

Research Study

How Are Investment Decisions Made?

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Richard has spoken widely to industry groups, and has appeared as a keynote speaker at a number of conferences. Many of my recent talks have been in the field of behavioural finance, which is increasingly recognized by financial professionals as a body knowledge that can improve product design, optimize client management and refine money management techniques.

Richard's book, *What Kind of an Investor Are You?* has recently been published by Insomniac Press. This book deals with investment process, in particular, what it takes to be a do-it-yourself investor, and whether it is best to invest in mutual funds, individual securities or index products. It also stresses the role of investor psychology and presents evidence on the behaviour and performance of retail investors.

Table of Contents

1.	Executive Summary	247
2.	Summary of Recommendations	249
3.	Introduction	250
4.	Previous Evidence on Investor Behaviour and Decision-Making	252
	i. The Ideal: <i>Homo Economicus</i>	252
	ii. The Reality: Limited Processing Abilities and Inattention, Heuristics, Biases, Overconfidence and Excessive Emotion.....	252
	a) Limited Processing Abilities and Inattention.....	252
	b) Heuristics and Biases.....	253
	c) Overconfidence.....	254
	d) Excessive Emotion and Frame Dependence.....	255
	iii. Bad Decisions Made by Retail Investors.....	256
	a) Many Do Not Understand Asset Allocation and Risk, and so Make Decisions Inconsistent with Their Risk Tolerance.....	257
	b) Many Are Subject to Representativeness in Fixating on Past Performance When They Choose Stocks or Mutual Funds.....	258
	c) Investors Trade Excessively and Under-Diversity.....	259
	d) Many Over-Invest in Local and Domestic Markets.....	260
	e) Many Allow Emotion to Unduly Influence Their Investment Decisions.....	261
	f) Information Sources Accessed by Retail Investors.....	261
	g) Many Are Too Credulous of the Information That They Are Presented With.....	262
	h) Many Are Too Influenced by the Form of the Information.....	263
	iv. The Participation Decision: Why Is It That Some People Do Not Participate at All in Financial Markets?	263
	a) Transaction Costs.....	264
	b) Trust in Financial Markets.....	265
	v. Flawed Institutional Investor Decision-Making.....	266
	a) Process of Institutional Investors.....	266
	b) Knowledge Levels and Behavioral Mistakes Made by Institutional Investors.....	267
	c) Principal-Agent Issues.....	269
5.	Why the Legislative and Regulatory Environment Matter	270
	i. Should the Public Sector Intervene?	270
	ii. What Should be Disclosed?	270
	iii. Disclosure vs. Effective Disclosure.....	272
6.	Retail Investor Survey	273
	i. Methodology of Retail Survey.....	273
	ii. Basic Profile of Canadian Investors.....	274
	a) Demographics.....	274
	b) Decision-Making Style.....	275
	c) Portfolio Composition.....	276
	d) Do-it-Yourselfers and Other Sophisticated Groups.....	276
	iii. Behavioural Bias, Knowledge, Investment Personality and Trust.....	277
	a) Overconfidence.....	278

	b)	Emotion.....	278
	c)	Representatives.....	279
	d)	Understanding of Diversification.....	279
	e)	Understanding of Asset Allocation.....	280
	f)	Investment Personality.....	281
	g)	Trust in the Financial System.....	281
iv.		Using Investor Characteristics to Account for Behaviour.....	282
	a)	Listing of Demographic and Behavioural Variables.....	282
	b)	Determinants of Risk-Taking.....	282
	c)	Determinants of Foreign Exposure.....	283
v.		Process of Decision-Making and the Use of Information.....	284
	a)	What Information Sources Are Accessed?.....	285
	b)	Hardcopy vs. Electronic Preferences.....	286
	c)	What Information is Viewed as Useful?.....	287
	d)	What Information Triggers Transactions?.....	287
	e)	Investor Familiarity with Portfolio Characteristics.....	288
vi.		Corporate Bonds and Decision-Making.....	289
vii.		Attitudes and Desires.....	289
	a)	Attitudes About Disclosure.....	289
	b)	Desires to be Addressed.....	290
viii.		Summary.....	291
7.		Institutional Investor Survey.....	292
	i.	Methodology of Institutional Investor Survey.....	292
	ii.	Basic Profile of Institutional Investors.....	292
	a)	Demographics.....	292
	b)	Decision-Making Style.....	293
	c)	Portfolio Characteristics.....	293
	d)	Performance Attribution.....	294
	e)	Investment Style and Security Analysis.....	294
	iii.	Financial Reporting.....	294
	a)	Importance and Quality of Disclosure.....	294
	b)	The Impact of Regulation FD.....	295
	c)	Disclosure Reliability, Trust and Enforcement.....	296
	d)	Information Burden and Standardization of Reporting.....	297
	e)	Additional Disclosure.....	298
	f)	Electronic Dissemination.....	299
iv.		Views on Efficiency and Risk.....	300
	a)	Market Efficiency.....	300
	b)	Passive Investment.....	300
	c)	Risk.....	301
v.		Process of Decision-Making and the Use of Information.....	301
	a)	Potential Information Sources.....	301
	b)	What Information is Viewed as Useful?.....	302
	c)	Institutional Investor Best Practices.....	303
vi.		Summary.....	303
8.		Recommendations and Discussion.....	305
		References	
		Exhibits	

