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Behavioral Economics of Accounting: A Review of Archival Research on Individual Decision Makers*

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ABSTRACT

This paper develops a unified framework to synthesize the growing stream of positive research on the role of individual decision makers in shaping observed accounting phenomena. This line of research recognizes two central ideas in behavioral economics. First, individual behavior depends not only on economic incentives and accessible information but also on individual preferences, abilities, experiences, and other characteristics. Second, the constraints that structure human interactions encompass both formal institutions (e.g., rules, laws, constitutions) and informal institutions (e.g., norms, conventions, rituals). Our review covers a broad set of individuals who are of interest in accounting research: managers, directors, audit partners, analysts, standard setters, politicians, judges, journalists, loan officers, financial advisors, and investors. We aim to understand the systematic effects of individual characteristics on a wide spectrum of accounting phenomena, including financial reporting, disclosure, tax planning, auditing, and corporate social responsibility. We highlight the importance of personal characteristics not only for an individual's own behavior but also for others' perceptions. Our review mainly focuses on archival research in accounting and provides some thoughts about opportunities for archival empiricists going forward. We also, when feasible, highlight opportunities for future field, survey, and experimental research. A central takeaway from our review is that individual-level factors significantly improve our ability to explain and predict accounting phenomena beyond firm-, industry-, and market-level factors.

Keywords: accounting, behavioral economics, individual decision makers, *Homo economicus*, *Homo sapiens*, informal institutions

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Économie comportementale de la comptabilité : examen de la recherche archivistique sur les décideurs individuels

RÉSUMÉ

La présente étude élabore un cadre unifié pour effectuer une synthèse des recherches positives de plus en plus nombreuses sur le rôle que jouent les décideurs individuels pour façonner certains phénomènes comptables observés. Ce champ de recherche s'appuie sur deux idées centrales du domaine de l'économie comportementale. D'abord, le comportement individuel est tributaire non seulement des incitatifs économiques et de l'information accessible, mais également des préférences, des capacités, de l'expérience et d'autres caractéristiques individuelles. Ensuite, les contraintes qui structurent les interactions humaines englobent les institutions formelles (p. ex., règles, lois et constitutions) et les institutions informelles (p. ex., normes, conventions, rituels). Notre examen s'attarde à un vaste éventail de personnes qui présentent un intérêt pour la recherche comptable, soit les gestionnaires, directeurs, partenaires d'audit, analystes, normalisateurs, politiciens, juges, journalistes, responsables des prêts, conseillers financiers et investisseurs. Nous tentons de comprendre les effets systématiques des caractéristiques individuelles sur un vaste éventail de phénomènes comptables, notamment la communication et la divulgation d'information financière, la planification fiscale, l'audit et la responsabilité sociale des entreprises. Nous faisons ressortir l'importance des caractéristiques individuelles non seulement en lien avec le comportement des particuliers, mais aussi avec la perception des autres. Notre examen, qui s'appuie principalement sur la recherche archivistique en comptabilité, offre quelques réflexions sur les occasions qui s'offrent aux empiristes qui s'intéressent aux documents d'archives. En outre, lorsque c'était possible, nous avons proposé des possibilités d'études sur le terrain, d'enquêtes et de recherche expérimentale. Une des principales idées qui se dégage de notre examen est que certains facteurs individuels améliorent considérablement notre capacité à expliquer et à prédire les phénomènes comptables, au-delà des facteurs à l'échelle de l'entreprise, du secteur d'activité et du marché.

Mots-clés : comptabilité, recherche archivistique, décideurs individuels, *Homo economicus*, *Homo sapiens*, institutions informelles

An accounting theory that seeks to explain and predict accounting cannot divorce accounting research from the study of people. (Watts and Zimmerman 1990, 147)

1. Introduction

A fundamental objective of accounting research is to explain and predict accounting phenomena (Watts and Zimmerman 1986). Early capital markets research takes observed accounting numbers as an equilibrium outcome and does not analyze the forces that shape this outcome (Ball and Brown 1968; Beaver 1968). Positive accounting theory takes the nexus of contracts view of a firm (Jensen and Meckling 1976) and seeks to understand accounting practices by deciphering the incentives of the various contracting parties (Watts and Zimmerman 1978). This contracting approach to studying accounting has led to the discovery of important empirical regularities (Holthausen and Leftwich 1983; Lys 1984; Healy 1985) and continues to further our understanding of accounting phenomena today (Kothari 2019).

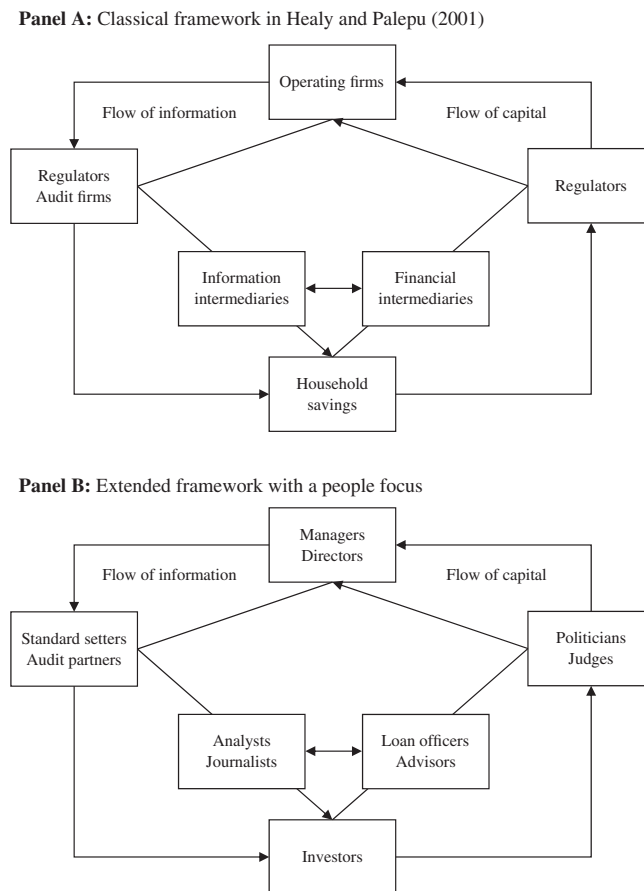
Traditional positive accounting theory builds on neoclassical economic theory and focuses on the economic forces that determine the demand for and supply of accounting information (Watts and Zimmerman 1986). Under this framework, investors demand accounting information to mitigate information asymmetry and agency conflicts, and managers supply accounting information based on a cost-benefit analysis that maximizes their own utility. It is commonly assumed that all decision makers are *Homo economicus* (i.e., an economic being) who will make the same choice for a given situation by optimizing, and that formal institutions (e.g., rules, laws, constitutions) govern the interactions between decision makers.

In this review, we focus on a growing body of positive accounting research that builds on behavioral economics. Following Thaler (2016), we use the term “behavioral economics” to broadly refer to evidence-based economics that views individual decision makers as *Homo sapiens* (i.e., a human being) in a real economy rather than *Homo economicus* (i.e., a self-interested being with well-defined preferences, unbiased beliefs, infinite cognitive abilities, and infinite willpower) in an abstract economy.¹ This view of individual decision makers extends traditional positive accounting theory in two ways. First, it recognizes that individual behavior depends not only on economic incentives and accessible information, but also on individual preferences, abilities, experiences, and other characteristics. Second, it expands the constraints that structure human interactions to include informal institutions (e.g., norms, conventions, rituals). Under this framework, the supply of accounting information can be shaped by the traits of managers, and the demand for accounting information can be influenced by investor sentiment. Overall, this line of work on the behavioral economics of accounting adopts an approach “in which hypotheses and assumptions are based on observations about human behavior” and represents “a set of practical enhancements that lead to better predictions about behavior” (Thaler 2016, 1591–92).

While experimental accounting research has been studying individual judgment and decision making for many years (Dyckman 1964; Ashton 1974; Libby 1975; Gibbins and Swieringa 1995; Libby et al. 2002; Kachelmeier 2020), archival research examining the effects of individual managers did not take off until more recently (Bamber et al. 2010; Dyreng et al. 2010; Ge et al. 2011). There are four key elements that constitute the foundation for this recent archival research on individual behavior in accounting: (i) a behavioral theory of rational choice (Simon 1955; Tversky and Kahneman 1974; Kahneman and Tversky 1979; Thaler 2000); (ii) an upper echelons perspective of organizations (Hambrick and Mason 1984); (iii) the individual fixed effects methodology (Bertrand and Schoar 2003); and (iv) data on observable individual characteristics.²

The availability of individual-level data allows us to develop refutable hypotheses and advance our understanding of what people do (i.e., actual behavior) rather than what people should do (i.e., optimal behavior) (Thaler 1980). Behavioral deviations from traditional economic models (often referred to as behavioral biases) do not necessarily mean that these behaviors are “irrational”—it might well be the case that the existing economic models are not fully descriptive of human behavior (Thaler 2015; Lo 2017). While some of these behavioral deviations appear to be random and unpredictable, there are also systematic deviation patterns that are shared by all individuals, individuals with similar characteristics, or individuals in a similar environment. A vast empirical literature explores between-individual and within-individual variation in these behavioral deviations using individual-level observables. This stream of archival literature in accounting and finance is essential to the development of behavioral economics as it shows that adopting behavioral assumptions can help us understand and predict the decision making of not only individual consumers or small investors, but also sophisticated and highly trained professionals in a competitive business environment (Malmendier 2018). Our review aims to summarize the empirical evidence of this literature without prescribing an optimal decision rule for individuals or society. This collective evidence can have important normative and practical implications once an objective function is specified (Watts 1977; Jensen 1983).³

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1. Simon (1987, 612) notes: “The phrase ‘behavioral economics’ appears to be a pleonasm. What ‘non-behavioral’ economics can we contrast with it? The answer to this question is found in the specific assumptions about human behavior that are made in neoclassical economic theory.” Thaler (2016, 1597) predicts that “the term ‘behavioral economics’ will eventually disappear from our lexicon” as we turn our attention to the study of *Homo sapiens* rather than *Homo economicus*.
 2. A large and important literature utilizes experimental data to study human behavior in accounting (Libby 1981; Bonner 2008). The archival and experimental approaches to data gathering are complementary and enhance the validity of the conclusions reached (Bloomfield et al. 2016).
 3. For example, if the objective of the government is to increase pension savings rates among private sector workers, the findings from Thaler and Benartzi (2004) suggest that the government should mandate employers to establish an automatic enrollment scheme (i.e., employees are automatically enrolled unless they explicitly opt out).

Figure 1 Financial and information flows in a capital market economy

Our review covers various players that shape the financial and information flows in the economy. Panel A of Figure 1 presents the classical framework developed in Healy and Palepu (2001, 408). The left side of this figure presents the flow of information from firms to savers, directly or indirectly through information intermediaries. The right side of this figure depicts the flow of capital from savers to firms, directly or indirectly through financial intermediaries. Panel B of Figure 1 presents our framework, which enriches the classical framework with a focus on individuals. Operating firms consist of managers and directors. Household savings are from investors. Accounting regulators and audit firms consist of accounting standard setters and audit partners. Information intermediaries consist of analysts and journalists. Regulators of capital markets and financial institutions include politicians and judges. Financial intermediaries include loan officers and financial advisors. We aim to understand the systematic effects of individual characteristics on a wide spectrum of accounting phenomena including financial reporting, disclosure, tax planning, auditing, and corporate social responsibility (CSR). We discuss research not only on how personal characteristics (e.g., gender, race/ethnicity, appearance, experiences) shape an individual's behavior, but also on how these characteristics affect others' perceptions of the individual's outputs.⁴

4. See the Appendix for a description of how we undertake our review. We do not discuss research on whether and how investor behavior can affect trading and asset prices because this topic has been reviewed extensively in behavioral finance (Hirshleifer 2015; Shiller 2015; Barberis 2018). Reviews on investors' information processing in

The research that we review is interdisciplinary in nature. To explain and predict individual behavior in accounting settings, we need to rely on theories developed not only in economics and finance, but also in psychology, biology, neuroscience, organizational behavior, management science, strategy, linguistics, and sociology. In addition, field, survey, and experimental methods can help to overcome some of the intrinsic limitations of archival research. For example, surveys can be used to measure unobservable constructs more directly, and experiments can be used to draw causal inferences and establish construct validity for archival proxies.

A central takeaway from our review is that individual-level factors significantly improve our ability to explain and predict accounting phenomena beyond firm-, industry-, and market-level factors. Ideally, where possible, future research should treat this people dimension with equal importance as other economic dimensions, especially in situations where there is limited labor market competition or other disciplining forces. Similar to research that examines various firm characteristics, a challenge in this behavioral literature is identifying the first-order factors in a given decision context and establishing causality. For the literature to move forward, researchers will need to draw on insights from other disciplines and utilize novel data sets and settings. It is also important for researchers to disentangle the precise mechanisms behind observed relations and unravel the complicated decision-making processes that lead to various economic choices. We expect that our framework and review can help researchers in navigating through this exercise and in developing a specific research plan. At the same time, we recognize that although data availability has certainly improved, there will be data constraints at times that limit our ability to fully examine individual effects.

With a pedagogical goal in mind, our review is written as a tool to assist researchers in learning this subject area rather than as a referee report to critique each individual paper. While we are as thorough as possible, our discussion inevitably reflects our own understanding and tastes and by no means is “optimal.” We encourage researchers to read the original papers and related reviews done by others to form their own perspectives.⁵ Our review proceeds as follows. In section 2, we discuss the historical development of the “managers matter” view and provide a conceptual framework based on behavioral economics. In section 3, we develop a schema to organize the empirical literature on manager (and director) effects and discuss the collective evidence from this literature. Researchers who are familiar with the literature and are mainly interested in our perspectives can jump directly to section 3.6.⁶ In section 4, we follow the schema developed in section 3 and review the literature regarding each of the other parties in Figure 1. Again, we first lay out what we can learn from the literature and then offer our observations and suggestions for the whole literature at the end of the section (i.e., section 4.5). Finally, we provide some concluding remarks and our conjectures regarding future work in section 5.

2. Conceptual framework

In this section, we develop a conceptual framework to synthesize the growing stream of positive accounting research on individual decision makers. Section 2.1 takes a historical perspective on the “managers matter” view. Section 2.2 outlines a behavioral theory of rational choice, and section 2.3 discusses formal and informal institutions. Section 2.4 uses CSR as an example to illustrate why it is important to take a behavioral perspective and understand whose preferences influence firm decisions.

accounting settings are provided in Hirshleifer and Teoh (2009), Libby and Emett (2014), Lee and So (2015), and Blankespoor et al. (2020). We complement these reviews by discussing research on whether and how investors react to information senders’ personal characteristics that may or may not be relevant to the information conveyed.

5. There have been other reviews on portions of the research that we cover (Kothari et al. 2016; Plöckinger et al. 2016; Bradshaw et al. 2017; Lennox and Wu 2018; Abernethy and Wallis 2019; Ge and Moon 2021). We make references to related reviews when discussing a specific topic and intend for our review to consolidate, integrate, and expand upon these reviews by drawing on the conceptual framework that we develop in section 2.
6. We avoid detailed critiques of each individual paper when discussing its findings because some limitations of a particular study are addressed in subsequent work and the common limitations of the literature are discussed in great length in section 3.6.

2.1 A historical perspective on the “managers matter” view

Early research in accounting often assumes a neoclassical view of the firm in which top executives do not matter for firm outcomes and the forces of demand and supply determine optimal firm behaviors (Kohler 1975; Christenson 1983). Under this view, managers are interchangeable inputs into the production and reporting functions, similar to machines and raw materials.⁷ Thus, corporate decisions depend on an activity’s marginal benefits and marginal costs at the firm level, and similar firms will make the same choices regardless of their top management teams (TMTs).

In contrast, positive accounting theory argues that managers have discretion inside their firms and that they use this discretion to maximize their own utility (Watts and Zimmerman 1978). Contracting parties allow managers to have some discretion over corporate practices because a firm’s management is the party most informed about the firm’s internal operations and performance (Holmström 1979). Managers can exercise their discretion to make all contracting parties better off but can also act opportunistically to increase their utility at the expense of other contracting parties. Ex ante efficient contracting can reduce ex post opportunistic behavior that causes deadweight costs, increasing a firm’s competitiveness (Klein 1983).⁸

Standard agency models often assume that all contracting parties are *Homo economicus* (i.e., a rational economic being) who will make the same choice for a given situation by optimizing (Jensen and Meckling 1976). These models generally attribute differences in corporate behavior to heterogeneity in corporate governance. Extensions of standard agency models allow top executives to impose their style on their firm when there is limited corporate control. The upper echelons perspective developed in the strategic management literature embodies this view and argues that organizational outcomes reflect the values and cognitive bases of top executives (Hambrick and Mason 1984). Under this perspective, managers are viewed as *Homo sapiens* (i.e., a human being) whose characteristics determine their *perception* of a given situation and the ultimate strategic choice. This “managers matter” view of corporate decisions is the focus of our review. We also extend this view to other individual actors in various accounting settings. Overall, we expect individual actors to matter more when there is less competition in their labor market and when there are fewer market forces disciplining their choices. For example, we expect individual regulators and standard setters to matter more for regulation and standards compared to individual investors for market prices. In the next section, we outline a behavioral theory of rational choice for *Homo sapiens*, which explains why managerial characteristics can predict organizational outcomes.

2.2 Behavioral theory of rational choice

Within accounting and related fields, individuals are assumed to maximize their expected utility (von Neumann and Morgenstern 1947). This choice can be neatly summarized as the following optimization problem:

$$\max_{x \in X} \sum_{s \in S} \pi(s) U(x|s), \quad (1)$$

where X is the choice set, S is the state space, $\pi(s)$ is the individual’s subjective beliefs, and $U(x|s)$ reflects his/her preferences.

Classic models provide an elegant framework for predicting *optimal* choices. However, hundreds of papers find that *actual* choices deviate systematically from the optimal choices predicted

7. A more extreme argument is that even if managers are different, none of these differences matter because organizational and environmental constraints severely limit the amount of discretion that managers have (Hannan and Freeman 1977).

