

# **Fundamental-Equity Investors Decision-Context Framework and Employment Taxonomy**

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*We present a theory that explains the decision-context framework and employment taxonomy of fundamental-equity investors. We developed this theory using the classical grounded theory methodology. Segment data are important to fundamental-equity investors' decision-making approach. These investors use segment data to improve their understandings of firms. Our decision-context framework conceptualizes their six decision contexts. The taxonomy conceptualizes their employment classifications on five dimensions. Our theory suggests researchers should investigate each decision context and the one decision type that has not been studied. Our taxonomy could be used to specify survey populations or sample frames, facilitate inter-study comparisons, and reduce surveyors' costs.*

## **INTRODUCTION**

Fundamental-equity investors assert that segment disclosures are crucial to their decision-making (Epstein & Palepu, 1999; Knutson, 1993; Lundholm & Myers, 2002). Despite the importance of segment disclosures to investors' decision frameworks, prior researchers have not conceptualized the frameworks. We present an original grounded theory comprised of a decision-context (contemplated activities) framework (Keeney, 1996) and a corresponding employment taxonomy. The framework is grounded in the decision contexts of equity fundamental analysis investment professionals—the investors most likely to employ segment disclosures (American Institute of Certified Public Accountants, 1994a, 1994b) and, we contend, other financial disclosures. The taxonomy is grounded in our sector, industry, decision type, decision-maker type and occupational title classifications.

This study is significant because it contributes to the segment reporting literature a decision-context framework and an employment taxonomy that jointly specify the attributes of the professional investors most likely to employ segment disclosures. These attributes could be used by future segment reporting and non-segment reporting survey researchers to specify their populations, sample frames, or both. Moreover, if prior professional investor surveyors (American Institute of Certified Public Accountants'

Special Committee on Financial Reporting, 1994; Boersema & Van Weelden, 1992a, 1992b; Brown, Call, Clement, & Sharp, 2015, 2016; de Jong, Mertens, van der Poel, & van Dijk, 2014) had employed such a taxonomy, this would facilitate comparisons of their studies.

This paper is organized as follows. First, we describe the classical grounded theory (CGT) methodology and how we implemented it. Then we present our results, summary and conclusions.

## **RESEARCH METHODOLOGY**

To execute this study, which is part of an ongoing field study (Blackstone, 2012) and research program addressing the decision usefulness of segment data, we employed the CGT methodology (Glaser, 1978, 1998; Stern & Porr, 2011). It is one of several competing grounded theory methodologies (Charmaz, 1990; Corbin & Strauss, 1990; Elharidy, Nicholson, & Scapens, 2008; Manuell & Graham, 2017; Sutton, Reinking, & Arnold, 2011). We employed CGT because it best enabled us to conceptualize our decision-context framework, taxonomy and other outputs of our research program. That is, CGT leads to a conceptual theory capable of empirical testing (Glaser, 2003)

### **Classical Grounded Theory**

Classical grounded theory is a set of inductive and deductive procedures for developing theory. Business researchers have employed CGT to develop theories in information systems (Evermann & Tate, 2009; Urquhart, Lehmann, & Myers, 2010), management (Isabella, 1990; Suddaby, 2006), and accounting (Anderson & Widener, 2007; Barker, 1998; Gibbins, Richardson, & Waterhouse, 1990; J. Holland, 1998; J. B. Holland, 1998; von Alberti-Alhtaybat & Al-Htaybat, 2010; Wall & Fogarty, 2016).

The purpose of a CGT study is not initially established by the researchers. Rather, that purpose emerges from the data as the study progresses (Glaser, 1992). A CGT study begins by identifying pre-existing data (initial data<sup>1</sup>) deemed fruitful for study. Initial data is deemed fruitful for study because it is thought to express problems, issues of concern, or the resolutions thereof. The data are coded using the constant comparison process. The aim of the process is to discern: (1) the pertaining population, (2) their problems, (3) their concerns, and (4) how their problems and/or concerns are resolved.

During the constant comparison process, the first initial data are broken apart (fractured) to facilitate identifying similarities and differences. Then fractured data are compared, categorized (conceptualized), and named (substantively coded). Next, new initial data are identified for analysis. The new initial data are identified using theoretical sampling, which is an iterative logical reasoning process. Researchers theoretically sample to select data that will lead to identifying related latent patterns. Theoretical sampling stops when the theory explains, predicts, and interprets the phenomenon of interest; when this occurs, the latent patterns are saturated (Glaser, 1978, 1998). The developed theory is grounded in the substantively coded data (Glaser 1978, 1998).

The constant comparison process is guided by three questions. The first question is: “What is this data the study of?” (Glaser, 1978, 57). The second question has a short and long form. This is the short form: “What category does this incident indicate?” (Glaser, 1978, 57). This is the long form: “What category or property of a category, of what part of the emerging theory, does this incident indicate?” (Glaser, 1978, 57). The third question comprises four related questions. However, only the following two are directly related to this study: “What accounts for the basic problem and process?” (Glaser 1978, 57); and “What is actually happening in the data?” (Glaser 1978, 57).

The first question reminds researchers that the theory should be grounded in the initially collected data, not in their preconceived notions. This question helps them become receptive to what the data convey. The second question helps researchers perceive and refine substantive codes and the relations among these codes. The third question helps researchers generate a core category. By continually reflecting on the three question types, researchers both focus and delimit their studies. Answers to the first question identify the research question(s) of the study at hand. Answers to the second help researchers figure out when to stop theorizing. Answers to the third help researchers to generate a theory (Glaser, 1978).

Conceptual likeness, rather than description, is the aim of substantive coding (Glaser, 2003, 2007; Glaser & Holton, 2005; Holton, 2009). Data are substantively coded to identify their latent patterns<sup>2</sup>, that is, their conceptual properties, conceptual dimensions, or both<sup>3</sup> (Holton, 2010).

Classical grounded theorists analyze latent patterns to identify the most pressing issues expressed in the substantively coded data. The core or most important issue becomes the core category (core variable). All other latent patterns of interest characterize properties or dimensions of the core variable (Glaser, 1978, 1998; Glaser & Holton, 2005).

Classical grounded theory includes theoretical coding, which is a deductive reasoning process for abstracting identified relations among latent patterns (Glaser, 1978, 1998, 2005)<sup>4</sup>. Individual codes within a family are called theoretical codes. Theoretical coding is central to CGT studies (Glaser, 1998; Glaser & Holton, 2005).

Throughout the CGT process, memos are prepared and used to record ideas, hunches, and questions. Memos are sorted at the theoretical coding stage to facilitate pattern abstraction, and used at the report-writing stage to articulate the findings and develop the discussion (Stern and Porr 2011).

### **Our Implementation of the CGT Research Methodology**

Our implementation of the CGT methodology involved a team, comprised of two representatives from the accounting field and one from decision sciences. Prior to the study, the accounting representatives were familiar with some of the employed data. The decision science representative was knowledgeable about CGT procedures.

