ARTICLE IN PRESS

Accounting, Organizations and Society xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Accounting, Organizations and Society

journal homepage: www.elsevier.com/locate/aos

Carriers of ideas in accounting standard-setting and financialization: The role of epistemic communities

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ARTICLE INFO

Keywords:
Discount rate
GASB
Pension accounting
Epistemic community
Standard setting
Financialization

ABSTRACT

We investigate one episode of the "financialization" of accounting: the debate over the "correct" method to discount defined benefit (DB) pension plan liabilities for US public sector financial reporting. We outline this issue from the pre-agenda, agenda-setting and alternatives selection phases of the standard setting process, through to the policy decision made by the Governmental Accounting Standards Board (GASB) in 2012. We find that one group of 15 individuals, which we propose acted as an epistemic community (EC) that was focused on financial economic theory, was disproportionally influential in all phases of the standard setting process, despite its small size. Ideas do not spontaneously travel from one jurisdiction (e.g., financial economics) to another (e.g., accounting) without agency. We thus add a focus on the *carriers* of ideas to the literature on accounting standard setting, which has so far predominantly examined this process from the standpoint of interests and institutions. We argue that framing theory helps to both empirically identify the hierarchies of the EC, but further helps to make visible the values and assumptions made by agents of financialization who push towards the adoption of financial computation techniques presented as axiologically neutral.

1. Introduction

> They [the Governmental Accounting Standards Board, GASB] are also being bombarded by public officials and a large share of the actuarial profession with misleading – but "good sounding" – arguments …. I look at it this way: imagine a sentient creature from another planet landed on the earth, and had no understanding of our system of mathematics. We decide to teach them math. But rather than teaching them math by standard instruction, we do it by debate. So we have a MIT-trained mathematician patiently explain why 1 + 1 = 2. On the other side, we had a Harvard-trained lawyer (someone really smart, but with a totally different area of expertise, and, in this hypothetical example, not particularly good at math) argue that 1 + 1 = 3. This alien creature would have the alien equivalent of cognitive dissonance, and then resolve it by "compromising" and learning that 1 + 1 = 2.5. (Brown, 2011)

This article's opening quotation illustrates the tension between the two main sides in a debate over an accounting standard, with its imaginary example suggesting how combining two very different technical approaches can lead to an illogical conclusion. The debate in question concerned the method used to discount defined-benefit (DB) pension plan liabilities for US public-sector financial reporting. We examine this debate – and more specifically, the carriers of its underlying ideas – from its initial emergence in a small group of epistemic actors in the late 1980s through to a policy decision made by the GASB in 2012. We find that one group of individuals, which we argue acts as an epistemic community (henceforth EC), was disproportionally influential in all the stages of this standard-setting process, despite its small size (the EC's core set of members only comprises 15 individuals).

Accounting, as we know, is made up of ideas drawn from elsewhere (Miller, 1988). One of the motivations for borrowing ideas from elsewhere is to 'modernize' accounting practice (Miller, 1988, p. 606), and one of the ways this modernization takes place is through standard-setting. One recent example of the updating of accounting practice and regulation is fair value accounting, an instance of accounting practice increasingly drawing upon market value and financial economics for measurement. In this article, we take the fair value approach to defined-benefit pension accounting as one empirical example of the broader phenomenon of accounting change. Our primary aim is to focus on the ideas which hold support for fair value accounting together, highlighting the carriers of these ideas in a particular instance of accounting change.

This case is an important empirical example of the importation of fair value and market value approaches in financial accounting for

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https://doi.org/10.1016/j.aos.2017.12.003
Received 1 May 2014; Received in revised form 7 December 2017; Accepted 15 December 2017
0361-3682/

several reasons. First, "getting the accounting right" in this context involves an inter-professional dispute between outsiders to accounting (including actuaries and financial economists) about what should happen in accounting, as well as an internal dispute within one profession (actuaries) about what would be best for another profession (accounting). This allows us to turn our analytical attention to the way knowledge is developed outside accounting, and how the accounting profession responds to that development. Secondly, given its relatively small size, the epistemic community studied had a surprisingly significant influence throughout, and observing the way its members carried certain ideas into the process offers both empirical and theoretical insights. Finally, while the debate is over measurement methodology, it has far-reaching socio-economic consequences, for the accounting methodology prescribed by the GASB for valuation of pension liabilities is related to multi-billion dollar government planning and spending (Novy-Marx, 2011). This last point warrants further explanation.

Pension obligations are just one of many liabilities that governments measure and report. The present value of this obligation is determined for two primary purposes: funding (the government knows how much cash to set aside to fund the obligation), and accounting (stakeholders are informed of the amount of the government's liability that shows up in its reported accounts). To calculate the present value, an interest rate must be selected at which to discount the future cash payments to benefit recipients. Rates may be selected using judgment (for instance, by estimating a future expected level of return in a portfolio), or by observation (for instance, by taking the rate observed from an index of specific bonds). At the heart of the debate in this paper is the practice through which actuaries have used their own judgement and standards of practice to select a discount rate, and the argument that this practice is out-dated and should be replaced by a rate which is observable in the market.

The arguments in favour of particular rates also involve the values they produce: reducing the discount rate by even a fraction of a percentage point would typically increase the liability values of DB pensions. Increasing the rate would lower the liability value, but would therefore hide the "true cost" of DB pension plans, and would amount to pushing costs into the future at the expense of coming generations of taxpayers in a "day of reckoning" (Bullock, 2016), upsetting intergenerational equity. For a recent example, in the state of Illinois a proposed change from 7.5% to 7.0% prompted the following memorandum from the state's senior advisor for revenue and pensions: "If the board were to approve a lower assumed rate of return taxpayers will be automatically and immediately on the hook for potentially hundreds of millions of dollars in higher taxes or reduced services." (Bullock, 2016). What appears, then, as a simple measurement issue involving no more than a half of a percentage point, is a catalyst for real impact on broader government spending concerns. This topic thus goes beyond pension plans, and is especially visible in today's focus on government finances, austerity, and debt levels.

This research advances our knowledge in three ways. First, bringing a carrier of ideas focus to this setting adds to our understanding of accounting standard-setting. ECs, unlike other types of lobbying groups, do not represent classic self-interest and thus offer an analytical focus unrelated to interests (Haas, 1992). This is not to say that ECs are entirely disinterested parties: they participate in the policy arena because they are motivated by their normative beliefs. They "aim to impose their view of the world by dint of their epistemic authority" (Dunlop, 2012, p. 239). They are, therefore, carriers of ideas, and it is possible to track the ideas they represent over time, which further allows us to contribute to the accounting literature on financialization. Chiapello (2015) argues that financialization is fundamentally an epistemic issue. Building on this, we suggest that financial economics is a set of ideas and associated methods that require carriers to garner support for their acceptability. As we show in this study, carriers of ideas do not always agree, even when they share a common layer of financial culture, and it is through these micro-episodes of epistemic conflict that the path of financialization is carved out. These are micro conflicts because groups of experts from outside the accounting profession agree that accountants should use financialized calculative devices, but disagree about *which ones* specifically.

The second contribution of this study is to the literature on epistemic communities. Our setting allows us to answer Dunlop's (2012) call for work on how ECs interact with other policy actors, including the amount of political savviness displayed in their bargaining tactics with policymakers, and the ways they get involved in the policy process. Dunlop also stresses the need for a temporal approach, to uncover aspects such as an EC's adjustment of its position over time. Temporally tracking an EC's activities also helps us to understand how ECs learn through the policy process, observing whether they change their approach, and whether they discover anomalies which could cause them to change their position. Accounting standard-setting processes can unfold over many years, from issue emergence, to agenda-setting, to alternative selection and the promulgation of a new rule, and this makes them a good potential setting for documenting an EC's participation over time. A longitudinal approach is also able to capture the EC in action as a carrier of ideas, since by looking at the backstory – i.e. what led up to a particular policy being put on the agenda – we can find and track the history of the idea itself, long before interests develop and agendas are set.

Combining Framing Theory (Benford & Snow, 2000; Snow & Benford, 1988, 1992) with the EC literature also enables us to answer Dunlop's (2012) call for work to better delineate the community component of ECs, and this constitutes a third contribution to research. We argue that longitudinal empirical observation of the framing activities of carriers of ideas throughout the policy-making process can identify an EC's "core set" of members (Collins, 1981). We suggest that ECs consist of concentric circles of members, who adhere to the frame created by the core set and contribute differently to its diffusion and success. Van Waarden and Drahos (2002, p. 930) note that ECs tend to have a hierarchical structure "where some actors are more equal than others". We confirm this observation: a leader – Jeremy Gold – clearly emerges from our analysis and plays the role of an "epistemic arbitrageur" (Seabrooke, 2014): his dual epistemic culture in both actuarial science and financial economics gives him the authority to arbitrate between the two sources of knowledge and promote what he considers the technically superior discounting method.

This paper continues as follows. We first review the literature on the financialization of accounting through standard-setting. We then explain why combining the concept of the epistemic community with framing theory is valuable, present our methods and describe our analysis, which starts with a description of the situation at the beginning of the process examined and continues with an overview of the EC's framing activities, in five distinct stages, the last of which concerns the role they played during the GASB's Pension Project debate. This is followed by an analysis of the frames and counter-frames advocated by participants in the GASB's consultation process, and the empirical section ends with an overview of the GASB's final decision. The implications of our results are then discussed before the conclusions.

2. The "financialization" of accounting

Research on financialization and accounting can be divided into five distinct yet non-mutually exclusive groups. A first group of studies explores the *broader political, economic and cultural context* within which accounting change has taken place over the last three decades, including (i) the birth of neoliberalism; (ii) a move away from long-term investment and profit-making in the real economy to a focus on short-term gains through speculation and trading activities in the financial markets, and (iii) the colonization of individuals' everyday decision-making processes by financial metrics and logics. Financialization is understood here as "the shift from industrial to financial capitalism, the shift from the factory to finance, and the shift from Keynes to Hayek." (Barthold, Dunne, & Harvie, 2017, p. 2).

A second, narrower group of studies focusses on how accounting *contributes* to financialization (understood, as in the first group above, as the financialization of capitalism and society): Pflueger (2016), Cooper, Graham, and Himick (2016) and Müller (2014), for example, argue that financial reporting in general, and IFRS and fair value accounting in particular, are part of the financialization process because they help to grease the wheels and legitimize this political and economic system of thought (see also Zhang, Andrew, & Rudkin, 2012; Chiapello, 2016). In this second group, the emphasis is on financialization *through* accounting rather than the financialization *of* accounting.

A third group of research articles focusses on the historical *manifestations* of financialization in accounting. The most widely-discussed manifestations include (i) the move from Historical Cost Accounting (HCA) to Fair Value Accounting (FVA) (Müller, 2014), (ii) the shift from stewardship to decision usefulness as the most important objective of financial reporting in the FASB and IASB conceptual frameworks (Erb & Pelger, 2015; Pelger, 2016; Zhang & Andrew, 2014), and (iii) the shift from professional judgment to market-based valuation, which caused accountants to (partially) lose control over value (Mennicken & Power, 2015, pp. 208–228). Mennicken and Power (2015, pp. 208–228) identify four historical moments of innovation in the valuation practices used by accountants, three of which can be viewed as indicative of a financialization trend in accounting: brand accounting in the 1980s and early 1990s (which led to the recognition of brands as a specific intangible asset in the balance sheet), and more recently the introduction of fair value accounting, and the adoption of impairment testing. The financialization that Mennicken and Power see in their historical overview is quite complex: older valuation conventions overlap with newer ones, and financialization is not a one-way street with finance "colonizing" accounting, as they argue that market-based information is also becoming more managerialized.

A fourth group of studies concentrates on the *effects* of financialization on accounting and control practices. These effects include the growing importance of the shareholder value mantra in corporate governance activities, and in the practices of corporations and professional service firms. This line of research highlights how managers adjust their organization's strategy to respond to shareholder value pressures for increased financial performance, modifying the ways in which accounting and control techniques are used (e.g., Alvehus & Spicer, 2012; Froud, Johal, Leaver, & Williams, 2014).