8. Dechow (1994) provides early evidence that, on average, managers use their discretion over accrual recognition to convey their private information rather than to manipulate earnings.

by classic models (Kahneman et al. 1982). Behavioral research replaces *Homo economicus* with *Homo sapiens* and tries to improve our ability to predict actual choices by incorporating insights from other disciplines (e.g., psychology, neuroscience, human ecology) into the study of economic decisions (Becker 1993; Akerlof and Kranton 2010). The goal of behavioral research is *not* to craft a story for each phenomenon that we wish to explain but rather to identify important patterns that can explain a range of behaviors. These behavioral theories are designed to extend and complement rather than replace traditional theories.⁹

We note three deviations from standard assumptions. First, people have cognitive limitations and, as a result, may engage in imperfect utility maximization (Simon 1955). Second, people deviate from Bayesian beliefs. For example, people tend to overweight their personal experiences because these events are easy to remember (Tversky and Kahneman 1974). Third, people may exhibit nonstandard preferences. For example, people may care about changes in their wealth rather than the level of their wealth (Kahneman and Tversky 1979), and people may deviate from pure self-interest and care about others (Rabin 1993; Fehr and Schmidt 1999).

2.2.1 Imperfect utility maximization

A traditional view is that utility maximization describes choices that people make without making any presumption about the level of individual consciousness (Friedman 1953).¹⁰ Classic models assume that decision makers act *as if* they conduct exhaustive searches over all possible choices and then they select the first best. Herbert Simon introduced the term “bounded rationality” to describe rational choice that takes into account the decision maker’s cognitive limitations.¹¹ Models of bounded rationality feature a deliberation cost that prevents individuals from making fully optimal decisions (Smith and Walker 1993). When a deliberation cost is introduced, decision makers need to balance the benefit of better decisions with the effort cost of the decision. This trade-off, in turn, can lead to a process known as “satisficing,” in which people perform limited searches and accept the first satisfactory decision.

Although differences among individuals are irrelevant under unbounded rationality, these differences matter under bounded rationality. As Simon (1986, S211) writes, if we accept the premise that “the knowledge and computational power of the decision maker are limited,” then “we must distinguish between the real world and the actor’s perception of it and reasoning about it. That is to say, we must construct a theory (and test it empirically) of the process of decision. Our theory must include not only the reasoning processes but also the processes that generated the actor’s subjective representation of the decision problem.” For example, differences in ability and experience can affect how people internalize deliberation costs or form beliefs.¹²

2.2.2 Deviations from Bayesian beliefs

Traditional economic models assume that people form beliefs through rigorous Bayesian reasoning based on accessible information. However, research on judgment under uncertainty identifies several systematic deviations from this belief formation pattern. For example, when people are asked to estimate the risk of a heart attack in the general population, their response depends on

9. Rabin (2013, 618) describes behavioral theories as “portable extensions of existing models.”

10. Sen (1997) makes the following analogy. While uniformly following the principle of least time, light does not make a conscious decision. However, from the perspective of a human observer, light behaves *as if* it does.

11. Simon (1955, 99) describes bounded rationality as “a kind of rational behavior that is compatible with the access to information and the computational capacities that are actually possessed by organisms, including man.”

12. Mullainathan and Shafir (2013) discuss various examples of a mind-set produced by scarcity. For example, in a randomized controlled experiment, Drexler et al. (2014) show that a rule-of-thumb training (that taught basic financial heuristics) was significantly more effective than a standard accounting training in improving the financial practices of micro-entrepreneurs. Rajgopal (2021) notes that the use of heuristics is prevalent in the world of accounting and valuation.

their ability to recall heart attacks among their acquaintances. This tendency where people estimate the probability of an event based on the ease with which they can recall similar events is referred to as the availability heuristic (Tversky and Kahneman 1974). In a similar vein, several papers find that people tend to overweight events that occur during their lifetime (Malmendier and Nagel 2011, 2016; D'Acunto et al. 2021).

The availability heuristic is moderated by salience and recency. Events that are salient are more likely to be remembered. For example, individuals who witness natural disasters first-hand assign a higher subjective probability to future disasters compared to individuals who read about natural disasters in the news. Events are also more likely to be remembered when they are recent (i.e., the recency effect). However, it is also the case that events that occur in the distant past can be “imprinted” into a person’s memory, especially if these events occur during formative periods such as early childhood or the beginning of one’s career (Marquis and Tilsik 2013). The long-term impact of early-career experiences has been documented in several populations, including economists (Oyer 2006), investment bankers (Oyer 2008), corporate managers (Schoar and Zuo 2016, 2017), audit partners (He et al. 2018), sell-side analysts (Clement and Law 2018), financial advisors (Law and Zuo 2021a), and mutual fund managers (Chen, Lasfer et al. 2021).

To understand how experiences influence economic decisions, we need to understand the neurological foundations of memory formation (Malmendier 2021). A large literature in neuroscience argues that personal experiences alter the functioning of the human brain through a process known as “synaptic tagging” (Frey and Morris 1997).¹³ Synaptic tagging is enhanced by emotional arousal (LaBar and Cabeza 2006; Talarico et al. 2004), which offers an explanation for why personal experiences are more likely to influence belief formation than learned information. For example, Ru et al. (2021) show that individuals pay more attention to COVID-19 and respond in a more proactive manner if they live in a country that had Severe Acute Respiratory Syndrome (SARS) infections in 2003. This effect holds even though information about SARS and other viral infections is easily accessible. Research also suggests that the same experience can generate different emotions for different people, and it is important to consider whether an experience generates positive or negative emotions when examining people’s responses (Laudenbach et al. 2019, 2020).

2.2.3 *Nonstandard preferences*

Expected utility theory assumes that individual preferences are well defined and obey the von Neumann-Morgenstern axioms.¹⁴ Prospect theory provides an illustration of a model with preferences that are different from these standard preferences (Kahneman and Tversky 1979; Tversky and Kahneman 1991). First, prospect theory assumes that individuals derive utility from changes in wealth relative to a reference point rather than their absolute level of wealth. This assumption is based on the idea that human perception is *reference dependent*. Second, prospect theory assumes that the function translating changes in wealth into utility exhibits a kink at the origin. This assumption captures the idea that people are *loss averse*. Third, prospect theory assumes that the function translating changes in wealth into utility becomes flatter as we move farther from the reference point. This assumption captures the idea that human perception has *diminishing sensitivity* as we move farther from a reference point. These three assumptions suggest that individuals have an S-shaped utility function, convex below the

13. For technical details on synaptic tagging, refer to the book by Sajikumar (2015).

14. The rationality axioms of expected utility theory include completeness, transitivity, independence, and continuity (see Mas-Colell et al. 1995 for details).

reference point and concave above the reference point. Intuitively, this suggests that individuals are risk-seeking in the domain of losses, but risk-averse in the domain of gains.¹⁵

Models of social preferences (or other-regarding preferences) present another example of nonstandard preferences.¹⁶ To illustrate this class of models, consider a two-person game in which Player 1 selects an action x , and this choice affects both Player 1's material well-being $\Pi_1(x)$ and Player 2's material well-being $\Pi_2(x)$. Roughly speaking, models of social preferences assume that Player 1 maximizes a utility function with the form $U_1(x) = (1-r)\Pi_1(x) + r\Pi_2(x)$. By letting $r=0$, we can model the idea that Player 1 is purely self-interested. Conversely, by letting $r>0$, we can model the idea that Player 1 cares about Player 2. Different models have been proposed to explain how people weight their personal utility and that of others. Social welfare models assume that people try to maximize the aggregate of their personal utility and that of others (Becker 1974). Difference aversion models assume that people are averse to the difference in payoffs between themselves and others (Fehr and Schmidt 1999; Bolton and Ockenfels 2000; Ho and Su 2009).¹⁷ Reciprocity models assume that people increase or decrease others' payoffs depending on how fairly others behave (Rabin 1993; Charness and Rabin 2002).

To summarize, this section discusses imperfect utility maximization, deviations from Bayesian beliefs, and nonstandard preferences. These deviations from standard assumptions are designed to introduce more cognitive and psychological realism into the study of economic decision making and to improve our ability to predict actual behavior. A vast empirical literature (discussed below) explores between-individual variation in these behavioral dimensions using observable characteristics (e.g., gender, race/ethnicity, experiences) as well as within-individual variation using environmental factors (e.g., sunshine exposure). In the next section, we discuss constraints that structure the interactions of *Homo sapiens*.

2.3 Institutions

Institutions are constraints that structure human interactions (North 1991). Institutions can be either formal (e.g., rules, laws, constitutions) or informal (e.g., norms, conventions, rituals), where the latter is often referred to as culture (North 1994; Williamson 2000; Guiso et al. 2015; Karolyi 2015). Both types of institutions limit the choice set X in equation (1), and informal institutions can also shape individual preferences and beliefs.

Traditional research in accounting focuses on formal institutions (Watts and Zuo 2016), which encompass three levels of analysis. First, neoclassical analysis describes a firm as a production function and specifies conditions for an optimal price and quantity based on marginal analysis (Marshall 1920). Agency theory enriches this analysis by emphasizing ex ante incentive alignment and efficient risk sharing (Jensen and Meckling 1976). Accounting information plays a crucial role in this setup as it mitigates information asymmetry and agency conflicts among contracting parties (Armstrong et al. 2010).¹⁸ Second, transaction cost economics focuses on the ex post stage of a contract—that is, incomplete contracts, postcontractual opportunism, and hold-up problems (Klein et al. 1978; Williamson 1979; Grossman and Hart 1986; Aghion and

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15. Investors' reference-dependent utility can lead managers to adjust their effort or inflate earnings to exceed salient benchmarks (Burgstahler and Dichev 1997) and to avoid dividend cuts (Baker et al. 2016; He et al. 2020). Experimental studies also provide evidence that managers' disaggregation preferences regarding income statement items are consistent with mental accounting theory, which draws on the S-shaped utility function of prospect theory (Bonner et al. 2014).
 16. This line of work took off in the 1990s after a series of experiments showed that people often make choices that do not maximize their own payoffs when their choices affect others' payoffs (Cooper and Kagel 2016).
 17. Difference-aversion is often offered as an explanation for the norm that resources should be split 50–50. This norm also implies that people care about *changes* in wealth rather than *levels* of wealth.
 18. This rationale led to a large literature on accounting conservatism (Basu 1997; Watts 2003a, 2003b; Ball and Shivakumar 2005, 2006; Ball et al. 2013a, 2013b; Kim et al. 2013; Roychowdhury and Martin 2013; Balakrishnan et al. 2016; Frankel et al. 2021).

Bolton 1992).¹⁹ In this setup, accounting information can be used to facilitate the optimal allocation of control rights (Christensen et al. 2016). Third, the institutional environment specifies the formal “rules of the game,” including the legislative, executive, and judicial functions of the government, and is the focus of international accounting research (Ball et al. 2000, 2003; Daske et al. 2008; Karolyi 2015; Lennox and Wu 2021).

Our review focuses more on informal institutions, including customs, traditions, norms, and religion, that are embedded in a society (Granovetter 1985). Informal institutions change very slowly—over the course of centuries or even millennia. Thus, they are taken as given when considering formal institutions. One reason that informal constraints persist across generations is because individual learning happens in the context of the perceptions shaped by the *cumulative* experience of a society, as embodied in its language and mental models (North 1994). This set of institutions are un-designed ecological systems shaped by evolutionary processes and are not primarily guided by constructivism—that is, “conscious deductive processes of human reason” (Smith 2003, 467). The influence of informal institutions on business practices and economic development is pervasive across the globe (Acemoglu et al. 2001; Rajan and Zingales 2003). For example, in China, individuals often rely on their private and social ties (*guanxi* in Chinese) to build trust, exchange information, and enforce contracts (Fei et al. 1992; Wong 2016); and Confucian culture heavily influences the behavior of individuals involved in the production or use of accounting information (Du 2021).²⁰

The foundation for formal and informal institutions is the process of human evolution (Williamson 2000). The use of evolutionary theories in accounting, finance, and economics is relatively new. One of the pioneers in this field is Andrew Lo, who has written a book on evolution and finance titled *Adaptive Markets: Financial Evolution at the Speed of Thought*. The first principle of Lo’s (2017, 188) Adaptive Markets Hypothesis is that “We are neither always rational nor irrational, but we are biological entities whose features and behaviors are shaped by the forces of evolution.” Evolution can explain and justify heuristics (e.g., probability matching, loss aversion) that appear to be “irrational” today.²¹ Within accounting, researchers note that neuroeconomic research suggests a strong pattern of brain behavior consistent with many prominent accounting principles, including conservatism, revenue recognition, and double-entry book-keeping (Basu and Waymire 2006; Dickhaut 2009; Dickhaut et al. 2010; Waymire 2014).²²

To summarize, traditional accounting research focuses on formal institutions, while the more recent research on individual decision makers shifts the focus to informal institutions and the human evolutionary process. Furthermore, the different kinds of social embeddedness—cognitive, cultural, structural, and political—imply that it is inappropriate to extrapolate the performance effects of formal institutions from one economy to another.²³

2.4 An application to CSR

We make two observations based on the discussions in sections 2.1–2.3. First, the beliefs and preferences of various individuals can influence firm decisions due to the interconnected nature of

19. More recent research recognizes the role of human cognition and examines its consequences for contractual design (Tirole 2009).

20. A key concept in Confucianism is benevolence; thus, people embracing Confucian morality are likely to exhibit social preferences (or other-regarding preferences).

21. Lo (2017, 198) notes that “if we want to understand current behavior, we need to understand the past environments and selective pressures that gave rise to that behavior over time and across generations of trial and error.” This biological approach argues that preferences and heuristics are shaped by the forces of natural selection (Robalino and Robson 2019; Henrich 2020).

22. There is also evidence that performance measurement and control systems can affect decision makers’ brain activity (Farrell et al. 2014).

23. North (1994, 366) notes: “And economies that adopt the formal rules of another economy will have very different performance characteristics than the first economy because of different informal norms and enforcement.”

the economy (summarized in Figure 1). Second, disentangling whose preferences influence firm decisions is important and can lead to different conclusions from both a governance and an efficiency standpoint. We use CSR as an example to illustrate these points.

Anecdotal evidence suggests that consumers have prosocial tastes and that firms invest in CSR to cater to these preferences (Hart and Zingales 2017). For example, some consumers may prefer an electric car to a gas guzzler due to their distaste about pollution or global warming; some may prefer fair trade coffee which is more expensive than regular coffee with similar quality; and some may prefer chicken from a free-range farm to those from a factory farm. As a result, there are firms that produce these products to cater to these consumer preferences. Furthermore, consumer boycotts are a somewhat common practice (John and Klein 2003; Wang et al. 2018). These potential threats from consumers can alter managerial decisions regarding CSR. For example, Walmart stopped selling high-capacity ammunition magazines of the sort used in mass killings because of fear of alienating customers (Zingales 2019).

There is also evidence that some investors prefer to invest in firms that have strong CSR performance (Bauer et al. 2021). The clearest evidence of investors' prosocial tastes is the scale of socially responsible investing. In 2018, the *Global Sustainable Investment Review* reported that socially responsible investing accounted for 25.7% (\$12 trillion) of the total assets under management in the United States. Since a large fraction of capital is restricted to socially responsible investing, firms face significant pressure to cater to investors' prosocial tastes. There is some evidence consistent with firms that have poor CSR performance having more limited access to capital and, therefore, facing a higher cost of capital (Heinkel et al. 2001; Hong and Kacperczyk 2009; Bolton and Kacperczyk 2021).

Managers' personal beliefs and preferences can also influence their decision to invest in CSR. Prior research finds that a firm's CSR rating is related to the characteristics of its top executives including political affiliation (Di Giuli and Kostovetsky 2014; Hutton et al. 2015), hubris (Tang et al. 2015), and family environment (Cronqvist and Yu 2017). More recent research uses a CEO's personal involvement with charitable organizations as a proxy for social preferences and shows that firms with prosocial CEOs tend to have lower executive subordinate turnover, implement more employee-friendly policies, achieve higher customer satisfaction, and engage in more socially responsible activities (Feng et al. 2021).²⁴

A point that we want to emphasize is that understanding whose preferences influence a firm's CSR activities has important implications from a governance and an efficiency standpoint. Indeed, identifying the source of these preferences is critical to the basic question of whether "managers matter." If managers are catering to consumers' prosocial tastes, then CSR activities could be viewed as policies aimed at maximizing long-term shareholder value. If, instead, managers are catering to investors' prosocial tastes, then CSR activities may deviate from shareholder value maximization, but could still be consistent with shareholder welfare maximization (Hart and Zingales 2017).²⁵ Finally, if managers impose their own prosocial tastes on their firm, then CSR activities are not necessarily consistent with shareholder welfare maximization. This scenario can reflect an agency problem (Friedman 1970), which Zingales (2019) describes as "taxation without representation."²⁶ Hence, it is important that researchers be clear on whose preferences they refer to when discussing various corporate activities.

24. We discuss alternative interpretations of these results in section 3.6 (e.g., people with these characteristics are attracted or matched to certain firms).

25. Fama (2021) notes that a portfolio perspective points to shareholder value maximization as the appropriate decision rule for firms even when consumers and investors exhibit preferences for CSR activities.

26. This agency problem can exist regardless of whether managers intentionally act against the interests of shareholders or not. More generally, managerial decisions can be driven by both System 1 processing, which is fast, instinctive, and emotional, and System 2 processing, which is slower, more deliberative, and more logical. Kahneman (2011) describes these two modes of thinking in detail.