Exhibit 1: Table of demographic variables.....	320
Exhibit 2: What percentage of time was assistance used?.....	321
Exhibit 3: What types of advisors were used?.....	322
Exhibit 4: How often was the portfolio examined?.....	323
Exhibit 5: Asset Classes.....	324
Exhibit 6: Total investable assets.....	325
Exhibit 7: Characteristics of investor sub samples.....	326
Exhibit 8: Description of all independent variables.....	327
Exhibit 9: Correlation matrix.....	328
Exhibit 10: Equity exposure.....	329
Exhibit 11: Determinants of equity exposure.....	330
Exhibit 12: Foreign exposure.....	331
Exhibit 10: Equity exposure.....	329
Exhibit 11: Determinants of equity exposure.....	330
Exhibit 12: Foreign exposure.....	331
Exhibit 13: Determinants of foreign exposure.....	332
Exhibit 14: Information sources accessed (stockholders).....	333
Exhibit 15: Information sources accessed (mutual fund unitholders).....	334
Exhibit 16: Determinants of information usage (stockholders).....	335
Exhibit 17: Determinants of information usage (mutual fund unitholders).....	336
Exhibit 18: Electronic usage (stockholders).....	337
Exhibit 19: Electronic usage (mutual fund unitholders).....	338
Exhibit 20: Comfort in electronic access (stockholders).....	339
Exhibit 21: Comfort in electronic access (mutual fund unitholders).....	340
Exhibit 22: Determinants of comfort in electronic access (stockholders).....	341
Exhibit 23: Determinants of comfort in electronic access (mutual fund unitholders).....	342
Exhibit 24: Perceived usefulness of information (stockholders).....	343
Exhibit 25: Perceived usefulness of information (mutual fund unitholders).....	344
Exhibit 26: Transaction triggers (stockholders).....	345
Exhibit 27: Transaction triggers (mutual fund unitholders).....	346
Exhibit 28: Familiarity with portfolio characteristics (stockholders).....	347
Exhibit 29: Familiarity with portfolio characteristics (mutual fund unitholders).....	348
Exhibit 30: How often are certain portfolio activities conducted? (stockholders).....	349
Exhibit 31: How often were certain portfolio activities conducted? (mutual fund unitholders).....	350
Exhibit 32: Transaction triggers (corporate bondholders).....	351
Exhibit 33: Attitudes about mandatory disclosure of information.....	352
Exhibit 34: Determinants of willingness to increase investment.....	353
Exhibit 35: Desires to be addressed.....	354
Exhibit 36: Decision-making style of institutional investors.....	355
Exhibit 37: Importance of various approaches to the investment process.....	356
Exhibit 38: Importance of various inputs to security analysis process.....	357
Exhibit 39: Beliefs about market anomalies.....	358
Exhibit 40: Importance of information disclosed by reporting issuers.....	359
Exhibit 41: Importance of other information.....	360

1. Executive Summary

This report presents the results of two surveys of investors designed to investigate how investment decisions are made in Canada. Issues of interest include the knowledge level of investors and the extent to which they are subject to behavioural biases; what information, whether mandated corporate disclosures or information provided by third parties, is used; and the openness of investors to electronic disclosure.

