pretending the world is dead simple. The world isn't simple, and the accounts shouldn't be simple by virtue of that." (I9-S);
"I just think it's [U.S. GAAP treatment] wrong. And I just... there's no other way to say it nicely." (I11-B);
"In my view I do think the *IFRS model is a better model...* Generally, from principles approach, I do think the IFRS model is a better place... there is a real asset there that's being expensed too early on a US GAAP basis. I would argue that we should be capitalising some portion of that R&D spend" (I12-B);
"We want to know *what the number is on R&D*, and we would like that published, but that doesn't mean that we want the whole thing capitalized. And, *and so we have these rules about them going on to the balance sheet*" (I13-B);
"Actually, I'm sure that, it's [the IAS 38 approach] just a sensible accounting method for companies and their ongoing business." (I16-B).

Against this general level of support for a principles-based approach to capitalisation of development costs, only two of interviewees were supportive of the US approach:

"I think if you probably asked us, as a group, we would largely prefer if you just wrote the whole thing off, every time. It's the most simplistic way. I would probably just do away with the whole thing entirely and tell everyone just to expense it. Takes out all the management decision making from that accounting process. And I think normally separating management opinion from accounting treatment is a good thing." (I14-B);
"You know, you've got to be very consistent about how some of this stuff works. And you can't just make it up as you go along. Because there is a certain level of uncertainty. So, so my instinct is to keep things simple and not capitalise it. Because the capitalisation can lead to all sorts of problems...Personally, I would just expense the R and D." (I17-S).

Nonetheless, despite investors' support for a principles-based capitalisation framework, their general perceptions were that, in reality, there was a high level of expensing of development costs under IAS 38. For instance, I2-S commented that "on the whole, European, the large cap ones, they just expense it as it comes", a view also shared by I5-S: "...the super vast majority of the R&D is expensed, very little capitalised as far as I've seen it". Further, I15-B indicated that his experience from his "own team...are broadly looking at companies where the majority is being expensed" with I12-B making the observation that they encounter such a "conservatism bias". Interestingly, I12-B highlighted that such an expensing treatment from a larger proportion of R&D active firms "is distorting economics".

On the actual costs capitalised and, despite their general support for a principles-based accounting treatment for development costs, there is very mixed evidence as to their signalling effect. A minority of the investors positively recognised signalling:

> "It's showing the management's confidence in the asset, if they are willing to capitalise it. So, I think there's some informational quality in that sense regardless of what the market's thinking themselves.... *there are hidden signals* in terms of financial reporting." (I1-S);
>
> "The accounting split isn't irrelevant... investors are definitely interested in the capitalisation ratio, the amount of R&D that is capitalised compared to competitors in the same industry...I think it's capitalisation that *might signal* a shift in the lifecycle of a research projects. That it shifted from being something which was hopeful to something being that's more commercially certain." (I9-S).

However, others, more generally, seemed to be more ambivalent, with some intimating the potential for accounting manipulation (a theme subsequently addressed below):

> "I'm not sure that systematically the high capitalisers produce the market leading products. You know, where the ones who are expensing it may equally produce the market leading products." (I5-S);
>
> "I wouldn't say in either regard it would be a positive or negative signal... I would see it as a negative signal if the company was increasing a percentage of its R&D that was capitalised over time. But that's purely an accounting point of view...[If] their R&D capitalised is much higher than it used to be.... If I can't understand the reason from an R&D perspective then it's more likely to be an accounting perspective and if it's an accounting perspective there's some... there's just a red flag there." (I7-S);
>
> "I need to know the level of investment, but the accounting treatment matters to me mostly in terms of being able to compare apples to apples. If I end up with a very different treatment for pharma than I would for let's say oil exploration companies, as long as it is homogeneous enough within each of these two sectors, I wouldn't mind, I wouldn't care whether the treatments were different between the two sectors." (I8-B).

The latter quote from 18-B again highlights the importance of comparability to the investors.

Further, a number of investors were far more skeptical of any signalling effect from capitalised development costs. For instance, I4-B reflected from their analysis:

> "Looking at trends, who was incrementally capitalising more,... and so then arrived a qualitative analysis that confirmed that the companies that were more likely to win market share... were also tending to be the ones who were more conservative as well.... so, in his analysis, he was more likely to pay a higher multiple for the *company that was expensing more*".

And when asked whether greater levels of capitalisation sends a signal to investors I2-S commented "I don't think it would".

Furthermore, the signalling effect is impaired due to concerns about the potential use of the accounting treatment as an earnings management tool. These were widely shared by our interviewees.

> "The six conditions are open to managerial interpretation, capitalisation can be used effectively an earnings management tool... which would create a disparity between different companies that would otherwise be comparable...and is a source of more questioning than other areas." (I8-B);
>
> "On the one hand, it can be used as a signalling device to say, you know, this product is well on the way. But on the other hand, it can be a downside, is it can be used as an earnings management tool...The prevalence in the market of more and more investors focusing on EBITDA as a key earnings multiple, obviously pushes companies towards trying to capitalise if they can because then when it gets amortised it's effectively being ignored and never gone through the P&L." (I14-B);
>
> Totally, yeah. [capitalisasion is used as earnings management tool] And not just earnings. But, you know, ratios in general, you know. But yeah, absolutely. Yeah. So, I think that's what the bad actors do. The bad actors, say, 'What can I get away with?' 'Will it suit my purpose?' 'Will it get the share price up?' 'Let's do it.' So yeah, I think that that's a given...Capitalisation of R&D is always a potential source of shenanigans because there's always the risk that it doesn't turn into future revenues." (I16-B).

More specifically, the investors' concerns surrounded the accounting treatment and its potential manipulation with respect to remuneration and bonus triggers (i.e., management incentives):

"The other key thing, I think, when you look at this topic, and it's common with a lot of these kind of accounting issues is how are management being paid. Because if they're being remunerated on a return invested capital, well hang on I'm just going to write off a larger portion of R&D, keep my denominator low" (I1-S);
"But of course, management compensation is usually based on core earnings. So, you get to decide what's in, what's out and you get paid on that. And if you then get to capitalise R&D and, what's more, there is a degree of management judgement about how that's reported. . ..and basically use that either inadvertently or in some cases not inadvertently, to inflate earnings" (I2-S);
"Because your shareholders, what they ought to be concerned about is that is the future. Whereas, perhaps, if you're shorter term driven perhaps, you're incentivised to, as you say, pump up EPS in an IAS 38 context, you might go down the capitalisation route to, sort of, as you say, interpret the rules such that you know you can sort of manage that variability." (I15-B).

Indeed, more broadly, this raises wider governance implications directly associated with the accounting treatment, reflective of the managerial judgement involvement in capitalisation. This is pertinent particularly because investors view R&D related accounting information more widely as a mechanism satisfying the stewardship role of financial reporting (and see quotes and related discussion in Section 4.1). For example:

"The accounting numbers are really interesting, but they're not an attempt to second guess what the share price should be. They are there about, principally about, the governance of companies." (I13-B);
"And in particular I look to the governance section, what are their incentives, are the incentives based on kind of GAAP earnings? And in that case, I suppose they are incentivised. . .. There's also a little risk of companies not only managing earnings on the way, as it were, capitalising on the way in but not on the way out and rather than amortising, writing off some of these assets at a later stage and looking out for that. And for that the link to the governance and their individual performance indicators I think are really important." (I6-S).

Reflecting on such concerns, I12-B advocated to "pull out R&D, pull out stock-based compensation, and look at what their operating cash flows are [and] operating margins are".

Taken together, these issues reflective of their views concerning the relatively weak signalling of capitalisation, the potential use of earnings management (potentially fuelled by management incentives) and the observed levels of capitalisation versus expensing, the investors highlighted the importance to them of total cash spend, rather than necessarily the accounting treatment, in their analysis of R&D. For instance: "the cash spend is more important from the, from my point of view" (I11-B); "there is a tendency to focus on cash" (I12-B); "a very high-level view of which companies are *spending more in R&D than others*" (I8-B) and "I would say is the total spend is very important, versus its competitors is very important, versus history which I have already mentioned is very important" (I9-S).