A fifth and last group of studies (including Chiapello, 2016; 2015) concentrates on the *process through which* accounting is becoming increasingly financialized (understood as the inclusion of financial tools in the accountant's toolbox). This process includes the importation into accounting of calculative techniques, theories and methods from financial economics and financial mathematics (see also Smith-Lacroix, Durocher, & Gendron, 2012).

The extant literature, though, whether examining how accounting is being financialized, or how accounting contributes to financialization, tends to ignore the fact that ideas such as neo-liberalism, and related techniques such as new calculations based on these ideas, arrive via carriers. For instance, in the fifth group of studies cited above, two aspects are lacking in this conversation on accounting's financialization process: why? And through whose agency? We focus on which carriers of ideas initiated a specific episode in the financialization of accounting history – the adoption of a financialized method for valuing the liability of defined benefits pension plans in public sector organization's balance sheet– and what reasons (motivations, justifications) they invoked to trigger this micro-episode of accounting financialization. Identifying the carriers of ideas who instigate specific episodes in the financialization of accounting, and the reasons they give for doing so, helps to fill this gap in the literature.

We argue that another subtle yet important aspect of the financialization process has also been overlooked in all five groups of studies listed above: finance itself evolves. For instance, one characterization of this evolution is that of Chiapello and Walter (2016), who highlight three major turning points in the history of quantification systems used in finance. These three quantification systems have been founded on three conventions. The first is the actuarial discounting convention where cash flows are discounted to present value using a constant expected rate of return. The second is the mean-variance convention, which takes into consideration the level of risk, as determined by the Capital Asset Pricing Model, thus producing a variable discount rate depending on factors such as levels of equity risk. The third, referred to as the absence of arbitrage opportunity convention, requires a stochastic model to extract the discount rate from market prices.

The evolution described by Chiapello and Walter (2016) illustrates how finance, like any scientific or professional discipline, is not static but dynamic, evolving as new theories and techniques replace or overlap with existing ones. And despite accounting's more generalized characterization in the literature as a somehow non- or lesser-financialized field increasingly "becoming" financialized, it has long contained elements from, and has a more complex relationship with, the ever-evolving finance discipline. As a result, more than one financialized method may be available to meet a given accounting need. This drives accounting to evolve, and when experts disagree about which method should be preferred, accountants are tasked with selecting appropriate specific tools from finance to blend with existing accounting practices.

Procedurally, the action of selection from a range of options is performed through standard-setting's due process, a topic addressed in diverse strands of literature looking at the interests of participants in the process, the institutions (rules, norms and bodies) where the process takes place, and the ideas and rationalities that spread through and around the process.

Research focusing on interests has repeatedly emphasized that standard-setters do not act in a vacuum (Cizek & Bunch, 2007) but are influenced by the social constituencies that have delegated their authority to them (Durocher, Fortin, & Côté, 2007; Gowthorpe & Amat, 2005; Kelly, 1982, 1985; Kwok & Sharp, 2005; Stenka & Taylor, 2010; Tutticci, Dunstan, & Holmes, 1994; Young, 2003). In addition, a large body of work has documented the incentives that lead corporations and auditing firms to lobby for or against a particular accounting standard (Elbannan & McKinley, 2006). Lobbying activities in the oil and gas sector – e.g., concerning accounting standards for exploration and evaluation activities (Cortese & Irvine, 2010) – and in the banking sector – e.g., concerning accounting standards for financial instruments (Hodder & Hopkins, 2014) – have received substantial attention.

Research focusing on institutions has critically examined the democratic legitimacy of accounting standard-setting bodies' due process (Bourne, 2014). It has also examined how certain accounting issues are constructed as "appropriate problems" worthy of standard-setting action, while other accounting issues never make their way onto the standard-setting bodies' agendas (Young, 1994). Scholars in this field have also emphasized that, contrary to what can be inferred from the literature on interests, accounting policy-making should be regarded as more than a bargaining process between powerful corporations, accounting firms and the political elite. Young (2014) explains that demarcations and boundaries between the political and the technical are sometimes deliberately maintained because accounting standard-setting bodies want to protect the claimed neutrality, impartiality and objectivity of their due process outcomes (see also Botzem, 2012; Richardson & Eberlein, 2011 and Young, 2003 on the argument that due process serves to strengthen standard-setters' legitimacy).

Finally, the research has recently begun to focus on ideas, studying the respective merits of competing rationalities such as rules-based versus principles-based approaches to standard-setting (Benston, Bromwich, & Wagenhofer, 2006); competing paradigms such as Fair

Value Accounting versus Historical Cost Accounting (Laux & Leuz, 2009); competing properties of accounting, including reliability versus representational faithfulness (Erb & Pelger, 2015); and competing models for the role of financial reporting: the stewardship model versus the information usefulness model (see Pelger, 2016 and Murphy, O'Connell, & Ó hÓgartaigh, 2013 on the revision process for the FASB and IASB's joint Conceptual Framework for Financial Reporting project, and see Bayou, Reinstein, & Williams, 2011 for a more general discussion of the tension between truth and usefulness in the standard-setters' approach to the role of accounting and auditing in democratic society).

Overall, accounting standard-setting research has focused on one, or a combination of two, of the above analytical angle(s), but rarely all three simultaneously (exceptions are Pelger, 2016 and Suzuki, 2007). This progression mirrors the development of the broader policy-making literature which similarly focused on interests, then institutions, and, more recently, ideas (Campbell, 2002; Kamieniecki, 2000).

The policy-making literature, however, has now turned its focus to a new analytical angle: the "carriers of ideas" (Dunlop, 2012). In accounting, this focus suggests that one important factor driving accounting change is the individuals who metaphorically carry the ideas they so firmly believe in, regardless of their own interests, including people who want to "get the accounting right" (Young, 1994, p. 86). Epistemic communities, whose involvement in accounting standard-setting has recently begun to attract the attention of researchers (Christensen, 2005, 2006; Durocher & Gendron, 2014; Lovell & MacKenzie, 2011), are groups of such individuals.

In sum, accounting is a disputed territory whose "frontier" (Miller, 1998) is essentially redrawn via standard-setting, a primary mechanism of accounting change. The literature on the financialization of accounting has not adequately explored the micro-conflicts arising as new financial theories and methods occasionally surface and challenge or overlap with older ones. When this happens, a layer of epistemic complexity is added to the deliberation process, wherein knowledge claims focus on why importing particular financial formulae makes accounting more "correct." We will show that these ideas and this knowledge are brought into the accounting fold via epistemic carriers.

3. Epistemic communities and framing theory in policy-making: institutions, interests and ideas

The politics of ideas turn in the literature on policy-making and agenda-setting has come to recognize that "what actors believe may be just as important as what they want" (Vanberg & Buchanan, 1989; in Campbell, 2002, p. 22), acknowledging that the ideas actors hold affect the way they define their interests in the first place. In a further development of this literature, the epistemic community framework reminds us that such "ideas would be sterile without carriers" (Haas, 1992; as described in Dunlop, 2012), placing individual actors (and groups) at the heart of the analysis of ideas.

ECs are "(…) a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area" (Haas, 1992). Starting in 1992, the first generation of EC research sets out the characteristics of an EC: what distinguishes epistemic communities from other groups is the combination of having a shared set of causal and principled beliefs, a consensual knowledge base, and a common policy-making aim. ECs differ from interest groups in that the emergence of anomalies that undermine their causal beliefs would lead them to withdraw from the policy debate. ECs also differ from professional groups (Morin, 2014) in that the latter "lack the shared normative commitments of members of an epistemic community" (Haas, 1992, p. 19).

The second generation of EC literature shifted its analytical focus to the epistemic aspect of ECs, to examine how truth is produced and authorized, and what role ECs play in the power-knowledge equation. ECs are envisaged in this approach as thought communities or "de facto natural coalitions of believers" (Sebenius, 1992, p. 325) comprising members who share a common understanding of a particular problem and want to translate their beliefs into public policies. One important implication of these second-generation EC studies is that the epistemic bond between EC members is a common style of thinking that extends beyond speaking the same technical or professional language, and is more than just understanding the same theories. In the third generation of EC research, the analytical focus shifted from subjects (first generation) and discourses (second generation) to practices, artifacts, methods and tools (Bueger, 2014).

To identify an epistemic community is thus to identify a set of actors with the professional and social stature to make authoritative claims (Dunlop, 2012) who forge their consensus based on shared knowledge and beliefs. Yet apart from covering EC characteristics and a framework for their identification, the EC literature offers little to work with to understand how ECs convert this shared knowledge into policy. Shared knowledge and social stature are insufficient in themselves to influence policy design. Litfin (1994), for instance, suggests that accepted knowledge is deeply connected to questions of framing and interpretation: *how knowledge is framed* can have a substantial impact not only on the identification of alternative policies but also on which course of action is eventually chosen. Similarly, Dunlop (2012) suggests that the success of any epistemic community is dependent not only on its epistemic resources but also on its members' political acumen. What they *do* with their consensual knowledge is thus an important question for empirical investigation. An epistemic view of policy-making suggests that to influence policy, actors need to use ideas and other tropes (White, 1978; in Alasuutari and Qadir, 2016) to frame the possibilities created by the knowledge they bring to the setting. Indeed, as Dunlop (2012) notes, "in the absence of epistemic communities to *frame complex issues and proffer new idea*s, policy making would follow more conventional, unreflective paths" (op. cit., p. 230, emphasis added).

Framing theory, based on the notion of frames originally defined by Goffman (1974) and further developed by Snow and Benford (1988, 1992), and Benford and Snow (2000), can help us understand how actors frame issues so that they become relevant to the targets they seek to influence. Framing involves processes of inclusion and exclusion as well as processes of emphasis (Entman, 1993). The frames themselves guide users like a map; they selectively punctuate and display a version of reality that the frame's creator desires its target to see. But a frame cannot simply be imposed on others. It is constructed as its promoters negotiate a shared understanding of certain issues they define as needing change, attribute blame for this situation, articulate an alternative set of arrangements, and urge others to act in concert (Benford & Snow, 2000). In order to come into existence, frames need activists, including experts and other knowledgeable actors (such as the members of an epistemic community); and the authority of such activists, and the network they participate in, can help to challenge the legitimacy of alternative frames (Hargrave & Van De Ven, 2006).

Not all framing efforts are successful. While some achieve resonance (Snow & Benford, 1988) and strike a responsive chord with the frame's target, other efforts fall on deaf ears and some are even counter-productive (Brivot, Himick, & Martinez, 2017; Lounsbury, 2005). Resonance is rarely achieved without some contestation and negotiation, because the targets of framing activities will not always passively accept whatever version of reality is presented to them. They may rebut or challenge the interpretive schemes that the framers want to spread, responding by producing a counter-frame, or a different understanding of the problem, that is pitched back at the framers (Benford & Snow, 2000). Sometimes the co-construction of a frame acceptable to all parties is possible (through several iterations of framing and counter-framing activities), and sometimes this co-construction fails to happen. The framing research, however, provides scant examples of resonance failures (but see Heitlinger, 1996).

We combine ideas from Framing Theory with the carriers of ideas approach to examine how one particular EC brought the issues it felt were important to the foreground in a specific accounting standard-setting forum. These analytical tools allow us to demonstrate how the EC shaped the debate throughout the stages of policy-making, including pre-agenda-setting, agenda-setting, and alternative selection.

4. Method

The process of agenda-setting and policy-making has a rich literature of its own, including analytical models of its progression (see Sabatier & Weible, 2014 for a review). As an analytical heuristic, we followed the epistemic community through three parts of the process based loosely on the "stages" model of policy-making (Sabatier & Weible, 2014). This model considers that policy development progresses through stages from problem definition and pre-agenda setting, to agenda-setting, to policy adoption and implementation; these stages are part of a continually ongoing policy-making process (Birkland, 1997).