In keeping with the CGT methodology, we did not develop our research objective before we initiated our study. We selected Statement of Financial Accounting Standards Number 131 (SFAS No. 131), “Disclosures about Segments of an Enterprise and Related Information” (FASB 1997) as our first initial data, because investment professionals’ decision-usefulness perceptions of segment data is our primary research interest. Executing the theoretical sampling process led us to employ literature concerning analysts who use segment data, and the question of how they use it (American Institute of Certified Public Accountants, 1994a, 1994b; Boersema & Van Weelden, 1992a, 1992b). We also employed literature that describes the fundamental analysis investment decision model (Damodaran, 2002; Graham & Zweig, 2003; Whitman & Shubik, 2006).

Next, we utilized literature that describes investment professionals and their decision contexts (Gardner, 2003; Investment Adviser Association & National Regulatory Services, 2017; LeBlanc & Fisher, 2004; Trone, Allbright, & Taylor, 1996). Finally, we operationalized an aspect of the value-focused thinking literature (Keeney, 1996)<sup>6</sup>. We did so because this literature includes a theoretical coding family that conveys a framework for abstracting the relations among these concepts: decision-makers, decisions, values (including information qualities), decision contexts, fundamental objectives, decision frames, a strategic decision context, a strategic objective, and information. This literature defines each concept, except for information<sup>7</sup>.

Figure 1 (a theoretical code) depicts the framework, which Keeney (1996) calls the “Value-Focused Thinking Framework with Flow of Information Indicated.” Keeney’s framework is central to conveying how information values and information link decision-makers who employ a common decision model<sup>8</sup>. It allows us to demonstrate the universality of decision-makers’ concerns about the qualities of the information they employ. Keeney’s framework is the foundation of our decision-context framework. Next, we define the concepts of Keeney’s framework and explain the relations among them.

According to Keeney (1996), a decision-maker is any decision-making entity; it could be a person, an organization, or a society.

A decision is the act of allocating limited resources, as defined by the decision-maker. An alternative is a different resource allocation or an allocation of a different resource (Keeney, 1996).

Values are the things about which a decision-maker cares. Some are tangible; others are intangible. An articulated value definition includes a value’s distinguishing attribute(s) and its aim. Values are used to evaluate the consequences of an alternative or decision (Keeney, 1996). Data qualities are a type of value.

A decision context is a contemplated activity (Keeney, 1996).

A fundamental objective is a statement that identifies the most pressing reason for making a decision. A fundamental objective has three distinguishing attributes: a decision context; an object, which is the thing one most hopes to achieve; and a preference direction (Keeney, 1996).

A decision frame is the condition for making a decision. A decision frame includes at least one decision context and one compatible fundamental objective (Keeney, 1996).

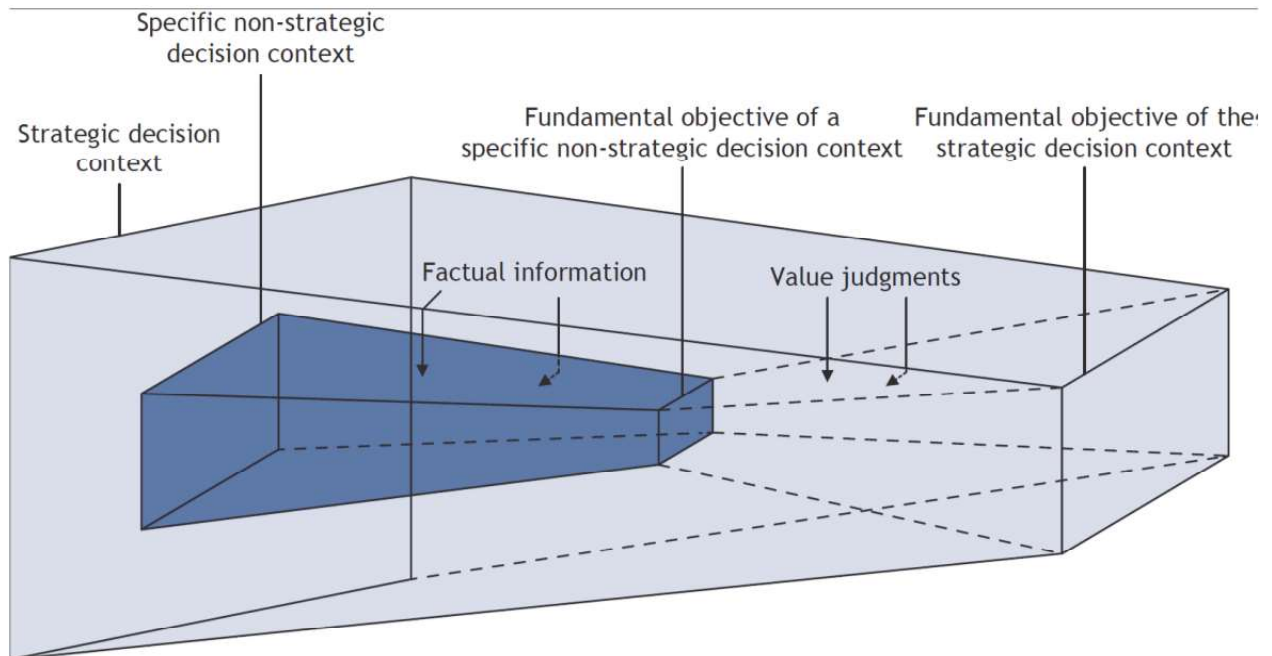
A strategic decision context is the most general decision context facing a decision-maker. It is the complete available alternatives set. However, a non-strategic decision context is not the most general decision context facing a decision-maker (Keeney, 1996).

The fundamental objective of the strategic decision context is the decision-maker's strategic objective. Objectives other than the strategic objectives are a means to achieve the latter. All decision-makers have strategic objectives, whether articulated or not. Strategic objectives guide decision-making. Strategic decisions are made over time, in pursuit of strategic objectives (Keeney, 1996).

Figure 1 represents a value-focused thinker's decision set. Two decision contexts are depicted: a strategic and non-strategic decision context. These decision-makers make decisions only after articulating their values. Consequently, they specify each value by identifying its distinguishing quality(ies). They identify their rationale for each value and employ values to assess the consequences of a particular decision or alternative. For value-focused decision-makers, values are the mechanism for increasing the likelihood that their fundamental objectives will align with their strategic objective. They aim to align all of their decision contexts with the strategic decision context (Keeney, 1996).

We employed memos throughout our research procedures. They identify our theoretical sampling procedures and the relations among our substantive and theoretical codes. Further, our memos reflect how our study's purpose emerged. Next, we present the results of our fracturing procedures and of our substantive and theoretical coding, as defined by Glaser (1978, 1998).