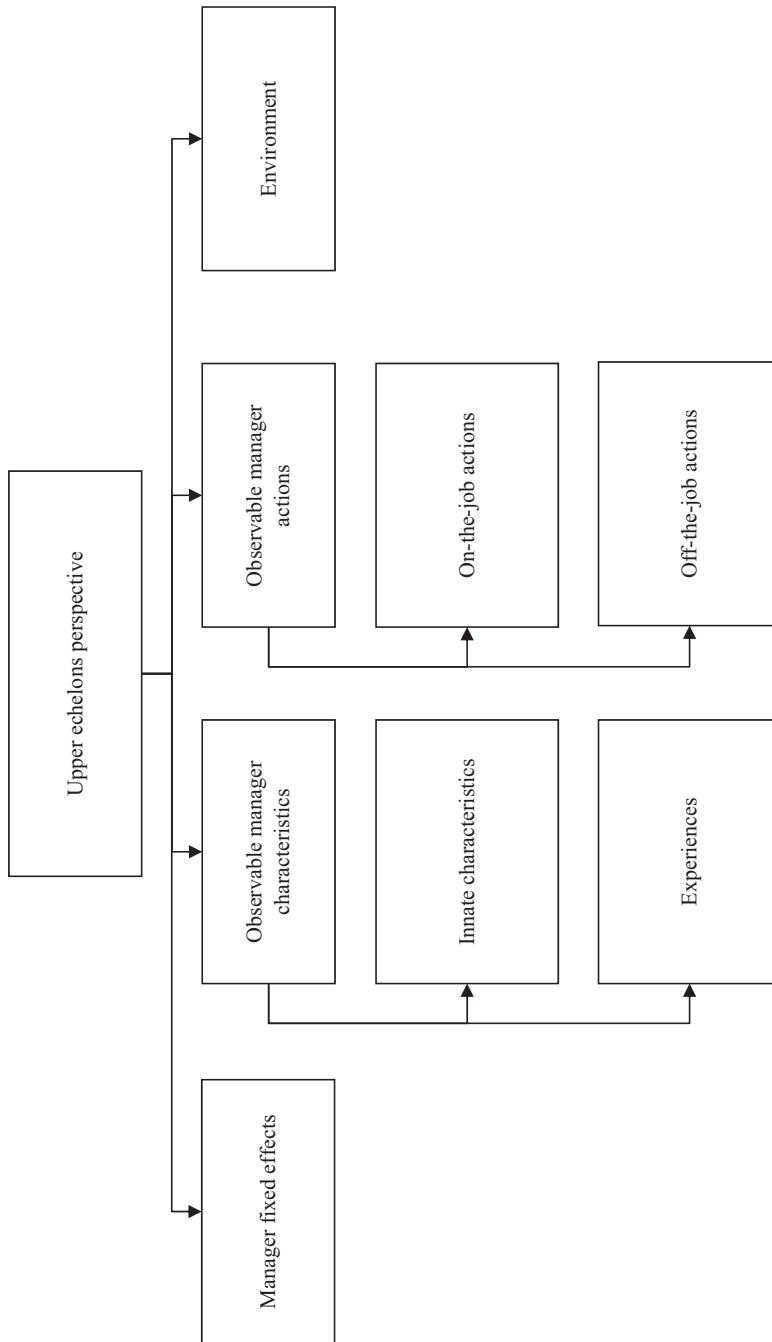


Figure 2 Managers

3. Managers and directors

This section discusses the role that managers and directors play in shaping the flow of information and capital in the economy. Figure 2 presents a schema to organize our discussion of the empirical literature that examines the systematic effects of managerial characteristics on corporate outcomes. Drawing on the conceptual framework developed in section 2, we integrate and extend several related reviews in accounting and finance (Baker and Wurgler 2013; Plöckinger et al. 2016; Malmendier 2018; Abernethy and Wallis 2019).²⁷ Section 3.1 describes the manager fixed effects methodology. Section 3.2 discusses the relation between firm policies and manager characteristics that are directly observed. Section 3.3 discusses the relation between firm policies and manager characteristics that are inferred from managers' observable actions. Section 3.4 discusses the relation between firm policies and a manager's environment. Section 3.5 applies this schema to directors. Section 3.6 highlights limitations and directions for future research.

3.1 Manager fixed effects

Early archival evidence documented changes in firm outcomes around CEO deaths and turnovers (Johnson et al. 1985; Warner et al. 1989; Murphy and Zimmerman 1993; Pourciau 1993; Hayes and Schaefer 1999). While these are certainly important studies, one potential concern with them is that they only capture random or temporary shocks (Bertrand 2009). In their seminal work, Bertrand and Schoar (2003) develop a methodology to isolate the systematic and persistent effect of managers on firm policies. This paper explicitly quantifies the importance of a people dimension for corporate practices and lays the foundation for studies that explore between-individual variations.

Bertrand and Schoar (2003) begin by constructing a panel data set that tracks the movement of top managers who worked in two or more firms.²⁸ Then, they estimate the following regression model:

$$y_{it} = \alpha_t + \gamma_i + \beta X_{it} + \lambda_{CEO} + \lambda_{CFO} + \lambda_{Other} + \varepsilon_{it}, \quad (2)$$

where y_{it} is the dependent variable for firm i in year t ; α_t are year fixed effects; γ_i are firm fixed effects; X_{it} is a vector of time-varying firm controls; λ_{CEO} , λ_{CFO} , and λ_{Other} are manager fixed effects; and ε_{it} is the error term. The variable of interest in equation (2) is the manager fixed effects, which test whether the dependent variable is correlated across at least two firms when the same manager is present, controlling for time-invariant firm characteristics (firm fixed effects), year-specific cross-sectional characteristics (year fixed effects), and time-varying firm characteristics.²⁹

27. Plöckinger et al. (2016) provide an excellent review of the literature on individual managers and corporate financial reporting from the upper echelons perspective. Within their review, the authors provide a nice count and classification of papers by topic. The authors conclude that more work on economic magnitude, the issue of reverse causality, and measurement is needed as is a more holistic perspective on outcomes. Some of this has been addressed in the ensuing years since their review. Abernethy and Wallis (2019) critique the "managerial style" literature and discuss some research opportunities from the perspective of management accounting.

28. This procedure is often referred to as the mover dummy variable (MDV) approach because it allows researchers to estimate manager fixed effects only for movers—that is, managers who have worked in more than one firm. A potential concern with the MDV approach is that movers can be intrinsically different from nonmovers, which limits the generalizability of the results. In settings where the dependent variable is manager-specific (e.g., executive compensation), researchers can alleviate this concern by using an alternative approach based on Abowd, Kramarz, and Margolis (AKM, 1999). The AKM approach allows researchers to estimate manager fixed effects for both movers and nonmovers who work in firms that have hired at least one mover. For applications of the AKM approach, see Graham et al. (2012), Liu et al. (2017), and Bushman et al. (2021).

29. If the goal of the empirical analysis is to quantify the *total* effect of managers on the dependent variable, then the model should exclude time-varying firm controls. However, including time-varying firm controls (as potential mediators) can help researchers assess the channels or paths through which managers affect the dependent variable. Therefore, it is useful to run the model without and with time-varying controls and report both. See detailed discussions in Dyreng et al. (2010) and Schoar et al. (2021).

Significant manager fixed effects imply that managers exert persistent, person-specific influences on the dependent variable.³⁰

Several studies provide evidence that manager fixed effects explain a significant extent of the heterogeneity in accounting practices, including management forecasts (Bamber et al. 2010; Yang 2012), tax avoidance (Dyregang et al. 2010), discretionary accruals (Ge et al. 2011; Wells 2020), conference calls (Davis et al. 2015), and risk factor disclosures (Moon 2021). Manager fixed effects quantify the combined effect of all time-invariant manager-specific characteristics, but they do not specify the characteristics that matter for the outcome of interest.³¹ To shed light on this front, a strand of literature studies the relation between firm policies and specific manager characteristics using firm-year panel data sets. The regression model often includes firm fixed effects. Therefore, the identification is not driven by average differences across firms, but instead comes from within-firm variation in CEO characteristics (i.e., from firms switching from one type of CEO to another). We elaborate on this literature in sections 3.2 and 3.3. Following the recommendation of Hambrick and Mason (1984), we organize our discussions around observable characteristics (e.g., gender, race/ethnicity, and experiences) and observable actions (e.g., option holdings) instead of unobservable psychological dimensions (e.g., risk-aversion and overconfidence).

3.2 *Observable manager characteristics and firm policies*

In this section, we discuss research examining the relation between firm policies and observable manager characteristics. Section 3.2.1 discusses innate characteristics and section 3.2.2 discusses managers' experiences.

3.2.1 *Innate characteristics*

3.2.1.1. Gender. A large strand of research documents differences in the preferences of men and women in the general population (Croson and Gneezy 2009). Several studies find that women, on average, are more risk-averse than men (Barsky et al. 1997; Sundén and Surette 1998; Barber and Odean 2001) and more averse to competition than men (Gneezy et al. 2003; Gneezy and Rustichini 2004; Niederle and Vesterlund 2007; Gneezy et al. 2009). In addition, there is evidence suggesting that women exhibit stronger social preferences compared to men (Beutel and Marini 1995; Adams and Funk 2012). These differences may explain why women, on average, do not commit as much corporate crime as men (Steffensmeier et al. 2013). The question of why such preferences exist has been researched less. One line of work draws on evolutionary biology to demonstrate how such preferences benefit each gender (Knight 2002).³² More recent work shows that average gender differences in skills or traits are very small in comparison with the large within-gender variation in these skills or traits (Bertrand 2020). Nevertheless, women may make systematically different choices from men due to gender identity norms (Akerlof and Kranton 2010), which are common beliefs about what men and women should do (or what their personality should be).³³

While gender differences are observed in the general population, there are several reasons why gender differences might vanish at the top of the corporate ladder (Adams and Funk 2012).

30. See Fee et al. (2013), Plöckinger et al. (2016), and Abernethy and Wallis (2019) for some of the theoretical and methodological challenges associated with “managerial style” research.

31. These studies do test whether significant manager fixed effects are correlated with specific manager characteristics, but this analysis often lacks power (Dyregang et al. 2010).

32. Knight (2002) argues that the difference in competitiveness between men and women is due to differences in the cost of reproduction. The cost of reproduction is very low for males. As a result, males will attempt to mate with many partners, and they will compete with other males in order to do so. On the other hand, females incur a much higher cost of reproduction and, therefore, are more selective rather than competitive.

33. Bloomfield et al. (2021) provide evidence that evaluators rely on gender stereotypes to interpret unexpected behaviors.

For example, women who pursue leadership positions may be of a type more similar to the average male. In addition, there is evidence that women have been denied promotions for acting too “feminine” (Branson 2006), which again suggests that only women who behave or learn to behave like the average male are promoted (generally by males) to the top of their firm. Nevertheless, evidence exists that female CEOs differ from male CEOs and this difference has implications for firm policies. For example, firms with female CEOs are more likely to be targeted by activist hedge funds than firms with male CEOs, partly because female CEOs are more likely to cooperate during hedge fund interventions (Francis et al. 2021).

In accounting settings, there is evidence that compared with firms led by male executives, firms led by female executives manage earnings less (Barua et al. 2010), issue forecasts with wider bands (Huang and Kisgen 2013), pay more tax (Francis et al. 2014), use less positive tone in conference calls (Davis et al. 2015), adopt more conservative financial reporting (Francis et al. 2015), and face fewer lawsuits (Adhikari et al. 2019). Overall, these results suggest that firms with male executives pursue more aggressive policies than firms with female executives. A caveat with all these studies is that they establish associations but not causality. The small number of female top executives also limits the generalizability of the results. With an increasing number of women becoming top executives, we expect more powerful tests in the future that can help us better understand the mechanisms through which executive gender affects corporate outcomes.

3.2.1.2. Race/ethnicity. A growing body of research in economics suggests that culture can influence individual preferences and beliefs, where culture is defined as “values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation” (Guiso et al. 2006, 23).³⁴ To the extent that managers’ race/ethnicity reflects their inherited culture, it should have predictive power for managerial behavior and corporate outcomes.

Researchers have developed several innovative ways to obtain data on the race/ethnicity of managers. Several studies match a manager’s surname (and first name) to a racial/ethnic group using machine learning algorithms (e.g., NamePrism).³⁵ Using this approach, Brochet et al. (2019) find that managers exhibit greater self-references and use a more optimistic tone in conference calls when they are from ethnic groups that emphasize individualism (e.g., Canada, the United Kingdom, and the United States) rather than collectivism (e.g., China, Singapore, and South Korea). Ellahie et al. (2017) find that CEOs prefer variable pay when their ethnicity’s language has strong future time reference (i.e., it grammatically separates between the future and the present). This finding is consistent with the view that when people speak languages with strong future time reference, they disassociate the future from the present and, as a result, behave less cautiously (Chen 2013).³⁶

Nguyen et al. (2018) propose a different approach. They hand-collect the birthplace for CEOs and their ancestors from Ancestry.com.³⁷ Using these data, the authors identify US-born CEOs whose parents or grandparents are immigrants (Gen 2–3 CEOs). This approach has two distinct

34. See section 2.3 for a detailed discussion on how culture is formed and transmitted.

35. NamePrism is one of the most effective classifiers available to the public (Ye et al. 2017).

36. Related research shows that managers are more likely to manage earnings, underinvest, and engage in tax avoidance, but are less likely to issue (long-horizon) management forecasts if they are located in a country with a language that grammatically separates between the future and the present (Kim et al. 2017, 2021; Guan et al. 2021; Na and Yan 2021).

37. Ancestry.com is the world’s largest genealogy database with more than 80 million family trees and more than 17 billion records.

advantages. First, it is less susceptible to measurement errors caused by naming issues.³⁸ Second, it can better pinpoint the effects of inherited culture since Gen 2–3 CEOs are exposed to the same legal, social, and institutional environment as other US-born CEOs. Overall, the literature suggests that CEOs' inherited culture (proxied by race/ethnicity) has a first-order effect on various firm outcomes. Similar to the gender studies, however, most of the results on race/ethnicity present associations rather than causality. More work is needed to identify the causal effect of race/ethnicity on these different outcomes.

3.2.1.3. Appearance. Research in biology and psychology suggests that appearance is associated with individual preferences and behavior. For example, there is evidence that facial masculinity is related to aggressive behavior because both are linked to the hormone testosterone (Lefevre et al. 2013). Prior studies have shown that individuals with higher levels of testosterone have a stronger preference for competition, display reduced fear, and are more likely to engage in excessively risky behaviors such as gambling (Mehta et al. 2008). In addition, these individuals are more likely to cheat and they have a stronger desire to maintain social status (Eisenegger et al. 2010). Drawing on these insights, Jia et al. (2014) measure facial masculinity using the facial width-to-height ratio (fWHR) and document a positive relation between CEO facial masculinity and accounting misreporting. They also find that facial masculinity is positively associated with the incidence of insider trading and option backdating.³⁹

There is also evidence that people form impressions of an individual based on the individual's appearance (Todorov et al. 2015). Graham, Harvey et al. (2017) ask survey participants to evaluate the facial attributes of CEOs based on beauty, competence, trustworthiness, and likability. They find that CEOs earn higher wages when they are rated as more competent, but compensation is not significantly correlated with any other facial attribute. Hsieh et al. (2020) measure facial trustworthiness using four facial features: the angle of the inner eyebrow ridge, face roundness, chin width, and nose-to-lip distance. Hsieh et al. (2020) find that auditors charge higher audit fees when their client's CEO has lower facial trustworthiness. Auditor tenure weakens this effect, consistent with auditors relying less on their initial impressions after gaining more relevant information.

Overall, the evidence suggests that an individual's appearance can be an informative signal about the individual's preferences, but it can also be a superficial signal that others rely on to make heuristic assessments. A limitation of archival research is that it is difficult to hold economic fundamentals constant as managers are not randomly assigned to firms. This challenge can be overcome with controlled experiments. For example, interesting field and experimental work by Brooks et al. (2014) provides evidence that investors like entrepreneurial pitches presented by attractive men more than entrepreneurial pitches presented by women, even when the content of the pitch is identical. We encourage more experimental studies along this line to further our understanding of impression formation.

3.2.2 Experiences

Individual behavior is shaped not only by nature (i.e., innate characteristics) but also by nurture (i.e., experiences). Several studies in behavioral economics suggest that experiences have a lingering effect on individual preferences and beliefs because individuals tend to overweight events that are easy to remember (Malmendier and Nagel 2011, 2016). Research in biology and psychology

38. Due to marriages and the convention of the wife taking on the husband's surname, people may not identify with the culture of their surname very much. Suppose, for example, a person has a British father and Chinese mother. Mothers often impose their culture on their family more than fathers, but the child of this couple would likely have a British surname. Further, the child of this couple might in adulthood marry a German and take on a German surname, but have no German upbringing whatsoever.

39. One avenue for future research is to examine whether CEO facial masculinity is related to tax avoidance.

has documented a similar phenomenon known as imprinting.⁴⁰ Marquis and Tilcsik (2013, 199) define imprinting as “a process whereby, during a brief period of susceptibility, a focal entity develops characteristics that reflect prominent features of the environment, and these characteristics continue to persist despite significant environmental changes.” Research strongly suggests that individuals are susceptible to imprinting during periods of transition, which includes, but is not limited to, the early-life stage (Higgins 2005). During these periods, individuals feel heightened anxiety about their roles. To reduce this anxiety, individuals adopt preferences and beliefs that are more congruent with the new environment.

3.2.2.1. Early-life experiences. Several papers suggest that managers’ early-life experiences influence the production of accounting information and other corporate decisions. CEOs who have early-life exposure to the Great Depression issue fewer forecasts (Bamber et al. 2010).⁴¹ These CEOs are also associated with higher investment-cash flow sensitivity (Malmendier and Tate 2005) and underutilize debt (Malmendier et al. 2011). Donaldson (1990, 125) describes the psychology behind these effects as follows:

The corporate leaders of this period were young adults in the 1930s whose early business and personal lives were profoundly affected by the collapse of the capital markets during the Great Depression. This led them to be deeply skeptical of the public capital markets as a reliable source of personal or corporate funding, to avoid financial risk wherever possible, and to have an instinctive affinity for a strategy of self-sufficiency.

