IFRS

Markets, Practice, and Politics

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Contents

IFRS:

Markets, Practice, and Politics

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ABSTRACT

This monograph reviews the academic literature on market outcomes, reporting practices and the political economy behind the global use of International Financial Reporting Standards (IFRS). We start with a conceptual discussion of expected benefits and costs of an international harmonization of accounting regulation and explain why predictions on possible outcomes are ambiguous. Section 3 discusses the characteristics of an "ideal" IFRS experiment that would allow to draw causal inferences on the effects of IFRS adoption. We offer a comprehensive overview of research on the impact of IFRS on capital markets, particularly around first-time adoption and during the global financial crisis. In Section 4, we describe current IFRS reporting practices, including digital reporting (XBRL), and benchmark the availability, accessibility, and processing of IFRS financial information against the information environment in the United States. We complement this discussion by evidence on the use of IFRS reporting choices such as the different fair value options. Section 5 provides information about important institutional features of IFRS standard setting and how political powers affect decisions on IFRS adoption,

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standard setting, and enforcement. The monograph concludes with an assessment of the impact of IFRS research and outlines emerging trends that provide opportunities for future research. Overall, this monograph offers a summary of research findings and methods that are relevant for the analysis of future regulatory innovations, such as the international standardization of sustainability (or ESG) reporting.

Keywords: IFRS; international accounting; disclosure; compliance; capital markets; real effects; XBRL; digitalization; fair value; financial crisis; politics; research impact; literature review.

1

Introduction

The global economy has experienced a long period of growth since World War II during which national markets have become increasingly interconnected and multinational firms have gained prominence. This global integration has involved many different economic sectors and has affected capital markets in particular by increasing the popularity of foreign investments and cross-border trading of securities (e.g., Camfferman and Zeff, 2007; Karolyi, 2006). At the same time, substantial differences in jurisdictions' legal infrastructures impeded contracting between trading partners and resulted in market frictions. This constellation created a demand for uniform securities regulation across jurisdictions (e.g., La Porta *et al.*, 2006; Stulz, 2009).

The international regulation of financial reporting has evolved as a major element of the global harmonization of securities regulation, with International Financial Reporting Standards (IFRS)[1] playing a key role in this development. In fact, the global adoption[2] of IFRS has become one of the most material changes in financial reporting

[1] We use the term "IFRS" interchangeably for the set of IAS (International Accounting Standards) and IFRS throughout the entire monograph.

[2] We use the term "adoption" for the various forms of incorporating IFRS into jurisdictional financial reporting systems which we discuss in Subsection 5.1.

in the history of securities regulation. It began with multinational firms, mainly from Europe, voluntarily adopting IFRS in the 1990s and the first jurisdictions mandating the use of the standards in the early 2000s (Zeff, 2012). As of 2020, 144 jurisdictions worldwide require the use of IFRS for companies listed on domestic capital markets (IFRS Foundation, 2020i).

While the benefits of globally uniform regulation may appear self-evident, the approach comes with costs, especially as it necessarily fails to account for the particularities of the local market infrastructure and legal systems that persist even in globalized markets (e.g., Ball, 2001; Leuz, 2010; Wysocki, 2011). If more is at stake than purely technical norms and securities regulation has economic or social consequences, the global uniformity of standards also induces transnational political conflicts over the design of the international norm. Accounting research has addressed the consequences of IFRS adoption for the politics of accounting standard setting, firms' reporting practice, the functioning of capital markets, and other economic outcomes. Between 2000 and 2019, the Top 15 accounting journals[3] alone have published 471 articles related to IFRS. This monograph provides a comprehensive overview of this literature.

Over the last few years, several review articles have summarized the IFRS literature (Brüggemann *et al.*, 2013, De George *et al.*, 2016, ICAEW, 2015, Leuz and Wysocki, 2016, Pope and McLeay, 2011, Soderstrom and Sun, 2007). As these summaries reveal, IFRS adoption, in many studies, boils down to a single dummy variable. However, the global use of IFRS in many different jurisdictions makes IFRS reporting a very diverse undertaking. The heterogeneity of what IFRS stands for stems from a host of factors,[4] which pose specific challenges for the

[3] "Top 15" accounting journals include all field journals with a focus on financial accounting that are included in the first quartile of the SCImago Scientific Journal Ranking 2018.

[4] Such factors are, among others, the mandatory adoption versus voluntary choice to apply IFRS; the adoption of IFRS as pronounced by the IASB versus the use of locally endorsed (and adjusted) IFRS; the variation in the use of IFRS reporting choices which often follows systematic patterns; the reliance on local interpretations of IFRS and reporting traditions that continue to persist; or the variation in the compliance with IFRS due to factors such as enforcement strength and audit quality.

research design, and are aggravated by the lack of standardized data from IFRS reports. The discussion of origins and implications of these data and research design issues are a core theme that distinguishes this review from other reviews on IFRS. Furthermore, while prior reviews acknowledge the political nature of standard setting, none of them discusses how IFRS are shaped by political powers. Thus, a systematic discussion of the political process underlying IFRS adoption, standard setting, and enforcement is another unique feature of our review. Finally, we provide evidence on the extent to which IFRS research responded to Barth's (2007a) call for more policy relevant research (in the first volume of this journal), by assessing the impact of IFRS literature.

The review proceeds as follows. Section 2 outlines the conceptual background, that is, the costs and benefits of a single set of global accounting standards, the choice of IFRS with very specific characteristics for this single global set, and the factors that shape diversity in reporting practice, even under a common global set of standards. In short, accounting theory predicts capital market benefits from a single set of global accounting standards, which can enhance comparability and reduce information asymmetries. However, these benefits often fail to manifest because institutional frictions arise when global standards lack compatibility with other features of the local regulatory infrastructure. These frictions tend to limit the impact of regulation on reporting practices, especially if they impede rule enforcement (e.g., Ball, 2006; Ball *et al.*, 2000; Leuz and Wysocki, 2016; Wysocki, 2011). The evolution of IFRS is rooted in political considerations by national legislators, who preferred IFRS for their (alleged) flexibility over a pre-existing set of foreign GAAP (most notably U.S. GAAP). The section provides the framework for this review.

Section 3 discusses what an "ideal" IFRS experiment would look like and what conditions (i.e., identifying assumptions) would have to be met for researchers to be able to draw causal inferences. It further summarizes the evidence around the adoption of IFRS. While the outcomes of interest are broad and diverse, many studies face the same challenges in the research design to disentangle the effect of IFRS adoption from other confounding factors, such as concurrent regulatory changes at the country level (when IFRS is introduced as part of a

broader package of a securities regulation reform) or changing reporting incentives at the firm level. Collectively, the findings still support the notion of positive capital market effects in the short run. The longer-lasting impact of these positive effects is even harder to assess because the financial crisis overshadowed IFRS adoption in many jurisdictions from 2007 onwards. Finally, the section covers literature that followed the shift of regulatory attention to outcomes that had previously been of lower importance, such as financial stability.

Section 4 presents an overview of the current reporting practice by IFRS-reporting firms. The section documents the diversity in the practices as well as the availability of IFRS data. The global application of a homogeneous set of accounting rules has not been accompanied by a standardized access to the accounting information. These data issues render the empirical analysis of IFRS reporting systematically different from the study of U.S. settings. While most of the evidence summarized in Section 3 attributes positive effects of IFRS adoption to the higher quality of IFRS reports, relative to previous local GAAP reports, data processing and electronic accessibility of IFRS reports depends on country-specific institutions, which are most often less developed than those in the United States (e.g., the SEC's EDGAR system or mandated XBRL tagging). These very specific challenges that result from the lack of standardization also affect how standard databases present IFRS accounting data. Section 4 informs about such differences across data providers and discusses the implications for the research design.

Section 5 examines the consequences of IFRS adoption from a political economy perspective. The global relevance of IFRS affects various special interest groups such as preparers, users, and other parties in many different jurisdictions, and they will attempt to influence standard setting (Kothari *et al.*, 2010; Peltzman, 1976; Stigler, 1971). The diversity of the legal infrastructure under which IFRS are adopted in different jurisdictions and the various ways how these jurisdictions, in turn, can intervene in supra-national standard setting create a laboratory for the study of the politics of accounting regulation. Section 5 provides an overview of research on the political process through which IFRS

are developed, adopted as binding rules and ultimately enforced in jurisdictions.

Section 6 aims at assessing the impact of IFRS research. To this end, the section starts by presenting a detailed citation analysis of the IFRS studies that have been published in 15 major accounting journals (between 2000 and 2019). Yet impact of research is of course not confined to the scientific community, and therefore the section further examines the impact of insights from the IFRS literature on the International Accounting Standards Board's (IASB) standard setting as well as the broader debate about the application of IFRS in accounting practice.

While any literature review is necessarily subjective, ours is comprehensive in that we cover the top-100 IFRS studies in terms of impact (by citations).[5] We also discuss studies that were influential on a specific topic, independent of the publication outlet or research method. This overview should be considered as an introductory guide for interpretations of the voluminous evidence on IFRS that is evolving in academic journals around the world. It should be relevant for academics, practitioners and regulators with an interest in the current state of the IFRS literature as well as current developments in related fields, such as the reporting on environmental, social and governance (ESG) matters. Remaining research gaps, emerging trends and possibilities for future research on IFRS are outlined in Subsections 3.6, 4.5 and 5.6.

[5]To arrive at this list, we use the citation measure from Scopus and consider all articles published in one of the Top 15 journals (see Footnote 3 in this section) that include one of the following terms in the abstract, title or keywords: IFRS, IAS, international accounting standard, international financial reporting standard. We manually exclude papers from this list if their primary research question is not related to IFRS reporting.

2

The Costs and Benefits of IFRS as a Single Set of Global Reporting Standards

The establishment of the International Accounting Standards Committee (IASC) in 1973 was a response to increasingly globalized markets, and the founders envisioned the reduction of differences in accounting regulation for the sake of better comparability of accounting practices (see Subsection 5.1). Eventually, the IASC (and later the IASB) went beyond the initial harmonization objectives and developed a complete set of standards that jurisdictions could transform into national law, thus using standardization to eliminate cross-country differences in accounting regulation. Today's global use of IFRS in many jurisdictions is the outcome of this process.

However, the global prevalence of IFRS did not emerge as a market solution, that is, as the consequence of firms starting to use IFRS voluntarily on account of individual cost-benefit considerations. Instead, jurisdictions across the world decided to mandate the use of IFRS for firms that were listed on their domestic stock exchanges.[1] On the one hand, the standardization of norms and regulations can create positive externalities for global markets. On the other, given the uniqueness

[1] See Watts (2006) for a discussion of characteristics of financial reporting regimes that resulted from private market forces. For a discussion of jurisdictions' reasoning in adopting IFRS, see Brown (2011).

of jurisdictions' institutions, it is unclear whether a one-size-fits-all approach to reporting regulation is optimal.

2.1 Costs and Benefits of a Single Set of Global Reporting Standards

International standardization has the potential to grant significant benefits, which primarily arise from easing the comparability of financial statements. While in itself not a well-defined concept (Barth, 2013), financial reports are considered to be more comparable when firms represent similar (different) transactions and events with similar (different) accounting amounts. Financial statements that are easier to compare can (1) lower information processing costs for users, resulting in (2) more investment opportunities for investors and thus higher liquidity in financial markets as well as (3) lower cost of capital, (4) better managerial decision making and (5) lower reporting costs for firms. Standardization effects also include (6) a minimum level of transparency across countries, (7) externalities or network effects for the entire society, and (8) efficiency gains in standard setting.

First, when accounting rules become uniform and even subtle institutional differences between local rules disappear, financial statement users will incur lower costs for analyzing disclosures of firms located in different jurisdictions (e.g., Barth *et al.*, 1999). Better comparability of accounting information decreases investors' need to adjust financial numbers and potentially decreases information asymmetries between local and foreign investors.

Second, the decrease in information asymmetries can enhance the liquidity of financial assets traded in capital markets, since a decrease in informational frictions across markets can lower investment barriers and home-biases of investors; i.e., it improves the efficiency of their capital allocation (Hope *et al.*, 2006).[2] More potential sellers and buyers,

[2] "Home bias" is the extent to which investors overweight domestic stocks, relative to the optimal level of international diversification that asset pricing theory predicts (e.g., Karolyi and Stulz, 2003). Cross-country differences in accounting create information barriers for foreign investors and likely contribute to investors' home bias.

due to more cross-border trading and investment, can thus increase market liquidity. A decrease in the risk of trading against more informed parties (i.e., information risk) likewise lowers the adverse selection component of bid-ask spreads and reduces the liquidity premium that buyers and sellers must pay when assets are exchanged (Brealey *et al.*, 1999; Glosten and Milgrom, 1985; Verrecchia, 2001). It may equally facilitate cross-border debt contracting (Brown, 2016). Market liquidity can also increase due to harmonized regulations because cross-listing securities becomes less costly and more firms decide to list on the investors' local securities exchanges. As a result, investors benefit from reduced trading (transaction) costs by trading in their more-accessible home markets.

Third, a global set of accounting standards can reduce firms' cost of capital in two core ways: (1) a decrease in information asymmetries and (2) an increase in market competitiveness. A decrease in investors' information asymmetries results in a decrease in firms' cost of capital, because better informed investors demand a lower return on their investments, thus decreasing firms' cost of capital (Easley and O'Hara, 2004; Li, 2010). A global set of accounting standards also can create more competitive markets, because it helps eliminate entry barriers (such as stock exchange listing requirements that mandate the use of specific accounting standards) to foreign capital markets (e.g., Coffee, 2002). Overcoming such hurdles can result in a larger pool of potential investors and improved risk sharing, which in turn lowers firms' cost of capital (e.g., Daske *et al.*, 2008; Merton, 1987).[3]

Fourth, reduced information asymmetries should also affect the behavior and decisions of managers inside the firm by enhancing the effectiveness of governance mechanisms and mitigating managerial excesses, such as under- or overinvestments. Internally generated information that is comparable with information that peers and competitors are forced to disclose, should increase the information base of executives and corporate boards, which should ultimately translate into better decision-making (e.g., Chen *et al.*, 2013; Shroff *et al.*, 2014).

[3]However, Lambert *et al.* (2012) show, in an asset pricing framework, that these two channels can interact and are not necessarily complements.

Fifth, a global set of standards can reduce reporting costs for firms that have subsidiaries in different jurisdictions, because the parent company and its subsidiaries are all using the same accounting standards (e.g., André and Kalogirou, 2020). Similarly, the elimination of differences in listing requirements across jurisdictions, including reconciliations to foreign GAAP, reduces reporting costs for cross-listed firms (e.g., Doidge *et al.*, 2010; SEC, 2007).

Sixth, the effects of a uniform set of standards on information asymmetries will be even more pronounced if the uniform standards require greater accounting quality (e.g., Barth *et al.*, 1999). International standardization can at least help to ensure minimum reporting quality levels, e.g., by mandating a core set of disclosures (Jamal and Sunder, 2014). Establishing minimum transparency levels has been an important component of the policy efforts by the World Bank and International Monetary Fund (IMF) to strengthen the international financial infrastructure. Relatedly, one set of global accounting standards can reduce the risk of firms opportunistically choosing a set of standards that fits managerial preferences (i.e., regulatory arbitrage). Yet an increase in reporting quality is not a certain outcome of standardization efforts. For example, if a high-accounting-quality firm changes its financial reporting to match that of a low-accounting-quality one, an increase in accounting comparability would come at the expense of quality.

Seventh, standardization can result in externalities or network effects for the society at large because voluntary disclosure equilibria under firms' individual cost-benefit trade-offs can be socially inefficient. (For a general theory on disclosure regulation, see Admati and Pfleiderer, 2000 and Dye, 1990.) An increase of the number of comparable financial statements can be expected to ease the communication among members of a particular reporting network (Hail *et al.*, 2010a). In other words, standardization does not only result in benefits for the individual firm (by, e.g., reducing its own cost of capital), but it may also affect its peers. Similarly, more similar reporting information can be expected to allow investors to take advantage of information spillovers (Leuz and Wysocki, 2016). The benefits of being within a "network" of similar firms increases the more firms join (Ramanna and Sletten, 2014).

Finally, benefits from using one set of global accounting standards include efficiency gains in form of jurisdictions' ability to mitigate costs of acquiring and maintaining technical expertise necessary to set high quality standards by outsourcing standard setting to a transnational organization (Mattli and Büthe, 2005). The development of standards in an international domain also bears the potential to reduce the political power of locally influential parties (Mattli and Büthe, 2005). Absent competition between standard setters, it is also less likely that political pressure leads to a convergence to the most lenient standard (i.e., a race to the bottom). It follows that transnational standard setters will develop regulations that are closer to a market solution than regulations developed by a national standard setter (Leuz, 2010).

However, international standardization also causes significant costs to a variety of constituents. The main costs include (1) one-time switching costs for users and preparers of financial statements, (2) inefficiencies arising from incompatibilities with the local institutional framework, (3) a potential decrease in reporting quality and (4) the quality of accounting regulation.

First, one-time switching costs for financial statement preparers (firms and auditors) and users (including contracting parties) arise from their need to acquire new GAAP expertise and implement new reporting technology while losing their competitive advantage in form of their local GAAP expertise (Barth *et al.*, 1999). Further, not only private contractors may incur re-contracting costs or suffer losses from wealth transfers, due to stale contracts (Christensen *et al.*, 2009), but jurisdictions may also need to adjust legislations that relate to accounting measures (e.g., tax law, prudential regulations, or regulations for rate-regulated industries). In addition, in case that international standardization increases minimum reporting quality levels, firms incur higher ongoing costs of preparing and auditing their financial reports.

Second, a jurisdiction's accounting system does not evolve in isolation from other elements of the institutional framework. Instead, equity and credit markets, corporate governance practices, tax legislations and the accounting system emerge locally as institutional complements (Leuz, 2010; Leuz and Wüstemann, 2004). While accounting regulation primarily aims at providing information and easing contracts between

corporations and stakeholders, it complements other fields of regulation with similar objectives (e.g., the regulation of securities exchanges, creditor protection, corporate governance or litigation). Governments also use accounting information as the basis of policymaking (e.g., determining the tax base, implementing price controls, or prudential supervision), which creates other specific demands for the design of the accounting system in each jurisdiction (Baxter, 1981; Jamal and Sunder, 2014; Leuz, 2010). Ultimately, it is the combination of these regulations as well as legal and cultural traditions that defines a jurisdiction's institutional framework (e.g., Ball, 1995; Ball *et al.*, 2000; d'Arcy, 2001; La Porta *et al.*, 1997; Leuz *et al.*, 2003). In the case that jurisdictions cannot fit particular institutional features with the global accounting regulations, the new (alien) element in the jurisdictions' overall institutional infrastructure can result in long-term inefficiencies (e.g., Wysocki, 2011).

For example, financial systems may either take the form of an (1) outsider system in which firms raise capital on public markets or (2) insider system in which firms maintain strong ties with individual investors or creditors and raise capital via private relationships. While outsider systems require transparency and the public disclosure of information to reduce information asymmetries between firms and investors, insider systems rely on a degree of opacity (Leuz and Wüstemann, 2004). Increases in disclosure requirements can therefore cause a decrease in the efficiency of the financial system in an insider system. Other inefficiencies may arise in the form of higher lobbying costs for local constituents who may be unfamiliar with the international standard setters' due process mechanisms (Büthe and Mattli, 2011, p. 12f.).

Third, a change to a global set of accounting standards will likely result in a decline of reporting quality for those jurisdictions that have a sophisticated set of accounting standards in place to meet their local demands (such as U.S. GAAP in the United States). One set of global standards will necessarily reflect compromises, and picking the most comprehensive existing solution seems an unrealistic (or overambitious) political objective to begin with.

Fourth, a lack of experimentation or insufficient professional discourse and innovation can impede improvements of accounting regulation. Granting one standard setter a monopoly position may therefore threaten the quality of accounting regulation (Dye and Sunder, 2001; Madsen, 2011; Meeks and Swann, 2009). While locally influential parties are likely to lose leverage on the standard setter (Mattli and Büthe, 2005), transnationally influential parties are likely to become more powerful. A monopolistic regulator could thus be even more exposed to regulatory capture than a national regulator (see Subsection 5.3). Similarly, satisfying the public interest at an international level is much more complex than at the local level. Even though an international standard setter is, in principle, supposed to balance the interest of all jurisdictions, it may instead, in practice, give in to the influence of the most powerful jurisdictions at the expense of the others (see Subsections 5.2 and 5.4).

2.2 The Choice of IFRS as the Single Set of Global Reporting Standards

Even if global harmonization of accounting regulation is an accepted political objective, there are multiple ways to achieve harmonization and alternatives to relying on a privately organized transnational organization, like the IASB and the IFRS standards that have emerged. This subsection discusses the costs and benefits that arise from the specific characteristics of IFRS, which (1) are principles-based, demand more (2) extensive disclosures and (3) fair-value measurements than many alternative local standards and (4) are a very dynamic set of standards set by the IASB, which is (5) not controlled by a specific jurisdiction and (6) currently not in a monopolistic position.

First, IFRS are principles-based and offer more reporting options than other (local) accounting standards (e.g., Ball, 2016; Nobes, 2013). In general, reporting choices enable firms to better represent their underlying economics, and principles-based standards likewise introduce some level of flexibility to adapt to locally unique institutional characteristics or business models. The principles-based nature of IFRS thereby eases the application of the standards in different jurisdictions (Carmona

and Trombetta, 2008). Furthermore, standards that rely on overarching principles are, in theory, considered to be more difficult to bypass than standards that include a lot of bright-line rules and foster a "check-box" mentality (Agoglia *et al.*, 2011; Schipper, 2003). Yet principles-based standards that grant some degree of reporting flexibility also entail costs, since reporting flexibility may result in lower reporting quality, if managers use their discretion opportunistically. Furthermore, the possibility of choosing different representations for similar business activities undermines the objective of enhancing the comparability of financial information (Ball, 2006).

Second, IFRS require more extensive footnote disclosures than many alternative accounting regimes (e.g., ICAEW, 2015; Saha *et al.*, 2019),[4] which leads to significant increases in the length of annual reports after IFRS adoption (Lang and Stice-Lawrence, 2015). On the one hand, more extensive disclosures provide more decision-useful information, enhancing their outsiders' ability to judge the content of the core financial statements or to find information that is relevant in specific situations (Hail *et al.*, 2021). On the other hand, the goal of decreasing information asymmetry can be hampered by excessive reporting complexity, i.e., disclosure overload (e.g., ICAEW, 2015; Saha *et al.*, 2019) or boiler-plate disclosures (Hoogervorst, 2013). More extensive disclosure requirements also increase firms' reporting costs.

Third, IFRS more often require the use of fair value measurements than alternative standards, which entails both advantages and disadvantages (Hitz, 2007; Laux and Leuz, 2009; Ryan, 2011). On the one hand, fair value measurements provide timely information about changes in the value of assets or liabilities and thereby enhance the transparency of financial reports. On the other hand, the obligation to rely on fair values neglects application difficulties that may exist for firms that operate in an environment without liquid markets. In such a case, IFRS can result in lower reporting quality and lower comparability, given that managers might need to rely on subjectively derived (model-based) fair values. Furthermore, the increased use of fair values can also be considered as undermining conditional conservatism that existed under historical cost

[4] As an example, see the disclosure checklist by Ernst and Young (2020).

regimes, which only allow for impairments but inhibit revaluations that exceed the asset's initial acquisitions costs. In debt contracting, financial numbers are only used if they are independently verifiable and enforceable in court. Asymmetric timeliness (or conditional conservatism) is one property of earnings that supports efficient contracting by protecting creditors' interests, and a decrease in conditional conservatism due to more fair value accounting can hence result in inefficiencies in institutional settings in which debt financing plays a major role (Kothari *et al.*, 2010). The pure reliance on fair value-based accounting numbers to assess management performance can further result in short-termism. Another central concern about the extensive use of fair values revolves around procyclicality effects, i.e., the amplification of ups and downs of the economy (see Subsection 3.5).

Fourth, IFRS has proven to be a very dynamic set of standards in terms of the frequency of substantial changes (e.g., Alsarghali and Daske, 2020).[5] The standards therefore have imposed substantial follow-up costs for both preparers and users. (See Ball *et al.*, 2015 for a discussion of problems arising from frequent changes of accounting standards for debt contractors.)

Fifth, the institutional set-up of the IASB (e.g., through the geographic quotas regarding the board composition) limits the standard setter's exposure to the influence of just one specific jurisdiction (see Subsection 5.2). In contrast to national standard setters that are only accountable to just one jurisdiction, the IASB legitimizes its actions by serving in the interest of a diverse set of jurisdictions, which allows the standard setter to be independent from the (political) influence of any particular jurisdiction.

Sixth, the existence of alternative accounting standards in combination with firms' (or countries') possibility to threaten to switch to local GAAP can be regarded as counterbalances to the risk of a lack in innovation in the development of accounting standards. As of today, 144 jurisdictions mandate domestic listed firms to use standards issued by the IASB (IFRS Foundation, 2020i). At first sight, this number can

[5]Core drivers for the frequent changes have been the rather incomplete set of standards that the IASB inherited from the IASC, the extensive convergence efforts with U.S. GAAP, and responses to the global financial crisis.

suggest that the IASB is close to assuming a monopoly position in accounting standard setting, which can entail adverse effects (see Subsection 2.1). However, and especially since the divergence of some recent standards (on leasing and financial instruments), U.S. GAAP represent a powerful counterbalance to IFRS, even though those standards are only mandated in one jurisdiction. Furthermore, local GAAP continue to exist in many jurisdictions and are applied by the vast majority of private firms. As a response, less demanding IFRS for small and medium-sized entities (IFRS for SMEs) have emerged and act as a bridge to incentivize more firms to move closer to IFRS in their reporting. Since firms are free to decide about listing or delisting from stock exchanges, they still have the option to choose between IFRS and local GAAP or IFRS for SMEs (although the decision entails considerable costs). The co-existence of alternative accounting standards, both across and within jurisdictions, and even within the IFRS universe, also implies that IFRS did not necessarily increase uniform reporting across firms, since industry peers may continue to use different standards (DeFond *et al.*, 2011).[6]

2.3 Reporting Standards and Reporting Practice

International harmonization of accounting regulation involves a change of accounting rules in many jurisdictions up to a complete replacement of local accounting standards, such as in the case of IFRS adoption. However, the change in accounting rules does not mechanically translate into changed reporting outcomes. Properties of reported accounting numbers, e.g., the informativeness of earnings or footnote disclosures, do not only result from the underlying rules but are shaped by additional factors at two distinct levels. First, managers can decide not to fully comply with the new rules, and their noncompliance can result in reporting practices that the rules alone cannot predict. Second, even if managers fully comply, accounting rules offer at least some flexibility

[6]IFRS adoption can even decrease uniform reporting among peer firms. For example, if there are more domestic peers still reporting under local GAAP than foreign peers newly adopting IFRS (e.g., because U.S. peers apply U.S. GAAP), IFRS adoption results in less peers that use the same set of standards.

and reporting choices, which managers can systematically manipulate (e.g., understate or overstate earnings), thus deviating from a neutral application of the rules. Management incentives at these two levels arise from both country-level institutions and firm-specific characteristics.

2.3.1 Public and Private Enforcement, Auditing, and Compliance

Whether managers comply with the substance of accounting rules is a function of the costs of such misrepresentation; in particular, the combination of detection risk and penalties (e.g., Ewert and Wagenhofer, 2019). If private monitoring through the firm's governance structure is insufficient to achieve the optimal level of transparency, a jurisdiction's regulatory framework establishes an additional layer of costs (e.g., Christensen *et al.*, 2020). In this regard, the design of the public enforcement regime is a key factor with enforcement intensity, through the resources, the independence and the legal rights of the supervisor, influencing the detection risk and the penalties imposed (Brown *et al.*, 2014; Christensen *et al.*, 2013; Holthausen, 2009; Jackson and Roe, 2009).

Financial audits are another channel through which accounting misrepresentation can be detected. The quality of audits and their impact on reporting credibility interacts with many factors, such as public oversight, mandatory rotation, auditor litigation, and audit market structure (DeFond and Zhang, 2014, for an overview). Many of these factors are set at the country level (Brown *et al.*, 2014).

Private enforcement complements public enforcement and financial audits in imposing potential costs of noncompliance with accounting rules (Rogers *et al.*, 2011; Skinner, 1997). Managers' litigation risk arises from lawsuits especially by shareholders and debt investors. It is substantially varying in the hurdles for initiating the lawsuits and the rights during court procedures, which are to a great extent set by a country's securities regulation (e.g., Djankov *et al.*, 2008; Frost *et al.*, 2006; La Porta *et al.*, 1997).

In the absence of effective mechanisms for public or private enforcement and high-quality audits, full compliance with a new set of accounting rules is hard to achieve, because managers will tend to stick

to those accounting practices that best serve their private interests. The establishment of such an infrastructure is costly, and its net benefits depend on both the magnitude of frictions in private monitoring that public infrastructure can overcome (Christensen *et al.*, 2020) and the existence of market-wide externalities from greater firm transparency. It will thus hinge on a jurisdiction's determining whether the adoption of new accounting standards like IFRS can meaningfully impact accounting properties, up to the point of adopting an essentially costless and thus uninformative IFRS "label" only (Ball *et al.*, 2000, 2003; Bushman *et al.*, 2004; Daske *et al.*, 2013; Leuz, 2010). The existence of de jure versus de facto IFRS adoption might then make it even more difficult for market participants to distinguish between reporting quality types (Ball, 2006, 2016).

2.3.2 Reporting Discretion and Reporting Incentives

Even the most rules-based accounting system offers discretion that leaves managers with perfectly legal reporting choices, i.e., those that cannot be confined by public or private enforcement. The shift in the level of discretion is crucial in judging the outcome of a change in accounting rules. Most often, there will be some significant overlap in the set of choices that two different accounting standards offer (Leuz and Wysocki, 2016). In these latter cases, it will depend on stakeholder demand for certain accounting properties and, more generally, management's reporting incentives whether the new accounting rules will actually alter reporting choices (Ball *et al.*, 2003; Burgstahler *et al.*, 2006; Leuz, 2003). This could happen if the adoption of new standards is accompanied by a change in the preferences of internal or external stakeholders (for example, because of simultaneous changes in the governance of the firm or changes in ownership and a new investor base).

Reporting preferences of stakeholders often arise from local market structures. For example, if debt investors have direct access to management and internal reports, they have to rely less on public earnings reports being timely and conditionally conservative than debt investors in arm's length transactions on public markets (Rajan, 1992). Similarly, the use of accounting income for the determination of dividend payout

restrictions, as it is common in many countries especially in Continental Europe, creates other demand for the properties of those earnings than a regime where dividend payouts are restricted through private covenant arrangements (Watts, 2003). Many of these market conditions vary across jurisdictions, and there is a multitude of country-level variables that correlate with reporting incentives for firms; i.e., they explain reporting practice beyond the mere content of accounting rules (Isidro *et al.*, 2020, provide a comprehensive overview).

There is also substantial variation within jurisdictions. Studies have shown that reporting practice varies predictably when holding the legal regime and the accounting rules constant (e.g., Ball and Shivakumar, 2005; Burgstahler *et al.*, 2006; Peek *et al.*, 2010). This variation can be explained by firm-specific factors, such as the ownership structure, capital market pressure from listing choices, analyst or press coverage, or quality of corporate governance. Overall then, even in settings with perfectly efficient enforcement and auditing, the impact of new accounting standards on accounting practice is limited and interacts with many other characteristics of a firm and its environment. Ultimately, it is therefore an empirical question to what extent a global set of IFRS standards materializes expected net benefits. We summarize the evidence on this question in the next section.

3

The Market Consequences of IFRS Adoption

This section summarizes research on the impact of IFRS on capital markets, particularly around adoption and during the global financial crisis. The key question is whether adopting IFRS at the expense of local standards really delivers the expected net benefits. Much of the research attempts to study the effects of adoption (suggesting causality). These studies often state that their aim is to illuminate the consequences of the "IFRS experiment" and argue that their focus on the first wave of adoptions represents a rare "quasi-experiment".[1]

Yet the ideal experiment for establishing the causality of the effects of IFRS adoption would have the following features.[2] First, the only changed factor (i.e., the treatment) would be the accounting standards. Second, the treatment—the switch to IFRS—would be randomly assigned to a sample of firms (the treatment group), relative to an untreated sample of firms (the control group). Third, the effect on the

[1] The frequently used expression "IFRS experiment" has ambiguities. In some cases, it is meant to reflect the uncertain outcomes of the decision to adopt IFRS, while, in others, it relates to a research design, given the substantial change in mandated accounting standards in selected countries and for selected firms (with other firms serving as a control group for the experiment).

[2] For a discussion on causal inference in accounting research, see Bertomeu *et al.* (2016) and Chen and Schipper (2016).

treatment group could be measured, relative to the control group, in changes over time in a difference-in-differences design. To rule out that the treatment effect only represents changes that would have occurred absent treatment, the random control group must serve as a benchmark for how the treatment group would have behaved if it had been untreated.

The most generic form of this design is:

$$y_{it} = \beta_1 IFRS_i + \beta_2 POST_t + \beta_3 POST_t \times IFRS_i + \epsilon \tag{3.1}$$

where:

1. y_{it} is the outcome variable of firm i at point in time t,
2. $IFRS_i$ is an indicator variable taking the value of 1 if firm i receives the IFRS treatment and 0 for control firms,
3. $POST_t$ is an indicator variable that takes the value of 1 if period t is after the IFRS adoption date and 0 for periods before,
4. β_3 captures the difference-in-differences effect. This coefficient can be interpreted as the change in the outcome variable for treated firms, relative to the change of the control group, and represents the causal effect of IFRS adoption (in sign and magnitude).

Archival research can only work with real-world settings. Available IFRS adoption settings and research designs applied on these settings fall short of these ideal requirements. (1) The outcome variables have measurement error and can reflect either anticipation or delay of the treatment. (2) The treatment is not randomly assigned. (3) Suitable control groups are missing. (4) Multiple treatments occur at the same time (that is, the quasi-experiment does not hold other potentially relevant factors constant).

The challenge researchers therefore face when working in the "IFRS laboratory" (Leuz and Wysocki, 2016, p. 582) is to demonstrate convincingly that a switch to IFRS indeed caused (or at least contributed to) the observed outcomes. While the average effects of adoption are difficult to interpret, more progress has been made to attribute variation

in outcomes to specific institutional features and reporting incentives in the cross-section.

In this section, we discuss important research design choices of IFRS studies within this framework, namely approaches to measure IFRS adoption outcomes (Subsection 3.1), identification problems (Subsection 3.2), and designs that capture outcomes over different measurement windows (Subsection 3.3). We then summarize evidence on IFRS effects around the adoption (Subsection 3.4) and evidence on the role of IFRS during the global financial crisis (Subsection 3.5). In Subsection 3.6, we outline future research opportunities.

3.1 Challenges with Measuring IFRS Adoption Outcomes

The first design choice concerns how to measure y_{it} on the left side of the Equation (3.1), that is, how to measure the theorized or expected outcomes of the treatment "IFRS adoption". Measurement issues are an initial reason why researchers have difficulties with the identification of predicted IFRS consequences (Leuz and Wysocki, 2016, pp. 538–542; Pope and McLeay, 2011, pp. 243–244).[3]

First, researchers face the general difficulties in accounting research in translating regulators' objectives, desired qualitative characteristics or properties of the accounting system into metrics and variables that can be analyzed formally. For example, there are many different ways to capture IFRS adoption effects on key reporting properties, such as transparency (Barth and Schipper, 2008), earnings quality (Francis *et al.*, 2008a) or comparability (Taplin, 2011).

Second, research on IFRS effects is constrained to the availability of archival data or estimations based on reasonably precise models. Even if available in theory, many data items are inaccessible for large samples, too costly to collect, or proprietary. For example, while projected or incurred costs due to the adoption of IFRS, or changes in individual standards are internally available at firms, this data is unobservable for researchers (who need to use imperfect proxies instead, such as audit fees; e.g., De George *et al.*, 2013).

[3]For a discussion of the impact of measurement error on casual inference in accounting research, see Jennings *et al.* (2020).

Third, outcome variables are subject to different degrees of measurement error: some are directly observable, such as footnote disclosures, whereas others can only be estimated with varying degrees of precision. For example, while effects of IFRS adoption on firms' cost of capital have frequently been predicted, available estimation methods are still notoriously noisy (Easton, 2009). This issue is particularly relevant in the context of studying adoption effects, as the magnitude of measurement errors must be benchmarked against the reasonably expectable economic magnitude of an IFRS adoption effect.

Fourth, outcomes differ in how and when they are affected by an IFRS treatment, with some variables likely to react in anticipation of the treatment (before official adoption) and others likely to react with delay (after official adoption). Short- and long-term effects of IFRS can thus differ (e.g., Ball, 2016). Cost of capital is a plausible candidate for an early reaction, whereas investment decisions tend to change later and can sometimes only be reasonably estimated over several years.

Fifth, when examining IFRS effects and moving from (1) the financial statements to (2) users' decisions to (3) firm-level market outcomes and (4) aggregated macro-level outcomes, the IFRS treatment gets increasingly indirect. The further down the causal chain, the more challenging it becomes to convincingly attribute an outcome to IFRS, because many other factors have plausibly simultaneous impacts.

In summary, IFRS researchers must understand the strength and weaknesses of outcome variables when studying IFRS adoption. The magnitude of estimated IFRS effects should be judged against what theory predicts, the measurement error of the estimation methods applied, and the magnitude of estimated effects of past regulatory treatments that provide reasonable benchmarks.

3.1.1 Accounting-Based Outcomes

In theory, the IFRS treatment should be directly observable from firms' reports by comparing prior local GAAP with the new IFRS

reports.[4] However, in practice, there are many explicit and implicit ways IFRS adoption can affect financial reports, and any measure can only capture some attributes. By design, measures can be broad, capturing the firm's overall commitment to transparency, or narrow, capturing specific properties of IFRS adoption. Most proxies for accounting-based outcomes in the IFRS literature relate to (1) comparability, (2) earnings quality, and (3) footnote disclosures, that is, core attributes that are predicted to change post IFRS.

The first type of accounting-based outcome relates to comparability, which is a core objective of IFRS adoption. Financial reports are considered comparable if similar economic transactions yield similar accounting outcomes ("similarity facet") and different economic events result in different accounting outcomes ("difference facets"). The literature operationalizes these facets by assuming that firms in the same industry have similar economic transactions (and therefore should have comparable accounting outcomes) and that firms in different industries have different ones (and should have different accounting outcomes). Empirical tests compare whether adoption increases comparability within an industry, in particular across countries, while not reducing differences across industries.

Based on this underlying idea, the literature has developed various comparability measures, which are often used in parallel (e.g., Barth *et al.*, 2012; Yip and Young, 2012). These include (1) value relevance comparability, that is, the similarity in the associations of earnings and book value of equity and stock price in a value relevance design,[5] (2) accounting system comparability, that is, the similarity of accounting

[4]Financial reports represent highly aggregated output of the financial reporting process. Archival researchers cannot observe how IFRS has internally affected the process of generating disclosed accounting information (e.g., related changes in staff, management information systems, or the auditing process). In addition, researchers often work within the limits of items that are available via commercial databases (see Section 4).

[5]Following this logic, similar firms should have more similar coefficients after IFRS adoption (Barth *et al.*, 2012), while dissimilar firms should not (Yip and Young, 2012).

outcomes for similar economic events affecting the firm and its peers,[6] (3) the degree of information transfer, that is, the extent to which a firm's earnings announcements affect its transnational industry-peers' stock prices,[7] and (4) similarity of the text corpus, that is, the similarity of the written language in annual reports.[8] All proxies are therefore at rather aggregate levels.

The second type of accounting-based variable focuses on outcomes of the accounting system's measurement, such as earnings or accruals. The accounting numbers are benchmarked against market-based outcomes intended to capture some property of "earnings quality" that is expected to be useful for decision-making. Measures include earnings persistence, earnings predictability, earnings informativeness, value relevance, or the (asymmetric) timeliness of revenue versus loss recognition (conditional conservatism). Other measures approximate characteristics of the firms' accruals process, such as the magnitude of accruals estimation error when mapping working capital accruals into operating cash flow realizations (accruals quality) or the scale of managerial intervention in that process (unexpected or discretionary accruals). All these proxies aim to capture positive or negative aspects of an accounting system labeled as "quality". They have a long tradition in the literature (see Dechow *et al.*, 2010a and Francis *et al.*, 2008a, for discussions), can be applied to large samples at low cost, and were used in the IFRS literature from early on (e.g., Barth *et al.*, 2008b).

However, some conceptual and measurement issues are inherent to these proxies. First, conceptually, not all of the properties may be consistent with the IASB's conceptual focus on usefulness for resource allocation decisions (Pope and McLeay, 2011), and the proxies' adequacy when judging accounting regulation can be debated (Barth *et al.*, 2001; Holthausen and Watts, 2001). Second, empirically, these measures are

[6]In this case, researchers apply modified versions of De Franco *et al.* (2011). For example, Barth *et al.* (2012) modify the within-country measure to allow testing for comparability across accounting systems. Cascino and Gassen (2015) modify the measure such that it can be applied to private firms.

[7]Similar firms should have stronger information transfers after IFRS adoption (Wang, 2014).

[8]Measured by the cosine similarity score of relative word frequencies between two annual reports (Lang and Stice-Lawrence, 2015).

subject to the "separation problem"; that is, one would ideally measure their three components separately, namely (1) the economics (the nature of the firm's business and transactions), (2) the accounting rule (the vector of accounting numbers that the economics could be mapped into when complying with accounting standards), and (3) the incentives (the relevant utility function of managers when choosing the exact accounting number from this vector). However, accounting research has not yet found a satisfactory way to empirically disentangle these attributes, impeding the connection of observed reporting changes and the change in accounting standards (Leuz and Wysocki, 2016). Third, proxies have been documented to contain significant measurement error even when applied to the large population of U.S. firms. Just because of practical constraints, errors are likely to be even larger when applied internationally.[9]

A third type of measure related to footnote disclosures is derived from the counting and scoring of disclosure items, either self-constructed (e.g., Glaum and Street, 2003) or based on experts' perceptions (e.g., Daske and Gebhardt, 2006). The selection of items and the coding involve subjectivity, as does the weighting of items when collapsing them into a summary score. These measures can be more focused and cover only specific IFRS requirements, such as transition effects in the adoption year (Hung and Subramanyam, 2007) or risk-reporting (Bischof *et al.*, 2021a). While focused measures contain less measurement error, by design, they only inform about specific disclosure practices, instead of firms' broader disclosure policies, and thus it will be unclear whether a firm's other disclosures act as substitutes or complements. Other work focuses on text-based attributes (Lang and Stice-Lawrence, 2015), such as the length of the report (number of words or numerical values), its readability (applying scores from computational linguistics),

[9]For example, while the accounting regime defining the accruals process is expected to be of first-order importance for earnings quality, IFRS adoption studies typically simply pool all observations across countries and different local GAAP regimes in the pre-adoption period to yield a reasonable number of observations. Other studies work with simplifications, such as shorter estimation periods, or they entirely neglect input parameters that are rarely available internationally (such as charge-offs when estimating discretionary loan loss provisions).

or the frequency of boilerplate disclosures (the use of phrases that are so common that they are unlikely to be informative).

Many studies circumvent these problems by directly estimating expected economic consequences. This approach captures the "net" effect of the entire range of IFRS changes. But it is vulnerable to the influence of concurrent shocks unrelated to IFRS that affect economic outcomes. Therefore, providing evidence along the entire causal chain can be beneficial to present a more cohesive story and, in particular, to pinpoint the reporting-based channels through which IFRS foster economic outcomes (Leuz and Wysocki, 2016).[10]

3.1.2 Economic Outcomes

Inputs into the decisions of users of accounting information are not directly observable and are a notorious black box for researchers. The same holds for the complex process through which these decisions translate into market prices and economic outcomes. Therefore, a variety of proxies have been tested in the IFRS literature, such as (1) analysts' information environment, (2) investors' capital allocation decisions and portfolio choices, (3) equity markets, (4) debt markets, and (5) corporate investments and governance.

3.1.2.1 Analysts' Information Environment

Information intermediaries, such as financial analysts, are considered to be prime users of accounting information and thus likely to adapt their behavior in response to IFRS adoption. For example, IFRS can impact an analyst's decision to follow a firm and the composition of the portfolio of firms that person covers (i.e., variation at the analyst's level), and therefore the number and mix of local versus foreign analysts following a firm (i.e., variation at the firm level). In turn, the number and type of analysts following a firm affect the production and dissemination of information, and coverage "shocks" have been documented to have consequences for firms (e.g., Irani and Oesch, 2013). Moreover, the IFRS literature uses the properties of analysts' forecasts (i.e., their accuracy,

[10]See Neel (2017) and De George *et al.* (2016) as examples.

bias, and the dispersion across analysts) as proxies for the quality of a firm's information environment (e.g., Bae *et al.*, 2008).