As summarised in the quotes below, unlike the accounting for R&D which can be manipulated through capitalisation, cash spend is generally viewed as sending a stronger signal in line with future strategy and associated longer term planning:

". . .that's one of the reasons we look at all these companies on a cash flow basis, because at the end of the day they can't hide it. So, from that point of view we would become cash flow militants." (I2-S);
"You're wanting to see that there is an expense (cash spend). . . it would at least focus you on who are the companies that are actually saying they're investing in lots of R&D. . ..whether you're expensing it or capitalising it. . . I mean you definitely use the R&D as a signal that company has an advantage in maintaining a certain position or competitive position within the space, it's on a dollar for dollar basis." (I5-S);
"The distinction between R&D. . . I just went with the whole amount rather between R&D (separately). I would prefer to have 'this is the total we're spending. . .'you would like to think the market looks through to cash flow. . .. So, I would like to know the total R&D. . . as an analyst you want to know as much as possible, the total R&D." (I6-S).

Such a view based on total R&D spend is also reflective in the use of in-house models (such as, but not exclusively, HOLT) by some of the interviewees, whereby all R&D costs are capitalised, regardless of the accounting treatment:[11]

"We actually have our own unique treatment whereby we capitalise all R&D. . .I'd say it's more of an objective view. . .So, we're just trying to replicate what the economic assets are in place and by creating an R&D asset across we're the board we're getting closer to that. In this way, we want to take the subjectivity out of IAS 38. . .It removes that and it removes obviously the accounting distortions." (I1-S);
"A tool called HOLT, CFROI methodology, where they capitalise all R&D and assume that all R&D is created equal and they amortise all R&D. . .. That I think is a valid methodology, it's slightly black-boxy but you can tweak the assumptions and can delve down into it. Most of our fund managers and analysts, I would say at least are aware of what HOLT is telling them about their businesses." (I4-B);
"I lean toward the HOLT approach. I have to say, I really lean toward, "There's something. . . There's something about this that is an asset." (I11-B)

[11] HOLT "provides an objective framework for comparing and valuing companies. . .enabling investors to make more confident investment decisions". Credit Suisse HOLT see https://www.credit-suisse.com/microsites/holt/en/what-is-holt.html.

"I've used [HOLT] in the past. I actually find it quite hard to interpret. I don't find it intuitive at all. *I use a reverse DCF model, another system* I buy in. It's a framework." (I16-B);

Indeed, from a conceptual perspective, and reflective of I11-B's comment, I7-S argued that:

"I think it's worthwhile thinking about this sort of holistically and, you know, saying 'Should R&D be entirely capitalised?' because theoretically it is investment to generate future returns and to me that's not a single year expense. So, you could easily argue actually that all R&D should be capitalised".

However, despite this recognition and use of in-house models, a small number of investors were critical and did not perceive the need to use such an alternative modelling for R&D. For example, I14-B stated that, in their firm, they "don't do that principally because there are so many assumptions built into that analysis that I think we would feel it's more effort than it's than it's worth frankly". Interestingly, I15-B referred again to their view that most development costs are expensed and thus there is effectively no need to (re)capitalise to further analyse the cash investment in R&D.

In summary, both sets of investors are supportive of a principles-based standard for the recognition of development costs and generally opposed to a US-based 'expense all' treatment. Nonetheless, despite this support, the level of signalling from capitalisation is regarded by them as weak, due to its inherent potential for impairment through earnings management exacerbated by managerial incentives raising wider governance implications, with their main focus on R&D cash spend. We now turn to consider the investors' recommendations for possible changes to IAS 38.

4.3. Do equity investors propose any potential revisions in the standard?

Reflective of their comments reported in Sections 4.1 and 4.2 about the current use and usefulness of accounting information and disclosures to them, we gauged investors' views on their potential calls for reform to IAS 38. From these discussions, it becomes apparent that there is a strong appetite for such a reform. This appetite is summarised in the following quotes, followed by their specific suggestions as to how the standard and hence companies' reporting could improve.

"They [investors] are not completely dismissing the accounting, but they are coming pretty close to it. And the main reason for that is because the accounting... unfortunate like a lot of the accounting for intangibles is very, very one dimensional it's driven more by an emphasis on a definition of an asset or prudence, if you like, rather than the assessment of the future...And you end up with some sort of compromise almost by default. And it's pretty old this standard, isn't it?" (I9-S);

"From the world I come from [talking about the investor community], we think the accounting is broken. The analysts have a bunch of areas where they've thought the accounting is broken and so we ignore it, and we do our own thing. And so, attention, in my view, attention should be paid to the accounting... my initial reaction is the cash spend is more important. ...But if you were, you know, narrow it really down to same sectors, same transaction, same economics, can I get to this same valuation regardless of who the company is, based on the given accounting? And right now, you can't and there is the reality that management sometimes just says, Either, 'I can't be bothered you know to draw these lines,' or, "I want to be conservative," you know, "Let's just expense everything."....[and what is needed] if we're in the current world that we're in, which is impartial capitalisation." (I11-B).

More broadly, commenting on this, I12-B implored the standard setters to engage in review and reform around the issue of intangibles.

"I think this is the next big apple the boards have to tackle. And, you know, I spoke with some of the board members in on the FASB, to the investors to understand that this whole concept of intangibles is coming, it's here, and it needs to be grappled with. ... I think the relevancy of our traditional financial reporting framework starts to erode. That's not a good, it's not a good situation for the boards to be in."

Principally, two core themes were highlighted by the investors for consideration of potential future changes to IAS 38. These related to the capitalisation criteria and levels of mandated disclosure to enable greater comparability, which as stated earlier is critical to them, whilst acknowledging the inherent subjectivity of R&D and associated development costs' capitalisation. The importance of comparability to the investors, as confirmed in Sections 4.1 and 4.2, is also clearly evident from these responses:

"You probably do need an accounting standard for it, comparability between companies is absolutely critical to our investment process. And R&D is a particularly important one to try and force some level of comparability recognising the level of subjectivity." (I4-B);

"In the implementation of IFRS - that we've missed... that, you know, we, we hit the target and missed the point... Numbers [need] to be comparable from company to company. So, you would like some standards in terms of comparability." (I13-B);

These insights are representative of an overall concern among our interviewees: the perceived vagueness of the six conditions specified in IAS 38 in respect of capitalisation and the subjectivity of their interpretation. As reported in Section 4.2, this raises concerns regarding potential accounting manipulation and earnings management. Indeed, there was unanimous agreement on the perceived lack of clarity of the capitalisation criteria as reflected in the following quotes:

"These definitions (IAS 38 conditions) are quite opaque 'technical feasibility', what does that mean?. . .. . . The feasibility criteria. . . because it is quite abstract when you read it, can it be spelt out in a clearer manner?" (I1-S);
"It [capitalisation] is a bit arbitrary. . .. you've got R&D that will always be much more uncertain . . . I would say ephemeral" (I6-S).

And I8-B, when asked whether the criteria need to be improved to provide greater clarity over capitalisation, they succinctly responded: "in principle, yes. . .".

Such criticisms continued within their reasoning to address this issue with two main lines of thinking emerged. Firstly, the investors specifically sought far greater clarity in distinguishing and identifying development costs through more specific application guidance or more detailed illustrative examples:

"But what we have been given by the standard is a framework for thinking about capitalisation. They are called 'conditions', but the conditionality is so vague, so therefore that's not a great name for them. . .And so, I think we're given a lot of latitude but within the framework, and I think that's the right place to settle. . . Application examples are very, very useful. *You know, and in later standards, I think they got much better at doing that* obviously as standards became much, much bigger. That's what you do. You create an analytical framework by giving practical application notes on each of the criteria. . . And maybe the area of improvement is just to help companies understand that framework better." (I9-S);
"You know, again, I kind of go to. . . I cover tax policy as well. It's very interesting when you have very complex issues. . . a lot of times the tax authorities will give guidance and literally give you 35 different examples. You know, I personally think that's a that's an opportunity for standard setting. . . But, you know. . ., I think you provide more scenarios and different scenario outcome. And that kind of builds a better contour". (I12-B).