**FIGURE 1**  
**VALUE-FOCUSED THINKING FRAMEWORK WITH**  
**FLOW OF INFORMATION INDICATED. ADAPTED FROM KEENEY (1996) PAGE 46**





## RESULTS

We have two sets of results. The first set concerns our decision-context framework, and the second our employment taxonomy. Each set addresses fundamental-equity investors. As previously mentioned, a decision-context framework is a tool for conveying how information and information values link decision-makers who employ a common decision model (Keeney, 1996).

A taxonomy is a classification scheme. Our employment taxonomy classifies the differentiating criteria of professional investors who employ the fundamental-analysis investment approach and financial reporting information to make U.S. equity investment decisions. Hence, our employment taxonomy is a contextual typology. A typology is a theory, which sets forth differentiating criteria. A typology developed using the classical grounded theory methodology is a special class of grounded theory (Glaser, 1978).

We developed our employment taxonomy using data from a private professional investor database and descriptive information about professional investors. Our descriptive information included: industry detail and sector groups from Value Line's Selection and Opinion reports (Value Line, 2018) and four United States (U.S.) laws: the Security Exchange Act of 1934, Investment Company Act of 1940, Investment Advisers Act of 1940 and Employee Retirement Income Security Act.

### **Decision-Context Framework**

#### *Fracturing and Substantive Coding: Segment Reporting Literature*

Our fracturing of and substantive coding of segment reporting literature identified that segment disclosures are of particular interest to one investor type: those who employ the fundamental-analysis approach (decision model) to support their equity investment decisions. They find segment disclosures useful because, in comparatively analyzing data about firms, these investors devise or employ analyses that identify mispriced equity securities. The identification of mispriced equity securities is supported by three kinds of comparative analyses: cross-sectional, time series, and financial ratio. Moreover, these investors either derive or employ segment analyses that support long-term firm-wide market value forecasts (American Institute of Certified Public Accountants, 1994a, 1994b; Boersema & Van Weelden, 1992a, 1992b). Fundamental analysis decision-makers use segment disclosures "to better understand firms" (Boersema & Van Weelden, 1992b; Financial Accounting Standards Board (FASB), 1997).

#### **Fracturing and Substantive and Theoretical Coding: Investment Professionals' Literature**

Our fracturing and substantive coding of literature concerning investment professionals revealed six decision contexts that represent the contemplated activities of fundamental analysis decision model users: fundamental analysis research, equity valuations, equity selections, portfolio strategy, equity allocations, and portfolio management. We named these professionals fundamental-equity investors. Figure 2 (a theoretical code) conveys their decision contexts. Fundamental-analysis research is their core decision context and is the foundation for the remaining five decision contexts. Portfolio management is their strategic decision context; it embodies their complete set of fundamental-equity investment decisions and alternatives.

**FIGURE 2**  
**FUNDAMENTAL EQUITY INVESTORS' SIX DECISION CONTEXTS**

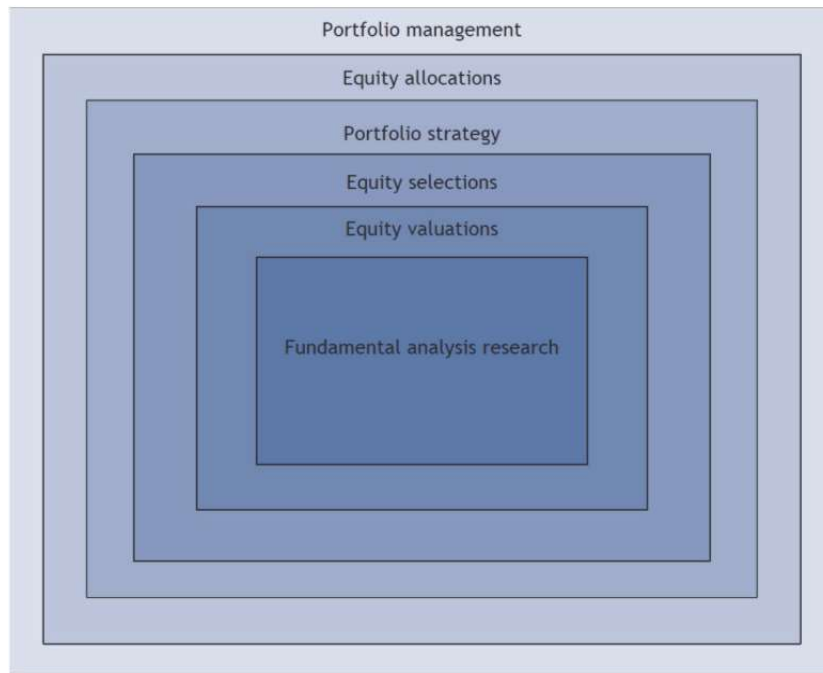
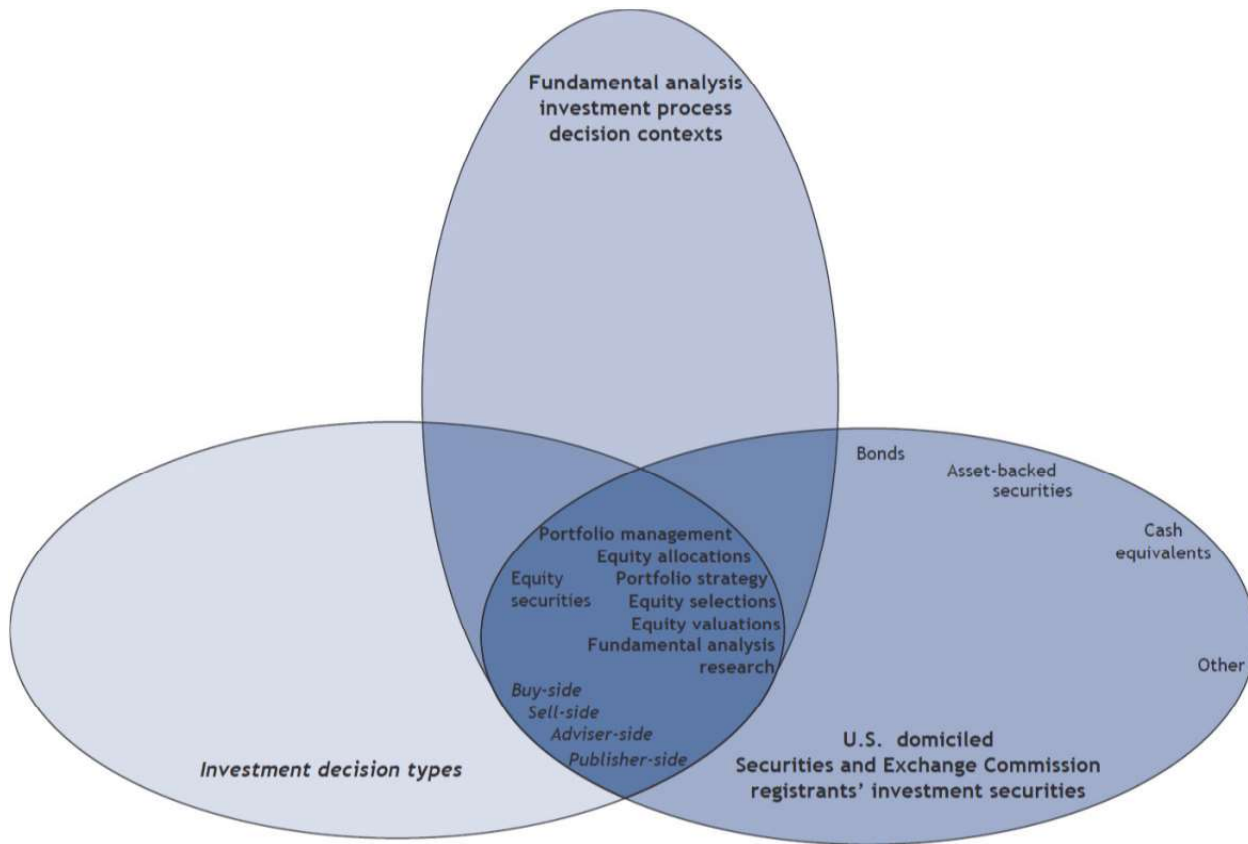