We apply this model to the GASB standard-setting process, but recognize that this overlaps and interacts with the FASB standard-setting process. We consider that the pre-agenda-setting phase began as early as 1989 (when Jeremy Gold wrote a letter to the FASB regarding financial economics), but primarily occurred during the late 1990s and early 2000s when the EC's core set were actively promoting particular ideas about the suitability of financial economics for pension actuarialism. Agenda-setting began in and around January 2006 when the GASB first added a specific pension accounting and reporting project to its research agenda, which was then formally put on the standard-setting agenda in April 2008. The GASB project staff reviewed pension plan disclosures and literature on pension accounting and reporting, as well as surveys of pension plans, financial report users, and actuaries. Alternative selection covered the three-year period (2009–2012) from the GASB's release of its Invitation to Comment (March 2009) through to finalization of its Statement 68 (June 2012).

Fig. 1 indicates the stages in this process, along with the number of letters of comment submitted to the Board for its consideration.

At each stage, the Board examined a proposed method for selecting a discount rate. This research focuses most closely on the first round (Invitation to Comment, March 2009) because it asked a relatively broad, open question regarding which discount rate should be used. While we analyzed the letters sent in all three rounds, our summary table of the primary frame and counter-frames (Appendix B) thus includes only round one, when participants could advocate for any discount rate and the frames are empirically more visible. However, quotations are drawn from all rounds where useful for illustrating framing processes. Quotations from letters are thus identified by number and year in order to indicate in which round the letter was sent (e.g. Letter 3.10 would be the third letter submitted to the GASB in 2010).

After the first round of comments, the GASB formulated its first preference - a "blended" discount rate - and asked for reactions.[1] The feedback in rounds two and three (2010 and 2011) generally concentrated on using a specific rate based on a long-term expected rate of return on plan assets to discount the funded portion of liabilities, combined with a high-quality, municipal-bond index rate to discount unfunded liabilities. Finally, after three years of due process, in June 2012 the GASB released Statement 68 which officially adopted this blended discount rate.

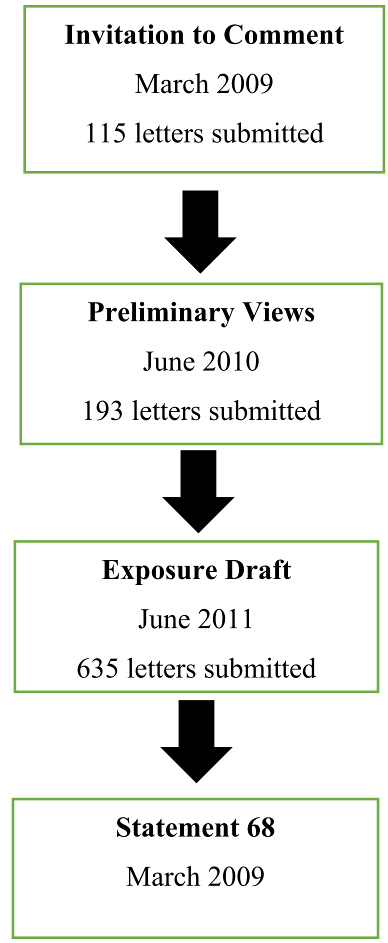

Fig. 1. Timeline of GASB's pension project.

4.1. Data collection, analysis, and coding method

This study draws its primary data from two distinct sources. First, we searched the Internet in general and Factiva (an academic database) for press articles, blog posts by journalists or self-declared experts, plus comments on the above discount rate debate in the general, business, and financial press and trade journals and magazines. Our focus was on arguments that were circulating outside the standard-setting process arena. This information retrieved was read, to understand the issues being raised in the broader media, but not entered into the coding process. We also searched the actuarial profession's publications and online blogs, to help us identify the members of the EC that first framed the debate in question. This information related to the pre-agenda-setting stage. Since the first site of problematization was in the actuarial profession itself these related activities and arguments were not visible from the accounting due process comment letters alone.

Next, the agenda-setting stage took us to the documents produced by the GASB, and an in-depth review of all comment letters written to the GASB. The letter-writers were primarily accountants, actuaries, and administrators of pension plans or finance staff at entities responsible for pension plan management. Some spoke in their own name while others represented the organizations or groups with which they were affiliated. Based on their professional affiliation, designation, or qualification as stated in the letter (or available via other searches), we coded them as belonging to one of four expert groups: accountants (e.g., CPAs), actuaries (e.g., FSAs), economists, chartered financial analysis and financial officers (e.g., CFAs, or "other financial"). The letters were publicly available and posted on the GASB website. Since they signed their names, we were able to map them to the EC and differentiate what

[1] The GASB has used a 'blended' rate in other standards for post-employment benefits other than pensions: http://www.milliman.com/uploadedFiles/insight/Periodicals/peri/pdfs/GASB-statements-73-74-75.pdf.

we would eventually characterize as a core EC membership and a separate set of supporters for the same frame. In total, 943 letters were sent to the GASB, but more than 600 of these were duplicates sent by multiple individual members of organizations. The 273 unique letters identified were each analyzed and coded according to the originating organization, author, author's occupation, and author's professional characteristics. Because the proposed standards covered more than one issue related to pension accounting, the letters had to be read carefully to extract the content dealing with the discount rate, which was then read and coded according to its position on the proposed change concerning discount rate rules, at each level of the process. Each argument, and any opinion or evidence put forward to support it, was analyzed separately and coded in order to bring out the reasoning used to back the author's position.

5. Analysis

Exemplifying the historical phases described by Chiapello and Walter (2016), in the first half of the 20th century the discount rates used to value pension liabilities were generally the same as prevailing fixed-income interest rates. Over the ensuing years, Modern Portfolio Theory developed to the point where interest rate selection began to incorporate its notions of risk and the equity risk premium. Discount rates were selected to represent the portfolio of assets funding the pension liabilities. As finance theories changed, so did discounting methodology in actuarial practice and also in accounting. Importantly, during all of these decades, rate selection was a primary responsibility of the pension actuary, who used judgment and discretion in selecting a specific rate. Professional actuarial societies developed rate selection guidance for their members which explicitly acknowledged (and still acknowledges) the importance of professional judgement.[2]

This status quo based on decades of privileging actuarial judgment is at the heart of what was challenged in this debate. The following analysis will examine how the idea that financial economic theory is superior to the judgement involved in generally accepted actuarial and accounting practices was carried into the actuarial and accounting professional spheres, and more specifically, into accounting's standard-setting processes. We begin by briefly describing the members of the epistemic community before examining its participation in this debate.

5.1. The epistemic community and its membership

Through analysis of our first data source (articles, blog posts, and comments in the press on the question of what discount rate should be used in pension accounting), we identified two related groups of financial economists and actuaries who formed a single active epistemic community.[3] This community posted material demonstrating its active interest and involvement in many areas of policy where members could educate their readers and promote financial economic theory.

At the time of writing, the first group called itself “The Pension Finance Institute”. Its members expressed their opinions on a variety of subjects including “pension funding, investment, accounting, plan design, standard actuarial practices, and the role of the Pension Benefit Guaranty Corporation” on a website[4] set up to provide “policymakers, plan sponsors, participants, journalists, investors, and others with pertinent information and objective analyses regarding the costs, risks, and social advantages of U.S. defined benefit pension plans.” The recorded members of this group were Lawrence N. Bader, Jeremy Gold, Christopher Levell, Robert C. North, Jr., Mark T. Ruloff, G. Bennett Stewart III, Zvi Bodie, David R. Kass, Douglas A. Love and Michael W. Peskin. All held a professional accreditation as FSA (Fellow of the Society of Actuaries), CFA (Chartered Financial Analyst) or ASA (Associate of the Society of Actuaries).

The second group called itself “Concerned Actuaries.” As its name implies, its members were all accredited FSAs. One of its stated aims[5] was to “educate the public about Social Security and Medicare,” and to write about the “many additional areas that beg for actuarial leadership.” The Concerned Actuaries website went further and also stated its intent to spark a “national dialogue” on public pensions. Members of this group included Bart Clennon, Jeremy Gold, Fred Kilbourne, Mark Litow, Bob Shapiro, and Jim Toole.

The common member in these two groups of experts was Jeremy Gold, who holds a PhD in pension finance from Wharton. He had owned his own firm “Jeremy Gold Pensions” since 1989, and prior to that was the “first pension actuary on Wall Street” as the head of Morgan Stanley Pensions from 1985 to 1989. This Wall Street experience appears to have greatly influenced his later ability to play the key role of an epistemic arbitrageur between members of the actuarial profession and financial economists. At a meeting of the Dallas chapter of the Actuarial Society in 2001, Gold explained the importance of this stage in his career:

> There is a relatively small, although growing, number of actuaries who have worked on Wall Street. Total immersion in a trading environment very quickly changes perceptions of value and the role of current market price. Traders are willing to "make a market." *Within months, one questions most of what one has learned as an actuary.* Pension actuaries make 30-year estimates; one year later we replace that with an estimate extending to the 31st year. Because that is so radically different from trading desk behavior, I began to question what I had learned as a pension actuary. Among actuaries who take Wall Street jobs, my experience is the rule, not the exception. In 1996, I went to Wharton because I had some concerns about pension actuarial methods and assumptions from a financial economics perspective. I believed I should strengthen my understanding of formal modern finance. (Kra, Bodie, & Gold, 2001, p. 2, emphasis added)

This fascinating glimpse into Gold's background describes how the two sets of knowledge became fundamentally opposed in his mind. His acknowledgement of the influence of market pricing theories is critically important to this narrative. In policy discussions, Gold acts as an epistemic arbitrageur, straddling both epistemic communities, and able to converse in each. We will discuss his role further below, and in the Discussion.

The EC, then, identified itself as a distinct group from its professional membership. Some observers recognized this explicitly:

> Many who support our effort are constrained in working within the professional structures that exist today. We have tried to work within various actuarial profession entities in the past, but in each case found the culture of onerous process, aversion to addressing controversial issues and censorship impossible to deal with. (Shapiro, 2015).

Similarly, others suggested that the pace of change can be hastened by working *outside* professional boundaries, as summarized by this actuary: “Note which groups tend to have a rapid response to discussions

[2] See for instance Actuarial Standards Board Actuarial Standard of Practice No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* Revised Edition, Sept. 2007, or the Canadian Institute of Actuaries Revised Educational Note, *Determination of Best Estimate Discount Rates for Going Concern Funding Valuations* 2015.

[3] It is possible that other members participated in these communities or that there were other similar communities. Our identification process was based upon what was made visible by the online presence and other participation activities of these identified members.

[4] At the time of writing, www.pensionfinance.org/.

[5] At the time of writing, www.concernedactuaries.com (now no longer updated).

of public policy: generally they stake out strong positions and gather together people of like minds."[6] These individuals actively distinguish their professional affiliation from their membership of the epistemic community, with whose other members they share a different, ideas-based and value-based kinship.

5.2. Building a frame for the superiority of financial economics in actuarial practice: issue emergence within the profession (1996–2006)

During the approximate ten-year period from the late 1990s to 2006, the EC problematized actuarial technique, taking issue with the practices of the actuarial profession itself. The EC members, individually and in collaboration, wrote several key papers that were widely circulated within the two professional actuaries' associations in the United States and Canada. The question common to all these papers was whether or not actuarial practice relied first and foremost on the principles of financial economics. When it did not, it was characterized as deficient, "status quo," or "traditional."