There is also evidence that early-life exposure to natural disasters has a persistent effect on managers’ risk tolerance. In the US setting, Bernile et al. (2017) find that CEOs behave more aggressively when they experience early-life disasters with moderate levels of fatalities, consistent with CEOs becoming desensitized to the consequences of risk. However, CEOs behave more conservatively when they experience early-life disasters with high levels of fatalities.⁴² This pattern is observed across several corporate decisions, including leverage, cash holdings, and acquisition activity. In the China setting, Hu et al. (2020) find that companies adopt more conservative accounting policies if their CEO has early-life exposure to the Great Chinese Famine.

Research also suggests that “place attachment” influences managers’ corporate decisions. Following periods of industry distress, portions of the company (e.g., factories) that are near the CEO’s childhood home experiences fewer employment and pay reductions and are less likely to be divested relative to other portions of the same firm (Yonker 2017). In addition, Lai et al. (2020) find that CEOs working near their childhood homes (“local CEO”) are less likely to make myopic decisions than nonlocal CEOs. Local CEOs are less likely to cut research and development to beat the consensus analyst forecast or to avoid earnings decreases. Local CEOs also have higher CSR ratings and pay more state tax, but not federal tax.

Overall, the literature suggests that managers carry the “imprints” of their early-life experiences throughout their career. A nice feature of these studies for research purposes is that many early-life experiences are not the endogenous choice of managers. However, a major limitation of these studies is that it is often very difficult to pinpoint the psychological dimensions of these experiences that drive the observed effects.

40. The concept of imprinting was first documented by studying animal behavior. In 1873, biologist Douglas Spalding noticed that newly hatched birds follow the first moving object that they see, a behavior that is “stamped into their nature.” Subsequent work documented imprinting in food and sexual preferences, aggression, and the selection of a home (Hess 1959).

41. An alternative interpretation is that CEOs who have early-life exposure to the Great Depression are older and may have advanced through their career when earnings guidance was a relatively rare practice.

42. Natural disasters include earthquakes, fires, floods, hurricanes, landslides, severe storms, tornadoes, tsunamis, and volcanic eruptions. A disaster has a high level of fatalities if it causes more than five fatalities and the number of fatalities is larger than 0.05% of the county population (e.g., Hurricane Katrina in 2005).

3.2.2.2. Professional experiences. A large body of work documents the importance of managers' professional experiences (Guenzel and Malmendier 2020). However, unlike early-life experiences, professional experiences are often (though not always) the endogenous choice of managers, making it difficult to establish causality between managers' professional experiences and firm policies. A significant relation between managers' professional experiences and firm policies is consistent with two interpretations. The first interpretation is that managers' professional experiences shape their preferences, which, in turn, affects corporate decisions. The second interpretation is that managers with different preferences select into certain professions. In both scenarios, manager characteristics matter, but the mechanism differs. In the former, corporate decisions are driven by managers' experiences. In the latter, corporate decisions are driven by an omitted variable that is correlated with managers' experiences.

With these caveats in mind, prior research suggests that managers who have a CPA license are associated with higher financial reporting quality (Aier et al. 2005; Li et al. 2010), and short-horizon event studies suggest that the market responds favorably to the appointment of managers who have an undergraduate or graduate degree in accounting (Vafeas 2009).⁴³ Graham, Hanlon et al. (2017) use survey data to examine whether companies use the theoretically correct marginal tax rate in their decision making. They find evidence consistent with many companies using the GAAP effective tax rate instead of the marginal tax rate to evaluate incremental decisions. Managers who have a CPA license or an accounting degree are 7.4% more likely to use the marginal tax rate.

However, research also suggests that the development of accounting expertise limits the acquisition of skills and knowledge that are valuable for nonaccounting responsibilities, including strategy, business development, global operations, and technology (Bernard et al. 2020). Consistent with a trade-off between accounting and nonaccounting expertise, managers with an accounting education are associated with greater underinvestment in high-growth industries (Hoitash et al. 2016).

Several studies have also examined managers promoted from nonaccounting functional tracks. Bamber et al. (2010) find that managers with legal backgrounds are more likely to issue forecasts that are below the consensus analyst forecast (i.e., guide expectations down), reflecting their heightened sensitivity to litigation risk. Davis et al. (2015) document that managers with consulting experience use more positive tone in conference calls, while managers with investment banking experience use less positive tone, reflecting the unique styles demanded by each profession. Custódio and Metzger (2014) find that managers with a background in finance are less likely to rely on one company-wide discount rate rather than project-specific ones, they are able to obtain external financing even in tight credit conditions, and their investments are less sensitive to cash flows. Moreover, these managers were more responsive to the dividend and capital gains tax cuts in the Jobs and Growth Tax Relief Reconciliation Act. Ma et al. (2021) document that firms with generalist CEOs have lower credit ratings, suggesting that credit rating agencies consider a CEO's skill set when assessing a firm's overall creditworthiness.⁴⁴

In addition, there is evidence that US CEOs who served in the military ("military CEOs") make more conservative corporate decisions. Benmelech and Frydman (2015) find that military CEOs are less likely to engage in fraud, invest less in research and development, and prefer lower leverage ratios. Moreover, Law and Mills (2017) find that military CEOs engage in less corporate tax avoidance and Bamber et al. (2010) find that military CEOs issue forecasts that guide expectations down.⁴⁵ Like many of the professional experiences described above, military experience can

43. Albrecht et al. (2018) document a "dark side" of accounting expertise. They find that accounting knowledge and experience increase the likelihood of misstatements when managers have incentives to misreport.

44. Generalist CEOs possess skills that are transferable across firms and industries, while specialist CEOs possess skills that are firm- or industry-specific (Custódio et al. 2013).

45. An interesting avenue for future research is to conduct these analyses in other countries where military service is compulsory (e.g., South Korea).

be driven by selection issues—that is, people with different unobservable characteristics endogenously choose to join the armed forces. To alleviate this concern, researchers can instrument for veteran status by using variation in the likelihood of being drafted introduced by birth year.⁴⁶

A few studies also examine managers' professional experiences that are induced by plausibly exogenous events. Schoar and Zuo (2017) examine the economic conditions at the start of a manager's career, which are outside of the manager's control. CEOs who start their careers during recessions ("recession CEOs") adopt more conservative corporate policies. Recession CEOs invest less, have lower leverage, and engage in less corporate tax avoidance. The effect of economic conditions at career start operates through two channels. First, recession CEOs and non-recession CEOs follow different career trajectories. Recession CEOs are more likely to find an initial job at smaller and/or private firms. This, in turn, shapes a manager's skills and attitudes through firm-specific training and socialization. Second, recession CEOs acquire different skills and attitudes because they enter the labor market during a unique period, regardless of their initial job. During a recession, all firms tend to adopt conservative strategies that involve cutting costs and preserving resources. In a follow-up study, Schoar and Zuo (2016) show that the market assigns a positive and economically significant value to recession CEOs.⁴⁷ Relatedly, Ahmed et al. (2019) find that bank executives who served during the savings and loan crisis of the 1980s and 1990s exhibited stronger performance, lower risk-taking, and higher financial reporting quality during the global financial crisis of 2007–2009. An important takeaway from these studies is that the early-career stage is a formative period that has long-term effects on managers' behavior. Future research can explore the long-term effects of other important moments in a manager's career such as when a worker is promoted to an important managerial position for the first time.

To recap, a growing literature suggests that firm policies are systematically related to observable manager characteristics. These studies have examined managers' experiences and innate characteristics such as gender, race/ethnicity, and appearance. We end this section with two observations. First, when interpreting results, it is important to note that observable manager characteristics may be associated with more than one unobservable construct (e.g., risk-aversion and overconfidence). Second, the explanatory power of observable manager characteristics is often relatively low when compared with the manager fixed effects discussed in section 3.1. Therefore, while it is quite evident that "managers matter," more work is needed to identify the underlying characteristics that are economically meaningful in each context.

3.3 Using observable actions to infer manager characteristics

A third strand of the literature uses observable actions to infer manager characteristics. The idea of studying individuals' preferences through their observable actions was pioneered by Paul Samuelson's work on "revealed preferences."⁴⁸ Section 3.3.1 highlights managers' "on-the-job" actions, including their option holdings and speech patterns during conference calls. Section 3.3.2 highlights managers' "off-the-job" actions, including prior legal infractions and ownership of luxury goods.

46. For example, men born between 1931 and 1936 in the United States were more likely to be drafted during the Korean conflict (Benmelech and Frydman 2015).

47. The underlying assumption for this analysis is that firms try to find the best match for the CEO position. When firms successfully hire a risk-seeking candidate, there is no market reaction because there is little uncertainty that firms can do so given the abundant supply of nonrecession CEOs.

48. Mas-Colell et al. (1995, 5) describe the advantages of this approach as follows:

This choice-based approach has several attractive features. It leaves room, in principle, for more general forms of individual behavior than is possible with the preference based approach. It also makes assumptions about objects that are directly observable (choice behavior), rather than about things that are not (preferences). Perhaps most importantly, it makes clear that the theory of individual decision making need not be based on a process of introspection but can be given an entirely behavioral foundation.

3.3.1 On-the-job actions

3.3.1.1. Option holdings. Malmendier and Tate (2005) laid the groundwork for using managers' actions to infer their underlying characteristics. In their seminal paper, Malmendier and Tate (2005) use managers' option holdings to infer overconfidence, where overconfidence refers to an overestimation of the mean and an underestimation of the variance of the underlying distribution (Malmendier 2018). In general, options should never be exercised except at expiration or just before dividend payments because the right to delay buying the underlying stock has nonnegative value and investors can freely diversify (Merton 1973). Malmendier and Tate (2005) argue that this logic does not hold for executive options. Executive options are not tradeable, and executives cannot short-sell company stock to hedge the risk of their holdings. Furthermore, executives are highly exposed to firm risk because a large fraction of their wealth is invested in their firm. Due to this underdiversification, risk-averse executives should exercise options early when the stock price is high enough. Overconfident managers may delay option exercise or even buy additional company stock because they overestimate the future returns of their projects and believe that the price of their company's stock will rise more than they objectively should. In a follow-up paper, Malmendier and Tate (2008) validate their option-based measure of overconfidence using a press-based measure of overconfidence. The press-based measure compares the number of articles that describe a manager as "confident" and "optimistic" versus the number of articles that describe the manager as "not confident," "not optimistic," and "reliable," "cautious," "conservative," "practical," "frugal," or "steady."

Several studies use these measures to document the effects of managerial overconfidence on firm policies. There is evidence that overconfident CEOs are associated with higher investment-cash flow sensitivity (Malmendier and Tate 2005) and lower-quality acquisitions (Malmendier and Tate 2008). Because overconfident managers are more likely to invest in value-destroying projects and ignore negative feedback, they are also associated with higher crash risk (Kim et al. 2016). On the financing side, overconfident managers prefer to use cash and riskless debt, perhaps because they believe that their firm is undervalued by the market and, therefore, view external financing as too costly (Malmendier et al. 2011). In addition, there is considerable evidence that managerial overconfidence shapes firms' accounting practices. Overconfident CEOs are more likely to misreport (Schrand and Zechman 2012), issue overly optimistic forecasts (Hribar and Yang 2016), report research and development expenditures as a separate line item (Koh et al. 2017), and engage in aggressive tax planning (Chyz et al. 2019). Overconfident CEOs are less likely to adopt conservative financial reporting (Ahmed and Duellman 2013) or impair goodwill (Chung and Hribar 2021).

The general conclusion from the previous studies is that managerial overconfidence leads to adverse consequences, such as misreporting and lower-quality acquisitions. However, additional research shows that managerial overconfidence can benefit shareholders by increasing investments in risky, innovative projects (Galasso and Simcoe 2011; Hirshleifer et al. 2012) and by attracting suppliers who are more willing to commit to relationship-specific investments (Phua et al. 2018). There is also evidence that adequate controls and independent viewpoints offered by an independent board can reduce the downside of CEO overconfidence (Banerjee et al. 2015) and that firms that combine an overconfident CEO with conservative accounting are able to achieve superior performance (Hsu et al. 2017).

To summarize, the previous studies use a manager's option holdings to infer overconfidence and examine its economic consequences. We encourage future research to further our understanding along three dimensions. First, the existing literature focuses on the time-invariant component of overconfidence and examines variation in overconfidence across managers. The literature would benefit from more work on the time-varying component of overconfidence. For example, it would be interesting to study how managers become overconfident (Hilary and Hsu 2011) and how a manager's confidence can change with various contextual factors. Second, a manager's option holdings can also reflect the manager's risk tolerance, which is a different construct than overconfidence. Future research can develop more powerful tests to disentangle these different

underlying constructs. Third, it would be helpful to validate the option-based measure with more direct measures based on surveys or experiments (Kaplan et al. 2021).

3.3.1.2. Communication. Research in social psychology and linguistics has long recognized that communication, written, verbal, and nonverbal, is a form of personal expression that conveys a wealth of information about the sender's underlying characteristics.⁴⁹ Drawing on this insight, several studies have used executive communication to infer managers' personality traits.

Chatterjee and Hambrick (2007) pioneered this approach. They measure CEO narcissism based on the use of first-person singular pronouns in CEO speech (i.e., I, me, mine, my, myself). The intuition for this measure is that the use of first-person singular pronouns reflects self-focus, an important hallmark of narcissists (Raskin and Shaw 1988). Chatterjee and Hambrick (2007) supplement this measure with another measure based on the prominence of the CEO's photograph in the annual report. These measures, however, can be difficult to apply to non-CEO executives because they rarely speak during conference calls and their photographs are rarely included in the annual report. Ham et al. (2017) address this concern by using signature size to measure CFO narcissism.

Due to an inflated sense of self-importance, narcissists tend to overestimate their ability and the likelihood of positive outcomes, leading to overconfident behavior. Indeed, narcissistic managers are more likely to engage in tax sheltering (Olsen and Stekelberg 2016), manage earnings (Ham et al. 2017), overinvest (Ham et al. 2018), and exclude expenses from non-GAAP earnings (Abdel-Meguid et al. 2021). There is also evidence that auditors perceive greater audit risk when their client's CEO is narcissistic and charge higher audit fees as a result (Judd et al. 2017).

In addition to examining narcissism, a few studies use executives' verbal and written communication to measure other personality traits. Larcker and Zakolyukina (2012) use data on subsequent restatements to identify "deceptive" and "truthful" managers. They find that deceptive managers refer more to general knowledge, use fewer nonextreme positive emotion words, and use fewer references to shareholder value. Gow et al. (2016) use linguistic features extracted from conference calls to measure the Big Five personality traits (OCEAN): openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism.⁵⁰ Similarly, Green et al. (2019) measure CEO and CFO extraversion by analyzing their speech patterns in conference calls.⁵¹ Dikolli et al. (2020) use shareholder letters to measure CEO behavioral integrity, defined as "the perceived pattern of alignment between an actor's words and deeds" (Simons 2002, 19).⁵²

There is also emerging evidence that managers' nonverbal communication is informative about managers' personal characteristics and that nonverbal communication significantly affects others' perceptions of managers. Researchers have used a manager's vocal cues during earnings conference calls to measure the manager's positive and negative emotions, and there is evidence that managers' vocal cues contain useful information about firm fundamentals (Mayew and Venkatachalam 2012; Hobson et al. 2012).⁵³ Blankespoor et al. (2017) use a survey approach and ask participants to view videos of CEOs' IPO presentations with verbal content filtered out. They document a positive relation between the overall perception of a CEO and pricing at all stages of the IPO.

49. See, for example, Pennebaker and King (1999), Schwartz et al. (2013), and Park et al. (2015).

50. The Big Five is the most widely accepted taxonomy of personality traits in psychology (Almlund et al. 2011).

51. Extraverts use words that are easier to visualize and are more emotionally charged. Extraverts also speak more, repeat themselves more often, and use more common language (Mairesse et al. 2007).

52. There are two schools of thought on integrity in the leadership and organizational science literatures: behavioral integrity as defined above and moral integrity which requires adherence to moral values (Krylova et al. 2017).

53. More recently, Jiang et al. (2019) develop a manager sentiment index based on the aggregate textual tone of corporate financial disclosures and find that manager sentiment negatively predicts stock returns. Mayew et al. (2020) show that manager dialogues with bearish analysts whose forecasts are missed are more informative.

Dávila and Guasch (2021) study nonverbal behavior in videotapes of entrepreneurs pitching their business ideas. Specifically, they measure body expansiveness using OpenPose, an algorithm developed by the CMU Perceptual Computing Lab. An individual has an expansive posture (as opposed to a contractive posture) if they exhibit widespread limbs, a stretched torso, and/or take up considerable physical space. The authors show that managers who have an expansive posture are associated with higher forecast errors, higher proposed firm valuations, and a higher likelihood of funding success, but a lower survival rate. The authors argue that an individual's physical expansiveness is associated with characteristics such as dominance, attractiveness, and passion, which affect investor perceptions and firm outcomes. The authors interpret their results as evidence that investors on average do not correctly incorporate the informational value of nonverbal communication. An interesting avenue for future research is to explore investor heterogeneity and study whether more sophisticated investors can better extract the signals from managers' nonverbal cues.

To date, the literature has used a manager's written, verbal, and nonverbal communication to extract useful information about the manager's personality. A common challenge with this approach is that conference calls and shareholder letters are not only affected by a manager's personality, but they are also affected by a firm's economic fundamentals and quite possibly the firm's general counsel and investor relations department. This reflects an inherent identification problem in much of this research—what effects are truly attributable to managers rather than omitted firm-specific factors? We encourage future research to use novel data and adopt multiple research methods to further this literature as each research method has its unique strengths and weaknesses. One advantage of experimental studies is that they can hold economic fundamentals constant when examining the determinants and consequences of managers' linguistic features (Asay et al. 2018; Tan et al. 2019). However, experimental studies potentially have less external validity compared to archival studies.