Investors are a diverse group. Most notably, they differ markedly in terms of sophistication. While some retail investors are fairly sophisticated, a dichotomous approach – institutional vs. retail – makes the most sense. One good reason is that the methodologies for obtaining information on how investors operate will of necessity differ between institutional and retail investors. A web-based self-administered survey of 1,600 retail investors was conducted. Conversely, a small but select group of institutional investors (20) was surveyed via direct interviews.

The major findings coming from the retail survey were as follows:

1. Most retail investors make most of their investment decision decisions with the help of financial professionals. There is, however, a small minority of do-it-yourselfers.
2. Knowledge levels are often low and decisions are tainted by behavioural bias. Some are overconfident, subject to emotion and chase winners (when they should be contrarians). In addition, the ability to understand diversification and asset allocation is quite limited.
3. Despite these problems, mandatory disclosures and third-party information are being used by many investors.
4. Interestingly, that which is used is not viewed as particularly useful by some. Information overload and lack of plain language may be factors.
5. Greater information usage is linked with markers of sophistication.
6. Mutual fund unit holders rely much less on information than direct investors.
7. Information does not tend to be accessed electronically (except by a small minority), but there is a reasonable level of openness to electronic disclosure.
8. Along these lines, a slim majority embraced a “continuously updated disclosure document available online that consolidates all relevant information.”
9. There seems to be a desire for greater (and clearer) disclosure on fees and returns. The needs and desires for greater fee disclosure are strongest for mutual fund holders.

The major findings coming from the institutional survey were as follows:

1. There is basic institutional investor confidence that the disclosure system and company reporting are reliable.
2. The quantity of information is seen as sufficient, but a higher degree of quality is desired. Improved quality could include, for example, providing a more segmented reporting of financial information for large companies, especially by business line.
3. Electronic dissemination is sufficient to meet most institutional investor needs. Electronic disclosure format could be streamlined and better organized. SEDAR is viewed as superior to EDGAR.
4. Investment decision-making is still reliant upon unique insights. Information chill has moved the focus from company management-watching to other sources.
5. Enforcement, though an effective tool for enhancing trust, needs to be tightened up. Enforcement actions, especially if notice is appropriately publicized, can benefit the system.
6. Information burden is viewed as a concern. Costly disclosure requirements, for example, can be a major burden for smaller issuers, and may drive some companies from public markets.

2. Summary of Recommendations

Based on these findings, the authors of this report make the following set of recommendations:

Recommendation #1: Regulators need to recognize and explicitly take into account the limitations of many retail investors.

Recommendation #2: Greater attention in the future should be paid by regulators to the form (rather than the content) of disclosure.

Recommendation #3: Regulators should move toward increased disclosure on fees and rates of return.

Recommendation #4: Careful attention needs to be paid by regulators to the practices and credentials of registered representatives, especially those selling mutual funds.

Recommendation #5: Regulators should encourage the movement towards greater reliance on electronic disclosure that is already in full swing.

Recommendation #6: Enforcement needs to be strengthened by regulators.

3. Introduction

Canada needs a 21st Century securities legislative and regulatory environment. Because dealing with multiple jurisdictions is becoming an increasing burden for companies, many are calling for a single securities regulator.¹ Additionally, investor confidence appears to be on the wane as the press has been awash the last few years with stories about Enron, Worldcom, Hollinger and mutual fund market timing. While some of these scandals have occurred south of the border, there is a perception among investors that fairness, consistency and strength of enforcement in Canada are lacking.² With other countries seeking to reform corporate governance and disclosure, the Sarbanes-Oxley Act of 2002 in the U.S. being a notable example, Canada can only be left behind in the global competition for scarce international investment if it does not address these issues. For these reasons, the Task Force to Modernize Securities Legislation in Canada of the Investment Dealers Association (hereafter the Task Force) is most timely.

The goal of the Task Force is to “recommend revisions to Canadian securities legislation and regulation to achieve a dynamic, fair, efficient and competitive capital market.”³ With this in mind, undertaking a research study on how investment decisions are made in Canada constitutes a needed piece of the puzzle. We intend to investigate how investors make decisions. How knowledgeable are they? What behavioural biases are they subject to? What information – whether mandated corporate disclosures or filtered data and analysis provided by third parties – do they use? How are transactions triggered? Of course investors are far from homogeneous. In particular, they differ markedly in terms of sophistication. One can think in terms of a continuum ranging from the very sophisticated (usually savvy portfolio managers) to the very unsophisticated (certain ill-informed retail investors). Additionally, there is an army of financial professionals providing information intermediation services to investors, ranging from financial planners to investment counsellors to mutual fund company representatives to bank representatives to brokers to analysts and CIOs.