In a paper entitled *Reinventing Pension Actuarial Science* (Bader & Gold, 2003), Lawrence Bader and Jeremy Gold forcefully critiqued the actuarial profession for not incorporating the principles of financial economics. This paper was published in the Pension Forum, a journal managed by the Society of Actuaries for its membership audience. It posits that the Employee Retirement Income Security Act of 1974 effectively halted the evolution of defined benefit finance (i.e., funding approaches and measurement techniques), which had, at that time, only begun to be exposed to the writings in financial economics. The authors identify the teachings of financial economics which *had* effectively been incorporated into defined benefit finance: "the efficient frontier of Markowitz (1952) and the Capital Asset Pricing Model of Sharpe (1964), Lintner (1965a,b), and Mossin (1966)," (Bader & Gold, 2003; note 1). However, they argue that:

> Other teachings of financial economics … have not been integrated into the actuarial model. … The lessons of M&M, Black and Scholes, and (a sequence of work including Treynor (1972), Sharpe (1976), Black (1980), Tepper (1981) and Harrison and Sharpe (1983) applying financial economics to defined benefit plans) challenge and threaten the existing actuarial model. … As other financial professions have adapted to and capitalized on these developments, the response of pension actuaries has been dilatory. … We call upon practicing actuaries to prepare for the inevitable application of financial economics to defined benefit finance (Bader & Gold, 2003, p.1–2).

The ideas, written in these papers, reached a broader professional audience as they were presented at gatherings of the profession. For instance, at a symposium held in Vancouver, Canada, in June 2003–aptly titled *The Great Controversy* – twenty-four papers on the implications of financial economics for pension plans were presented to 200 participants. Proponents of financial economics labelled the status quo "traditional" and "antiquated." Constructing the frame, then, meant "othering" the existing approach and its proponents. Figurative language was extensively used, with talk of the danger of being behind the times, unmodern, or traditional. The "correct" thing to do was associated with keeping up with finance theory as it entered new phases: this was complicated by the fact that applications of the theory had not yet completely evolved, but were being driven forward by carriers of the idea that a new, modern method was at hand. As we noted earlier in this paper, disciplines (like finance) evolve as ideas about what is appropriate change – but we suggest that carriers of those ideas are necessary for their evolution particularly as they move from theory to application. Tracing the epistemic community's footprint in this case reveals how the development of financial economic theory similarly relied upon carriers actively framing the issue with tropes such as becoming modern versus remaining traditional, all alluding to a new era in financial knowledge.

5.3. Framing the superiority of financial economics in accounting practice: issue emergence for accounting and GASB agenda-setting (2006–2008)

In accounting policy formulation, tracing the EC's activities through from the original issue emergence to the GASB's agenda-setting leads us to the EC's earlier interactions with the FASB. As early as 1989, in a comment letter to the FASB on its *Exposure Draft on Employers' Accounting for Postretirement Benefits Other Than Pensions,* Jeremy Gold had argued that a risk-free rate of return would be the most appropriate. He can thus be seen as a key, early epistemic arbitrageur.

When the FASB decided in 2002 to add a project to its agenda that would seek first to improve pension plan disclosures, and subsequently pension accounting including discount rate selection, it cited concerns raised by investors and analysts. There is no evidence that the discount rate was the most significant issue (or significant at all) at the time. Instead the project was written as deliberately broad, intended to address "perceived deficiencies" in then-current pension accounting by identifying ways to enhance disclosures about pension costs, plan assets, obligations and funding requirements (Financial Accounting Foundation, 2002). However, this broad approach gave members of the EC an opportunity to express their views about the discount rate, and in the process elevate it to the status of a potential agenda item. In June 2003, for instance, Michael Peskin (of Morgan Stanley) and Jeremy Gold (as an independent actuary) discussed valuing pension obligations in their presentation to FASB staff (FASB, 2003). By 2006, the FASB had completed one phase of this broad project on pension accounting with the issuance of *Statement 158*.[7] This offered new guidance on the discount rate previously prescribed in FAS 87, now emphasizing the use of a corporate bond rate.

That same year, the GASB announced an extensive review of government pension accounting (Financial Accounting Foundation, 2006). It was only 12 years earlier, in 1994, that the GASB had first specified the discount rate for pension accounting, as the "estimated long-term investment yield for the plan, with consideration given to the nature and mix of current and expected plan investments" (GASB, 1994, p. 6; see Appendix A). This methodology both permitted actuarial judgement and linked discount rate selection to the rate of return on plan assets, including equity risk. By 2008, the GASB's information-gathering and research agenda had begun to be shaped by the framing used by the EC during the earlier issue emergence phase. The GASB reported its session with external experts in the following terms:

> An educational session was held in July 2008 to provide an opportunity for the Board and the project staff to obtain additional information and views from proponents of two distinctly different approaches to the measurement of pension costs and obligations and expenses by employers—a *financial-economics, or fair-value, approach and an actuarial-funding, or asset-accumulation, approach.* (GASB, 2010, p. 13, emphasis added)

The GASB annual report notes that in that session, Jeremy Gold, accompanied by Paul Angelo, another actuary, spoke to GASB staff and the Board about the financial-economics and actuarial-funding approaches. In the presentation slides posted online, Gold respectively characterized the two approaches as the "traditional view", in which "discount rates, inflation, future salaries and asset return expectations

[6] On the "Actuarial Outpost" internet-based discussion board, which is an anonymous forum in which participants discuss a wide variety of topics related to the profession. This particular quote is derived from the discussion found at: http://www.actuary.ca/actuarial_discussion_forum/showthread.php?p=8257322 at the date of writing.

[7] Statement No. 158, Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans—an amendment of FASB Statements No. 87, 88, 106, and 132(R).

are assumptions made by the actuary based on long-term trends, treated very much like non-economic factors" and the "modern view" in which discount rates and inflation are observations of capital market values (Gold, 2008). By the time the GASB released its Invitation to Comment a year later, it had adopted this language. The EC, therefore, influenced not only what made it onto the GASB agenda, but the range of alternatives, the way in which the associated ideas were framed (into two competing ideas), and the knowledge which was deemed acceptable.

5.4. Alternative selection–2009–2012

In 2009, the GASB released its Invitation to Comment, cementing the financial-economics position on the discount rate as an agenda item and opening it up more broadly for reaction. Question 5 of the Invitation to Comment (GASB, 2009) reads as follows:

> What should be the basis for determining the discount rate used for discounting projected pension benefits to their present value for accounting purposes? Why?
>
> a. The estimated long-term investment yield for the plan;
>
> b. A risk-free rate (or a yield curve of risk-free rates applied to cash flows of different maturities);
>
> c. The employer's borrowing rate;
>
> d. An average return on high-quality municipal bonds;
>
> e. Other.

Option (a) represents the traditional, or actuarial-funding method and is the only option that explicitly incorporates actuarial judgement in its methodology, requiring an estimate of the expected returns given the portfolio of assets held in the fund. It thus traditionally requires some forward-looking anticipation of equity returns based upon past equity results. Option (b) represents the rate preferred from the financial-economics standpoint, based on the return from securities of the U.S. federal government, which are presumed to be free of the risk of nonpayment (GASB, 2010).[8] The EC's involvement here is visible, since several of its members had been involved in the earlier periods of issue emergence and their framing is reflected in the above question. Further, while pre-agenda setting had created that space for the EC to participate, with this issuance of the formal Invitation to Comment (and the start of this phase of alternative selection), others could now participate. These others were both non-members, and members occupying a more peripheral position relative to the EC's core membership. These phases in the policy-making process are, therefore, important in understanding (empirically and otherwise) who the members of the EC are, and how the EC grows or attracts new participants.

5.4.1. Primary frame: financial-economics theory is superior

Jeremy Gold wrote a letter to the GASB during the first round of the process, in which he echoed the frame he, and others, had promoted during prior stages. The argument was that financial economics and finance should be the primary source of knowledge, the benchmark to which other approaches (including the status quo) should be compared:

> The estimated long-term investment yield (aka expected return on assets, EROA) for the plan is entirely inappropriate for accounting purposes. *Finance teaches* that future cash flows (in this case plan benefit payouts) need to be discounted at rates for similar cash flows in traded markets in order to estimate a present value. (Jeremy Gold, Letter 59-09, emphasis added)

The same approach was taken by Robert North, a member of the Pension Finance Institute, who argued in both rounds one and two that only the risk-free rate would fit with the principles of modern economic theory. The deference to financial economics as the only valid approach to value uncertain future cash flows was echoed by other participants in the consultation process (including the two economists cited below, Jeffrey Brown and Barton Waring), none of whom explicitly belonged to Gold and North's epistemic community. Despite being outside the core of the EC, these financial-economics proponents are identifiable by their mobilization of the same idea: to support the choice of the risk-free discount rate they draw upon the dictates of financial economics, referring to both its clear position on the availability and use of observable market values and the link to the riskiness of the cash flows being discounted:

> Economic and financial theory is very clear that the choice of a discount rate depends on the risk of the cash flows being discounted. (Jeffrey R. Brown, Ph.D. Letter 65-11, emphasis in original)
>
> There is a longstanding view in the actuarial community that the discount rate is one set by the actuary, using reasoned professional judgment. But in finance, we teach that discount rates are set by the market - *they are observed, not decided.* (M. Barton Waring, independent financial economist, Letter 37.10, emphasis added)

Financial economists were under-represented in the GASB'S consultation process (accounting for only six participants in the first round) but they put forward the same arguments over all three rounds: that the correct base of knowledge from which to derive the discount rate came from the market, that the judgement exercised by actuaries was inappropriate, and that the current approach was outdated. Not only that, but embedding expected equity returns into the discount is "dangerous" since there is no guarantee that assets will experience those returns:

> The use of the expected return to reflect the financing of long term pension debt is a complete anachronism… No one else uses this method anywhere else that financing is done, on anything else being financed. *No one else; nowhere else; nothing else. … I will demonstrate in these comments that the expected return assumption is dangerous to pension plan survival.* (M. Barton Waring, independent financial economist, Letter 66.11, emphasis in original)

A longitudinal focus on the EC as carriers of the financial economics ideas helped us identify several insights concerning their efforts and how they engaged in this policy process. First, their framing of the issue never changed across their period of involvement. Regardless of the sheer volume of opposition, or the hint that the GASB was heading towards a blended discount rate which would not be "pure" in the view of financial economics, they remained true to their theoretical position. Second, core EC members did not participate in every round of letter writing. Jeremy Gold, for instance, only wrote one letter, while Robert North wrote in all three rounds. However, other supporters and proponents echoed the EC's frame, illustrating the important role played by outer circle carriers of the EC's ideas. In settings where core EC members were absent, their frame was still propagated by non-core member adopters. The outer circle of EC members comprised individuals who did not participate in frame *construction* but whose comment letters mirrored it. This distinction between the core set and the outer circle helps to delineate, empirically, the components and boundaries of the EC; it can be observed over time to determine what happens to these peripheral members, in other words whether they stop campaigning after this policy-making episode, or direct their energies into other settings as core or outer circle members. Third, we found no explicit, identifiable alliance among EC members in the policy making venue, despite their work outside of the due process. Even if they belonged to the Internet-based groups presented earlier, they appeared to not capitalize on this connection. We suggest that it could be important to understand in what way EC members take their own professional

[8] Option (c) is affected by a government's credit worthiness and option (d) would be represented by an index of municipal bonds. Generally, each of these alternative discount rates would be considerably lower than a long-term rate of return and, therefore, would produce a larger present value of the obligation (GASB, 2010).

Table 1
Primary frame: Financial economic theory is superior.

Calculative idealism	The risk-free rate is the only theoretically-sound discount rate for DB public pensions
What is the problem?	The public/users are being lied to (largely because of actuarial methods) about the true value of public defined-benefit pension liabilities.
What is the cause?	The status-quo discount rate is erroneous because it is not supported by financial economic theory.
What needs to be done?	Change the status-quo rate to a "risk free" rate instead.
Why?	Economic theory dictates that discount rates should reflect the riskiness of debt. The risk of non-payment of public pension liabilities is almost nil because of governments' (and thus taxpayers') contingent liability to fund accrued public pension benefits should plan assets fall short. A risk-free rate should thus be used.

standing rather than the EC's collective standing as a signal of their expertise. This is particularly of interest in light of the earlier findings that some individuals purposefully worked outside the professional sphere in order to "get things done" and avoid what they viewed as a professional bureaucracy. This leads us to unanswered questions for future research about how EC members move across the boundaries of their professional membership and their EC participation at opportune moments.