3.3.1.3. Firm outcomes. A few studies use firm outcomes to infer manager characteristics. One example is Demerjian et al. (2012) who propose a measure of managerial ability based on the efficiency with which firms transform corporate resources into revenues. The intuition for their measure is that better managers should be able to generate higher revenues for a given level of resources. This measure of managerial ability has been used to study a number of phenomena in accounting. Baik et al. (2011) find that the probability of issuing forecasts increases with managerial ability, consistent with managers issuing forecasts to signal their ability (Trueman 1986). In addition, there is evidence that managers with higher ability are associated with higher financial reporting quality (Demerjian et al. 2013) and greater corporate tax avoidance (Koester et al. 2017). Prior research also suggests that capital market participants perceive differences in managerial ability, as reflected in credit ratings (Bonsall et al. 2017; Cornaggia et al. 2017) and audit fees (Krishnan and Wang 2015).

A challenge with using firm efficiency to measure managerial ability is that firm efficiency could reflect factors unrelated to managerial ability, including but not limited to firm-specific factors. At the same time, controlling for firm-specific factors such as firm size can remove the effects of managerial ability. If better managers work at larger firms, then controlling for firm size would eliminate this effect. We encourage future research to develop measures of managerial ability based on variables more directly related to the actions of managers. Controlled experiments can also assist in developing and validating more precise measures of managerial ability.

To summarize, prior studies have used managers' option holdings to infer overconfidence, communication in conference calls and shareholder letters to infer several dimensions of personality, and firm efficiency to infer managerial ability. A challenge with this approach is that option holdings, conference calls, shareholder letters, and firm efficiency are influenced by a number of firm-specific factors. Researchers can alleviate the concern that results are contaminated by firm-specific effects by studying managers' off-the-job actions, a topic we turn to next.

3.3.2 Off-the-job actions

A growing literature relates corporate outcomes to managers' off-the-job behavior (Ge and Moon 2021).⁵⁴ The use of managers' off-the-job actions is grounded in behavioral consistency theory (Allport 1937, 1966; Epstein 1979, 1980; Funder and Colvin 1991). Behavioral consistency theory posits that individuals tend to exhibit consistent behaviors across different situations. For example, prior research suggests that there is a positive relation between CEOs' personal leverage and leverage at the firm level (Cronqvist et al. 2012), and executives who engage in personal tax evasion (through option backdating) are associated with greater tax sheltering at the firm-level (Chyz 2013) and a higher likelihood of committing fraud at the firm-level (Biggerstaff et al. 2015).⁵⁵

Relatedly, Davidson et al. (2015) examine whether prior legal infractions and ownership of luxury goods are associated with job performance. The authors find that CEOs and CFOs with prior legal infractions (e.g., domestic violence, driving under the influence, drug charges, traffic violations) are more likely to commit fraud. The authors also argue that CEOs who choose not to purchase luxury goods ("frugal CEOs") are more likely to run a "tight ship" compared to CEOs who indulge in luxury goods ("materialistic CEOs"), and they find evidence consistent with non-CEO insiders being less likely to perpetrate fraud when a CEO is frugal.⁵⁶ In a subsequent paper, Davidson et al. (2019) find that CSR scores are positively associated with performance when a CEO is frugal, but CSR scores are not related to performance when a CEO is materialistic. Bushman et al. (2018) find that the strength of risk management functions is higher in banks with frugal CEOs. In a similar vein, Biggerstaff et al. (2021) argue that the amount of golf played by executives is inversely related to their effort at work. They document that when CFOs spend more time on the golf course, their firms exhibit lower earnings quality, less accurate guidance, and reduced participation in conference calls. The amount of golf played by CEOs, however, does not have an effect on the firm's information environment, suggesting that CFOs likely play a larger role in the financial reporting process than CEOs. Sunder et al. (2017) examine a different off-the-job behavior—CEOs who have a pilot license ("pilot CEOs"). They argue that pilot certification captures sensation seeking, a personality trait that combines risk-taking with a desire for new experiences.⁵⁷ Consistent with this interpretation, pilot CEOs acquire more patents and patent citations, and they achieve greater innovative output for a given level of research and development expenditure.⁵⁸

There is also growing evidence that firm policies are related to managers' political views, which are typically measured using political donations (Hutton et al. 2014; Hutton et al. 2015). Prior research shows that Democratic managers spend more on CSR (Chin et al. 2013; Di Giuli and Kostovetsky 2014). An interesting avenue for future research is to examine how managers with different political views interact in the product and factor markets. The concept of affective polarization in the political sciences literature suggests that individuals tend to dislike and distrust those from the other party (Iyengar et al. 2019).

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54. Ge and Moon (2021) provide an excellent review of the literature on managers' off-the-job behavior. The authors provide three main concerns: (i) it is unclear exactly what traits researchers try to capture, (ii) it is not clear how the managerial traits relate to one another, and (iii) generalizability is a concern because of data constraints and the specificity of the research settings employed.
55. A related line of research shows that corporate decision making is affected by not only corporate tax incentives but also CEOs' personal tax incentives (Hanlon and Hoopes 2014; Yost 2018; Armstrong et al. 2019; Hanlon et al. 2021).
56. Davidson et al.'s (2015) sample covers the period 1992–2004, and includes all frauds identified by the SEC up to June 2010. An interesting avenue for future research is to examine whether these results still hold today.
57. Prior research focuses on the economic determinants of corporate risk taking, such as taxes (Ljungqvist et al. 2017), financial reporting frequency (Fu et al. 2020), and relative performance evaluation (Do et al. 2021).
58. The authors include industry fixed effects in their analyses to control for heterogeneity in the use of patents.

Lastly, a few studies use survey responses to gauge managers' underlying characteristics.⁵⁹ For example, the Duke University/CFO Business Outlook Survey is administered quarterly to CFOs and others who have financial decision-making roles, such as directors of finance, controllers, and treasurers. Survey participants are asked a series of questions related to the financial outlook of their firm and their expectations for the US economy.⁶⁰ Using this survey, Hribar et al. (2017) find that higher managerial sentiment is associated with lower contemporaneous loan loss provisions. Moreover, the realization of this accrual (i.e., future charge-offs) is higher for each dollar of current period loan loss provision when managerial sentiment is higher.

Overall, novel data on managers' off-the-job actions offer opportunities for researchers to measure many managerial attributes that affect firm outcomes. However, it is often difficult to pin down the underlying construct of a specific action (e.g., ownership of luxury goods). In addition, a yet to be answered question is whether investors' perceptions of a manager are distorted by the manager's off-the-job actions that are unrelated to the manager's professional conduct. More importantly, it is unclear to what extent researchers should be encouraged (or allowed) to dig out the "private life" of corporate managers—an ethical consideration that is often ignored in archival research, but very much emphasized in experimental work. This type of archival research might fall into the category of human subjects research and require a review from the Institutional Review Board (IRB). For example, the Committee for Protection of Human Subjects at the University of California, Berkeley notes that projects are considered human subjects research when they involve "private data sets obtained with identifiers" or "stolen, hacked, accidentally released data about individuals."⁶¹

3.4 Environment

A fourth strand of research examines how a manager's judgment and decision making is affected by the manager's environment. One line of work uses firm location to measure various contextual features. Hilary and Hui (2009) provide evidence that firms have lower volatility in equity returns and return on assets when they are located in US counties with higher levels of religiosity. Hasan et al. (2017) document that corporate tax avoidance is negatively associated with social capital, defined as values and beliefs that aid cooperation. The authors measure social capital at the county-level based on the strength of civic norms and the density of social networks. Hayes et al. (2021) find that customers are less likely to file complaints against banks if they are located in a high-trust area and this, in turn, affects how banks treat their customers.⁶² While these studies focus on informal institutions that are relatively stable, Chen, Wu et al. (2021) adopt a different approach and use terrorist attacks (e.g., the 9/11 attacks) around firm headquarters as an adverse shock to (time-varying) managerial sentiment. Chen, Wu et al. (2021) find that managers in affected areas issue more negatively-biased earnings forecasts. An interesting avenue for future research is to examine if these terrorist attacks have any long-term effects on managerial behavior, similar to what prior research documents for natural disasters (Bernile et al. 2017).

Researchers have also examined how CEOs' marital status and family composition affect their decision making. Roussanov and Savor (2014) find that married CEOs behave more conservatively than CEOs who are not married. One explanation for this finding is that married CEOs may make decisions based on the objective function of their family. It is likely that CEOs are more risk tolerant than their spouse and children. To the extent that married CEOs maximize the

59. See, for example, Kaplan et al. (2012), Ben-David et al. (2013), Graham et al. (2013), and Kaplan and Sorensen (2021). Two common limitations of surveys are (i) relatively small samples, especially when the participant pool is restricted to senior managers and (ii) potentially biased responses that deviate from true preferences or beliefs (Bertrand and Mullainathan 2001).

60. See www.cfosurvey.org for additional information about the survey.

61. See <https://cphs.berkeley.edu/secondarydata.pdf>.

62. They utilize two measures of trust. Their first measure relies on data from the General Social Survey, a biennial survey of social characteristics and attitudes (<https://gss.norc.berkeley.edu/About-The-GSS>). Their second measure relies on census data that contain information about the ancestral origins of the local population.

utility of their family, the aggregation of preferences implies that married CEOs will exhibit greater risk-aversion than if they were to maximize their own utility. Cronqvist and Yu (2017) take a step further by examining whether CEO behavior is shaped by their children. They find that firms have higher CSR ratings when their CEO has a daughter.⁶³ Cronqvist and Yu (2017) argue that this CEO-daughter effect may arise because parents internalize the preferences of their children. As a result, CEOs who have daughters adopt preferences that are more similar to those of the average female.⁶⁴ It would be interesting to re-examine this question as more women ascend to the position of CEO. For example, does a female CEO exhibit a stronger or weaker CEO-daughter effect than a male CEO?⁶⁵

The natural environment can also significantly affect people's emotions and judgment. For example, greater exposure to sunshine often leads to a better mood and more optimistic behavior (Cunningham 1979). Consistent with this prediction, Chen, Chen et al. (2021) show that manager's issue more upwardly biased earnings forecasts when they have greater sunshine exposure. The impact of sunshine exposure on earnings forecast bias is stronger for managers who are less experienced and less capable, and CEOs who are more sensitive to sunshine-induced mood experience adverse career outcomes in the form of shorter tenures and lower compensation. The authors include firm fixed effects in their analyses to ensure that their findings are not driven by the possibility that sunnier areas attract more optimistic CEOs, which, in turn, leads to higher forecast bias. An interesting avenue for future research is to provide direct evidence on the underlying mechanism through which sunshine exposure affects managers. For example, sunshine exposure could affect managers through a number of biological factors, such as serotonin and melatonin levels.⁶⁶

In sum, there is growing evidence that the environment has a first-order effect on a manager's judgment and decision making. It is interesting to contrast this line of research with the earlier literatures that we reviewed. For example, research on managers' experiences often focus on the long-term effects of early-life experiences, while research on managers' environments often focus on the short-term effects of current environments (e.g., the effect of terrorist attacks on managerial sentiment). The literature would greatly benefit from a deeper understanding of the mechanisms underlying the short- and long-term effects of managers' environments and experiences.

3.5 Directors

This section extends our discussion to directors.⁶⁷ A company's board of directors serves two broad functions: (i) advising senior management and (ii) monitoring senior management (Adams et al. 2010; Armstrong et al. 2010). The board includes a number of committees—most notably, the audit committee and the compensation committee. The audit committee oversees the company's financial reporting process (Beasley et al. 2009) and the compensation committee reviews and approves senior management's compensation package (Hermanson et al. 2012). As we discuss below, a growing strand of research takes advantage of individual-level data and shows that corporate policies are systematically related to observable director characteristics.

Several studies investigate differences between male and female directors. One line of work suggests that female representation on the board leads to improved monitoring. Adams and Ferreira (2009) find that female directors have better attendance records relative to male directors, male directors have fewer attendance problems when the board is more gender-diverse, and

63. The authors control for several CEO characteristics (e.g., gender, age, tenure, equity ownership). In their sample, only about 3.0% of the observations have female CEOs.

64. There is evidence that, on average, women exhibit stronger social preferences compared to men (Beutel and Marini 1995; Adams and Funk 2012).

65. Future research can also examine this CEO-daughter effect for same-sex couples. Based on the previous argument that CEOs maximize the utility of their family, the CEO-daughter effect should be more (less) pronounced when both spouses are male (female) relative to a heterosexual couple.

66. It would also be interesting to examine this sunshine effect outside the United States.

67. As Figure 1 illustrates, both managers and directors are parties inside operating firms.

female directors are more likely to join oversight committees than male directors. These differences between male and female directors manifest in a number of firm outcomes. For example, female directors are associated with more informative stock prices (Gul et al. 2011), higher earnings quality (Srinidhi et al. 2011), and higher audit quality (Lai et al. 2017). The effect of female directors on firm performance, however, is more nuanced (Post and Byron 2015). Female representation on the board can improve firm performance by motivating women in middle management (Dezsö and Ross 2012), but female directors tend to prefer stakeholder-friendly policies that reduce short-term profits (Matsa and Miller 2013).

Understanding how female representation on the board influences corporate decisions is particularly important in light of recent regulation mandating gender quotas. In 2003, Norway passed a law requiring that firms have at least 40% female directors by 2008 (Ahern and Dittmar 2012; Matsa and Miller 2013; Bertrand et al. 2019). Following Norway's lead, Belgium, France, Germany, Iceland, India, Israel, Italy, Malaysia, and the United States have all established similar reforms (Von Meyerinck et al. 2021). Going forward, these settings will provide richer data and potentially sharper identification to deepen our understanding of the economic consequences of gender diversity on corporate boards.

Another director characteristic that has received widespread interest is financial expertise.⁶⁸ This line of work took off after Congress passed section 407 of the Sarbanes-Oxley Act (SOX). Section 407 of SOX mandates that public companies disclose whether their audit committee includes at least one financial expert. The general takeaway from this literature is that having financial experts on the audit committee leads to better oversight of the financial reporting process. DeFond et al. (2005) use a short-horizon event study and find positive abnormal returns when an accounting expert is appointed to the audit committee. Subsequent work has shown that accounting expertise on the audit committee is associated with higher earnings quality (Agrawal and Chadha 2005), higher audit quality (Chen and Zhou 2007; Lisic et al. 2019; Hansen et al. 2021), and more conservative financial reporting (Krishnan and Visvanathan 2008). Furthermore, Chychyla et al. (2019) find that firms respond to complex accounting standards by investing in accounting expertise on the board and the audit committee. Other types of expertise, such as legal expertise (Krishnan et al. 2011) and industry expertise (Cohen et al. 2014), have also been shown to improve the audit committee's monitoring of the financial reporting process. These different types of expertise are more effective when they are combined (Dhaliwal et al. 2010) and when the audit committee has high status (Badolato et al. 2014).

There is also evidence that director expertise influences corporate decisions outside of the financial reporting process. However, results in this literature are somewhat mixed. Director expertise appears to be value-enhancing in some cases and value-destroying in other cases. For example, Armstrong et al. (2015) find that financial expertise on the board mitigates under- and overinvestment in tax avoidance. Similarly, Chen et al. (2020) find that US firms that have directors with China-related experience exhibit more positive announcement returns and better long-run operating performance for cross-border M&A, joint ventures, and strategic alliances involving Chinese firms. In contrast, Güner et al. (2008) find that investment-cash flow sensitivity decreases when commercial bankers join the board. The authors conclude that this effect is not due to banker-directors helping their firm mitigate financial constraints. Banker-directors increase financing only to firms with high credit quality but bad investment opportunities. Taken together, these results suggest that banker-directors act in the interest of creditors rather than shareholders. Furthermore, Wahid and Welch (2019) find negative abnormal returns around the appointment of professional directors (i.e., board members who have no

68. Many papers that examine professional experiences gather data from corporate disclosures. It is important to note that directors may strategically withhold information. For example, Gow et al. (2018) find that directors are less likely to disclose a directorship on another board when the other firm experienced an accounting restatement, bankruptcy, or securities litigation.

employment besides serving as independent directors). Professional directors are also associated with lower-quality acquisitions and lower financial performance.⁶⁹

There is also research that examines director networks. One stream of research examines the consequences of multiple directorships—a situation in which a director serves more than one board. Multiple directorships can be beneficial or detrimental to firm performance. On one hand, directors who serve more than one board may be too busy and hence less effective at monitoring (Falato et al. 2014; Hauser 2018). On the other hand, directors who serve more than one board may be more effective at monitoring because they are connected, have more experience, and can facilitate the flow of information across boards. Along these lines, Larcker et al. (2013) find that firms earn superior risk-adjusted returns when they have well-connected boards.⁷⁰ There is also evidence that firms adopt similar policies when they have board interlocks, a situation where an individual affiliated with one firm sits on the board of another firm. For example, Bizjak et al. (2009) find that a firm has a higher likelihood to backdate stock options if it has a board member who is affiliated with a previously backdating firm.⁷¹ The diffusion of corporate policies through board interlocks can be driven by a variety of mechanisms. First, board interlocks may facilitate information cascades (Bikhchandani et al. 1992). For example, when deciding whether to manage earnings, a board may have imperfect information about the costs and benefits of earnings management. Therefore, it may be rational for the board to rely on the previous experiences of an interlocked director. Second, the social psychology literature provides ample evidence that individuals in groups tend to follow others' behavior, even when the consensus is clearly wrong (Milgram 1963).

Another strand of research examines the consequences of directors' political connections. Prior research suggests that the political connections of board members enhance a firm's creditworthiness and reduce the cost of bank loans (Houston et al. 2014). Moreover, firms pursue more aggressive tax policies when their directors have political connections (Kim and Zhang 2016) because these connections undermine the effectiveness of tax enforcement (Lin et al. 2018). Hung et al. (2015) compare scandals signaling the loss of a firm's political connections and scandals signaling the loss of a firm's market credibility. They find that the former leads to more negative stock returns than the latter in China.

To summarize, a growing body of research suggests that corporate policies are related to observable director characteristics. Research on directors has lagged research on managers due to data availability. BoardEx is a novel database that can facilitate large-sample studies on directors. Although BoardEx has rich data on all board members, not all board members have an equal role in advising and monitoring senior management. Going forward, we recommend that researchers differentiate between directors who wield more or less power to better understand the board's behavior.