While there will be a fairly sophisticated group of retail investors, a dichotomous approach – institutional vs. retail – makes the most sense. One good reason is that the methodologies for obtaining information on how investors operate will of necessity differ between institutional and retail investors. While a web-based self-administered survey of retail investors will be conducted, a small but select group of

¹ See *Wise Persons' Committee to Review the Structure of Securities Regulation in Canada* (2003).

² See *AIMR* (2003).

³ See Terms of Reference of the *Task Force to Modernize Securities Legislation in Canada* of the Investment Dealers Association.

institutional investors (which we take to include supporting professionals) will be surveyed via direct interviews.

Why will it be useful to the *Task Force* to know how investment decisions are made in Canada? Some of the themes that we address are as follows:

1. If investors, especially less sophisticated retail ones, are not making decisions optimally because they have low levels of knowledge and are subject to behavioural bias, are there ways to make their job easier, to provide them with the information that they need to move them towards better decision-making? We need to examine evidence on the existence of such biases and also consider mechanisms that might move people in the right direction.
2. Judicious investment decisions, whether made by institutional investors or sophisticated amateurs, rely on the provision of mandated information. Investors need to have the right information, and it needs to be in a form that they can access. Of the currently mandated disclosures, are some found to be more useful than others? Are there desires for additional items (whether new disclosures or repackaging of old disclosures) that are currently not being satisfied? Is electronic disclosure viewed to be adequate?
3. Efficiency and competitiveness are enhanced by liquidity. Liquidity in turn requires active involvement by as many investors (current or potential) as possible. Are there any features of the present environment, such as a lack of trust and a perception of weak enforcement, holding some people back?

In what follows, Part 4 discusses previous evidence on how investors, both retail and institutional, make investment decisions. Since much of the Task Force's thrust is to examine the legislative and regulatory environment, a brief discussion, in Part 5, on the potential role of securities legislation and regulation to achieve economically desirable goals is in order. The next two sections describe what can be learned from the original components of this research. Part 6 describes the findings from the retail investor survey. Part 7 describes the findings from the institutional investor survey. Part 8 proposes a few recommendations (for which supporting discussion is provided) that the Task Force may want to consider making to securities legislators and regulators.

4. **Previous Evidence on Investor Behaviour and Decision-Making**

i. **The Ideal: *Homo Economicus***

Models in economics and finance are formulated as if the typical decision-maker is Mr. Spock (from Star Trek), an individual with almost unlimited cerebral RAM. Such a decision-maker considers all relevant information, including the motives of all parties (which can include the motive to deceive) and comes up with the best decision under the circumstances. Take the capital asset pricing model (CAPM), a model famous and important enough to have won for William Sharpe the 1990 Nobel Prize for Economic Science. This model assumes that investors are capable of studying the universe of securities in order to come up with all required model inputs.⁴ In what follows, we argue that the typical decision-maker falls well short of this ideal.

ii. **The Reality: Limited Processing Abilities and Inattention, Heuristics, Biases, Overconfidence and Excessive Emotion**

a) **Limited Processing Abilities and Inattention**

Unfortunately most of us are imperfect and cannot process information like Mr. Spock. Put yourself in the place of the lay investor. Think of the plethora of information (and misinformation) that she is constantly bombarded with when she has to make a financial decision. It has been shown that people filter information.⁵ For example, there is evidence that expectations influence perceptions. People see what they want to see, especially when it supports their initial view. Individuals are more likely to believe something that is easy to process. Memory is not absolute, but reconstructive and sometimes self-serving. One result that has been documented is that items of information that are readily available and salient (in the headlines or in the financial statements, for example) will be weighted more heavily than perhaps more important information that is not so available or salient (buried on page 19 of the business section, or in the Annual Information Form, for example).⁶ Further, because of limited attention, most of us can only really focus on certain items of information at once. The result is that some people sometimes are forgetting to consider potentially relevant information.