Both the number and type of analysts following a firm and the properties of analyst forecasts are outcome measures that can be easily obtained from IBES. However, given that data-collection at IBES is opaque (e.g., Ljungqvist *et al.*, 2009), it is unclear how the IFRS transition affected this process, which makes interpretations challenging. For example, not all analysts report to IBES and so if IBES extended its scope of coverage to a region right when this region adopts IFRS, an increasing number of analysts following a firm displayed in IBES would not necessarily reflect a real increase in coverage. Moreover, "actuals" (reported earnings by the firm) in IBES are "adjusted" to better match to what analysts forecasted (labelled "core earnings"), and it is unclear how IFRS impacted these adjustments. Similarly, "consensus forecasts" during the transition periods reflect a mixture of IFRS and non-IFRS forecasts that different analysts provided.[11] Both issues can bias measures of analysts' forecasting accuracy around IFRS adoption. Since IBES is the only broad-scale provider for international data on analysts, there is no possibility to benchmark the data quality.

3.1.2.2 Investors' Capital Allocation and Portfolio Choices

Cross-country differences in accounting create information barriers for foreign investors and likely contribute to investors' home bias (Karolyi and Stulz, 2003). To test the effect of IFRS on investment decisions, the literature has examined (1) worldwide portfolio holdings of mutual funds,[12] (2) worldwide portfolio holdings of a wider range of institutional investors,[13] (3) aggregated, country-level long-term equity investments

[11] See the IBES Summary History User Guide (Thomson Reuters, 2013) for details. No study has used information on the "accounting-bases" of IBES forecasts and actuals that became available in the "Company Level Footnote File" from early 2005 onwards.

[12] The Thomson Reuters International Mutual Funds database covers firm-level holdings of over 25,000 mutual funds from around the world. See Covrig *et al.* (2007), DeFond *et al.* (2011), and Fang *et al.* (2015).

[13] The Thomson Financial Ownership database captures a wider set of investor types beyond mutual funds, such as pension funds, insurance companies, hedge funds, or private equity. See Florou and Pope (2012).

by U.S. investors,[14] and (4) data from the German Open Market serving as a proxy for retail investors' trading.[15] Collectively, these sources cover holdings and trades for a wide range of investor types.

3.1.2.3 Equity Markets

The literature has developed a rich set of measures that capture the properties of stock returns, liquidity, and trading activities as well as the conditions for firms when raising equity in these markets (such as the cost of capital). Most measures share the limitation that they build on the assumptions that different markets have similar levels of efficiency in information processing and similar levels of private (insider) versus public information flows, both of which are unlikely to hold across countries (e.g., Frost *et al.*, 2006; Morck *et al.*, 2000).

Based on stock returns, research has tested for IFRS-related changes in how stock markets react to disclosure events, such as earnings announcements of the firm (Landsman *et al.*, 2012) or its competitors (Wang, 2014). The literature looked not only at first moments, that is, changes in the price level, but also into second, that is, variance and disagreement, and third moments of the return distribution, that is, skewness, or the frequency of extreme negative stock returns in the left-tail, called crash risk (DeFond *et al.*, 2015). Other measures capture stock price synchronicity, that is, the extent to which IFRS causes stock prices to co-move more (less) closely with firm-specific (common) information (Kim and Shi, 2012). In general, the wider the window over which returns are measured, the greater the risk of capturing improvements in firm-specific information flows at the time of IFRS adoption that are due to other contemporaneous innovations or

[14] Retrieved from reports by the U.S. Treasury Department, which, in theory, capture all types of long-term foreign equity holdings. See Khurana and Michas (2011) and Shima and Gordon (2011).

[15] Data on holdings and trading of retail investors are particularly difficult to acquire, as there are no corresponding disclosure requirements for individuals. The literature therefore has either exploited individual researcher's access to proprietary data of (online) brokerage services or trading data of stock market segments customized toward individual investors. See Brüggemann *et al.* (2012).

emerging channels of communications (e.g., the use of investor relations or earnings guidance).

Many studies use measures of liquidity and trading in equity markets (e.g., Daske *et al.*, 2008, 2013), such as quoted bid-ask spreads, trading (volume or the percentage of zero return or trading days), the Amihud (2002) price-impact measure (absolute stock return divided by trading volume), and estimates of the total round-trip costs of transactions (including trading costs other than spreads) based on Lesmond *et al.* (1999). Such measures have been used on a standalone basis (note the correct sign as some measures rather reflect illiquidity) or combined in joint liquidity scores (e.g., based on factor analysis; Christensen *et al.*, 2013; Lang *et al.*, 2012). Internationally, intra-day trading data was not available for many markets,[16] and there is additional noise when using data for less developed markets.[17] Still, liquidity measures in general, and bid-ask spreads in particular, have emerged over time as a frequently used outcome variable for testing information asymmetry, given the strong theoretical foundation, sensitivity to news, and large-scale availability at high frequencies. Other studies focus on equity market characteristics that are easily observable, such as firms' cross-listed shares on a foreign exchange (e.g., Chen *et al.*, 2015a) or the conditions of equity issuances (e.g., Hong *et al.*, 2014).

Investors' required returns or the firm's cost of capital are not directly observable. Estimates of expected returns are notoriously imprecise and can be based on time-series of realized returns or ex-ante cost of capital using analyst forecasts. Many studies on disclosure effects rely on the latter estimates, given their conceptual appeal, forward-looking nature, and the fact that changes in cost of capital can be estimated in basis points, which allows for judging economic magnitudes (e.g., Daske, 2006; Hail and Leuz, 2006, 2009; Li, 2010). However, these measures produce substantial measurement errors (Easton, 2009), particularly in accounting regime change settings, such as IFRS (Easton, 2006),

[16] As a consequence, other established facets of liquidity from the market-microstructure literature could not be considered, such as effective bid-ask spreads (based on transactions) or measures for market depth.

[17] For example, for trading volume in Datastream there is an unsystematic treatment of missing data entries versus entries of the value "zero".

because they necessarily rely on long-term growth assumptions and analyst forecasts as the main inputs into the models. There is also a debate to what extent the cost of capital reflects *expected* transparency changes.[18]

3.1.2.4 Debt Markets

Research has analyzed the impact of IFRS on (1) the pricing and terms of debt contracting, that is, volume of financing, yields or credit spreads, maturities, fees, and use and type debt covenants (e.g., Kim *et al.*, 2011; Chen *et al.*, 2015c); (2) the market structure for debt financing, that is, the mix of public versus private debt (Florou and Kosi, 2015), the structure of loan syndicates (Brown, 2016), and the relationship between the pricing of debt instruments across market segments, for example, CDS and underlying financial instruments (Bhat *et al.*, 2014, 2016); and (3) the use of accounting information in facilitating lending, in terms of credit relevance, that is, the ability of accounting numbers to explain firms' default probabilities, reflected in ratings or CDS spreads (e.g., Florou *et al.*, 2017; Kraft *et al.*, 2020; Wu and Zhang, 2014), and contractibility, that is, the usage of accounting-based covenants in debt contracts (e.g., Ball *et al.*, 2015; Chen *et al.*, 2015c).

A key challenge when using debt-market outcomes is that firms have multiple options for debt financing, and all relevant terms[19] of a contract need to be negotiated (contrary to equity contracts, which are more standardized) and may substitute or complement each other. Thus, the designs of debt contracts are endogenous, and, in theory, all terms should be modeled together and estimated simultaneously, which poses econometric challenges.

[18] Christensen *et al.* (2013, p. 152) argue that market participants "likely adjust market valuations or cost of capital estimates as soon as their expectations about future corporate transparency change, liquidity is less anticipatory because investors primarily worry about adverse selection and, hence, the level of transparency at the time they trade". In contrast, De George *et al.* (2016, p. 935) suggest that "from a theoretical perspective, it is unclear why investors decrease the premium for information risk even before the risk is attenuated and despite the significant uncertainty around IFRS implementation and its effect on reporting quality".

[19] Such as volume, pricing, maturity, control rights, or collateral.

Many debt contracts are also private (such as loans or trade credit) and important contractual terms (such as the use of collateral, control rights, or the frequency of information exchange) are not observable for international lending relationships. Researchers mostly use data on debt issues as collected by DealScan. This data tends to be biased towards specific types of loans (especially syndicated loans), loans issued in countries where there are public sources for loan originations (especially the United States), loans with facility volumes that meet some disclosure threshold, or loans where arrangers and lenders voluntarily disclosed the contractual terms (e.g., to be included in league tables).[20] One example for imperfections is that only around 10% of international debt issues have at least one recorded covenant, which probably represents the failure or inability of vendors to collect covenant information, rather than the debt being covenant free.[21] Bank loan contracts, which are the key source of debt financing for many international firms, are rarely observable.

More information on the pricing of debt and credit risk under a rather fixed set of terms (bond contracts are rarely renegotiated) is available from public bond markets covered by Securities Data Company's (SDC) Platinum. However, secondary corporate bond markets are often not very liquid internationally, because of the low number of bonds issued (many firms do not have a credit rating) and the low trading frequency after issuance (many bonds are privately placed with buy-and-hold investors). Researchers struggle with the small number of bonds, the stickiness of bond returns, and often missing controls for default risk (such as CDS contracts).

3.1.2.5 Effects Inside the Firm: Corporate Investments and Governance

The last category of outcomes relates to effects inside the IFRS-adopting firm and can be broadly grouped into (1) firms' internal investment

[20] Data is "primarily sourced from direct bank submissions from lenders, journalist news stories and relevant press releases. U.S. data also benefits from these sources in addition to regulatory filings with the SEC" (DealScan customer support).

[21] See Ball *et al.* (2015, p. 929). Furthermore, in theory, IFRS 7.18 mandates firms to report covenant violations during the past reporting period. However, in practice, this disclosure requirement is often ignored when covenants have been renegotiated.

decisions, such as corporates' or subsidiaries' investment cash flow sensitivities (Chen *et al.*, 2013; Shroff *et al.*, 2014), and (2) their corporate governance, such as incentive schemes in executive compensation (e.g., Ozkan *et al.*, 2012) or managerial dismissals (Wu and Zhang, 2009, 2019).

Finally, in line with cost-benefit analyses, research has investigated IFRS reporting costs, often proxied by audit fees (De George *et al.*, 2013; Kim *et al.*, 2012). We discuss potential issues with these outcome variables along with the evidence in Subsection 3.4.

3.2 Field Conditions and Identification

After the challenge of measuring IFRS adoption outcomes, another set of challenges relates to the right hand-side of Equation (3.1), that is, the clean identification of the IFRS treatment effect. Available IFRS settings only imperfectly satisfy identification requirements, that is, the random assignment of the treatment to a group of firms relative to an untreated benchmark group in an otherwise static environment (De George *et al.*, 2016, pp. 985–991; Leuz and Wysocki, 2016, pp. 584–586; Pope and McLeay, 2011, pp. 244–246).

3.2.1 Cross-Country Studies

In this subsection, we discuss general identification problems that apply to most of the frequently-used cross-country settings studying IFRS adoption effects. First, there is little variation in the timing of the treatment that could help mitigate confounding effects from concurrent shocks to the treatment and control groups (clustering in time). The initial wave of mandatory IFRS adoption occurred almost simultaneously in many jurisdictions during 2005. The only variation in timing that studies could exploit relates to (1) variation in firms' fiscal year-ends (for which the exact timing of the treatment is likely to be exogenous within the window of the adoption year) and (2) transition options for specific groups of firms (for which the timing of the treatment is likely to be more endogenous, because they do not have to use this option).

Second, for multiple reasons, the treatment itself is not as clean and uniform as the use of a binary indicator variable for IFRS adoption suggests. Most studies compare narrow windows of two years before and after IFRS adoption. This period comprises a number of special effects. In the adoption year, first-time adoption choices are applicable under IFRS 1 (First-time Adoption of International Financial Reporting Standards), reconciliation requirements apply for prior local GAAP numbers, and managers tend to issue transition guidance. The last local GAAP year is special, as firms start to provide outlooks for the likely impact of IFRS adoption, thus becoming subject to the IFRS treatment. For example, in Australia, firms were even required to reconcile their Australian GAAP to equivalent IFRS figures in the year *before* full IFRS adoption (Loyeung *et al.*, 2011). In addition, after the European Union's announcement in 2002 that it would mandate IFRS in 2005, firms started to use their local accounting choices to move closer to IFRS to mitigate severe reporting changes in the transition year. Finally, the IFRS treatment is not uniform across treated countries (jurisdictions often endorse IFRS, instead of mandating the standards as issued by the IASB; see Subsection 5.1) and over time (because IFRS are a dynamic set of standards; see Subsection 2.2).

Third, selection bias exists in the timing of the treatment. For example, many EU firms voluntarily adopted IFRS well before the mandate was even announced. These "early voluntary" adopters (Daske *et al.*, 2008) therefore purposely chose to adopt, and they make the estimation of the IFRS effect subject to self-selection and endogeneity issues. Given that "late voluntary" (or "early mandatory") adoption was possible between the EU's announcement in 2002 and the entry-into-force date in 2005, the mandatory treatment of firms around 2005 still contains choice, as these treated firms chose to adopt IFRS late. Furthermore, even the mandatory adoption decision by the legislature cannot be considered to be entirely exogenous. Rather, it was an endogenous choice determined, for example, by perceived economic network benefits (Ramanna and Sletten, 2014).

Fourth, natural control groups are missing in practice. Firms must apply IFRS at the level of their jurisdiction, and the mandate often

applies to all listed firms on regulated markets.[22] This impedes the possibility of setting up a control group within the same jurisdiction.[23] As a consequence, control groups are most likely to consist of listed firms from non-adoption countries, which are often dominated by a few jurisdictions (the United States and Japan) and require adequate controls for country-specific time trends.

Fifth, there are many other institutional changes that occurred around the same time and make it difficult to isolate the effects of IFRS adoption. IFRS adoption was often not a singular event but part of concerted efforts to strengthen capital market regulation and the financial infrastructure more generally.[24] Thus, the timing of these other reforms often overlaps with the timing of IFRS adoption, which likely complement each other as their regulatory goals are often very similar. These confounding events inhibit singling out IFRS effects and represent a core limitation.

3.2.2 Specific Settings

Given the limitations of cross-country settings, researchers have used specific settings that offer conditions that allow mitigating at least

[22] In some settings, there have been temporary exemptions. EU firms could, for example, delay IFRS adoption until 2007 if they were filing U.S. GAAP reports or if they had only issued debt. There even exist permanent exemptions that may apply to very specific groups of listed firms, such as standalone entities not required to prepare any consolidated financial statements (Pownall and Wieczynska, 2018) or firms listed on unregulated (grey) markets, such as the Alternative Investment Market in London (Gerakos *et al.*, 2013). The number of these firms is typically low, and their characteristics are unique, such that any parallel-trends assumption is hard to justify.

[23] Private firms are exempt from the (full) IFRS mandate in most countries. Private firms have only rarely been used as control group (e.g., Cascino and Gassen, 2015), because of the lack of market-based outcomes, and differing reporting incentives (e.g., Bonacchi *et al.*, 2019; Burgstahler *et al.*, 2006).

[24] For example, the Reports on the Observance of Standards and Codes (ROSC) by the World Bank and the International Monetary Fund (IMF) document how the two institutions promote international standards for 12 different fields of regulation, only one of them being the adoption of IFRS in the field of financial reporting regulation.

some of the described challenges and thus moving closer toward a clean identification of an IFRS effect.[25]

First, studies have made use of *reconciliation requirements in the adoption year*, holding the firm and the economics of the reporting period constant. In the initial adoption year, firms are required by IFRS 1 to prepare both the current year's and the prior year's financial statements under IFRS (to ease comparison). This requirement allows benchmarking IFRS with the local GAAP numbers disclosed in the prior year, holding the underlying transactions constant (e.g., Hung and Subramanyam, 2007). In addition, IFRS 1 mandates reconciliations of earnings and book values in the footnotes of the first IFRS report, such that users can understand which standards drove material differences (e.g., Barth *et al.*, 2014). In the United Kingdom, firms disclosed standalone IFRS reconciliation documents separately from other disclosures (in timing and content), thus enabling the use of an event-study design (e.g., Christensen *et al.*, 2009; Horton and Serafeim, 2010). However, all reconciliation settings share the limitation of allowing only for cross-sectional analyses in the IFRS adoption year.

Second, studies have made use of *persistent reconciliation requirements for firms cross-listed in the United States*, holding the firm and the economics of the reporting period constant. Until 2007, the SEC required foreign firms that cross-listed securities on a regulated U.S. securities exchange to reconcile earnings and book values from their home-country GAAP (often IFRS) to U.S. GAAP. Yearly reconciliations provided researchers with the opportunity to compare summary measures across two accounting regimes for the same firm and year and thus benchmark IFRS and U.S. GAAP (e.g., Chen and Sami, 2008, 2013; Harris and Muller, 1999; Henry *et al.*, 2009). However, many studies document that firms that self-select to list shares in the United States are of a specific type, which is neither fully comparable to peers at home because cross-listed firms are subject to U.S. oversight (e.g., Lang *et al.*, 2003), nor to U.S. peers, because cross-listed firms remain

[25] While these settings offer better internal validity of the research design, external validity of the findings is a concern, since IFRS likely interact with institutions that are different elsewhere.

subject to domestic reporting incentives (e.g., Lang *et al.*, 2006; Leuz, 2006; Lundholm *et al.*, 2014).

Third, studies have used *settings where IFRS does not materially change accounting rules*, holding the reporting quality (likely) constant. Brochet *et al.* (2013) argue that UK accounting standards are often perceived to resemble IFRS. Thus any capital market effects for UK firms after IFRS adoption are likely caused by positive spillovers from other (non-UK) peers adopting IFRS. They back their argument by the observation that Bae *et al.* (2008) categorize the United Kingdom as having the least number of differences across accounting standards (only one out of 21 differences that they code). However, to the contrary, Barth *et al.* (2014) report that firms' *actual* reconciliations of net income from UK GAAP to IFRS reported in the IFRS adoption year tend to be even larger for UK firms than for firms from many other European countries.

Fourth, studies have used *settings where some firms had voluntarily adopted IFRS before the mandate*, holding the reporting rules constant. For these firms, any observable change in outcomes around the IFRS mandate should be caused by (1) contemporaneous improvements in the set of IFRS standards, that is, new pronouncements becoming effective within the mandatory reporting year;[26] (2) spillovers from peer firms that started to report under IFRS; and (3) contemporaneous institutional changes that complemented the IFRS mandate. However, these potential drivers are difficult to disentangle. Still, these voluntary adopters were frequently used as a control group (e.g., Byard *et al.*, 2011; Wang, 2014).

Fifth, studies have used *settings in which firms have a choice between IFRS and other accounting standards*, holding the institutional environment constant (e.g., the former German New Market or Euronext; see Leuz, 2003; Pownall *et al.*, 2014). Such an option allows for the comparison of different accounting regimes in a single home-market setting (unlike U.S. cross-listings). However, if the choice between standards (mostly between IFRS and U.S. GAAP) is not random, self-selection

[26]For example, in 2005, four new pronouncements (IFRS 2, IFRS 4, IFRS 5, and IFRIC 2) were added to IFRS, and 19 revised pronouncements became binding for periods beginning on or after January 1, 2005.

is hard to control for, and the literature has struggled to introduce convincing instruments.

Sixth, studies used *settings in which decision-makers are affected differently by the IFRS mandate*. In this case, the analysis is performed at the decision-maker level. For example, Horton *et al.* (2013) distinguish between (1) analysts covering only firms that used a single local GAAP before IFRS adoption, though some of these firms use IFRS and some use local GAAP afterward (for them, comparability *decreased*); (2) analysts covering only firms that used a single local GAAP before adoption, and all used IFRS afterward (for them, comparability was *unchanged*); and (3) analysts covering firms that used different local GAAPs before adoption, but all used IFRS afterward (for them, comparability *increased*). Thus, IFRS treatment leads to different consequences depending on coverage before the IFRS mandate, and identification rests on the extent to which coverage allocation was exogenous. Comparable identification strategies have been applied to loan syndicates (Brown, 2016) and institutional investors (Covrig *et al.*, 2007; DeFond *et al.*, 2011).

3.3 Research Design Choices

In this subsection, we discuss research designs that researchers have used to tackle the limitations inherent in the IFRS adoption settings. Effects around IFRS adoption have been estimated using event study and difference-in-differences research designs.

3.3.1 Event Studies Over Short Time Windows

Event study designs intend to infer investor perceptions of an information event from the stock price reaction. This design has been frequently applied to examine perceptions regarding broader regulatory changes or individual standards (Barth, 2007a; Leuz and Wysocki, 2016).[27]

[27] General challenges in the application of event study designs include the identification of relevant event dates and return benchmarks, the specification of the unexpected portion of information, ruling out the impact of confounding events and coping with events that are aligned in calendar time (for reviews, see Corrado, 2011; MacKinlay, 1997).

We next discuss challenges of studies that test market reactions to (1) regulatory announcements increasing or decreasing the likelihood of IFRS adoption by a jurisdiction, (2) firms' disclosure of reconciliation adjustments to IFRS, and (3) firm-specific information events.

3.3.1.1 Market Reactions to Key Regulatory Events

New regulation typically evolves in a legislative process that has multiple steps. Event studies accumulate abnormal returns over a series of events that increase or decrease the likelihood of occurrence of the regulatory change.[28]

Armstrong *et al.* (2010) assess investors' perception of net benefits (or costs) of mandating IFRS by investigating the stock price reaction to 16 selected regulatory events between 2002 and 2005 that supposedly increased or decreased the likelihood of the European Union's adoption of IFRS. While the study's results are often interpreted as documenting a positive market assessment, the choice of the market-adjustment for abnormal returns is crucial for this interpretation. The average raw market responses are negative, and the majority of events (11 out of 16) yield reactions in a direction opposite to the prediction (Armstrong *et al.*, 2010). Several events were also overlapping with other legislative announcements (De George *et al.*, 2016). The selection of events is subjective, as all analyzed events occurred *after* the European Parliament had passed the regulation in March 2002 that required all listed firms in the European Union to report under IFRS from 2005 onwards (the Parliament's resolution usually marks the end to the regulatory process in the EU). Somewhat surprisingly, the study does not include any events prior to this decision.[29] By considering only events after the general IFRS adoption decision was already made, their

[28] One limitation is that governments often pass multiple regulations at the same time. It can then be difficult to isolate the effects of one regulatory change. Researchers can still test the validity of expectations about cross-sectional differences in firms' exposure to the regulatory change if these firm-characteristics are uncorrelated with the effects of other regulations passed at the time (Leuz and Wysocki, 2016).

[29] Plausible events are the announcements by EUROFIN or the European Commission earlier in the European Union's regulatory process that both provided strong support for the ultimate decision; see Armstrong *et al.* (2010), and footnotes 8 and 9.

events relate for the most part to the IFRS *endorsement* process, and specifically to the discussions of one controversial standard, IAS 39. One could argue that the study therefore primarily captures how the market perceived *deviations* from IFRS standards as issued by the IASB or, even more narrowly, deviations from IAS 39.

Joos and Leung (2013) apply a very similar idea to the U.S. setting and study the SEC's deliberations between 2007 and 2009 on whether the United States should adopt IFRS for domestic issuers. Due to the setting in which the adoption process faded out in 2012, the 15 policy announcements capture rather early stages in the SEC's rule-making process (see Becker *et al.*, 2020b). The authors find, on average, positive market reactions of +0.86% to events that increased the likelihood of IFRS adoption (marginally statistically significant). However, 13 out of 15 events coincide with the stock market crash of 2008.

Other studies that assess market perceptions based on event returns use events that relate to pronouncements of specific reporting standards. For example, Onali and Ginesti (2014) study stock price reactions to the IASB's deliberations on the replacement of IAS 39 by IFRS 9. Their study illustrates the difficulties when applying the event study design to individual IFRS pronouncements. The "events" represent rather technical discussions in the due process of the IASB and a jurisdictions' endorsement bodies (such as European Financial Reporting Advisory Group (EFRAG) in case of IFRS 9). These events are hard to select, lack visibility, and are often difficult to clearly interpret.[30] The reported cumulative abnormal returns of around +10% to the revision of an

[30]While the authors initially identified 20 events, they ultimately considered only 11, because some were not newsworthy enough to be covered by the business press, while for others it was impossible to infer whether they increased or decreased the likelihood of the standard's issuance. Furthermore, technical discussions during the development of a new standard affected not only the likelihood of the standard's issuance but also its content (in case of IFRS 9, there were material changes during its drafting).

individual standard seem economically unreasonably high (compared to the modest reactions to the entire set of IFRS).[31]

All these studies capture investors' ex-ante *perceptions* and *expectations* of the regulatory change, rather than *realizations* of its effects after implementation. Expectations are likely to differ substantially from realized effects, given that many IFRS adoption deficiencies only became visible over time (e.g., in form of IFRS implementation differences at the firm or jurisdictional level; see Sections 4 and 5).

3.3.1.2 Market Reactions to Reconciliation Adjustments

In some settings, regulators mandated the *separate* disclosure of reconciliations from local GAAP to IFRS (or from IFRS to U.S. GAAP), such that researchers can assess, by the market's reaction to the release, whether these reconciliations contain incremental information.[32]

In the United Kingdom, when transitioning from UK GAAP to IFRS, a subset of firms published an IFRS reconciliation separately from other disclosures. Horton and Serafeim (2010) study the market reaction to these announcements, conditional on earnings differences between IFRS and the UK GAAP results that were published earlier. While earnings were, on average, higher under IFRS (thus positive news), only lower IFRS earnings triggered significantly negative market reactions. The authors conclude that IFRS numbers are value relevant for investors. Christensen *et al.* (2009) re-examine reactions to negative earnings reconciliations and show that these reactions are more pronounced for firms that face a greater likelihood of covenant violations and higher costs from these violations, due to rolling GAAP covenants (which

[31] The authors do not report stock price reactions to the individual events, but only aggregated over all events. They do not cover the entire deliberative process. The latest event used in the study covers the IASB's issuance of IFRS 9, although the EU's endorsement process was still ongoing. In a sense, their selection of events stops where Armstrong *et al.* (2010) start.

[32] A market reaction that is consistent with the direction of the reconciled difference in earnings is often interpreted as evidence for the higher quality of an accounting regime. However, such an interpretation is premature, as reconciliations to some other GAAP are released *after* the results under the original GAAP had been disclosed. Thus, independent of the quality of the accounting system, reconciliations may also act as an additional signal of the precision of the initially disclosed earnings.

economically reflects a wealth transfer from shareholders to creditors). These findings illustrate that interpretations of IFRS market reactions require careful examination. In the UK case, transition (or contracting) costs played a decisive role beyond the mere changes to reporting quality.[33]

In the United States, until 2007, reconciliations from IFRS to U.S. GAAP were a required part of the annual Form 20-F (Harris and Muller, 1999).[34] A number of studies examine reactions to the earnings reconciliations from IFRS to U.S. GAAP by foreign issuers. Chen and Sami (2008, 2013) examine trading volume responses of American depositary receipts (ADRs) and of shares traded on a firm's home stock exchange. They find that the magnitude of reconciliations is associated with abnormal trading volume during the days surrounding the Form 20-F filing date.[35] Kim *et al.* (2012) and Chen and Khurana (2015) study the stock market reactions to the SEC's decision in 2007 to eliminate 20-F reconciliations for IFRS issuers. Chen and Khurana (2015) examine reactions to four key events that led to the SEC decision and document an overall positive stock market-reaction that is positively (negatively) associated with proxies for savings of dual reporting costs (the magnitude of IFRS reconciliation adjustments). Kim *et al.* (2012) further refute claims that eliminating 20-F reconciliations harmed investors' information environment by providing evidence that a large variety of market-based measures were unaffected after reconciliations were lifted. Overall, the literature concludes that, within the very specific setting, reconciliations from IFRS to U.S. GAAP no longer included material

[33]This setting entails the limitation that firms self-select to report their IFRS transition documents separately. It's also possible the market can predict firms' IFRS-UK adjustments, because similar reconciliations may have already been disclosed by other firms. Thus, the true benchmark for the market reaction to the IFRS reconciliation release would be the predicted IFRS earnings, which are unobservable, rather than the local UK GAAP earnings that the studies use as a proxy.

[34]The disclosure of first-time reconciliations from IFRS to U.S. GAAP plays a key role in this setting since the market should be able to at least partially anticipate the content of firms' reconciliations in the future due to the repetitiveness of some reconciliation items.

[35]However, the form 20-F contains much more information than reconciliations. Thus, the trading response may be driven by other factors that are correlated with the magnitude of reconciliations.

information after the IFRS had developed into a comprehensive set of reporting standards.

3.3.1.3 Market Reactions to Firms' Information Events

A last set of event studies examines changes in stock price reactions to firms' information events, bridging event study and difference-in-differences designs. Information events can be an individual firm's announcement to adopt IFRS, its own earnings announcement, information spillovers from competing firms' earnings announcements, or the disclosure of private information.

A first type of study examines the stock price response to firms' announcement to voluntarily adopt IFRS before a mandate and persistently finds significant positive abnormal returns. For example, Karamanou and Nishiotis (2009) find an average reaction of +0.73% to 59 firm announcements before 2002 (the EU announcement of the mandate) and attribute this reaction to these firm's signaling their "high-value" type and "bonding" to increased transparency (to the extent that voluntary IFRS adoption is costly and represents a commitment; Leuz and Verrecchia, 2000).

A second type of study (for early evidence, see Auer, 1996) examines changes in the information content of earnings announcements captured by abnormal return volatility and trading volume. The use of second moments builds on the argument that return volatility and trading volume reflect *idiosyncratic* interpretations of the announcement, rather than an *average* change in investors' beliefs that price changes in first moments would reflect. The greater the information content of an announcement, the more likely investors will interpret the content differently, and the more frequently they will trade. If IFRS improve the information content of firms' disclosures, return volatility and trading volume around earnings announcements should increase. Using a global sample of firms, Landsman *et al.* (2012) show a positive association between IFRS adoption and these two measures, suggesting that IFRS deliver more information.

Yet there are limitations to be considered. First, during the sample period of most studies, there had been exceptionally high noise in IBES

announcement dates of international firms (DeFond *et al.*, 2007), and an increase in the precision of announcement dates in the database over time could equally drive these results.[36] Second, the underlying theory is ambiguous. Given that IFRS should provide a level playing field on global markets, one could also argue that IFRS should reduce, instead of increase, differences in investors' assessments.[37] Third, a number of innovations in the communication of earnings news overlapped with IFRS adoption, which makes the attribution of the reaction difficult. For example, around adoption, reporting lag decreased (Landsman *et al.*, 2012), the electronic availability of announcement dates improved (DeFond *et al.*, 2007), earnings guidance was initiated (Li and Yang, 2016), and more detailed financial statements started to be included in earnings announcements (Kim *et al.*, 2019).

A third type of study tests whether IFRS adoption results in increased cross-border information transfers and spillovers (Wang, 2014; Yip and Young, 2012). For example, Wang (2014) studies how earnings announcements of global industry leaders (the three largest firms in an industry) translate into price reactions of all non-announcing firms in the same industry domiciled in a country different from that of the announcing firm. The study finds that non-announcing foreign firms react more strongly to the earnings announcements of a global leader when both firms report under IFRS and transnational information transfers are stronger when firm-pairs are located in countries which economies are more tightly integrated.

A forth type of study looks into changes of market reactions to other information events. For example, in the case of insider trading, Brochet *et al.* (2013) predict that the adoption of IFRS should result in lower market reactions, because IFRS reduce private information. In fact, they find that mandatory adoption significantly reduces abnormal returns associated with insider purchases after adoption, supporting

[36]This argument would hold in a difference-in-differences design in case these IBES announcement dates were already precise in the pre-period for the U.S. firms in the benchmark group, which is not unlikely.

[37]De George *et al.* (2016) argue that without knowing the identity of the traders, it is difficult to attribute the observed changes to IFRS.

the view that IFRS decreases information asymmetry between insiders and outsiders.

3.3.2 Difference-in-Differences Analysis Over Longer Time Windows

Many outcomes of interest do not respond to IFRS adoption in the short run or are not observable at high frequencies. A difference-in-differences analysis over a longer time window is the basic research design for many studies. Equation (3.1) describes this approach with the IFRS effect being estimated as the difference in the changes of the outcome variables from the pre- to the post-IFRS period between a treatment group (the IFRS adopters) and a control group. The equation implies that the key design choices relate to (1) the coding of the indicator variable for IFRS adoption, (2) the definition of the post-period, and (3) the controlling for contemporary changes, which potentially confound the adoption effect (often through fixed-effects structures or further partitioning to capture variation in the treatment effect).

3.3.2.1 The Indicator Variable for IFRS Adoption

Regulation at the level of individual jurisdictions determines the options that firms have in their use of IFRS for financial reporting. The appropriate coding of the IFRS adoption indicator is still a firm-level observation. There are different institutional reasons for why the coding can vary within jurisdictions (see Subsection 3.2.1 for details). There are usually three distinct groups of firms in a jurisdiction: (1) firms that mandatorily adopt IFRS upon the regulatory treatment, that is, the treatment group; (2) those that voluntarily adopt IFRS at some self-determined date (during a timeframe determined by the jurisdiction); and (3) those that never become subject to the IFRS mandate and decide against voluntarily adoption, that is, the control group.[38]

The coding of the first and third group (as treatment and control group) seems relatively clear. However, the IFRS mandate often applies to all listed firms on regulated markets, which impedes setting up a

[38]Most of these firms stick to their local GAAP, but some may choose another international set of reporting standards, especially U.S. GAAP, over IFRS.

control group within the same jurisdiction, at least if market-based outcome measures are considered. Private firms are also distinct in their reporting incentives. As a consequence, control groups typically consist of listed firms from non-adoption countries.

Matching these firms on observable characteristics (e.g., by using propensity scores) is the standard approach to address systematic and observable differences between these subsamples (e.g., Hong *et al.*, 2014; Kim and Shi, 2012). Additional imbalance arises from substantial differences in the number of IFRS-adopting firms across countries, which could lead to the coefficient estimates being largely driven by observations from a few countries with the most adopters (i.e., damp external validity). For example, UK firms may dominate the sample of first wave adopters, Canadian firms the sample of second wave adopters, and U.S. and Japanese firms the control group. There are different approaches to deal with this issue. For example, Daske *et al.* (2008) randomly draw an equal number of firms from each country. Landsman *et al.* (2012) randomly draw 100 samples of 500 firm-years per country and present the mean coefficient estimates from these samples in a robustness check. Other sample selection issues, for example, changes in the composition over time, which can lead to attrition or enlargement, are not unique to IFRS settings.

Another difficulty arises from the treatment of the voluntary IFRS adopters. If voluntary adopters applied IFRS before the general mandate, they could serve as a control group because their reporting standards do not change around the treatment. However, this idea is subject to multiple caveats. First, if the implementation of an IFRS mandate is expected to produce spillovers that affect the outcome variable of interest; that is, the voluntary adopters will become part of the treatment.[39] The same is true if mandatory IFRS adoption is part of a broader package of a reform of financial reporting regulation and other parts of the package affect the voluntary adopters.

Second, voluntary IFRS adopters are not homogeneous. They represent at least three quite distinct groups of firms around the 2005

[39]For example, because the financial reports of earlier voluntary adopters become more comparable to the large number of new mandatory reports, market-wide information asymmetries decrease.

mandate: (1) firms that voluntarily adopted (parts of) IFRS *in addition* to their local GAAP filings long before an IFRS mandate became applicable (Ashbaugh, 2001; Daske *et al.*, 2013); (2) firms that adopted IFRS when jurisdictions, especially in Continental Europe, started to allow firms to *substitute* their reporting requirements under local GAAP by IFRS filings, that is, once the voluntary IFRS adoption would no longer lead to dual reporting costs (Daske, 2006; Leuz and Verrecchia, 2000); (3) firms that chose to *go public* on special markets segments for start-up companies (such as the former German New Market), with these markets then requiring the filing of IFRS reports (Christensen, 2012; Leuz, 2003). Since then, additional groups have emerged in response to new adoption incentives.[40] In sum, the global set of voluntary IFRS adopters consists of very specific clusters of firm-types.

Each of these groups tends to have specific characteristics, including reporting incentives. If these characteristics also explain changes in the outcome variable or overlap with other reporting incentives that also change around IFRS adoption (for evidence, see Daske *et al.*, 2013), the research design needs to control for self-selection and the ensuing endogeneity. Convincing sets of full controls or even instruments for two-stage estimations are rare (Christensen, 2012; Larcker and Rusticus, 2010). To avoid these complications and isolate the effect of the mandatory treatment, studies often exclude voluntary adopters from the sample (e.g., Landsman *et al.*, 2012).

However, it should be clear that mandatory adoption can also suffer from endogeneity, especially when regulators leave a subset of firms for which the IFRS mandate is not binding and when regulators decide about the timing of the first-time adoption on the basis of other simultaneous developments in the economy. Thus, in case that

[40]For example, in jurisdictions that permit but do not require the use of IFRS, adoption incentives are often specific to the setting. In Japan, the ruling political party explicitly recommended (and therefore implicitly incentivized) that Japanese firms adopt IFRS (Tsunogaya, 2016). Another example related to firms with securities listed on U.S. exchanges is when the SEC dropped reconciliation requirements to U.S. GAAP for firms that adopted IFRS from 2007. This created new incentives to voluntarily adopt IFRS to avoid dual reporting. A different case emerged in Switzerland, where listed firms had the option to switch from IFRS back to local GAAP, and around one-quarter of IFRS-reporting firms did (Fiechter *et al.*, 2018).

intertemporal or cross-sectional variance of the mandate is higher within jurisdictions, this could help solve identification problems by allowing the use of more sophisticated fixed-effects structures (see Subsection 3.3.2.3). At the same time, concerns about the endogeneity of the mandate itself become more valid (because the IFRS indicator may not reflect a truly external regulatory shock). Finally, instead of modelling IFRS adoption as a binary variable, a special solution is modelling it as a continuous effect. For example, Cascino and Gassen (2015) use an IFRS indicator that captures change in the proximity of IFRS to prior local GAAP, that is, the magnitude of the actual change in reporting requirements after adoption (based on Bae *et al.*, 2008).

3.3.2.2 The Definition of the Post-Treatment Period

The timing of the post-event period depends on regulation if IFRS adoption is mandatory and on management choice if it is voluntary. If adoption is mandatory, the post-treatment period is often (assumed to be) homogeneous within a jurisdiction, since many studies, especially those using the EU setting, rely on 2005 as the year of mandatory first-time adoption. The windows around this year vary across studies. Many studies have in common that the sample period ends in 2007 to avoid confounding effects from the financial crisis, which peaked in 2008. Evidence from first-time adoption studies thus often comes from a short and early period and systematically neglects potential outcomes in the longer run (which would be harder to identify even absent a crisis). To test for the persistence of adoption effects and document post-treatment trends, individual years of the post-treatment period can be separately interacted with the treatment indicator (i.e., replacing the POST $*$ IFRS interaction with separate YEAR $*$ IFRS interactions). Landsman *et al.* (2012) is one example.

The definition of the post-treatment period also depends on the frequency by which the outcome variable is observable. The higher the frequency, the more likely the existence of variations in the exact starting point of the treatment within a specific group of treated firms. For example, if the outcome variable can only be measured once per year, the post-treatment period starts at the same time for all firms with

an initial IFRS adoption date in the year 2005. However, if the outcome variable can be measured on a monthly or even weekly basis, variations in the coding of the post-treatment indicator are possible even within this group. In particular, this is the case if sample firms have a different financial year-end (e.g., June 30 versus December 31). If the initial *publication* of the IFRS report matters for the outcome variable (rather than the internal *adoption* of the rules), common differences in adoption dates also arise from different reporting schedules (e.g., a December 31 report being filed in February versus March). Generally speaking, the frequency by which the outcome variable can be observed is higher for market outcomes than for accounting outcomes. A staggered IFRS adoption within a certain mandated group helps identifying the adoption effect because specific time trends of that group can be controlled for without absorbing the IFRS main effect (e.g., through country-month fixed effects; see Daske *et al.*, 2008).

3.3.2.3 The Interaction Term: Challenges in the Causal Identification of the IFRS Effect

The interaction term in Equation (3.1) captures the incremental effect of IFRS adoption on treated firms and represents the difference-in-differences estimator. To attribute a change in the outcome variable to the IFRS adoption, it is crucial to rule out that any other factor could have plausibly caused this change at the same time, that is, around the treatment date (e.g., Gow *et al.*, 2016). One common confounding factor is the bundling of IFRS adoption with other regulatory changes which target the same firms. In this case, the interaction term is capturing the bundled effect making it difficult to disentangle the IFRS adoption effect. Another confounding factor is a systematic difference between the group of IFRS-adopting firms and the selected benchmark group which may result in different (and nonparallel) time trends. In this case, the interaction term is capturing the general difference between time trends that would have been observed even in the absence of IFRS adoption.

A careful choice of the control group helps address these issues and is a core element of any identification strategy. Ideally, the strategy also

offers variation in the treatment assignment or, at least, variation in the treatment date within one group of treated firms for which a specific time trend is expected. If this variation exists, the research design can use group-specific time-fixed effects and thus can control for nonparallel trends. Most often, the relevant group is defined by geography (within jurisdictions), business model (within industries), or both.

For example, if the main concern relates to country-specific time trends, country-specific time-fixed effects are possible (i.e., do not absorb the interaction term) if there are firms within the country that plausibly follow the same time trend but either never adopt IFRS or start to adopt at different dates. In the latter case, the interaction term is estimated during the periods in which some firms within the country have already adopted IFRS while others have not. When IFRS adoption is staggered in this manner, the late adopters serve as a control group for the early adopters during an interim period. But external validity can suffer, depending on how short and specific the distinct period and group of firms are. The internal validity of a staggered-adoption design relies on the exact order of the treatment being quasi-randomly assigned within the group and is threatened by potential spillover effects from early to late adopters (Leuz and Wysocki, 2016). An equivalent selection of group-specific time-fixed effects applies if concerns are about industry-specific time trends (homogeneous across jurisdictions) or about different industry-specific trends across jurisdictions.

While fixed-effects structures continue to vary in the recent IFRS literature, there is increasing agreement that the clustering of standard errors is most convincing at the country level. This approach best addresses potential within-country correlation of residuals, at least if the number of clusters exceeds 40 (Petersen, 2009). De George *et al.* (2016) document a significant increase in the number of IFRS publications using this method over time.

3.3.2.4 Cross-Sectional Variation in the Treatment Effect

While the interaction term in Equation (3.1) has to be interpreted as an average effect, IFRS adoption likely has heterogeneous consequences within the overall group of treated firms. Exploiting cross-sectional

variation helps illuminate the causal chain behind the average treatment effect. The literature has established both firm- and country-level splits, which relate to the extent to which IFRS differs from previously applicable accounting rules and institutional characteristics of the reporting environment that go beyond established proxies for firm reporting incentives.

A first set of splits identifies the extent to which accounting rules changed when switching from local GAAP to IFRS. The greater the difference, the more likely are meaningful effects of IFRS adoption on firms' financial reporting. Broad country-level scores by Bae *et al.* (2008) or Ding *et al.* (2007, 2009) rely on the content of a selected set of accounting rules, based on GAAP comparisons and surveys of auditors (e.g., Nobes, 2001). Yet defining a proxy for the difference between local GAAP and IFRS is not straightforward, because the relevance of certain rules varies with a firm's business model and GAAP regimes evolve over time (see De George *et al.*, 2016, for a discussion). More specific scores relate to only one or very few important area(s) for which IFRS differ considerably from prior domestic accounting rules across countries.[41] Finally, some studies use the magnitude of reconciliations disclosed in the adoption period as a proxy for accounting differences (e.g., Barth *et al.*, 2014), although these reconciliations are affected by firm-specific choices and incentives in the implementation of IFRS.

Given the ambiguous role of rules in explaining reporting behavior (see Subsection 2.3), a second set of cross-sectional splits relates to institutional characteristics of the reporting environment. For example, the strength of public enforcement is an important institutional characteristic, which is often captured by broad constructs that capture more general aspects outside of accounting and auditing.[42] Other examples include a country's insider trading restrictions, financial development and market capitalization, market integration, or cultural dimensions

[41] For example, Aharony *et al.* (2010) study goodwill, R&D expenses, and asset revaluation; Gebhardt and Novotny-Farkas (2011) examine loan-loss provisioning; and Wu and Zhang (2019) discretionary loss provisions.