3.6 Limitations and directions for future research

We conclude this section by highlighting some limitations of the current literature that present opportunities for future research. Panel A of Table 1 lists five general questions for future

69. A related strand of research investigates differences between inside and outside directors. Inside directors possess firm-specific information that can facilitate effective decision making, while outside directors bring superior objectivity in monitoring management. Given these competing arguments, it is not surprising that the empirical evidence is somewhat mixed. Ahmed and Duellman (2007) find that inside directors are associated with less conservative financial reporting, while Bedard et al. (2014) find that firms whose CFO serves on the board are associated with higher financial reporting quality.

70. A related line of research examines executive network centrality. He (2021) provides evidence that high-centrality executives are generally more likely to misreport than low-centrality executives.

71. See also Brown (2011) on tax aggressiveness, Chiu et al. (2013) on earnings management, Cai et al. (2014) on earnings guidance, and Cheng et al. (2019) on internal control weaknesses.

TABLE 1

Summary of future research questions on managers and directors

Panel A: General questions (section 3.6)

1. To what extent are the “managerial style” results driven by the endogenous matching of managers to firms? Is there a setting in which we can hold the firm-manager match constant?
2. Who becomes a top executive (e.g., CEO or CFO)? How does this selection process affect the inferences in the “managerial style” literature?
3. What is the role of other important players in a firm (e.g., the investor relations officer or the general counsel)? How strong is the IRO (or general counsel) fixed effect versus the CEO (or CFO) fixed effect?
4. To what extent are corporate policies shaped by the top management team (TMT) rather than individual managers? Does a new CEO bring other members to the C-suite with him/her? How does the power of each TMT member interact with their individual effects in shaping corporate outcomes? How does TMT diversity (in terms of gender, race, experiences, etc.) affect firm performance?
5. What types of managers better understand investor preferences and investor information? What types of managers are more likely to cater to or learn from the stock market?

Panel B: More specific questions (sections 3.1–3.5)

1. What are the most relevant managerial characteristics in a given decision context? Why? (section 3.1)
2. What is the causal effect of managerial characteristics (e.g., gender, race/ethnicity, appearance) on corporate outcomes? What is the mechanism underlying the observed relations? (section 3.2.1)
3. What psychological dimensions drive the long-term effects of early-life experiences on corporate policies? (section 3.2.2)
4. What are the long-term effects of a manager’s experiences during important career moments besides career start, such as when a worker is promoted to an important managerial position for the first time? (section 3.2.2)
5. How do managers become overconfident? Is there a better measure of managerial overconfidence than the option-based measure? (section 3.3.1)
6. What are the determinants and consequences of managers’ communication features? Can we use different research methodologies (e.g., experiments and field studies) to identify causal effects? (section 3.3.1)
7. Is there a better measure of managerial ability than the one based on firm efficiency? More broadly, how can we isolate the portion of managers’ on-the-job actions that are attributable to manager-specific characteristics rather than other firm-specific factors? (section 3.3.1)
8. Are investors’ perceptions of a manager distorted by the manager’s off-the-job actions that are unrelated to the manager’s professional conduct? (section 3.3.2)
9. What are the long-term effects of environmental factors (e.g., terrorist attacks, sunshine exposure) on managerial behavior? (section 3.4)
10. How do directors who wield more or less power shape board and firm behavior? (section 3.5)

research that we discuss in detail below. Panel B lists 10 more specific questions mentioned in the previous subsections.

First, most of the empirical work described above is consistent with two interpretations. The first interpretation is that managers impose their beliefs and preferences on the firms that they lead. The second interpretation is that managers are purposefully chosen because of their beliefs and preferences (i.e., the firm “matches” the manager to its needs). For example, a board may decide that it needs to go through a growth phase and, as a result, hire a manager who is more

aggressive.⁷² In both cases, manager-specific differences are central to understanding corporate decisions. However, the two interpretations have very different efficiency implications. Under the first interpretation, managers' beliefs and preferences can cause their firm to adopt suboptimal strategies that deviate from the board's vision. Under the second interpretation, managers will pursue strategies that are aligned with the board's vision.

Existing evidence suggests that frictions in the CEO labor market prevent an optimal matching of CEOs to firms (Schoar and Zuo 2016). Moreover, the general finding of insignificant pretrends in the year before a CEO is appointed suggests that the CEO's presence is needed to implement the intended change even if the CEO is endogenously selected by the board (Bertrand and Schoar 2003; Schoar and Zuo 2017). Future research that further disentangles these interpretations would greatly enhance our understanding of the consequences of managerial style. Bennesen et al. (2020) take a step in this direction. They estimate the effect of CEOs on firm performance using hospitalizations as a source of variation in firms' exposures to their CEOs. The basic premise is that hospitalizations affect managers' ability to fulfill their duties because they are not in the office or they are recovering from a medical condition. A desirable feature of this setting is that it allows researchers to hold the firm-CEO match constant. Nevertheless, CEO hospitalizations can partly reflect managerial stress caused by market discipline or industry crises (Borgschulte et al. 2021), which renders causal inferences difficult to some extent.

Second, it is important to note that many insights in behavioral economics are drawn from the general population and therefore may not translate to the subpopulation of top executives. CEOs, in some sense, have "won the tournament" to become CEOs and therefore may be different from the general population. For example, while a large strand of research documents differences in the preferences of men and women in the general population, female CEOs may not exhibit these features because they undergo an extensive socialization process while rising to the top of their firm (Hambrick and Mason 1984). To better connect behavioral economics with the study of corporate decisions, we need a deeper understanding of the process through which workers ascend to the top executive position.⁷³

Third, the existing literature focuses on CEOs and CFOs. We encourage future research to consider other members of the TMT. For example, recent evidence suggests that investor relations officers (IROs) play an important role in shaping their firm's disclosure policy (Brown et al. 2019) and that IROs with prior experience as financial analysts can better communicate with investors (Hope et al. 2021). The general counsel is another important position that can influence corporate disclosure. A lingering question is how much of an effect CEOs have on the content and tone of disclosures relative to other parties that are involved in the process, such as the IRO and the general counsel. In other words, how strong is the IRO (or general counsel) fixed effect versus the CEO (or CFO) fixed effect?

Fourth, the existing literature usually studies executives in isolation.⁷⁴ In the real world, executives work together as a team. A shift in focus from individual managers to the TMT is a

72. Finkelstein et al.'s (2009) fit-drift/shift-refit model expands on the second interpretation. They argue that the economic environment can gradually *drift* or radically *shift*, creating a mismatch between the incumbent CEO's style and the firm's strategic needs. CEO succession provides an opportunity for the board to realign the firm's leadership with its prevailing economic environment.

73. An example is Kaplan and Sorensen (2021) who use detailed assessments of candidates considered for executive positions and find that the likelihood of a candidate becoming a CEO increases with general ability, execution skills, charisma, and strategic focus. In terms of innate characteristics, Field et al. (2020) provide evidence that "diverse directors" (in terms of gender and race) are less likely to be promoted to leadership positions even though they possess stronger qualifications than nondiverse directors.

74. There are a few notable exceptions. Li et al. (2014) use speech patterns in conference calls to measure the distribution of knowledge within the top management team; Feng et al. (2011) provide evidence that CFOs become involved with misstatements because they succumb to pressure from the CEO; and Bernard et al. (2020) find that firms are less likely to have chief accounting officers when their CFO is an accounting expert.

promising direction for future research. One avenue may be to consider whether new CEOs bring other members to the C-suite with them—like a politician or a coach of a professional or college sports team often does. Indeed, even how often and under what circumstances this occurs for CEOs would be important descriptive data to know. In addition, researchers can draw on numerous theories from behavioral economics on differences in judgment and decision making between individuals and groups (Charness and Sutter 2012). When we study teams, an important factor to consider is the amount of power held by each member. Finkelstein (1992, 532) points out that “research on TMTs requires a recognition of the role of power in strategic choice and a means of incorporating power.” Along these lines, Ke et al. (2021) propose and validate a measure of managerial power using a sample of publicly listed firms in China. We encourage researchers to leverage their unique institutional knowledge to develop measures of TMT power wherever there are data and to explore how TMT power interacts with executive effects. Another important factor to consider is TMT diversity. While diversity may encourage discussion and stimulate creativity, diversity can also create conflicts between subgroups within the TMT (Van Peteghem et al. 2018). In addition, increasing diversity in the TMT may not have much effect on group decision making if the members of a subgroup (e.g., female or minority managers) have very little power. More work is needed to understand the situations in which TMT diversity is beneficial and detrimental to firm performance.

Fifth, we encourage future research to explore how managerial characteristics can affect their understanding of investor preferences and investor information.⁷⁵ We make three predictions along this line. First, overconfident managers may be less likely to consider investor preferences or “learn from prices” because people who are overconfident tend to overestimate their ability (Langer 1975; Svenson 1981) and the quality of their information (Ben-David et al. 2013). Second, managers who have professional experiences interacting with investors (e.g., analysts or investment bankers) may be better able to cater to or learn from investors. Third, managers’ direct interactions with investors (Solomon and Soltes 2015) may help them better decode investor preferences or investor information. In addition, while prior research often focuses on how managers respond to the financial markets, we encourage future research to consider other venues where investor preferences or investor information can be revealed to managers, such as social media (e.g., Facebook, Twitter, or Reddit).⁷⁶

4. Regulators and intermediaries

This section extends our discussion to other players in the capital markets, including audit partners (section 4.1), analysts (section 4.2), regulators (section 4.3), and other intermediaries (section 4.4). We use the schema developed for managers (see Figure 2) to organize our discussion of these different players. Section 4.5 highlights limitations and directions for future research. Most notably, research on regulators and intermediaries is far less developed than research on managers and directors. This provides an opportunity for future research to fill in the gaps in these relatively nascent literatures.

75. A large literature in behavioral corporate finance documents that managers can time, cater to, and learn from the market (see reviews in Bond et al. 2012; Baker and Wurgler 2013; Malmendier 2018). Evidence on market timing and catering is also widely documented in accounting settings (see reviews in Libby and Emett 2014; Lee and So 2015; Blankespoor et al. 2020). More recent accounting research also provides evidence that supports the managerial learning hypothesis (Zuo 2016; Jayaraman and Wu 2019, 2020; Chen, Ng et al. 2021; Goldstein et al. 2021).

76. Prior research often relies on surveys to gauge investor preferences. For example, using survey responses from 228 professional investors, Cohen et al. (2015) show that this class of investors prefers nonfinancial information that is concise, comprehensive, comparable, and credible. Loewenstein et al. (2014) provide a detailed discussion of how psychological factors can affect the efficacy of disclosure requirements.

4.1 Audit partners

Auditors play an important role in the capital markets by offering independent assurance of accounting information's credibility. For decades, researchers have studied the forces that affect audit quality (DeFond and Zhang 2014). Early archival studies focused on heterogeneity in audit quality between audit firms and assumed that audit quality was homogenous within the same firm. A second wave of research studied audit quality at the office-level, arguing that the unique skills and expertise in one office cannot necessarily be transferred to other offices within the same firm. Taking this logic one step further, a third wave of research pushes the focus down to individual engagement partners (Lennox and Wu 2018).⁷⁷ The PCAOB and the SEC have adopted rules requiring that the identity of engagement partners be disclosed for audit reports issued on or after January 31, 2017. Thus, we expect a surge in research on audit partners in the coming years. At this time, research on audit partners in the United States is in its early stage and existing evidence is primarily based on audit partners in non-US jurisdictions where partner names have been disclosed for several years (e.g., China, Sweden, and Belgium). The newly available data in the United States presents a unique opportunity for researchers to further this literature. For example, it would be interesting to explore how the role of audit partners differs in the United States versus other countries due to various formal and informal institutions.

4.1.1 Audit partner fixed effects

In China, an audit report is signed by the two most senior auditors on the engagement. The role of these auditors is similar to that of engagement partners in the United States.⁷⁸ Gul et al. (2013) document the importance of signing auditors in the Chinese market using Bertrand and Schoar's (2003) methodology (described in detail in section 3.1). Aobdia et al. (2015) provide corroborating evidence using data from Taiwan. The key innovation of this latter paper is that they use audit partner fixed effects as a measure of audit partner quality and examine whether equity and debt market participants perceive differences in audit partner quality. They find that earnings response coefficients increase with audit partner quality, suggesting that equity investors view earnings as more informative when the audit is performed by a higher-quality partner. They also find that equity investors respond favorably when a firm replaces a lower-quality partner with a higher-quality partner, and a higher-quality audit partner can mitigate underpricing when a firm goes public. Furthermore, they show that the importance of audit partner quality extends to the debt market. When firms are audited by higher-quality partners, they pay lower interest rates, have greater access to credit, and are less likely to be required to post collateral.⁷⁹ An important contribution from these studies is that one of the inputs into the audit process—the audit partner—can be observed and can provide insights about the quality of an audit. This evidence complements prior audit quality studies in which generally only audit outputs (but not audit inputs) are observed and audit quality is inferred from these outputs.⁸⁰

77. The importance of individual auditors in the audit process has been long noted in experimental and field studies (Libby and Luft 1993; Nelson and Tan 2005).

78. This literature commonly uses the term "partner" to describe signing auditors in China who can be senior managers. The audit report contains the two signing auditors' signatures, with the bottom signature from the relatively junior signing auditor (referred to as the engagement partner) and the top signature from the relatively senior signing auditor (referred to as the review partner). Empirical analysis often focuses on engagement partners as they play a more important role in the audit field work (He et al. 2018).

79. Prior research shows that high-quality audits are valuable to debt market participants (Blackwell et al. 1998; Mansi et al. 2004; Minnis 2011).

80. Aobdia (2018) and Hanlon and Shroff (2021) are exceptions.

4.1.2 *Observable audit partner characteristics*

There is some evidence that gender influences the audit process. Using data from Finland and Sweden, Ittonen et al. (2013) find that client firms have smaller abnormal accruals when they hire female audit partners. Moreover, Hardies et al. (2015) find that clients are willing to pay higher fees to female partners in Belgium. They speculate that this premium may exist due to gender differences in skills and knowledge or supply-side factors (e.g., demand for diversity). However, Hardies et al. (2021) find evidence consistent with female audit partners in Belgium receiving lower compensation than male audit partners. Thus, clients appear to be willing to pay a higher audit fee for female partners, but audit firms pay less for female partners. Although this may be due to gender discrimination, additional research is needed to understand why this disconnect exists between fees and wages.

Gul et al. (2013) document the importance of education among signing auditors in China. Signing auditors who have a graduate degree tend to be more aggressive (i.e., they have a lower threshold for issuing a clean audit opinion) than signing partners without a graduate degree. In contrast, signing auditors who were exposed to Western accounting systems during college tend to be more conservative than those who were not exposed (holding the level of education constant).⁸¹

Several papers examine audit partners' professional experiences. Chin and Chi (2009) find that client firms are less likely to restate earnings when their partner has greater industry expertise, and there is evidence that partners with industry expertise are rewarded with higher audit fees (Zerni 2012; Goodwin and Wu 2014).⁸² Chi et al. (2017) find that audit quality increases with an audit partner's preclient experience (i.e., the audit partner's years of experience as an audit partner before the start of the current engagement). However, preclient experience does not fully substitute for client-specific experience (i.e., the audit partner's years of experience with the current client), suggesting that audit quality may decline following (mandatory) audit partner rotations. A limitation of the previous studies is that many of these professional experiences reflect endogenous career choices. Researchers can mitigate this concern by examining professional experiences that are induced by plausibly exogenous events. A good example is He et al. (2018) who examine the economic conditions at the start of a partner's career, which is outside of the partner's control. He et al. (2018) argue that auditors who enter the labor market during an economic downturn ("downturn auditors") are imprinted with a higher degree of professional skepticism.⁸³ Their findings reinforce the results on "recession CEOs" discussed earlier and highlight the importance of the early career stage as a formative period.

There is also evidence that audit partners' physical attractiveness affects their chances of being selected for an audit engagement. Baugh et al. (2021) determine the identities of US audit partners using PCAOB Form AP and obtain nine independent ratings of each partner's facial attractiveness by surveying workers from Amazon Mechanical Turk. They find that audit committees with no Big 4 experience are more likely to favor partners who are rated as highly attractive compared to audit committees with Big 4 experience (i.e., an audit committee has Big 4 experience if at least one member has worked as an auditor at a Big 4 audit

81. Gul et al. (2013) measure exposure to Western accounting systems based on whether an auditor was born after 1971 because Western accounting systems were introduced to the college curriculum in China in 1990 and the typical student in China enters college at 19. The authors do not directly test whether foreign education or experience affects audit quality because only a few audit partners received foreign education or worked overseas during their sample period.

82. He et al. (2021) find that audit performance improves after audit firms merge due to a transfer of industry-specific knowledge.

83. For more discussions on professional skepticism, see Nelson (2009), Cohen, Dalton et al. (2017), and Nolder and Kadous (2018).

firm).⁸⁴ The authors find no evidence that audit partners' physical attractiveness is related to their ability to conduct high-quality audits. The authors interpret their results as evidence that less-informed audit committees (proxied by the absence of Big 4 experience) are more likely to be influenced by superficial, heuristic cues (e.g., facial attractiveness) in auditor selection decisions. This archival evidence reinforces and extends the experimental evidence discussed earlier, in which investors like entrepreneurial pitches presented by attractive men more than entrepreneurial pitches presented by women, even when the content of the pitch is identical.

4.1.3 Using observable actions to infer audit partner characteristics

Several papers argue that audit partners are likely to exhibit a consistent pattern of behavior due to personal characteristics such as risk tolerance, integrity, and overconfidence. Using data from Sweden, Knechel et al. (2015) find that partners with a history of aggressive (conservative) errors are more likely to commit aggressive (conservative) errors in the future.⁸⁵ The market recognizes that partners have different styles and penalizes firms that are audited by lenient partners through higher interest rates, lower credit ratings, and higher assessed insolvency risk. In a similar vein, Li et al. (2017) examine signing auditors in China who have performed at least one failed audit—that is, an audit where the client restates earnings downward. They find that failed auditors are more likely to deliver lower-quality audits on other audit engagements up to four years after the initial audit failure.