⁴ The traditional defence acknowledges that model assumptions are not likely to be literally true. The real test of a model is whether or not its testable implications are consistent with the empirical evidence.

⁵ See Plous (1993) for numerous references.

⁶ See Tversky and Kahneman (1973) and Kruschke and Johansen (1999).

b) Heuristics and Biases

Given all these difficulties in processing information, it is not surprising that people take shortcuts. Decision-making shortcuts are operationalized by developing rules-of-thumb or “heuristics,” that allow people to do what they think is best (or at least reasonable) with minimal processing. Some heuristics obviously helped primitive man in good stead. In eating he learned that something tasting different from normal fare was probably something to be avoided. If in his daily exploration he heard an unfamiliar sound it made good sense to move away from it until he identified and felt comfortable with its source. Hard to argue with these heuristics, but others, used outside of their natural domain, can lead to suboptimal decisions. Below I touch upon some of the main heuristics that seem to matter in the context of investment decision-making:

1. *Diversification heuristic*:⁷ People, when unsure, automatically choose “a bit of everything.” This may make sense when going to a buffet, but should investments be chosen in this way? Indeed this heuristic has been used to explain poor asset-allocation decisions.
2. *Ambiguity aversion*:⁸ In experiments, people are more willing to bet that a ball drawn at random is red or blue if they know that an opaque jar contains 50 red and 50 blue, compared to the situation where they know that the bag contains red and blue balls (in unknown proportions).⁹ This has been used to explain such phenomena as the equity premium puzzle.¹⁰
3. *Status quo bias*:¹¹ What you currently have seems preferable by virtue of its possession. For example, people will pay less for an item currently owned than what they demand from others to part with it. This has been used to explain such things as infrequent portfolio rebalancing.

⁷ See Read and Loewenstein (1995).

⁸ See Ellsberg (1961).

⁹ For example, someone playing the game where she has to guess the ball color in advance (and red and blue have unknown proportions), if risk-neutral, would pay \$1 for the chance of a \$2 prize for a correct guess; someone risk-averse might pay 80 cents; and someone both risk-averse and ambiguity-averse might pay 60 cents.

¹⁰ The equity premium puzzle is the fact that equities historically have done much better than fixed-income securities, a gap that cannot logically be explained by risk level differences. Ambiguity aversion can come into play if people are nervous about stocks both because of risk (as reflected in the historical distribution of returns) *and* uncertainty (due to the fact that the future distribution may differ from the past distribution).

¹¹ See Kahneman, Knetsch and Thaler (1991).

4. *Familiarity bias*:¹² Related to the status quo bias is the degree of comfort that people have in the familiar. This leads to placing a greater value on what is known. Home bias has been linked to this predisposition.
5. *Representativeness*:¹³ This occurs when people judge probabilities “by the degree to which A is representative of B, that is, by the degree to which A resembles B.” One key aspect of representativeness, recency, exists when people judge the nature of the population by a recent sample of data. The latter has been used to explain why people chase winning stocks and funds.
6. *Anchoring*:¹⁴ Anchoring, which potentially counterbalances recency, occurs when people pay *insufficient* attention to the arrival of new data. Some argue that because of “coarse calibration,” people flip-flop between anchoring and recency. For example, an analyst may at first be too anchored on his prior opinion (e.g., slow growth), until a critical mass of new information causes him to totally buy into a new regime (e.g., high growth). This has been linked to under-reaction to earnings surprises.

c) Overconfidence

The psychology literature is rich with references which document that most people most of the time, are overconfident: that is, they believe they are more skilful or knowledgeable than they really are.¹⁵

Overconfidence is the tendency for people to overestimate their knowledge, abilities and the precision of their information. That most people are overconfident is well-documented by researchers in the psychology literature.¹⁶ In a research setting, overconfidence can be detected and even measured in several ways, none of them perfect. Some studies have asked people to rate themselves relative to average on certain positive personal attributes such as athletic skill or driving ability. Generally more than 50% say they are better than average. This is the so-called *better-than average* effect.¹⁷ Another

¹² See Heath and Tversky (1991).

¹³ See Tversky and Kahneman (1974).

¹⁴ Again, see Tversky and Kahneman (1974).

¹⁵ See Barber and Odean (1999) for numerous references.