[42] Examples include the public enforcement index by La Porta *et al.* (2006), the Kaufmann *et al.* (2007) index for the rule-of-law, or the resource-based proxies by Jackson and Roe (2009). See Isidro *et al.* (2020) for a comprehensive list and analyses of 72 potential country attributes.

summarized in Hofstede *et al.* (2010). More specific proxies for the enforcement of accounting standards include the comprehensive index by Brown *et al.* (2014), the coding of public enforcement changes in EU countries by Christensen *et al.* (2013), or the coding of the enforcement strength of disclosures by financial institutions (Bischof *et al.*, 2021a). The use of additional cross-sectional splits depends on the specific research question and the outcome variable of interest.

When incorporating these scores into the regression framework in Equation (3.1), the POST $*$ IFRS interaction variable is further interacted with the split variable (e.g., by separating between above and below median values of the split variable). The split variable can be measured in levels (e.g., Daske *et al.*, 2008) or in corresponding changes from the pre- to post-period (e.g., Christensen *et al.*, 2013).

3.4 Evidence Around Initial IFRS Adoption

3.4.1 Financial Reporting Properties

Archival evidence on changing reporting properties post IFRS is particularly rich. Researchers benchmarked IFRS against different alternative GAAP regimes (local GAAP as lower bound or U.S. GAAP as upper bound references), applied a host of proxies capturing different characteristics of earnings quality in diverse settings (global, EU, or a single country) and in various situations when firms adopted IFRS (voluntarily or mandatorily, or when being cross-listed in the United States). Collectively, these findings are particularly diverse but point to persistent heterogeneity, due to ongoing differences in reporting incentives (see ICAEW, 2015, for in-depth coverage of a wide range of studies). A likely reason for this diversity in findings is that the individual attributes that constitute "IFRS" work as complements or substitutes (see Section 2), and their individual or combined effects can differ, depending on the nature of the earnings property studied (e.g., while fair value accounting may improve the timeliness of information, it may impair comparability, etc.).

3.4.1.1 Comparability

IFRS is expected to decrease cross-country differences in financial reports. While many studies attribute consequences after IFRS adoption to increased comparability, only a few studies specifically focus on testing this channel. The empirical challenges are to disentangle comparability from other information effects and to operationalize comparability in the research design, that is, the idea that similar economic transactions should yield similar accounting outcomes while different ones should yield different accounting outcomes (Yip and Young, 2012). It is not sufficient to simply exploit changes in the number of firms that use the same reporting standards within an industry to adequately capture changes in comparability, because *uniformity* of reporting standards leads to a common reporting label but does not necessarily result in greater similarity in the reporting of the underlying economics (DeFond *et al.*, 2011).

Using a comprehensive global sample and a set of different measures (categorized into "accounting system comparability" and "value relevance comparability"), Barth *et al.* (2012) document that IFRS adoption is associated with an increase in the comparability of financial statements across IFRS firms and even for a matched sample of U.S. firms that use U.S. GAAP. This increase in comparability is approximated by changes in earnings smoothing, accruals quality, and earnings timeliness. Comparability effects are higher when firms adopt IFRS mandatorily or are from common-law countries and based in countries with strict enforcement. To trace sources of comparability improvements, Cascino and Gassen (2015) exploit variations in how *changes in individual standards*, due to IFRS adoption, affect the comparability of country-firm-pairs and thereby apply a heterogeneous (instead of a dichotomous) IFRS treatment measure. They conclude that comparability effects of IFRS adoption are "marginal" and identify firm-level heterogeneity in compliance as a main driver for missing comparability. As their accounting-based comparability measure allows for comparisons of public and private firms, they make the somewhat obvious but very important point that IFRS *decreases* accounting comparability in many

national markets, since unlisted firms still follow local GAAP in many jurisdictions.

Yip and Young (2012) study both the similarity and the difference facets of comparability. They customize a set of comparability measures for that purpose. (See their Figure 1 for an overview.) Using an EU sample, they show improvements in these measures following IFRS adoption for firms in the *same* industry domiciled in different countries. At the same time, they find few changes in comparability measures for firms in *different* industries domiciled in different countries. With the help of their refinement, they debunk widespread concerns that IFRS might mask differences across firms by creating artificial reporting similarities.

3.4.1.2 Reporting Discretion and Earnings Management

Principles-based standards imply the possibility of a flexible application of the standards across different jurisdictions and business models and allow managers to signal their private information. At the same time, the discretion inherent in IFRS may be exploited opportunistically for earnings management. Empirical studies have tried to assess to what extent this concern is valid, but the major studies have produced particularly conflicting results. While Barth *et al.* (2008b, 2012) document lower magnitudes of earnings management under IFRS, Jeanjean and Stolowy (2008) and Ahmed *et al.* (2013) present evidence for higher magnitudes. At least the literature does offer some explanations for these contradictions.

First, most proxies for earnings management rely on accruals. Yet, when applying the standard formula to calculate accruals that was developed under U.S. GAAP (e.g., Dechow *et al.*, 1995), researchers must consider major types of accruals that uniquely exist in local GAAP regimes. In this regard, van Tendeloo and Vanstraelen (2005) illustrate that their findings on the degree of earnings management post-IFRS adoption change entirely when they apply the standard formula versus a formula which includes "hidden reserves" under German GAAP, that

is, a well-known tool for earnings management in the German context.[43] Still, the literature continued to apply the standard formula, if only for practicability.[44]

Second, transition management is always important to consider when new (individual) accounting standards are introduced, since managers are notorious for opportunistically exploiting special reporting options when recording mandated changes (e.g., "below-the-line" treatment of these effects under U.S. GAAP; Beatty and Weber, 2006). IFRS 1 (First-time Adoption of IFRS) provides options for the transition period that offer considerable discretion for managers to "clean-up" their books in the opening IFRS financial statements. In fact, in the IFRS adoption period, managers rationally consider immediate and future effects of the accounting change on earnings when choosing transition options, understanding that these decisions have multi-period consequences, because of the reversal of accruals under the clean-surplus principle (Garcia Osma and Pope, 2011). For example, Capkun *et al.* (2010) find that the greatest increase in return on assets disclosed in transition-year reconciliations to IFRS emerges for firms with the lowest levels under local GAAP and attribute this result to transition management. Garcia Osma and Pope (2011) model strategic balance-sheet adjustments in the IFRS adoption period and provide evidence that these adjustments are negatively associated with earnings quality in *subsequent* periods, i.e., transition options have a material impact in periods *beyond* the transition year.[45] This insight is important, because the major studies on IFRS effects on earnings management use a limited number of post-adoption years that are likely to be biased by these choices.

[43]To include hidden reserves, van Tendeloo and Vanstraelen (2005, p. 176) add to the basic formula for accruals "the year-to-year change in provisions, deferred revenues and other long-term non-interest bearing debt".

[44]Even cash flows are affected by the transition to IFRS, due to the way the statement of cash flows is constructed. For example, reported cash flow from operations differs for the same reporting period under local GAAP and IFRS, e.g., due to different scopes of consolidation, foreign currency translations, or definitions of cash equivalents.

[45]While Pope and McLeay (2011) conclude that IFRS 1 compromises the principle of faithful representation, due to this inherent weakness, one should bear in mind that the wide range of transition options in IFRS 1 aim to limit the cost of adoption and to incentivize IFRS adoption.

Third, the frequent revision in the set of IFRS standards arguably had an impact on the results. While decreasing levels of earnings management for voluntary IFRS adopters (e.g., Barth *et al.*, 2008b) are often attributed to self-selection and their reporting incentives (e.g., Ahmed *et al.*, 2013), a later revision of IFRS standards could have had an impact on inferences on earnings management as well. Capkun *et al.* (2016) hypothesize that the greater flexibility of the many new IFRS standards drafted between 2003 and 2005 that became binding from 2005 or later (especially IFRS 3 for business combinations and goodwill), coupled with the lack of clear implementation guidance, led to an increase in earnings management post-2005, that is, that voluntary and mandatory adopters simply had to apply different sets of IFRS. They present evidence that earnings management increased for both mandatory *and* voluntary adopters after 2005, despite the latter group's continuing incentives for transparency. However, their tests are not granular enough to disentangle which new standards drove this trend and whether this increase in earnings management is persistent or only due to transition effects.

Fourth, complex links between earnings properties complicate the interpretation of results. For example, Capkun and Collins (2018) study how changes in the timeliness of the recognition of gains and losses, due to IFRS adoption, affect earnings management proxies. They argue and find that IFRS lead to more timely recognition of good news (e.g., fair value measurement) but less timely recognition of bad news (e.g., goodwill impairment). Both effects affect the correlation between contemporaneous accruals and operating cash flows (CFO) that serve as a proxy for earnings management (i.e., where a more negative correlation indicates more earnings management, due to higher income smoothing). Yet a timelier recognition of good news leads to a *decrease* in the negative correlation between accruals and CFO. To the contrary, less timely recognition of bad news leads to an *increase* in the negative correlation between accruals and CFO. Thus, documented increases in the negative correlation post IFRS could be due to a *mechanical* effect of the standards and not necessarily due to an increased use of discretion. Also, the estimated impact of IFRS adoption will depend on

the type and mix of economic news, that is, positive or negative cash flow years.

Fifth, the accounting literature documents important interactions between accruals-based and real earnings management, which often act as substitutes (e.g., Evans *et al.*, 2015; Ewert and Wagenhofer, 2005; Zang, 2012). To the extent that IFRS significantly impact the degree of accruals-based earnings management, spillovers and opposite adjustments in real earnings management should be observable. Yet Doukakis (2014) finds no significant effects on both accrual-based and real earnings management.

Sixth, regardless of a change in accounting standards, the literature overwhelmingly shows persistence in the relation between incentives for earnings management and proxies used to measure earnings management. For example, when examining changes in four country-level earnings management proxies based on Leuz *et al.* (2003), Garcia Osma and Pope (2011) find highly persistent aggregate country-level scores for earnings management in the pre- and post-IFRS periods. Similar results can be found for many firm-level incentives.

Collectively, the multifaceted picture on possible changes in earnings management under IFRS is not surprising. Any accounting system offers discretion that even high-levels of enforcement or strict accounting standards, such as U.S. GAAP, cannot prevent (Leuz, 2006). In addition, while the complexities of the accruals process are not well understood in general, additional complications of the transition process from one accounting system to another as well as the frequent changes in standards add additional complexity, which prevents drawing any robust conclusions.

3.4.1.3 Reporting Quality

It is notoriously hard to measure financial reporting quality, and empirical constructs thus vary substantially (see Subsection 3.1.1). Early studies on voluntary adopters (Soderstrom and Sun, 2007) frequently used a value relevance design because it allows a comparison of earnings and book values across different types of filings, such as reconciliations to IFRS (e.g., Ashbaugh and Olsson, 2002; Bartov *et al.*, 2005; Harris

and Muller, 1999; Hung and Subramanyam, 2007). Mixed results are at least partially due to the large variety of possible specifications and limits to robustness when a value relevance design is applied to very small samples.[46]

Using a sample of over 300 voluntary IFRS adopters (until 2003) and matching these against local GAAP firms, Barth *et al.* (2008b) show that IFRS adoption is associated with greater value relevance, more timely loss recognition, and lower earnings management. However, they also note that the IFRS dummy is likely to capture other relevant changes to these firms' reporting, as their decision to voluntarily adopt IFRS was often part of a broader internationalization strategy (including the initiation of reporting in English or the improvement of market communication more generally). Given the self-selection, the reporting effects could also be caused by the underlying factors that gave rise to the firm's decision to switch, thereby overestimating the IFRS effect. At the same time, these tests may underestimate an IFRS effect, since voluntary adopters' IFRS reports were often incomplete and sometimes aimed at equally complying with local GAAP reporting requirements; that is, these tests did not get an unconditional IFRS treatment.

Highlighting the importance of self-selection and firms' revealed preferences in the choice to adopt IFRS, Christensen *et al.* (2015) replicate the design of Barth *et al.* (2008b) and compare changes in these reporting properties for voluntary and mandatory IFRS adopters in Germany (a country where firms were able to voluntarily replace local GAAP with IFRS from 1998 until 2005, when listed firms were mandated to use IFRS). They find that earnings quality improvements are limited to voluntary adopters and those of mandatory adopters were only modest.

[46]For example, when using a value relevance design, researchers have applied price versus returns models or varied the timing and the length of the measurement window (at year-end or disclosure date), the approach to deflation, or the econometric approach to estimation.

When comparing voluntary IFRS adopters against U.S. GAAP reporting firms, studies often find very similar earnings properties.[47] Again, reporting incentives and selection issues often play a big role in the available settings. For example, compliance with IFRS and U.S. GAAP was very weak in the German New Market (Glaum and Street, 2003; Leuz, 2003). Similarly, reconciliation differences from IFRS to U.S. GAAP that markets might view skeptically are likely to be small because cross-listed firms use their reporting discretion to prevent the disclosure of material reconciliation differences in their Form 20-F. (See Radebaugh *et al.*, 1995, for the case of Daimler-Benz, a pioneering firm.)

Using cross-country samples of mandatory adopters, Aharony *et al.* (2010) and Barth *et al.* (2012) find that IFRS adopters' value relevance of net income and book value of equity increased under IFRS. Barth *et al.* (2014) confirm this result when studying reconciliation disclosures in the transition year. Yet, again, across the range of contemporaneous and follow-up studies, there is substantial variation in findings for individual settings and countries.[48] Lang and Stice-Lawrence (2015) take a very different approach and focus instead on qualitative disclosure characteristics of financial reports that they extract with automated textual analysis from almost 90,000 annual reports until 2011. They find that IFRS reports are significantly longer, contain less boilerplate language, and increase the comparability of textual attributes across reports. They thereby identify a unique quality dimension that other studies had missed. Finally, many studies that use market-based outcomes (see Subsection 3.4.2) are often interpreted as evidence for the combined "net" effects of all IFRS reporting characteristics on reporting quality.

[47] See, for example, Leuz (2003) using firms listed on the German New Market; Bartov *et al.* (2005) and Gordon *et al.* (2008) using firms listed on various German stock exchanges; Ashbaugh and Olsson (2002) and Harris and Muller (1999), and Gordon *et al.* (2008) using firms cross-listed in the United States; Atwood *et al.* (2011) and Barth *et al.* (2012) using a global sample of pair-wise matched firms; and Lin *et al.* (2012) using German firms switching from U.S. GAAP to IFRS.

[48] For example, of the 14 pan-European studies that ICAEW (2015) summarize, 10 find some increase in value relevance post-IFRS adoption, in particular for earnings, less so for the book value of equity. See also Oliveira *et al.* (2010) for a study on Portuguese firms.

3.4.2 Capital-Market Outcomes

Using firm-year observations before IFRS adoption, Bae *et al.* (2008) test whether GAAP differences across countries are associated with the number of foreign analysts covering firms and their relative forecasting accuracy. The study offers two key innovations: First, a pairwise measure of IFRS-GAAP differences based on a GAAP survey by Nobes (2001). Second, the identification of foreign analysts by matching their location disclosed in the Nelson's Directories of Investment Research to IBES data. They find that the number of foreign analysts following a firm and their forecasting accuracy relates negatively to IFRS-GAAP differences. This finding suggest that GAAP differences impair the global information environment. Consistent with this idea, Ashbaugh and Pincus (2001) show that analysts' forecast errors declined for firms that had voluntarily adopted some form of international standards by the early 1990s and that this decrease relates to the variation in firms' previously used accounting standards.

The effect of the more widespread adoption of IFRS on analysts' information environment is, however, unclear, because of possible trade-offs. If analysts receive better information after IFRS adoption and uniformity in standards across countries increases firms' comparability (as implicitly assumed by the Bae *et al.*, 2008, measure), analysts should issue more precise (or less dispersed) forecasts. However, IFRS also reduce analysts' incentives to acquire costly information, which works in the opposite direction by inducing a "crowding out" of information intermediaries (or a "chilling effect"). Regarding the number of analysts following, IFRS decrease analysts' information acquisition costs and should hence increase the capacity of an analyst to follow more firms. However, IFRS also decrease the returns from analysts' information acquisition, which decreases their incentives to follow firms. Overall, the signs of the net effects are empirical questions.

Byard *et al.* (2011) compare the properties of analyst forecasts in the EU setting between mandatory and early voluntary IFRS adopters. They find decreasing absolute forecast errors and dispersion around mandatory adoption and even stronger effects for firms located in jurisdictions with strong country-level institutions as well as for those

that have strong firm-level reporting incentives. Bilinski *et al.* (2013) extend this evidence by studying properties of analysts' target price predictions.

IFRS should affect analysts differently, depending on their location and the portfolio of firms they cover before the IFRS mandate, both of which can be used to isolate reporting effects from other concurrent shocks (to the extent these characteristics are independent of the IFRS shock and there is no anticipation). Tan *et al.* (2011) split the universe of analysts into local versus foreign and find that adoption is associated with an increase in coverage by foreign analysts from countries switching to IFRS and by local analysts with prior IFRS expertise (due to IFRS firms they already cover). They also find that foreign analyst accuracy increases after IFRS adoption while local analysts' forecast accuracy does not.

Horton *et al.* (2013) refine this idea by deriving specific hypotheses about whether changes in forecast accuracy under IFRS result from a greater comparability, higher reporting quality, or more discretion to manage earnings. They use differences in analysts' *prior* coverage of firms before IFRS adoption to assess whether the forecast accuracy varies across these groups. Consistent with comparability benefits from IFRS adoption being a primary driver, forecast accuracy improves most for analysts with portfolios that move from multiple GAAP to IFRS. Had it only been the change in reporting quality, the increase in forecast accuracy should have been homogeneous across all analysts covering any kind of IFRS-adopting firm.[49]

Collectively, those studies consistently show that properties of analyst forecasts improve after the adoption of IFRS, particularly for foreign analysts and those who benefited from higher uniformity of standards in the portfolio of firms they cover. Crowding out effects did not dominate in the early adoption years.

[49]The authors restrict their analysis to firms that an analyst covers both before and after mandatory IFRS adoption, thus changes in firm's analyst coverage or changes in the analysts' location are neglected. For example, it seems feasible that analyst capacities would move to financial centers in IFRS adoption regions (such as London or Singapore) at the expense of non-adopting locations (such as New York).

3.4.3 Investors' Capital Allocation and Portfolio Choices

A core goal of IFRS is to foster capital cross-border flows and market integration. In a pre-IFRS world, the literature documented both demand and supply-side effects of U.S. institutional investors on foreign firms' accounting information. On the demand-side, Bradshaw *et al.* (2004) show that U.S. institutional investors invest more in foreign firms whose *prior* accounting methods are closer to U.S. GAAP (consistent with the idea that accounting diversity deters foreign investment). On the supply-side, Fang *et al.* (2015) document that U.S. institutional investors directly affect the convergence of reporting practices, as increases in their ownership are positively associated with *subsequent* increases in firms' comparability with U.S. firms (consistent with the idea that accounting differences are important enough for investors to use their influence to limit them).

Major arguments for why IFRS adoption matters to foreign investors and attracts greater foreign investments are the replacement of country-specific GAAP standards that many investors are unfamiliar with, the general provision of more information for decision-making, and the greater visibility of foreign firms. That is, IFRS firms are becoming part of foreign investors' universe of potential investments and survive potential accounting filters that investors apply when investing abroad.

Using a global set of firms and portfolio holdings in the Thomson Reuters International Mutual Funds database, Covrig *et al.* (2007) find that foreign mutual funds' stock ownership of voluntary IFRS-adopting firms increases by almost 50%, relative to non-adopters. When they split their sample by investment scope (country, regional, and global funds), they expect regional funds (specializing in geographic regions, such as Europe) to have a higher demand for a common set of accounting standards, compared to country funds (which have greater knowledge of and access to local information) and global funds (which invest in international blue-chip companies). Consistent with their expectation, they find that fund managers with a regional scope invest more in IFRS-adopting firms than country and global fund managers. DeFond *et al.* (2011) apply a similar research design to mandatory IFRS adopters and also document some increases in foreign mutual fund holdings (although

not as high as with voluntary adopters), particularly in case of those funds for which IFRS increases the uniformity of peers in an industry (which they interpret as comparability benefits). Overall, the idea to relate IFRS adoption effects to the diversity of prior fund holdings is very similar to that of Horton *et al.* (2013) in case of analyst coverage. Yu and Wahid (2014) add another layer of identification by studying country-pairs that allow disentanglement of changes in response to IFRS adoption by the *investee* from changes in response to IFRS adoption in the *investor's* country of location. Overall, these results align with the more general findings of Young and Guenther (2003) and Maffett (2012) that cross-country differences in a firm's information environment are associated with cross-border capital investments.

Other studies present similar insights when using different datasets, studying different types of institutional investors, or focusing exclusively on U.S. investors. For example, Khurana and Michas (2011) and Shima and Gordon (2011) analyze how IFRS relates to the U.S. investors' home bias. Florou and Pope (2012) study the global investment allocation decisions of funds other than mutual funds and distinguish between active and passive investors. Brüggemann *et al.* (2012) are unique in that they focus on retail investors and document that foreign IFRS stocks in the Open Market at the Frankfurt Stock Exchange, which is targeted towards retail investors, experience an increase in trading volume after IFRS adoption. Thus, IFRS seems to also impact nonprofessional investors. Given the rather rich and consistent evidence across datasets, investor types, settings and research designs, it seems fair to conclude that IFRS adoption contributed to increased investments abroad and worked against investors' home bias.

Lastly, Gordon *et al.* (2012) take a macro perspective by comparing foreign direct investment (FDI) across IFRS and non-IFRS adopting countries.[50] Using data from the World Development Indicators database

[50]FDI inflows are the value of inward direct investments made by nonresident investors in the economy. They are considered to be a major driver for economic development, especially for developing economies. See also Beneish *et al.* (2014), who further split these macroeconomic flows into equity and debt. The unit of observation of these studies is a country.

by the World Bank, they show that IFRS adoption of developing countries was correlated with increases in FDI inflows. Taken at face value, this result is important, because it suggests that accounting plays a role for FDI flows and that IFRS foster investments in developing economies. However, concerns over these interpretations include that IFRS was adopted in developing countries typically as only one part of a much broader package of infrastructural changes promoted by the IMF and World Bank (see the ROSC reports) and that adoption was often a prerequisite for receiving IMF and World Bank funding (Lamoreaux *et al.*, 2015).

3.4.4 Equity Markets

The integration of markets with increased cross-border capital flows should lead to tangible benefits in terms of more liquidity and lower trading costs for investors as well as lower cost of capital for firms when raising capital, which translates into lower hurdle rates for investments and should foster economic growth (see Section 2).

Starting with Leuz and Verrecchia (2000), multiple studies compare proxies for the liquidity of stocks (i.e., the extent to which investors can readily buy or sell stocks at low transaction costs) and find that firms that voluntarily use international GAAP enjoy higher liquidity for their stocks (e.g., lower bid-ask spreads or higher trading volumes). Using a global sample of mandatory IFRS adopters around 2005 and an array of proxies that capture different characteristics of liquidity (e.g., the price impact of trades or estimates of the total transaction costs), Daske *et al.* (2008) find an average increase in liquidity after IFRS adoption across the measures. For example, on average, bid-ask spreads decrease by 6%. However, the magnitude of the estimated effects differs significantly across liquidity characteristics and firm types. In particular, firms that are forced to adopt IFRS experience the *smallest* effects, while voluntary adopters that already reported under IFRS experience the largest liquidity effects (plausibly due to positive externalities of the mandate). In addition, the effects are stronger or even limited to certain countries, that is, the European Union, or countries with strong legal enforcement (in *levels*). Extending the evidence, Christensen *et al.*

(2013) use firm-quarter observations and identify strength of enforcement in *changes*. They conclude that liquidity benefits around IFRS are limited to those few European countries that made simultaneous and substantial changes in enforcement efforts. Moreover, developments in the microstructure of capital markets, such as new trading platforms and protocols, mergers among stock market providers, or algorithmic trading that could be correlated with IFRS adoption or concurrent enforcement changes can drive (at least part of) the documented liquidity effects (Brown, 2013).

Documenting lower costs of capital has been particularly challenging. The first studies use voluntary adopters and fail to find any robust evidence. The cost of capital estimates turn out to be *higher* for IFRS than local GAAP firms and estimated magnitudes are large (Cuijpers and Buijink, 2005; Daske, 2006). One feasible explanation is that the implied cost of capital, viewed from a different angle, also represents return expectations and that the voluntary adopters' signaling to be a "high-value" type may foster these expectations. Conversely, expected long-term growth rates of surplus, such as earnings, are key determinants when deriving cost of capital estimates, and they either need to be arbitrarily set or simultaneously estimated. When estimating implied growth rates simultaneously (following Easton, 2004; Easton *et al.*, 2002), implicitly assumed long-term earnings growth rates *also* turn out to be significantly higher post IFRS for adoption firms (see Figure 1 of Daske, 2006). Any failure to adequately capture shifts in expected long-term growth rates post IFRS or a mismatch in the interplay of stock price and analysts' earnings forecasts can bias implied cost of capital estimates (e.g., upward if analysts' inherent optimism becomes larger). Overall, implied cost of capital estimates are susceptible to the inherent characteristics of voluntary adopters.

Using a global sample of voluntary adopters prior to 2005, Daske *et al.* (2013) re-examine cost of capital effects based on the idea that, prior to a mandate, these voluntary adopters had considerable freedom in what constituted adoption and could choose their commitment to transparency accordingly. When classifying firms into "serious" and "label" adopters, Daske *et al.* (2013) find capital market benefits but only for "serious" adopters (relative to local GAAP and "label" adopters).

Kim *et al.* (2014) contribute to this evidence by splitting the universe of IFRS adopters into those that fully adopted IFRS based on more restrictive Worldscope codes and find significantly lower cost of capital only for these firms. Taken together, this is strong evidence that voluntary IFRS adoption does not constitute a serious commitment, neither to transparency nor to the standards. Any results on the effects of voluntary adoption, irrespective of the outcome variable, are thus likely driven by the subset of firms that took IFRS adoption seriously, due to their reporting incentives.

Broad sample evidence on mandatory adopters faces other difficulties. Daske *et al.* (2008) find an increase in the cost of equity capital in the year of adoption for mandatory adopters and speculate that this may be due to transition or anticipation effects. Consistent with the latter explanation, they find that the cost of capital decreases by only 26 basis points for mandatory adopters when measuring the effect one year before the adoption year (and up to 90 basis points for voluntary adopters once the mandate kicks in). Lee *et al.* (2008), on average, do not find any significant change in the cost of capital. Li (2010) reinvestigates the cost of capital variables used by Daske *et al.* (2008), focusing on the EU setting only, using one more IFRS reporting year, and using voluntary adopters as a control (instead of a separate testing) group. Under these choices, the author finds a decrease in the cost of capital (of up to 50 basis points) that is stronger in countries with strong enforcement and legal institutions. So far, this study is unique in that it has been the only major one to finds robust cost of capital effects after the EU's IFRS mandate.[51] Later studies in single jurisdictions or regions like Latin America sometimes have also found lower cost of capital after IFRS adoption.[52]

[51] See ICAEW (2015), Chapter 5.2.4, for a discussion of how these differing results can be reconciled. For example, reported estimates by Li (2010) and Daske *et al.* (2008) imply that costs of capital are unusually low in year 2004. Thus, a reduction in cost of capital post IFRS can be found if either the transition period (2004–2005) is deleted (Li, 2010) or when moving the IFRS indicator one year ahead to capture anticipation effects (Daske *et al.*, 2008). Neither of these studies estimates any implied changes in growth expectations, which are less likely to be an issue in the mandated setting, as the exact date of IFRS adoption is exogenously set through regulation.

[52] See, e.g., de Moura *et al.* (2020) or Nurul Houque *et al.* (2016).

Given these difficulties in estimating the costs of equity, an alternative way is to study directly observable activities in equity markets, such as the cross-listing of stocks (Chen and Khurana, 2015), conditions when going public (IPOs, Hong *et al.*, 2014) or when issuing seasoned equity offerings (SEOs, Wang and Welker, 2011), dividend payments (Hail *et al.*, 2014), or the voting premium (Hong, 2013). Generally, this literature documents benefits of IFRS adoption on the equity market characteristics or the conditions of raising equity in these markets. For example, there is evidence of a decrease in IPO underpricing and an increase in the relative proceeds from foreign markets, following mandatory IFRS adoption (Byard *et al.*, 2021; Hong *et al.*, 2014). Furthermore, the net costs of cross-listing declined after the global recognition of IFRS removed the dual-reporting burden (Chen and Khurana, 2015). Hong (2013) finds a significant decrease of around 8% in voting premiums for firms with dual-class shares after mandatory IFRS adoption, consistent with an improvement in managerial monitoring and a corresponding decline in the benefits of voting control. Finally, firms are less likely to pay (or increase) dividends after IFRS adoption and more likely to cut (stop) such payments (Hail *et al.*, 2014). This finding is consistent with IFRS constraining the private benefits of control, that is, equity market outcomes also being attributable to changes in the behavior of managers (see also Subsections 3.4.1.2 and 3.4.1.3).

In sum, while the early evidence is fairly strong for liquidity effects and weak for cost of equity effects, the evidence for other directly observable equity market characteristics seems consistent and compelling. It is hard to argue that all documented benefits are rooted only in correlated omitted variables or are due to changes in enforcement only. Still, there is considerable cross-sectional variation that we discuss in Subsection 3.4.8.

3.4.5 Debt Markets

Insights from equity markets do not necessarily translate to debt markets, because creditors have asymmetric payoff functions (they face only downside risk) and conflicts of interest between shareholders and creditors can extend to accounting policies. (Certain earnings properties

are more appreciated by creditors than by shareholders.) In debt markets, IFRS may reduce borrowing costs and relax financial constraints (see Subsection 2.1). However, IFRS also have certain properties, such as frequent changes in pronouncements, reporting flexibility due to principle-based standards, or more fair value measurements that can have hurt creditors when writing debt contracts (see Subsection 2.2).

Evidence for the effects of IFRS on debt markets, borrowing rates, and nonprice related contractual terms is scarce. Public debt markets have benefited from IFRS, at least to some extent (similar to equity markets), while private debt markets and especially relationship lending have potentially suffered by losing some of their information advantages (and thus market shares). There are also potentially adverse effects of IFRS on the usefulness of accounting numbers for debt contracting.

Florou and Kosi (2015) document that risk premia on corporate bonds decreased for mandatory IFRS adopters (i.e., a reduction in the cost of debt on the issuance) and that firms' relative share of debt from public debt markets has increased. They attribute this finding to information advantages (disadvantages) of public (private) creditors. In the case of syndicated loans, the evidence is less clear. Kim *et al.* (2011) find that voluntary IFRS adopters pay lower interest rates (up to 30 basis points) and raise larger loan amounts but that other contractual features are sensitive to controlling for self-selection. In contrast, Chen *et al.* (2015c) find that mandatory IFRS adopters' interest rates increased (although to a small extent of less than 10 basis points) and loan maturities decreased post IFRS.

Another stream of the literature studies the usability of accounting numbers in facilitating lending (Bhat *et al.*, 2014; Florou *et al.*, 2017; Kraft *et al.*, 2020; Wu and Zhang, 2014). The authors define the concept of credit relevance (a parallel concept to value relevance on the equity side) as the extent to which firms' core financial numbers map into their credit risk (proxied by credit ratings or CDS spreads). They interpret a stronger association as evidence for credit analysts' need to make fewer accounting adjustments. If, in turn, the need for accounting adjustments correlates with information risk, evidence in support of IFRS's credit relevance could conceptually underpin why credit risk premia could decrease post IFRS. However, current evidence is mixed and sensitive

to the research design (parallel to applying the similar concept to equities). Florou *et al.* (2017) and Wu and Zhang (2014) find that IFRS adoption increases the credit relevance of accounting numbers, while Kraft *et al.* (2020) find a decrease and Bhat *et al.* (2014) conclude that IFRS adoption has no meaningful effects on credit relevance. As discussed by De George *et al.* (2016), these studies differ in the details of their definition of credit relevance, the proxies used for credit risk, and the type of regression output they focus on (coefficients, pseudo-R2 statistics, or residuals).

Usefulness of accounting standards for debt *pricing* does not necessarily carry over to debt *contracting* (Ball *et al.*, 2015). A more direct measure of assessing the usefulness of IFRS for credit decisions is the number of accounting-based covenants used in debt contracts, because their inclusion will depend on accounting numbers' ability to predict changes in a borrower's credit risk (particularly before the occurrence of material credit risk deteriorations). However, there is a controversy over how to interpret post-IFRS adoption changes in the number of covenants. Some studies interpret observed declines in the number of covenants as "more favorable, or less restrictive, nonprice terms" from the borrower's point of view (e.g., Demerjian, 2011; Kim *et al.*, 2011), because restrictive nonprice terms can be viewed as indirect (or implicit) costs to borrowers (e.g., Graham *et al.*, 2008; Smith and Warner, 1979). Other work, however, posits that declines in the number of covenants should be interpreted as an adverse effect of IFRS on contractibility from an accounting theory point of view (Ball *et al.*, 2015; Chen *et al.*, 2015c). In a comprehensive analysis of contract features, Chen *et al.* (2015c) document that IFRS borrowers experience a significant reduction in the use of financial covenants in their debt contracts (as much as 50%, although from a very low basis), while at the same time, the use of nonfinancial provisions significantly increases. In other words, non-accounting-based covenants substituted for accounting-based covenants. Ball *et al.* (2015) provide similar evidence for the substitution of accounting-based covenants by focusing on a single type of contractual loan term (financial covenants only), removing contracts with zero covenants from the sample (assuming these are data errors).

While this evidence of lower debt contracting value of IFRS seems compelling, definite conclusions are premature. First, there is no observable information about the restrictiveness of covenants. Second, there is no evidence on how accounting-based covenants are adjusted (e.g., creditors could use more frozen GAAP covenants to be less exposed to the frequent changes of IFRS). Third, in the Ball *et al.* (2015) samples, less than 10% of firms have accounting-based debt covenants (even under their prior local GAAP regimes), which, if taken at face value, would bring into question their role in debt contracting. Fourth, when we search for "financial covenants" in our global annual report dataset (see Section 4), we receive more than 45,000 hits in IFRS reports, suggesting that their use is actually pervasive and not adequately covered by the databases. Fifth, Brown (2016) illustrates that international and domestic loan contracting differ significantly (a home bias of lenders due to information risk) and the location of borrowers and lenders needs to be considered. In fact, in contrast to cross-country arm's length contracting, IFRS do not benefit local relationship lending (Balsmeier and Vanhaverbeke, 2018). Sixth, evidence from other types of creditors or contracts (beyond the DealScan universe) is missing.

3.4.6 Effects Inside the Firm

3.4.6.1 Corporate Investments

More favorable conditions in capital markets under IFRS should also translate into better terms when firms raise capital. On the one hand, lower costs of capital should reduce internal hurdle-rates for corporate investments (market driven or demand-side responses). On the other, reduced information asymmetries should also have feedback effects on the behavior and decisions of managers (supply-side responses; see Section 2).

The accounting literature has addressed how IFRS influence corporate decision-making. Corporate investment is one of the most important managerial actions and is observable. Research has identified multiple information channels through which IFRS can affect internal capital allocation. First, at the group level, Schleicher *et al.* (2010) and Biddle

et al. (2017) study the effects of IFRS adoption on firms' investment-cash flow sensitivity as an established indicator of capital investment efficiency (e.g., Fazzari *et al.*, 2000; Malmendier and Tate, 2005). The measure captures deviations from the optimal investment policy by estimating the sensitivity of capital investments to the amount of internally generated cash flows (of current and prior periods), when controlling for growth opportunities that should affect investments, independent of the availability of internal funds. In fact, those studies find that, after IFRS adoption, the investment-cash flow sensitivity decreases and the quality of investments increases (particularly in insider economies where agency problems are more pronounced).

Second, moving from the group to the subsidiary level, Shroff *et al.* (2014) examine the role of the subsidiaries' information environment in helping multinational corporations monitor and evaluate their subsidiaries' investment decisions. They argue that cross-border frictions increase information asymmetry between parents and subsidiaries and increase costs of monitoring while assuming that frictions cannot be resolved through internal control mechanisms (such as management accounting information systems, e.g., because subsidiaries are not fully integrated). In such cases, subsidiaries' financial reporting information can complement internal mechanisms. Shroff *et al.* (2014) determine the sensitivity of a subsidiary's investment to its growth opportunities, where a high sensitivity indicates that investments were responsive to growth opportunities. The authors find that the sensitivity of investment to growth opportunities increases for subsidiaries located in IFRS-adopting countries. They conclude that IFRS help mitigate the agency problems that arise from expanding operations across borders by keeping parent companies informed about the investment environment of their foreign subsidiaries.

Third, expanding the information spillover idea from within groups to the industry in general, Chen *et al.* (2013) examine whether IFRS affect the relationship between the investment efficiency of a firm and the investment performance of its foreign peers (conceptually a similar idea to information spillovers of peers' earnings announcements). For example, peer firms' information can reduce uncertainty about industry-level demand and cost conditions. Excess profits reported by peers can

indicate investment opportunities. On the premise that IFRS enhance information usefulness, they argue that investment performance of peers should be easier to judge after adoption. They document that IFRS increase the sensitivity of a firm's investment efficiency to performance-related information of peers (relative return on assets performance). Taken together, foreign competitors' disclosures of investment-related information are another way through which IFRS improve firms' investment efficiency in the economy.

If both the acquirer and the target in a merger or acquisition are using IFRS, the cost of information acquisition is lower, which later facilitates the target's integration. IFRS should therefore foster cross-border acquisitions and the likelihood of completed deals. These predictions are supported by the evidence based on transactions available in the Security Data Company (SDC)'s M&A database. Francis *et al.* (2012) find an increase in frequency and magnitude of acquisitions following IFRS adoption using a country-pair analysis (country as unit of observation) and a gravity model (which uses country pairwise cross-border investments to capture the sum of investment inflow and outflow). Louis and Urcan (2015) discuss several weaknesses in the identification strategy of this design (e.g., the failure to distinguish between listed firms subject to the IFRS treatment and private firms that make up a fair share of acquisitions). They extend the evidence by documenting that the likelihood of cross-border acquisitions of listed firms from IFRS-adopting countries significantly increases in the post-IFRS period, relative to the likelihood of cross-border acquisitions for either private firms in IFRS countries or listed firms from non-IFRS countries (two feasible benchmark groups). Finally, Loureiro and Taboada (2015) hypothesize that investors can learn more from a firm's stock price after the firm adopted IFRS and apply this idea to the performance of mergers and acquisitions. They show that the relation between the market reaction to deal announcements and the likelihood of deal completion becomes stronger and that the post-acquisition operating and stock price performance improves after IFRS adoption.

3.4.6.2 Corporate Governance

To fulfil its stewardship role, accounting is used to mitigate agency costs of manager–shareholder conflicts. Predictions on the impact of IFRS adoption on the usefulness of accounting numbers for incentivizing executives (i.e., evaluating their performance and determining their payment) are ambiguous. On the one hand, if more peer firms apply IFRS, accounting numbers should allow for a better benchmarking of performance. IFRS also aim at reflecting economic gains and losses in a timelier and less biased manner (see Subsection 2.2). On the other hand, their principles-based nature implies flexibility for managers, which they can exploit to maximize their pay (Healy, 1985). Similarly, the more frequent use of fair value measurements raises concerns about the independent verifiability of the reported numbers (e.g., Georgiou *et al.*, 2021) and introduces market-wide, macroeconomic developments into earnings that are beyond management's control (Baber *et al.*, 1998; Sloan, 1993).

In the UK setting, where firms' remuneration reports provide comparatively high transparency, Voulgaris *et al.* (2014) identify whether firms use performance targets based on accounting numbers, stock returns, or both. They find that firms use accounting-based performance measures less often after adopting IFRS (i.e., IFRS are *less* useful for compensation contracting). However, their setting has several limitations. First, they cannot observe any details about the performance targets, including the levels (De George *et al.*, 2016). There is also no information about the selection of peers in relative performance evaluation. Second, the setting does not offer a control group (the IFRS treatment is a simple POST indicator), and one cannot rule out other trends driving compensation in the United Kingdom, especially since UK-GAAP and IFRS are very similar to begin with (Ozkan *et al.*, 2012). Third, the examined performance measures relate only to conditions set in long-term vesting targets for equity-based pay schemes, which are particularly widespread in the United Kingdom but not to other forms of pay such as bonuses. Hence, external validity to other settings or forms of compensation are a concern.

Ozkan *et al.* (2012), to the contrary, find (weakly) higher cash pay-to-earnings sensitivity (PPS) and an increased use of earnings-based relative performance evaluation (RPE) with foreign peers following IFRS adoption (i.e., IFRS are *more* useful for compensation contracting). However, their indirect measures may misrepresent actual contractual terms (e.g., the increased association between earnings and compensation could well be mechanical, due to more fair value measurement under IFRS), and capture cash compensation only, while the majority of CEO compensation is often equity-based (Voulgaris *et al.*, 2014). In addition, their choice of the setting is special, as theirs is one of the very few studies that focuses on *Continental* Europe only. Finally, none of the studies can document a substitution effect among accounting- and non-accounting-based performance measures, which theory and prior U.S. evidence would predict, or any modifications to contracts that respond to changes in the accounting standards (De George *et al.*, 2016). Missing data on the details of the compensation contract and the process through which compensation committees determine variable pay plausibly explain this lack of results. Also note that all studies relate to top executives only (as covered by the BoardEx database), and therefore any impact on incentive schemes in lower levels of the corporate hierarchy remains unclear.

In addition to compensation, dismissal decisions by corporate boards serve an important governance role, especially when managers perform poorly. Wu and Zhang (2009, 2019) document an increasing association between accounting information and CEO turnovers post-IFRS adoption; that is, CEO turnover becomes more sensitive to accounting performance, consistent with boards' putting increased weight on earnings. Marra *et al.* (2011) add the point that board characteristics help foster the efficient internal use of IFRS data in determining executive pay, in particular during the transition years (Marra and Mazzola, 2014) or when revaluation gains under IFRS are newly recognized in income (Chen and Tang, 2017).

Finally, in jurisdictions that followed a dual-ledger approach in the past, the introduction of IFRS encouraged firms to integrate their management and financial accounting systems (Brandau *et al.*, 2017). However, beyond case studies (e.g., Hjelström and Schuster, 2011), there

exists little systematic evidence on how IFRS adoption has impacted managerial incentive schemes, management accounting practices, or information systems more broadly.[53] So far, interviews with investment professionals suggest that participants considered IFRS accounting information as being significantly less useful when evaluating managerial performance, as compared to the situation when determining firm value (Cascino *et al.*, 2021).

3.4.7 Direct, Indirect and Social Costs of IFRS Adoption

The accounting literature has identified several types of economic costs of financial reporting: Direct costs, proprietary costs, competition, and litigation (Leuz and Wysocki, 2016). Besides firm-specific costs, there can be social costs, due to negative externalities, that can be unexpected (Brüggemann *et al.*, 2013). IFRS can impact all of these (see Section 2), and evidence on the cost side is crucial for an overall assessment cost-benefits analysis.

The direct cost of preparation, certification, and communication of IFRS reports is likely to be substantial, since the implementation and application of the standards is demanding for preparers and auditors. The standards are relatively new, dynamic, in a foreign language (at least, in many countries), principles-based, and require frequent fair-value measurement and extensive footnote disclosures. As a result, the application of IFRS yields much longer and more complex reports (see Section 4). IFRS reporting requires additional diligence from all involved parties (leading to opportunity costs as well as out-of-pocket costs for staff, systems, and audits). These characteristics also increase auditors' litigation risk (especially if IFRS adoption correlates with increased public and private enforcement) and reputational risk (especially if the detection of auditing mistakes becomes more likely). Auditors pass these costs onto their clients. Direct costs are likely to be higher when a firm adopts the entire IFRS set (one-time transition costs) but can also be substantial going forward (permanent preparation costs and costs to implement ongoing changes in IFRS). Preparers have repeatedly

[53] See Wagenhofer (2016) for guidelines on how to exploit regulatory changes for research in management accounting.

complained about high reporting costs and frequently use this argument against new IFRS standards in the political debate when demanding a "period of calm".

Consistent with these expectations, the literature has provided robust evidence of higher reporting costs when using audit fees as an observable proxy (often labeled as "IFRS-related audit fee premium"). In the EU setting, Kim *et al.* (2012) document an incremental average increase in audit fees post-IFRS adoption of around 5%. In a single-country setting with a history of high-quality audit fee data (Australia), De George *et al.* (2013) estimate an economy-wide increase of around 8%. Audit fees increase with the complexity of tasks and with the strength of private enforcement. Smaller firms are subject to disproportionately high IFRS-related audit fee increases, consistent with the notion that IFRS reporting costs have a fixed component that make them particularly burdensome for smaller firms (Hail *et al.*, 2010a). Replications in many other settings confirm these findings, and survey responses also indicate that firms view increased audit fees as one of their largest IFRS-related costs (e.g., ICAEW, 2007). Since the vast majority of subsidiaries are unlisted and still subject to local reporting requirements in most jurisdictions, it is unlikely that groups could materially harmonize their internal reporting and thus reduce the costs of consolidating the financial information of their subsidiaries. For example, Shroff *et al.* (2014) report that only 2% of all subsidiaries in their global sample report under IFRS (based on coding in ORBIS).