Figure 3 is a Venn diagram (a theoretical code) that depicts the decisions made by fundamental analysis investors who make decisions concerning U.S. equity securities. The overlapping area of the three ovals represents decisions made by fundamental-equity investors.

We define U.S. fundamental-equity investors as those who primarily make U.S. equity investment decisions, rather than decisions concerning bonds, asset-backed securities, cash equivalents, or other securities. These investors make decisions involving fundamental analysis research and perhaps one or more of these: equity valuations, equity selections, portfolio strategy, equity allocations, or portfolio management. Further, their decisions are one of four types: buy-side, sell-side, adviser-side, and publisher-side. We define buy-side decision types as those made to represent the interests of banks, foundations or endowments, government or regulatory agencies, insurance companies, investment companies (inclusive of mutual and hedge funds), corporate plan sponsors, public plan sponsors, or union plan sponsors. We define sell-side decision types as those made to represent the interests of brokers, dealers, or investment banks. We define adviser-side decision types as those made to represent the interests of investment management counseling firms. We define publisher-side decision types as those made to represent the interests of financial publishers.

Fundamental-equity investors are our core variable (most important issue). The reason is that understanding these investors and the fundamental analysis decision process is crucial to understanding how segment reporting impacts investors' decision frameworks. All other latent patterns of interest characterize properties or dimensions of the fundamental-equity investors.

**FIGURE 3**  
**VENN DIAGRAM OF FUNDAMENTAL EQUITY INVESTORS' INVESTMENT DECISIONS**

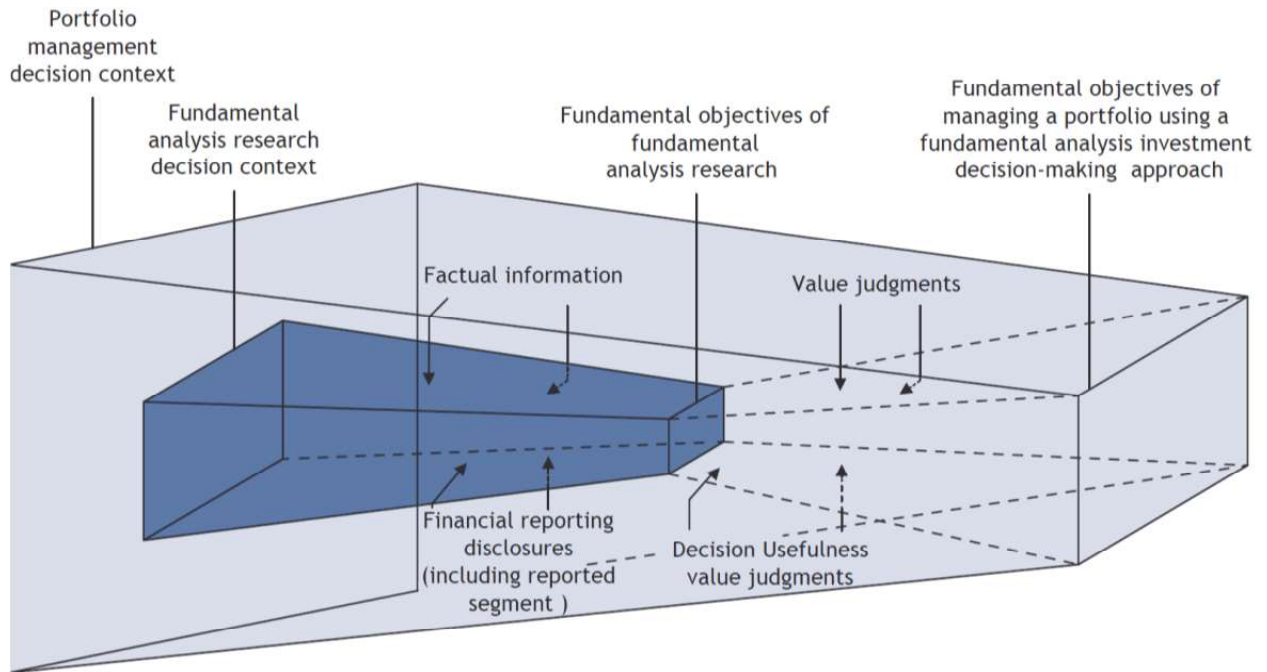


*Theoretical Coding: Value-focused Thinking Literature*

Our fracturing procedures and our substantive and theoretical coding of the previously discussed literature led us to theoretically code Keeney’s (1996) framework in the context of segment data, U.S. fundamental-equity investors’ six investment decision contexts, and their value judgements. Given that these investors employ a common decision model, they also have a common value set regarding the information they employ. These values include the qualities of decision-useful segment data. Their use of these data in any of their decisions contexts facilitates their “understandings of firms.” They decide what segment data to employ, for what purposes, based on the fundamental-analysis decision model and their decision-usefulness value judgements.

Figure 4 (a theoretical code) depicts our fundamental-equity investors’ decision-context framework. It conveys the relations among their six decision contexts, values, and value judgements. These judgements include those concerning the decision-usefulness of segment data. Their decision-usefulness values (include values such as relevance and reliability) and value judgements are a mechanism that increases the likelihood that the objectives of their decision contexts will align. Alignment leads to accomplishing the aims of the strategic decision-context, which is profitable portfolio management.