¹⁶ See Fischhoff (1982).

¹⁷ See Svenson (1981).

strain of overconfidence is called *illusion of control*.¹⁸ Those so afflicted think they have more control over events than can objectively be true. Another popular way to tease out a discrepancy between knowledge and knowledge perception is to conduct what is termed a calibration test.¹⁹ In one variant, people are asked to provide (say) 90% confidence intervals for a series of questions which have known (or soon knowable) answers. Almost invariably, people manage to obtain a percentage much lower than 90% right.

Researchers have tried to explain why overconfidence is so prevalent among people, and, more puzzlingly, why people fail to learn from past mistakes. It is believed that many people possess certain behavioural biases that contribute to the longevity of overconfidence. One of these is *self-attribution bias*.²⁰ People tend to attribute successes or good outcomes to their own abilities, while blaming failures on circumstances beyond their control, or plain bad luck. For example, a lot of people think highly of their investing ability. They believe they can time the market or pick the next hot stock. When the market is rising, most stocks will do well, including those that they pick, and most people will take that as a confirmation of their acumen. On the other hand, when their stocks drop in price, they will generally blame it on circumstances over which they had no control - such as the general condition of the market or the economy. As it were, people learn to be overconfident.²¹

While we know that investors as a whole are subject to the behavioural flaw of overconfidence, recent work has shed light on its demographics. Gender and overconfidence are associated, with males being most at risk.²² Highly educated high earners also seem to be at some risk.²³

d) Excessive Emotion and Frame-Dependence

We are all human and hence subject to emotion. While many automatically assume that all decision-making should be drained of emotion (again, think of Mr. Spock), this is not quite so. There is evidence that balanced emotion can actually *improve* decision-making in two respects.²⁴ First, emotion pushes individuals to make some decision when making a decision is paramount. Second, emotion can assist in making optimal decisions: positive feelings can make it easier to access information in the brain, promote

¹⁸ See Langer (1975).

¹⁹ See Lichtenstein, Fischhoff and Phillips (1982).

²⁰ See Miller and Ross (1975).

²¹ See Gervais and Odean (2001).

²² See Lundeberg, Fox and Puncochar (1994) and Barber and Odean (2001).

²³ See Deaves and Bhandari (2006).

²⁴ See Ackert, Church and Deaves (2004).

creativity, improve problem solving, enhance negotiation, and build efficient and thorough decision-making.

Nevertheless balance is in order. No good decisions are likely to come from states of dread or panic. It has become fashionable to use the rubric “emotional intelligence” to refer to this state of balance.²⁵

Emotional intelligence is all about knowing one’s emotions, controlling one’s emotions and motivating oneself to expend effort to achieve results. It is argued by some that emotional intelligence is an important consideration when one is considering whether or not to handle one’s investments independently vs. obtaining the assistance of a financial professional.²⁶

Turning to frames, there is substantial evidence that people’s decisions are heavily influenced by the manner in which problems are presented. This is the familiar half-empty vs. half-full issue. Many examples have been produced of problems, only differing by wording, that is, only “framed” differently, and leading to quite different decisions.²⁷ For example, in the context of medicine, surgeons will come to different decisions about various types of intervention depending on whether outcomes are framed in terms of the probability of surviving vs. the probability of dying.²⁸

iii. Bad Decisions Made by Retail Investors

It is fair to say that we do not know as much about the decision-making process of retail investors as we would like. We do know though that retail investors have low levels of investment knowledge and are subject to the behavioural biases outlined in the previous section. Much of the literature studies the behaviour of self-investing retirement account members.²⁹ Because of procrastination, many do not begin saving till very late and do not save enough once they start.³⁰ Risk is not well understood: it is common to believe that an individual security is less risky than a market index.³¹ People become increasingly hesitant and even paralyzed when offered additional asset choices.³² Ignoring the most basic lessons of diversification, future retirees put far too much money into company stock, and fall prey to recency and

²⁵ Goleman (1995) provides an in-depth treatment.

²⁶ See Deaves (2006).

²⁷ See Tversky and Kahneman (1981).

²⁸ See Plous (1993).

²⁹ Most of the work has been done in the context of U.S. 401(k)s.

³⁰ See Mitchell and Utkus (2004).

³¹ See Benartzi (2001).