Indirect costs of IFRS can be reflected in higher proprietary costs when the general level of required disclosures increases; for example, negative product or labor market consequences can arise, such as an increase in competition or a decrease in innovation which hurts expected cash flows of the firms. In terms of competition, a better information environment that results from widespread disclosures of IFRS reports can decrease the uncertainty of potential market entrants about industry performance and also impact dynamics of within-industry competition (e.g., Badia *et al.*, 2020). At the same time, potentially lower financing costs under IFRS may benefit public firms at the expense of private firms and increase their relative product market share and foster market concentration (Downes *et al.*, 2018). Finally, there may be shifts in

litigation risk, due to more demanding reporting requirements, as well as need for more IFRS expertise by lawyers. So far, however, there is surprisingly little systematic evidence on these indirect costs or on negative unexpected consequences (although there is litigation that relates to violations of IFRS requirements filed in many different countries).

Social costs involve adverse market-wide effects or unintended transfers of wealth from one societal group to another. While evidence on adverse market-wide effects is scarce (e.g., broad scale avoidance strategies of firms to escape the IFRS mandate by delisting or going private are not observable; Hitz and Müller-Bloch, 2016), there is consistent evidence for the idea that IFRS benefits those societal groups that are active internationally at the expense of groups with a local focus. For example, Wieczynska (2016) documents externalities in the form of increasing audit market concentration, as IFRS provides Big "N" audit firms that have global networks with a competitive advantage. Similarly, the expansion of British professional accountancy bodies crowds out local suppliers of similar services and degrees (Samsonova-Taddei and Humphrey, 2014). Finally, IFRS has reduced economic mobility barriers, essentially making it easier for accounting professionals who are mobile to move across countries at the expense of local GAAP experts (Bloomfield *et al.*, 2017). The latter examples illustrate again that some of the documented benefits in the literature can be actually costs to some groups in the society.

3.4.8 Heterogeneity in IFRS Adoption Effects

As the previous summary has shown, IFRS adoption can benefit some groups at the expense of others. For example, IFRS benefits global actors at the expense of purely local players. IFRS increases cross-border comparability of financial reports, while impairing the comparability of public and private firms within a jurisdiction. IFRS can impede the use of accounting numbers for debt contracting, while offering benefits for equity investors. Starting with Ball *et al.* (2003) (see also the discussion by Holthausen, 2003), a robust finding in the literature on IFRS adoption is that the results exhibit considerable cross-sectional heterogeneity; that is, outcomes around IFRS adoption vary significantly in predictable

ways across jurisdictions with different institutional regimes and across firms with different reporting incentives (see Subsection 3.3.2.4).[54] The IFRS literature largely confirms that adopting a single set of reporting standards is not sufficient to obtain convergence in reporting practices. (For details on these practices, see Section 4.)

3.4.8.1 Heterogeneity in Accounting Standards

Many studies condition their outcomes by the differences between local GAAP and IFRS. These studies often find stronger effects in jurisdictions (or for firms) for which local GAAP standards differed more from IFRS. The studies suggest that observable effects were indeed driven by the standards, because the strength of the treatment (in terms of accounting changes due to IFRS) drives the effects in the predicted direction. While these results collectively support the notion that the IFRS adoption mattered, Leuz and Wysocki (2016, p. 587) raise the concern that these (country-level) cross-sectional splits "likely do not isolate the effect of accounting standards due to institutional clusters". Such clusters are likely to be less of an issue when splitting the sample on the basis of firm-level reconciliations that offer more variation. However, even in this case, one cannot fully attribute observed effects to the standards alone, because firms' reconciliations are a product of both the standards' requirements and managerial choices based on firm-level reporting incentives.

3.4.8.2 Heterogeneity in Institutional Characteristics

Many IFRS adoption outcomes are weaker, or even non-existent, in jurisdictions with weak legal regimes and weak public or private enforcement, low levels of economic integration, and for firms that exhibit limited reporting incentives. The literature therefore concludes that

[54] It is well established in the accounting literature that reporting incentives of firms drive reporting quality, *irrespective* of the accounting standards or the strength of the institutional infrastructure. So cross-sectional variation in outcomes under IFRS are not surprising. An innovation in the IFRS literature was to document the role of these firm-specific incentives in *changes* at the time of IFRS adoption (e.g., Daske *et al.*, 2013).

mandatory IFRS adoption has significant positive market effects (only) when supported by institutions that ensure that IFRS are properly applied.

This interpretation can be challenged by potential confounding factors around IFRS adoption that are correlated with the cross-sectional split variables. In the European Union, the timing of capital-market reforms unrelated to IFRS adoption overlapped with the adoption of IFRS, and countries with strong legal regimes adopted the reforms earlier and implemented them more rigorously. Therefore, the observed IFRS effects in strong institutional regimes could (at least partially) be driven by these concurrent reforms. However, the IFRS adoption effects are still present when controlling for country-quarter fixed effects, which should absorb these concurrent changes (Christensen *et al.*, 2013).

Research has conditioned IFRS effects on both the level of and change in enforcement. In particular, Christensen *et al.* (2013) show that liquidity effects around IFRS adoption are confined to only *five* EU countries that made substantive concurrent *changes* in the enforcement of financial reporting standards. Based on this finding, they conclude that IFRS had little, if any, standalone effects on market liquidity and market effects were entirely driven by concurrent enforcement changes. However, the identification of enforcement changes is purely cross-sectional, and the study can thus rule out neither the impact of other factors correlated with the enforcement change (Leuz and Wysocki, 2016), nor the interaction effects between the standards and the enforcement changes (Barth and Israeli, 2013). Moreover, the coding of strong increases in enforcement increases does not align with the enforcement indices constructed by Brown *et al.* (2014) (ICAEW, 2015). From an economic efficiency point of view, it also remains puzzling why so many resources are invested in developing, implementing, and auditing IFRS standards, if very modest investments in local enforcement institutions have much stronger effects.[55]

[55]For example, Germany, which has been coded as one of the five countries that experienced the strongest improvement in its enforcement regime, primarily relies on a private enforcement organization (the Financial Reporting Enforcement Panel (FREP)), which has an annual budget of only 5 million EUR and later got dismantled by the federal government after the emergence of the Wirecard scandal.

Rather than arguing that strong legal regimes are correlated with the success of reforms, one could also make the reverse argument that weak legal regimes are correlated with deviations from IFRS as issued by the IASB (e.g., due to time lags and modifications of content in these countries' endorsement processes). When IFRS as issued by the IASB have not been applied in those jurisdictions, the absence of observable IFRS effects cannot be attributed to the IFRS *standards* per se.[56]

Collectively, the IFRS literature is now at a stage where it seems impossible to fully disentangle the effects of IFRS and enforcement because counterfactuals are not observable (Barth and Israeli, 2013). Exploiting more granular settings and identification strategies could help. Variations in IFRS standards across jurisdictions over time (e.g., because of different endorsement decisions) or size thresholds for the mandatory adoption of IFRS in some countries, while holding the country's enforcement regime constant, could provide interesting empirical settings.

3.5 Evidence from IFRS Reporting Around the Financial Crisis

3.5.1 IFRS Reporting and the Origins of the Financial Crisis

The global financial crisis emerged right after many companies had initially adopted IFRS and triggered studies on the role of IFRS during the crisis. The change in the economic environment turned the spotlight on other consequences of IFRS than had originally been studied around the initial adoption. First, the consequences of adoption for the financial industry received greater attention.[57] Second, the crisis drew regulators' attention to potential consequences of financial reporting (e.g., financial stability or procyclicality) that differed from IFRS adoption consequences that had been in the focus before. With hindsight, three questions have been discussed most controversially: (1) Did fair value accounting rules (and especially the IAS 39 rules for financial instruments)

[56]Even though such deviations may appear immaterial in isolation, they can constitute a red flag and erode trust in firms' reporting beyond the technical details.

[57]Many studies on the consequences of mandatory IFRS adoption eliminate financial institutions from the sample, largely due to the idiosyncrasies of the industry.

contribute to the financial crisis, say, by exacerbating procyclicality?; (2) was the delay of banks' loan loss recognition attributable to the IAS 39?; and (3) did the fair value rules for liabilities (and especially the own credit risk adjustments) result in accounting anomalies and thus created an artificial capital buffer? To answer such pressing questions, the accounting literature has evolved during and after the crisis and today has reached at least some conclusions.

3.5.1.1 Did Fair Value Accounting Contribute to the Financial Crisis?

Accounting literature offers plenty of studies on the informational consequences of fair value accounting (see McDonough *et al.*, 2020, for a recent review). Overall, these studies are relatively consistent in documenting informational benefits of fair value accounting for investors. Largely based on data from the U.S. financial sector, this evidence suggests that fair values are more strongly associated with equity prices and thus more value relevant than amortized costs (e.g., Hodder *et al.*, 2014; Landsman, 2007, for an overview). Similar evidence exists for the relevance of fair values in explaining bank risk (Blankespoor *et al.*, 2013; Hodder *et al.*, 2006). In Europe, stock markets tend to react positively to regulatory announcements that expand the use of fair value by European firms (Armstrong *et al.*, 2010). Consistent with these findings, financial analysts have systematically requested fair value information in conference calls with international banks and used this data in their research reports (Bischof *et al.*, 2014).

Despite these well-documented benefits for capital market investors, the net effect of fair value accounting remains controversial, with politicians and regulators having viewed it as one potential catalyst of the global financial crisis (André *et al.*, 2009). The controversy arises from the lack of evidence on the costs of fair value accounting, which potentially outweigh its benefits. Theory suggests that fair value accounting triggers downward spirals by inducing fire sales and contagion among financial institutions, which lead to market inefficiencies, such as the curtailing of bank lending and financial instability (Allen and Carletti, 2008; Plantin *et al.*, 2008). These effects often originate in the link

between financial accounting and prudential regulation of the banking sector (Heaton *et al.*, 2010; Milbradt, 2012).

Consistent with these costs of fair value accounting being particularly pronounced during the crisis, evidence suggests that U.S. stock markets tended to react positively to regulation relaxing requirements for fair value write-downs in fall 2008 and spring 2009 (Bhat *et al.*, 2011; Brown *et al.*, 2014). However, there is little evidence that the adverse effects of fair value accounting actually materialized in any meaningful way during the crisis. In particular, the impact of fair value accounting on regulatory capital and any ensuing fire sales are hardly observable in the financial industry.[58] Badertscher *et al.* (2012) have done influential work in this regard. Based on data for the 150 largest U.S. bank holding companies, they document that fair value losses depleted regulatory capital to a minimal extent and that there is no evidence for an abnormal level of industry-wide sales of securities during the crisis.

While research has not directly addressed these questions in an international IFRS setting, many presumptions have external validity in other developed financial markets. First, the low fraction of assets and liabilities measured at fair value, which explains the minimal impact of these losses on the regulatory capital of U.S. banks, is similarly low in Europe (e.g., Bischof and Daske, 2016; Fiechter and Novotny-Farkas, 2017). Second, even for the few assets and liabilities measured at fair value, the IASB published specific guidance in October 2008 clarifying that, consistent with U.S. rules, fair values can deviate from market prices if the latter were artificially deflated and represented forced transactions, such as fire sales. That is, just like U.S. banks, IFRS-adopting banks could avoid fair value write-downs even when market prices were declining (IASB, 2008). Third, similar to U.S. regulators, international regulators had implemented circuit breakers, like prudential filters, that eliminated the impact of recognized fair value

[58]One exception might be the insurance industry. Merrill *et al.* (2014) show that forced sales of residential mortgage-backed securities at discounted prices were most pronounced when insurance companies were capital-constrained and subject to mark-to-market requirements in accounting. However, Ellul *et al.* (2015) suggest that it is historical cost accounting that triggers gains trading by life insurers and thus price pressure across markets.

losses from regulatory capital (especially for assets held at fair value through other comprehensive income; Bischof *et al.*, 2021b). Therefore, the link between IFRS balance-sheet information and regulatory capital is not as tight as the theoretical models imply, and many theoretical assumptions underpinning the critique of fair value accounting did not hold in practice, neither in the United States nor internationally.

Conceptually, fair value accounting can even enhance financial stability, especially when it leads to earlier loss recognition than impairments under amortized cost accounting. Such timely loss recognition can set proper incentives for managers to take corrective actions (Bischof *et al.*, 2021b), especially if it is accompanied by effective governance, which is not undermined by regulatory forbearance. These remedies can involve dividend cuts and variable management compensation as well as reductions in leverage and risk positions. If managers act early during a crisis in response to timely fair value write-downs, which reduce equity capital, the impact of a crisis is likely to be damped. The key challenge for prudential supervision is to exactly meet the point where corrective actions are still possible (in response to the reduction in capital) without the market overreacting to the loss disclosures and panic ensuing.

Against this background, another question is why fair value accounting became controversial among politicians and regulators (André *et al.*, 2009, provide an overview). One explanation lies in the political economy of accounting standard setting, with economic consequences of fair value accounting being tied to special interests of the financial industry (Hodder and Hopkins, 2014), ideologies of politicians (Bischof *et al.*, 2020a) and to the public interest (for an analysis of how different actors framed fair value accounting to be (in)consistent with the public interest during the financial crisis, see Becker *et al.*, 2020c).

3.5.1.2 Were Loan Losses Delayed ("Too Little, Too Late")?

Before and during the financial crisis, IAS 39 was also the relevant standard for the recognition and measurement of loan impairments. These loan losses represent the core accounting item of commercial banks that analysts and investors are interested in. IAS 39 loan losses peaked in 2009, very late during the crisis, and remained relatively low until

late 2008, when the crisis had already become severe (BvD BankFocus). A common criticism, advanced especially by bank supervisors and the G20 (e.g., Financial Stability Financial Stability Forum, 2009), referred to IFRS loan losses having been recognized "too little, too late" during the crisis. The incurred loss model requires objective evidence for the existence of an actual loss event (e.g., a default on interest payments or a renegotiation of contract terms) before a loan can be impaired.

While evidence supports this diagnosis, the criticism of the reporting outcomes does not imply that the IAS 39 rules for loan impairments are necessarily to blame; that is, it is open whether the loan loss provisioning would have looked any different under a different reporting regime. Yet it is this latter presumption on which the replacement of IAS 39's incurred loss approach by IFRS 9 and an expected credit loss model is built (e.g., Pucci and Skærbæk, 2020).

Different pieces of evidence provide a mixed picture of whether the change in the impairment model will translate into a timelier recognition of impairment losses. Bushman and Williams (2012) examine the loan loss provisioning of 3,091 banks from 27 countries over the period from 1995 to 2006. They find very substantial variation in reporting practices across countries, even when holding the application of an incurred loss model constant. The finding is consistent with the reporting-incentives view and suggests that the discretion inherent to any loan loss model will be used opportunistically, irrespective of the design of the rules.

Other evidence comes from the European Central Bank (ECB)'s Asset Quality Review (AQR), which was published in 2014 upon the adoption of the Single Supervisory Mechanism with the ECB taking over the prudential supervision of the most systemically relevant banks in the Eurozone. The AQR involved a detailed assessment of each bank's loan portfolio based on the IAS 39 impairment rules. On average, the ECB substantially adjusted assets' carrying values (European Central Bank, 2014), which suggests that the incurred loss model under these same rules did not represent a binding constraint to the impairment of banks' loan portfolios. The evidence is rather consistent with these European banks having opportunistically used the discretion in the rules. Thus, the finding lends further support to the reporting incentives view (Bischof *et al.*, 2020b, 2021b).

In contrast, Gebhardt and Novotny-Farkas (2011) document that the first-time adoption of IAS 39 and thus the implementation of the standard's incurred loss model was associated with less timely recognition of loan losses than under previous local GAAP standards. The finding is consistent with the delay in loss recognition being attributable to the IAS 39 rules. Based on this evidence, Novotny-Farkas (2016) argues that the adoption of the IFRS 9 expected credit loss model will likely lead to more divergent reporting. Early evidence on the informational consequences of IFRS 9 still suggests that the new expected credit loss model better predicts bank risk than the IAS 39 approach (Lòpez-Espinosa *et al.*, 2021). At the same time, the new standard seems to shift banks' lending (Ertan, 2019), leaving the overall effect an open question that needs to be addressed by future research.

While the evidence is mixed with regard to the actual role of the IAS 39 rules in explaining the average reporting behavior, the evidence is fairly robust in the cross-section of IFRS-adopting banks. Timely loss recognition is more pronounced in banks with less excessive risk-taking (Bushman and Williams, 2012; Leventis *et al.*, 2011) and in countries with strict supervision (Bushman and Williams, 2012; Gebhardt and Novotny-Farkas, 2011).

3.5.1.3 Did Own Credit Risk Adjustments for Liabilities Provide Useful Information?

During the financial crisis, the IASB viewed the inclusion of credit risk into fair value measurement of financial liabilities as one of the most controversial aspects of fair value accounting under IAS 39 (IASB, 2009, para. 1). Banks' application of this rule came under public scrutiny because it resulted in sometimes substantial reductions of reported losses. The Swiss bank UBS is one example that was prominently covered by the financial press. The bank reported a net profit of CHF 433 million for the third quarter of 2008, only after having recognized a gain of CHF 2,207 million from changes in the fair value of own debt attributable to changes in the bank's own credit risk (e.g., The Wall Street Journal, 2008). Critiques view these gains as counterintuitive and describe them as accounting anomalies that reduce the informational usefulness of

bank financial statements (e.g., Chasteen and Ransom, 2007; European Central Bank, 2004). Proponents argue that the separate effect of own credit risk in liability measurement correctly represents an economic wealth transfer between debtholders and shareholders (e.g., Barth *et al.*, 2008a; Barth and Landsman, 1995).

There is some evidence on the informational role of these debt valuation adjustments for own credit risk during the crisis. Schneider and Tran (2015) examine a sample of 117 IFRS-adopting banks from 24 European countries. They find that banks that have used the fair value option for liabilities and recognized gains or losses attributable to own credit risk exhibit lower information asymmetry (proxied for by the bid-ask spreads), compared to non-adopters. Fontes *et al.* (2018) use a similar sample of 104 IFRS-adopting banks from 23 European countries. They find that the measurement of financial assets at fair value through profit or loss is negatively associated with information asymmetry and that this relationship is stronger when banks also use the fair value option for liabilities and recognize own credit risk adjustments. Overall, these findings point to these fair value adjustments providing investors with relevant information. These results are similar to evidence from U.S. data (see McDonough *et al.*, 2020, for a global overview).

However, all studies on this question must deal with severe selection bias because the very application of fair value accounting for financial liabilities and thus being required to show these own credit risk adjustments, is largely left at management's discretion (i.e., the decision whether to use the fair value option). Any controls for the potential bias, especially the two-stage Heckman correction (Heckman, 1979), suffer from a lack of convincing and valid instruments that meet the exclusion restriction. Therefore, it is not too surprising that evidence from other angles provides a different picture. Bischof *et al.* (2014) document that own credit risk changes in liability fair values have been one of the fair value-related accounting topics that financial analysts inquired most frequently about in conference calls during the financial crisis. Analysts' questions and the discussion in their research reports suggest that they exclude these fair value changes from the income measure used in forecasting and valuation, which would be inconsistent with their informational usefulness.

3.5.2 The IASB's Regulatory Responses During the Financial Crisis

The IASB changed several accounting standards during the financial crisis. The most prominent change was the introduction of the reclassification option in IAS 39 in October 2008, at the very peak of the crisis. Other changes included the issuance of expanded fair value guidance, new risk disclosure requirements, and stricter consolidation rules for special-purpose entities. Accounting research has examined the consequences of these changes for reporting practice and economic outcomes.

3.5.2.1 The Reclassification Amendment to IAS 39

In October 2008, the IASB skipped any regular due process to issue amendments to IAS 39 and IFRS 7 (André *et al.*, 2009; Howieson, 2011). These amendments offered banks the choice to retroactively reclassify financial assets that had been measured at fair value into categories that require measurement at amortized cost, that is, to effectively abandon fair value accounting for these assets. As then-IASB Chair Sir David Tweedie later admitted, the decision was the result of intense lobbying by politicians and banking regulators mainly from Europe (House of Commons, 2008), which culminated in the European Commission threatening to amend IAS 39 unilaterally. The decision also sharply contrasted with the IASB's general strategy in reporting for financial instruments (IASB, 2008) and its strong initial position against reclassifications.

Banks made ample use of the opportunity to forgo substantial write-downs of financial assets whose market prices had substantially fallen or become illiquid during 2008. For example, Germany's Deutsche Bank was able to boost its net income for 2008 by 3.2 billion EUR by means of reclassifying illiquid assets with a book value of 23.6 billion EUR. Overall, more than one-third of European banks chose to reclassify during the financial year 2008 (Bischof *et al.*, 2019; Fiechter, 2011), with most of these reclassifying trading securities into other categories. The impact on reported income was substantial, with return on assets doubling for the largest European banks (Fiechter, 2011). Evidence shows that banks' use of the option was an opportunistic means of

capital and earnings management (e.g., Bischof *et al.*, 2019; Fiechter *et al.*, 2017).

The immediate market reaction to the IASB's announcement of the new rules is hard to judge because it overlapped with many other regulatory measures by governments and bailout decisions. Therefore, the average market reaction around this event is statistically insignificant (Bowen and Khan, 2014). However, markets tend to react negatively to the reclassification announcements of those banks that do not support the accruals-based recapitalization effect from the asset reclassifications by other measures that lead to a real, cash supported increase in bank capital (Bischof *et al.*, 2019). The stock market underperformance of this group of banks even persists in the long run, suggesting that accruals-based recapitalization strategies are unsustainable.

This link between reported IFRS figures and prudential regulation in the financial industry had been overlooked in the pre-crisis period. After having experienced the economic consequences of bank accounting rules during the crisis, the use of IFRS for purposes other than informing investors received more attention. Conceptual proposals to adjust IFRS figures or use an entirely different accounting system for prudential regulation (e.g., Barth and Landsman, 2010) have not been broadly implemented. With a few exceptions (e.g., country-specific prudential filters for unrealized fair value gains and losses from loans and securities), equity determined by IFRS rules still forms the basis of banks' regulatory capital assessment. The variation in these filters is interesting in its own right, as it reveals that banks' responses to financial difficulties depend on how accounting defines their regulatory buffers (Bischof *et al.*, 2021b).

However, evidence also suggests that the short-term regulatory relief from the fair value reclassification comes at the cost of a loss in informational usefulness. For example, Paananen *et al.* (2012) show that earnings and book value of equity become less value-relevant after a bank publishes its use of the reclassification option. Banks' reclassification choice is also negatively associated with analyst forecast accuracy and positively associated with analyst forecast dispersion (Lim *et al.*, 2013). Similarly, evidence from conference calls and analyst reports indicates that analysts add the disclosed fair value changes of reclassified assets

back to bank earnings (Bischof *et al.*, 2014). These findings are all consistent with investors and analysts perceiving the reclassification of financial assets, that is, the shift of fair value information from the income statement to footnote disclosures, as a loss of useful information.

3.5.2.2 Other Regulatory Responses

Other IASB regulatory activities during the financial crisis have received much less academic attention. We briefly highlight two of these changes. First, the IASB issued fair value guidance specifying the use of pricing data from forced transactions, especially fire sales. The IASB also amended IFRS 7 (Financial Instruments: Disclosures) and introduced disclosure requirements for the three levels of fair value estimates (similar to the SFAS 159 definition previously adopted by the FASB). Second, the IASB changed consolidation rules for group accounts (with IFRS 10, 11, and 12 being newly introduced). These new rules addressed disclosures about special-purpose entities, such as the ones many financial firms had been used during the crisis. There is no systematic evidence on the use and effects of these IFRS regulations. We would have to borrow from U.S. studies to draw inferences.[59]

3.5.3 Consequences of the Financial Crisis for the Global Acceptance of IFRS

Next to triggering several changes to IFRS (see Subsection 3.5.2), the financial crisis affected the IASB's work by drawing policymakers' attention to the interconnection between accounting standards and prudential regulation. Constituents had started to raise questions about (1) the political independence of the IASB, (2) the adequacy of providing decision-useful information as the IASB's single objective of accounting standards, and (3) the desirability of ceding authority to a supranational organization.

First, public policymakers demanded to enhance the governance of the IASB "to ensure transparency, accountability, and an appropriate

[59]For example, Song *et al.* (2010) examine the value relevance of fair-value-level disclosures using data from 405 U.S. banks. Dechow *et al.* (2010b) analyze the use of asset sales to special-purpose entities (securitizations) for earnings management.

relationship between this independent body and the relevant authorities" (G20, 2008, p. 4). Given its already existing plan to establish a second oversight layer, the standard setter was able to respond swiftly to such demands with the creation of the Monitoring Board in 2009 (Camfferman and Zeff, 2015, pp. 419–420). The installation of the board aimed to create a closer link between the IFRS Foundation and capital markets authorities by allowing those representatives to approve or reject the appointment of trustees (IFRS Foundation, 2018, Sections 18–19).

Second, public policymakers asked the IASB (as well as the FASB) to make the enhancement of financial stability a standard-setting objective. With the support of their constituents, the boards warded off such demands, arguing that the objective of financial stability may at times conflict with the accounting standard setters' core objective of providing decision-useful information. (See Barth and Landsman, 2010, for a discussion of the conflict of the two objectives.) In contrast, the IASB even narrowed its focus from "present and potential investors, employees, lenders, suppliers and other trade creditors, customers, governments and their agencies and the public" (Conceptual Framework as of 2009, paragraph 9) to "existing and potential investors, lenders and other creditors" (Conceptual Framework as of 2010, OB2) and thus cemented its focus on capital market investors (Zhang and Andrew, 2014). Instead of developing a conceptual framework to constrain the use of fair values (as demanded by public policymakers), the IASB paved the way for extending the use of fair values—a step that was partially reversed by another revision of the conceptual framework in 2018 (Pelger, 2020).

Third, the financial crisis disrupted the SEC's work on passing a rule to introduce IFRS for U.S. issuers. As documented by Becker *et al.* (2020b), in late August 2008, the SEC's chair was pushing for the quick approval of the roadmap to introduce IFRS into capital markets by the beginning of 2009. With the crash of Lehman Brothers in September 2008, the legislative due process was delayed by several months, such that the new SEC chair inherited the legislative initiative in January 2009. From then onward, U.S. constituents' experiences during the financial crisis strengthened doubts about the desirability of ceding power to a non-U.S. organization. On the one hand, U.S. constituents appreciated their ability to use the multi-tier regulatory structure in the United

States to influence the FASB (Becker *et al.*, 2020a,c). On the other, U.S. constituents questioned the IASB's political independence after the IASB violated its own due process regulations under the EU's carve-out threat in October 2008 (Becker *et al.*, 2020a). The U.S. decision to not adopt IFRS arguably affected other jurisdictions' decisions (such as Japan's decision against mandating IFRS; see Tsunogaya, 2016).

Concurrent with the United States' unwillingness to commit to IFRS, the IASB's and FASB's convergence work became increasingly difficult. Even though public policymakers continued to emphasize the importance of making "significant progress towards a single set of high-quality global accounting standards" (G20, 2009, p. 6, also G20, 2008, p. 1), the crisis impeded this work by raising doubts about the desirability of a uniform set of global accounting standards, which has shown to be hard to adapt to local needs.

3.6 Outlook and Future Research Opportunities

The literature on market consequences of IFRS adoption has reached a relatively advanced stage. Future research opportunities will hinge on the emergence of innovative settings, the accessibility of new proprietary data, or changes at the level of individual IFRS standards. We conclude this section by providing an outlook of what these future research opportunities could be.

First, controversies remain about the causality of the documented effects and, more generally, the role of accounting standards per se. The analysis of new settings that offer tighter field conditions and approximate an experimental ideal remains promising. The detection and the convincing exploitation of subtle regulatory features will, however, require profound institutional knowledge.

Second, new data sources could allow insights into unaddressed questions. In particular, our understanding of the use of IFRS data in private contracting (e.g., lending, customer–supplier relationships, or management compensation) would benefit from more granular data, which advances in information technology could help collect. National regulators, the IASB, auditors, and other private players will play a major role in this process, and researchers need to use their links to

these institutions to help make their proprietary data accessible for research.

Third, research has established that the IFRS label refers to a variety of reporting rules (e.g., IFRS as issued by the IASB versus endorsed IFRS) and reporting strategies (e.g., sticking to local reporting practices versus substantial investments in reporting quality). Most studies still focus on an overall IFRS indicator only. Breaking up this indicator is a data issue and could help advance understanding the consequences of IFRS adoption and to what extent country- or firm-level deviations from IFRS as published by the IASB matter.

Fourth, most research has focused on the adoption of IFRS in mostly developed economies. It follows that the long-term consequences of adoption or developing countries' costs and benefits of adoption remain unclear. For example, little is known about the impact of learning effects or regulatory changes after IFRS adoption. In light of limited data availability in developing countries, studies often use qualitative research methods (e.g., Lassou *et al.*, 2021; for a quantitative study on IFRS adoption effects in Jordan, see Al-Akra *et al.*, 2010).

Fifth, the consequences of IFRS adoption depend on local regulatory infrastructure. While the cross-sectional variation of the adoption effect along these regulatory characteristics is well established, local regulators also cooperate and compete with other national and foreign institutions (Lang *et al.*, 2020). At the same time, multinational firms strategically allocate discretionary accounting choices to jurisdictions with more lenient enforcement (e.g., Beuselinck *et al.*, 2019). How these dynamics affect the strength of public enforcement is not fully understood.

Finally, apart from the adoption of the entire set of IFRS, future research will likely focus more on the adoption of specific standards, such as IFRS 9 (Financial Instruments), IFRS 15 (Revenue from Contracts with Customers), or IFRS 16 (Leases), to inform about the consequences of innovations in the way firms must account for specific transactions.[60] For example, the IFRS Foundation (2021a,b,c) summarizes a multitude of research questions on recently issued standards, such as whether

[60]See e.g., the topics of the recently announced joint conference of the FASB, the IASB, and *The Accounting Review* at: https://aaahq.org/Meetings/2022/Accounting-for-an-Ever-Changing-World/Call-for-Papers.

IFRS 15 actually enhances the comparability of revenue across firms, industries, and jurisdictions and whether it provides more useful information about the timing and nature of firms' revenues and cash flows. Only early evidence exists on the use and effects of these new IFRS regulations. The availability of reconciliations at the level of individual IFRS-standards in firms' notes disclosures also allows archival researchers to tackle questions on adoption effects.

4

The Global Practices of IFRS Reporting

This section summarizes the current reporting landscape and firms' reporting practices under IFRS. We discuss the implications and challenges that researchers face when working with IFRS data. To this end, it is helpful to first benchmark the IFRS reporting environment against the characteristics of U.S. data, which is still the most widely used in empirical accounting research. Core characteristics of the U.S. reporting environment for listed firms are (1) comprehensive and rules-based U.S. GAAP standards that require extensive disclosures; (2) a high level of firm compliance with these rules under a strict enforcement regime; (3) English as the reporting language; (4) highly standardized financial reports and corporate filings, often based on templates provided by regulatory authorities; (5) the SEC's EDGAR (Electronic Data Gathering, Analysis, and Retrieval) system, a repository for easily accessing firm data for free and in electronic formats that can be processed by algorithms.[1]

[1] These observations relate to listed firms under SEC supervision only. For private firms, there is better data availability in the European Union due to disclosure requirements (e.g., Burgstahler *et al.*, 2006) and the transmission of these disclosures through official gazettes or corporate registers (e.g., Breuer *et al.*, 2018).

Commercial databases (especially Compustat North America) cover the financials of listed U.S. firms in detail (with hundreds of individual data items collected per firm) and provide researchers with customized input for empirical research, making the full universe of U.S. firms' core financial reporting items readily available for analysis. This data is available either via Standard & Poor's (S&P) Capital IQ interface or via the Wharton Research Data Service (WRDS). Furthermore, footnote disclosures or qualitative information that is not provided by commercial databases can be obtained via the EDGAR system directly. EDGAR is compatible with the use of web scraping and text mining techniques and enables investors to extract structured information for specific types of disclosures. Recently, new data providers have emerged (such as Calcbench and idaciti) that are making full use of mandated XBRL (eXtensible Business Reporting Language) tagging and provide access to the complete universe of disclosed items. In sum, these characteristics of the U.S. reporting environment collectively make it very convenient for researchers using U.S. accounting data.

Against this benchmark, the heterogeneity of the international reporting environment as well as a lack of standardization in IFRS reports make it much more costly for researchers to use international accounting data (e.g., collect disclosure data). These costs of both manual and automated information processing create significant hurdles and entry barriers and increase potential measurement error (e.g., in the coding of IFRS adoption per se).

We start this section by discussing the two options researchers have when working with IFRS data, that is, to compile the dataset themselves (Subsection 4.1) or to use a commercial database (Subsection 4.2). Next, we illustrate these issues by selected IFRS disclosures and then discuss broader evidence on how firms apply IFRS and what we know about these choices (Subsection 4.3). Finally, we offer an overview of current digital reporting practices and recent developments in the field of XBRL-based reporting (Subsection 4.4). In Subsection 4.5, we outline further research opportunities.

4.1 Data Collection from IFRS Reports

4.1.1 The Collection and Accessibility of IFRS Reports

Collecting financial reports outside the United States entails various difficulties. First, there is no single public point of access, that is, a central global repository or webpage where filings of IFRS-reporting firms are available.[2] IFRS reports of international firms are usually accessible through a firm's individual webpage or country-specific repositories (maintained by, for example, local stock exchanges).[3] Both sources are subject to constant change (in terms of their page setup and content) and cover historical records to a varying extent. Thus, the collection of relevant IFRS reports across countries requires substantial setup costs. Additional costs arise from the frequent adjustment of the search process when collecting IFRS reports manually or semi-automatically. Moreover, the accessibility of IFRS reports can be impeded by download restrictions, such as the blockages of automated downloads or license fees that preclude collection on a large scale.[4]

There are still examples of individual studies where researchers have compiled a comprehensive electronic archive of global annual reports. For example, Daske *et al.* (2013) downloaded around 22,200 documents from Thomson Research and manually inspected the reports for firms' use of reporting standards. (See their discussion of data-collection issues in the print and online appendices.) Lang and Stice-Lawrence (2015)

[2]While there are some free websites that provide a selection of annual reports, their coverage of firms remains a black box, and none of these websites has been used in IFRS research. For an overview, see https://subjectguides.library.american.edu/c.php?g=175038&p=1154644.

[3]For example, Croatia's Zagreb Stock Exchange at: https://zse.hr/default.aspx?id=36801&ticker1=&Page=1.dafasdf or Jordan's Amman Stock Exchange at: https://www.ase.com.jo/en/disclosures.

[4]For example, while the business registers of EU countries are now electronically searchable and firm's annual reports are made available (e.g., https://e-justice.europa.eu/content_business_registers_at_european_level-105-en.do?clang=en), national business registers and their service distributers often charge fees per download (see e.g., the Irish KYCKR (https://app.kyckr.com)) and restrict access to humans (i.e., by implementing a challenge-response test that is used in computing to determine whether the user is human (so-called CAPTCHA; e.g., the Italian InfoCamere (http://www.registroimprese.it/))).

compiled an archive of 87,600 reports until the financial year 2011 from Bureau van Dijk's (BvD) Osiris Global Reports database. In recent years, Perfect Information has emerged as a provider of global corporate filings and lately introduced an API feature that allows downloading financial reports on a larger scale.[5]

Second, IFRS reports are not as readily machine-processable as traditional, non-XBRL reporting documents prepared by SEC registrants (provided via EDGAR as html, txt, or xml files). Irrespective of the source (i.e., firm, stock exchange, or data provider), the IFRS reports of most firms are only available as a nonstandardized PDF document. This is particularly critical for historical IFRS reports in the time-series when PDFs are, to a noticeable extent, scans of hard copies and images.[6] Preparers can embed restrictions into their PDF files and work with a variety of different formats within PDFs depending on the version.[7] Lang and Stice-Lawrence (2015) conduct the first large sample-based automated analysis of international annual reports by converting PDF files to text, but the description of their data steps is brief. Researchers at Lancaster University have recently conducted a series of studies to improve data collection and text-based analysis from British annual reports (e.g., El-Haj *et al.*, 2020; Lewis and Young, 2019). They develop and comprehensively describe automated procedures for retrieving and classifying narrative components of annual reports from PDF files that likely can soon be applied to reports of other countries as well.

Third, not all source webpages and financial reports are in English, the lingua franca of business and research. English is not an official

[5]To gauge the magnitude of the issues we discuss in this subsection, we use a comprehensive sample of around 420,000 annual reports from IFRS-adopting countries from 1990 to 2018 that we recently compiled as part of the Collaborative Research Center (SFB/TRR) Project-ID 403041268 – TRR 266 Accounting for Transparency.

[6]In our comprehensive sample of annual reports in IFRS-adopting countries, the magnitude of nonreadable PDFs declines over time (on average 26%) but remains well above 10% until today.

[7]Today, most content restrictions (e.g., copying restrictions) can be circumvented via tools that decrypt PDFs. The variety of different formats in PDFs (Version 1.0–1.7 and 2.0, etc.), however, reflects a significant obstacle. Since PDF is designed as a display format, not a storage format, many design choices can lead to significant text parsing errors.

language in many IFRS-adopting countries, and there are generally no requirements for firms to publish their reports in English.[8] Jeanjean *et al.* (2010) report for their sample of the largest 4,000 firms in non-English-speaking countries that about 50% voluntarily issue an annual report in English.[9] In our more comprehensive sample, only 35% of the IFRS reports in non-English-speaking countries are in English. While availability has increased over time, large variation remains across countries.[10] Thus, most IFRS financial reports are still reported in local languages (e.g., Spanish, German, etc.), some of which do not use Latin characters (e.g., Arabic, Russian, or Chinese).

IFRS studies for which authors collect data from the annual reports are typically limited to English language reports.[11] So far, automated text mining and data collection from financial reports have likewise been only conducted on English documents. (See El-Haj *et al.*, 2020 for an application to a selection of Portuguese reports as an exception.) Consequently, research findings are typically biased toward English-speaking countries and firms that voluntarily translate their reports. To mitigate such biases, authors rely on their own language skills to complement their datasets of English IFRS reports with non-English IFRS reports (e.g., Bischof *et al.*, 2019; Gordon *et al.*, 2017). Alternatively, authors have relied on the language skills of research assistants (RAs) to collect the data from the local language IFRS reports. (See, for example, the list of acknowledgments of Daske *et al.*, 2013.) However, due to these very practical constraints, IFRS reporting information in non-English-speaking countries not collected by commercial data providers remain a significant black box.

[8]Even if firms choose to be listed on a stock exchange that demands the publication of English reports, the general legal requirement remains and a parallel filing of a financial report in the country's official language is mandatory. Denmark is a notable exception by starting to allow reporting solely in English; see Deloitte (2014).

[9]See Jeanjean *et al.* (2010) for determinants and Jeanjean *et al.* (2015) for economic consequences of issuing an annual report in English. Note, however, that annual reports translated into English are often much shorter versions of the original and focus on core financials only, omitting many footnotes.

[10]For example, most firms in Israel report in English (85%), while only few do so in Chile (12%) or Peru (6%).

[11]See e.g., Bischof and Daske (2013), Lang and Stice-Lawrence (2015), and Nichols *et al.* (2012).

4.1.2 The Identification of IFRS Adoption

References in a firm's report to "IFRS" in footnotes and the auditor statement should, in theory, make it obvious on which basis financial reports have been prepared. However, due to countries' different methods of incorporating IFRS into national laws and regulations (see Subsection 5.1), a reference to the "IFRS" label in firms' reports is not as widespread as the jurisdictional profiles of the IFRS Foundation suggest (IFRS Foundation, 2020i). For example, in many cases in which countries fully converge their national standards with IFRS (and are therefore counted as IFRS adopters), firms still refer to the (fully converged) national accounting standards in their financial reports. This is often due to legal reasons and to distinguish locally incorporated IFRS that use different codification systems (i.e., labels and numbers for individual standards) from IFRS as issued by the IASB. To avoid dual reporting, some jurisdictions even prohibit firms from referring to IFRS (e.g., South Korea and Turkey). Without knowing about the institutional details, it is therefore not obvious whether a firm applied IFRS as issued by the IASB or national GAAP, and a researcher may code such a report as either "national GAAP" (consistent with the reference in the report) or as "IFRS as issued by the IASB" (consistent with the content of the underlying standards that are fully converged with IFRS). Differences in references to labels are one driver of diverse definitions in the scientific literature of what is an IFRS country or report. (See Bischof *et al.*, 2019 as an example for the recoding and Zeff, 2016a for a discussion of the case of Switzerland.)

Given the heterogeneity in IFRS adoption, it is an unresolved issue which deviations in content from IFRS as issued by the IASB remain acceptable for a country or firm to still be coded as "IFRS" reporting. Research points to these ambiguities of IFRS adoption at the jurisdictional level (e.g., Ball, 2006; Zeff and Nobes, 2010), and various grey zones have resulted in differences in country classifications across IFRS studies. There is no uniform coding or consensus in the IFRS literature

on where to draw lines between IFRS (treatment) and local (benchmark) reporting countries.[12]

Moreover, the correct classification of a country's IFRS adoption status does not imply that all listed local firms report in accordance with IFRS (e.g., either due to specific industries' exemptions, transitional options, or because firms are simply not following the rules even if they are within the scope of the IFRS mandate). Pownall and Wieczynska (2018) document that there is a substantial percentage of EU firms that are noncompliant and stick to local GAAP practices, instead of applying IFRS as issued by the IASB. Thus, accounting data from such firms are de facto based on local GAAP, even if it should be de jure based on IFRS. These findings imply that the common practice to code all firms from countries mandating IFRS as "IFRS-reporting firms" entails a significant measurement error in the IFRS treatment dummy variable.

The dynamic nature of IFRS introduces additional heterogeneity during transition periods. Since the IASB's establishment in 2001, IFRS were subject to more than 200 replacements, amendments, and revisions of standards and interpretations. (See Alsarghali and Daske, 2020 for details.) Local regulators incorporating these new pronouncements into national law as well as preparers mandated to follow the new rules need to keep up with the pace of these developments. Any delay in local adoption, in addition to potential local modifications of the content of new pronouncements (such as a "carve-in" or "carve-out"; see Subsection 5.4.2), contributes to diversity in IFRS reporting practices across jurisdictions. It is sometimes not obvious which version of an individual IFRS standard an IFRS-reporting firm is using. Consequently, the compilation of a clean dataset to study the effect of an individual IFRS standard would require the careful inspection of the accounting policies section, at least for a sample of firms.

[12] Song and Trimble (2020) however provide a dataset of IFRS adoption dates and forms that can help researchers to more accurately identify treatment and benchmark groups (see Nobes, 2020, for a corresponding discussion).

4.1.3 The Identification of Data Items in IFRS Reports

Despite a common set of principles, substantial heterogeneity in actual reporting practices of IFRS-adopting firms still exists for a number of different reasons.

First, local reporting regulations and reporting practices from a country's pre-IFRS period tend to persist (e.g., Nobes, 2006, 2013). IFRS reports are a collection of IFRS-compliant items and idiosyncratic local disclosures that are not always easy to disentangle. Examples include sections on governance, management commentaries, sustainability (ESG), or the Basel framework for banks. While such differences are clearly identifiable by means of a manual inspection, they pose challenges for automated text extractions (El-Haj *et al.*, 2020). Detailed institutional knowledge is required in cases where regulations overlap, such as the coding of banks' risk disclosures, where IFRS 7 requirements are often combined with Pillar 3 reporting requirements under the Basel framework (see Bischof *et al.*, 2021a). International firms frequently combine both the consolidated group account (prepared in accordance with IFRS) and the parent company's separate financial statements (often prepared in accordance with local GAAP) in one document. Similarly, in case of voluntary IFRS adoption or during the transition periods, firms often chose to report their consolidated financial numbers in parallel under IFRS and local GAAP.[13] In all these cases, researchers and data analysts need to take extra care when identifying the relevant IFRS number.

Second, differences in IFRS reporting practices are driven by the principles-based nature of the standards (as opposed to the more rules-based U.S. GAAP; see Donelson *et al.*, 2016; 2012, for an empirical comparison). While there is an unresolved discussion on how to precisely define principles or rules-based standards (e.g., Nobes, 2005; Schipper, 2003) as well as their desirability (e.g., Benston *et al.*, 2006; Wüstemann and Wüstemann, 2010), a consensus is that the "inner flexibility" of the principles-based approach enables the application of IFRS across

[13] See Daske *et al.* (2013) for a discussion or the Thomson Reuters Fundamental Glossary (2015, p. 32), on data selection choices in the case of "alternative accounting standards".

jurisdictions with diverse accounting traditions and varying institutional conditions (e.g., Carmona and Trombetta, 2008). Thus, the principles-based characteristics of IFRS fostered their use in diverse settings.