Secondly, the consequential need for greater levels of disclosure in relation to capitalisation and related decision-making:

"The investors don't have the foresight to make these judgement calls. You can argue the ability to use or sell the asset. That's a management judgement call. . .. How that criteria will change the feasibility criteria, will it be a more. . . *because it is quite abstract when you read it, can it be spelt out in a clearer manner, so just that would encourage greater disclosure in annual reports*." (I1-S);
"In order to make sense of that comparison you need good disclosure. . .You know, it's the disclosure around it that's really important in accounting. *It's just really helpful if it's consistent and if there is good scrutiny of the way in which the standards have been applied*." (I10-B);
"That's where the accounting and disclosure requirements are broken. . .you can't get management in the same industry [to] all apply the same template, *because of the vagueness [of the conditions]. The objectives are so vague*. It's still just so general that it doesn't help management actually kind of in the same industry doing the same economic transaction. . .You know, the standards setters just need to require more specifics, it can be so vague. Tell us exactly why you. . . *If you're going to keep the wording that vague, then you have to add some extra lines in the sentences afterwards that say, why exactly it is creating the potential future revenue*". (I11-B);
"What I'm more interested in is that there's the scope for management judgment but that crucially, *there's an obligation to explain why one treatment has been chosen over another*. The onus to be on them to explain very clearly why one treatment has been chosen and what why they were over that judgment." (I15-B);
"I'm happy to start modestly and just say a couple of lines, a *couple paragraphs of discussion and analysis around the decisions around capitalised R&D will be helpful*" (I16-B).

Beyond this technical disclosure around the accounting treatment, the investors also advocated greater levels of more general R&D disclosure to be mandated within the standard given the paucity of current requirements specified under IAS 38. They contended that this would improve the decision-usefulness of R&D accounting information to them. These further views are encapsulated by the quotes below:

"How much do you need to spend on a normalised basis, not to grow, not in a particular year?' . . .This is how much we're doing to replace projects that are falling off. This is just general ongoing R&D all put together. And this is for real growth projects. And that classification I could do something with" (I6-S);
"More information. Two main directions would be new R&D as opposed to continuation of existing R&D. And another one would be something to assess the quality of R&D expected impacts of certain projects which are launched. Essentially anything which would giving a quantitative impact of the R&D on the explicit earnings of the company, something which would help to track what these R&D is used for. Or maybe an R&D split by types of activities within the company. Or in our industry by regions, or anything which would be more granular than what is currently provided, and which would then allow me to run any type of analysis. . ...This would also with assist me in comparing different companies in the same industry, for example". (I8-B);

"If we [they] can provide more disclosures, so we can understand what the inputs are, so they can better translate to what... how I can maybe forecast the outputs. You know, more granularity about the types of projects, or which segments R&D spend is, and rates of change of R&D those different segments. We have principles and guidelines of how to disclose that information to make it more transparent. I think you could unlock a lot of value... R&D, it's just not transparent." (I12-B)

As well as advocating greater levels of disclosure, a minority of investors were also cognisant of the trade-off between such disclosure and proprietary information. For instance, when asked *Would you like to see more disclosure*? I6-S noted:

"Yes' but it wouldn't happen... because within that you're giving away a lot of information about how you see... your competitors and analysts, you're giving your forward projections it's one or two key projects"

Overall, an increase in disclosure was commented on as strengthening investors' perceptions about management's effectiveness in relation to R&D investments, which is of particular importance to them, as evidenced in Sections 4.1 and 4.2. This view is reflected on the following quote:

"This is why disclosure so important. You know, the accounts get you a snapshot of one particular angle on the company. But it is the disclosure...gives you a sense as to whether that [R&D] expenditure is in the shareholders' interests or not. Whether it is actually going to turn into something that is productive." (I10-B)

From the foregoing two main recommendations emerge for possible future revisions to IAS 38 to help inform professional body agendas. It is apparent investors would welcome greater definitional clarity as to what constitutes development costs that are capitalised and hence, more widely contributing to the debate on intangible assets recognition (Lev and Gu, 2016; Lev, 2019). Further, in view of their current perceptions as to the vagueness of the conditions and the lack of detailed disclosures required under IAS 38, the investors advocated far greater levels of disclosures to improve the decision-usefulness of R&D accounting information.

5. Discussion of findings

Reflecting holistically on the findings, the views expressed were in general shared between buy-side and sell-side and we do not observe stark differences between the two groups. Firstly, the investors affirmed the relevance and use of R&D accounting information to them highlighting measures of R&D efficiency, longitudinal and cross sector comparisons. This would be supportive of the decision-usefulness of financial reporting in general and R&D related information in particular, in line with the Conceptual Framework and IAS 38, respectively. Secondly, whilst stewardship has been the feature of considerable debate within the evolution of the Conceptual Frameworks (see for instance Camfferman and Zeff, 2015, chapter 12; Pelger, 2016, 2020), the investors confirmed their use of R&D related accounting information as part of their evaluation towards the stewardship and governance of entities. Thirdly, in general, they supported the principle of mandatory capitalisation, subject to meeting specific criteria and were largely opposed to an 'expense all' treatment of development costs as with US accounting standards. This is a further finding illustrating some level of harmony and agreement between standard setters and users.

However, a one-sided assessment of the findings in support of the thinking of standard setters would be a façade. This is because of two further findings. Firstly, the investors offered very mixed views on the signalling effect of capitalised development costs to them as users. Whilst reference was made to hidden signals offered by such assets, this is far from an explicitly visible signal. Their criticisms were driven by a collective concern regarding the underpinning criteria, in particular their lack of specificity and clarity combined with a lack of application guidance and detailed examples. Furthermore, they highlighted that the vagueness of the conditions results in the accounting treatment being subject to manipulation by preparers. This is evidenced in the investors' clear references to earnings management, compounded by managerial incentive structures and bonus triggers. Aligned to this, investors demanded greater levels of technical disclosure from companies to support the capitalisation decision, and the decision-making behind this in their application of the standard. Secondly, the investors bemoaned the level of general R&D disclosure reflective of the absence of prescribed disclosure in IAS 38.[12] Hence, the decision-usefulness and comparability of capitalised development costs to users is currently impaired. It is interesting at this point to also reflect on the similar historic criticisms made by IOSCO in 1994 toward the IASC. Specifically, that IASC should consider providing more objective criteria, and although IOSCO advocated an expensing treatment, they recommended enhanced disclosure to provide more useful information to investors (Cairns, 1999, p. 390).[13] More widely, these findings echo Durocher and Fortin (2021) who also find that users advocate principles-based standards, the importance of comparability but significantly highlight the need for improved application guidance in standards.

[12] Indeed, due to the subjectivity and unreliability of capitalised development costs, Dinh et al. (2020, 31) argue that "R&D disclosures may make actual R&D capitalisation more credible and thus more informative". This is also aligned with Merkley's (2014, p. 724) assertion, albeit in a US setting, that "narrative disclosure provides a channel for managers to convey contextual information about their firms to market participants" recognising R&D as an area of "significant information problems between managers and investors".

[13] Similarly, Cairns (1999, p. 288) reported that some commentators on E32 argued that "the criteria were too subjective and allowed too much scope for manipulation" and hence all costs should be expensed under IAS 9 revised. Additionally, some of the disclosures suggested by the interviewees were recommended in the preamble of the original IAS 9 but were not included in the revised IAS 9 or IAS 38 (see Section 2.1 for details).