**FIGURE 4**  
**FUNDAMENTAL-EQUITY INVESTORS' VALUE-FOCUSED THINKING FRAMEWORK.**  
**ADAPTED FROM KEENEY (1996) PAGE 46.**



### **Fundamental-Equity Investors' Taxonomy**

*Fracturing and Substantive and Theoretical Coding: Value Line Data, Investor Database, and U.S. Laws*

Our fracturing and substantive coding of Value Line data (Value Line, 2018), the investor database, and certain U.S. laws led us to develop our employment taxonomy. It comprises sector, industry and generalist specialty, decision type, decision-maker type, and occupational title classifications. Our taxonomy is theoretically coded in Figure 5 and solely concerns fundamental equity investors—the professional investors most interested in financial reporting data, in particular, segment data. We next explicate the taxonomy.

#### *Sector, Industry and Generalist Specialty Classifications*

At the most abstract level, we classify fundamental-equity investors by sector and then by industry specialty. Various sector classification schemes are in use to classify industries. Examples include the North American Industry Classification System (NAICS), Global Industry Classification Standard (GICS), Thomson Reuters Business Classification (TRBC), (Phillips & Ormsby, 2016) and Value Line. Each is intended to help users identify and diversify industry- and sector-specific risk (Vermorken, 2011). For our taxonomy, we chose to employ the Value Line scheme because it classifies companies within industries based on the similarity of the companies' business activities and the similarity of the fundamental analysis methods Value Line uses to understand those activities. Our fracturing of the Value Line data and the investor database revealed that some investment professionals follow an industry or subset thereof. Others, however, follow one or more sectors or subsets thereof.

Our taxonomy comprises 11 sector classifications. Ten sectors classify the industries followed by Value Line. These are the sectors; the number of industry specialties are in parentheses: basic materials (7), consumer-cyclical (22), consumer staples (6), energy (5), financial (11), healthcare (7), industrial (22), technology (7), telecommunications (3), and utilities (7). The number of specialties range from five to twenty-two; there are 97 total industry specialties. Appendix A sets forth the sector and industry specialty names. The eleventh sector is the generalist sector; it comprises four generalist types: types 1-4.

Type 1 comprises investors who self-identify as generalists or specialize in special/emerging situations. The latter investors specialize in firms undergoing a turnaround or some other situation that has caused the market to undervalue the firms significantly. Type 2 comprises investors who specialize in two industries; however, those industries are not in the same sector. Type 3 comprises investors who specialize in firms within three industries; however, those industries are in either two or three sectors. Finally, type 4 comprises investors who self-identify as generalists, specialize in the special/emerging situations, and specialize in firms within an industry. Figure 5 depicts the generalist sector, types, and specialties.

#### *Decision Type Classifications*

When we explicated our decision-context framework, we defined four decision types: buy-side, sell-side, adviser-side and investment publisher-side. Each decision type is a component of our taxonomy and is depicted in Figure 5.

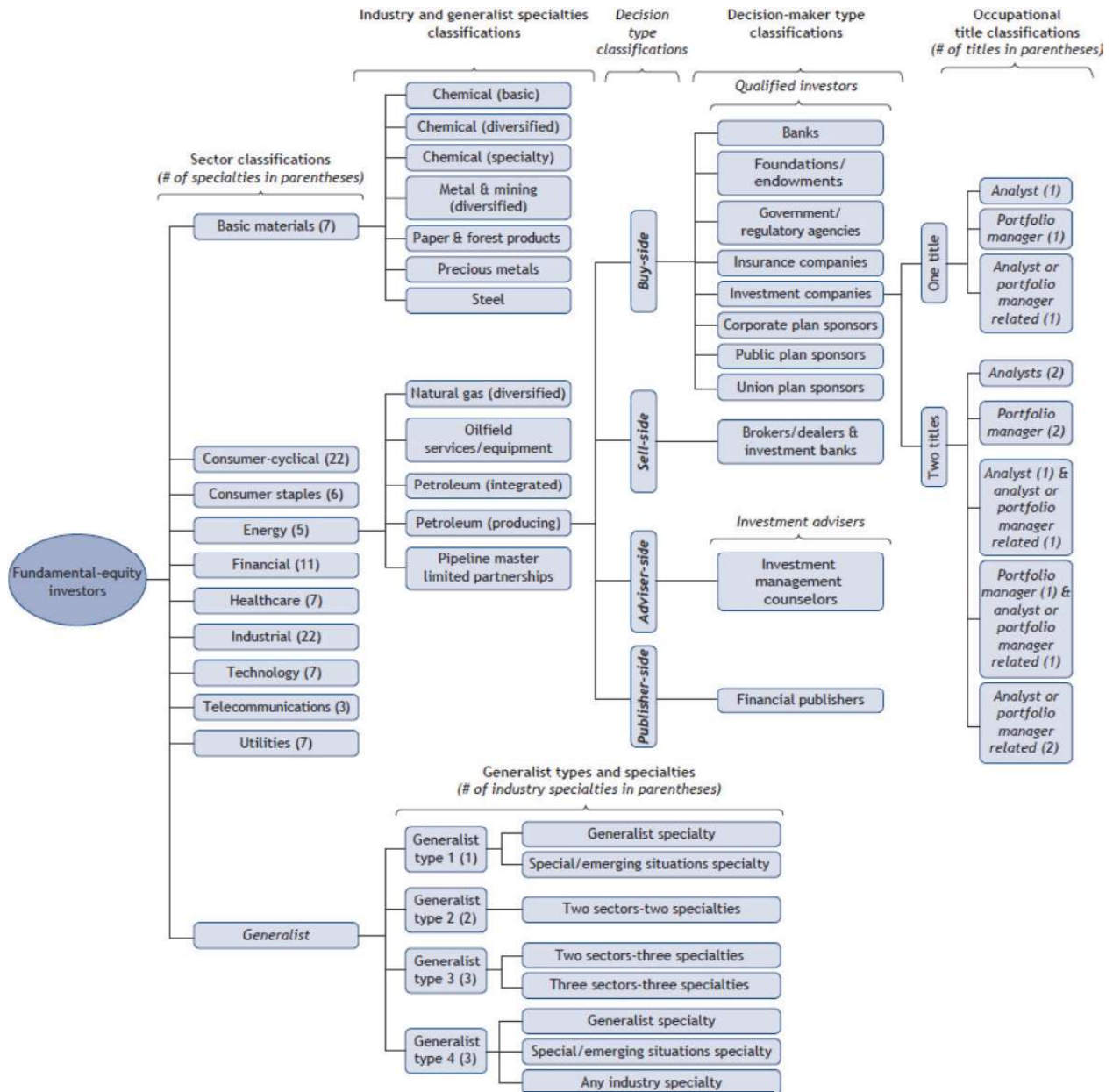
#### *Decision-maker Type Classifications*

As previously stated, a decision-maker is any decision-making entity (Keeney, 1996). A decision-maker type is a set of decision-makers with characteristics that distinguish them as a class. We include in our taxonomy three investment decision-maker types specified by U.S. laws: qualified investors ("Securities Exchange Act of 1934," 2016), investment advisers<sup>9</sup> ("Investment Advisers Act of 1940," 2015), and investment publishers ("Investment Advisers Act of 1940," 2015). Following U.S. laws, we define decision-maker types by industry of employment classification. Our taxonomy includes twelve industry of employment classes. We define fundamental-equity analysis qualified investors as professional investors who employ the fundamental analysis equity investment decision-making approach and work for the following institutions: banks, foundations or endowments, government or regulatory agencies, insurance companies, investment companies, corporate plan sponsors, public plan sponsors, union plans sponsors, brokers, dealers or investment banks. Likewise, we define fundamental-equity analysis investment advisers as professional investors who employ the fundamental analysis equity investment decision-making approach and work for investment management counseling firms or firms that provide similar services. Finally, we define fundamental-equity analysis investment publishers as professional investors who employ the fundamental analysis approach to investment decision-making and work for financial publishing firms. Each industry of employment is defined in Appendix B.