Yet, in the absence of a requirement to use a standardized structure to present IFRS financial statements, firms have considerable flexibility on how to structure and label line-items and how to report information in the footnotes, both in terms of content and format. There are only general guidelines in IAS 1 (Presentation of Financial Statements) and the IFRS Foundation's Illustrative Examples, which foster common IFRS reporting practices in certain areas, although they "do not constitute accounting or other professional advice" (IFRS Foundation, 2020f). This flexible approach leads in practice to significant diversity in the individual line-items reported in the core set of financial statements and the footnote disclosures across firms and countries. While this flexibility allows customized communication by firms that may optimally portray an individual firm's situation, it impedes the collection and comparison of information across firms and time for the following reasons: (1) items reported in the core set of financial statements are often incomparable and must be adjusted to a common base using footnote disclosures, (2) information only disclosed in the footnotes may be spread around different sections or footnotes, (3) there can be significant heterogeneity in how footnotes are structured (depending on the specific IFRS standards), and (4) there is significant variation in terminology, that is, the labelling of items.

Next, noncompliance with individual disclosure requirements is a well-documented issue using disclosure checklists for specific IFRS standards (e.g., Bischof *et al.*, 2021a; Glaum and Street, 2003; Glaum *et al.*, 2013; Street and Bryant, 2000). However, it is frequently unclear whether a missing piece of information is really the result of noncompliance or just due to its lack of materiality for a given firm. Under IFRS, the materiality assessment is at management's discretion and involves the judgment whether omitting or misstating a required item could influence decisions that users make (IAS 1.7). Put differently, a disclosure requirement in IFRS does not need to be fulfilled if the effect of omitting the information is immaterial.

Thus, studies on IFRS compliance risk overestimating the extent of noncompliance when not controlling for materiality. Ideally, such an analysis requires a reasonable proxy for the materiality of the underlying transactions (e.g., a firm's business model or available information from a matched peer). In other IFRS studies, firms with missing disclosures are simply excluded from the sample for practical reasons. In these cases, results tend to tilt toward firms that comply and thus have material positions (likely adding power to their tests by focusing on firms for which these disclosures matter while at the same time reducing variation in the lower tails of the data). If noncompliance (rather than immateriality) is the reason for the missing disclosure, the firm's reporting incentives are systematically different from complying firms that are included in the sample. A control for the sample selection is thus warranted to address external validity concerns.

There also exist language and translation issues. The working language at the IASB is English. Yet, given the global reach of IFRS, language differences and translation issues matter and cause an additional layer of reporting diversity. This diversity arises from (1) translating the IFRS standards into local language versions (either by the IASB or some local standard setter or institution under the IFRS Foundation's licensing policy; see Evans, 2018; Evans *et al.*, 2015; Kettunen, 2017; for some languages there exist even multiple versions such as in Portuguese because Portugal and Brazil could not agree); (2) users interpreting the same IFRS standard differently, depending on whether they use an English or local language version (see Doupnik and Richter, 2003); and (3) firms' translation of their local language IFRS reports into English versions (see Subsection 4.1.1).

The English version is usually translated from the local language IFRS report by translators who are not necessarily accounting experts. Translation studies suggest that the risk of misunderstanding is exacerbated when technical terms are translated into another language (Evans, 2004). Thus, translation difficulties cause additional diversity in concepts and terms to be found in IFRS reports that data analysts and researchers must cope with. (See Nobes and Stadler, 2018 for an illustration of variations in English translations of the term "impairment" in IFRS reports.) While we know that translation complexities matter

in this context and cause variation, we still lack systematic evidence that goes beyond anecdotes or the analysis of very specific accounting terms (despite the frequently used metaphor of IFRS as a "common global reporting language"[14]).

4.2 IFRS Data in Commercial Databases

4.2.1 Data Providers

A less time-consuming and more standardized way of accessing accounting data is through commercial data providers. In fact, the majority of IFRS studies rely on accounting information from commercial providers, mirroring the investment practice where users almost entirely rely on third-party providers and manually collect data in only a very limited amount (CFA Institute, 2016b). Because most research depends on data providers' compilation of IFRS data, researchers should seek to understand the providers' collection process and the dataset's limitations. Given the difficulties to collect IFRS data (see Subsection 4.1), data providers (that is, their data analysts and programmers who develop algorithms) face issues similar to those confronting researchers, and it is likely that IFRS databases face at least as severe data quality issues as those known for Compustat North America in the United States.[15]

There is no dominant source for international accounting data. The market for global accounting data is instead served by competing providers with origins in different countries. Market dynamics in terms of changes in ownership and mergers of datasets, newly emerging players as well as innovations in information technology resulted in frequent changes in data providers' names, their platforms, and the accessibility of their data. Over the past two decades, three prime databases have

[14] See e.g., Cox (2008), IFAC (2011), and IFRS Foundation (2017b).

[15] In the words of then-SEC Chair Christopher Cox: "Executives who have taken the time to double check the data that financial analysts following their companies are working with can sometimes get quite a shock. That's because some of them bear no resemblance to what the companies published"; see Cox (2006). In the United States, there is a long history of evaluating the data quality of Compustat North America and other major providers, starting with Rosenberg and Houglet (1974). See Bennin (1980) and Kern and Morris (1994), or more recently Chychyla and Kogan (2015) or Li and Sloan (2017) for the case of goodwill impairment.

emerged as the market leaders for non-U.S. firms' accounting data and have been most widely used in the IFRS literature: (1) Compustat Global (currently provided by Standard and Poor's and accessible via S&P's Global Market Intelligence), (2) Worldscope (currently provided by Refinitiv as Thomson Reuters Company Fundamentals and accessible via Eikon, formerly marketed as Global Vantage), and (3) Osiris/Orbis (currently provided by Bureau van Dijk (BvD) and part of Moody's Analytics).[16]

Against this background, the choice of a database is not a trivial one in international accounting research. Most importantly, different datasets come with differences in coverage that affect the number of observations and heterogeneity in data quality. Ideally then, the best data source for a specific research project or disclosure type under IFRS needs to offer the best fit to the research question of interest and likely varies across projects which makes the trade-off challenging when subscription fees are significant and research budgets are tight.

4.2.2 Relevance of the Database Choice

There is some evidence that the database choice actually matters for IFRS research and that there are significant differences across providers in the coverage of countries and firms as well as the selection of major data items from the financial statements (e.g., Dai, 2012 and McGuire *et al.*, 2016). In general, these studies conclude that BvD Osiris and Worldscope cover more firms than Compustat Global. Worldscope (BvD Osiris) offers less (more) variety of accounting items than Compustat Global. All databases show an increasing number of observations throughout the years. However, these studies analyze only the coverage of generic disclosures from the core financial statements and do not

[16] FactSet Fundamentals is another competitor (available, for example, via WRDS). FactSet acquired a copy of Thomson's Worldscope database in 2008 and started to collect own data from 2010. However, none of the 64 IFRS studies that De George *et al.* (2016) examine (see Table 3) used this data, likely because only few academic institutions have access. Note that the European Commission had required the sale of Worldscope to the competitor as part of its merger investigation of Thomson and Reuters (Baccaro, 2008, p. 65), because "the merger would therefore have reduced from three to two the providers of fundamentals, which also supply re-distributors".

speak to more specific disclosures from the footnotes that accounting researchers most frequently miss. Data providers also tend to overstate the number of proprietary items they collect by including a host of ratios or pro-formas that are only repetitive calculations. Researchers therefore need to evaluate the specific coverage of a disclosure item with the help of user guides and the customer support.

As for the adjustments made to standardize raw accounting data, the more analysts need to adjust the item found in the original filings to fit their definition, the greater are the differences in values across databases. As the number of adjustments often directly relates to the way firms report items in their financial statements, differences in values across databases for an item are often driven by diversity in reporting practices. This observation is supported by large sample-based evidence for the United States for which Chychyla and Kogan (2015) conclude that standardization is the main source of discrepancies between Compustat and 10-K filings using XBRL-filings as a benchmark.

Several studies suggest that the choice of a database can affect the results of accounting research. Ljungqvist *et al.* (2009) investigate the completeness and accuracy of the historical IBES analyst stock recommendations database and show that changes to the historical record affect the inferences of academic research that relied on this data source. In the pre-IFRS world, Garcia Lara *et al.* (2006) show that the database choice across the major providers significantly impacts the results when standard research designs are applied to international firms, and that differences in coverage are not the only driver of different inferences. However, so far, no study has evaluated the (relative) accuracy of accounting data across the different sources or how IFRS has impacted the quality of providers. Thus, in general, the IFRS literature has assumed that errors, standardization adjustments, or differences across providers are idiosyncratic and negligible in large samples; replications of IFRS studies using an alternative data sources would be advisable.

In sum, while Ball (2006) argues that IFRS introduction makes the work of analysts at data providers across countries easier, there is no evidence on whether IFRS affected the electronic transmission of accounting data through these providers in terms of coverage, automatization, error rates, timeliness, or variation across providers.

4.2.3 The Origin of Differences Across Databases

Observed deviations across the relevant accounting databases result from differences in (1) coverage of countries, firms, and individual data items from the financial reports; (2) data definitions (i.e., the organization of data items), standardization procedures (i.e., the ways of adjusting raw data and reporting data in a provider's common format) and data quality (i.e., idiosyncratic data errors distorting the original data not captured by a provider's validation steps); and (3) variation in accessibility of the provider's collected data. In the following, we provide an overview of the major differences based on the glossaries, manuals, or user guides published by database providers as well as interactions with customer support and data analysts.

Data coverage is a first difference. Coverage has two dimensions and captures both the breadth of the universe of countries and firms included in the database and the depth of data items collected from the original financial statements of each covered firm (which also varies by firm). Collecting individual items is costly for commercial providers, and their collection choices trade off these costs and commercial benefits. In fact, providers rationally choose to collect or disregard disclosures depending on (anticipated) demand by their current (or potential) clients. For example, when a new IFRS standard expands the available reporting information, providers reach out to their core institutional clients to determine in a first step the demand for specific new disclosure items. They also decide in a second step for which firms to actually collect the data item (e.g., fewer disclosures are collected for smaller firms). Thus, commercial considerations, rather than research ideals (such as completeness for public or academic interests), drive coverage choices.[17] The introduction of new data items in response to new IFRS disclosure requirements can therefore not be considered a mechanical procedure but a case-by-case decision.[18]

[17]However, providers have also reacted to specific academic demands, for example by providing historical time series instead of static information or by including dead firms. See e.g., Kalemli-Ozcan *et al.* (2015) for a case study on Bureau van Dijk.

[18]See, as an example, the new supplementary fields for all templates in Worldscope due to the adoption of IFRS 15 in Thomson Reuters' Worldscope Data Definitions Guide, (2018), p. 26.

A second difference arises from individual providers' data-collection process, that is, item definitions, standardization, and validation procedures (see Subsection 4.2.4 for more details). All providers necessarily need to standardize data to cope with the diversity in reporting practices, historically when covering different local GAAP regimes but also currently when covering IFRS reports, given the variation in these practices. To present reporting information across jurisdictions in a homogeneous way in their templates (e.g., like Compustat's balancing models), providers work with their own definition of each data item, including a detailed list of each item's components to achieve comparability across firms. Therefore, data analysts must first understand in which ways a particular disclosure item can be presented in IFRS financial statements (e.g., gross or net, including or excluding possible components). They then need to dismantle every item into its sub-components, before reassembling these components consistent with the provider's own data definition.[19] Thus, differences between what is reported as a disclosure item by the firm and what is provided by different databases often result from differences in the firm's versus each data provider's definition of a reported item.

As an illustration, consider the simple example of the "Current Assets" item of Rolls-Royce plc. Table 4.1 displays its values as reported in Compustat Global and Worldscope over time and benchmarks these against related disclosures in the actual annual report. Several observations are worth noting. First, Worldscope strictly followed its definition of 12 months as the cutoff between current and noncurrent balance-sheet items until 2011 (deviating from Rolls-Royce's own distinction which, in accordance with IAS 1.62, is based on their operating cycle of more than 12 months). In contrast, Compustat does not adjust the firm's reported current asset position (effectively including components that are due after 12 months). Second, even though this does not become externally visible from the data guide, Worldscope must have changed the collection procedure and internal working guidelines from 2012 onward when it stopped excluding portions that relate to periods of

[19] Applying techniques of "accounting adjustments" such as those covered in standard Financial Statement Analysis textbooks, see e.g., Chapter 4 of Palepu *et al.* (2019).

Table 4.1: Analysis of Current Assets for Rolls-Royce (in GBP million)

	Current Assets			Current Assets (>One Year)	
Year	**Compustat**	**Worldscope**	**Original Filing**	**IFRS**	**UK GAAP**
2000	3,892	3,410	3,892		482
2001	4,551	3,741	4,551		810
2002	4,289	3,363	4,289		926
2003	4,536	3,427	4,536		1,109
2004	4,979	3,926	4,979		1,053
2005	5,617	4,971	5,617	646	
2006	6,780	5,954	6,780	826	
2007	7,253	6,426	7,253	827	
2008	9,412	8,041	9,412	1,371	
2009	9,374	8,108	9,374	1,266	
2010	9,824	8,553	9,824	1,271	
2011	8,315	6,889	8,315	1,426	
2012	9,593	9,593	9,593	1,611	
2013	12,818	12,818	12,818	1,927	
2014	11,188	11,188	11,188	2,600	
2015	12,116	12,116	12,116	3,025	
2016	12,858	12,858	12,858	3,279	
2017	14,595	14,595	14,595	3,501	

Notes: The table reports the amount of total current assets for Rolls-Royce Holdings plc for the years 2000 to 2017 retrieved from Compustat (data item "ACT"), Worldscope (data item "WC02201") and the company's original financial statements. The last two columns represent the amount of trade and other receivables expected to be recovered in more than one year (IFRS terminology) and debtors' amounts falling due after one year (UK GAAP terminology).

more than 12 months. Third, the example illustrates that Worldscope analysts had to cope with a change in the terminology of components they needed to collect for their adjustment when Rolls-Royce switched from local UK GAAP to IFRS in 2005.

These procedures by data providers have ambiguous consequences for research. On the one hand, the common template establishes access to accounting information in a homogeneous and straightforward way that facilitates comparability. At the same time, these procedures come at the expense of not necessarily portraying what the firm actually reported, even in the "as reported" data templates. Moreover, some providers

offer additional templates in which they standardize accounting data even further and adjust for differences in measurement and the use of different accounting options. We generally advise use of "as reported" templates for IFRS research, as they come closer to the firm's reporting practice. A third difference across providers relates to data-validation procedures and the extent to which they detect and fix idiosyncratic errors. While it can sometimes be difficult to reconcile the magnitude of a recorded item in a database with the IFRS report, potential data errors generally should not be systematic and therefore only add noise.

A third difference relates to variation in accessibility of the provider's collected data. Data accessibility comprises both the availability of individual items and the timing of dissemination. Availability differs depending on the channel used to pull the data. For example, not all data items that a provider may offer via its own platform are necessarily provided via WRDS.[20] This leads to the use of different platforms by the same data provider yielding systematically different results for the same query.[21] Another difference across providers is the linking of their individual data points to an excerpt of the original source document. (S&P Global Market Intelligence is an example for this practice.) This allows users to verify data points and improves data transparency and, thus, researchers' ability to reconcile the data with specific IFRS disclosures.

In addition to data availability, timeliness and dissemination speed of (fundamental) data are highly relevant in financial markets, with early data access generating significant information advantages. For example, in the U.S. environment, Rogers *et al.* (2017) show that subscribers of the SEC's public dissemination system had access to filings before they were posted to the EDGAR website and this provided private trading advantages in the 30 seconds before public posting. Similarly, for commercial data providers, studies document that information processing delays and data collection lags, that is, the time between the

[20]WRDS and each vendor agree to what data will be available on their platform. Usually WRDS gets an "academic version".

[21]Kalemli-Ozcan *et al.* (2015) illustrate this point for the case of BvD's Orbis data and provide detailed instructions on how to download and organize the data to maximize the number of observations.

announcement date of the firm and the release date of the data provider, matter for institutional demand and ownership (e.g., D'Souza *et al.*, 2010) as well as trading and market efficiency (e.g., Akbas *et al.*, 2018). Yet, timeliness issues and implications of different dissimilation channels of electronic IFRS data are currently a black box and warrant further research.

Overall, these observations on IFRS data in commercial databases have implications for the design of constructs that aim to measure the properties of IFRS reports. In the U.S. environment, for example, Chen *et al.* (2015b) introduce a measure of disclosure quality by counting non-missing Compustat North America line items. Such a measure cannot simply be borrowed for IFRS research because a missing observation for an IFRS-adopting firm cannot easily be interpreted. The missing observations could be due to firms' materiality thresholds or noncompliance, to the decisions of data providers not to collect that item for a specific firm (or not to distribute the item via a certain channel), or to a wrong interpretation in the process of data collection that is correlated with specific institutional factors. Illustrating this point, Nobes and Stadler (2018) document that Worldscope recorded missing items simply when firms were using "unusual" translations of the term "impairment" in their translated English language reports.

4.2.4 Particularities in Data Providers' Collection of International Accounting Data

Beyond these general observations, we further illustrate specific details in the provider's data collection processes for international accounting data that contribute to differences across datasets of IFRS-reporting firms: (1) the employment of a company's own pool of global analysts (versus the data purchase from country-specific local sources), (2) the language of the source documents used (i.e., English versus local language) and the approach to translations, (3) the extent of auto-tagging in the data collection (versus the manual collection by data analysts), (4) the assignment of manual data collection to analysts (i.e., by firm or by disclosure type), and (5) country-specific data validation steps (e.g., the procedure in case of auto-detected mistakes).

(1) Compustat Global and Worldscope collect most of their data through their own pool of analysts based in data-collection centers.[22] In contrast, BvD relies on purchasing data from external data vendors (e.g., WorldVestBase) and often exploits country-specific local sources (e.g., German data is bought from Creditreform).[23] BvD then consolidates this data into a global population for its "Osiris/Orbis" products but also offers local versions of fundamentals data for individual countries with better coverage of firms and items (e.g., BvD Dafne in Germany). Variation in BvD's global dataset is likely introduced by differences in the raw data collected by the different local sources (that may have their own policies or collection goals, such as credit scoring in case of Creditreform). In this case, researchers need to judge coverage and data quality for a specific IFRS disclosure item separately for each individual country.

(2) Compustat Global collects all source documents in English, and, if not available, the local language reports are translated by custom-trained translation software (Systran, Wordfast and Atlas) along with linguists located in Manila, Buenos Aires, and London (according to the Compustat customer support). In contrast, Worldscope employs data analysts who are native speakers or fluent nonnative speakers in 25 major languages and gathers more source documents directly.[24] Thus, there is variation in the source document used (local language report versus English translation), the extent of automatization of the translation process (software versus human), and the expertise of the responsible employees (linguists versus data analysts).

[22]Compustat Global has its own pool of analysts in data centers located in India, Pakistan, and Argentina and runs additional centers for client and translation services in Hong Kong, the Philippines, and the United States. Worldscope collects all data through its own pool of analysts with data centers in India, China, the Philippines, and Poland. Thus, most manual data-collection of IFRS reports is conducted in low-cost locations.

[23]The online appendix of Kalemli-Ozcan *et al.* (2015) provides an exemplary list of BvD's data providers in different countries.

[24]See Thomson Reuters (2018, p. 32).

(3) Each provider works with auto-tagging as a first step to automate the collection. For example, Compustat Global's auto-tagging system searches the database of reported line item descriptions from past reports and matches this information with reported line items in the newly added reports (assuming consistency in reporting). Compustat Global's customer support states that approximately 90% of line items from U.S. reports can be auto-tagged, while line items from international firms' reports can be auto-tagged only in approximately 50% of the cases.[25] This divergence is consistent with our priors about complexities arising from the heterogeneity in the international reporting environment and confirms lower disclosure scriptability of international reports (in the sense of Allee *et al.*, 2018). In a similar fashion, Worldscope has implemented automatic procedures to increase the speed of data collection. While the importance of XBRL-tagged data in the automated data collection is increasingly clear for U.S. firms, it is still unclear to what extent providers already use XBRL-tagged data of international IFRS-adopting firms, primarily because it is not widely used in many jurisdictions (Tarca, 2020).[26]

(4) Once analysts start working on the source document, the scope of their analysis differs. Compustat Global analysts do not cover an entire company but instead focus on specific sections of documents, such as specific tables or line items. One type of data item is homogeneously dealt with by the same analysts, with different analysts coping with the same firm. In contrast, Worldscope follows a "one analyst, one company" approach. A priori, both approaches have their pros and cons, especially the better understanding of firm-specific reporting practices versus the greater familiarity with a specific type of disclosure.

[25]Feedback from Compustat's customer support.

[26]It is also likely that the lacking availability of formats other than PDF documents impedes the processing of data for many IFRS firms. For example, Toppan Merrill Insights (2019) quotes a data provider who "estimated that XBRL processing takes about one or two minutes per filing, versus 20 minutes for an HTML filing and 30 minutes for a good-quality PDF" (for U.S. firms). Thus, the file format matters even for professional providers.

(5) To reduce the number and severity of errors, Compustat has implemented multiple validation checks to avoid, for example, wrongly tagged data, false units, or reversed signs. If an error occurs, the data is revised by a team that did not collect the data. Worldscope has introduced a series of automated data validation checks for new data, such as the checking of balances or the plausibility of magnitudes and correlations but notes that many of its tests are individually adjusted for country (and industry). Thus, country-specific components in the data-cleaning process of providers also contribute to the observed differences across datasets.

4.3 Reporting Choices by IFRS-Adopting Firms

A key reason for different approaches of data providers to standardization is the breadth of reporting choices that IFRS offer to firms and that lead to different firms potentially presenting the same economic transaction differently.

Generally, their principles-based approach makes IFRS rely less on bright-line thresholds than other accounting standards, especially U.S. GAAP. (The differences in the regulation of lease accounting between the former SFAS 13 and IAS 17 are a well-established example.) Principles-based accounting rules generally offer substantial discretion in determining an accounting treatment and implicitly establish more accounting choices than a rules-based approach that relies on, for example, detailed implementation guidance (Schipper, 2003). Both characteristics lead to much less prescriptive rules under IFRS. While current IFRS pronouncements (e.g., in the 2019 Red Book) comprise in total 361,216 words and 46 individual pronouncements, U.S. GAAP (as announced by the FASB) comprise around 1.5 times the number of words (522,727) and 3.6 times the number of individual pronouncements (167).[27]

[27]Since the FASB Accounting Standards Codification in 2009, U.S. GAAP is issued in sections, not in individual pronouncements. To ensure comparability to the IASB pronouncements, the calculation is based on the U.S. GAAP pre-codification Statements of Financial Accounting Standards. Furthermore, the count only considers words that appear directly in the integral part of the pronouncements. (This excludes, among others, Illustrative Examples and Basis for Conclusions.)

Besides being principles-based, IFRS introduce a number of explicit accounting choices. Many of these choices relate to measurement issues and arise from the parallel use of a fair value basis and a cost basis in the accounting for assets (and some liabilities) in many standards.[28] In combination, the room for management judgment and the accounting choices lead to a heterogeneous practice among IFRS-adopting firms for the measurement and disclosure of assets and liabilities. The following subsection provides an overview of research on these different reporting practices.

4.3.1 Measurement Choices

4.3.1.1 The Relevance of Measurement Choices Under IFRS

As described above, databases represent reported IFRS numbers that are standardized and adjusted. In addition to these adjustments, researchers must also understand the accounting choices that are part of a firm's reporting practice and determined by its management before the reporting. Management choices in the measurement of assets and liabilities impact balance sheet and income statement and are shaped by a diverse set of incentives. The more discretion the accounting standards provide management with, the greater is the role of these incentives. IFRS tend to offer a relatively high level of reporting discretion, not least because they lack a consistent measurement basis (Wüstemann and Wüstemann, 2010). Chapter 6 of the IFRS Conceptual Framework introduces different measurement bases, with some of these being hardly compatible with each other. Most importantly, the framework leaves it to the design of individual standards whether a cost basis or a fair value (current value) basis is adopted.

In the absence of an overriding valuation principle, the choice of the measurement basis is part of the political process in standard setting, and the outcome varies substantially across different standards. Different standards are thus requiring different measurement bases. For example, a standard such as IFRS 9 (or formerly IAS 39) is heavily exposed to

[28] Cairns (2006) provides an early overview of the measurement bases used in different standards. Nobes (2015) presents a more recent update which considers the replacement of IAS 39 by IFRS 9.

lobbying by the banking industry, which generally opposes a fair value basis, at least for loans (Hodder and Hopkins, 2014). Contrary to the public perception from the controversial debates around measurement issues of the standard (Laux and Leuz, 2009), IFRS 9 puts relatively little emphasis on the fair value basis for financial instruments as compared to other standards (e.g., a fair value basis is dominant in IAS 41 for certain assets held by agricultural firms).

Even for the fair value basis, IFRS standards rely on very different approaches. A first difference is the frequency of remeasurement. Revaluation models for property, plant, and equipment (IAS 16) and intangible assets (IAS 38) require an infrequent revaluation (up to every five years). Under this approach, current values are only infrequently used to adjust the cost basis and the amortization scheme. In contrast, full fair value models like the one for investment property (IAS 40) or financial instruments (IFRS 9) require a frequent use of current values at each reporting date. A second difference comes from the income effect of fair value changes. These income effects are shown either in profit or loss (e.g., for investment property under the IAS 40 fair value model) or in other comprehensive income (e.g., for assets under the IAS 16 and IAS 38 revaluation model). This accounting treatment can vary within the very same standard and for the very same asset, depending on its intended use. For example, IFRS requires fair value through profit or loss for some financial instruments (e.g., equity securities held for trading) and allows for fair value through other comprehensive income for others (e.g., equity securities not held for trading).

It is essential for the interpretation of accounting performance to understand the valuation basis of assets and liabilities. The coverage of this information in databases varies substantially across different types of assets and liabilities and across industries. In particular, it is helpful to distinguish between (1) financial instruments held by financial institutions and (2) financial and nonfinancial assets held by nonfinancial entities.

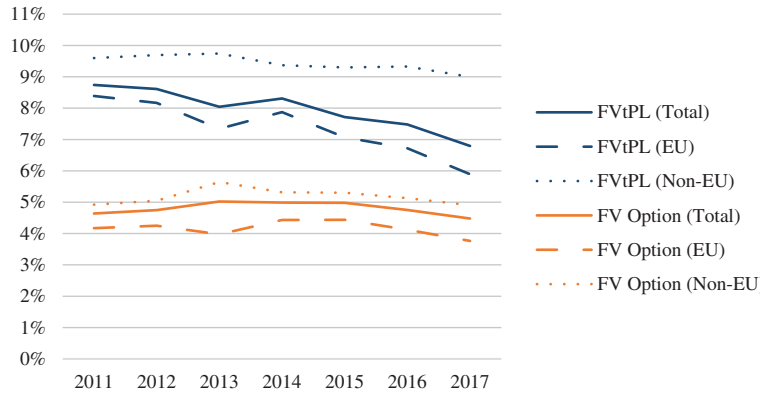
4.3.1.2 Evidence on Financial Instruments Held by Financial Institutions

Evidence on measurement choices by financial institutions comes from the use of the measurement categories under IFRS 9 (and formerly IAS 39). Specialized databases like BvD Bankfocus or S&P Market Intelligence (formerly SNL Financial) typically capture these measurement categories in detail. Therefore, we can rely on relatively broad evidence regarding the measurement of financial instruments by financial institutions. We ignore nonfinancial assets and liabilities in this discussion because they play a negligible role on the average bank balance sheet.

Fiechter and Novotny-Farkas (2017) provide the most comprehensive overview of fair value measurement by global banks in the literature. Based on hand-collected data for 907 bank-years from 46 countries over the period from 2006 through 2009, they find that on average 9.4% (5.9%) of bank assets (liabilities) are measured at fair value through profit or loss. Banks voluntarily elected the IAS 39 fair value option for 3.2% of assets and 2.7% of liabilities; fair value through profit or loss is mandatory for the remaining parts (especially the trading portfolio and other derivatives). In addition, banks measure 7.7% of their assets at fair value through other comprehensive income, amounting to a total fair value ratio of 17.1% for assets (fair value through other comprehensive income is not a feasible measurement basis for financial liabilities). These numbers are largely at par with comparable evidence. For example, Bischof and Daske (2016) report an average fair value ratio of 23.3% for assets (with a median of 14.3%) using a European sample of 320 banks over the period from 2006 through 2010. Here, fair value through profit or loss accounts for 15.3% of assets (4.7% under the fair value option) and fair value through other comprehensive income for 8.0% of assets.

Figure 4.1 and Table 4.2 update this evidence for the post-2010 period until 2017, right before IFRS 9 becomes effective, which would mitigate the comparability of the time-series data. We retrieve the data from BvD Bankfocus for a balanced sample of 1,188 banks from

Panel A. Financial Assets at Fair Value through Profit or Loss



Panel B. Financial Liabilities at Fair Value through Profit or Loss

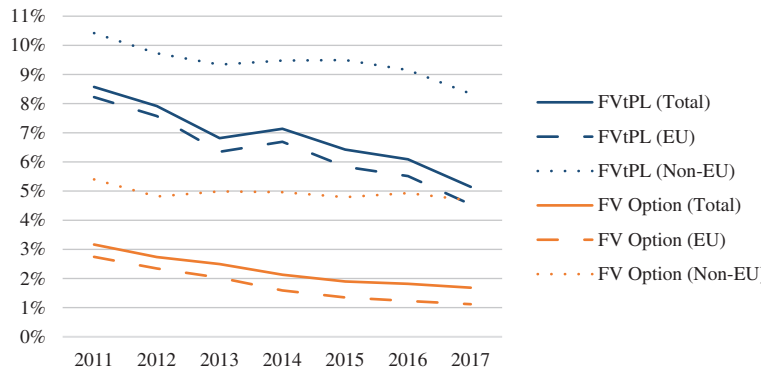


Figure 4.1: Fair value measurement of financial instruments: Evidence from international banks.

Notes: The figure reports the proportion of financial assets (Panel A) and financial liabilities (Panel B) that are measured at fair value through profit or loss under IAS 39 (scaled by total assets). The fair value through profit or loss (*FVtPL*) category includes the trading portfolio, all derivatives not designated for cash flow hedges, and instruments for which the fair value option (*FV Option*) is elected. The sample for Panel A includes 1,188 banks with 8,316 bank-year observations (thereof 5,915 from the EU). The sample for Panel B includes 780 banks with 5,460 bank-year observations (thereof 4,592 from the EU). The sample covers the period from 2011 until 2017 (right before the IFRS 9 adoption). Data is retrieved from BvD Bankfocus (in July 2020).

Table 4.2: The choice of fair value through profit or loss for financial instruments: Evidence from international banks

	Mean	Standard Deviation	P1	P10	P25	P50	P75	P90	P99
Total Sample									
FVtPL Assets	8.0%	12.5%	0.0%	0.0%	0.3%	2.4%	10.7%	22.8%	58.1%
thereof: Level 1	57.4%	37.2%	0.0%	0.4%	18.2%	68.4%	93.3%	98.3%	100.0%
thereof: Level 2	31.5%	34.6%	0.0%	0.0%	1.2%	15.3%	58.7%	92.0%	100.0%
thereof: Level 3	10.4%	21.7%	0.0%	0.0%	0.1%	1.9%	7.1%	34.8%	99.9%
FVtPL Liabilities	6.9%	12.5%	0.0%	0.0%	0.0%	1.2%	7.8%	21.1%	59.3%
thereof: Level 1	9.2%	22.1%	0.0%	0.0%	0.0%	0.0%	4.0%	31.4%	100.0%
thereof: Level 2	83.5%	30.1%	0.0%	23.7%	84.5%	100.0%	100.0%	100.0%	100.0%
thereof: Level 3	6.8%	21.2%	0.0%	0.0%	0.0%	0.0%	0.7%	12.0%	100.0%
EU-Sample									
FVtPL Assets	7.4%	13.0%	0.0%	0.0%	0.1%	1.2%	8.6%	23.4%	56.1%
thereof: Level 1	65.9%	34.7%	0.0%	6.1%	36.9%	82.6%	95.2%	98.4%	100.0%
thereof: Level 2	25.1%	31.3%	0.0%	0.0%	0.8%	8.5%	43.1%	81.2%	100.0%
thereof: Level 3	7.8%	17.7%	0.0%	0.0%	0.3%	1.9%	5.2%	16.9%	93.8%
FVtPL Liabilities	6.4%	12.1%	0.0%	0.0%	0.0%	0.6%	6.6%	21.2%	55.7%
thereof: Level 1	9.1%	21.6%	0.0%	0.0%	0.0%	0.0%	4.8%	31.2%	100.0%
thereof: Level 2	84.7%	28.1%	0.0%	37.3%	85.0%	100.0%	100.0%	100.0%	100.0%
thereof: Level 3	6.2%	19.7%	0.0%	0.0%	0.0%	0.0%	0.8%	11.3%	100.0%

Continued.

Table 4.2: Continued

	Mean	Standard Deviation	P1	P10	P25	P50	P75	P90	P99
Non-EU Sample									
FVtPL Assets	9.4%	11.2%	0.1%	0.7%	1.9%	5.9%	13.0%	20.8%	61.7%
thereof: Level 1	43.1%	36.8%	0.0%	0.0%	4.9%	39.4%	78.6%	97.3%	100.0%
thereof: Level 2	42.0%	37.3%	0.0%	0.0%	4.4%	33.6%	79.4%	99.2%	100.0%
thereof: Level 3	14.9%	26.5%	0.0%	0.0%	0.0%	1.4%	15.3%	60.1%	100.0%
FVtPL Liabilities	9.4%	14.2%	0.1%	0.7%	1.7%	4.7%	10.6%	20.6%	81.8%
thereof: Level 1	9.4%	23.2%	0.0%	0.0%	0.0%	0.0%	3.2%	31.9%	100.0%
thereof: Level 2	81.3%	33.4%	0.0%	6.2%	82.3%	100.0%	100.0%	100.0%	100.0%
thereof: Level 3	7.8%	23.6%	0.0%	0.0%	0.0%	0.0%	0.3%	15.6%	100.0%

Notes: The table reports statistics for the proportion of assets (*FTtPL Assets*) and liabilities (*FVtPL Liabilities*) that are measured at fair value through profit or loss under IAS 39 (scaled by total assets). The fair value through profit or loss category includes the trading portfolio, all derivatives not designated for cash flow hedges, and instruments for which the fair value option is elected. The table also reports the fraction of total fair value assets (and fair value liabilities) for which the fair value is measured at Level 1, Level 2, and Level 3 of the IFRS 13 fair value hierarchy. The sample includes 8,316 bank-year observations (thereof 5,915 from the EU) for assets and 5,460 bank-year observations (thereof 4,592 from the EU) for liabilities and covers the period from 2011 until 2017 (right before the IFRS 9 adoption). Data is retrieved from BvD Bankfocus (in July 2020).

36 countries (i.e., 8,316 bank-year observations) for the asset data and 780 banks (i.e., 5,460 bank-year observations) for the liability data. On average, our sample banks use fair value through profit or loss for 8.0% of assets and 6.9% of liabilities. The use of fair value through profit or loss is slightly more widespread outside the European Union (9.4% versus 7.4% for assets and 9.4% versus 6.4% for liabilities). The sample average is lower than the evidence from the pre-2010 period suggests. This is consistent with the time trend that Figure 4.1 displays. The graphs report average fair value ratios per year for the same sample that we use in Table 4.2. Following the discussions around the financial crisis, the use of fair value through profit or loss is on a clear decline in IFRS reporting practice for both financial assets (Panel A) and liabilities (Panel B) and both inside and outside the European Union.

However, Panel A suggests that the downward trend for financial assets is driven by portfolio composition and thus mandatory fair value measurement rather than banks' voluntary choice. Especially after the financial crisis, many banks started to reduce their trading activities for which IAS 39 mandated fair value through profit or loss. In contrast, the use of the fair value option for financial assets remains relatively stable over time, which is consistent with continuing demand for fair value information by investors. Panel B shows a different pattern for financial liabilities. The downward trend in fair value measurement is supported by financial institutions using the fair value option much less frequently for financial liabilities. It is harder to come up with a demand-side explanation for this trend because prior evidence points to investors perceiving the own credit risk effect from liability fair values reported under IAS 39 as useful information (Fontes *et al.*, 2018; Schneider and Tran, 2015). At least compared to assets, it appears more costly to explain the potentially counterintuitive results in footnotes and conference calls (Bischof *et al.*, 2014; Gaynor *et al.*, 2011). This phenomenon needs explanation, and the revised IFRS 9 rules under which the own credit risk effect is separated and transferred to other comprehensive income offer a potentially interesting setting to explore this question.

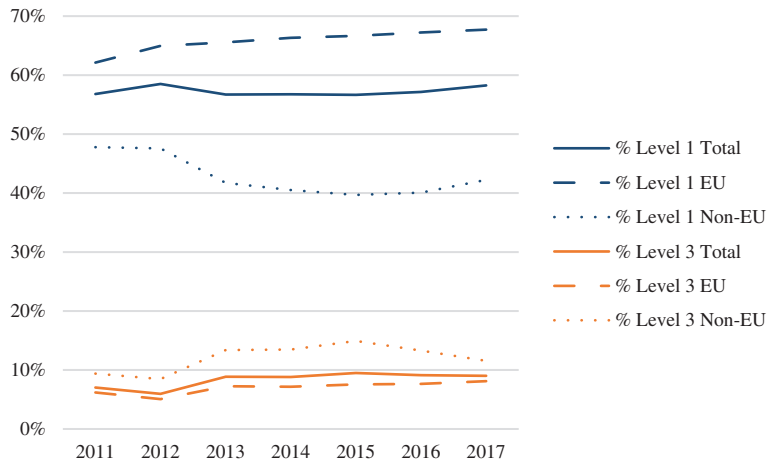
It is also insightful to look at the distribution of fair value ratios. Table 4.2 reveals that the distribution is highly skewed. A few banks

use fair value through profit or loss for a relatively large proportion of their portfolio (22.8% at the 90th percentile and 58.1% at the 99th percentile). However, the fair value ratio is almost negligible for many more banks (2.4% at the median, 0.3% at the 25th percentile, and 0.0% at the 10th percentile). The distribution is similar for financial liabilities. The skewness in the distribution points to a few banks with specific business models driving the average of the fair value ratio upwards. For most banks, fair value through profit or loss does not really play a meaningful role. Some cross-country patterns that are mainly shaped by a fair value tradition in local GAAP (e.g., in Denmark; Bernard *et al.*, 1995) also play a role and are visible in the Fiechter and Novotny-Farkas (2017) data.

In addition to the magnitude of fair value measurement on the balance sheets of financial institutions, Table 4.2 and Figure 4.2 provide evidence on the type of fair values, that is, the fair value levels under the IFRS 13 fair value hierarchy. Level 1 fair values (i.e., mark-to-market accounting) are prevalent for financial assets with an average proportion of 57.4% (65.9% inside the European Union and 43.1% elsewhere). McDonough *et al.* (2020) report a similar ratio of almost 50% for a small hand-collected sample of 36 IFRS-adopting banks. The high proportion should not be misinterpreted. In fact, many small banks with small trading portfolios of highly liquid securities strongly influence the sample average. The Level 1 ratio is thus negatively correlated with bank size and the magnitude of the fair value portfolio. McDonough *et al.* (2020) make a similar observation and note that this is a systematic difference to U.S. banks, where the average proportion of Level 1 fair values is much lower (less than 10%) and positively correlated with bank size. For large IFRS-adopting institutions with many complex securities in the trading books, mark-to-model accounting (i.e., in Levels 2 and 3) thus continues to play a larger role than the sample average might suggest.

At the other end of the hierarchy, mark-to-model fair values at Level 3 are relatively rare with an average proportion of 10.4% (7.75% in the European Union and 14.9% elsewhere). Again, the distribution is highly skewed, with the median firm using Level 3 fair values for 1.9% of its fair value assets only. For financial liabilities, the use of Level 3 fair

Panel A. Level 1 and Level 3 Fair Values of Financial Assets



Panel B. Level 1 and Level 3 Fair Values of Financial Liabilities

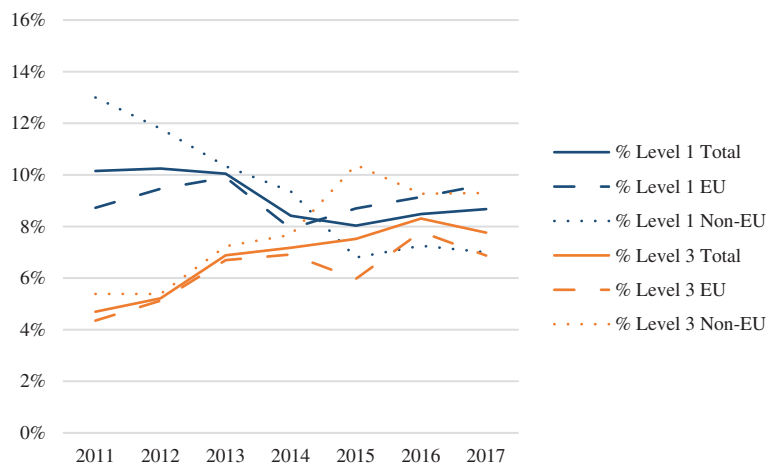


Figure 4.2: Fair value levels: Evidence from international banks.

Notes: The figure reports the proportion of financial assets (Panel A) and financial liabilities (Panel B) that are measured at Level 1 and Level 3 fair values (scaled by total fair value assets and total fair value liabilities, respectively). The sample for Panel A includes 1,152 banks with 8,064 bank-year observations (thereof 5,040 from the EU). The sample for Panel B includes 738 banks with 5,166 bank-year observations (thereof 3,381 from the EU). The sample covers the period from 2011 until 2017 (right before the IFRS 9 adoption). Data is retrieved from BvD Bankfocus (in July 2020).

values is even less frequent. The distribution shows that more than half of our sample banks do not even use them at all (both in the European Union and elsewhere). At the 75th percentile, the average proportion of Level 3 fair values for financial liabilities is as low as 0.7%. Therefore, in summary, it is a misconception that fair value accounting and internal fair value estimates dominate banks' balance sheets (Laux and Leuz, 2010).

4.3.1.3 Evidence on Assets and Liabilities Held by Nonfinancial Entities

Empirical evidence on the choice of the measurement basis is less readily available for the nonfinancial industry. Standard databases such as Compustat Global do not cover the use of valuation options for assets and liabilities (McDonough *et al.*, 2020), including financial instruments (Gebhardt, 2012). Therefore, we have to rely on hand-collected evidence that is naturally coming from diverse samples and settings. Table 4.3 provides an overview of several studies that examine measurement choices by nonfinancial firms. Five standards are most frequently studied: IAS 16 (Property, Plant, and Equipment), IAS 38 (Intangible Assets), IAS 39 (Financial Instruments), IAS 40 (Investment Property), and IAS 41 (Agriculture).

Even though the evidence comes from different periods and different regions (see Table 4.3 for details), the picture is relatively consistent. Fair value is the dominant valuation basis for agricultural products under IAS 41 (Cairns *et al.*, 2011; Huffman, 2018). The dominance of fair value measurement comes from consumable biological assets for which amortized cost measurement is very rare,[29] whereas cost basis remains important for bearer biological assets.[30] The difference between consumable and bearer biological assets is consistent with the greater

[29]Strictly speaking, IAS 41 does not introduce a fair value option but requires fair value measurement for consumable biological assets unless their fair value cannot be reliably estimated.

[30]Consumable biological assets are cultivated for sale (e.g., crops) and can thus be characterized as commodities. Bearer biological assets are self-regenerating and thus continuously contribute to the production of agricultural output (e.g., trees in a plantation); see Huffman (2018) for details. Since 2014, bearer biological assets are accounted for like property, plant, and equipment in the scope of IAS 16 once their growth period is completed.

Table 4.3: The use of the fair value option: A literature review

Study	% Firms Using Option	% Assets Measured at FVtPL	Sample Size (# Firms)	Sample Industry	Sample Period	Sample Origin
IAS 16 (Property, Plant, and Equipment)						
Cairns *et al.* (2011)	2.5%	N/A	447	All	2004–2006	Australia, UK
Christensen and Nikolaev (2013)	3.3%	N/A	1,508	All	2005–2006	Germany, UK
Kvaal and Nobes (2010)	8.2%	N/A	207	All	2005–2006	Australia, France, Germany, Spain, UK
Kvaal and Nobes (2012)	7.1%	N/A	212	All	2008–2009	Australia, France, Germany, Spain, UK
IAS 38 (Intangible Assets)						
Cairns *et al.* (2011)	0.0%	N/A	195	All	2004–2006	Australia, UK
Christensen and Nikolaev (2013)	0.0%	N/A	1,397	All	2005–2006	Germany, UK

Continued.