The contemporary investor opinions expressed in this current study are reflective of the similarly mixed findings reported in the market-based accounting literature under IFRS.[14] On the one hand, there is evidence as to the value relevance of development costs (Tsoligkas and Tsalavoutas, 2011; Shah et al., 2013; Dinh et al., 2016; Kreß et al., 2019). This is aligned to the views of IASC at the time of mandatory capitalisation adoption and those studies, albeit mainly US based, "which show that reflecting research and development at cost in the balance sheet yields value-relevant information to investors" (Rivat and Nulty, 1998, p. 257; IAS 38 BCZ 39). Reflecting on this and the discussion in Section 2.1, we note that one aspect of the IASC's thinking behind mandatory capitalisation was to more fully recognise intangibles, reflective of their increasing importance to companies, and specifically in this case, development costs on the balance sheet. This concern was summarised in IAS 38 Basis for Conclusions (BCZ 39) as follows: "the non-recognition of intangible assets in the financial statements distorts the measurement of financial performance and does not allow an accurate assessment of returns on investment in intangible assets".

However, on the one hand, whilst Dargenidou et al. (2021) report an increase in such asset recognition in the UK after the transition to IFRS, although still at less than half of R&D intensive companies, there is evidence indicating that greater levels of development costs capitalisation would be expected at a global level, based on firm and country characteristics (Mazzi et al., 2019b). This is consistent with other studies highlighting a continuing lack of intangible asset recognition more broadly under IFRS (Zéghal and Maaloul, 2011; Lev, 2018, 2019). Furthermore, there are also significant concerns within the literature regarding the potential manipulation of capitalisation, being used as an earnings management tool, and the consequent impairment to signalling. In fact, archival studies indicate that the signalling effect is more (or only) prevalent for sub-samples of firms with lower earnings management incentives (e.g., Dinh et al., 2016; Mazzi et al., 2019a; Kreß et al., 2019). Indeed, the impaired signalling of capitalisation of development costs raised by the interviewees is in line with the findings of Shah et al. (2013) documenting that the value relevance of R&D assets in the UK has decreased in the post IFRS period and those of Dargenidou et al. (2021) that capitalisation does not provide more information about future earnings than expensing under IFRS in the UK. Further, the findings illustrate the difficulties associated with analysts' forecasting and it is perhaps not surprising that Dinh et al. (2016) reported that capitalisation under IAS 38 is associated with increased forecast errors in Germany.

Moreover, due to their criticisms of the conditions and concern for comparability, the investors, more generally affirmed their use of cash spend as investment in R&D, with also some recourse to in-house models to negate 'managerial' capitalisation. This is regarded by them as objective and cannot be manipulated so providing a clear measure of investment in R&D comparable between companies and over time to be used in performance metrics. More widely, this is consistent with Cascino et al. (2016) who found that investors have strong reservations about the representational faithfulness of bottom-line figures, being negatively affected by managerial estimates and judgements. This leads to increased reliance by users on non-GAAP measures. As such, "the properties of information used for stewardship, such as high levels of verifiability and informativeness about management effort therefore need promotion and protection [from standard setters]" (Cascino et al., 2016, p. 10).

This contention revolving around the capitalisation of development costs between standard setter expectations and use in practice by users is a site of dissonance (Hutter and Stark, 2015; Stark, 2009). However, unlike that of brand accounting (see Mennicken and Power, 2015)[15] there is not a fundamental disagreement between the parties as each recognise the principle of capitalisation and the consequential meaning and value of signalling. Nor is there a difference of emphasis (such as the use of fair values in Georgiou 2018) as both standard setters and investors recognise the firm performance aspects and the signalling potential of capitalisation behind the accounting for development costs under IAS 38.

Nonetheless, our findings show a tension between the standard setter intentions and the application of the standard in practice, specifically evident in relation to user views concerning the subjectivity of the conditions for capitalisation, not mitigated by the disclosure requirements. This tension has its roots in the wording of IAS 38 and its malleability (Mennicken and Power, 2015) by preparers through earnings management, casting doubt over its value to users. Thus, the framing of dissonant translation is apposite to reflect on this site of contention between standard setter intentions and subsequent use by investors. Specifically, the impairment of the decision-usefulness of capitalisation, away from that envisaged by the standard setters in the "authoring phase" to the consumption of reporting information by investors in the "reading phase". The historic move by the IASC from managerial choice in capitalisation to a mandatory accounting treatment aimed to more fully recognise development costs on the balance sheet, to provide a stronger signalling effect and to promote greater consistency and comparability to users consistent with the Conceptual Framework. It is during the "reading phase" that users experience the product (Hutter, 2015, p. 61) such that alternative conceptions arise away from that envisaged by the authors. In our case these are the impaired decision-usefulness of capitalisation and the alternative measures used by investors such as cash spend or in-house capitalisation models. Hence, whilst capitalisation may be regarded as a symbol of value and meaning, designed to show a high degree of uniformity and regularity (Hutter, 2015, p. 60), the strength of this to users is diminished due to translations and multiple interpretations by "the critical judgements of those who experiences [sic] the product" (ibid, p. 62). In this case, the quality of the product and its meaning is weakened because, the users perceive it of low quality at the

[14] We acknowledge that the investor mixed views on signalling would not support the prior experimental-based research of Goodacre and McGrath (conducted under SSAP 13 which allowed for overt managerial choice) which was highly supportive of the 'no-effects hypothesis'. However, the views of the IASC were such that "allowing a free choice undermines the comparability of financial statements" (Rivat and Nulty, 1998, p. 257).

[15] Similar fundamental disagreement between standard setters and users appears to exist on the issue of accounting for goodwill arising from business combinations (Durocher and Georgiou, 2021).

authorship stage (i.e., vagueness and lack of clarity of the conditions, lack of application guidance and detailed examples, and lack of mandated supporting disclosures).

In sum, the results of our research illustrate a level of harmony of the principle of the accounting treatment but a dissonance between the views and aims of the standard setters and users in practice due a lack of application guidance and associated detail in IAS 38. In addition, the review of the relevant literature that examines the relationship between standard setters and the opinions of analysts as key users of financial statements and theoretical framing employed in this paper, reveals a polemic range of outcomes, relevant to the topic of their focus. Georgiou (2018) on fair value recognises the co-existence of worldviews of standard setters and users but a difference in emphasis of the importance of valuation compared to performance measurement. At a more extreme level Durocher and Georgiou (2021) report their intractability over the accounting for goodwill following business combinations.

Taken together these positions serve to illustrate the complexity and plurality of accounting (Mennicken and Power, 2015) and the inherent difficulties that may arise in serving user needs, to provide decision-useful accounting information, a cornerstone of the Conceptual Framework, whilst seeking to maintain a balance of their influence (Bhimani et al., 2019). A single solution to these positions would denigrate and over-simplify the very complexity and plurality of the issues involved. Nonetheless, what the situations reveal is the ex-post dynamics of standards in practice. To move towards greater alignment between standard setters and users there is a need for the evolution of a culture and environment supportive of an ongoing collective dialogue with user groups so that any future changes to standards benefit from ex-ante consideration. This may serve to mitigate users' 'imaginary' label as attributed to them in the literature (e.g., Georgiou et al., 2021; Stenka and Jaworska, 2019; Pelger and Spieß, 2017; Young 2006). Whilst differences of opinion and positions may still arise, at least the respective aims of the standard setters and views of users are transparently considered despite the "continuing struggles faced by the IASB to translate user engagement into more user centric standards" (Bhimani et al., 2019, p. 80). Indeed, both Bhimani et al. (2019) and Allini et al. (2018) highlight the increased emphasis now placed by standard setters in seeking user views.

Given that IASB currently details intangibles as an item on its agenda consultation, there is now a unique window of opportunity to embrace current users' views and bolster the decision usefulness of R&D accounting and comparability of financial statements (an importance also noted by Durocher and Fortin (2021) more broadly) by improving IAS 38 in these aspects, without the need to change the requirement to capitalise development costs, on meeting specific criteria. In fact, it appears that there will be a consequential need for less voluntary disclosure, if the capitalisation criteria improve and are supported by technical mandatory disclosures. Then, the "product" and its associated "symbol of worth" would be of higher quality and thus provide a more reliable signal of future value creation to users. This would address a site of dissonant translation between author and end-user by enhancing the decision-usefulness and comparability and thus the overall quality of financial information to them. The former remains the fundamental objective of financial reporting to users and is underpinned by comparability "as the keystone of global capital market regulation" (Durocher and Gendron, 2011, p. 245). Finally, given the complementary use of this information for stewardship purposes by investors, improvements in the standard along these lines would also enhance the stewardship role of financial reporting. This is reflective of Cascino et al.'s (2016, p. 10) statement that "professional investors view the corporate governance of a firm as highly influential over the representational faithfulness of financial reporting data" and this "needs to be borne in mind when designing standards to ensure that governance and financial reporting are complementary."