Similar to the “off-the-job” studies discussed for CEOs, Amir et al. (2014) provide evidence that audit partners in Sweden who have prior criminal convictions (“convicted partners”) are more likely to audit riskier clients. Clients of convicted partners have greater financial risk, weaker governance, and more aggressive financial reporting. Pittman et al. (2021) find corroborating evidence in the US setting. They document that audit partners with prior legal infractions are associated with lower-quality audits, but the effect of prior legal infractions is mitigated by quality control systems in Big 4 audit firms.

Kallunki et al. (2019) document the importance of an audit partner's IQ for audit quality.⁸⁶ They take advantage of an IQ test that was administered to virtually all male citizens in Sweden before 2010. Due to compulsory military service, men in Sweden were required by law to take an IQ test similar to that of the Armed Forces Qualifications Test in the United States. Kallunki et al. (2019) document that audit partners who have higher IQs are associated with higher audit quality. Moreover, Kallunki et al. (2019) find that audit fees increase with an audit partner's IQ, suggesting that clients are able to identify smarter partners and they are willing to pay a premium for these partners.⁸⁷

Chou et al. (2021) use signature size to measure audit partner narcissism, similar to the CFO studies discussed earlier. They find that audit quality increases with partner narcissism in Taiwan. The authors argue that narcissistic partners are likely to be more independent from their clients because narcissists devalue the opinions of others. As a result, narcissistic partners are more likely to stick to their own opinions and discount clients' justifications when assessing accounting policies and estimates.

84. The authors control for several partner characteristics, including age, experience, education, gender, rank, and workload.

85. A partner's history of aggressive errors is the total number of companies for which the partner did not issue a going concern opinion, but the company filed for bankruptcy within 12 months of the audit report, divided by the total number of bankrupt companies audited by the partner up to the end of year $t - 1$. Conversely, a partner's history of conservative errors is the total number of companies for which the partner issued a going concern opinion, but the company did not file for bankruptcy within 12 months of the audit report, divided by the total number of nonbankrupt companies audited by the partner up to the end of year $t - 1$.

86. Experimental research often uses psychometric tests to measure auditor expertise. See, for example, Bonner and Lewis (1990) on ability and Tan and Libby (1997) on tacit managerial knowledge.

87. The authors show that audit partners with higher IQs have fewer criminal convictions but more listed clients than audit partners with lower IQs. The authors control for these other attributes in their analyses.

To summarize, there is growing evidence that individual auditors play an important role in the audit process beyond the audit office, audit firm, or auditing standards. Auditor fixed effects explain a large amount of heterogeneity in audit quality, and audit quality is associated with several auditor characteristics such as experiences and innate characteristics such as gender. We conclude this section by echoing DeFond and Zhang (2014) who call for more research on individual auditor characteristics by utilizing novel data.⁸⁸ For example, research on the various dimensions of personality can enhance our understanding of the role of auditors in the audit process. Moreover, it is interesting to contrast the literature on audit partners with the literature on managers. Most of the research on audit partners relies on non-US data, while the vast majority of research on managers relies on US data. More research is needed to determine whether the role of audit partners differs in the United States and whether the role of managers differs in non-US settings.⁸⁹ As mentioned above, more data will be available in the United States soon and such data may allow tests to get at these issues. We extend our call to include the effect of auditors not just on audit outcomes, but also on client outcomes. For example, how much do audit partners affect their client's disclosure choices? Finally, we encourage more research on how the individual characteristics of audit committee members and auditors affect their interactions in the auditing and financial reporting processes (He et al. 2017).

4.2 Analysts

Analysts are an important information intermediary in the capital markets. Analysts collect information from a combination of public and private sources. Then, they use this information to evaluate the performance of the firms that they follow, and they relay this information to investors. Analysts issue forecasts about firms' future prospects and recommend whether investors should buy, hold, or sell their stock.

Analyst forecasts have been widely used in accounting research. Many tests require a measure of the market's expectations to separate the expected and unexpected portions of earnings (Kothari 2001). The standard procedure is to use the consensus analyst forecast to model these expectations. A limitation with this approach is that the consensus analyst forecast assumes that analysts have the same forecasting ability. Prior research has proposed that we can improve our proxy of the market's expectations, and thereby sharpen our tests, by identifying persistent differences in forecast accuracy among individual analysts (O'Brien 1990). To this end, this section discusses behavioral factors that are systematically related to analyst forecast accuracy. While we focus on behavioral factors, we acknowledge that other factors can also contribute to differences in analyst forecast accuracy (see Kothari et al. 2016; Bradshaw et al. 2017 for reviews). For example, analysts may issue biased forecasts to curry favor with managers (Ke and Yu 2006; Malmendier and Shanthikumar 2014).

4.2.1 Observable analyst characteristics

Similar to the research on other individuals in the reporting process that we discussed above, there is a growing literature that examines how analysts' innate characteristics (e.g., gender, race/ethnicity, and appearance) affect their forecast accuracy and equity market reactions. Kumar (2010) examines the role of gender and finds that female analysts issue more accurate forecasts and are less likely to herd than male analysts. He argues that these results are likely due

88. A recent example is Dekeyser et al. (2021) who develop a proxy for an audit partner's net worth by leveraging institutional features in Belgium.

89. Recent research in the US setting finds little evidence that the disclosure of audit partner identity in Form AP leads to changes in audit outcomes or investor responses (Cunningham et al. 2019; Doxey et al. 2021). In contrast, there is evidence of improved audit quality after the adoption of the partner signature requirement in the United Kingdom (Carcello and Li 2013). Differences in the presentation and location of these disclosures (i.e., Form AP in the United States vs. audit reports in the United Kingdom) may partly explain this difference in findings.

to a self-selection process: females who pursue a career in the male-dominated financial services industry are likely to possess unique skills that enable them to compete against male analysts. The market is aware of this difference in skills and reacts more strongly to forecast revisions issued by female analysts. While Kumar (2010) suggests a selection issue, there is also selection on the part of male analysts as surely not all males are suitable to be analysts. Thus, it is possible that something other than selection is the driving force behind these results.

There is also strong evidence that analyst ethnicity matters. First, analysts from different countries have different forecasting approaches due to their cultural beliefs such as tendency to trust (Bhagwat and Liu 2020), and the consensus analyst forecast is more accurate when there is a higher level of cultural diversity among analysts (Merkley et al. 2020). Second, there is some research suggesting that analysts perform better when their cultural background is aligned with the firm that they are covering. For example, US analysts who are ethnically Chinese (“Chinese analysts”) issue more accurate forecasts than non-Chinese analysts for US-listed firms that are headquartered in a geographic region that shares the Chinese culture (i.e., mainland China, Hong Kong, Taiwan, and Singapore) (Du et al. 2017).⁹⁰ Third, analyst ethnicity affects the market’s processing of analyst forecasts. Using a measure of Americans’ favorability toward other countries (e.g., disfavor of Middle Eastern countries following the 9/11 terrorist attacks), Jung et al. (2019) find that analysts who have “favorable” surnames generate a stronger market reaction, but these analysts are not associated with higher forecast accuracy.⁹¹

Research also shows that analyst appearance affects their forecasting behavior, access to information, and career development (Cao et al. 2020; Li, Lin et al. 2020; Peng et al. 2021). For example, He et al. (2019) find that Chinese analysts who have high facial masculinity issue more accurate forecasts and conduct more corporate site visits than Chinese analysts who have low facial masculinity. The authors interpret their results as evidence that achievement drive is the dominant trait associated with testosterone (and facial masculinity) in the Chinese analyst setting. This evidence contrasts with the evidence in the US CEO setting, where facial masculinity is associated with negative outcomes such as accounting misreporting and insider trading (Jia et al. 2014). He et al. (2019) also find that facial masculinity is higher for men than for women, on average, suggesting that male analysts issue more accurate forecasts than female analysts in China. This evidence contrasts with the US evidence discussed earlier that female analysts are more accurate than male analysts (Kumar 2010). If the inferences in these papers are valid, then the different inferences across the settings suggest that researchers cannot necessarily generalize the findings from one cultural setting to another when examining the behavior of individuals.

As with the research of other individuals, analyst forecasts are influenced not only by analysts’ innate characteristics such as gender and race/ethnicity, but also by analysts’ experiences. De Franco and Zhou (2009) examine analysts who have a Chartered Financial Analyst (CFA) designation. They find mixed results for forecast accuracy, but they find strong evidence that analysts who have a CFA designation issue timelier forecasts and the stock market responds more strongly to their forecasts. There is also evidence that analysts improve their forecast accuracy with general experience, defined as the number of times that an analyst issues a forecast for any firm (Clement 1999; Clement and Tse 2005; Brown and Mohammad 2010; Drake and Myers 2011).⁹² Recent research shows that analyst forecast accuracy improves with more granular dimensions of experience, including industry-specific experience (Bradley, Gokkaya, Liu, and

90. Li, Wong et al. (2020) provide evidence that analysts who share close connections with firms and other analysts (“embedded analysts”) serve as a channel for disseminating proprietary, hard-to-verify information.

91. The issue of changing surnames as discussed earlier is arguably less of a problem in Jung et al. (2019) because they examine market reactions to the “perceived” analyst ethnicity (based on the analyst surname) rather than the actual decisions of the analyst.

92. Hong et al. (2000) take a slightly different approach and classify analysts as experienced if they have more than three years of experience.

Xie 2017; Bradley, Gokkaya, and Liu 2017), firm-specific experience (Mikhail et al. 1997, 2003), and task-specific experience (Clement et al. 2007).⁹³

4.2.2 *Using observable actions to infer analyst characteristics*

Similar to the auditor studies discussed above, several papers suggest that individual analysts exhibit a consistent pattern of behavior over time. Prior research has documented persistence in forecast accuracy (Sinha et al. 1997; Park and Stice 2000), forecast bias (Butler and Lang 1991), and the profitability of stock recommendations (Li 2005) for individual analysts.

In contrast, Hilary and Menzly (2006) hypothesize and find that past forecasting success can lead to lower forecasting accuracy in the future. Drawing on self-attribution theory, they argue that analysts who successfully forecast earnings may attribute too much of their success to their ability and too little of their success to chance. As a result, analysts become overconfident and place too much weight on their private signals and too little weight on public signals. Consistent with self-attribution theory, Hilary and Menzly (2006) find that analysts who predicted earnings more accurately in the previous four quarters tend to be less accurate and deviate more from the consensus in their subsequent forecasts.⁹⁴ This study zooms in on the decision-making process of analysts and presents evidence of dynamic overconfidence.⁹⁵ This evidence contrasts with prior studies on managers which often explore between-individual variation in overconfidence that is fixed over time.

There is also evidence that an analyst's political affiliation influences his/her professional judgment. Using data from 1993 to 2009, Jiang et al. (2016) report that analysts who donate to the Republican Party are more conservative. Their forecast revisions tend to conform to the consensus forecast and their stock recommendations consist of more modest upgrades and downgrades. The authors argue that these findings are consistent with Republicans preferring the status quo, exhibiting resistance to rapid changes, and being more cautious in updating their beliefs.⁹⁶ Relatedly, Kempf and Tsoutsoura (2021) show that analysts are more likely to downward-adjust corporate credit ratings when they are not affiliated with the US president's party.

4.2.3 *Environment*

Lastly, there is evidence that the environment can influence an analyst's mood/emotions, which, in turn, affects his/her forecasting behavior. Similar to the effect of sunshine exposure on management forecasts discussed earlier, deHaan et al. (2017) show that analysts experiencing unpleasant weather (i.e., the principal component of cloud cover, rain, and wind) are slower or less likely to react to an earnings announcement compared to analysts experiencing pleasant weather. Dong et al. (2021) document a negative association between air pollution during corporate site visits and analysts' subsequent earnings forecasts, consistent with higher air pollution resulting in heightened pessimism among analysts. Similarly, Bourveau and Law (2021) find that analysts in states affected by hurricanes issue less optimistic forecasts for nonaffected firms compared to nonaffected analysts. This effect, however, dissipates over a two-year period. This last result is somewhat in contrast with the evidence in the CEO literature where top managers carry the imprints of their early-life experiences throughout their career. Understanding what experiences have a

93. Jacob et al. (1999) find that the relation between forecast accuracy and firm-specific experience is not significant when controlling for analyst-company fixed effects (i.e., the endogenous matching between analysts and companies).

94. A caveat of Hilary and Menzly (2006) is that their results may reflect a mechanical mean reversion effect due to the inclusion of analyst fixed effects in the regressions. See Nickell (1981) for a rigorous analysis of this issue.

95. For more evidence on analysts' decision-making processes, see Hirshleifer et al. (2019) on decision fatigue and Hirshleifer et al. (2021) on first impression bias.

96. These arguments are based on the pre-Trump era and may not generalize to a more recent sample period due to changes in the political landscape in the United States.

permanent versus temporary effect on different players in the capital markets is an interesting avenue for future research.

To summarize, there is growing evidence that analysts differ in their forecast accuracy, and these differences are systematically related to their personal characteristics such as gender and race/ethnicity. While the broad takeaway from the analyst literature is similar to that from the manager and audit partner literatures, there are noteworthy differences between these literatures. First, in the manager literature, researchers often draw conclusions by studying whether firm outcomes differ over time when a firm replaces one manager with another manager or by studying whether firm outcomes differ between firms at the same point in time if they have managers with different characteristics. The same is true in the audit partner literature. On the other hand, the analyst literature often draws conclusions by studying differences in analysts' forecasts for the same firm at the same point in time, which helps researchers rule out various confounding factors. Second, a nice feature of the analyst literature is that we are able to compare analysts' forecasts with the realization of earnings, *ex post*. This, in turn, allows us to measure biases in analysts' beliefs directly.

4.3 Regulators

This section discusses standard setters (section 4.3.1), politicians (section 4.3.2), and judges (section 4.3.3).

4.3.1 Standard setters

Accounting standards specify the reporting choices available to managers and thus exert considerable influence on accounting practices. An important question is how standard setters design these regulations.⁹⁷

A nascent strand of research suggests that heterogeneity in accounting standards is related to standard setter characteristics. An important caveat with this literature is that standard setting boards are quite small, leading to tests with relatively low power. Allen and Ramanna (2013) analyze 149 FASB exposure drafts proposed between 1973 (the FASB's inception) and 2007. Each exposure draft is evaluated based on its impact on "relevance" and "reliability" using comment letters filed by Big N auditors. Allen and Ramanna (2013) document that FASB members with prior employment in financial services tend to propose standards that use fair-value methods. When a larger proportion of FASB members have experience in financial services, the FASB is more likely to propose exposure drafts that increase accounting relevance and decrease accounting reliability. Similarly, Jiang et al. (2018) analyze 211 financial accounting standards issued between 1973 and 2014. They focus on dissenting opinions expressed by FASB members. FASB members with a preparer background (e.g., former CFOs and controllers) are less likely to object to standards that create exceptions or give managers more accounting choices, but they are more likely to object when they believe that a standard lacks reliability. On the other hand, FASB members with an academic or regulator background have a greater tendency to express dissent when they believe that a standard lacks relevance.⁹⁸

Jiang et al. (2015) take a different approach. Using a short-horizon event study, they examine how the stock market responded to Bob Herz's resignation from being Chair of the FASB on August 24, 2010. This setting has two critical features. First, Herz's resignation was unexpected.

97. There are three major theories on the role of regulators in the political economy literature: public interest theory, capture theory, and ideology theory (see section 4.1 of Kothari et al. 2010 for details). Most relevant to our review is ideology theory, which argues that regulators are endowed with ideologies and regulatory outcomes are shaped by these ideologies (Grossman and Helpman 1994). See Leuz and Wysocki (2016) for an insightful discussion of the economics of disclosure and financial reporting regulation.

98. One avenue for future research is to examine how standard setters' backgrounds affect their stance on principles-based versus rules-based standards (Schipper 2003; Jamal and Tan 2010).

Herz resigned two years before the end of his term and no reasons were given for his departure. Second, at the time of Herz's resignation, the FASB was engaged in a heated debate surrounding a proposed standard, which would require banks to report loans held for collection at fair value. Herz supported the proposal, despite fierce opposition from banks. Jiang et al. (2015) find that investors reacted positively to Herz's resignation, and this response was stronger for banks that would have been more affected by the fair value standard. Taken together, these findings suggest that the market believed that Herz was critical to the final outcome of the proposal. Indeed, the FASB repealed the proposal on January 25, 2011, with Herz's successor Leslie Seidman voting against the proposal.

To summarize, there is some evidence that standard setters have unique ideologies that influence their stance on accounting standards. This literature offers many opportunities for future research. For example, the previous studies focus on members of the FASB, but it is also important to understand the role of standard setters on other regulatory bodies such as the PCAOB. Indeed, the SEC removed William Duhnke as chairman of the PCAOB this year and plans to replace all board members (SEC 2021). It would be interesting to study whether this turnover at the PCAOB has any observable effects on audit firms, client companies, and/or the capital markets. Similarly, the current SEC head, Gary Gensler, has a reputation of being a strict regulator.⁹⁹ What were the capital market effects and effects on real firm behavior when he was appointed (even when just rumored to be in line for appointment)?

4.3.2 Politicians

There is also evidence that politicians influence accounting regulation and enforcement. For example, during the global financial crisis, politicians with conservative views expressed strong support for a proposal to relax the FASB's fair value accounting standards (Bischof et al. 2020). They argued that the relaxation of fair value accounting would bolster banks' regulatory capital and stabilize the financial system without requiring bailouts.