A handful of other participants also expressed their preference for the risk-free rate, but for reasons other than the orthodox application of financial economic theory. For example, Diann Shipione, the whistle-blowing trustee who revealed fraudulent mismanagement of the San Diego City Employees' Retirement System, wrote in favor of the risk-free rate because it would produce the most conservative estimates and would be less open to manipulation.

Table 1 summarizes the primary frame introduced as far back as 1989 by Jeremy Gold, whose voice echoed the preferred approach of his epistemic community. Ideas like the superiority of financial economics are brought to life by carriers, and the framing practices employed by carriers reveal the underlying assumptions, values and belief systems that these ideas represent. In this frame, the promotion of financial economic theory as the only valid basis for interest rate selection incorporates beliefs positioned along three intersecting lines.

First, this frame treats current market prices as the sole measure of value, as if, for a given problem, there was necessarily only one right answer. Second, it assumes that subjectivity is undesirable, a stance linked to the EC's adoption of market price as an objective, and thus superior, indicator of value. Extending objective practices into the realms of judgmental practices is clearly seen as progress by the supporters of this frame.[9] Third, this market price approach suggests that representational faithfulness is the most fundamental goal of financial accounting information, and in this view, accounting's role is constructed as seeking and reporting the "truest" value of public pension debt. The measurement of balance sheet accounts is believed to require market estimates because they enhance objectivity and comparability.

5.4.2. First counter-frame: the status quo is superior to avoid unfair economic consequences

Our analysis shows that one often-used argument in favor of keeping existing discount rate practices concerned the challenging economic consequences that a change to a lower rate would unleash. The argument was highly pragmatic. Arguments for leaving practices unchanged were based on the worry that benefits would have to be reduced, or plans modified in other ways. These fears were fueled by the 2007–2009 financial crisis and the ensuing climate of austerity, and they were amplified when US municipalities (e.g., Stockton, California and Detroit, Michigan) announced bankruptcy over pension-related costs. The most pragmatic solution, it was argued, would simply be to leave things as they were. The following excerpts from comment letters illustrate various aspects of this claim.

> I feel very strongly that the *viability of long standing proven programs* should not be thwarted by the mislabeling and mischaracterization of an economic activity that would, I fear, come to fruition if the GASB were to embrace the concepts being advocated by the (market value) proponents. **(**Anonymous, Executive Director of a State Employees' Retirement System, Letter 15.09, emphasis added)

> I would like to state that, without a gradual phase-in, changes downward in rates of return *will have a catastrophic effect on local governments because of large increased payments to the plan*. This in turn, will unleash *unintended consequences* in employee-employer relations. (Anonymous, CPA representing a municipal plan sponsor, Letter 3.10, emphasis added)

There are three main beliefs underlying this counter-frame. First, in contrast with the EC's frame, the Unfair Economic Consequences rhetoric rests on the idea that no calculative method should be used automatically, without prior consideration of all the relevant circumstances. Most of the Unfair Economic Consequences arguments assumed an implicit justice dilemma. A promise had been made to the present cohort of retirees for a certain level of benefits, and to current and future taxpayers for a certain burden of pension funding. This promise, it was argued, would be impossible to keep if the discount rate was reduced. Second, it was argued that a sound discount rate ought to be derived, using judgement, and considering multiple factors that cannot be defined and fixed *a priori.* This argument that professional judgment cannot be automated or replaced by systematic use of a predefined standard method is a classic assertion relayed by most of the sociological literature on the professions, including actuaries (Porter, 1995). Third, representational faithfulness is an *ideal* that should not be pursued without cautiously considering all the practical implementation issues and likely economic effects. Truth is a relative notion for pragmatists.[10] Arguing that only one correct discount rate exists is thus intellectual heresy for calculative pragmatists, [11] and is not to be pursued to the detriment of fairness.

The above arguments are summarized in Table 2. Importantly, the problem that this new frame addressed was contingent, since it would

[9] Their position echoes that of "calculative idealists," who are described by Power (2010, p. 207) as technical enthusiasts who "tend to have a strong background or affinity with elements of financial economics which, while admitting to not always being applicable to 'realistic settings', nevertheless provide an intellectual centre of gravity for thinking about value and underwriting the expandability of fair values."

[10] In the words of William James: "any idea that will carry us prosperously from any one part of our experience to any other part, linking things satisfactorily, working securely, simplifying, saving labor; is true for just so much, true in so far forth, true instrumentally," (James, 2000, p. 30).

[11] Mikes (2009) and Power (2007 and 2010) contrast "calculative pragmatists" (c.f. note 9) with "calculative idealists." While idealists regard subjective estimates as deeply flawed, pragmatists are rather skeptical about the role of numbers. "They typically regard them as attention-directing devices with no intrinsic claims to represent reality" (Power, 2007, p. 121) and are more tolerant of hybrid measurement systems that consider various sources of estimates. For the pragmatists, the balance sheet is a source of "information hygiene – a point of triangulation in a wider information ecosystem (…) [which] means that they are less hung up on getting measurement 'right' " (Power, 2010, p. 207).

Table 2
First Counter-Frame: The status quo is superior to avoid Unfair Economic Consequences.

Calculative pragmatism	Changing the status-quo discount rate would lead to unfair economic consequences
What is the problem?	The problem lies in the very idea of changing the status-quo discount rate.
What is the cause?	The cause of the problem is the unnecessary and irresponsible attempt, by some, to change the discount rate used in the accounting of public defined-benefit pension plans in order to comply with financial economic theory.
What needs to be done?	Change nothing. Keep the status-quo rate.
Why?	Changing the status-quo discount rate for the risk-free rate (or any other lower rate) would trigger an automatic increase in the reported pension liabilities, which would lead to a potential change to the plan design (lower benefits, reduced coverage, switch to defined-contribution plans, etc.). These dramatic and unfair economic consequences would affect current retirees and taxpayers.

only exist if the financial-economics superiority frame (summarized in Table 1) won the debate. As a counter-frame, it was defined in opposition to the primary frame and its supporters were not members of a competing EC; they simply did not embrace the ideas carried by the EC members and relayed by their partisans.

5.4.3. Second counter-frame: actuarial practice is technically superior

Our analysis reveals that the second counter-frame was by far the most popular among participants (54 letters out of 105 in the first round, see Appendix B for details). It shared the Unfair Economic Consequences Counter-Frame's solution of keeping the status quo, and its realistic, practical stance – but differed in the grounds argued for that solution. The second counter-frame presents actuarial knowledge and calculative methods as better designed than financial-economics knowledge and calculative methods, with fewer potential technical and/or practical hitches. Its proponents thus framed the debate not in terms of fair vs. unfair economic consequences but as a matter of theoretical allegiance to the traditional method (Table 3 summarizes this alternative counter-frame):

> While such a procedure may be good from a theoretical standpoint, from a practical viewpoint it will create a much more complicated set of calculations for disclosure. … The proposal represents an unnecessary complication to financial reporting and should be removed from consideration. (CPA, representing a municipal plan sponsor, Letter 114.10)

> The estimated long-term investment yield … is the best overall discount rate. … The (rate) provides a more stable return and tends to smooth out the fluctuation in the actuarial rates of return the (plan) can earn over time. (It) also matches the principle that a (pension plan) is a going concern and will function well into the future…, (and) provides the most consistency with respect to funding (CPA, Letter 23.09).

Table 3
Second Counter-Frame: Actuarial Practice is Technically Superior.

Elements of calculative idealism and pragmatism	Actuarial methods are superior to financial economic methods for determining the discount rate to be used for pension plans
What is the problem?	Same as in Table 2
What is the cause?	Same as in Table 2
What needs to be done?	Same as in Table 2
Why?	Actuarial methods are technically superior, and less costly to implement, with fewer undesirable effects in the form of fluctuation in plans' funded ratios. They also create less incentive for managers to make counter-productive short-term decisions in order to “manage” such damaging fluctuations.

As a counter-frame, this argument is a dynamic response to the frame it opposes. Hence, its proponents believe that the financial-economics approach is “often too theoretical… and too far removed from reality,” (Paterson, 2005, p. 3). It critiques financial economics for ignoring the expectation of future returns on equities, for narrowly considering only one financing possibility for the plan, and for removing judgement input. Its counter-argument to the primary frame's view that the market provides a single, correct, measurement value would be along the lines of that put forward by Bühlman (1997, p. 169), who argues that this is “not even true in mathematics, let alone in economics.” The beliefs and values that emerge out of this second counter-frame are thus that practical approaches are superior to purely theoretical ones, the expectation of future returns should be priced into the discounting equation, and subjectivity is equated with professional judgment, which is considered a good thing.

These arguments are indicative of a certain degree of calculative pragmatism (undesirable effects should be avoided, including the fluctuation of certain ratios) but are also infused with calculative idealism (the status-quo discount rate is “truer” than the risk-free rate). In contrast to the first counter-frame, however, there are no allusions to the question of unfair consequences for certain stakeholder groups.

Finally, some participants (27 out of 105, see Appendix B) hybridized their arguments, combining aspects of the two counter-frames, as illustrated by the excerpt below.

> We believe that the discount rate should be a future earnings discount rate based on the estimated long-term investment yield for the plan. *Our reasons are both practical and theoretical, and are supported by the principles of both decision usefulness and interperiod equity.* (Actuarial consulting firm, Letter 64.09, emphasis added)

These hybrid arguments reflect further pragmatic reasoning. Many participants did not put forward epistemologically pure support for a scenario, instead borrowing and combining ideas that were circulating in all of the frames. It is important for an EC entering a political forum to understand that such people exist, and their willingness to navigate between ideas and frames perhaps makes them harder to win over to the EC's cause. This is particularly relevant for an EC given that, by definition, ECs prioritize a singular set of ideals, rather than compromise. They may represent an outlier position relative to a profession, and also relative to wider society. If it is the case that many members of the general public readily take on this hybrid view, there are implications for the EC's ability to attract supporters.

5.5. Policy adoption – the “blended” discount rate

The GASB ended up deciding upon a blended (or dual) rate which – in both its technical and epistemic dimensions – represents a customized form of financialization. This rate combines the financial-economics, market-based form advocated by the EC members with the actuarial-funding, asset-accumulation, status quo, rate. The blended rate consists of using the expected long-term rate of return on plan assets to discount the asset-funded portion of the liabilities, and a high-quality municipal bond index rate to discount the remaining unfunded liabilities.

As already noted, the GASB had proposed this method as a possibility after the first round of letters. The additional letters received from June 2010 to June 2012 did not persuade it to come down firmly on one side or the other. The blended rate decision was unwelcome to some EC members, who still believed in the veracity of their technique, and as a result, one even conjectured that it was due to communication errors on their part:

> I met with the GASB board and staff for several hours last month. I mean it sincerely (not condescendingly) when I say they are a bright, engaged, and hard-working group of folks who want to "do the right thing." But most of them lack advanced training in financial economics, and so I honestly do not think that they all fully understand the case we economists make, *in part because we have not done a very good job of explaining it!* (Brown, 2011; emphasis added)

Others, in contrast, saw the blended rate as simply "throwing a bone" to the financial-economics campaigners while essentially continuing with a status-quo approach:

> GASB proposes to throw a bone to those of us who have been critics of its willingness to permit public sector employers in the United States to use as the pension liability discount rate "a reasonable expected long-term rate of return on the plan's investment." Does it matter? … Yes it does. 1. The process systematically transfers wealth from future to current generations of workers and taxpayers. … 2. The process heightens the risk that DB plans will run out of assets before they run out of liabilities. … We urge GASB to … (w)ithdraw the "throw them a bone" pension accounting option …. It is folly. (Actuarial and pension investment consultant, Letter 12.10)

That the GASB maintained its original proposal despite the criticisms received in the subsequent rounds of consultation is not entirely surprising: we know that due process sometimes serves more as a legitimizing device than as a true sounding board for standard-setters (Young, 2003). What is surprising, however, is the theoretical "impurity" of the hybrid solution chosen by the GASB: it is neither acceptable from a classic actuarial practice standpoint, nor from a financial economic theory standpoint:

> The discount rate should be a risk-free rate if you believe in financial economics and the long-term rate if you believe traditional actuarial methods. The proposed (Blended Rate) method will not be acceptable to anyone. (Anonymous author, Letter 106.10)

This situation contrasts with Young's (2014) observation that standard-setting bodies usually present their work as a way to *reduce* accounting's technical anomalies and "impurities" (op. cit., p. 741), not as a way to generate more of them.