6. Concluding comments and future research avenues

Within the financial accounting literature, studies directly examining the views of users on how they use accounting information and its decision-usefulness to them remain rare. This is despite successive IASC and IASB Conceptual Frameworks identifying such usefulness as a fundamental objective of financial reporting. In an exception to this lacuna, Georgiou (2018, p. 1325–6), reflects, that "there is demonstrably much to be gained, for our understandings of accounting and capital markets, by turning the financial statement user from a rhetorical resource to a subject of empirical investigation".

This paper directly canvasses contemporary investor views on the decision-usefulness of accounting information to them specifically in the context of R&D and development costs' capitalisation under IAS 38. This is contrasted to the thinking of the standard setters, namely IASC and IASB, in the development of IAS 38 and their rationale behind mandatory capitalisation of development costs. Whilst IAS 38 was issued in 1998 and remains in force today, R&D has become increasingly important in the global economy and is a material element of investors' assessment of a company's future economic performance and growth potential (Chan et al., 2003; Curtis et al., 2020). Given this, it is an apposite arena to examine the views of 'real' users on the current decision-usefulness of related accounting information to them and of the treatment prescribed under IAS 38. This is especially pertinent due to the current calls for reform of IAS 38 and its consideration as part of the IASB 2021 agenda consultation. This study fills this void and is relevant to those studies asserting that, despite the prime objective of the decision-usefulness of accounting information to users, the evolution of accounting standards has been reflective of the conceived beliefs of user needs by the standard setters (Durocher and Georgiou, 2021; Georgiou et al., 2021; Pelger and Spieß, 2017; Stenka and Jaworska, 2019).

The findings revealed a high degree of uniformity of opinion between buy-side and sell-side analysts. They highlighted the importance R&D accounting information to them in measuring performance, to gauge the efficiency and effectiveness of R&D against future incremental sales growth, and in wider aspects of governance and stewardship. Importantly, they were generally supportive of the principle in IAS 38 for the mandatory capitalisation of development costs and were opposed to an 'expense all' treatment as per US GAAP. The standard setters in their rationale behind moving from managerial choice of capitalisation (under IAS 9) had hoped that mandatory capitalisation would result in an adequate signal to users, providing greater comparability and decision-usefulness to them. However, the interviewees were highly critical of the conditions for capitalisation, as specified in the standard, due to their subjectivity and lack of application guidance, as well as their potential manipulation enabling earnings management. As a result, the signalling, and hence decision-usefulness to them, of capitalised development costs is impaired with consequential demands for increased technical as well as wider voluntary disclosure and related reform of IAS 38.

From a policy perspective, these findings reveal a tension in which the investors are supportive of the standard setters' intentions and thinking, but do not currently regard capitalised development costs as providing an adequate signal to them. They are highly critical, not of the principle, but of its application through the conditions. Hence, it is not a disagreement of principle but rather one of interpretation from author to user that the theoretical framing of dissonant translation helps to unpick. However, advocating more disclosure would seem to paper over the cracks of the standard and specifically those of the conditions. What is more fundamental is their views on the conditions and that these need to be more specific and clearer, supported by more detailed examples, application guidance and ultimately would be less subject to manipulation. Further, capitalised development costs shall be supported by mandated disclosure that explains the standard's application or the issues considered behind the managerial decision-making. These assets would then convey a more adequate signal for firm future performance and reduce the need for additional voluntary disclosure.

These findings speak to the current calls by international bodies, such as EFRAG, for a review of IAS 38 and for its consideration as part of the IASB 2021 agenda consultation process and inclusion in the future IASB research pipeline and the report by FRC (2021) highlighting the limitations of accounting for development costs and the need for reform of IAS 38. More widely, our findings reveal a disconnect between standards and their decision-usefulness to investors as users, particularly on a standard which is so dated. Considering the existence of other dated standards, such as IAS 19 and IAS 37, which rely on significant managerial judgement without (arguably) detailed guidance and include mandated disclosures that require improvement,[16] dissonant translation between author and users may be a fundamental issue. This could be addressed by standard setters providing more guidance for clarity through the drafting of revised standards. Similarly, this could be considered in the development of new standards. Hence, our findings may be relevant to solving a bigger puzzle facing the decision usefulness of accounting information to users with whom ex-ante dialogue on standards in practice and their actual decision-usefulness to them should be actively promulgated.

Our study is subject to a number of limitations. We accept that qualitative research evidence garnered through interviews only reflects the personal views of the investors interviewed, naturally limiting the generalisability of the findings. Further, we accept that other interpretations and theoretical perspectives of the data could be drawn and thus "there is no claim of interpretative closure" (Guénin-Paracini et al., 2014, p. 269). Finally, we acknowledge that the views expressed in this paper relate only to buy-side and sell-side analysts. As such, we recognise that future research could provide evidence from other user groups (e.g., private investors, credit analysts or bond holders), which would bring into light a more holistic illustration of capital providers' views on the treatment of R&D and related accounting information more widely. In fact, there is dearth of evidence of the decision usefulness of accounting information more generally to such user groups.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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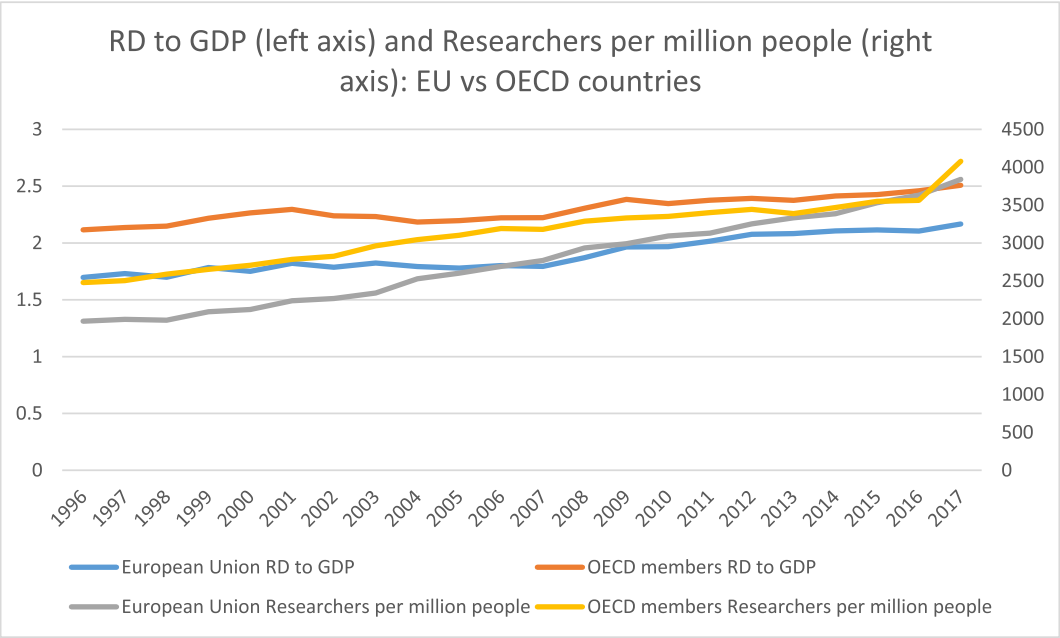
[16] For example, IAS 19 is one of the standards considered by the IASB for the pilot approach to developing disclosure requirements in accounting standards in general and in parallel making amendments to its disclosure requirements in particular. https://www.ifrs.org/projects/work-plan/standards-level-review-of-disclosures/exposure-draft-and-comment-letters/.

we would like to record our appreciation to all interviewees who took the time to participate in our interviews and provided valuable insights into the issues we explore in this research.