Table 4.3: Continued

Study	% Firms Using Option	% Assets Measured at FVtPL	Sample Size (# Firms)	Sample Industry	Sample Period	Sample Origin
IAS 39 (Financial Instruments)						
Gebhardt (2012)	12.3%	3.6%	154	Non-Financial	2009–2010	Europe
Kvaal and Nobes (2010)	18.1%	N/A	155	Non-Financial	2005–2006	Australia, France, Germany, Spain, UK
Kvaal and Nobes (2012)	19.3%	N/A	161	Non-Financial	2008–2009	Australia, France, Germany, Spain, UK
IAS 40 (Investment Property)						
Cairns *et al.* (2011)	82.9%	N/A	41	All	2004–2006	Australia, UK
Christensen and Nikolaev (2013)	47.3%	N/A	275	All	2005–2006	Germany, UK
Israeli (2015)	67.4%	N/A	86	Real Estate	2005–2010	France, Germany, Italy, Spain

Continued.

Table 4.3: Continued

Study	% Firms Using Option	% Assets Measured at FVtPL	Sample Size (# Firms)	Sample Industry	Sample Period	Sample Origin
Kvaal and Nobes (2010)	33.0%	N/A	88	All	2005–2006	Australia, France, Germany, Spain, UK
Kvaal and Nobes (2012)	34.4%	N/A	93	All	2008–2009	Australia, France, Germany, Spain, UK
Müller *et al.* (2015)	85.3%	80.0%	245	Real Estate	2003–2012	Europe
Quagli and Avallone (2010)	52.6%	N/A	76	Real Estate	2005–2007	Europe
IAS 41 (Agriculture)						
Cairns *et al.* (2011)	82.4%	N/A	17	All	2004–2006	Australia, UK
Huffman (2018)	72.1%	N/A	183	All	2003–2014	Global (35 countries)

Notes: The table summarizes evidence from prior accounting literature on the use of a fair value option by non-financial firms or for non-financial assets. The fair value option includes the revaluation model under IAS 16 and IAS 38 as well as the fair value model under IAS 39, IAS 40, and IAS 41. *% Firms using FV Option* reports the proportion of sample firms which elect the fair value option. *% Assets Measured at FVtPL* reports the average proportion of assets that are measured at fair value through profit or loss by the sample firms. The table also reports sample details for each study.

availability of fair values for commodities (i.e., consumable assets), for which external markets typically exist, as compared to the availability of fair values for in-use production equipment (i.e., bearer assets), which are rarely traded.

The fair value basis is also an option for most investment property under IAS 40. Unlike IAS 41, IAS 40 offers an explicit accounting option, which is the choice between the fair value model and the cost model. The IAS 40 evidence thus reflects the outcome of an actual management choice. The preference for the fair value model that likely reflects investor demand is particularly strong if a company is specialized in real estate business (e.g., Quagli and Avallone, 2010). The cost model tends to be more prevalent in more diverse samples (see Table 4.3) that include less specialized firms where investment property is just one part of the business model, potentially even a minor one (e.g., Christensen and Nikolaev, 2013).

Across different business models, the use of the fair value model for investment property is substantially more common than the choice of the revaluation model for property, plant, and equipment (in the scope of IAS 16) and, even more so, intangible assets (in the scope of IAS 38). The evidence is very consistent and shows that there is a very small fraction of firms (less than 10% of the sample population) that chooses the revaluation model for at least one class of property, plant, and equipment and hardly any firm at all that chooses the model for intangible assets (0 out of 1,397 sample firms from Germany and the United Kingdom according to Christensen and Nikolaev, 2013). These firms' choices indicate the existence of a market equilibrium in which a fair value basis for these highly illiquid nonfinancial assets appears to be prohibitively costly (relative to a cost basis).

Finally, nonfinancial firms invest in financial instruments, and their choice of the IAS 39 and IFRS 9 fair value options is fully equivalent to financial institutions (Gebhardt, 2012). The proportion of firms voluntarily electing the fair value basis varies between 12.3% in a larger European sample (Gebhardt, 2012) and 19.3% in a smaller global sample (Kvaal and Nobes, 2012). These rates suggest that demand for fair value information is not confined to the specific business model of financial institutions.

4.3.1.4 Key Determinants of Measurement Choices

Heterogeneity in the reporting practices under IFRS has two dimensions. The evidence suggests that the choice of the measurement basis varies across different firms (even if holding the business model and the asset portfolios constant) and across different asset classes (within the same firm). Both asset and firm characteristics thus help explain valuation choices.

The evidence on asset characteristics is relatively clear. The net benefit of choosing the fair value basis varies with the availability of fair value estimates. Fair value estimates are readily available for assets that can be traded on active markets. Costs of estimating fair values increase if no such sales markets exist (e.g., Barker and Schulte, 2017; Müller *et al.*, 2015). If observable market prices do not even exist for similar assets, management has to set up potentially complex valuation models, often with support from external consultants and greater diligence in the external audit (Goncharov *et al.*, 2014). The higher costs of obtaining the fair value estimates tend to be correlated with lower reliability, because managerial discretion becomes greater if market evidence cannot be used to support and verify the internal estimates (Christensen and Nikolaev, 2013). Even if market prices exist, they fail to provide reliable evidence for the asset's value if the asset primarily generates value through internal use and its illiquidity stems from a management decision. Investors do not perceive a sales price as useful information about these kind of "in-use assets" (Huffman, 2018). Therefore, the less frequent use of the fair value basis for illiquid assets is also attributable to the lower demand for this kind of information.

The evidence on firm characteristics is more nuanced and varies across countries. One important factor, which often explains the measurement choice, is the pre-IFRS reporting practice under local GAAP (e.g., Kvaal and Nobes, 2010; Stadler and Nobes, 2014). For example, firms from the United Kingdom, which had a similar option under UK GAAP before, use the revaluation option for property, plant, and equipment under IAS 16 more often than German firms, which were confined to the cost model under local German GAAP (Christensen and Nikolaev, 2013). Similarly, almost all real estate firms from the

United Kingdom continued to use the fair value model under IAS 40, which they were required to use under UK GAAP before (Danbolt and Rees, 2008). In contrast, there is substantial within-country variation among German real estate firms, which were all used to applying the cost model under local German GAAP (Müller *et al.*, 2015). Therefore, pre-IFRS differences in reporting practice across countries tend to persist in the IFRS period and even more so where IFRS permit different accounting options. This observation points to strong incentives for firms to avoid switching costs from changing their accounting methods. These switching costs tend to be lower when a firm is using fair values for internal performance measures.

Apart from this, individual measurement choices, such as the use of a fair value option, are often associated with a firm's commitment to transparency (e.g., Müller *et al.*, 2015). Firms that benefit more from transparency are more likely to commit to more costly measurement on a timely fair value basis. A firm's commitment to transparency originates from a host of factors, such as capital structure, exposure to capital market pressures, intensity of internal monitoring through effective corporate governance, institutional characteristics, and strength of local market supervision. These factors are rarely IFRS-specific and closely related to the reporting incentives that shape the overall transparency of firms (e.g., Burgstahler *et al.*, 2006; Bushman and Piotroski, 2006).

4.3.2 Disclosure Choices

Presentation and disclosure requirements complement the regulation of accounting measurement in many IFRS standards. Compared to measurement, there is a lower degree of explicit reporting choices for the footnote disclosures. Most of these disclosure choices are implicit and result from the lack of standardization for the design of IFRS reports. IFRS generally avoid the prescription of specific templates.[31] Therefore, decisions about reporting design, such as the choice between

[31]Sometimes, stock exchanges or local supervisors responsible for IFRS enforcement require the use of specific reporting templates for the filings of IFRS reports. Banking supervisors in Italy (Banca d'Italia) or Spain (Banco de España) are prominent examples. IFRS disclosure practice tends to be substantially more uniform in those settings (Bischof, 2009).

a table format and a verbal presentation, are at the discretion of management. The discretion extends to the presentation format of the primary financial statements. IAS 1 provides minimal requirements and examples for the presentation of balance sheet ("statement of financial position"), income statement ("statement of profit or loss and other comprehensive income"), and statement of changes in equity. It is ultimately a management decision how to exactly organize and label the line items on these statements.[32] Therefore, very substantial variation in the structure and design of IFRS reports is a key feature of IFRS practice (see also Subsection 4.1.3.)

The key feature of IFRS disclosures that received most attention in the literature is firms' compliance with mandatory disclosure checklists. Early evidence, which primarily comes from voluntary IFRS adopters, documents substantial noncompliance with these requirements. Underdeveloped enforcement regimes and a lack of market experience offer plausible explanations (e.g., Glaum and Street, 2003; Street and Bryant, 2000; Street and Gray, 2002; Street *et al.*, 1999). The evidence also indicates that disclosure compliance is generally lower than compliance with measurement rules (Cascino and Gassen, 2015; Street and Gray, 2002). However, note that measurement error in the estimation of measurement compliance is very substantial because the compliance of the underlying valuation process is essentially unobservable without internal information about the exact asset characteristics.

More recent evidence shows similar findings for mandatory IFRS adopters. For example, Verriest *et al.* (2013) analyze the first-time mandatory IFRS adoption of 223 European firms in financial year 2005. Their results reveal that more than half of these firms fail to fully comply with all 15 mandatory items in their disclosure score. Cascino and Gassen (2015) examine the compliance with IFRS disclosures in 2006 for a sample of mandatory IFRS adopters from Germany and Italy.

[32] IFRS 7 disclosures for financial instruments provide an example. IFRS 7 requires the disclosure of financial instruments by the different measurement categories. Some firms, especially banks, comply with this requirement by organizing the balance sheet around the measurement categories. Other firms organize the balance sheet by the type of financial instruments (e.g., loans, securities, shares) and present their use of the measurement categories in an accompanying footnote (Bischof, 2009).

The rates vary between 32.6% for IAS 36 disclosures on impairments and 87.7% for IAS 38 disclosures on intangible assets. In a more specific analysis of IFRS 3 and IAS 36 disclosures, Glaum *et al.* (2013) determine a 72.8% compliance rate for a sample of 357 European firms, varying between 56.9% (in Spain) and 84.9% (in Switzerland). For a developing country, Bova and Pereira (2012) report a comprehensive compliance score based on annual report ratings of 71.1% for publicly listed firms in Kenya (and 58.3% for privately held firms). Again, there are firm and country-level factors that help explain the variation in the compliance with disclosure rules. These factors resemble the reporting incentives, which also shape measurement choices. Moreover, we caution that these compliance rates typically represent a lower bound of firms' "true" compliance as many studies do not control for lacking materiality that may explain missing disclosures (see Subsection 4.1.3).

4.4 Digital Reporting Using Tagged Reports

A computer-based and automated recognition of individual financial statement items and notes disclosures could overcome many of the issues in the international reporting environment discussed above. The idea of improving the accessibility, accuracy, and speed of data transmission through the tagging of financial statements such that users can access a "barcode for financial reporting" is fairly old (e.g., Ramin and Prather, 2003). Yet, after two decades of related work, this idea has only been implemented imperfectly so far, even in the United States, but much more so internationally in the jurisdictions where IFRS are applied. (See Tarca, 2020 for a recent discussion of the status quo.)

4.4.1 Tagging IFRS Reports

Users can process reporting information automatically if firms provide XBRL-based reporting formats (in eXtensible Business Reporting Language), rather than paper-based financial reports in unstructured PDF documents. In short, XBRL is an open, XML-based language designed to improve the disclosure of financial information by making financial

data standardized, tagged, and machine-readable.[33] XBRL is increasingly required for different types of corporate filings around the world, including filings with prudential regulators, tax authorities, and corporate registers.[34] In their attempts to improve the supply chain for global business information, XBRL and IFRS share very similar goals. While IFRS define common rules to prepare financial reporting information at the beginning of this chain, XBRL defines common accessibility of this reporting information for users at a later point. In fact, powerful synergies have long been expected.[35]

XBRL reporting can only be implemented by the use of taxonomies that provide clear definitions of financial reporting items and a concise structure how items relate to each other (similar to how data providers use their own definition of items when mapping reporting data into their templates). More technically, taxonomies provide specific "tags" that refer to individual items of accounting data (called elements), their attributes and interrelationships (XBRL International, 2020a).[36] These taxonomies are generally created by regulators, who provide definitions of information they require firms to disclose.[37] In addition,

[33]XBRL developed by XBRL International has evolved as the international standard for digital business reporting. XBRL International (2020a) defines XBRL as "a language in which reporting terms can be authoritatively defined. Those terms can then be used to uniquely represent the contents of financial statements or other kinds of compliance, performance and business reports. XBRL lets reporting information move between organisations rapidly, accurately and digitally". Inline XBRL (iXBRL) is a form of XBRL that allows creating a document that is human readable and also shows the tagging embedded in the financial statements.

[34]XBRL International (2020b) provides a list of countries that make XBRL filings available online. Cohn (2017) claims that "(g)lobally, more than 100 countries have some form of XBRL reporting, be it voluntary or mandatory".

[35]Regulators and academics clearly expected that common global accounting standards would enhance the benefits of XBRL. See then-SEC Chair Cox (2008) and, in academia, Bonsón *et al.* (2009) for early contributions.

[36]Thus, a taxonomy serves as a dictionary containing financial reporting elements and concepts. It further hierarchically groups the elements and defines the relationships between elements.

[37]Examples of regulators (and the taxonomies they require firms to use) include the European Banking Authority (COREP and FINREP taxonomies), the European Insurance and Occupational Pensions Authority (Solvency II taxonomy), the Global Reporting Initiative (GRI Taxonomy), or the Carbon Disclosure Project and Climate Disclosure Standards Board (Climate Change Reporting Taxonomy).

the frameworks allow preparers to customize the data retrieval by choosing different formats or adding firm-specific tags.

The IFRS Foundation has been developing and updating the IFRS Taxonomy for more than 15 years with the aim to facilitate efficient dissemination, accessing, and processing of marked-up IFRS reports. The IFRS Taxonomy "reflects the presentation and disclosure requirements of IFRS Standards and includes elements from the accompanying materials to the IFRS Standards, such as implementation guidance and illustrative examples. In addition, it contains elements for disclosures not specifically required by IFRS Standards but commonly reported in practice" (see IFRS Foundation, 2020e). As a consequence, the taxonomy has the potential to unduly legitimize common reporting practices and to act as an "opposing force" against the principles-based nature of IFRS by forcing information into common formats that are machine-readable (Rowbottom *et al.*, 2021).

The IFRS Taxonomy consists of around 5,000 unique elements as of 2020,[38] which is less than one-third of the U.S. GAAP taxonomy with more than 15,000 elements.[39] On the one hand, these 5,000 elements include elements that are not required by IFRS standards but are only observed in IFRS reporting practice. Thus, the number of elements even exceeds the scope of mandated IFRS disclosures. The number of elements of the IFRS or U.S. GAAP taxonomy is also much higher than the number of items in the templates of traditional data providers (which usually cover about 1,000 items). On the other hand, Bonsón *et al.* (2009) report that many items which they found in PDF-based IFRS reports were missing in the then-IFRS taxonomy.

Tagged references of elements to individual IFRS standards (called labels) in the IFRS taxonomy allow us to provide an overview of the magnitude of specific disclosure requirements. Table 4.4 and Figure 4.3 list the number of unique labels for each IFRS pronouncement as a proxy for the scope of their disclosure requirements (i.e., the maximum number of unique elements, if applicable to the firm, before firms apply additional

[38]We calculate the number of elements (which have a label) in the IFRS Taxonomy package for 2020 (see IFRS Foundation, 2020e).

[39]We calculate the number of elements (which have a label) in the U.S. GAAP Taxonomy package for 2020 (see XBRL US, 2020).

Table 4.4: Unique taxonomy labels per IFRS pronouncement

Pronouncement (IAS)	# Terms	% Terms	Pronouncement (IFRS and IFRIC)	# Terms	% Terms
IAS (Total)	**2,383**	**49.1%**	**IFRS (Total)**	**2,458**	**50.6%**
IAS 01	1,065	21.9%	IFRS 01	48	1.0%
IAS 02	31	0.6%	IFRS 02	87	1.8%
IAS 07	233	4.8%	IFRS 03	141	2.9%
IAS 08	47	1.0%	IFRS 04	202	4.2%
IAS 10	26	0.5%	IFRS 05	42	0.9%
IAS 12	89	1.8%	IFRS 06	12	0.2%
IAS 16	97	2.0%	IFRS 07	708	14.6%
IAS 19	155	3.2%	IFRS 08	60	1.2%
IAS 20	8	0.2%	IFRS 09	103	2.1%
IAS 21	14	0.3%	IFRS 10	4	0.1%
IAS 23	3	0.1%	IFRS 11	8	0.2%
IAS 24	64	1.3%	IFRS 12	187	3.9%
IAS 26	29	0.6%	IFRS 13	299	6.2%
IAS 27	53	1.1%	IFRS 14	100	2.1%
IAS 29	7	0.1%	IFRS 15	109	2.2%
IAS 32	3	0.1%	IFRS 16	81	1.7%
IAS 33	28	0.6%	IFRS 17	267	5.5%
IAS 34	16	0.3%	**IFRIC (Total)**	**15**	**0.3%**
IAS 36	69	1.4%	IFRIC 02	3	0.1%
IAS 37	81	1.7%	IFRIC 05	3	0.1%
IAS 38	118	2.4%	IFRIC 14	1	0.0%
IAS 39	12	0.2%	IFRIC 17	7	0.1%
IAS 40	56	1.2%	IFRIC 19	1	0.0%
IAS 41	79	1.6%			

Notes: This table shows the number of unique IFRS taxonomy labels per IFRS Pronouncement. For better depiction, the table is split into IAS pronouncements (left side) and IFRS and IFRIC pronouncements (right side). The total numbers are shown in columns two and five. Relative numbers are shown in columns three and six. Data is retrieved from the 2020 IFRS Taxonomy package (IFRS Foundation, 2020e).

customized tags). First, by far the most disclosure requirements relate to IAS 1 and the general presentation of financial statements. Second, the other most frequently used standards are IFRS 7, 13, and 17, all of which relate to disclosures around fair value accounting, risk disclosures, and the financial industry, which again illustrates the impact of these topics on IFRS reporting. Third, 54.5 labels for individual disclosure

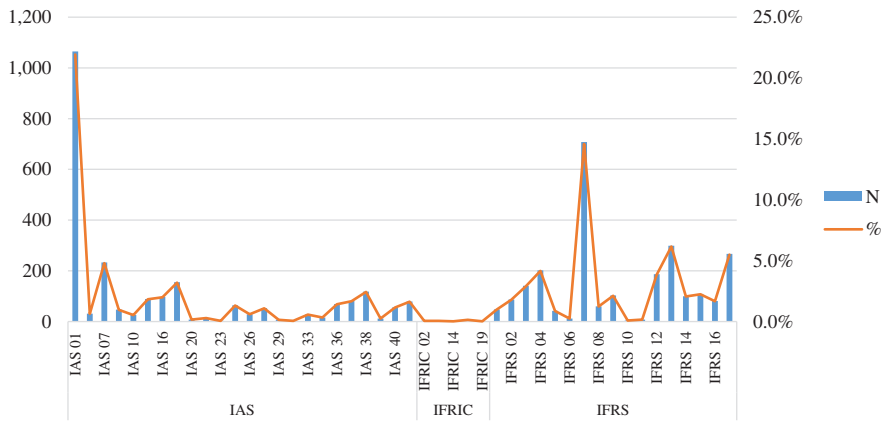


Figure 4.3: Unique taxonomy labels per IFRS pronouncement.

Notes: This figure shows the number of unique IFRS taxonomy labels per IFRS Pronouncement. The bar chart corresponds to the left axis and shows absolute number of terms per pronouncement. The line chart corresponds to the right axis and shows the percentage distribution. Data is retrieved from the 2020 IFRS Taxonomy package (IFRS Foundation, 2020e).

items are available for the median IFRS pronouncement. Going forward, we expect that these labels will allow researchers to specifically target all disclosures items that relate to an individual (new) IFRS standard, that is, access information that has not been as precisely linked to the underlying standard in a firm's PDF-based IFRS report.

In addition, local regulators often require the application of their own taxonomies that extend the IFRS taxonomy. For example, the European Securities and Markets Authority's (ESMA) electronic reporting format requires the use of its "ESEF XBRL Taxonomy files" that extend the IFRS taxonomy by around 200 additional elements.[40] At the same time, regulators allow firms to create their own company-specific "extension tags", if specific elements capturing an idiosyncratic business model or economic situation are missing in the taxonomy. While such extensions are consistent with principles-based reporting and reduce the cost of XBRL implementation by using existing financial reporting systems,

[40] We calculate this number based on the 2019 XML file; see ESMA (2020). Note that the package includes taxonomies in all 24 official EU languages.

these extension tags hinder comparability and standardization of XBRL reporting under IFRS.

Overall, we observe three different types of tags in the practice of using XBRL for IFRS reporting: tags that capture IFRS reporting requirements, tags that capture firm-specific disclosures, and tags that are additional mandates of local regulators. While the scope of the authoritative IFRS taxonomy is noticeably smaller than under U.S. GAAP, firm-specific reporting practices arising from the diversity of institutions and businesses worldwide play a more important role internationally.

4.4.2 XBRL Usage and Reporting Practices

The mandate for the usage of XBRL and the IFRS taxonomy is set by securities regulators rather than the IASB. Internationally, firms often have a choice regarding the filing of their IFRS reports (paper, PDF, HTML, XBRL or iXBRL).[41] In contrast, the SEC has started to require the tagging of financial reports in 2009, first in a voluntary and later in a mandatory program for all U.S. registrants. Foreign private issuers that file IFRS reports are mandated to apply the IFRS Taxonomy when tagging their reports and providing an XBRL file via EDGAR. Evidence on reporting practices under XBRL are therefore mainly based on U.S. experience. (See Hoitash *et al.*, 2021 for a review.)[42]

Research has documented two types of issues with the XBRL reporting practice: complications with the tagging of the reports and the use of extensions. Both issues appear at a significant scale even in the United States and are likely aggravated by the fact that XBRL filings are neither audited nor subject to enforcement by the SEC (e.g.,

[41]The "regulatory filing profiles" available for some but not all jurisdictions of the IASB's jurisdictional profiles provide detailed information on jurisdictions' digital reporting requirements (IFRS Foundation, 2020i). Core categories include the general electronic filing requirements, structured formats to be used, the extent of the IFRS taxonomy adopted, and the usage of XBRL by other regulatory bodies in the jurisdiction.

[42]Hoitash *et al.* (2021) conclude that international evidence is missing because "requirements for electronic reporting using XBRL tagging are not widespread in jurisdictions where entities use IFRS Standards". Most evidence from outside the United States is based on Belgium, which has already mandated XBRL for general business reporting; see Kaya and Pronobis (2016) and Liu *et al.* (2017).

Plumlee and Plumlee, 2008).[43] To illustrate the first issue, systematic errors in the tagging of reports that have been documented include (1) missing tags, that is, a firm not assigning a tag to an appropriate section and users assuming that the information is missing; (2) wrong tags, that is, firms assigning tags incorrectly or inconsistently; and (3) errors in the relationships implied by the taxonomy. For example, Debreceny *et al.* (2010) categorize different types of tagging errors and found that one-quarter of the filings had errors such that reported monetary values did not add up as they were supposed to, according to the taxonomy. (4) While being implemented in the XBRL taxonomies, the tagging of text blocks is typically not required and thus often not employed by firms. In these cases, the detection of information that belongs to a specific section of the footnotes and finding individual sections of elements in a footnote that are interrelated can be more difficult than under HTML/XML; see Allee *et al.* (2018).

In general, the tags tend to produce complex information, which is costlier to absorb than information from standard databases, at least for the average user. The IFRS taxonomy uses highly technical and complex terms that are relatively difficult to comprehend. To illustrate this point, we conduct a simple n-gram analysis of the accounting terms used by the IFRS Taxonomy 2020 and compare them to the terms used by the data providers Compustat and Worldscope (see Figure 4.4).[44] This evidence shows that data providers use much shorter terms (bigrams to five-grams) to describe the same accounting information than the IFRS Taxonomy (which consists of a significant percentage of over six-grams). These complexities are likely to create additional entry barriers at least for less sophisticated users. Consistent with this

[43]In response to the regulatory setup and issues described, the "EDGAR Dashboard" has emerged as a market-based solution in the United States. The data provider analyzes XBRL filings in EDGAR and rates the quality of firms' XBRL data over a variety of dimensions, such as the frequency of errors, the number of warnings associated with various XBRL rules, and the percentage of customized tags (https://edgardashboard.xbrlcloud.com/edgar-dashboard/). See Allee *et al.* (2018) for an application of this setting in research.

[44]We use the IFRS Taxonomy 2020 file available at IFRS Foundation (2020e), and, in the case of Worldscope (Compustat), we copy the terms directly from the Eikon (WRDS) user interfaces.

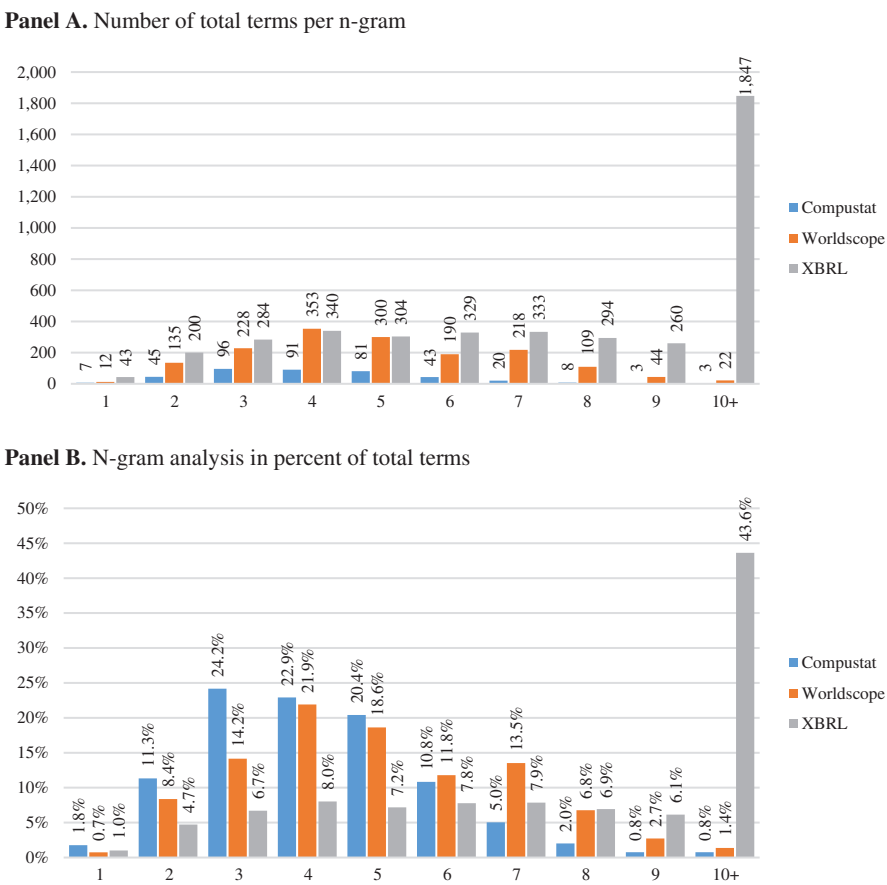


Figure 4.4: N-gram analysis of accounting terms in Compustat, Worldscope, and XBRL.

Notes: This figure reports the total number of terms (Panel A) and the relative number of terms (Panel B) per n-gram for Compustat, Worldscope, and XBRL. Data is retrieved from the 2020 IFRS Taxonomy package (IFRS Foundation, 2020e), and from the Eikon (WRDS) user interfaces in the case of Worldscope (Compustat).

prediction, Harris *et al.* (2020) establish in an experimental setting that "descriptor length" (i.e., the number of grams that refer to different descriptors of the same disclosure item) negatively affects information acquisition of participants with limited investment experience.

The second issue relates to the erroneous and excessive use of extensions, that is, a firm's use of customized and often idiosyncratic

tags. Firms are generally allowed to assign these individual tags to capture all items they report in their PDF report and thus to increase its usefulness. However, this option leads to less standardization and impedes comparability. Debreceny *et al.* (2011) classify firm-specific extensions of U.S. firms and find that 40% of these extensions were unnecessary, because semantically equivalent elements were already available in the U.S. GAAP taxonomy. Really novel concepts accounted only for 30% of the extensions, and many were just variants of existing elements. A recent analysis by the SEC on the magnitude of foreign issuers' customized tag rates in IFRS XBRL financial data documents that, on average, these IFRS reports include around 40% of customized tags (SEC, 2020c), which is more than twice the rate of U.S. firms (SEC, 2020a). Thus, customizing seems to be much more pervasive in digital IFRS reporting practice. The trade-off between a less comprehensive taxonomy and a greater magnitude of customized extensions remains on open issue. If we see variation in how jurisdictions implement the IFRS taxonomy and, in particular, how they regulate the use of extensions, there will be a potential for promising research settings.

In sum, we know little about digital IFRS reporting practices. The application of XBRL by firms without a U.S. listing is still not sufficiently widespread. The lack of auditing and enforcement procedures results in information transmission not being at par with the information in the PDF documents. Evidence on whether XBRL has passed the market test has therefore to be judged against these constraints.

4.4.3 Has XBRL Passed the Market Test?

The central question for regulators (firms) in many IFRS-adopting jurisdictions that still have to decide whether to mandate (apply) digital reporting is whether XBRL has passed the market test, that is, whether users are really using this information and to what extent benefits in capital markets can be documented, justifying the implementation costs.

One challenge when addressing these questions is that "the financial data that investors use is already digital—they get it from database providers" (Tarca, 2020). Put differently, users are trading off the costs of processing raw XBRL data on their own against license fees charged

by their current providers (and not against the processing of PDF reports). Evidence on the usage of XBRL data mainly comes from surveys, download statistics, and competition in the market for data provision. In a CFA Institute (2016a) survey, 45% of respondents were aware of XBRL but only 10% had extracted information from XBRL filings. Blankespoor (2019) studies access logs for 10-K XBRL filings ("search traffic") on EDGAR as a proxy for investor demand. She finds a "dramatic increase" in the number of downloads over the years, from 240,000 in 2010 to 1.65 million in 2016, consistent with the XBRL technology being better understood, its data quality having improved, and more software providers being available. At the same time, new data providers (such as Calcbench or idaciti) have emerged in the U.S. market and compete with Compustat by exploiting the power of XBRL and disregarding the traditional reports.[45] In fact, the IASB expects primarily data providers to benefit from an expansion of XBRL, while users will benefit only indirectly when data providers offer more timely and granular data (Tarca, 2020). Of course, such an indirect channel is also more difficult to document.

Research that has been assessing capital market consequences of XBRL is largely confined to the United States. Evidence on potential benefits is rather mixed, at least when studying the first-time adoption of XBRL during the staggered three-stage phase-in period (e.g., Bhattacharya *et al.*, 2018; Blankespoor *et al.*, 2014; Liu *et al.*, 2014; see Blankespoor *et al.* (2020) and Hoitash *et al.* (2021) for comprehensive reviews). The inconclusive evidence from the U.S. market is a prime reason why many regulators (firms) remain hesitant to require (file) digital reports.

Therefore the call on documenting the benefits and costs of widespread digital reporting in global capital markets is still out, and we expect plenty of research opportunities in the near future once more

[45] As these new providers likely have significantly lower cost structures, due to their high level of automatization, relative to the traditional providers (see Subsection 4.2), but rely on the quality of tagged information (see Subsection 4.4.2), it will be interesting to observe how the market for data providers will further develop. XBRL use is still not sufficiently widespread outside the U.S. market, and thus, providers with global coverage still need to stick to their current data-collection process.

jurisdictions (firms) start implementing XBRL internationally.[46] Unique features of such an international setting could include the interactions between IFRS and XBRL adoption (e.g., on IFRS enforcement, compliance, standardization of formats and terminology, and comparability more generally), the sudden accessibility of IFRS reporting data in languages other than English for non-native speakers, or the variation in how markets and regulators use the massive amount of new data.[47]

Apart from analyzing the consequences of XBRL adoption (where it is typically collapsed into a dummy variable like IFRS adoption), the greatest potential for research on digital reporting most likely lies in its suitability to replace or complement other data sources, especially PDF reports or commercial databases. Hoitash *et al.* (2021) describe different ways of obtaining and using XBRL data in academic research in their Appendix C, which helps lower entry barriers to this field.[48] The comprehensiveness of this data source can then be used to study very specific types of disclosures that are usually collected manually.[49] For example, Ahn *et al.* (2020) study audit expertise and fair values and exploit the fact that, "while Compustat includes about 9 fair value (FV)-related items, over 219 items are available from XBRL data". In addition to using individual items, properties of the combined set of

[46]See Tarca (2020) and Kothari (2019) on research opportunities in the era of big data from the perspective of regulators. Note that applicable research designs for XBRL adoption will have many similarities with those of classic IFRS adoption studies that we discuss in Section 3.

[47]For example, the Danish Business Authority is developing and testing new machine learning capabilities, which will allow it to exploit the information potential of the more than 230,000 financial statement filings it receives in XBRL format each year; see XBRL International (2017).

[48]Researchers face a new data structure, and some proficiency in XML-based file systems will become a requirement. Options include (1) to write one's own code to download XBRL files and parse them into a customized database, (2) to free-ride on pre-processed data that other researchers or organizations share, (3) to use commercial analysis tools (see XBRL Europe (2020) for international sources), or (4) to license a data provider that extracts data from XBRL filings.

[49]Examples of context-specific types of disclosures that only become relevant in specific situations and are therefore, almost by construction, not available in standard templates of providers are risk exposures related to sovereign debt during the Eurozone crises 2010–2011 (Bischof and Daske, 2013) or currency risk in the Swiss Franc shock 2015 (Hail *et al.*, 2021).

items in an XBRL file can be used to capture reporting properties such as reporting complexity (e.g., Hoitash and Hoitash, 2018).

4.5 Outlook and Future Research Opportunities

Despite many improvements, there is still a substantial gap in data quality and accessibility between the international IFRS environment and the U.S. reporting environment. Researchers and other users of IFRS reports face various difficulties and incur significant information processing costs. In turn, research shows that information processing costs have significant economic consequences by affecting investors' information choices, trades, and market outcomes. (See Blankespoor *et al.*, 2020 for a comprehensive review.) In the following, we provide an overview on some recent developments that we expect to narrow the gap and foster new IFRS-related research in the future.

First, in reaction to feedback that "it can be difficult and time-consuming [...] to identify useful information" in IFRS reports, the IASB launched a major strategic initiative called "Better Communication in Financial Reporting" that aims at "making communication of information in companies' financial statements more effective" and that will change the way of reporting IFRS information (IFRS Foundation, 2020c). Related standard setting projects include, among other things, accounting policies and estimates, accounting policy changes, principles of disclosures (also in case of lacking materiality), and the presentation of financial statements. In particular, the recently published exposure draft on "Primary Financial Statements" illustrates that more common structure and subtotals will be introduced into IFRS financial statements. The initiative also relates to the IASB's separate "Technology Initiative", which aims at supporting the automated electronic transmission of firms' disclosures, for example, through the improvement of the IFRS Taxonomy. Given that all these projects will change the presentation of information in many material ways, they offer plenty of opportunities to deliver generalizable research findings.

Second, securities regulators around the world, which increasingly recognize deficiencies in IFRS reporting practices and the transmission of IFRS information, are progressing in requiring electronic filings and

tagging of financial statement items to make financial statement information equally readable and accessible by humans and computers, which, in turn, should also help them improve their own IFRS enforcement. For example, ESMA has introduced a single electronic reporting format under which issuers on EU regulated markets shall prepare their financial reports, starting from January 1, 2020.[50] In the United States, the SEC took already the next step and started mandating "Inline XBRL", which demands filers to incorporate XBRL-tagged data directly into their EDGAR filings, making documents equally readable for humans and machines.[51] So far, evidence on the effects of electronic transmission channels of accounting information is limited to EDGAR and XBRL in the United States (e.g., Blankespoor *et al.*, 2020).[52] Exploiting variation in electronic transmission channels, machine-readability, and accessibility of IFRS reporting information that depends on regulatory reforms such as the newly envisioned European Financial Transparency Gateway (EFTG)[53] offers a fruitful avenue for future research. It is also unclear to what extent electronic tagging will impact firms' reporting in terms of their compliance with IFRS disclosure requirements. (See Blankespoor, 2019 for evidence on U.S. firms' disclosure choices in response to XBRL introduction.) Since firms can deviate from the IFRS taxonomy by introducing individualized tags, it remains to be seen whether XBRL will increase the comparability of IFRS reports.

[50]See ESMA (2020) for details. The objectives are "to make reporting easier for issuers and to facilitate accessibility, analysis and comparability of annual financial reports". While the primary financial statements need to be marked up in detail, footnotes will only need to be block-tagged for whole sections, and individual footnote disclosures therefore not be recognizable. Thus, the initiative can only be a first step toward full scale electronic tagging.

[51]See SEC (2020b) for details. The SEC claims that "for data users, Inline XBRL provides an easier way to view, access, and explore the contextual information of the underlying data".

[52]Practical guidance on how to download and use XBRL data can be found at www.fasb.org in the section "Academics use of XBRL data".

[53]The European Union is in the process of developing a platform that offers a single view for information currently stored in the diverse infrastructure of different member states, with the ultimate objective being the implementation of a single and uniform repository based on blockchain technology; see https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/transparency-requirements-listed-companies.

Third, significant improvements in web scraping, text mining, and the analysis of unstructured data offer new possibilities for analyzing larger samples of IFRS reporting information and will decrease researchers' dependence on commercial data providers or manual data collection (also with regard to firms' use of tables, graphs, pictures, or other ways to structure and present information). The application of these methods in accounting research will become more common, as they are increasingly included in the curriculum of doctoral programs in accounting, with many libraries, tools and user-defined functions now becoming available that allow data customization at low cost. (See Anand *et al.*, 2020 for the use of Python for text analysis in accounting research.) Studies that analyze unstructured U.S. accounting data applying Latent Dirichlet Allocation (LDA) as a Bayesian computational linguistic technique include Dyer *et al.* (2017), who identify the most relevant topics in 10-K disclosures, and Brown *et al.* (2020), who use topic modeling to distinguish among types of topics discussed during conference calls. Addressing such research questions in the international environment to examine the impact of institutional factors and exploit cross-country variation is hardly possible with current reporting formats but will become a more realistic option in the decade to come.

Fourth, the application of IFRS standards has been gradually expanding in scope, beyond its originally intended use for listed firms. Much less is known about the reporting practices of these preparers. In various jurisdictions and settings, IFRS are now either already used or being seriously considered for (1) nonlisted firms, (2) the individual financial statements of parent companies in group structures, (3) not-for-profit organizations and charities, (4) central banks, (5) tax authorities to determine firms' tax base, and (6) other governmental and public sector institutions. All these settings offer idiosyncratic reporting incentives that are worth understanding.[54]

Fifth, a reduced set of IFRS standards for small and medium-sized enterprises (SMEs), sometimes referenced as "IFRS-light", is predicted

[54]See Goncharov *et al.* (2020) for initial evidence of IFRS adoptions by central banks as an illustrative example. See PwC for a yearly overview of countries' usage of IFRS for tax authorities (e.g., PwC, 2017), and De Simone (2016) for a study on how IFRS interacts with firms' tax incentives in transfer pricing and income shifting.

to be the most frequently applied set of standards issued by the IASB, given that around 90 jurisdictions already require or permit the IFRS for SMEs for nonlisted firms, which outnumber listed firms by far.[55] Yet there is little evidence on the actual frequencies of adoption, the reporting practices, or the economic consequences of these standards, relative to local GAAP and the application of full IFRS.[56]

Finally, despite the common view that accounting education affects reporting practices (e.g., IFRS Foundation, 2016b; SEC, 2012; also the World Bank's ROSC reports), little is known about the interconnection between firms' reporting practices and IFRS literacy. In light of the need to re-educate practitioners with limited prior exposure to comparable standards, the move from local GAAP to IFRS or the continuous need to embrace new IFRS standards has been more challenging for some jurisdictions than others (Jackling *et al.*, 2012). Accordingly, the heterogeneity in IFRS education in accounting curricula around the world may have led (and may still lead) to differences in reporting practices. As of today, the question (already raised by Barth, 2007a) about the role of educators for achieving globally consistent reporting practices has not been addressed.

[55]It is difficult to assess the type of IFRS applied by firms, because (1) many jurisdictions give firms the option to choose between IFRS and IFRS for SMEs and (2) standard databases do not distinguish between IFRS and IFRS for SMEs in their coding. At least, it is well documented that the number of nonlisted firms coded as using a version of IFRS is much larger than the number of listed firms. For example, ORBIS presents around 1.5 million nonlisted firms as IFRS adopters versus 25,000 listed firms.

[56]See IFRS Foundation (2020h) for details on the standards and IFRS Foundation (2020i) for detailed statistics on usage and scope of the application of IFRS for SMEs in jurisdictions around the world. See Kaya and Koch (2015) for an empirical analysis why jurisdictions adopt IFRS for SMEs. Most evidence on IFRS for SMEs is based on surveys and interviews of users; e.g., Eierle and Haller (2009), Litjens *et al.* (2012), and Gassen (2017). See Francis *et al.* (2008b) for early evidence on why SMEs voluntarily adopt full IFRS.

5

The Political Economy of IFRS

This section illuminates the political economy of IFRS by outlining various ways through which political forces can affect reporting standards and practices. The political nature of accounting standard setting has long been acknowledged since the seminal work of Horngren (1973), Watts (1977), Watts and Zimmerman (1978), and Zeff (1978). Political authority and wealth distributive powers generally reside with the state and its institutions (Hines, 1989). A jurisdiction's decision to outsource standard-setting power to a private organization, such as the IASB, aims at constraining the influence of powerful societal groups and at enabling a group of independent, technical experts to serve the public interest.[1] To ensure the standard setter's independence, there exist different means of defense (Solomons, 1983). First, a carefully designed governance structure can enhance the standard setter's political viability. Second, a conceptual framework that allows the standard setter

[1]The FASB is the role model here. See Zeff (2018) for the documentation of the creation of the private U.S. standard setter in the early 1970s: "An important reason why the APB [Accounting Principles Board, the predecessor of the FASB] failed is that its members were perceived to be susceptible to pressure from powerful interests outside the Board". In 1999, the U.S. SEC fostered the restructuring of the IASC into a FASB-like independent private-sector standard setter (Camfferman and Zeff, 2015, pp. 8–16).

to show that its standards are coherent and consistent can shield it from political influence. Third, research and education that clarifies the nature and scope of accounting standards' consequences can reduce the potential for political arguments.

Yet, political lobbying, that is, "threats to seek [political] intervention [of State authorities] to overturn a proposed standard" (Zeff, 2016b, p. 268), continues to be part of standard setting (Beresford, 1993). Despite the IASB's increasing focus on evidence-based standard setting (e.g., Barth, 2007b; Leuz, 2018), its conceptual framework and thoughtfully designed governance structure and due process, there still exist various gateways for political powers to affect the IASB's work. After reflecting on the political considerations behind a jurisdiction's IFRS adoption decision and choice of IFRS incorporation in Subsection 5.1, we highlight political forces affecting the IASB's standard setting. In particular, we discuss three channels through which political forces can affect different stages in the process. These include the governance structure, through which interested parties can influence the selection of board members (Subsection 5.2); accounting constituents' lobbying endeavors (Subsection 5.3); and direct political interventions (Subsection 5.4). The local choice of enforcement mechanisms adds another unique layer to the political economy of IFRS reporting (Subsection 5.5).[2]

5.1 Jurisdictions' IFRS Adoption Decisions

The rise of IFRS can be understood as a reaction to changes in the socio-economic environment (e.g., Burchell *et al.*, 1985). Only few decades ago, accounting practices were highly heterogeneous across the world (e.g., Nobes, 1983). The emergence of a new form of business organization in the 1960s, the multinational companies, laid the bedrock for a rising demand for uniform accounting practices (Zeff, 2012). The path to meet this market-demand was in turn subject to political considerations. Founded in 1973, the IASC was arguably meant to foster the more

[2]We acknowledge the fact that there exist other areas such as audit, tax, bank and other industry regulations which also affect IFRS reporting practices and are subject to political forces. For conciseness, we focus on accounting regulation and enforcement that the IFRS literature has documented to be of first-order importance.

capital market-oriented Anglo-Saxon accounting tradition and to prevent a dominance of the Continental European rather tax-oriented tradition (Hopwood, 1994; Zeff, 2012). The political nature of the IASC's endeavor to create an international set of standards became evident when board members advocated the use of accounting practices used in their own countries of origin. As a result, the first set of IAS included a myriad of accounting choices (Zeff, 2012).