6. Discussion

In any phase of policy-making, ideas do not emerge out of nowhere, nor do they travel spontaneously from one policy-making jurisdiction (such as the FASB) to another (such as the GASB). They need carriers (Haas, 1992). In this case, those carriers were a small group of engaged, motivated financial economists, some of whom were also trained as actuaries. These people took it upon themselves to educate GASB members regarding the need to adopt a particular approach to pension valuation. Part of that education process involved a process of framing – devising a way to explain both the recommended method, and the reasons why it was superior to existing practice. We know from Dunlop (2012, p. 230) that policy-making in situations of technical complexity is usually an exercise in learning from, rather than bargaining with, epistemic communities. But in this case where the GASB selected a compromise discount rate, we suggest that technical complexity did not preclude negotiations and concessions. This study has examined how an EC carried ideas, educated targets via framing, and contributed to eventual concessions. Its contributions to research concern three distinct areas.

First, we contribute to the accounting standard-setting literature. Extant research in this area has so far tended to focus on interests, e.g., showing the lobbying efforts made by some constituents in favor or against a new proposed accounting standard; institutions, e.g., documenting how a new accounting problem emerges, how it makes its way onto a standard-setting body's agenda, and how a new accounting standard is proposed in response to the problem after completion of due process; and, more recently, on ideas, e.g., understanding the rationale behind the transition from one calculative method or paradigm to a new calculative method or paradigm. Some studies have used a combination of two of these three analytical angles, but very few have used all three simultaneously. Our study combines the focus on interests, institutions and ideas, but also adds agency to the equation by identifying the carriers of ideas. In the case examined, the carriers of ideas were members of the same epistemic community, not just members of the same profession. ECs are not simply another lobbying group. According to Young (2014), standard-setters are increasingly trying to demonstrate their ability to separate the technical from the political to convince the public that their due process is value-neutral, objective and rational. ECs' political neutrality and moral motivation – redressing false beliefs – makes them apparently more legitimate as influencers of policy-makers than lobbying groups with their obvious economic self-interest. They thus deserve more attention in the accounting standard-setting literature, and this study is one of the first steps in that direction.

ECs and professions need not always be analyzed as different, but in this study, an analytical focus on professions would have prevented clear identification of the arguments and counter-arguments put forward in the debate. The positions taken in the pension discount rate debate were not determined by professional allegiance or professional practice. Indeed, EC members were consistent in their framing, while within the professions, actuaries and accountants disagreed even among themselves, as illustrated in Appendix B. Also, this debate was not a simple intra-professional disagreement, but rather concerned a commitment to financial economic theory that questioned the epistemic foundation of particular practices. The members of the EC purposefully took a stance outside the professional realm, which they considered unsuited to the purity of their views. We argue that approaching a technical dispute from the angle of professional membership could lead researchers to overlook the subtle – and sometimes radical – differences in individual professionals' conceptual schemes, and to overestimate their epistemic cohesion, thereby reducing our understanding of what is really at stake in such a dispute.

Technical disputes may involve different disciplines, for example mathematics, physics and philosophy in the 1611–1613 quarrel about the theory of buoyancy (Biagioli, 1990) or different professions, as in the case of the 1985–1990 disagreement between British accountants and lawyers regarding the proper interpretation of company law (Pong, 1999). As our study demonstrates, they can also involve epistemic conflicts *within* a given discipline or profession. We suggest that those who carry new ideas into their own field of practice, or challenge existing orthodoxy by suggesting novel interpretations of existing theories, may look at things differently because they have a dual epistemic culture, for instance speaking both the language of actuarial science and the language of financial economics. Jeremy Gold was one such bilingual carrier of novelty, in the Great Controversy episode that stirred the actuarial profession in 2003. However, Biagioli (1990, p. 202) reminds us that: "if bilingualism offers a way around incommensurability, it cannot resolve it. (…) Bilingualism makes one aware of incommensurability but does not solve it." In science, incommensurability between two competing frames of meaning can be overcome through the unforced strength of the better argument, and through a paradigm shift, but our study indicates that this is not necessarily what happens in accounting: change can sometimes come about through a compromise between incompatible frames.

According to Putnam (1983, p. 5), when conflicting rationales are present in a public debate with policy implications, one important, and pragmatic, approach is to avoid attempting to settle the matter "once and for all," and seek instead to progress through temporary "adjudications." "We need adjudications precisely in cases (…) in which we cannot find a non-controversial principle or application of a principle which settles what we should do," (Putnam, 1983, p. 6). Importantly, adjudications are provisional. An adjudication is thus a reasonable stance in the absence of an undisputed theory. From this perspective, the GASB's compromise decision makes sense, but Putnam (1983) makes it clear that decisions based on adjudication are pragmatic, but always made at the expense of logical consistency.

What does this say about accounting's episteme? Clearly, the body of knowledge in accounting does not evolve though scientific revolutions. Some accounting standards appear to be a mixed bag of elements (including Statement 68) unsupported by any established scientific theory, as underlined by the fictional 2.5 example in Brown's quotation that opens this paper. This pragmatic, adjudication-based aspect of accounting change needs further documentation in future standard-setting research. Putnam also raises the point that "muddling through" in this way requires a heightened awareness of what the community around the issue will accept. Thus, shedding light on the way standard-setters adjudicate would bring a new meaning to the work they actually do and what we can expect of them.

Second, we contribute to the literature studying Epistemic Communities. Dunlop (2012) laments the fact that the EC concept is too often used metaphorically, to describe any group of experts giving policy advice, since actually identifying these communities can be a difficult process. We argue that framing theory is a valuable tool to identify and delineate communities of experts based on shared beliefs in the validity of certain theories, leading to the identification of an EC's "core set" (Collins, 1981). Finding other supporters (once the frame's meaning has been fixed) leads to the identification of a wider perimeter of EC members. We thus develop the community component of EC theory. An EC consists of concentric circles of members, with a smaller core set of campaigners who are proactively involved in the framing activities, and outer circles of members who adhere to the frame, and then contribute to translating and diffusing it. This interaction between the core and other members is important, as we find that the other members play an important role in periods or settings where the core set's participation drops off. Framing theory's further analytical focus on counter-frames (as opposed to only the primary frame) is also essential, because these rebuttals have the power to halt propagation of the frame or reduce its influence on policy-makers.

In our case, the EC's core set included members of the Concerned Actuaries and the Pension Finance Institute, with Jeremy Gold at the intersection between the two. We found that Gold's role in this setting offered some particularly unique insights: his dual epistemic culture in actuarial science and financial economics gave him the authority to arbitrate between two sources of knowledge. This finding lends empirical substance to the claim by Van Waarden and Drahos (2002) that ECs are not flat entities: some members are more important than others, particularly, we argue, when they can play the role of epistemic arbitrageurs. We suggest that research would benefit from increased attention to individual actors who can speak to both sides of a policy debate.

Third, this study extends the financialization literature. According to Chiapello (2015, p. 14), criticisms of financialization are based on a fear that financialized forms of quantification will come to dominate others, promoting a world that becomes "one-dimensional (Marcuse, 1964) in which certain dominant orders of worth could become tyrannical (Walzer, 1983)." Our research finds a more pluralistic form of financialization. We illustrate that because financial economic theory has fertilized various fields of expertise sporadically and in different ways while continuing to evolve as a discipline in its own right, conflicts may emerge regarding the best financialized metric or calculative tool that should be used in a given context, including conflicts between groups of experts who share a common layer of financial culture. This adds complexity and nuance to the more homogenous, tyrannical view of financialization. First, conflicts weaken an ideology's power of conviction. Second, and no less importantly, conflicts create choices (in this case, the choice of which calculations to use). What potentially mitigates the tyranny of financial economics is not its diversity per se (or the large array of techniques and calculative tools available). The issue is that experts disagree about which techniques and tools are correct, and this is precisely what leads to a situation of plurality, or "choices." Having a choice could be theorized as less tyrannical, but on the other hand, when all the possible options are finance options, the choice is arguably an illusion – illustrating the importance of looking at micro-episodes of financialization.

Further, unlike most studies of accounting financialization which focus on macro-level transformations (e.g., from historical cost accounting to fair value accounting, or from stewardship to decision usefulness in financial reporting), this research concerns a specific micro-episode in the history of accounting financialization. This micro-dimension was precisely what allowed us to focus our analytical attention on the "who and why?" components that are missing from our understanding of the process through which accounting is financialized: who are the people who trigger accounting change, and why do they do it?

Finally, since the EC studied here was not totally successful in influencing the outcome of the due process, this study extends the documentation of occurrences of resistance to financialization, although not in the sense of Barthold et al.'s (2017) Occupy Wall Street understanding of resistance. The more subtle resistance at play here is achieved by the GASB's blending of the pure financial-economics solution proposed by the EC with elements drawn from elsewhere. This finding answers Müller's (2014, p. 555) call for more nuance in the financialization literature, where the preponderant tendency is "to assume that financialization is always victorious" and where "counter-tendencies are too often disregarded." This study also illustrates Chiapello's (2015 and 2016) claim that calculative methods and valuation tools are a very important channel for the financialization of accounting. We would add that framing theory helps to make explicit the hidden values of agents of financialization who push for the adoption, by accountants, of financial computation techniques presented as axiologically neutral.

7. Conclusion

Our primary motivation in this study was to improve our understanding of the role of epistemic communities during accounting standard-setting processes. It is all the more important to understand these dynamics as bodies of professional knowledge are continuously transforming, becoming permeable to adjacent fields of expertise (Whitley, 1986) and institutionalizing not only their theories and methods but also calculative tools. Such tools are more important than they may appear. They reside at some of the most micro levels of professional work, and it is tempting to believe they are too insignificant to drive meaningful change. But significantly, they also reside at the margins of their own fields (Miller, 1998), thus making them open to change in ways that the field's core body of knowledge may not be.

We have focused on the policy-making process initiated in 1989, and coordinated by the GASB between 2009 and 2012, examining the discount rate that should be used to discount defined-benefit pension liabilities in government financial reporting. This debate was not only technical but also political: supporters of the risk-free rate believed that the use of any other rate would severely understate (by nearly $100 billion each year) what they claimed to be the true cost of providing pension benefits to teachers, police, firefighters, and other public sector workers. In contrast, supporters of the status quo argued that changing to a risk-free rate could increase liabilities on governmental books to the tune of 1/7th of the United States' GDP, and double the related annual expense.

We find that the GASB plugged in to the writings of an epistemic community comprising two linked groups of (primarily) actuaries with backgrounds in financial economics, respectively named Concerned Actuaries and The Pension Finance Institute. Members of these groups attempted to persuade others of their beliefs by communicating on their websites, writing press articles, co-authoring research articles with academics, and giving presentations. Their ideas triggered what is referred to as the "Great Controversy" in the actuarial profession, a contest between old and new. Our findings show that the first major success for the EC in this project came when the GASB itself adopted the EC's primary frame in what was a clash between a modern and a traditional calculative approach.

During the agenda-setting and selection phase, the EC's argument hinged on the possible truth that could be achieved via financial economics, i.e. the problem was that the status quo rate produced a false and misleading value, resulting in the public – including employers, plan members, and others – being "lied to" about the true value of the public pension debt. These "lies" led observers to believe that the costs were lower than they really were. Since the risk of non-payment of public pension debt is low, the EC took the view that a risk-free rate should be used, which would have considerably increased the value of the reported liabilities. We found at this stage that the EC's frame triggered the emergence of at least two counter-frames defined by their opposition to it. The primary frame and the counter-frames together formed the essence of the entire debate over three years. We consider this structuring of the debate as the EC's second notable achievement.