On the enforcement side, Mehta and Zhao (2020) find that politicians who serve on SEC-relevant congressional committees are significantly less likely to be reelected following SEC enforcement actions against firms located in their districts. To maximize their likelihood of reelection, politicians limit enforcement efforts in their districts and delay the announcement of enforcement actions around election years.¹⁰⁰

Ultimately, research on individual politicians is still in its infancy, and more work in this area can enhance our understanding of accounting regulation and enforcement. Future work can also leverage on a burgeoning literature in economics and finance (Jones and Olken 2005, 2009; Baker et al. 2018).

4.3.3 Judges

Judges play a key role in the enforcement of securities laws. In many cases, the materials presented in court do not provide sufficient clarity to resolve the dispute. As a result, judges' personal characteristics can influence legal outcomes. Huang et al. (2019) document the importance of judges' political ideologies for class action lawsuits stemming from securities fraud. They find that judges appointed by Democratic presidents are more likely to side with investors, while judges appointed by Republican presidents are more likely to side with firms. They also find that firms act as if they understand the implications of judge ideology on litigation risk. When

99. See, for example, "Biden's candidate for SEC Chairman is expected to be tough on companies" (Maurer 2021) in the *Wall Street Journal* (January 27, 2021) and "Wall Street beware: The SEC's Gensler carries a big stick" (Masters 2021) in the *Financial Times* (April 28, 2021).

100. Stephan et al. (2021) identify a politician's connections using campaign contribution information. The authors document that politicians make more trading profits if the trade is executed at a brokerage house that is connected to the politician, suggesting that brokerage houses provide stock tips to politicians.

litigation risk is heightened due to judge ideology, firms are more likely to issue short-term earnings forecasts to preempt negative news and they are also more reluctant to release positive long-term earnings forecasts. Subsequent studies show that judges' political ideologies affect corporate tax planning (Chow et al. 2021), insider trading (Huang et al. 2021), and the likelihood of firms receiving going concern modified audit opinions (Gu et al. 2021). More work along these lines can enhance our understanding of the effect of judges on legal outcomes and the potential feedback effects on firm policies. For example, it would be interesting to know whether other judge characteristics (e.g., gender) influence the enforcement of securities laws (and other laws) and how this affects firm behavior. To achieve sharper identification, future research can use deaths as an exogenous source of variation in judge ideology (e.g., the passing of Supreme Court justice Ruth Bader Ginsburg).

4.4 Other intermediaries

This section discusses journalists (section 4.4.1), loan officers (section 4.4.2), and financial advisors (section 4.4.3).

4.4.1 Journalists

The business press is an important information intermediary in the capital markets. Media outlets such as the *Wall Street Journal* and the *Financial Times* disseminate firm disclosures to a wide audience (e.g., by rebroadcasting earnings announcements). These outlets also create new information through “investigative” journalism (Miller 2006; Guest 2021).

Academic research has often viewed the business press as a faceless institution, ignoring the fact that news articles are written by individual journalists. This is important since a journalist can inject his/her style, views, and bias into the finished product. A few recent studies take an important step and study the effect of individual journalists. For example, Dougal et al. (2012) find that the short-term returns of the Dow Jones Industrial Average can be predicted using the author identity of the *Wall Street Journal*'s “Abreast of the Market” (AOTM) column, a widely read market summary article.¹⁰¹ To mitigate the concern that journalists simply report news, rather than influence investors' interpretations of news, Dougal et al. (2012) exploit exogenous variation in news due to the rotation of journalists who write the AOTM column. Relatedly, Ahern and Sosyura (2015) find that merger rumors are more accurate when reported by journalists who are older, have an undergraduate degree in journalism, or specialize in the target's industry. More research along these lines is needed to fully understand the role of journalists in the capital markets. For example, research about which journalist characteristics are perceived more favorably by investors and are associated with better access to information might help us understand varying market reactions to news. In addition, future research can explore crowd-sourced platforms like Seeking Alpha. These platforms have greater heterogeneity in author characteristics, which will facilitate more powerful tests. Moreover, it would be interesting to know whether results based on media outlets like the *Wall Street Journal* and the *Financial Times* extend to these crowd-sourced platforms.

4.4.2 Loan officers

Loan officers are an important financial intermediary in the capital markets. Loan officers screen potential borrowers, make credit assessments, and monitor the borrower over the loan cycle. Until

101. Using a testing framework similar to that of Bertrand and Schoar (2003), Dougal et al. (2012) use journalist fixed effects to capture differences in style among the journalists who write the AOTM column. They describe the advantage of this approach as follows: “what truly makes Dickens ‘Dickens’ or Faulkner ‘Faulkner’ cannot be easily quantified, regardless of how sophisticated the analysis may be. Like performing a violin concerto or preparing a fine meal, summarizing the nuances of a written article may be impossible, relative to simply specifying the creator” (642).

recently, data limitations have made it difficult to disentangle loan officer effects from bank effects. Bushman et al. (2021) and Herpfer (2021) provide important contributions. Using a testing framework similar to that of Bertrand and Schoar (2003), Bushman et al. (2021) find that loan officer fixed effects explain a large amount of heterogeneity in contract design, incremental to bank and borrower characteristics. Loan officers are more influential in setting covenant packages than in setting interest spreads or loan maturity. One explanation for this finding is that loan spreads are largely determined by “hard” information, while covenants are shaped by “soft” information. These differences in covenant design translate into differences in loan performance, as reflected in ratings downgrades and defaults. Similarly, Herpfer (2021) constructs a data set of individual bankers in the US syndicated loan market and shows that individual bankers play an important role in setting loan terms, even for the largest, most transparent borrowers.

Several studies provide evidence on loan officers’ processing of hard and soft information and the effects on loan outcomes. Campbell et al. (2019) find that relying on soft information leads to worse loan quality when loan officers are busy, when they have prior sales experience, and when both the loan officer and the borrower are men.¹⁰² Costello et al. (2020) show in a randomized, controlled experiment that loan officer discretion can improve loan outcomes by incorporating soft information into machine-generated credit scoring models. Liu (2021) shows that a machine learning model substantially outperforms loan officers in processing hard information because loan officers exhibit limited attention and overreact to salient accounting information. He also finds that loan officers acquire more soft information after seeing salient accounting information, suggesting that salience facilitates attention allocation in information acquisition.¹⁰³

Overall, research suggests that individual loan officers are important for loan outcomes. While there is growing evidence on loan officers’ processing of soft versus hard information, there is still limited research on how personal characteristics of loan officers (e.g., gender and religion) affect their behavior.

4.4.3 *Financial advisors*

Financial advisors are another important financial intermediary in the capital markets. Financial advisors provide advice and transaction services to their customers, and customers can file complaints with the Financial Industry Regulatory Authority (FINRA) if they perceive any unfair treatment by an advisory firm or its employees (<https://www.finra.org>). FINRA administers BrokerCheck, a free online portal that contains detailed information on financial advisors and their firms (<https://brokercheck.finra.org/>). Several recent studies take advantage of this platform to examine advisor misconduct and customer complaints in the financial advisory industry. One advantage of this setting is that the data structure (i.e., multiple advisors in a given office) allows researchers to compare advisors with their colleagues from the same firm, at the same location, and at the same point in time, which significantly reduces omitted variable bias.

There is evidence that past misconduct/criminal records and use of marital infidelity websites are associated with future customer complaints and future professional misconduct (Griffin et al. 2017; Egan et al. 2019; Law and Mills 2019). There is also evidence that financial advisors who start their career during recessions are less likely to engage in misconduct (Law and Zuo 2021a), consistent with the findings for CEOs and auditors discussed earlier. In addition, it appears that training matters. Kowaleski et al. (2020) study the effects of a change in the investment adviser qualification exam and report that individuals passing the exam with more rules and ethics coverage are less likely to commit misconduct. Finally, there is evidence suggesting that discrimination based on gender and race/ethnicity exists in the

102. Beck et al. (2013) also find that loans selected and monitored by male loan officers have a higher likelihood to turn problematic than those handled by female loan officers.

103. Shroff (2017) and Li et al. (2021) provide evidence that managers have limited attention.

financial advisory industry. Egan et al. (2021) find that relative to male advisors, female advisors are more likely to lose their jobs and less likely to find new jobs following an incident of misconduct. Law and Zuo (2021b) find that compared with their white colleagues in the same office, Hispanic and Asian advisors are more likely to receive complaints in periods of high immigration concern than in other periods.

While it is commonly believed that financial advisors' conflicts of interest contribute to the high cost of advice, recent evidence suggests that financial advisors may provide poor advice to their clients at least in part due to misguided beliefs. Linnainmaa et al. (2021) use data provided by two large financial institutions in Canada that include trading and portfolio information on more than 4,000 advisors and almost 500,000 clients. The authors find that financial advisors themselves chase returns, prefer actively managed and expensive funds, and under-diversify. These results suggest that advisors invest personally in the same way that they advise their clients.¹⁰⁴

To summarize, there is a growing stream of research that utilizes novel data to understand the behavior of financial advisors. While traditional research has focused on conflicts of interest, more recent research suggests that financial advisors' personal characteristics explain their behavior, which, in turn, shapes investors' perceptions. More work on financial advisors is needed to disentangle the various mechanisms through which advisor misconduct and investor complaints arise.

4.5 Limitations and directions for future research

We conclude this section by highlighting some limitations of the current literature as well as some open areas for investigation. Panel A of Table 2 lists four general questions for future research that we discuss in detail below. Panel B lists 10 more specific questions mentioned in the previous subsections.

First, we note that most of the literature on regulators and intermediaries is still relatively underdeveloped and more work is needed to understand the role of these individual decision makers in the economy. Future work can draw inspiration from the vast literature on managers reviewed in section 3. It is important to emphasize that personal characteristics can have different implications in different settings. For example, US managers who have high facial masculinity are associated with aggressive behaviors such as accounting misreporting, insider trading, and option backdating (Jia et al. 2014). In contrast, Chinese analysts who have high facial masculinity are associated with higher forecast accuracy and more profitable stock recommendations (He et al. 2019). More research is needed to understand how the effects of individual characteristics differ for unique subpopulations and/or cultures and settings, and why these differences arise. To this end, the literature would benefit from a deeper understanding of the underlying mechanisms and a deeper understanding of the selection process through which individuals choose their profession and advance through their career.

Second, most of the empirical work on regulators and intermediaries is subject to the concern of endogenous matching, similar to the CEO literature. For example, the assignment of audit partners to clients is not random, and clients often engage in partner-level opinion shopping (Chen et al. 2016). Therefore, the observed effects of audit partners on their clients may be partly or even entirely driven by the characteristics of these clients. Future research that isolates the causal effect of regulators and intermediaries would greatly enhance our understanding of the forces at play. Data generated from randomized, controlled experiments will be of great value in this venture.

104. Another strand of research studies market expectations and portfolio holdings of asset managers (Cooper et al. 2013). There are two common findings. First, domestic asset managers tend to be more bullish about their own equity market than foreign investors (Solnik and Zuo 2017). Second, asset managers do not hold the world market portfolio and have a bias toward domestic equity (Solnik and Zuo 2012).

TABLE 2

Summary of future research questions on regulators and intermediaries

Panel A: General questions (section 4.5)

1. How do the effects of individual characteristics differ for unique subpopulations and/or cultures and settings? Why do these differences arise?
2. How can we isolate the causal effect of regulators and intermediaries on outcome variables?
3. Are suboptimal decisions driven by agency conflicts or misguided beliefs?
4. How are social ties formed among the various players in the economy?

Panel B: More specific questions (sections 4.1–4.4)

1. How does the role of audit partners differ in the United States versus other countries due to various formal and informal institutions? (section 4.1)
2. How much do audit partners affect their clients' disclosure choices? (section 4.1)
3. How do the individual characteristics of audit committee members and auditors affect their interactions in the auditing and financial reporting processes? (section 4.1)
4. What experiences have a permanent versus temporary effect on analysts or other players in the capital markets? (section 4.2)
5. Did the turnover at the PCAOB in 2021 have any observable effects on audit firms, client companies, and/or the capital markets? What were the capital market effects and effects on real firm behavior when Gary Gensler was appointed head of the SEC (even when just rumored to be in line for appointment)? (section 4.3.1)
6. How do individual politicians affect accounting regulation and enforcement? (section 4.3.2)
7. Do judge characteristics (e.g., gender) influence the enforcement of securities laws (and other laws)? How does this affect firm behavior? (section 4.3.3)
8. Do the findings of individual journalist effects based on media outlets like the *Wall Street Journal* and the *Financial Times* extend to crowd-sourced platforms like Seeking Alpha? (section 4.4.1)
9. How do personal characteristics of loan officers (e.g., gender and religion) affect their behavior? (section 4.4.2)
10. How do financial advisor misconduct and investor complaints arise? (section 4.4.3)

Third, behavioral research has developed somewhat independently from research on economic incentives. Future research can benefit from a cross-fertilization of ideas between these two lines of research.¹⁰⁵ For example, several papers argue that regulators and intermediaries make suboptimal decisions due to agency frictions. We encourage future research to explore whether these suboptimal decisions are due to misguided beliefs.

Finally, we encourage future archival research to draw insights from field studies (Gibbins et al. 2001; Cohen, Krishnamoorthy et al. 2017; Austin et al. 2021) and explore the interactions among the various players in the capital and product markets (Cen et al. 2017, 2021; Hoang et al. 2019; Chen, Huang et al. 2021). Most decisions are not made in isolation and are affected by an individual's environment. For example, analysts with certain characteristics might be granted more access to corporate information or might be favored by institutional investors. This, in turn, could translate into more accurate forecasts and/or better career prospects. It would also be interesting to understand how social ties are formed among the various players.

5. Concluding remarks

A growing stream of positive accounting research has contributed to our understanding of how individual decision makers affect accounting practices. In this paper, we develop a

105. Gaynor et al. (2016) is an excellent paper that integrates archival and experimental research in the area of audit and financial reporting quality.

framework that organizes this literature in a manageable and accessible manner. This framework builds on a behavioral theory of rational choice, where individuals are viewed as *Homo sapiens* instead of *Homo economicus*. Thus, individual preferences, abilities, experiences, and other characteristics all matter for individual behavior, and characteristics such as gender, race, and appearance can affect others' perceptions. Moreover, human interactions are constrained by both formal institutions (e.g., rules, laws, constitutions) and informal institutions (e.g., norms, conventions, rituals).

Our review covers a broad set of individuals that are of interest in accounting research. We start by discussing research that examines the effect of top managers on firm policies. Because beliefs and preferences are not directly observable, prior research has used four indirect approaches to study the effect of top managers. The first approach examines whether firm policies are correlated across different firms when the same manager is present. The second approach examines whether firm policies are correlated with observable manager characteristics. The third approach uses observable actions to infer managers' behavioral traits and relates these traits to firm policies. The fourth approach examines whether firm policies are related to a manager's environment. We extend this discussion to other important players in the capital markets, including directors, audit partners, analysts, standard setters, politicians, judges, journalists, loan officers, and financial advisors.

The literature has made great strides in recent years. For example, research on managers has progressed significantly thanks to a concerted effort by researchers to hand-collect new data. Nevertheless, concerns, as well as opportunities, remain. The first concern is endogenous matching. Do managers impose their beliefs and preferences on the firms that they run, or do boards hire managers precisely because of their beliefs and preferences? As discussed earlier, these two interpretations have very different implications from a governance and an efficiency standpoint. A second concern is that we need to more clearly separate the effect of different players. For example, are the documented effects of managers on corporate disclosure truly attributable to managers or to someone else?

Despite its limitations, this line of research has deepened our understanding in the accounting context of what people do rather than what people should do based on traditional economic models. These behavioral deviations from economic optimality are not necessarily random errors, but can form an equilibrium (Akerlof and Shiller 2015). To decipher the underlying reasons for human behavior, we need to incorporate insights from other disciplines besides economics, such as psychology, neuroscience, and biology. The collective evidence can have important normative and practical implications once an objective function is specified.

Finally, we note that accounting researchers can leverage their understanding of the institutional environment and "the language of business" to contribute broadly to the economics and social science literatures. For example, accounting researchers can bring their expertise in the study of information production and dissemination to the emerging fields of narrative economics (Shiller 2017, 2020) and social economics and finance (Frank 2020; Hirshleifer 2020). Furthermore, a focus on individual people paves the way for accounting and finance researchers to study important topics such as morality, ethics, and stereotypes (O'Hara 2016; Bertrand 2020; Bloomfield 2021; Lunawat et al. 2021). With the increasing availability of individual-level data and sophisticated data analytics (e.g., machine learning and artificial intelligence algorithms), we expect research on individual decision makers to flourish and further our understanding of the behavioral economics of accounting.

Appendix: Review criteria

In this paper, we perform a systematic review of the accounting literature on the role of individual decision makers in shaping observed accounting phenomena. We use the classical framework in Healy and Palepu (2001) to guide the scope of our review (see Figure 1). More specifically, we discuss a broad set of decision makers including managers, directors, audit partners, analysts, standard setters, politicians, judges, journalists, loan officers, financial advisors, and investors. Our review covers a wide spectrum of accounting phenomena, including financial reporting, disclosure, tax planning, auditing, and CSR. We mainly focus on studies that use the archival methodology, but we also discuss a few field, survey, and experimental studies that complement related archival research.

To identify relevant archival research on individual decision makers, we read the abstract for every paper published or forthcoming in the top five accounting journals over the period 2000–2021: *Contemporary Accounting Research*, the *Journal of Accounting and Economics*, the *Journal of Accounting Research*, the *Review of Accounting Studies*, and *The Accounting Review*.¹⁰⁶ Our review also includes several studies published in top journals in other fields, such as the *American Economic Review*, the *Journal of Finance*, the *Journal of Financial Economics*, the *Journal of Political Economy*, *Management Science*, the *Quarterly Journal of Economics*, and the *Review of Financial Studies*, when these studies serve as the foundation for archival accounting research or when they are natural extensions of an accounting study. A few studies published before 2000 are included because these studies provide important innovations or motivation for the more recent work. In addition, we discuss several prominent working papers when we believe that they fill in an important gap in the literature. While we try to be thorough, we do not include every study possible but a subset that illustrates the research for the question.

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