#### *Occupational Title Classifications*

Our taxonomy is designed to facilitate surveys of fundamental-equity investment professionals. Thus, our taxonomy focuses on investors who employ the fundamental analysis approach to decision making and are employed in these occupational classifications: analysts, portfolio managers, analysts or portfolio managers related, or a combination thereof. Using the database's occupational titles and descriptive information about investment professionals, we classify 12 titles into the three classifications. These are the twelve titles: equity analyst, mergers and acquisition analyst, real estate equity securities analyst, investment banker, investment counselor, portfolio manager, real estate investment manager, portfolio strategist, director or research, chief investment officer, and economist. The investor database included up to two titles per investor. Hence, our taxonomy allows for up to two occupational titles per investment professional. Appendix C sets forth our occupational titles, title descriptions, and occupational classifications.

**FIGURE 5**  
**FUNDAMENTAL-EQUITY INVESTORS EMPLOYMENT TAXONOMY**



**SUMMARY AND CONCLUSIONS**

This field study employed the classical grounded theory (CGT) methodology to generate a theory about professional investors. Our theory comprises a decision-context framework and an employment taxonomy. Our framework concerns decision-makers, decision contexts, decisions, and financial reporting information inclusive of segment data. We found that decision usefulness, a desired quality of segment data, is of particular interest to one decision-maker class: fundamental-equity investors. Segment data are essential to the fundamental analysis decision model, which they employ. These investors primarily make equity investment decisions and use segment data to *improve their understandings of firms*.



Six decision contexts jointly represent the decisions made by fundamental-equity investors: fundamental analysis research, equity valuations, equity selections, equity allocations, portfolio strategy, and portfolio management. Fundamental analysis research is their core decision context. However, portfolio management is their strategic decision context because it comprises all alternative actions available to them. Fundamental-equity investors' common decision model gives them a common set of data values. These values include the qualities of decision-useful data and increase the likelihood that these investors' decision contexts align and that their profit objectives are attained.

Of the six decision contexts, two are often examined by accounting researchers: fundamental analysis research and equity valuations or derivations thereof, (Barron, Byard, & Yu, 2017; Brown et al., 2015, 2016; de Jong et al., 2014; Givoly, Li, Lourie, & Nekrasov, 2017; Schröder & Yim, 2017). We could find no mention of the other four in the accounting literature. Accordingly, we suggest these are avenues for future accounting research.

Our employment taxonomy demonstrates that fundamental-equity investors can be classified on five dimensions: sector, industry or generalist specialty, decision type, decision-maker type, and occupational title. That is, these investors are either sector specialists or generalists. Furthermore, they specialize in one or more industries or components thereof. They make one of four decision types: buy-side, sell-side, adviser-side or investment publisher-side. Their decision-maker type is qualified investor, investment adviser, or investment publisher. Their occupational title classifications are: analysts, portfolio management, or analysts or portfolio manager related.

The accounting literature includes research addressing buy-side, sell-side, and investment publisher-side decisions (Brown et al., 2015, 2016; Groyberg, Healy, Serafeim, & Shanthikumar, 2013; Prombutr, Lockwood, Zhang, & Steven V, 2016; Ramnath, Rock, & Shane, 2008; Schipper, 1991; Zhang, Tang, Prombutr, & Le', 2016). However, we could not find studies exploring adviser-side decisions<sup>10</sup>. Future researchers should address this decision type. We acknowledge, however, that investment advisers may be difficult to access.

Our employment taxonomy solely concerns investment professionals who employ the fundamental analysis approach to making equity investment decisions. One or more of the five dimensions that compose the taxonomy could be used by survey researchers to identify their target populations, specify their sample frames, or assess the representativeness of their obtained survey responses. Our taxonomy could reduce surveyors' costs by providing them with a better understanding of precisely who should be surveyed. Researchers who apply our taxonomy should experience improved response rates, as they will likely target and obtain responses from populations who have an interest in the survey questions and results. In searching the literature, we could not find such an employment taxonomy. Use of our taxonomy by future researchers would facilitate survey study executions and interstudy comparisons.

Researchers seeking to study fundamental-equity investment professionals often find it difficult to access them. Tools that clarify who should be studied could foster cooperation between researchers and members of the investment community. Our employment taxonomy is such a tool.

## ENDNOTES

1. "All is data" is a CGT dictum. It means that any data source may compose the initial or subsequent datasets. Hence, employed data may be from interviews, observations, documents, etc. The selection of initial data is subjective, based on the researcher's interests (Glaser, 2007).
2. Latent patterns are latent variables. A latent variable is not observable; however, its presence is inferred from a series of observed indicators.
3. Latent patterns with conceptual properties are those that have reflective indicators. Reflective indicators move in tandem. For example, reflective indicators of mental inebriation might include blood alcohol level, driving ability, MRI brain scan, and performance on mental calculations. A change in one indicator will lead to a change in the others. However, latent patterns with conceptual dimensions are those that have formative indicators. Formative indicators form or cause the creation of or change in the latent pattern, but do not move in tandem. For example, formative indicators of mental inebriation might include a change in

- quantity of beer, wine, and hard liquor consumed. A change in any of those indicators does not necessarily lead to a change in one or more of the others (Chin, 1998).
4. Glaser (1978) presents thirty abstract relations sets; these are called theoretical coding families. All literatures employ theoretical coding families. Coding families facilitate abstracting a theory and expressing it diagrammatically. The most familiar theoretical code is the independent-dependent variable model (Glaser (1978).
  5. This decision model focuses on understanding firms and the factors that affect them. Discounted cash flow techniques are employed to estimate firms' long-term firm-wide market values (Damodaran, 2002; Whitman & Shubik, 2006).
  6. We utilized the value-focused thinking methodology because it enables us to present a framework for articulating the relations among decision-makers, decisions, values, decision contexts, and information.
  7. We searched several literatures (accounting, information systems, library sciences, economics, and psychology), but could not find a non-tautological definition for information.
  8. A means of linking seemingly diverse decision-makers and their common decision model is important, because accounting theorists have debated whether firms should disclose information based on decision-maker needs or decision model needs. For examples of this debate see (Fraser & Nobes, 1985a, 1985b; Sterling, 1972).
  9. Investment adviser is a legal term. It refers to an individual registered with the SEC or a state securities regulator. Investment advisers are paid to provide investment advice.
  10. It is possible that prior researchers have included adviser-side decision makers in the buy-side category.