However, these wins in the early stages of the process did not translate into the EC's desired final outcome. The GASB opted for its own solution, a blended rate, instead of wholly adopting the proposed risk-free rate. But this "failure" must be considered in the context of what the EC was able to accomplish here. As Dunlop (2012) suggests, the role of ECs (and the value of analytical attention directed at them) is multi-faceted:

> (The) policy outcome should not … be the standard against which an epistemic community's influence is judged. These cases show the maximum influence experts can have; they are extreme examples. If we look only for (such outcomes) the results are liable to disappoint. … Policy outputs should not be the primary focus as epistemic communities' influence over those will usually be indirect. (op. cit., p. 236)

What can we learn, then, about an EC's involvement and the distribution of its participation and influence at various stages of a policy-making process? Our findings suggest that accounting standard-setters can, and do, sometimes resist strong pressures that arise at the margins of accounting as a discipline, even when those pressures emanate from highly reputable, expert sources, and even when those sources come bearing increasingly dominant frames. Forms of resistance against widespread "master frames" (Snow & Benford, 1992) are thus possible and require further empirical illustration. Research to that end, which could be situated at the intersection of EC theory and framing theory, could investigate how framing failure translates into the EC "learning" (Dunlop, 2012) how to participate. As Dunlop (2012) notes, "we need to empirically explore what happens to these communities during this evolutionary process. Of specific interest is the impact that political exposure has on an epistemic community's belief system" (op. cit., p. 235). An important question is whether any parts of their belief system change after interacting with others in different policy domains. As Haas (1992, p. 23) originally noted, the EC's notion of truth is "temporally bounded." In our case, the EC's belief system remained constant over the entire process, and upon reflection some of its members began to attribute part of the problem to their lack of political acumen in communicating (framing) their message. Does this mean they see their early-stage involvement as a waste of time, or as a valuable first step even though the final outcome was not entirely in their favor? Since ECs are expected to participate in multiple policy forums (wherever their expertise is relevant), one possible approach would be to use an even longer longitudinal, multiple policy-setting research program. This could show how EC members move from forum to forum, how learning materializes after participation, how framing attempts change, how the material devices (Latour, 1987; Marres & Lezaun, 2011), through which framing takes place change, and whether and to what extent the movement solidifies around, or starts to break up, its "temporary" (Haas, 1992) knowledge consensus.

Moreover, at the outset of this article we suggested that a fair-value approach to pension measurement was one example of a broader class of accounting change, grounded in a financial economic logic that appears across a breadth of accounting issues apart from pension measurement. And yet it is also a single instance of a much broader economic and societal issue: the move toward austerity by governments globally. In countries that are currently in the grip of tough austerity measures, the size of liabilities (such as public pension debt) feeds into the size of the public debt more broadly. A focus on austerity spotlights public debt levels, thus linking the epistemic and political compromises concerning the measurement of one component of such debt to a much wider issue about whether other obligations can, and should, be viewed as objectively measurable. This issue does not appear to be receding; by contrast, it is increasing in importance globally as issues around government debt are prominent in recent eras of austerity.

For instance, the European Union has made it mandatory, as of 2017, for its members to begin to produce and disclose information on public pension liabilities in their national accounts, to offer comparability among nations concerning the size of their public debt.[12] Discounting methodology and discount rates are prescribed in these directives. This suggests important unanswered questions: what changes does the discount rate mandated in these measures produce in the national accounts of these countries? To what extent do countries resist such measures in order to maintain some level of control over their disclosed debt and creditor position in the world markets? At least one nation (Japan) has refused to implement United Nations rules to disclose pension liabilities, for the express reason that doing so would cause their already high debt levels to appear even worse (Financial Times, 2016). For highly indebted countries, how does the measurement of public pension liabilities in national accounts influence calls for austerity measures? These are important future research avenues that suggest a much broader implication for what is, at face value, a simple accounting measurement question.

Finally, the financial-economics EC's attempts to frame the discount rate issue as a matter of neutral, scientific, apolitical truth echo the way actuaries themselves attempted to frame the issue of pension accounting more than one hundred years ago (Himick, 2016). At the turn of the 20th century, a small group of pension actuaries devoted a good deal of time to educating the public, including policy-makers and other professions, about the allegedly disinterested science of actuarial

[12] https://www.ecb.europa.eu/pub/pdf/other/techn_comp_gd_pens_dt_nat_accts_201201en.pdf.

knowledge, which served the role of "non-political" expertise (Rose, 1993, p. 283). Today, financial economics is attempting to occupy the same role, citing the objective financial market as the place where estimates of value can be accessed by all sides to any issue without bias. This judgment-objectivity cycle has come full circle within one setting and helped that setting to "evolve." Future research could similarly explore how other professionals can also skillfully navigate between the rhetoric of scientific objectivity and the rhetoric of professional judgment.

Appendix A. GASB Statements concerning pension plan accounting.

GASB Statement		
4	Applicability of FASB Statement No. 87, "Employers' Accounting for Pensions," to State and Local Governmental Employers	Issued September 1986. Effective upon issuance
5	Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Governmental Employers	Issued November 1986. Effective for periods beginning after December 15, 1986
12	Disclosure of Information on Postemployment Benefits Other Than Pension Benefits by State and Local Governmental Employers	Issued May 1990. Effective for periods beginning after June 15, 1990
25	Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans	Issued November 1994. Effective for periods beginning after June 15, 1996 (supersedes Statement 5)
26	Financial Reporting for Postemployment Healthcare Plans Administered by Defined Benefit Pension Plans	Issued November 1994. Effective for periods beginning after June 15, 1996
27	Accounting for Pensions by State and Local Governmental Employers	Issued November 1994. Effective for periods beginning after June 15, 1997 (supersedes Statements 4 and 5)
43	Financial Reporting for Postemployment Benefits Other Than Pension Plans	Issued April 2004. Effective for periods beginning after December 15, 2005, 2006, 2007 depending on annual revenues (supersedes Statement 26)
45	Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions	Issued June 2004. Effective for periods beginning after December 15, 2006, 2007, 2008 depending on annual revenues (supersedes Statement 12)
50	Pension Disclosures – an amendment of GASB Statements No. 25 and No. 27	Issued May 2007. Effective for periods beginning after June 15, 2007

Appendix B. Descriptive statistics.

Respondents' profile	Frame and counter-frames				
	Primary frame	First counter-frame	Second counter-frame	Other arguments	Total
Actuaries	2	1	8	5	16
Accountants	5	7	26	11	49
Economists and CFAs/financial officers	2	1	2	1	6
Others	2	4	18	10	34
Total	**11**	**13**	**54**	**27**	**105**[a]

[a] The total of 105 is a sub-set of the 115 non-duplicate letters that were submitted during the first round of consultation, and represents only those letters where the writer expressed a clear opinion on the discount rate question.

References

Alasuutari, P., & Qadir, A. (2016). Imageries of the social world in epistemic governance. *International Sociology, 31*(6), 633–652.

Alvehus, J., & Spicer, A. (2012). Financialization as a strategy of workplace control in professional service firms. *Critical Perspectives on Accounting, 23*(7), 497–510.

Bader, L., & Gold, J. (2003). Reinventing pension actuarial science. *The Pension Forum, 14*(2), 1–13.

Barthold, C., Dunne, S., & Harvie, D. (2017). Resisting financialisation with deleuze and guattari: The case of occupy Wall street. *Critical Perspectives on Accounting*. http://dx.doi.org/10.1016/j.cpa.2017.03.010.

Bayou, M., Reinstein, A., & Williams, P. (2011). To tell the truth: A discussion of issues concerning truth and ethics in accounting. *Accounting, Organizations and Society, 36*(2), 109–124.

Benford, R. D., & Snow, D. A. (2000). Framing processes and social movements: An overview and assessment. *Annual Review of Sociology, 26*, 611–639.

Benston, G. J., Bromwich, M., & Wagenhofer, A. (2006). Principles-versus rules-based accounting standards: The FASB's standard setting strategy. *Abacus, 42*(2), 165–188.

Biagioli, M. (1990). The anthropology of incommensurability. *Studies In History and Philosophy of Science Part A, 21*(2), 183–209.

Birkland, T. (1997). *After disaster: Agenda setting, public policy, and focusing events.* Washington: Georgetown University Press.

Black, F. (1980). The tax consequences of long-run pension policy. *Financial Analysts Journal, 36*(4), 21–28.

Botzem, S. (2012). *The politics of accounting regulation: Organizing transnational standard setting in financial reporting.* Northampton: Edward Elgar Publishing.

Bourne, M. (2014). *Towards a multidimensional model of power: The international accounting standards boards and its amendment of international financial reporting standard 3 (business combination)*Ph.D. Thesis. Canada: Alberta School of Business, University of Alberta.

Brivot, M., Himick, D., & Martinez, D. (2017). Constructing, contesting, and overloading: A study of risk management framing. *European Accounting Review, 4*, 703–728.

Brown, J. (2011). *The clearest explanation yet of why public pension accounting rules are garbage*Center for Business & Public Policy. available online at: http://businesspublicpolicy.com/?p=2100, Accessed date: 12 May 2016.

Bueger, C. (2014). From expert communities to epistemic arrangements: Situating expertise in international relations. In M. Mayer, M. Carpes, & R. Knoblich (Eds.). *The global politics of science and technology volume 1* (pp. 39–54). Berlin Heidelberg: Springer.

Bühlman, H. (1997). The actuary: The role and the limitations of the profession since the mid-19th century. *Astin Bulletin, 27*(2), 165–171.