Appendix A. R&D expenditure to GDP and number of researchers per million people (1996–2017)



Data from World Bank (World Development Indicators series): GB.XPD.RSDV.GD.ZS and SP.POP.SCIE.RD.P6, respectively.

Appendix B. Criteria to be considered in relation to optional capitalisation under IAS 9 (Original–1978)

This managerial discretion was subject to identified development costs meeting stipulated conditions (set out in para 17) such that the uncertainties of "expected future benefits derived from these activities" (para 9) is reduced. These conditions were:

- The product or process is clearly defined and the costs attributable to that product or process can be separately identified;
- The technical feasibility of the product or process has been demonstrated;
- The management of the enterprise has indicated its intention to produce and market, or use, the product or process;
- There is clear indication of a future market for the product or process or, if it is to be used internally rather than sold, its usefulness to the enterprise can be demonstrated; and
- Adequate resources exist, or are reasonably expected to be available, to complete the project and market the product or process.

References

Abraham, S., Bamber, M., 2017. The Q&A: under surveillance. Acc. Org. Soc. 58, 15–31. https://doi.org/10.1016/j.aos.2017.04.001.
Accounting Standards Committee (ASC), 1975. ED 14 – Accounting for Research and Development.
Accounting Standards Committee (ASC), 1976. ED 17 – Accounting for Research and Development.
Ahmed, K., Falk, H., 2006. The value relevance of management's research and development reporting choice: Evidence from Australia. J. Acc. Public Policy 25 (3), 231–264. https://doi.org/10.1016/j.jaccpubpol.2006.03.002.
Ahrens, T., Chapman, C.S., 2006. Doing qualitative field research in management accounting: Positioning data to contribute to theory. Handbooks Manag. Acc. Res. 1, 299–318. https://doi.org/10.1016/S1751-3243(06)01011-X.
Allini, A., Aria, M., Macchioni, R., Zagaria, C., 2018. Motivations behind users' participation in the standard-setting process: focus on financial analysts. J. Acc. Public Policy 37 (3), 207–225.
Barker, R., McGeachin, A., 2015. An analysis of concepts and evidence on the question of whether IFRS should be conservative. Abacus 51 (2), 169–207. https://doi.org/10.1111/abac.12049.

Barker, R., Penman, S., Linsmeier, T.J., Cooper, S., 2020. Moving the conceptual framework forward: Accounting for uncertainty. Contemp. Acc. Res. 37 (1), 322–357. https://doi.org/10.1111/1911-3846.12585.
Bhimani, A., Bond, D., Sivabalan, P., 2019. Does greater user representation lead to more user focused standards? An empirical investigation of IASB's approach to standard setting. J. Acc. Public Policy 38 (2), 65–88. https://doi.org/10.1016/j.jaccpubpol.2019.02.004.
Boltanski, L., Thévenot, L., 2006. On Justification: Economies of Worth. Princeton University Press.
Bushman, R.M., Smith, A.J., 2001. Financial accounting information and corporate governance. J. Acc. Econ. 32 (1–3), 237–333. https://doi.org/10.1016/S0165-4101(01)00027-1.
Cairns, D., 1999. Applying International Accounting Standards. Butterworths, London.
Callimaci, A., Landry, S., 2004. Market valuation of research and development spending under Canadian GAAP. Can. Acc. Perspect. 3 (1), 33–54. https://doi.org/10.1506/V5LY-4CNE-3J0Q-00HN.
Camfferman, K., Zeff, S.A., 2015. Aiming for global accounting standards: the International Accounting Standards Board, 2001–2011. Oxford University Press, USA.
Camfferman, K., Zeff, S.A., 2007. Financial reporting and global capital markets: A history of the international accounting standards committee, 1973-2000. Oxford University Press on Demand.
Campbell, D., Slack, R., 2011. Environmental disclosure and environmental risk: Sceptical attitudes of UK sell-side bank analysts. Br. Acc. Rev. 43 (1), 54–64. https://doi.org/10.1016/j.bar.2010.11.002.
Carrington, T., Catasús, B., 2007. Auditing stories about discomfort: Becoming comfortable with comfort theory. Eur. Acc. Rev. 16 (1), 35–58. https://doi.org/10.1080/09638180701265846.
Cascino, S., Clatworthy, M., Osma, B.G., Gassen, J., Imam, S., Jeanjean, T., 2016. Professional investors and the decision usefulness of financial reporting.
Chan, L.K., Karceski, J., Lakonishok, J., 2003. The level and persistence of growth rates. J. Fin. 58 (2), 643–684.
Chen, E., Gavious, I., Lev, B., 2017. The positive externalities of IFRS R&D capitalization: enhanced voluntary disclosure. Rev. Acc. Stud. 22 (2), 677–714. https://doi.org/10.1007/s11142-017-9399-x.
Chenhall, R.H., Hall, M., Smith, D., 2013. Performance measurement, modes of evaluation and the development of compromising accounts. Acc. Org. Soc. 38 (4), 268–287. https://doi.org/10.1016/j.aos.2013.06.002.
CICA (Canadian Institute of Chartered Accountants), 1978. Handbook Section 3450: Research and Development Costs. Toronto, Ont.
Clune, C., O'Dwyer, B., 2020. Organizing dissonance through institutional work: The embedding of social and environmental accountability in an investment field. Acc. Org. Soc. 82 (101130), 1–25. https://doi.org/10.1016/j.aos.2020.101130.
Coopers, Lybrand, 1990. Intangible assets: Their value and how to report it. Coopers & Lybrand Deloitte London.
Corbin, J., Strauss, A., 2008. Basics of Qualitative Research: Techniques and procedures for developing grounded theory, third ed.: Thousand Oaks, CA: Sage Publications. https://dx.doi.org/10.4135/9781452230153
Curtis, A., McVay, S., Toynbee, S., 2020. The changing implications of research and development expenditures for future profitability. Rev. Acc. Stud. 25 (2), 405–437. https://doi.org/10.1007/s11142-019-09528-6.
Dai, N.T., Free, C., Gendron, Y., 2019. Interview-based research in accounting 2000–2014: Informal norms, translation and vibrancy. Manag. Acc. Res. 42, 26–38. https://doi.org/10.1016/j.mar.2018.06.002.
Dargenidou, C., Jackson, R.H.G., Tsalavoutas, I., Tsoligkas, F., 2021. Capitalisation of R&D and the informativeness of stock prices: Pre- and post-IFRS evidence. Br. Acc. Rev., 100998 https://doi.org/10.1016/j.bar.2021.100998.
Davies, M., Paterson, R., Wilson, A., 1999. UK GAAP: Generally Accepted Accounting Practice in the United Kingdom. Butterworths Tolley.
Ding, T., Schultze, W., Eierle, B., Steeger, L., 2015. Research and Development, Uncertainty, and Analysts' Forecasts: The Case of IAS 38. J. Int. Financ. Manage. Acc. 26 (3), 257–293. https://doi.org/10.1111/jifm.12029.
Ding, Y., Entwistle, G., Stolowy, H., 2004. International differences in research and development reporting practices: A French and Canadian comparison. Adv. Int. Acc. 17, 55–72. https://doi.org/10.1016/S0897-3660(04)17003-7.
Dinh, T., Kang, H., Schultze, W., 2016. Capitalizing research & development: Signaling or earnings management? Eur. Acc. Rev. 25 (2), 373–401. https://doi.org/10.1080/09638180.2015.1031149.
Drake, M.S., Hales, J., Rees, L., 2019. Disclosure Overload? A Professional User Perspective on the Usefulness of General Purpose Financial Statements. Contemp. Acc. Res. 36 (4), 1935–1965. https://doi.org/10.1111/1911-3846.12488.
Dulige, J., Abayadeera, N., Ali, M., Mather, P., 2019. The development of accounting and financial reporting practices in Sri Lanka: An exploratory investigation. Int. J. Acc. 54 (2), 1–36. https://doi.org/10.1142/S1094406019500082.
Durocher, S., Georgiou, O., 2021. Framing accounting for goodwill: Intractable controversies between users and standard setters. Crit. Perspect. Acc., 102357 https://doi.org/10.1016/j.cpa.2021.102357.
Durocher, S., 2009. The future of interpretive accounting research. Qualit. Res. Acc. Manage. 6 (3), 137–159. https://doi.org/10.1108/11766090910973902.
Durocher, S., Fortin, A., 2021. Financial statement users' institutional logic. J. Acc. Public Policy 40 (2), 106819. https://doi.org/10.1016/j.jaccpubpol.2021.106819.
Durocher, S., Gendron, Y., 2011. IFRS: On the docility of sophisticated users in preserving the ideal of comparability. Eur. Acc. Rev. 20 (2), 233–262. https://doi.org/10.1080/09638181003687869.
Entwistle, G.M., 1999. Exploring the R&D disclosure environment. Acc. Horizons 13 (4), 323–342. https://doi.org/10.2308/acch.1999.13.4.323.
European Financial Reporting Advisory Group (EFRAG), 2019. Discussions on Intangibles in relation to the IASB 2020 Agenda Consultation – Update paper for background. European Financial Reporting Advisory Group, Brusells.
Financial Reporting Council (FRC), 2021. Feedback Statement Business Reporting of Intangibles: Realistic Proposals. Financial Reporting Council, London.
Georgiou, O., 2018. The worth of fair value accounting: dissonance between users and standard setters. Contemp. Acc. Res. 35 (3), 1297–1331. https://doi.org/10.1111/1911-3846.12342.
Georgiou, O., Mantzari, E., Mundy, J., 2021. Problematising the decision-usefulness of fair values: empirical evidence from UK financial analysts. Acc. Bus. Res. 51 (4), 307–346. https://doi.org/10.1080/00014788.2020.1814687.
Gjesdal, F., 1981. Accounting for stewardship. J. Acc. Res. 19 (1), 208–231. https://doi.org/10.2307/2490970.
Goodacre, A., McGrath, J., 1997. An Experimental Study of Analysts' Reactions to Corporate R&D Expenditure. Br. Acc. Rev. 29 (2), 155–179. https://doi.org/10.1006/bare.1996.0041.
Guest, G., Bunce, A., Johnson, L., 2006. How many interviews are enough? An experiment with data saturation and variability. Field Methods 18 (1), 59–82. https://doi.org/10.1177/1525822X05279903.
Harding, N., Mckinnon, J., 1997. User involvement in the standard-setting process: A research note on the congruence of accountant and user perceptions of decision usefulness. Acc. Org. Soc. 22 (1), 55–67. https://doi.org/10.1016/S0361-3682(96)00003-7.
Healy, P.M., Myers, S.C., Howe, C.D., 2002. R&D Accounting and the tradeoff between relevance and objectivity. J. Acc. Res. 40, 677–710. https://doi.org/10.1111/1475-679X.00067.
Hope, T., Gray, R., 1982. Power and policy making: the development of an R & D standard. J. Bus. Finance Acc. 9 (4), 531–558. https://doi.org/10.1111/j.1468-5957.1982.tb01014.x.
Horwitz, B.N., Kolodny, R., 1980. The economic effects of involuntary uniformity in the financial reporting of R&D expenditures. J. Acc. Res. 38–74. https://doi.org/10.2307/2490326.
Hutter, M., 2015. Dissonant translations. Artistic sources of innovation in creative industries. In: Antal, A.B., Hutter, M., Stark, D. (Eds.), Moments of Valuation: Exploring Sites of Dissonance. Oxford University Press, Oxford.
Hutter, M., Stark, D., 2015. Pragmatist perspectives on valuation: An introduction. In: Antal, A.B., Hutter, M., Stark, D. (Eds.), Moments of Valuation: Exploring Sites of Dissonance. Oxford University Press, Oxford.