To secure the support of securities market regulators, especially the International Organization of Securities Commissions (IOSCO) and the SEC, the IASC later agreed to reform its structure and to effectively become more alike the FASB. The rise of the new body, the IASB, succeeding the IASC in 2001, followed another disruption. With the dissolution of the Soviet Union and the German reunification, the need for new forms of financing apart from traditional bank financing arose on the European continent in the 1990s. More and more European firms entered U.S. financial markets and succeeded to advertise their stock to retail investors (Haller, 2002; Zeff, 2012). A demand for internationally accepted capital market-oriented accounting standards arose in Continental Europe. As discussed in the next subsections, a mix of market pressures and political considerations finally resulted in the European Commission's decision to mandate the use of IFRS, which in turn nudged other jurisdictions into considering adoption. For in-depth information on the impact of political powers on the evolution of the IASB, see Botzem (2012), Camfferman and Zeff (2007, 2015), and Zeff (2002).

5.1.1 The Political Trade-Offs Behind IFRS Adoption

While harmonization initiatives are generally driven by incentives to remove international trade and investment barriers in light of the globalization of markets, they are hampered by the persistence of local economic and political activities (Ball, 2016). The tension between the incentive to harmonize accounting practices internationally and the incentive to adapt accounting rules to local particularities adds a (geo)political dimension to the decision-making on whether and how to

incorporate IFRS into the national financial reporting system (Camfferman, 2020).

The replacement of the previous local standards with IFRS is associated with significant costs and benefits for different societal groups. For a discussion of the U.S. setting, see Hail *et al.* (2010a,b). In fact, the introduction of new standards also affects the ability of local governments to foster domestic economic growth, allocate risks among societal groups, and support specific forms of corporations and business models (Posner, 2010). Weighing the importance of such costs and benefits to decide on whether to adopt IFRS is therefore a political endeavor.

For many countries, adopting international standards was part of a political strategy to join the "Western worlds of economic and political activities" (Mennicken, 2008, p. 388). International organizations, such as the International Monetary Fund (IMF) and World Bank, heavily supported this development by establishing the adoption and application of international accounting standards as a prerequisite for the receipt of financial aid.[3] Lamoreaux *et al.* (2015) document the relevance of developing countries' compliance with IFRS for the receipt of World Bank aids. Alon and Dwyer (2014) suggest that countries' resource-dependence (e.g., dependence on IMF and World Bank funds) outweighs pressures against joining an international accounting community. Several case studies provide in-depth accounts on how developing countries experienced pressure from international organizations to adopt IFRS (e.g., Albu and Albu, 2012; Arnold, 2012; Hassan *et al.*, 2014; Mir and Rahaman, 2005). Showing that the European Union's decision to adopt IFRS has nudged other jurisdictions toward adoption by providing incentives arising from perceived network effects (such as lower costs of foreign investment and greater trade), Ramanna and Sletten (2014)

[3]Both organizations have long followed a strategy of trying to strengthen the architecture of global financial markets by "dissemination, adoption, and implementation of international standards and codes" in many regulatory areas, one of which concerns financial reporting (https://www.worldbank.org/en/programs/rosc). The Reports on the Observance of Standards and Codes (ROSC), which are used as a basis for the IMF's and World Bank's policy discussions with national authorities, therefore include sections on the extent to which IFRS is applied in each jurisdiction (see https://www.imf.org/en/Publications/rosc).

provide another explanation for the fast expansion of IFRS in the mid-2000s. Overall, especially after the first wave of IFRS adoption, the remaining jurisdictions and firms experienced increasing (isomorphic) pressures to join the network (Chua and Taylor, 2008; Rodrigues and Craig, 2007; Touron, 2005).

For the European Union, in turn, adopting international standards was part of a political strategy to prevent U.S. GAAP from becoming the future set of global accounting standards when more and more European firms had started using U.S. GAAP (Camfferman and Zeff, 2015, p. 57). Given the lack of political support for the idea of a European accounting standard setter (Van Hulle, 2004) and the member states' opposition to ceding standard setting authority to the United States, the incorporation of international accounting standards into EU law constituted the only viable option to meet the objective of harmonizing European accounting regulations (Chiapello and Medjad, 2009; for a discussion of different jurisdictions' reasoning to adopt IFRS, see Brown, 2011).

5.1.2 Classification of IFRS Adoption Methods at the Jurisdictional Level

With the adoption of IFRS, jurisdictions join an international community of IFRS constituents with, at times, diverse financial reporting preferences. Yet, the adoption of IFRS is not a binary decision. A jurisdiction's eventual adoption choice can take substantially different forms that reflect the different weighing of costs and benefits when considering local particularities. In other words, each of these forms of adoption entail advantages and disadvantages with regard to the jurisdiction's future political bargaining power at the IASB vis-à-vis other jurisdictions' influence on the IASB. Raising awareness of the ambiguous use of the term "IFRS adoption" at the jurisdictional level, Zeff and Nobes (2010) offer a classification of available IFRS implementation methods. These six classes of IFRS adoption can best be described as follows.

1. Adopting the process of IFRS standard setting, which results into the mechanical adoption of newly issued or revised IFRSs. The

method implies low direct regulatory costs for the adopting jurisdiction, since it does not require any further regulatory actions at the local level and unconditionally accepts what the IASB produces. While this method insures fully consistent incorporation of new IFRSs across jurisdictions and is consistent with the general idea of one common set of global standards, it unconditionally pushes all adoption costs on the local preparers, whether a standard is suitable or not. Developing countries primarily chose this incorporation method.

2. Inserting IFRS—one by one—into national law. Even though the approach does not require any assessment of IFRS standards (as in the case of an endorsement approach), it requires constant work of a regulatory body at the jurisdictional level. In its pure "rubber stamp"-like form (Zeff and Nobes, 2010, p. 180), this approach can result in delays regarding the applicability of IFRS at the local level but not in any changes of the standards' content, as adoption is mechanical. However, the few jurisdictions that opted for this approach (e.g., Canada, Turkey, and Ukraine) established procedures, in which the local standard setter only inserts the IFRS standard after evaluating it. In the case of Canada, evaluation takes the form of an own due process, which runs parallel to the IASB's due process and aims at influencing the content of the IFRS standard before its issuance by the IASB.[4]

3. Endorsing IFRS, where each pronouncement of the IASB undergoes an implementation process at the jurisdictional level during which it is checked for its local applicability. Depending on the outcome of this assessment, IFRS will be endorsed as issued by the IASB or adapted to meet local demands. There are different ways in which content of individual IFRSs can be adjusted, depending on the specific setup. Next to the European Union (allowing only for "carve-outs" removing certain parts of an IFRS), other G20 countries that opted for an endorsement approach include

[4]Canadian firms that are listed on a U.S. stock exchange, i.e., SEC registrants, can choose between IFRS and U.S. GAAP (Nobes and Zeff, 2016). Canada's IFRS adoption method therefore also conforms with approach (6).

Argentina, Brazil, and Russia (allowing also for "carve-ins" adding content to an IFRS). Jurisdictions also differ in how preparers need to reference IFRS (from using the IFRS label, to hybrid forms such as "IFRS as adopted in the European Union", to even disallowing any reference to IFRS).

4. Aiming at a full convergence with IFRS, which requires the existence of a national standard setting body that (fully) incorporates IFRS into local GAAP. The approach is used by, for example, Australia and South Korea and provides adjustment possibilities similar to the endorsement approach. During convergence, local standard setters might deviate from the content of an IFRS standard (e.g., by demanding additional disclosures or restricting the use of accounting options under IFRS). The local government retains the possibility to reject the decisions made by the local standard setter.

5. Aiming at a partial convergence with IFRS, where differences between local standards and IFRS continue to exist where the jurisdiction concludes that local adjustments were necessary. As in the case of "full convergence", a local standard setter must be maintained. China, India, and Indonesia are examples for jurisdictions that opted for the partial convergence.

6. Allowing the use of IFRS, where domestic firms can choose to apply IFRS (as issued by the IASB) among other options (such as U.S. GAAP or national GAAP). Examples include Japan and Switzerland. In the United States, only non-U.S. firms that are listed on U.S. stock exchanges are allowed to apply "IFRS as issued by the IASB".

5.1.3 IFRS Adoption Methods and Political Influence Over the IASB

Depending on the chosen method of IFRS adoption, jurisdictions have different options available to advance their financial reporting preferences at the IASB. Jurisdictions that adopted the process of IFRS standard setting have few political escalation levels available in case

they disagree with the IASB's decisions. Even though jurisdictions can, in principle, revoke their decision to require the use of IFRS, such a decision is costly and subject to political as well as practical counter-pressures (Nobes and Zeff, 2016). For example, local regulatory bodies will not readily be able to take over the lead of setting local accounting standards that replace IFRS. Overall then, transition costs of changing a reporting system create some "lock-in" effect, especially once IFRS is adopted under method (1) or, if "rubber-stamping" IFRS into national law is the only remaining task of the local regulatory body, even under method (2).

Jurisdictions that choose an endorsement or convergence approach have mechanisms (readily) available that allow them to diverge from one particular IFRS standard (instead of revoking the decision to apply the full set of IFRS). Therefore, these jurisdictions have more political escalation levels available than jurisdictions that used approach (1). For example, by establishing its endorsement mechanisms, the European Union effectively created uncertainties about the likelihood of a European version of IFRS (Posner, 2010) and obtained political bargaining power vis-à-vis the IASB (Bischof and Daske, 2016). Moreover, the endorsement or convergence procedure itself includes additional opportunities for political interventions.

For example, for the endorsement of an IFRS standard into EU law, the EU endorsement process involves a private sector body, the European Financial Reporting Advisory Group (EFRAG), that develops an endorsement recommendation at the request of the European Commission. Based on the EFRAG's advice, the Commission drafts an adoption proposal that needs to receive a qualified majority vote of the Accounting Regulatory Committee (ARC) to advance to the next stage, at which the draft regulation is sent to the European Parliament and Council. If neither the European Parliament nor the Council objects to the Committee's decision, the standard is finally endorsed and published in the Official Journal of the European Union (European Commission, 2020). Since each of the involved bodies (EFRAG, ARC, the European Commission, Parliament and Council) is meant to represent the interests of the member states' constituents (e.g., Van Hulle, 2004), the process creates various possibilities for political lobbying.

The creation of EFRAG was motivated by the desire to overcome the institutional fragmentation of financial reporting governance in Europe and help European constituents to consolidate their interests to promote them at the IASB (Büthe and Mattli, 2011; Van Hulle, 2004; van Mourik and Walton, 2018). In other words, the multi-step endorsement process also aims at empowering the involved parties (that likely have idiosyncratic incentives and agendas) to each exert pressure on the IASB from early on in the standard setting process.

Other jurisdictions, such as Canada, likewise rely on organizations that can amplify the voices of local constituents. Like EFRAG, the Canadian Accounting Standards Board "work[s] hard to influence the development of IFRS Standards" (AsCB, 2020). Over the past decade, other local standard setters have started regional alliances to enhance the strength of their voice when representing the interests of their constituents at the IASB (e.g., the Asian-Oceanian Standard-Setters Group or the Group of Latin American Accounting Standard Setters that are part of the Accounting Standards Advisory Forum (ASAF), which acts as a technical advisory body for the IASB; see IFRS Foundation, 2020a).

Similar to the endorsement approach, jurisdictions using the approaches (4)–(6) rely on the significant involvement of a local regulatory body, which can deviate from IFRS as issued by the IASB. Since the government can easily overrule the local standard setter's decision, methods (4) and (5) entail a similar number of political escalation levels as method (3). At the same time, the lower commitment to IFRS by jurisdictions that choose approach (5) or (6), as compared to other jurisdictions that choose approach (1)–(4), reduces their influence at the level of the IASB (Ramanna, 2013).[5] A jurisdiction's decision to adopt IFRS is thus not necessarily equivalent to giving up all of the political power over accounting standards. Jurisdictions are rather able

[5]The U.S. influence on the IASB constitutes a special case. Even though only foreign issuers are allowed to use IFRS to meet listing requirements on U.S. stock exchanges, the United States had considerable impact on the development of IFRS by promoting a mutual convergence strategy for several years (see Baudot, 2014; Ramanna, 2013).

to maintain political bargaining power by choosing an IFRS implementation method that allows for adjusting standards issued by the IASB (or credibly threatening to do so) to meet local demands. The adoption method and a jurisdiction's bargaining power in future standard setting alter the costs and benefits of IFRS implementation. We next discuss how jurisdictions can make use of their political bargaining power during standard setting.

5.2 Political Forces Unfolding via the IASB's Governance Structure

5.2.1 IASB Representation

To shield the group of technical experts at the IASB from undue political pressures, the IASB has been set up as "the independent standard setting body of the IFRS Foundation" (IFRS Foundation, 2018). The IFRS Foundation comprises 22 Trustees who select the IASB Board members and are formally committed to act in the public interest instead of representing special interest groups (IFRS Foundation, 2018). Since 2009, a Monitoring Board, consisting of representatives of public authorities, such as the European Commission, IOSCO, and the U.S. SEC, was added to the governance structure. The Monitoring Board establishes a formal link between the IFRS Foundation and public authorities and is supposed to improve the IASB's accountability (IFRS Foundation, 2018).[6]

To "ensure a broad international basis" (IFRS Foundation, 2018), the IFRS Foundation's Constitution prescribes a certain representation of geographical regions at the level of the Trustees of the IFRS Foundation (see Article 6), the Monitoring Board (see Article 21), and the IASB itself (see Article 26). Not surprisingly, the adequacy of those quotas has been subject to debate (e.g., whether non-adopters, such as the United States, should be represented or whether a continent like Africa should have only one seat). Ramanna (2013) highlights the importance of the regional representation at the IASB for jurisdictions' IFRS adoption decisions.

[6]For an early discussion on how to set up a system of global accounting regulation, see Gebhardt (2000).

Offering a two-dimensional framework for the analysis of jurisdictions' IFRS implementation choices, Ramanna (2013) explains a jurisdiction's strategy by the degree to which it can expect (1) its interests to be already represented at the IASB and (2) the extent to which it will have political bargaining power to affect the IASB's decisions. The lower a jurisdiction's expectations with regard to the two dimensions, the lower its incentives to choose an IFRS implementation method that rules out local adaptations. For example, since members of the Commonwealth of Nations (such as Australia, Canada, New Zealand, or South Africa, which are all historically connected to the United Kingdom in some way) can expect to be well-represented at the (London-based) IASB, they have higher incentives to choose implementation methods that allow fewer adaptations (Ramanna, 2013).

5.2.2 The Role of the IASB Members in Standard Setting

While there exists a considerable volume of literature on constituents' influence on standard setters, fewer papers exist on the role of the board members themselves (with none of these papers specifically studying the role of the members of the Monitoring Board or the IFRS Foundation's Trustees).[7] Yet, standard setting bodies are social entities, which implies that standard setting decisions build on deliberation processes of board members with diverse personal characteristics. It follows that a relatively small group of individuals (currently 14 in case of the IASB) has a significant influence on the production of IFRS.

5.2.2.1 Does the Composition of the Board Matter for Standard Setting Outcomes?

The literature is relatively clear on this first question. Despite the board's collective decision-making, evidence suggests that small groups of board members and even individual members can have the marginal say in standard setting decisions. Based on interviews and an analysis

[7] These groups typically meet behind closed doors, and only agenda items or brief summaries of their meetings are publicly available. Camfferman and Zeff (2015, p. 555) report on a clash between the IASB chair and the members of the Monitoring Board over the Monitoring Board's ability to influence the IASB's agenda.

of publicly available documents and audio files, Morley (2016) studies board discussion dynamics on the subject of fair value accounting and a potential change of IAS 37 (Provisions, Contingent Liabilities and Contingent Assets). She finds that group dynamics at the IASB led to a polarization of views among board members. When the group size of fair value advocates at the IASB diminished after several board members retired, the proposed change to IAS 37 could no longer find a majority and was removed from the IASB's agenda. Based on the case of the FASB's and IASB's joint revision of their conceptual frameworks, Erb and Pelger (2015) document the successful strategy of a group of board members to elevate board discussions to a high level of abstraction where practitioners' arguments received less weight than the theoretical considerations of academics.

Jiang *et al.* (2015) show that even individual board members can play a significant role. They document that FASB Chair Robert Herz's abrupt retirement in August 2010 changed market expectations on the likelihood of the finalization of a controversial FASB proposal. Given that the proposal to extend fair value accounting to loans held for collection passed with a vote of 3-2 under Herz's chairmanship, his sudden retirement reduced the likelihood of an actual accounting standard update. Using an event-study design, the authors observe positive abnormal returns for banks on the announcement day of Herz's retirement. The proposal was subsequently rejected under the new chair, Leslie Seidman, an event date on which banks likewise experienced positive abnormal returns.

Given that the IASB staff is in charge of preparing draft standards, discussion papers, or comment letter summaries for board meetings, they can also influence the content and presumably the outcome of discussions (Botzem, 2012, p. 117; Klein and Fülbier, 2019; Pelger, 2016). In their interview-based study, Erb and Pelger (2015) illustrate the importance of the staff's support for board members' success at convincing colleagues about controversial changes. Similarly, Morley (2016) suggests that individual board members' interactions with the technical staff can affect the content of staff papers that are circulated before board meetings. While the IFRS Foundation specifies expected

competencies from its technical staff, it remains unclear who decides on staff selection under which criteria.

5.2.2.2 Which Factors Determine the Decision-Making of Individual Board Members?

While the literature is relatively clear in suggesting that the board composition matters, little evidence exists on the factors that determine the decision-making and, ultimately, the voting of individual members. Political economy offers three explanations (e.g., Gipper *et al.*, 2013; Kothari *et al.*, 2010):[8] the theory of regulatory capture (or the principal-agent theory of regulation), the theory of political ideology, and the theory of public interest. The theory of regulatory capture suggests that standard setters generally act out of self-interest, with individual board members (i.e., agents) catering to the special economic interests of their constituencies (i.e., their principal).[9] Outcomes of accounting standard setting can thus be explained by the specific economic benefits that accounting regulation can deliver for the individual board member.

Evidence on the extent of board members' capture is limited. Research documents that the professional background is likely to affect members' positions. By testing how FASB members' professionals background affect the content of exposure drafts issued between 1973 and 2007, Allen and Ramanna (2013) find that the FASB proposed more standards that increased relevance, at the detriment of reliability, when the board included a high number of members with roots in the financial services industry. Consistent with regulatory capture, the finding

[8] Alternative explanations for standard setters' decision making include "institutional thinking", where individuals' thinking depends on institutions to which they are exposed to, such as standard setters' conceptual framework, and which were derived from a shared basis of knowledge and moral standards (see Young, 1996). "Knowledge templates", defined as reflecting "assumptions, values, and beliefs about the nature of the world and the way it functions" (Baudot, 2018, p. 660), are a similar construct to capture social factors that influence standard setters' decision making.

[9] See Correia (2014) and deHaan *et al.* (2015) for evidence supporting the regulatory capture theory with regard to the U.S. securities regulator, the SEC, and Hail *et al.* (2018) for international evidence on how regulatory capture has contributed to reemerging corporate accounting scandals and corresponding accounting regulation over a long historical time series.

points to connections to former employers influencing the actions of board members (and less so the ones to future employers, likely because many board members are at a more senior, often final, stage in their careers). Baudot (2018), in an analysis of the contributions to board discussions by the 15 most active members of FASB and IASB, confirms the relevance of the professional backgrounds for the members' fairly static views on accounting measurement.

However, other results are more nuanced. In a descriptive study, Jiang *et al.* (2018) follow up on Allen and Ramanna (2013) by linking FASB members' professional background to their voting behavior. Based on an analysis of dissenting votes on standards issued between 1973 and 2014, the authors find for example that board members with preparer backgrounds were the least likely group to object standards that introduced exceptions or reporting alternatives. Members with academic or regulatory backgrounds were more likely to dissent, if they perceived a lack in relevance of the information provided by the proposed new standards. Members with user backgrounds dissented if they believed a standard harmed relevance or reliability. Yet, they find no consistent association between board members' professional background and their votes on fair value measurement standards and suggest that voting behavior is highly context-specific, given that some members rejected standards arguing for more fair value measurements while dissenting on another standard to argue for less fair value measurements.

Allen and Ramanna (2013) study the impact of board members' political party affiliation, which speak to the role of political ideology in standard setting. They show that an increase in the proportion of board members supporting the Democratic (Republican) Party can be linked with the proposal of standards that enhance reliability (relevance). However, in the absence of a clear theory on why greater relevance is consistent with the conservative ideology that the support of the Republican Party proxies for, it is hard to interpret these findings. It is more plausible that standard setters, similar to politicians, have ideological views on the economic consequences of accounting regulation, which often results in the reallocation of welfare (Bischof *et al.*, 2020a).

Finally, public interest theory suggests that standard setters act in the best interest of the public by passing socially optimal regulation

that corrects market imperfections (Posner, 1974). In particular, it is often argued that the independent technical experts to which standard setting is delegated are more likely to live up to this ideal than elected politicians. Evidence from political economy, in general, is inconsistent with this view, and the literature does not show that the theory prevailed in the specific context of accounting standard setting.

5.2.3 The Selection of IASB Members

At the board level, the selection of members is subject to political interests and bargaining (Botzem and Quack, 2009). In case of the selection of the new IASB chair in 2010, Camfferman and Zeff (2015, p. 481) describe how the European commissioner Michel Barnier interfered in the IFRS Foundation Trustees' decision-making. In light of the IASB's regular political challenges, the job candidate's political experience and standing has been an important criterion for the selection of the new IASB chair. The IFRS Trustees finally chose Hans Hoogervorst, a former politician and prior state secretary and minister in various Dutch governments, to become the new IASB chair (Camfferman and Zeff, 2015, p. 478).

Set up as an independent committee of technical experts, the IASB was not meant to represent the geographical diversity of its constituents. However, in reaction to the increasing number of jurisdictions incorporating IFRS into their national financial reporting systems, the IFRS Foundation's second constitutional review introduced the requirement of geographical representation of the diversity of the IASB's constituents at the IASB (Camfferman and Zeff, 2015, p. 459). In fact, the IFRS Foundation expected explicit geographical criteria "to have a calming influence in a situation where the IASB was easily criticized for being too much dominated by either Europe or the United States, or both relative to the rest of the world" (Camfferman and Zeff, 2015, p. 453). Both the Foundation's trustees as well as the IASB board members are expected to act as ambassadors and information intermediaries for IFRS-related issues in their home countries. The current IFRS constitution seeks to create a geographical balance via the IASB's composition of four members from the Asia-Oceania region, four members from Europe,

four members from North or South America, one member from Africa, and one member appointed from any area (IFRS Foundation, 2018: Article 26). So far, there exists no analysis of the connection between board members' voting and their geographical background.[10]

Collectively, the literature documents that the selection of individual board members matters. Based on individuals' characteristics, when controlling for contextual factors, their likely future voting can be modeled and predicted (with error arising from group dynamics or personal idiosyncrasies). In a similar vein, the selection of IASB members is a rational choice by the trustees, who certainly consider the importance of candidates' characteristics, such as prior professional positions, when selecting a candidate. In the "small world of accounting" (IASB Chair Hans Hoogervorst), short-listed individuals are typically well known. Unfortunately, and in contrast to the generally transparent standard setting process, the pool of applicants is not publicly observable, and the selection process therefore hardly analyzable.

5.3 Constituents' Lobbying During the IASB's Regular Due Process

5.3.1 The Stages of the IASB's Due Process

In the absence of direct democratic authority, multi-step, participatory IFRS standard setting aims at legitimizing the IASB's actions (Burlaud and Colasse, 2011; Richardson and Eberlein, 2011) and involves the following steps: (1) agenda consultation, (2) eventual release of a discussion paper, (3) release of an exposure draft, (4) issue of the new standard. The first three stages provide opportunities for constituents to lobby to influence the outcome. According to survey results by Georgiou (2004), corporate managers perceive a decreasing effectiveness of their lobbying efforts from step (1) to (3), although many constituents typically engage

[10] Analyzing early IASB Board discussions back in 2002 and 2003, Walton (2009) documents a heavy dominance of Anglo-Saxon board members in the board's debates. With regard to the geographical backgrounds of IASB members serving from 2002 to 2010, Morley (2016) documents a dominance of native English speakers in board discussions. Baudot (2018) did not consider the board members' geographical background in her analysis of IASB and FASB members' discourse over the years 2002 to 2008, because 13 of 15 board members being Anglo-Americans.

rather late in the process and only once they perceive the likelihood of the new regulation being passed as sufficiently high. The length of a successful due process can vary considerably from less than a year[11] up to several years with multiple exposure drafts.[12] Projects can also become inactive or removed from the agenda. So far, only in one case, during the heat of the financial crisis, the IASB deviated from its regular due process, defined in IFRS Foundation (2006).[13]

The first due process step, which is essential to determine the content of a standard setter's agenda, has been identified as involving the "single most important decision" of a standard setter (Beresford, 1993). Since the IASB's agenda is updated with the agreement of the IFRS Foundation, on which the Monitoring Board can exert influence via its oversight function, lobbyists not only have the possibility to contact IASB members but also the trustees as well as members of the Monitoring Board (Walton, 2020).[14] Despite the general importance of agenda decisions and the IASB's enhanced transparency of its agenda decisions since 2011,[15] we are not aware of any attempt so far to systematically analyze the IASB's agenda decisions (for U.S. evidence based on yearly FASAC surveys, see Allen, 2018; Jiang *et al.*, 2018; Young, 1994), likely because public agenda consultations at the IASB are only conducted every five years.

By encouraging constituents to share their opinions on the different stages of the development of new accounting standards (in steps 2 and 3), the IASB's due process stimulates constituents to formally lobby

[11]IFRS 8 (Segment Reporting) is an example of a short process; see Crawford *et al.* (2014).

[12]IFRS 9 (Financial Instruments: Impairment) is an example of a lengthy process, taking six years; see Bischof and Daske (2016).

[13]In October 2008, in reaction to political pressure from the European Union to amend IAS 39 (Financial Instruments: Recognition and Measurement), the IASB suspended its regular due process, which would have required a comment period of at least 30 days (IFRS Foundation, 2006: paragraph 98).

[14]Next to the requests from powerful interest groups, the choice of board members or the IASB's attempt to converge its standards with those of other jurisdictions can likewise affect the prioritization of accounting issues.

[15]The IASB introduced public agenda consultation projects in 2011 in reaction to constituents' criticism, that is, to promote its legitimacy (Camfferman and Zeff, 2015, p. 465; Pelger and Spieß, 2017).

for the consideration of their arguments (and interests). It is entirely at the IASB's discretion whether to change a proposed standard in response to these comments and to weigh different interests in this process. Against this background, interest groups participate in the due process to varying degrees.

5.3.2 Lobbying by Constituents

Generally speaking, financial statement preparers and the accounting profession can be expected to engage more intensively in the standard setting process than financial statement users, because their expected benefits from influencing accounting standards tend to be significantly higher (Sutton, 1984). Research confirms this hypothesized dominance of the accounting profession and preparers in the use of feedback opportunities provided by the IASB (e.g., Georgiou, 2010; Giner and Arce, 2012; Holder *et al.*, 2013; Jorissen *et al.*, 2012, 2013; Pelger and Spieß, 2017).[16] According to board members, public consultation serves the purpose of collecting additional arguments for consideration in board discussions and does not have the function of a "Gallup poll" (Botzem, 2012, p. 121). However, comment letter campaigns orchestrated by U.S. lobbying organizations also indicate that affected parties perceive the quantity of feedback to be important, as it reflects interest groups' willingness to elevate a debate to higher political levels of authority.[17]

In their analysis of constituents' use of conceptual versus economic-consequences arguments in comment letter submissions, Giner and Arce (2012) find that no interest group had a dominant influence on the board's final decision on the development of IFRS 2 (Share-based Payment). Combining evidence from interviews, the content of comment letters, and IASC documents, Kwok and Sharp (2005) likewise conclude that no particular interest group was able to systematically affect the IASC's decisions, even though preparers appeared to be more influential

[16]For feedback received by EFRAG, i.e., a local organization that is supposed to consolidate the views of its local constituents, see Gäumann and Dobler (2019), Jorissen *et al.* (2012), and Weiss (2019).

[17]This is especially true for the case of the FASB's exposure draft on extending fair value accounting to other financial instrument categories, where the FASB received 2,971 comment letters (Hodder and Hopkins, 2014).

than users. Analyzing constituents' responses to suggested forms of incorporating the European Fourth Company Law Directive into German commercial law, McLeay *et al.* (2000) point to the importance of constituents' efforts to collaboratively influence the regulatory decisions. Preparers might have been only successful in convincing standard setters to implement their preferred solution, because they experienced the support of other interest groups, such as the accounting profession.

Finally, this stream of research does not provide evidence on a dominant role of the accounting profession. Based on their analysis of comment letters submitted to the draft version of IFRS 7 (Financial Instruments: Disclosures), Bamber and McMeeking (2016) even suggest that the group of accounting firms is least influential. However, Big Four firms, in particular, can act as regulatory intermediaries between the standard setter and the regulated firms and have other informal channels, such as the movement of staff between accounting firms and the IASB, both at the board and senior staff level, or established working relations and personal networks (Kohler *et al.*, 2021). See Walton (2020) on the role of professional lobbyists that work for international audit firms.

The accounting firms' monetary contributions to the IFRS Foundation, especially in its early years, have been a similar cause of concern (Botzem, 2012, p. 111). In contrast to the FASB, which is funded by mandatory contributions by U.S. firms,[18] the IASB continues to heavily rely on voluntary contributions, that is, donations, from its constituents which have to be continuously renegotiated and secured. Over the past several years, the IFRS Foundation reformed its funding basis to mitigate concerns about interest groups' power arising from their monetary contributions. As of 2019, the FASB and IASB cover about one third of their budget with publication revenues (FAF Foundation 2020; IFRS Foundation, 2020m). In 2009, the Big Four firms contributed 5.3 million GBP (that is, 2 million USD each) to fund as much as 23% of the IFRS Foundation's total budget of 22.6 million GBP. Ten years later, in 2019,

[18]In the U.S., securities market regulations (that is, the Sarbanes–Oxley Act) require equity issuers and investment company issuers to pay "accounting support fees" to the FAF Foundation. The fees are determined on the basis of the issuers' relative average monthly market capitalization (FAF Foundation, 2020).

the Big Four contributed only 3.2 million GBP (that is, 1.1 million USD each) which covered about 13% of the total budget of 30.9 million GBP (IFRS Foundation, 2010, 2020m).[19] Even though the number of donors has increased over time, and the financial contributions are transparent, the reliance on voluntary contributions from jurisdictions and firms arguably makes the IASB more susceptible to special interest influences than a standard setter that is empowered by law to collect mandatory fees.

5.3.3 The Role of National Institutions in the Lobbying for Supranational Standards

Arguably for the reason that IFRS builds on the assumption that one set of standards can meet the demands of all constituents, there exist no mechanisms at the level of the IASB's due process to balance the uneven distribution of lobbying powers across jurisdictions (especially between developed versus developing countries; see Botzem *et al.*, 2017; Jorissen *et al.*, 2013). By consolidating regional constituents, who may even struggle with language barriers (i.e., the IASB's due process requires English language proficiency), regional cooperation is one means to mitigate the problem. Fulfilling this purpose in the European Union, EFRAG submits comment letters to the IASB communicating the perspective of its constituents and includes more or less obvious signals on whether it supports the endorsement of the standard into EU law.[20] To level the playing field vis-à-vis powerful supranational or national interest groups from Europe and the United States (especially at the time when the IASB and FASB were working on the harmonization of their standards), other jurisdictions established similar regional coalitions (such as Asian-Oceanian Standard-Setters Group or the Group of Latin American Accounting Standard Setters). The

[19]The IFRS Foundation's annual reports provide information about financial supporters by jurisdiction and states that "all contributions are voluntary" (IFRS Foundation, 2020m, p. 33). For an analysis of funding sources until 2008, see Larson and Kenny (2011).

[20]See, for example, Morley (2016, p. 242) on the case of IAS 37, where EFRAG informed the IASB about its view that "the proposals set out in the exposure draft fail to satisfy the IASB's objective to improve the quality of financial reporting".

case of IAS 24 (Related Party Disclosures) offers one example for the successful lobbying endeavors by one powerful jurisdiction. To mitigate excessive disclosure obligations for state-controlled Chinese firms, the IASB decided to partially exempt government-related entities, thereby contradicting the "entity concept" (Ramanna, 2013). Ramanna (2013, p. 22) further discusses China's successful lobbying and concludes that "China's strong central government allows the country to speak with one voice when advocating for itself in international forums such as the IASB".

Overall, the invitation for comments can be understood as a means to construct procedural legitimacy, that is, to provide evidence that the IASB is considering the arguments of its broad range of constituents. The underrepresentation of certain professional and geographic groups can therefore undermine the IASB's acceptance as a supranational standard setter (Bamber and McMeeking, 2016; Jorissen *et al.*, 2013). To establish a counterbalance to the unequal distribution of lobbying incentives and power, the IASB committed itself to act in the "public interest" and, in particular, in the interest of the financial statement users, who they view as the least powerful group in terms of representation (Pelger and Spieß, 2017 on the implementation of this policy; IFRS Foundation, 2018: Article 2(a); Bhimani *et al.*, 2019).[21] We note the paradox that users, that is, providers of capital, are perceived as least powerful in the case of accounting standard setting, while plenty of evidence suggests that institutional investors (such as large pension funds, mutual or hedge funds), in particular, are very influential in other fields of business (e.g., corporate policies and investors' voting or activism; Appel *et al.*, 2016; Crane *et al.*, 2016; Dyck *et al.*, 2019).

[21]Note that the interests of financial statements users are also embedded in the current Conceptual Framework of the IASB (see paragraph 1.1–14 of the 2019 Conceptual Framework). As pointed out by Burlaud and Colasse (2011, p. 27), the content of the Conceptual Framework "is therefore highly political in character". However, the persistent focus on users as standard setter's prime target group has also been controversially discussed; e.g., Young (2006).

5.4 Political Interventions in Standard Setting

5.4.1 The Incentives of Politicians to Intervene

The number of open political interventions by legislative or executive branches of government into the IASB's standard setting has so far been fairly limited, compared to the U.S. standard setter, which has a much longer history (for a comparison see Camfferman and Zeff, 2011). Therefore most evidence on the incentives of politicians to intervene in accounting regulation comes from the United States. Besides the younger age of the IASB, political forces have greater proximity to the FASB. In a single country setting, such as the United States, politicians can pressure the FASB or the SEC by using their legislative authority and budgeting rights (or by threatening to do so). U.S. lobbyists therefore can approach individual members of Congress (in the House or Senate) to seek an intervention in the FASB's due process. The literature documents special interest pressure by examining ties between firms with incentives to lobby against a FASB proposal and these firms' campaign contributions to Congressional representatives, who then pressured the FASB to amend the respective proposal (Bischof *et al.*, 2020a; Farber *et al.*, 2007; Ramanna, 2008). Connections to special interests thus help explain why politicians interact with the standard setter.

Bischof *et al.* (2020a) show that political ideology also helps shape the stance of Congressional representatives on accounting regulation. In particular, ideology helps explain the involvement of politicians in accounting regulation when an accounting standard has economic consequences on which ideological controversies are most plausible. For example, U.S. politicians with the most conservative records in the House (i.e., those who most strictly oppose any kind of government intervention) participated most actively in the fair value accounting debate around the time of the congressional vote on the Emergency Economic Stabilization Act (EESA), which introduced a bailout package. These politicians viewed the relaxation of fair value accounting as a means to bolster banks' regulatory capital and to stabilize the financial system without resorting to bailouts and spending public money (and they became much less involved later in the debate after the bailout

vote was settled). The evidence is likely generalizable to the European environment, where similar political forces are at play but more often tend to remain behind the scenes.

5.4.2 Political Forces in the IASB's Standard Setting

Although it is likely that other jurisdictions' political representatives have similar incentives as their U.S. counterparts, the complexities of the international environment constrain IFRS constituents' possibilities to influence accounting standards by mobilizing politicians. In case of the European Union, lobbying for the rejection of the endorsement of a standard would require the concerted actions of IFRS constituents from different member states, which have potentially diverging incentives and views.[22] Moreover, the typical divergence of interests implies that European constituents' chances to successfully lobby the IASB to change its position depends also on the alignment of their preferences with those of other important IFRS constituents (Ramanna, 2013).

Historically, the European Union made active use of the endorsement process to influence the IASB's standard setting. For example, in 2006, the European Commission and Parliament objected the endorsement of the standard on segment reporting, IFRS 8, which converged IFRS with U.S. GAAP by adopting the U.S. rules. Büthe and Mattli (2011, pp. 100–101) describe the debate on IFRS 8 as an incident in which European constituents realized the disadvantages arising from a lack of coordination of their lobbying. European constituents informed the Commission about their concerns about IFRS 8 only at a point when the IASB had already issued IFRS 8 (some of the constituents missed the commenting deadline of the IASB and subsequently tried to involve political powers). As a consequence, the Commission and Parliament

[22]Even though the French banking industry has succeeded in lobbying for a change of IAS 39 in 2004 (by using its strong ties to the highest levels of the French government, resulting in the personal involvement of French President Jacques Chirac; see Alexander, 2006), their success might be idiosyncratic to the French setting and historical circumstances shortly before the crucial first-time adoption of the European Union. Other industries or interest groups in other EU member states do not necessarily have the same tight connections with top-level politicians (Camfferman and Zeff, 2011).

had no possibilities to exert pressure on the IASB anymore and finally agreed to the endorsement of IFRS 8 (see also Camfferman and Zeff, 2015, Chapter 9.6.3). Crawford *et al.*'s (2014) interview-based study suggests that the intense debate on IFRS 8 between European politicians and the IASB aimed at further increasing the EU's bargaining power during future standard setting by signaling the IASB that the EU endorsement process was not a one-way road toward the adoption of newly issued standards.

Two years earlier, in 2004, the European Commission had already underscored this position when taking action against the former financial instruments standard, IAS 39. The symbolic significance of the EU decision to carve out parts of IAS 39 in 2004 considerably exceeded the practical significance of the carve-outs.[23] The carve-outs' "very existence ... raised the spectre of more such carve-outs, both by the European Union and by other jurisdictions adopting IFRSs, leading to a dilution of the ideal of comparable financial reporting" (Camfferman and Zeff, 2015, p. 160). In other words, the European Union's decision backed the credibility of carve-out threats and sensitized the IASB to the possibility of local IFRS versions.

The European Commission's decision to use its political bargaining power during the global financial crisis of 2008–2009 created the most delicate situation for the IASB so far, which its then-Chair Sir David Tweedie experienced as "a blunt threat to blow the organisation away" (House of Commons, 2008). In early October 2008, the European Commission threatened to carve-out passages from IAS 39 unless the IASB amended the standard to allow firms to reclassify financial instruments from fair value into historical cost categories.[24] While the global financial crisis provided strong incentives for an economically and politically powerful interest group to lobby, the crisis also forced

[23] In their own analysis of jurisdictional profiles, the IASB notes that a "'carve-out' has been applied by fewer than two dozen banks out of the 8,000 IFRS companies whose securities trade on a regulated market in Europe" (IFRS Foundation, 2020i). See Whittington (2005), and Camfferman and Zeff (2015, pp. 157–160) on the background of the EU carve-outs in 2004.

[24] See André *et al.* (2009), Bengtsson (2011), and Camfferman and Zeff (2015) for more information on the controversy. See Subsection 3.5.2 for evidence on economic consequences.

politicians to act to prevent the financial system from collapsing.[25] Overall, the intensity of the political pressure on the IASB to change accounting rules at the disregard of its normal due process therefore rooted in the existential threat for the financial services industry and the stability of the financial system.

The European Commission's decision to modify IFRS 4 (Insurance Contracts) to defer the effective date of IFRS 9 (Financial Instruments) for EU-based financial conglomerates (see Commission Regulation (EU) 2017/1988) is the most recent case in which the European Union took advantage of its endorsement process to amend IFRS. Moreover, while labelled "top up", this modification can very well be interpreted as the first "carve-in" that has occurred in the history of European IFRS endorsements (Dobler, 2020). As of today, Regulation (EC) 1606/2002 does officially not allow for carve-ins. Yet, survey responses to the European Commission's question on whether carve-ins should be allowed in the EU IFRS endorsement process document that some constituents support the idea of using them to increase Europe's influence on IFRS (European Commission, 2018). At the same time, the report also documents European constituents' awareness that amendments to IFRS create a European version of IFRSs and that such a move, first, imperils the acceptance of European firms' IFRS-based financial statements for listings at foreign stock exchanges (such as in the United States) and, second, incentivizes other jurisdictions to adjust IFRS to their local needs, thereby undermining the very reason for adopting IFRS. Despite the benefits that arise to some of their local constituents, jurisdictions therefore also have strong disincentives to create local variations of IFRS.

The IASB's ambition to convince more jurisdictions to incorporate its standards provides another gateway for jurisdictions to affect IFRS. Analyzing the convergence efforts of the IASB and FASB from 2002

[25] Ultimately, the crisis forced worldwide government reactions in form of multiple bank rescue packages starting from October 2008 (see BIS, 2009, and ECB, 2010, for overviews). For instance, the U.S. government established the 700 billion USD Troubled Asset Relief Program (TARP) and the British, German, and French governments provided approximately 850 billion USD, 610 billion USD, and 470 billion USD respectively of additional loans and guarantees.

to 2011, Baudot (2014) illuminates the standard setters' reactions to changes in economic, political, and social situations when trying to converge their sets of standards. On the one hand, calls for the convergence of IFRS and U.S. GAAP (by the G20) as well as the prospects of potential acceptance of IFRS for U.S. issuers supported the boards' cooperation. On the other hand, the political decision to reject the adoption of IFRS for U.S. issuers in the near future discouraged the IASB from devoting attention to the needs of U.S. constituents at the expense of the needs of constituents from other jurisdictions.[26]

While the IASB experienced only few open political interventions so far, most of them had strong symbolic relevance. The carve-out decision by the European Union in 2004 constituted a landmark case for jurisdictions' actual willingness to deviate from IFRS as issued by the IASB. Similarly, the European Union's intervention in 2008 forced the IASB for the first-time to change a standard solely due to political intervention and at the dispense of its own due process, which damaged its reputation (e.g., Selling, 2008).

5.5 Political Forces Affecting the Enforcement of IFRS

In addition to the form of IFRS adoption, domestic policymakers (as discussed in Subsection 5.1) also choose how to design and operate a local infrastructure that can secure the consistent application of IFRS by firms. The latter is of special importance since the adoption of IFRS on paper does not necessarily imply compliance with the standards. In fact, several studies suggest that the level of compliance with IFRS is very heterogeneous across firms and jurisdictions (Hellman *et al.*, 2018; Street and Bryant, 2000; Tsalavoutas *et al.*, 2020). The rigor of local country-level enforcement is one important factor that helps explain this heterogeneity (e.g., Chen *et al.*, 2002; Christensen *et al.*, 2013; Daske *et al.*, 2008; Demmer *et al.*, 2019; see Subsection 2.3).

While the IFRS Foundation aims at developing accounting standards that are consistently enforceable (IFRS Foundation, 2018: Section 2(a)),

[26] See the reflections of former IASB Chair Sir David Tweedie in Street (2014). For further insights on the failed convergence project on financial instruments see Pucci and Skærbæk (2020).

it has no authority for the actual enforcement of firms' compliance with reporting requirements. Put differently, the IFRS Foundation has no mandate to protect the "IFRS brand name" by ensuring that only firms that fully comply with IFRS as issued by the IASB can state to prepare their financial statements in accordance with IFRS. Instead, local regulators perform this task.[27] Jurisdictions can thus independently decide upon the design of their enforcement systems and can deviate from enforcement recommendations provided by supranational bodies (see ESMA, 2014; IOSCO, 2015; OECD, 2014). Actors at the local, jurisdictional level can thereby crucially affect the creation of enforcement systems (see Albu *et al.*, 2021). With their interview-based study on how clients, auditors, and enforcement agencies negotiate the adequacy of IFRS reporting practices, Meusburger and Pelger (2020) illustrate the substantial influence of national enforcement agencies on firms' reporting and the possible result of national versions of IFRS interpretations.[28]

National enforcement systems vary considerably in multiple dimensions. For example, there exist large differences in the staff size of enforcement agencies and their access to sufficient financial resources (Brown *et al.*, 2014; Caramanis *et al.*, 2015; ESMA, 2017; Jackson and Roe, 2009). Based on a survey among European enforcement bodies and regulatory specialists, Johansen *et al.* (2020) document the varying degrees of enforcement agencies' independence from political actors or other market participants, their freedom to decide upon the scope of enforcement, and regulatory power in case of noncompliance. Eventually, a jurisdiction's decision on how to equip its enforcement agencies with financial resources and regulatory powers is subject to political considerations and reflects the diverging interests of local constituents (Ball, 2006).