Bullock, N. (2016). *The crumbling assumptions of US public pension plans. Financial Times.* August 26. Available at: https://www.ft.com/content/456172b4-6b11-11e6-ae5b-a7cc5dd5a28c.
Campbell, J. (2002). Ideas, politics, and public policy. *Annual Review of Sociology, 28*, 21–38.
Chiapello, E. (2015). Financialisation of valuation. *Human Studies, 38*, 13–35.
Chiapello, E. (2016). How IFRS contribute to the financialization of capitalism. In D. Bensadon, & N. Praquin (Eds.). *IFRS in a global world* (pp. 71–84). Berlin Heidelberg: Springer.
Chiapello, E., & Walter, C. (2016). The three ages of financial quantification: A conventionalist approach to the financiers' metrology. *Historical Social Research, 41*(2), 155–177.
Christensen, M. (2005). The 'third hand': Private sector consultants in public sector accounting change. *European Accounting Review, 14*(3), 447–474.
Christensen, M. (2006). On public sector accounting change: Epistemic communities, consultants, naive officials and a reply to Humphrey. *European Accounting Review, 15*(2), 289–296.
Cizek, G. J., & Bunch, M. B. (2007). *Standard setting - a guide to establishing and evaluating performance.* Thousand Oaks: Sage Publications Limited.
Collins, H. (1981). The place of the 'core-set' in modern science: Social contingency with methodological propriety in science. *History of Science, 19*(1), 6–19.
Cooper, C., Graham, C., & Himick, D. (2016). Social impact bonds: The securitization of the homeless. *Accounting, Organizations and Society, 55*, 63–82.
Cortese, C., & Irvine, H. (2010). Investigating international accounting standard setting: The black box of IFRS 6. *Research in Accounting Regulation, 22*(2), 87–95.
Dunlop, C. (2012). Chapter 18: Epistemic communities. In E. Araral, S. Fritzen, M. Howlett, M. Ramesh, & X. Wu (Eds.). *Routledge handbook of public policy* (pp. 229–243). London: Routledge.
Durocher, S., Fortin, A., & Côté, L. (2007). Users' participation in the accounting standard-setting process: A theory-building study. *Accounting, Organizations and Society, 32*(1), 29–59.
Durocher, S., & Gendron, Y. (2014). Epistemic commitment and cognitive disunity toward fair-value accounting. *Accounting and Business Research, 44*(5), 630–655.
Elbannan, M., & McKinley, W. (2006). A theory of the corporate decision to resist FASB standards: An organization theory perspective. *Accounting, Organizations and Society, 31*(7), 601–622.
Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication, 43*(4), 51–58.
Erb, C., & Pelger, C. (2015). "Twisting words"? A study of the construction and reconstruction of reliability in financial reporting standard-setting. *Accounting, Organizations and Society, 40*, 13–40.
FASB (2003). *Report of the chairman of the FASB to the financial accounting standards advisory council for the quarter ended June 30, 2003*.
Financial Accounting Foundation (2002). *Annual report of the financial accounting standards board and the governmental accounting standards board*.
Financial Accounting Foundation (2006). *Annual report of the financial accounting standards board and the governmental accounting standards board*.
Financial Times (2016). *Japan ducks UN pension accounting rule to flatter its public debt.* Published online on December 29th, 2016. Available at: https://www.ft.com/content/9cea885e-c03e-11e6-9bca-2b93a6856354, Accessed date: 24 November 2017.
Froud, J., Johal, S., Leaver, A., & Williams, K. (2014). Financialization across the Pacific: Manufacturing cost ratios, supply chains and power. *Critical Perspectives on Accounting, 25*(1), 46–57.
GASB (1994). *Governmental accounting standards series statement No. 27: Accounting for pensions by state and local governmental employers*.
GASB (2009). *Invitation to comment on pension accounting and financial reporting*.
GASB (2010). *Technical plan for the second third of 2010: Background and historical material*.
Goffman, E. (1974). *Frame analysis: An essay on the organization of experience.* Boston: Northeastern University Press.
Gold, J. (2008). *GASB board presentation 2008–fair value for public pension plans.* Available at: http://www.pensionfinance.org/papers/gasb.pdf, Accessed date: 15 June 2016.
Gowthorpe, C., & Amat, O. (2005). Creative accounting: Some ethical issues of macro- and micro- manipulation. *Journal of Business Ethics, 57*(1), 55–64.
Haas, P. M. (1992). Introduction: Epistemic communities and international policy coordination. *International Organization, 46*(1), 1–35.
Hargrave, T. J., & Van De Ven, A. H. (2006). A collective action model of institutional innovation. *Academy of Management Review, 31*(4), 864–888.
Harrison, J. M., & Sharpe, W. F. (1983). Optimal funding and asset allocation rules for defined-benefit pension plans. *Financial aspects of the United States pension system* (pp. 91–106). University of Chicago Press.
Heitlinger, A. (1996). Framing feminism in post-communist Czech Republic. *Communist and Post-Communist Studies, 29*(1), 77–93.
Himick, D. (2016). Actuarialism as biopolitical and disciplinary technique. *Accounting, Organizations and Society, 54*, 22–44.
Hodder, L., & Hopkins, P. (2014). Agency problems, accounting slack, and banks' response to proposed reporting of loan fair values. *Accounting, Organizations and Society, 39*(2), 117–133.
James, W. (2000). *Pragmatism and other writings.* New York: Penguin Books.
Kamieniecki, S. (2000). Testing alternative theories of agenda setting: Forest policy change in British Columbia, Canada. *Policy Studies Journal, 28*(1), 176–189.
Kelly, L. (1982). Corporate lobbying and changes in financing or operating activities in reaction to FAS no. 8. *Journal of Accounting and Public Policy, 1*(2), 153–173.
Kelly, L. (1985). Corporate management lobbying on FAS No.8: Some further evidence. *Journal of Accounting Research, 23*(2), 619–632.
Kra, E., Bodie, Z., & Gold, J. (2001). Does an actuarial bias lead to equity investment? *The Record, 27*(1) Dallas Spring Meeting May 30–June 1, 2001 Session 37PD.
Kwok, W., & Sharp, D. (2005). Power and international accounting standard setting: Evidence from segment reporting and intangible assets projects. *Accounting, Auditing & Accountability Journal, 18*(1), 74–99.
Latour, B. (1987). *Science in action: How to follow scientists and engineers through society.* Harvard university press.
Laux, C., & Leuz, C. (2009). The crisis of fair-value accounting: Making sense of the recent debate. *Accounting, Organizations and Society, 34*(6–7), 826–834.
Lintner, J. (1965a). Security prices, risk, and maximal gains from diversification. *The Journal of Finance, 20*(4), 587–615.
Lintner, J. (1965b). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. *The Review of Economics and Statistics,* 13–37.
Litfin, K. (1994). *Ozone discourses: Science and politics in global environmental cooperation.* Columbia University Press.
Lounsbury, M. (2005). Institutional variation in the evolution of social movements: The spread of recycling advocacy groups. In J. Davis, D. McAdam, W. Scott, & M. Zald (Eds.). *Social movements and organization theory* (pp. 73–95). Oxford: Oxford University Press.
Lovell, H., & MacKenzie, D. (2011). Accounting for carbon: The role of accounting professional organisations in governing climate change. *Antipode, 43*(3), 704–730.
Marcuse, H. (1964). *One-dimensional man.* Boston: Beacon Press.
Markowitz, H. (1952). Portfolio selection. *The Journal of Finance, 7*(1), 77–91.
Marres, N., & Lezaun, J. (2011). Materials and devices of the public: An introduction. *Economy and Society, 40*(4), 489–509.
Mennicken, A., & Power, M. (2015). Accounting and the plasticity of valuation. In A. Berthoin Antal, M. Hutter, & D. $ Stark (Eds.). *Moments of valuation: Exploring sites of dissonance*. Oxford: Oxford Scholarship Online.
Mikes, A. (2009). Risk management and calculative cultures. *Management Accounting Research, 20*(1), 18–40.
Miller, P. (1998). The margins of accounting. *European Accounting Review, 7*(4), 605–621.
Morin, J.-F. (2014). Paradigm shift in the global IP regime: The agency of academics. *Review of International Political Economy, 21*(2), 275–309.
Mossin, J. (1966). Equilibrium in a capital asset market. *Econometrica: Journal of the econometric society,* 768–783.
Müller, J. (2014). An accounting revolution? The financialisation of standard setting. *Critical Perspectives on Accounting, 25*(7), 539–557.
Murphy, T., O'Connell, V., & Ó hÓgartaigh, C. (2013). Discourses surrounding the evolution of the IASB/FASB Conceptual Framework: What they reveal about the "living law" of accounting. *Accounting, Organizations and Society, 38*(1), 72–91.
Novy-Marx, R. (2011). *Logical implications of GASB's methodology for valuing pension liabilities* (No. w17613)National Bureau of Economic Research.
Paterson, J. (2005). Is financial economics the "magic bullet" for pension plans? *Canadian Institute of Actuaries Bulletin, 15*(6).
Pelger, C. (2016). Practices of standard-setting – an analysis of the IASB's and FASB's process of identifying the objective of financial reporting. *Accounting, Organizations and Society, 50*, 51–73.
Pflueger, D. (2016). Knowing patients: The customer survey and the changing margins of accounting in healthcare. *Accounting, Organizations and Society, 53*, 17–33.
Pong, C. K. (1999). Jurisdictional contests between accountants and lawyers: The case of off-balance sheet finance 1985-1990. *Accounting History, 4*(1), 7–29.
Porter, T. (1995). *Trust in numbers. The pursuit of objectivity in science and public life.* Princeton: Princeton University Press.
Power, M. (2007). *Organized uncertainty - designing a world of risk management.* Oxford: Oxford University Press.
Power, M. (2010). Fair value accounting, financial economics and the transformation of reliability. *Accounting and Business Research, 4*(3), 197–210.
Putnam, H. (1983). *How not to solve ethical problems. The Lindley Lectures.* Department of Philosophy: The University of Kansas. Available at: https://kuscholarworks.ku.edu/bitstream/handle/1808/12397/How%20Not%20to%20Solve%20Ethical%20Problems-1983.pdf;sequence=1, Accessed date: 26 June 2017.
Richardson, A., & Eberlein, B. (2011). Legitimating transnational standard setting: The case of the international accounting standards board. *Journal of Business Ethics, 98*(2), 217–245.
Rose, N. (1993). Government, authority and expertise in advanced liberalism. *Economy and Society, 22*(3), 283–299.
Sabatier, P., & Weible, C. (2014). *Theories of the policy process.* Boulder: Westview Press.
Seabrooke, L. (2014). Epistemic arbitrage: Transnational professional knowledge in action. *Journal of Professions and Organizations, 1*(1), 49–64.
Sebenius, J. (1992). Challenging conventional explanations of international cooperation: Negotiation analysis and the case of epistemic communities. *International Organization, 46*(1), 323–365.
Shapiro, R. (2015). *Response to a blog post.* Available at: http://www.actuarialoutpost.com/actuarial_discussion_forum/showthread.php?p=8269253#post8269253, Accessed date: 15 June 2016.
Sharpe, W. F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *The Journal of Finance, 19*(3), 425–442.
Sharpe, W. F. (1976). Corporate pension funding policy. *Journal of Financial Economics, 3*(3), 183–193.
Smith-Lacroix, J. H., Durocher, S., & Gendron, Y. (2012). The erosion of jurisdiction: Auditing in a market value accounting regime. *Critical Perspectives on Accounting, 23*(1), 36–53.
Snow, D. A., & Benford, R. D. (1988). Ideology, frame resonance, and participant mobilization. *International Social Movement Research, 1*(1), 197–217.
Snow, D. A., & Benford, R. D. (1992). Master frames and cycles of protest. In A. D. Morris, & C. M. Mueller (Eds.). *Frontiers in social movement theory* (pp. 133–155). New Haven: Yale University Press.

Stenka, R., & Taylor, P. (2010). Setting UK standards on the concept of control: An analysis of lobbying behaviour. *Accounting and Business Research, 40*(2), 109–130.

Suzuki, T. (2007). Accountics: Impacts of internationally standardized accounting on the Japanese socio-economy. *Accounting, Organizations and Society, 32*(3), 263–301.

Tepper, I. (1981). Taxation and corporate pension policy. *The Journal of Finance, 36*(1), 1–13.

Treynor, J. (1972). Risk and reward in corporate pension funds. *Financial Analysts Journal, 28*(1), 80–84 (using pseudonym Bagehot, W.).

Tutticci, I., Dunstan, K., & Holmes, S. (1994). Respondent lobbying in the Australian accounting standard-setting process: ED49–a case study. *Accounting, Auditing & Accountability Journal, 7*(2), 86–104.

Van Waarden, F., & Drahos, M. (2002). Courts and (epistemic) communities in the convergence of competition policies'. *Journal of European Public Policy, 9*(6), 913–934.

Vanberg, V., & Buchanan, J. M. (1989). Interests and theories in constitutional choice. *Journal of Theoretical Politics, 1*(1), 49–62.

Walzer, M. (1983). *Spheres of justice: A defense of pluralism and equality.* New York: Basic Books.

White, H. (1978). *The tropics of discourse.* Baltimore: Johns Hopkins University Press.

Whitley, R. (1986). The transformation of business finance into financial economics: The roles of academic expansion and changes in U.S. capital markets. *Accounting, Organizations and Society, 11*(2), 171–192.

Young, J. (1994). Outlining regulatory space: Agenda setting issues and the FASB. *Accounting, Organizations and Society, 19*(1), 83–109.

Young, J. (2003). Constructing, persuading and silencing: The rhetoric of accounting standards. *Accounting, Organizations and Society, 28*(6), 621–638.

Young, J. (2014). Separating the political and technical: Accounting standard-setting and purification. *Contemporary Accounting Research, 31*(3), 713–747.

Zhang, Y., & Andrew, J. (2014). Financialisation and the conceptual framework. *Critical Perspectives on Accounting, 25*(1), 17–26.

Zhang, Y., Andrew, J., & Rudkin, K. (2012). Accounting as an instrument of neoliberalisation? Exploring the adoption of fair value accounting in China. *Accounting, Auditing & Accountability Journal, 25*(8), 1266–1289.