IASB (International Accounting Standards Board), 2010. Conceptual framework for financial reporting. International Accounting Standards Board, London.
IASB (International Accounting Standards Board), 2018. Conceptual framework for financial reporting. International Accounting Standards Board, London.
IASC (International Accounting Standards Committee), 1989a. Exposure Draft 32 (E32). Comparability of Financial Statements, IASC, London.
IASC (International Accounting Standards Committee), 1989b. Framework for the Preparation and Presentation of Financial Statements. International Accounting Standards Committee, London.
IASC (International Accounting Standards Committee), 1990. Statement of Intent Comparability of Financial Statements. IASC, London.
IASC (International Accounting Standards Committee), 1991. Exposure Draft 37 (E37), International Accounting Standard Proposed Statement Research and Development Activities. IASC, London.
IASC (International Accounting Standards Committee), 1997. Exposure Draft 60 (E60). Intangible Assets, IASC, London.
Imam, S., Spence, C., 2016. Context, not predictions: a field study of financial analysts. Acc., Audit. Acc. J. 29 (2), 226–247. https://doi.org/10.1108/AAAJ-02-2014-1606.
International Accounting Standards Board (IASB), 2016. IASB Work Plan 2017–2021 Feedback Statement on the 2015 Agenda Consultation. International Accounting Standards Board, London.
International Accounting Standards Board (IASB), 2018. Conceptual Framework for Financial Reporting and Basis for Conclusions. International Accounting Standards Board, London.
International Accounting Standards Board (IASB), 2021. Request for Information: Third Agenda Consultation. International Accounting Standards Board, London.
Jermias, J., 2001. Cognitive dissonance and resistance to change: the influence of commitment confirmation and feedback on judgment usefulness of accounting systems. Acc. Org. Soc. 26 (2), 141–160. https://doi.org/10.1016/S0361-3682(00)00008-8.
Jorissen, A., Lybaert, N., Orens, R., Van Der Tas, L., 2012. Formal participation in the IASB's due process of standard setting: a multi-issue/multi-period analysis. Eur. Acc. Rev. 21 (4), 693–729. https://doi.org/10.1080/09638180.2010.522775.
Kim, S., Bay, D., 2017. Cognitive Dissonance as an Explanation of Goodwill Write-Offs. J. Behav. Fin. 18 (1), 14–28. https://doi.org/10.1080/15427560.2017.1274755.
KPMG, 2007. IFRS vs. US GAAP: R&D costs. Retrieved from: https://advisory.kpmg.us/articles/2017/ifrs-vs-us-gaap-rd-costs.html.
Kreß, A., Eierle, B., Tsalavoutas, I., 2019. Development costs capitalization and debt financing. J. Bus. Fin. Acc. 46 (5-6), 636–685. https://doi.org/10.1111/jbfa.12370.
Krouwel, M., Jolly, K., Greenfield, S., 2019. Comparing Skype (video calling) and in-person qualitative interview modes in a study of people with irritable bowel syndrome–an exploratory comparative analysis. BMC Med. Res. Method 19 (1), 1–9. https://doi.org/10.1186/s12874-019-0867-9.
Kuhner, C., Pelger, C., 2015. On the relationship of stewardship and valuation – an analytical viewpoint. Abacus 51 (3), 379–411. https://doi.org/10.1111/abac.12053.
Lambert, R., 2010. Discussion of "Implications for GAAP from an analysis of positive research in accounting". J. Acc. Econ. 50 (2–3), 287–295. https://doi.org/10.1016/j.jacceco.2010.09.006.
Latour, B., 2005. Reassembling the Sodal: An Introduction to Actor-Network-Theory. Oxford University Press, Oxford.
Lev, B., 2018. The Deteriorating Usefulness of Financial Report Information and How to Reverse It. Acc. Bus. Res. 48 (5), 465–493. https://doi.org/10.1080/00014788.2018.1470138.
Lev, B., 2019. Ending the accounting-for-intangibles status quo. Eur. Acc. Rev. 28 (4), 713–736. https://doi.org/10.1080/09638180.2018.1521614.
Lev, B., Nissim, D., Thomas, K.J., 2008. On the informational usefulness of R&D capitalization and amortization. In: Zambon, S., Marzo, G. (Eds.), Visualising intantigbles: Measuring and reporting in the knowledge economy. Ashgate Publising Limited.
Lev, B., Sougiannis, T., 1996. The capitalization, amortization, and value-relevance of R&D. J. Acc. Econ. 21 (1), 107–138. https://doi.org/10.1016/0165-4101(95)00410-6.
Malsch, B., Salterio, S.E., 2016. "Doing good field research": Assessing the quality of audit field research. Audit.: A J. Pract. Theory 35 (1), 1–22. https://doi.org/10.2308/ajpt-51170.
Mazzi, F., Slack, R., Tsalavoutas, I., Tsoligkas, F., 2019a. Country-level corruption and accounting choice: Research & development capitalization under IFRS. The Br. Account. Rev., 51(5). doi: 10.1016/j.bar.2019.02.003.
Mazzi, F., Slack, R., Tsalavoutas, I., & Tsoligkas, F., 2019b. The capitalisation debate: R&D expenditure, disclosure content and quantity, and stakeholder views. ACCA research monograph. https://www.accaglobal.com/gb/en/professional-insights/global-profession/the-capitalisation-debate.html.
Mennicken, A., Power, M., 2015. Accounting and the plasticity of valuation. In: Antal, A.B., Hutter, M., Stark, D. (Eds.), Moments of Valuation: Exploring Sites of Dissonance. Oxford University Press, Oxford, pp. 208–228.
Merkley, K., 2014. Narrative Disclosure and Earnings Performance: Evidence from R&D Disclosures. Acc. Rev. 89 (2), 725–757. https://doi.org/10.2308/accr-50649.
Nadiri, M.I., Prucha, I.R., 1996. Estimation of the depreciation rate of physical and R&D capital in the US total manufacturing sector. Econ. Inq. 34 (1), 43–56. https://doi.org/10.1111/j.1465-7295.1996.tb01363.x.
Nahapiet, J., 1988. The rhetoric and reality of an accounting change: A study of resource allocation. Acc. Org. Soc. 13 (4), 333–358. https://doi.org/10.1016/0361-3682(88)90009-8.
Nix, P.E., Nix, D.E., 1992. A historical review of the accounting treatment of research and development costs. Acc. Histor. J. 19 (1), 51–78. https://doi.org/10.2308/0148-4184.19.1.51.
Nixon, B., 1997. The Accounting Treatment of Research and Development Expenditure: Views of UK Company Accountants. Eur. Acc. Rev. 6 (2), 265–277. https://doi.org/10.1080/713764720.
Paul, J.M., 1992. On the efficiency of stock-based compensation. Rev. Fin. Stud. 5 (3), 471–502.
Pelger, C., 2016. Practices of standard-setting–An analysis of the IASB's and FASB's process of identifying the objective of financial reporting. Acc. Org. Soc. 50, 51–73. https://doi.org/10.1016/j.aos.2015.10.001.
Pelger, C., 2020. The Return of Stewardship, Reliability and Prudence–A Commentary on the IASB's New Conceptual Framework. Acc. Europe 17 (1), 33–51. https://doi.org/10.1080/17449480.2019.1645960.
Pelger, C., Spieß, N., 2017. On the IASB's construction of legitimacy–the case of the agenda consultation project. Acc. Bus. Res. 47 (1), 64–90. https://doi.org/10.1080/00014788.2016.1198684.
Power, M., 2010. Fair value accounting, financial economics and the transformation of reliability. Acc. Bus. Res. 40 (3), 197–210. https://doi.org/10.1080/00014788.2010.9663394.
PricewaterhouseCoopers, 2010. In: Pwc (Ed.), Accounting for innovation the impact on technology companies of accounting for R&D activity under IFRS.
Rennekamp, K., Rupar, K.K., Seybert, N., 2015. Impaired Judgment: The Effects of Asset Impairment Reversibility and Cognitive Dissonance on Future Investment. Acc. Rev. 90 (2), 739–759. https://doi.org/10.2308/accr-50879.
Rivat, L., Nulty, K., 1998. Accounting for intangible assets. Boletín de Estudios Económicos 53, 251–264.
Shah, S.A.Z., Liang, S., Akbar, S., 2013. International financial reporting standards and the value relevance of R&D expenditures: Pre and post IFRS analysis. Int. Rev. Fin. Anal. 30, 158–169. https://doi.org/10.1016/j.irfa.2013.08.001.
Slack, R., Tsalavoutas, I., 2018. Integrated reporting decision usefulness: Mainstream equity market views. Acc. Forum 42 (2), 184–198. https://doi.org/10.1016/j.accfor.2018.01.005.
Smith, D.T., 1999. Discretionary capitalisation of R&D expenditures in Canada and Australia. Doctoral Thesis, University of Waterloo. Available at https://uwspace.uwaterloo.ca/bitstream/handle/10012/407/NQ38271.pdf ?sequence=1&isAllowed=y [accessed 3rd May 2021]
Smith-Lacroix, J.H., Durocher, S., Gendron, Y., 2012. The erosion of jurisdiction: Auditing in a market value accounting regime. Crit. Perspect. Acc. 23 (1), 36–53. https://doi.org/10.1016/j.cpa.2011.09.002.