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**APPENDIX A**

**SECTOR AND INDUSTRY SPECIALTY CLASSIFICATIONS**

Sectors	Industry specialties
Basic materials	Chemical (basic)
Basic materials	Chemical (diversified)
Basic materials	Chemical (specialty)
Basic materials	Metal & mining (diversified)
Basic materials	Paper and forest products
Basic materials	Precious metals
Basic materials	Steel
Consumer-cyclical	Advertising
Consumer-cyclical	Apparel
Consumer-cyclical	Auto parts
Consumer-cyclical	Automotive
Consumer-cyclical	Cable tv
Consumer-cyclical	Educational services
Consumer-cyclical	Entertainment
Consumer-cyclical	Entertainment technology
Consumer-cyclical	Foreign electronics/entertainment
Consumer-cyclical	Furniture/home furnishing
Consumer-cyclical	Homebuilding
Consumer-cyclical	Hotel/gaming
Consumer-cyclical	Newspaper,
Consumer-cyclical	Publishing
Consumer-cyclical	Recreation
Consumer-cyclical	Restaurant
Consumer-cyclical	Retail automotive
Consumer-cyclical	Retail building supply
Consumer-cyclical	Retail hardlines
Consumer-cyclical	Retail softlines
Consumer-cyclical	Retail store
Consumer-cyclical	Shoe
Consumer staples	Beverage
Consumer staples	Toiletries/cosmetics
Consumer staples	Food processing
Consumer staples	Tobacco
Consumer staples	Retail/wholesale food
Consumer staples	Household products
Energy	Natural gas (diversified)
Energy	Oilfield services/ equipment
Energy	Petroleum (integrated)
Energy	Petroleum (producing)
Energy	Pipeline master limited partnerships

**SECTOR AND INDUSTRY SPECIALTY CLASSIFICATIONS (CONTINUED)**

Sectors	Industry specialties
Financial	Bank
Financial	Bank (midwest)
Financial	Brokers and exchanges
Financial	Financial services diversified
Financial	Insurance (life)
Financial	Insurance property/casualty)
Financial	Investment banking
Financial	Public/private equity
Financial	R.E.I.T.
Financial	Reinsurance
Financial	Thrift
Health care	Biotechnology
Health care	Drug
Health care	Healthcare information
Health care	Medical services
Health care	Medical supplies (invasive)
Health care	Medical supplies (non-invasive)
Health care	Pharmacy services
Industrial	Aerospace/defence
Industrial	Air transport
Industrial	Building materials
Industrial	Diversified companies
Industrial	Electrical equipment
Industrial	Electronics
Industrial	Engineering & construction
Industrial	Environmental
Industrial	Funeral services
Industrial	Heavy truck/equipment makers
Industrial	Human resources
Industrial	Industrial services
Industrial	Information services
Industrial	Machinery
Industrial	Maritime
Industrial	Metal fabricating
Industrial	Office equipment & supplies
Industrial	Packaging & container
Industrial	Power
Industrial	Precision instrument
Industrial	Railroad
Industrial	Trucking
Technology	Computer & peripherals
Technology	Computer software
Technology	E-commerce

**SECTOR AND INDUSTRY SPECIALTY CLASSIFICATIONS (CONTINUED)**

Sectors	Industry specialties
Technology	Internet
Technology	IT services
Technology	Semiconductor
Technology	Semiconductor (capital equipment)
Telecommunications	Telecom equipment
Telecommunications	Telecom services
Telecommunications	Wireless networking
Utilities	Electric utility (central)
Utilities	Electric utility (east)
Utilities	Electric utility (west)
Utilities	Natural gas utility
Utilities	Oil/gas distribution
Utilities	Telecom utility
Utilities	Water utility

**APPENDIX B**

**DECISION-MAKER TYPES, AND INDUSTRY OF EMPLOYMENT CLASSIFICATIONS AND DEFINITIONS**

Decision-maker types	Industry of employment	
	Classifications	Definitions
Qualified investors	Banks	<p>Banks are primarily companies doing business as one of the following: (a) a banking institution or federal savings association doing business under the laws of the United States or any of its states; (b) a member of the federal reserve system; and (c) any other banking institution or savings association as defined by the Home Owners' Loan Association Act ("Securities Exchange Act of 1934," 2016, p. 10).</p> <p>A bank is a <i>qualified investor</i> ("Securities Exchange Act of 1934," 2016, p. 28).</p>
Qualified investors	Brokers, dealers, investment bankers	<p>A broker is "any person engaged in the business of effecting transactions in securities for the account of others" ("Securities Exchange Act of 1934," 2016, p. 4).</p> <p>A dealer is "any person engaged in the business of buying and selling securities for such person's own account . . . through a broker or otherwise" ("Securities Exchange Act of 1934," 2016, p. 9).</p> <p>An investment banker is "any person engaged in the business of underwriting securities issued by other persons" ("Investment Company Act of 1940," 2010, p. 8). While the following may underwrite securities issued by others, they are not investment bankers: (1) an investment company, (2) a person who acts as an underwriter in isolated transactions that are not part of a regular business, and (3) any person that acts as an underwriter for one or more investment companies ("Investment Company Act of 1940," 2010, p. 8).</p> <p>Brokers, dealers, and investment bankers<sup>1</sup> are <i>qualified investors</i> ("Securities Exchange Act of 1934," 2016, p. 28).</p>
Investment publishers	Financial publishers	<p>A financial publisher is "the publisher of a bona fide newspaper, news magazine or business or financial publication of general and regular circulation" ("Investment Advisers Act of 1940," 2015, p. 3).</p>