[27]For example, the European Union mandated its members to establish enforcement agencies by 2005. See Brown and Tarca (2005) for a discussion of the installment of enforcement agencies in different EU member states.

[28]For a discussion of the risk of local IFRS interpretations, see Schipper (2005). Note that the SEC has also shaped IFRS reporting practices of non-U.S. firms that are cross-listed in the United States (Gietzmann and Isidro, 2013).

As stated, for example, in the ESMA Guidelines on enforcement of financial information, "(e)nforcers should ensure adequate independence from government [and other market participants]. Independence from government implies that government cannot unduly influence the decisions taken by enforcers" (ESMA, 2014, p. 12; OECD, 2014; see also IOSCO, 2015). Research confirms the legitimacy of concerns about connections between enforcement agencies and politicians. Investigating an enforcement setting with a generally high reputation,[29] Correia (2014) shows that firms with connections to U.S. politicians or prior SEC employees are less likely to face enforcement actions by the SEC and face less severe penalties if the SEC takes action. Similarly, Heese (2019) suggests that SEC enforcement actions reflect political preferences concerning the avoidance of substantial increases in unemployment rates. In line with Tahoun and van Lent (2019)'s findings on the interdependence of politicians' personal wealth considerations and their support for government interventions, Mehta and Zhao (2020) show that members of the U.S. Congress influence SEC enforcement decisions for firms domiciled in their districts. It is likely that politicians' influence on enforcement agencies exists in other jurisdictions to a similar, if not larger, extent. For example, Piotroski *et al.* (2015) document Chinese firms' suppression of negative news in response to political incentives, such as meetings of the National Congress of the Chinese Communist Party or promotions of high-level provincial politicians. If regulators can anticipate being subject to retaliation, they will be more likely to exclude a firm with strong political connections from their scope.

More generally, it can be expected that governments will align the actions of enforcement agencies with other political objectives. For example, supervisors tend to be more lenient toward firms that were rescued through government programs (Agarwal *et al.*, 2014). Gallemore (2021) suggests that bank supervisors were more lenient toward banks with high degrees of reporting opacity during the financial crisis. In other words, more lenience in the enforcement of capital market rules (e.g., via the selection of investigated firms or subject areas to be inspected) can

[29]Some even regard it as the "gold standard" for securities regulation systems (e.g., Carton, 2009).

serve as a regulatory forbearance tool at times of crises, in particular when regulatory interventions are institutionally linked to accounting numbers, such as regulatory capital requirements for banks (Gallemore, 2021; Skinner, 2008).

Enforcement agencies have different means toward this end. For example, the specification of the criteria for the selection of investigated firms and enforcement priorities with focus areas[30] can assist enforcement agencies in circumventing politically sensitive firms or areas of reporting while at the same time creating the impression of upholding strict enforcement principles. For some institutional insights, see the interview-based case studies of Bischof *et al.* (2021a) on regulatory interactions between securities and prudential regulators.

Recent case studies raise particular doubts about the European enforcement system's ability to prevent regulatory forbearance. In Italy, local political interests affected the local enforcement agency's opinion on the adequacy of Italian banks' recognition of revaluation gains from available for sales assets (here, shares of the Italian Central Bank) in profit and loss instead of equity reserves as required by IAS 39 (Quagli *et al.*, 2021). This accounting treatment resulted in overall revaluation gains of 5 billion Euro and helped enhancing the stability of the troubled Italian banking sector. The case study further shows that even the supranational institutions failed their purpose, because both ESMA and the IFRS Interpretations Committee refused to provide guidance on this accounting question, which forced the Italian banks' auditors to rely on academic and juridical expert opinions. Similarly, focusing on the case of a Spanish bank with tight political connections, Giner and Mora (2020) show that local enforcement agencies as well as auditors refrained from pointing out significant deviations from IFRS impairment rules. In that case, the Spanish government pressured banks to recognize higher impairment losses than required under IFRS (i.e.,

[30]For example, the German Financial Reporting Enforcement Panel (FREP) announces priorities each year in advance for the next year (e.g., FREP, 2019). While common enforcement priorities are set in the European Union by ESMA, it remains unclear how they are implemented and complemented by other priorities at the national level.

to take a "big bath") to qualify the banks for the bailout program by the European Financial Stability Facility (EFSF).

Overall, research findings suggest that policymakers rather use lenience as a regulatory forbearance tool than openly pushing the standard setters to ease accounting rules in their transparent due process (see Subsection 5.4). The observable reluctance within the European Union to harmonize enforcement practices supports the argument that local policymakers aim at maintaining some discretion over the strict application of accounting rules by local firms (Véron, 2020).

5.6 Outlook and Future Research Opportunities

So far, accounting research provided various insights into the political dimension of jurisdictions' IFRS adoption decisions, the IASB's institutional design, the IASB's standard setting decisions, and the local design of enforcement mechanisms. The very nature of politics, which often involves behind-closed-doors and tacit agreements, creates practical hurdles for researchers to provide evidence on the drivers for decisions concerning the adoption, development, or enforcement of IFRS. With the background of these data-availability constraints, we next summarize areas within the political economy of IFRS that offer research opportunities.

First, large parts of the IASB and IFRS Foundation remain black boxes. Almost all research on board dynamics examines the first decade of the IASB (2001–2011) under Chair Sir David Tweedie. As of today, little is known about how these dynamics change with the composition of the board and with different chairpersons. Further, even though anecdotal evidence (e.g., Barth, 2008) suggests that the IASB staff is a crucial information intermediary between constituents and board members, we know little about how IASB staff members are selected and how the staff performs its function as information gatekeepers.

Second, endeavors to influence the IASB's decisions remain obscure. Field or interview studies to obtain insights in firms' and institutions' drafting processes of comment letters and endeavors to coordinate their activities with other constituents could provide insights on constituents'

approaches to deal with proposed changes to IFRS that may fundamentally change their current reporting, auditing, or data analyses practices. At the level of politicians, little is known about how they develop opinions on IFRS, such as when debating whether an IFRS standard should be endorsed (e.g., in the European Parliament). As of today, there exists very little knowledge about political pressure on the IASB from outside the European Union.

Third, jurisdictions' endeavors to enforce the application of IFRS by domestic firms remain a poorly understood component within the domain of financial reporting, which is, to a great part, due to the reluctance of (non-U.S.) enforcement agencies to share their data. Next to limited institutional knowledge about the work of enforcement agencies, little is known about collaborations among enforcement agencies as well as enforcement agencies and the IFRS Interpretations Committee to prevent the emergence of local IFRS interpretations.

Fourth, new standard setting decisions of the IASB and endorsement decisions at the jurisdictional level naturally provide new case material. Despite continued conversations between the FASB and IASB, the lack of a convergence agenda raises the question about the stability and effects of this coexistence of two standard setters, which may continue to develop diverging accounting standards. Similarly, the recent market demand for internationally comparable nonfinancial (or ESG) reporting information is likely to create new pressures on the IASB and IFRS Foundation (e.g., the recent consultation paper on whether the IFRS Foundation should engage in the field of sustainability reporting, see IFRS Foundation, 2020l). The same holds for the increasing demand for non-GAAP performance measures and more frequent communication, which challenges the relevance of traditional accounting information in periodically issued financial reports.

Fifth, in case that local deviations from IFRS as issued by the IASB become more frequent, the question arises to what extent these deviations can be predicted on the basis of the characteristics of IFRS standards, local jurisdictions and their constituents. Furthermore, such cases will offer the possibility to study the markets' reaction and assessment of such local deviations or firms' reporting choices when being subject to local deviations from IFRS.

Finally, technological developments, such as the availability of automated transcription software, can help reducing costs of conducting research on audio or video files of board meetings, Parliamentary debates, or roundtable meetings.

6

The Impact of IFRS Research

In the first volume of this journal, then-IASB member, Mary E. Barth (2007a), describes how research can support standard setters' decision-making while simultaneously contributing to academic discourse. More than a decade later, we can assess how the IFRS literature has contributed to the understanding of accounting as an academic discipline[1] and how this research has, at the same time, influenced the development of IFRS standards and, thus, affected the real economy.[2] In this section, we address the relevance of IFRS research and provide an account of the status quo. Specifically, we present (1) a citation analysis for IFRS

[1] Academic impact is usually measured via the number of citations in the literature. Journal rankings frequently rely on articles' number of citations (e.g., Chartered Association of Business Schools, 2018). Only a few rankings rely on assessments by the academic community (e.g., Financial Times, 2016).

[2] For a review of different definitions of "research impact", see Alla *et al.* (2017). Usually, nonbibliographic definitions of research impact highlight the research publication's effect on the economy, society, public policy, etc., beyond academia (Alla *et al.*, 2017, p. 5). When making evaluations and funding decisions, research councils around the world increasingly require research to have economic and societal impact; e.g., the U.K., UKRI (2020).

literature, (2) evidence for the impact of IFRS research on standard setting, and (3) information on the extent to which practitioners consider IFRS research.

6.1 The Impact of IFRS Research on Academic Discourse

In this subsection, we start by presenting an overview of the IFRS literature that has been published in one of the "Top 15" accounting journals[3] within the past two decades (between 2000 and 2019). We define an "IFRS article" as an article that includes the term "IFRS", "IAS", "international accounting standard", or "international financial reporting standard" in the abstract, title, or keywords. It follows that our analysis might not consider papers that study the effects of major changes within the set of IFRS standards and do so by only referring to the accounting subject in the abstract, title, or keywords (such as fair value measurement) but not to the accounting standard's name (e.g., IFRS 13 or ASC 820).[4]

To illustrate to what extent IFRS-related research has influenced the discipline, we use a citation analysis, which assumes that the number of citations of a particular research paper by academic peers reflects its influence on other researchers' work (Cole and Cole, 1967). Despite their limitations in adequately measuring academic impact,[5] citation counts have been used in academia as the most objective, timely proxy for a research paper's influence on academic discourse (Brown and Gardner, 1985). The metric prominently appears in academic forums, such as Research Gate or the Social Science Research Network (SSRN); search platforms, such as Google Scholar or Scopus; and defines the impact factor and ranking of academic journals—which in turn affects

[3] "Top 15" accounting journals include all field journals with a focus on financial accounting that are included in the first Quartile of the SCImago Scientific Journal Ranking 2018 (see Table 6.1 for the list of considered journals).

[4] For example, this becomes evident in the IFRS 13 post-implementation literature review by Filip *et al.* (2017).

[5] For example, the failure to distinguish between positive and negative citations could result in a flawed perception of a paper's influence (Zeff, 2019). The same holds for strategic citations, i.e., citing research published in the targeted journal to demonstrate the paper's alignment with the journal's "aims and scope".

Table 6.1: Absolute and relative number and citations of IFRS articles by journal published between 2000–2019

	Number of IFRS Articles		Total Number of Articles	Citations of IFRS Articles		Number of Citations	Average Number of Citations Per Article	
	abs.	rel.		abs.	rel.		IFRS	non-IFRS
Panel A: Top 6 Journals								
Accounting, Organizations and Society (AOS)	22	2.9%	762	811	1.6%	49,650	36.9	66.0
Contemporary Accounting Research (CAR)	18	2.1%	854	641	2.3%	27,843	35.6	32.5
Journal of Accounting and Economics (JAE)	16	2.4%	668	2,135	3.3%	64,170	133.4	95.1
Journal of Accounting Research (JAR)	21	3.3%	644	4,372	9.1%	48,055	208.2	70.1
Review of Accounting Studies (RAST)	24	4.3%	554	883	5.2%	16,970	36.8	30.4
The Accounting Review (TAR)	40	3.3%	1,196	1,836	2.5%	72,426	45.9	61.1
Total (Top 6 journals)	**141**	**3.0%**	**4,678**	**10,678**	**3.8%**	**279,114**	**75.7**	**59.2**

Continued.

Table 6.1: Continued

	Number of IFRS Articles		Total Number of Articles	Citations of IFRS Articles		Number of Citations	Average Number of Citations Per Article	
	abs.	rel.		abs.	rel.		IFRS	non-IFRS
Panel B: Other Top 15 Journals								
Accounting, Auditing and Accountability Journal (AAAJ)	22	2.7%	813	332	1.8%	18,023	15.1	22.4
Accounting and Business Research (ABR)	58	11.7%	495	1,903	21.3%	8,928	32.8	16.1
Accounting Horizons (AH)	57	8.9%	642	1,252	6.9%	18,079	22.0	28.8
British Accounting Review (BAR)	30	6.2%	482	587	4.7%	12,457	19.6	26.3
Critical Perspectives on Accounting (CPA)	25	2.3%	1,096	679	3.4%	20,241	27.2	18.3
European Accounting Review (EAR)	60	9.7%	619	2,479	15.0%	16,489	41.3	25.1

Continued.

Table 6.1: Continued

	Number of IFRS Articles		Total Number of Articles	Citations of IFRS Articles		Number of Citations	Average Number of Citations Per Article	
	abs.	**rel.**		**abs.**	**rel.**		**IFRS**	**non-IFRS**
Foundations and Trends in Accounting (FnT)	3	5.9%	51	54	9.0%	600	18.0	11.4
Journal of Accounting and Public Policy (JAPP)	48	9.0%	534	1,436	8.0%	17,972	29.9	34.0
Journal of Business Finance and Accounting (JBFA)	27	2.7%	1,006	662	3.3%	20,343	24.5	20.1
Total (Top 15 journals without Top 6)	**330**	**5.8%**	**5,738**	**9,384**	**7.0%**	**133,132**	**28.4**	**22.9**
Total (Top 15 journals)	**471**	**4.5%**	**10,416**	**20,062**	**4.9%**	**412,246**	**42.6**	**39.4**

Notes: Data is retrieved from Scopus (in February 2020). We searched for the universe of articles published in journals with a focus on financial accounting that are included in the first Quartile of the SCImago Scientific Journal Ranking 2018. *IFRS articles* include one of the following terms in the abstract, title or keywords: IFRS, IAS, international accounting standard, international financial reporting standard. All other articles are defined as *non-IFRS articles*. We excluded editorials, discussion papers and errata.

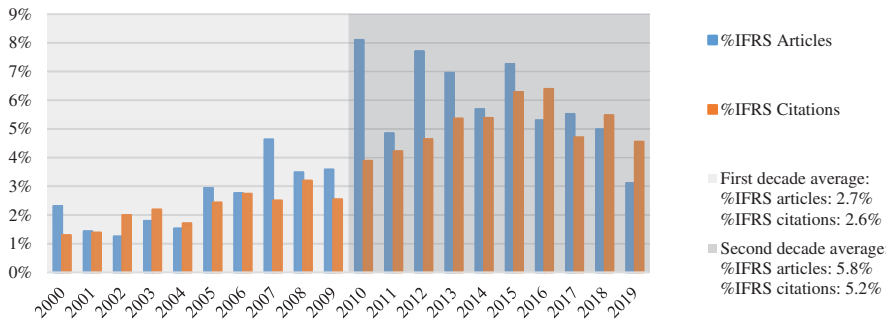


Figure 6.1: Relative number of IFRS articles and citations over time.

Note: Data is retrieved from Scopus (in February 2020) for articles published in journals with a focus on financial accounting that are included in the first Quartile of the SCImago Scientific Journal Ranking 2018 (see Table 6.1 for the list of considered "Top 15 journals"). *IFRS articles* include one of the following terms in the abstract, title or keywords: IFRS, IAS, international accounting standard, international financial reporting standard. We exclude editorials, discussion papers and errata. *%IFRS articles* is the number of *IFRS articles* divided by the total number of articles published in Top 15 journals in the respective period of time. *%IFRS citations* is the total number of citations of *IFRS articles* in a specific period divided by the total number of citations of all Top 15 journal articles in a specific period.

outcomes, such as research funding, the accreditation of business schools, and individual careers.

Regulatory changes like IFRS adoption are generally followed by research papers, which analyze their consequences (Leuz and Wysocki, 2016). Consistent with the increasing use of IFRS throughout the world, Figure 6.1 illustrates the rise in IFRS research over time. Over the past 20 years, a total number of 471 articles on IFRS have been published in the Top 15 journals and 141 in one of the six journals that are part of the FT50[6] (hereafter referred to as the "Top 6"). Journals that are not part of the Top 6 published about twice as many papers on IFRS as the Top 6 journals (in absolute and relative terms; see Table 6.1).

IFRS articles published in Top 15 journals generated only about 2.6% of the citations generated by all articles published in these journals between 2000 and 2009. Consistent with the considerable increase in the relative number of IFRS articles published in Top 15 journals in

[6]For a list with details on the 50 journals that *The Financial Times* uses in compiling its research ranking, see Financial Times (2016).

the following decade (from 2.7% in the first decade to 5.8% in the second decade; see Figure 6.1), IFRS articles likewise attracted more attention by academia in terms of citations. Between 2010 and 2019, IFRS articles that were published in the Top 15 journals between 2000 and 2019 accounted for 5.2% of the citations generated by all articles published in these journals (see Figure 6.1).

Table 6.1 compares the average number of citations per IFRS article with the average number of citations per non-IFRS article. On average, IFRS articles were cited more often than non-IFRS articles. IFRS articles that were published in a Top 6 (another Top 15) journal were cited on average about 76 (28) times, while non-IFRS articles that were published in a Top 6 (another Top 15) journal were cited on average only about 59 (23) times.

Table 6.2 provides further information on the number and characteristics of IFRS and non-IFRS articles that generated specific numbers of citations. The age pattern reveals that, on average, IFRS articles need an "incubation" time of at least 10 years until they become successful (in terms of yielding more than 100 citations). The table also shows that the 12 most frequently cited IFRS articles with at least 250 citations (listed individually in Table 6.3) generated 29% of all IFRS citations (17.0% + 12.0%). While this seems to be an exceptionally high share, a comparison with the non-IFRS articles (Panel B of Table 6.2) reveals that the 243 most successful non-IFRS articles (i.e., 57 + 186) likewise generated about 27.6% of all non-IFRS citations (11.4% + 16.2%). Overall, Table 6.2 suggests that the IFRS literature is just as successful as the non-IFRS literature (on average, 42.6 as compared to 39.4 citations per article), despite its younger age (7.8 years on average as compared to 9.4 years) and its lower share in the Top 6 journals (29.9% as compared to 45.6%).

We next analyze in which type of publication outlet (accounting journals, journals covering business, economics or other disciplines, books and other forms of publications) the 12 most frequently cited IFRS articles were referenced. Table 6.4 reveals that 59.1% of the 5,830 cumulated citations stem from other IFRS articles published in a variety of outlets. Another indicator for the relatively low impact of IFRS research not only outside the IFRS literature but also outside

Table 6.2: Characteristics of IFRS and non-IFRS articles by number of citations

	>500	250–500	100–250	50–100	10–50	<10	Total
Panel A: IFRS Articles							
Number of published articles	4	8	28	49	217	165	**471**
... in Top 6 journals (rel.)	100.0%	75.0%	46.4%	40.8%	29.5%	20.6%	**29.9%**
... in other Top 15 journals (rel.)	0.0%	25.0%	53.6%	59.2%	70.5%	79.4%	**70.1%**
Average age (in years)	15.3	13.4	10.8	11.0	8.4	5.1	**7.8**
Average citations	853.5	302.0	164.9	73.4	24.9	3.7	**42.6**
Total number of citations	3,414	2,416	4,618	3,599	5,409	606	**20,062**
Relative number of citations	17.0%	12.0%	23.0%	17.9%	27.0%	3.0%	**100.0%**
Panel B: Non-IFRS Articles							
Number of published articles	57	186	671	1,113	3,938	3,980	**9,945**
... in Top 6 journals (rel.)	91.2%	86.6%	73.6%	61.7%	44.9%	34.6%	**45.6%**
... in other Top 15 journals (rel.)	8.8%	13.4%	26.4%	38.3%	55.1%	65.4%	**54.4%**
Average age (in years)	15.9	15.1	13.8	12.8	10.6	6.1	**9.4**
Average citations	786.5	341.2	148.5	69.1	24.0	3.3	**39.4**
Total number of citations	44,828	63,468	99,632	76,887	94,393	12,976	**392,184**
Relative number of citations	11.4%	16.2%	25.4%	19.6%	24.1%	3.3%	**100.0%**

Notes: Data is retrieved from Scopus (in February 2020). We searched for the universe of articles published in journals with a focus on financial accounting that are included in the first Quartile of the SCImago Scientific Journal Ranking 2018. *IFRS articles* include one of the following terms in the abstract, title or keywords: IFRS, IAS, international accounting standard, international financial reporting standard. All other articles are defined as *non-IFRS articles*. We excluded editorials, discussion papers and errata.

Table 6.3: IFRS articles with more than 250 citations (2000–2019)

Author(s)	Year	Title	Journal	Citations
Leuz and Verrecchia	2000	The economic consequences of increased disclosure	JAR	1,032
Ball *et al.*	2003	Incentives versus standards: Properties of accounting income in four East Asian countries	JAE	846
Barth *et al.*	2008b	International accounting standards and accounting quality	JAR	827
Daske *et al.*	2008	Mandatory IFRS reporting around the world: Early evidence on the economic consequences	JAR	709
Ball	2006	International financial reporting standards (IFRS): Pros and cons for investors	ABR	487
Ashbaugh and Pincus	2001	Domestic accounting standards, international accounting standards, and the predictability of earnings	JAR	303
Leuz	2003	IAS versus U.S. GAAP: Information asymmetry-based evidence from Germany's new market	JAR	287
Laux and Leuz	2009	The crisis of fair-value accounting: Making sense of the recent debate	AOS	279
Li	2010	Does mandatory adoption of international financial reporting standards in the European Union reduce the cost of equity capital?	TAR	269

Continued.

Table 6.3: Continued

Author(s)	Year	Title	Journal	Citations
Armstrong *et al.*	2010	Market reaction to the adoption of IFRS in Europe	TAR	269
Hung and Subramanyam	2007	Financial statement effects of adopting international accounting standards: The case of Germany	RAST	264
Soderstrom and Sun	2007	IFRS adoption and accounting quality: A review	EAR	258
				5,830

Notes: This table lists all IFRS papers with more than 250 citations. Data is retrieved from Scopus (in February 2020).

the financial accounting literature is the high number of citations from articles published in other accounting journals (i.e., $60\% = 24.4\% + 35.6\%$). In fact, our analysis suggests that only 27.4% ($9.6\% + 15.2\% + 0.8\% + 1.8\%$) of the total 5,830 citations originate from articles that were published in journals outside of accounting. It is likely that the impact of less frequently cited IFRS articles on non-accounting-related disciplines is considerably lower. While reach beyond the own field is a general issue in the technical domain of accounting,[7] the impact of the IFRS literature is even more bound to the field of accounting than accounting research in general.[8] Thus, even the most significant event

[7]Even the Top 6 journals have comparably low impact factors within their *Financial Times* 50 (FT50) journal peer group. The average SCImago journal rank (SJR) of the six FT50 accounting journals is 5.05, while the average SJR of the other FT50 business journals is 7.28 (data for the 2018 SJRs is retrieved from Scopus in February 2020).

[8]In comparison to the IFRS articles, whose share of citations in non-accounting journals amounts to 27.4% (see Table 6.4), the 10 most cited non-IFRS articles generated 37.2% out of 14,650 citations from articles published in non-accounting journals (untabulated results of a citation analysis for the 10 most cited articles published in one of the Top 15 journals between 2000 and 2019; data is retrieved from Scopus in July 2020).

Table 6.4: Citation analysis of Top 12 IFRS articles (listed in Table 6.3)

	Citations by IFRS Articles		Citations by Non-IFRS Articles		Total Citations	
	abs.	**rel.**	**abs.**	**rel.**	**abs.**	**rel.**
Articles published in ...						
... Top 15 accounting journals	745	12.8%	679	11.6%	1,424	24.4%
... other accounting journals	1,462	25.1%	613	10.5%	2,075	35.6%
... business and economics Q1 journals	222	3.8%	340	5.8%	562	9.6%
... other business and economics journals	535	9.2%	352	6.0%	887	15.2%
... Q1 journals of other disciplines	8	0.1%	39	0.7%	47	0.8%
... other journals of other disciplines	54	0.9%	50	0.9%	104	1.8%
... books, conference proceedings, etc.	421	7.2%	310	5.3%	731	12.5%
Total citations by other IFRS articles	**3,447**	**59.1%**	**2,383**	**40.9%**	**5,830**	**100.0%**

Notes: We retrieved the data (in February 2020) for each of the 12 articles listed in Table 6.3 via the Scopus option "View cited by" available for individual articles and merged with the Scopus Journal List (https://www.scimagojr.com/journalrank.php) via the journals' names. *IFRS articles* include one of the following terms in the abstract, title or keywords: IFRS, IAS, international accounting standard, international financial reporting standard. All other articles are defined as *non-IFRS articles*. *Q1 journals* are defined as journals that are included in the first Quartile of the SCImago Scientific Journal Ranking 2018. *Other accounting journals* are defined as journals that include "Accounting" in their names or that Scopus classified into the subject area of "Accounting". *Business and economic journals* include journals that are not classified as *accounting journals* and were classified by Scopus into the subject area of "Economics, Econometrics and Finance" or "Business, Management and Accounting" or include one of the following terms: Finance, Management, Econom*. *Books, conference proceedings, etc.* comprise articles in outlets that could not be merged with the Scopus Journal List. *Other journals of other disciplines* serves as a residual category.

in recent accounting history has largely remained within the accounting academy and has not attracted much outside attention.

Figure 6.1 finally suggests that the production of IFRS articles has passed its peak (in 2010), even though the literature on IFRS seems to remain influential as measured by the relative number of citations that IFRS papers yield in comparison to all other papers published in the selected journals. The observable trend reflects a saturation effect in the supply of or demand for research on the consequences of the adoption of the entire set of IFRS standards following the first wave of mandatory IFRS adoptions in 2005. The low-hanging fruit of analyzing the more obvious research questions and applying standard research designs following the major regulatory change in 2005 are no longer available. Unsurprisingly, it has become more difficult to deliver a major contribution, and the IFRS literature has moved on to studying more nuanced issues.

6.2 The Impact of IFRS Research on Standard Setting

Given that the IASB pursues an "evidence-based" standard setting approach, there exists an actual demand for policy-relevant IFRS research. The idea of "evidence-based" regulation, or more narrowly, the use of cost-benefit analysis as a basis for regulatory decisions, is applied in many public policy areas (Schipper, 2010). After a court case in 2011, the U.S. securities market regulator (the SEC) started to increase the use of academic evidence to inform its rule making process (Geoffrey and Lee, 2020). Around the same time, after the Trustees' strategy review in 2012, the IASB likewise embraced the idea of evidence-based standard setting (IFRS Foundation, 2012)—a move that corresponds to its aim to balance costs and benefits of its regulations (Schipper, 2010). As of today, the IASB uses the term "evidence-*supported* standard setting"[9] and covers its demand for evidence via its own staff's internal research, descriptive evidence provided by regulatory peers and the IASB's constituents, and by relying on academic research (Scott and Tarca, 2018). In line with Watts and Zimmerman's (1979) depiction of

[9]See https://www.ifrs.org/academics/.

much research serving "the market for excuses", academic research is said to be especially appreciated, as it is less likely for academics to have vested interests than for other IFRS constituents (IFRS Foundation, 2017b). At the same time, accounting standard setters struggle to identify relevant and high-quality academic research that speaks to their questions on a timely basis (IFRS Foundation, 2017c).

In reality, academic research primarily provides after-the-fact evidence, rather than findings that could help the standard setter to make evidence-based decisions before issuing a new regulation (Beresford, 1994; Beresford and Johnson, 1995; Fülbier *et al.*, 2009; Schipper, 1994). In many cases, regulatory "pre-implementation" studies are hardly possible, because most accounting researchers are trained to examine archival data (instead of conducting simulations, experiments, surveys, interviews or developing applicable analytical models).[10] If no historical data is available to examine a particular question, accounting researchers usually fail to provide input to standard setters (Schipper, 1994). Limitations to draw causal inferences in financial accounting (see Subsection 3.2) create additional barriers for academics (Leuz, 2018). Former members of both communities (i.e., standard setters and accounting academia) have repeatedly outlined reasons for the communication gap between researchers and standard setters and potential ways to reduce the gap. For example, Barth (2007b) highlights the importance of explaining how the answer to a research question can provide useful input for standard-setters (in other words, providing a link between the motivating question and research question).[11] Yet, there exists evidence that authors of research papers often fail to present this link.[12] In the

[10] See also Stephen Zeff's comments as outgoing editor of *The Accounting Review*: "When modeling problems, researchers seem to be more affected by technical developments in the literature than by their potential to explain phenomena. So often it seems that manuscripts are the result of methods in search of questions, rather than questions in search of methods" (Zeff, 1983, p. 134).

[11] See also former FASB member Katherine Schipper (1994) and former Institute of Chartered Accountants in England and Wales (ICAEW) member Brian Singleton-Green (2010) for discussions of key attributes of policy-relevant research.

[12] For example, Zeff and Dyckman (2018) find that the majority of papers published over the first 30 years in *Accounting Horizons*—a journal that originally aimed at bridging academe and practice—does not explain the economic significance of their findings in the article's synopsis or conclusions.

following, we aim at taking stock of the type of IFRS research that did attract the attention of standard setters as well as the various means that now exist to stimulate policy-relevant IFRS research.

6.2.1 The IASB's Gateways for the Exchange of Information

Apart from providing teaching resources, the IASB explicitly seeks collaboration with academics via different channels (see IFRS Foundation, 2020k). First, the IASB co-hosts the IASB research forum together with an academic journal, where academics and non-academics meet to discuss research papers that were selected for presentation.[13] To ensure the exchange between academics and non-academics, each paper has an academic discussant as well as a discussant from the IASB or a national standard setter.[14] To assure the selection of high quality research projects, paper submissions are subject to the journal's normal rigorous review.

Second, the IASB draws on academic literature as part of its post-implementation reviews (PIR). According to the IASB's Due Process Handbook a "PIR is an opportunity to assess the effect of the new requirements on investors, preparers and auditors" (IFRS Foundation, 2016a: Article 6.55). The IASB may consider to undertake a review of academic literature as part of its public consultation (IFRS Foundation, 2016a: Article 6.60). The IASB informs about current and upcoming PIRs on its website (IFRS Foundation, 2020g) and infrequently calls for academic literature reviews on particular subjects.[15] PIRs usually take place about 30 to 36 months after the effective date of the standard (IFRS Foundation, 2016a: Article 6.52). Academic researchers thus have a relatively short period to generate helpful information for the standard setter. Still, researchers can anticipate future subjects of interest to the standard setter.

[13]The annual events exist since 2014 and are announced by a call for research papers on contemporary issues that are relevant for the IASB (usually issued in September of the preceding year); e.g., IFRS Foundation (2020b).

[14]The papers, the presentation slides of the author and discussants as well as audio files are available on the IASB's website (IFRS Foundation, 2020b).

[15]See the latest call from 2017 for a review of relevant literature for the post-implementation review of IFRS 13 (IFRS Foundation, 2017a).

Third, the IASB sends board and staff members to academic conferences to present new developments at the IASB and discuss academic research (e.g., IFRS Foundation, 2019a). With regard to the actual or practical use of IFRS research for standard setting, the staff plays an important role in finding, selecting, and presenting research findings to the board members (e.g., Barth, 2008, p. 1169). The staff collects information on potential standard setting projects by conducting its own research program, the main output of which takes the form of discussion papers or research papers (IFRS Foundation, 2016a, Article 4.12). Such papers are meant to "include a comprehensive overview of the issue" and "possible approaches to addressing the issue" (IFRS Foundation, 2016a, Article 4.12). Research papers are issued on the IASB's website.[16]

Fourth, the IFRS Foundation liaises with academia by appointing academics to the board (e.g., Tom Scott and Ann Tarca as of 2020). The IFRS Foundation further invites the academic community to inform the IASB's work via memberships at the IFRS Advisory Council. Yet, one channel that the IASB is not using this far is a separate Academic Panel. While at the local level, for example, EFRAG established the EFRAG Academic Panel in 2017 "as a response to the increased importance of research activities for the IASB and EFRAG" (EFRAG, 2020), the IASB has not followed up on prior discussions in its IFRS Advisory Council about establishing such a panel for the IFRS Foundation.[17]

These different channels underscore that the IASB has adopted practices of more mature standard setters, such as the AASB, CASB or FASB[18] (IFRS Foundation, 2017b, p. 15) and met criticism about missing gateways for the exchange of information between academics and the IASB (e.g., Buijink, 2006). In addition, the IASB also implicitly invites academics to comment on drafted standards in the course of its due process. An analysis of the submission of comment letters by various groups for consideration by the IASB over the years 2002–2006

[16]See "Research Projects" on https://www.ifrs.org/projects/work-plan/.

[17]See IFRS Advisory Meeting notes on the "academic liaison strategy" on 27–28 February 2018.

[18]For an overview of the FASB's approaches to engage with academics see Zeff (2021).

shows that academics submitted only 1.8% out of 3,234 comment letters (Jorissen *et al.*, 2012). In the future, the IASB may consider copying other regulators' approaches to create conditions that remedy identification problems (e.g., through pilot studies, field experiments, regulatory sandboxes, etc., see Cascino, 2019). For example, the SEC changed short-sale regulations for a randomly selected groups of firms to be able to study the effects of the regulatory change. The staggered introduction of new standards bears the potential to significantly improve researchers' attempts to analyze effects of accounting changes (Cascino, 2019).

6.2.2 The Academic Community's Gateways for the Exchange of Information

At the academic level, there exist platforms that aim at stimulating the discourse between academics and standard setters. For example, the American Accounting Association (AAA) runs the AAA Financial Accounting and Reporting Section with its Financial Reporting Policy Committee as an elaborate platform featuring academics' participation in both the FASB's and IASB's due process (see AAA, 2020). During the debate on the adoption of IFRS by U.S. issuers, the AAA submitted multiple comment letters to the SEC to inform about current research findings on IFRS.[19] With the Financial Reporting Standards Committee (FRSC), the European Accounting Association (EAA) established a similar platform. The committee serves the purpose of liaising "with the IASB and EFRAG on behalf of the EAA to promote the use of academic research and to ensure that the voice of the European academic community is heard" (EAA, 2020). The chair decides on the main activities of the committee, which include the encouragement of comment letter submissions or the organization of symposia and research forums with IASB staff members.

In alignment with its mission, the International Association for Accounting Education and Research (IAAER) aims at enhancing the

[19]See comment letters from the AAA's FARS Financial Reporting Policy Committee and the AAA's International Accounting Section on https://www.sec.gov/comments/s7-27-08/s72708.shtml. While one of the comment letters was cited in the SEC's final staff report on the incorporation of IFRS into the U.S. financial reporting system (SEC, 2012, p. 27), the quote does not refer to academic research findings.

exchange between academia and standard setters (see e.g., Gordon and Street, 2013). For example, IAAER sponsors a program to "inform the IASB standard setting process", which involves a call for research proposals instead of more or less finished research papers. The projects are funded and accompanied by periodic meetings with IASB Board members and staff.[20] Next to the EAA, IAAER funds one seat at the IFRS Advisory Council to represent international accounting research.

6.2.3 Evidence for the Use of IFRS Research by the IASB

While the impact of research on standard setters is often belittled, the influence of board members can be substantial (see Subsection 5.2). The literature suggests that academic liaison members at the IASB and FASB had a considerable impact on the promotion of the use of fair value measurements or the design of the conceptual framework (Erb and Pelger, 2015; Moehrle *et al.*, 2009; Morley, 2016).

The extent to which the IASB actually relies on IFRS research in its decision-making is difficult to approximate. In line with the idea of the "market for excuses" (Watts and Zimmerman, 1979), the selective summary of academic evidence that backs the benefits of adopting IFRS (e.g., Tarca, 2012) and references to other organizations' positive IFRS post-adoption reviews[21] suggests that the IASB uses academic research strategically to promote the use of IFRS. Klein and Fülbier (2019) provide evidence in the form of a content analysis of publicly available board meetings' audio playbacks (on the amendment of IAS 19 in 2011) and find that no single study and only one academic opinion were referenced over the series of 14 analyzed board meetings. So far, there do not exist analyses on other IASB projects. Standard setters also largely avoid referring to accounting literature in their standards' basis for conclusions (Zeff, 2021).

However, more recently published discussion papers suggest that the IASB has started to pay more attention to research findings and incorporate research evidence in its due process. For example, the

[20] See IAAER (2020). See also IFRS Foundation (2019b).

[21] See the post-adoption reviews by AASB (2016) and KASB (2016), and the European Commission (2015) cited by IFRS Foundation (2020j).

release of the Discussion Paper on Business Combinations in March 2020 shows that the staff also considered academic research on the issue (e.g., footnotes 12, 18, 21, 22, 25, 27, 38 in IFRS Foundation, 2020d). The Exposure Draft version of the Basis for Conclusions on General Presentations and Disclosures, issued in December 2019, similarly relies on academic research (e.g., footnotes 5, 8, 9, 10 in IFRS Foundation, 2019c). This anecdotal evidence suggests that the staff's interaction with researchers may actually manifest in the content of public consultation documents that are a core input for the board's discussions.

6.2.4 Evidence for the Use of IFRS Research in Endorsement Decisions

Given that academic evidence can help support controversial positions on the desirability of accounting changes (Watts and Zimmerman, 1979), IFRS research plays a potential role for a jurisdiction's endorsement decision. In case of the European Union, IFRS research is not only a potential resource for EFRAG to develop its endorsement recommendation but also for other parties involved in the process. For example, members of the European Parliament frequently ask their staff to collect academic evidence that informs about issues relevant for endorsement decisions (Walton, 2020). Members of the European Parliament or Commission can also decide to commission academic reviews on particularly contested issues before making an endorsement decision. This has, for example, happened during the endorsement process of controversial IFRS 9 (Financial Instruments), where a series of research papers (Bischof and Daske, 2016; Gebhardt, 2016; Hashim *et al.*, 2016; Novotny-Farkas, 2016) were commissioned to inform parliamentarians on the new standard.

6.3 The Impact of IFRS Research on Practitioners' Discourse

Calls for more practice-relevant accounting research are an equally reoccurring phenomenon, and the literature has addressed ways to overcome communication challenges between researchers and practitioners (e.g., Barth, 2008; Rutherford, 2011; Schipper, 1994; Singleton-Green, 2010).

Different foci of interest are reasons for why practitioners usually do not read academic journals. As pointed out by Kaplan (2019, p. 22), practitioners "have their own journals to read". Contributions in these journals usually inform the accounting profession about solutions to practical implementation problems arising from new accounting standards.

In Europe, the internationalization of accounting research and the adoption of research assessment criteria that focus on journal rankings broke with the tradition of publishing in local language journals that targeted both the academic and practitioner audiences. Yet, the existence of such local outlets illustrates that diverse interactions exist in local jurisdictions that also relate to IFRS research and its impact. Many more studies on IFRS are thus published in the local language journals than our citation analysis in Subsection 6.1 has picked up. These studies have an impact on the local discourse on IFRS in a country that is hardly observable. Naturally, the transmission of such insights to the international domain is limited.[22]

As of today, there is little systematic evidence available about the current status quo—that is, to what extent accounting research (or IFRS research specifically) affects practitioners' decisions or perceptions. In other words, "research on the linkages between accounting research and practice is embryonic in many respects" (Gendron, 2009).

With regard to IFRS research, we see demand for further analyses on this issue. In that regard, we observe that specific transmission channels exist that summarize and filter research insights for a wider audience. Several information intermediaries, such as professional associations, play an important role for practitioners in obtaining access to comprehensible summaries of academic research on IFRS (e.g., Evans *et al.*, 2011). Examples are the Association of Chartered Certified Accountants (ACCA) research reports (e.g., Tsalavoutas *et al.*, 2014) as well as more industry-specific regulatory agencies, such as the Bank for International Settlements (BIS) with its working paper series (e.g., BIS,

[22] Articles in the Top 15 academic journals almost never cite work published in any local language journal.

2015). While the IAS Plus webpage often features these reports, the page only documents a very limited number of other academic studies.[23]

Furthermore, the rise of social networking platforms, such as LinkedIn and Twitter, bears the potential for the easier transmission of research findings to the broader accounting community. However, even though a limited number of accounting researchers use these kinds of platforms, as of today, the spread of their communications is largely constrained to the research community.

[23]iasplus.com by Deloitte can be considered as one of the most comprehensive sources of global accounting news and IFRS resources. The page only provides links to a small number of academic papers (https://www.iasplus.com/en/tag-types/third-party/research-papers), with most of them having been presented at the IASB Research Forum.

7

Conclusions

Over the past two decades, the rise of IFRS has changed the field of financial reporting worldwide. In many jurisdictions, it has forced financial statement preparers and users to adapt to new reporting rules and practices as well as to the new political realities of international accounting standard setting. The increased relevance of IFRS for accounting constituents around the globe has affected accounting research by having provided powerful settings to study fundamental questions about the role of accounting information in the economy. The research on these questions has also provided answers to contemporary accounting questions asked by standard setters, other policymakers and practitioners (see Section 6).

Accounting research has eagerly taken up the quest of analyzing the consequences of the adoption of IFRS by different countries. Because the standardization of accounting regulation has different effects in different environments and for different constituents (see Section 2), IFRS adoption effects are hard to generalize. While there exists plenty of evidence on economic consequences of IFRS adoption, limitations of adoption settings and available research designs impede definite answers on the effects (see Subsections 3.1–3.3). Collectively, research

on IFRS adoption still supports the notion that IFRS had positive capital market effects, despite confounding effects in the form of firms' reporting incentives and simultaneous enhancements of enforcement regimes or other elements of jurisdictions' regulatory infrastructure (see Subsection 3.4). With the financial crisis of 2008 and 2009, IFRS had to weather its first litmus test, when the awareness of the interconnection of accounting rules and financial market stability increased. Accounting researchers assessed the impact of IFRS during the financial crisis, providing evidence that incentives for transparent risk disclosures and timely loss recognition were underdeveloped in the global financial sector such that the disciplining power of efficient markets was not able to unfold (see Subsection 3.5).

Next, accounting research has investigated IFRS reporting practices by different types of firms and across different countries. As compared to the U.S. research settings, IFRS research entails high data collection costs that arise from a lack of centralized public databases (such as the SEC's EDGAR system) and from a lack of comparability of firms' disclosures in their IFRS reports and electronic filing requirements (see Section 4). The underdevelopment of the infrastructure for the standardized provision of accounting information outside the United States as well as the inconsistencies and regional idiosyncrasies in reporting and terminology choices are key reasons for these limitations. There is plenty of room for improvement in the efficient transmission of financial data for the years to come.

Accounting research has also addressed questions about the political dimension of jurisdictions' IFRS adoption decisions, the IASB's standard setting decisions and the local design of enforcement (see Section 5). Since the IASB needs to respond to an international set of constituents with contrary reporting preferences, it operates within an even more complex political economy than its national counterparts (such as the FASB). So far, research shows how the chosen governance structure and due process of the IASB can shield IFRS standard setting from special interest group pressures, except in rare and extreme situations.

Just as IFRS standards and reporting practices continually change, IFRS research will remain a dynamic field of research with many open questions. New technological developments are expanding researchers'

ability to collect and analyze IFRS data, adding further possibilities for future research on IFRS. We offer three lists of future research opportunities at the end of each main section (see Subsections 3.6, 4.5, and 5.6).

In addition, new research opportunities are likely to arise from the IFRS Foundation's endeavors to respond to calls for the standardization of reporting on environmental, social and governance (ESG) matters (e.g., Barker and Eccles, 2018). The formation of a new standard setting body next to the IASB under the realm of the IFRS Foundation and the determination of a conceptual framework for this standard setter on the basis of the feedback on the consultation documents likely invite research on how such decisions were taken.[1] The initiation of this project coincides, for example, with the European Commission's endeavors to harmonize European firms' non-financial reporting practices.[2] The IFRS Foundation's potential development of non-financial reporting standards entails similar research opportunities regarding the analysis of market effects, reporting practices, and the political dimension of jurisdictions' adoption decision as summarized in this manuscript.

[1]The current stage of the sustainability reporting project of the IFRS Foundation can be found on: https://www.ifrs.org/projects/work-plan/sustainability-reporting/.

[2]See https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting_en as well as EFRAG's project page: https://www.efrag.org/Activities/2010051123028442/Non-financial-reporting-standards?AspxAutoDetectCookieSupport=1.

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