Solomon, J.F., Solomon, A., Norton, S.D., Joseph, N.L., 2011. Private climate change reporting: an emerging discourse of risk and opportunity? Acc. Audit. Acc. J. 24 (8), 1119–1148. https://doi.org/10.1108/09513571111184788.
Stark, A.W., 2008. Intangibles and research–an overview with a specific focus on the UK: Plus ça change, plus c'est la même chose. Acc. Bus. Res. 38 (3), 275–285. https://doi.org/10.1080/00014788.2008.9663340.
Stark, D., 2009. The Sense of Dissonance: Accounts of Worth in Economic Life. Princeton University Press.
Stenka, R., Jaworska, S., 2019. The use of made-up users. Acc. Org. Soc. 78, 1–17. https://doi.org/10.1016/j.aos.2019.07.001.
Strauss, A., Corbin, J., 1998. Basics of Qualitative Research Techniques. Sage Publications, Thousand Oaks, CA.
Taffler, R.J., Spence, C., Eshraghi, A., 2017. Emotional economic man: Calculation and anxiety in fund management. Acc. Org. Soc. 61, 53–67. https://doi.org/10.1016/j.aos.2017.07.003.
Tsoligkas, F., Tsalavoutas, I., 2011. Value relevance of R&D in the UK after IFRS mandatory implementation. Appl. Fin. Econ. 21, 957–967. https://doi.org/10.1080/09603107.2011.556588.
Van Mourik, C., Katsuo Asami, Y., 2018. Articulation, profit or loss and OCI in the IASB conceptual framework: Different shades of clean (or dirty) surplus. Acc. Europe 15 (2), 167–192. https://doi.org/10.1080/17449480.2018.1448936.
Weetman, P., 1977. Accounting standards: A pause for reflection. Acc. Bus. Res. 7 (27), 168–176. https://doi.org/10.1080/00014788.1977.9728700.
Weetman, P., Davie, E.S., Collins, W., 1996. Lobbying on accounting issues: preparer/user imbalance in the case of the operating and financial review. Acc. Audit. Acc. J. 9 (1), 59–76. https://doi.org/10.1108/09513579610109978.
Wells, V., Ellis, N., Slack, R., Moufahim, M., 2019. "It's Us, You Know, There's a Feeling of Community": Exploring Notions of Community in a Consumer Co-operative. J. Bus. Ethics 158 (3), 617–635. https://doi.org/10.1007/s10551-017-3747-4.
Wyatt, A., 2008. What financial and non-financial information on intangibles is value relevant? A review of the evidence. Acc. Bus. Res. 38 (3), 217–256. https://doi.org/10.1080/00014788.2008.9663336.
Young, J.J., 2006. Making up users. Acc. Org. Soc. 31 (6), 579–600. https://doi.org/10.1016/j.aos.2005.12.005.
Zéghal, D., Maaloul, A., 2011. The accounting treatment of intangibles–A critical review of the literature. Acc. Forum 35 (4), 262–274. https://doi.org/10.1016/j.accfor.2011.04.003.