**DECISION-MAKER TYPES, AND INDUSTRY OF  
EMPLOYMENT CLASSIFICATIONS AND DEFINITIONS (CONTINUED)**

Decision-maker types	Industry of employment	
	Classifications	Definitions
Qualified investors	Foundations/ endowments	<p>“A foundation is an entity that supports charitable activities by making grants to unrelated organizations or institutions or to individuals for scientific, educational, cultural, religious, or other charitable purposes” (Council on Foundations, 2018).</p> <p>A foundation is founded and supported by an endowment. An endowment is a donation consisting of investment funds or other property. The donor may or may not stipulate how the endowment is to be used. However, generally, the donor will specify that the principle is to remain intact, but the investment income can be used (Investopedia, 2018).</p> <p>A foundation may be organized as either a trust or corporation. A trust whose security purchases are directed by one of the following qualified investors is considered a <i>qualified investor</i>: a bank, broker-dealer, insurance company, investment company, or plan sponsor ("Securities Exchange Act of 1934," 2016, p. 29).</p>
Qualified investors	Government/ regulatory agencies	<p>A U.S. government or regulatory agency is a department of the government that has responsibility for the legislation (acts and regulations) impacting a specific government sector. Such a department is established by the U.S. Congress (eInvestigator.com, 2018).</p> <p>Any governmental agency or instrumentality that owns, and discretionarily invests, at least \$50,000,000 is a <i>qualified investor</i> ("Securities Exchange Act of 1934," 2016, p. 29).</p>
Qualified investors	Insurance companies	<p>An insurance company is a firm that has three attributes. First, it is organized as an insurance company. Second, its main business activity is writing insurance or reinsuring of risks underwritten by other insurance companies. Third, it is subject to the supervision of a state insurance commissioner or of a similar state official or state agency ("Investment Company Act of 1940," 2010, p. 5).</p> <p>An insurance company is a qualified investor ("Securities Exchange Act of 1934," 2016, p. 28).</p>



**DECISION-MAKER TYPES, AND INDUSTRY OF  
EMPLOYMENT CLASSIFICATIONS AND DEFINITIONS (CONTINUED)**

Decision-maker types	Industry of employment	
	Classifications	Definitions
Qualified investors	Investment companies	An investment company is any issuer of securities that engages in at least one of the three activities. The first activity is to hold itself out as a firm that primarily engages or proposes to engage in the business of investing, reinvesting, or trading in securities. The second, is to engage or propose to engage in the business of issuing installment type face-amount certificates; or to have been engaged in that business and to have outstanding certificates. The third, is to have engaged or to propose to engage in the business of investing, reinvesting, owning, holding, or trading in securities and to own or propose to acquire investment securities valued at more than forty percent of the firm's total consolidated assets, excluding Government securities and cash items ("Investment Company Act of 1940," 2010). A mutual fund is a type of investment company. An investment company is a <i>qualified investor</i> ("Securities Exchange Act of 1934," 2016, p. 28).
Investment advisers	Investment management counselors	An investment management counselor firm is a firm that employs investment advisers. An <i>investment adviser</i> is any person who receives compensation for either or both of the following services: (1) providing personalized advice directly or through publications or writings, about any of the following (a) the value of securities or (b) the advisability of investing in, purchasing, or selling securities; or (2) issuing or officially announcing analyses or reports about securities ("Investment Advisers Act of 1940," 2015, p. 2)

**DECISION-MAKER TYPES, AND INDUSTRY OF  
EMPLOYMENT CLASSIFICATIONS AND DEFINITIONS (CONTINUED)**

Decision-maker types	Industry of employment	
	Classifications	Definitions
Qualified investors	Corporate plan sponsors	<p>Plan means an employee welfare benefit plan or an employee pension benefit plan, or a plan which is both. An employee welfare benefit plan provides benefits other than pensions on retirement or death, for its participants or their beneficiaries through the purchase of insurance or otherwise. An employee pension plan provides either retirement income to employees or provides for the deferral of employee income until the employee is terminated or thereafter ("Employee Retirement Income Security Act," 2017, p. 1) .</p> <p>A plan sponsor is an employer that establishes or maintains an employee benefit plan. A corporation may be a plan sponsor ("Employee Retirement Income Security Act," 2017, p. 2).</p> <p>An employee benefit plan is a <i>qualified investor</i>, if the plan investment decisions are made by a plan fiduciary. A plan fiduciary may be a bank, a savings and loan association, an insurance company, or registered investment adviser ("Securities Exchange Act of 1934," 2016, p. 29).</p>
Qualified investors	Public plan sponsors	Same as corporate plan sponsor, except the plan is established by a public entity.
Qualified investors	Union plan sponsors	Same as corporate plan sponsor, except the plan is established by a union.

**ENDNOTE**

1. The SEC Act of 1934 does not explicitly identify investment bankers as qualified investors. We categorized investment bankers as qualified investors because any firm operating as an investment banker is highly likely to meet qualified investor definition criterion (A)(xi): "any corporation, company, or partnership that owns and invests on a discretionary basis, not less than \$25,000,000 in investments" ("Securities Exchange Act of 1934," 2016, p. 28).

## OCCUPATIONAL TITLES, DESCRIPTIONS, AND CLASSIFICATIONS

Occupational titles	Title descriptions	Occupational classifications
Equity analyst	Analyses, values, and recommends equity securities.	Analysts
Mergers and acquisition analyst	Analyses, values, and recommends equity securities for merger and acquisition purposes.	Analysts
Real estate equity securities analyst	Analyses, values, and recommends real estate equity securities.	Analysts
Investment banker	Analyses and values securities for public offering; targets and values mergers and acquisitions for corporate clients.	Analysts
Investment counselor	Manages portfolios of high net-worth clients. Identifies investors' objectives and develops investment policies. Manages client relationships.	Portfolio managers
Portfolio manager	Manages client investment portfolios. Makes investment decisions, inclusive of security selection, industry or sector selection, and portfolio construction.	Portfolio managers
Real estate investment manager	Specializes in managing real estate investment securities. Develops investment policies and monitors performance.	Portfolio managers
Portfolio strategist	Applies investment knowledge to develop and analyse investment strategies. These strategies are designed to achieve investors' goals.	Analysts or portfolio managers related

**APPENDIX C**

**OCCUPATIONAL TITLES, DESCRIPTIONS, AND CLASSIFICATIONS (CONTINUED)**

Occupational titles	Title descriptions	Occupational classifications
Director of research	Develops and maintains the firm’s research framework, which includes its assumptions, concepts, values and practices. Manages, directs, oversees, and develops the firm’s investment professional team. Guides analysts’ development of their fundamental analysis and related models. Establishes and maintains rigorous research standards. Understands the performance of industry sectors and companies within the sectors. Participates in and publishes primary research. Develops processes that integrate the firm’s research into processes managed by portfolio teams that serve the firm’s clients. Represents the firm in due diligence and client meetings (Calvert Investments, 2017).	Analysts or portfolio managers related
Chief investment officer	Reports to executive management. Implements the investment objectives and policies set forth by the Investment Committee. Oversees an investment portfolio and professional investment team, which includes junior and senior analysts, strategists, and portfolio managers. Provides investment leadership and management with the aim of maximizing portfolio performance. Responsible for portfolio construction, manager selection, investment policy adherence, asset allocation, risk management, and meeting performance benchmarks. Identifies, evaluates, and executes investment strategies, which includes selecting and monitoring third-party investment managers. Develops in-house investment managers (University of Pittsburgh, 2018).	Analysts or portfolio managers related
Economist	Develops economic outlooks to be used to formulate investment strategies and portfolio structuring.	Analysts or portfolio managers related