³² See Iyengar, Jiang and Huberman (2004).

representativeness in chasing winners.³³ Moreover, though it is commonly argued that the asset allocation decision has the greatest impact on portfolio return variability,³⁴ many investors signal a total misunderstanding of the concept.³⁵ In what follows we review some of these important findings.

a) Many Do Not Understand Asset Allocation and Risk, and So Make Decisions Inconsistent with Their Risk Tolerance

One way to ascertain whether investors understand asset allocation is to see if they exhibit consistency in their choices when they are forced to make their opinions known. Benartzi and Thaler (2001) have provided evidence that the diversification heuristic (previously discussed) appears to come into play for decisions as important as asset allocation. A group of University of California employees were asked to allocate their money among five funds, of which four were fixed-income and one was equity. The resultant average equity share was 43%. In a second treatment another group of employees was told to allocate their money among five other funds, of which, this time, four out of five were equity. This time the average equity share was 68%. The obvious inference is that confused respondents allowed the menu of options to have a major impact on their choice. The same researchers found evidence of similar behaviour in examining the *actual* decisions made by 1.5 million members across 170 plans. And Deaves (2005), using a survey of Canadian defined contribution pension plan members commissioned by SEI Investments, corroborated the results in the Canadian environment.

There are other ways to see that people are confused when it comes to risk. One way to see this is to look at evidence that people's objective and subjective risk tolerance levels differ. Subjective risk tolerance is what people say, for example when they fill out the risk tolerance questionnaires administered by many financial planners; and objective risk tolerance is what they actually do in terms of risk-taking behaviour. It is not uncommon to find that there is a wide divergence between the two.³⁶

People also have great difficulty seeing that risk is horizon-specific. In one experimental study, employees at a firm offering a DC pension were asked to allocate their money between two funds, labelled 'A' and 'B'.³⁷ Despite neutrality of nomenclature, information presented for these funds was based on historical data for a broad U.S. stock market index and 5-year Treasury bonds. Experimental

³³ See Benartzi (2001) and Deaves (2005).

³⁴ See Brinson, Hood and Beebower (1986).

³⁵ See Benartzi and Thaler (2001) and Bhandari and Deaves (2005).

³⁶ Chang, DeVaney and Chiremba (2004) provide a discussion.

³⁷ See Benartzi and Thaler (1999).

treatment was to display to one group a return distribution for each asset class in terms of one-year returns, and, to the second group, return distributions in terms of 30-year returns. That is, the same information was “framed” in two different ways.

As is well known, there is a low probability (especially using U.S. data) that bonds will outperform stocks over a very long horizon. The probability however rises as the horizon shortens, and once we are down to one year it’s not far from a coin flip. The researchers that conducted the study conjectured that because of “loss aversion” – which simply means that investors hate to see a loss show up in their portfolio – the average allocation going to the stock fund would be much higher when people were shown 30-year return distributions compared to the case where people saw those for a one-year horizon.³⁸ Indeed the experimental evidence cited in this study was consistent with this conjecture.

b) Many Are Subject to Representativeness in Fixating on Past Performance When They Choose Stocks or Mutual Funds

There is also evidence that because of recency, investors choose securities and funds based on past performance. De Bondt (1993) for example finds in a survey of a group from the *American Association of Individual Investors* that more people become bullish if the market has recently turned up. In the context of mutual funds, a number of researchers have found that strong past performance leads to abnormally high inflows of mutual fund money.³⁹

Further evidence comes from the SEI survey referred to earlier.⁴⁰ Participants were asked to allocate \$100,000 between two stocks, stock ‘A’ with an “average return over the last 5 years of 5%,” and stock ‘B’ with an “average return over the last 5 years of 15%.” Further, they were told that “[a]nalytsts forecast that both stocks should earn about 10% per year over the next 5 years.” Those who are neutral on future direction would go 50/50 in order to maximize diversification. Momentum-chasers would put more than 50% in ‘A,’ while contrarians would put more than 50% of their money in ‘B’. Of course, since there were only two stocks on offer, diversification demands should dominate, leading to at most a slight tilt away from 50/50.

³⁸ Loss aversion follows from the well-known descriptive (or positive) model of decision-making under uncertainty known as *prospect theory*, which was first formulated by Kahneman and Tversky (1973).

³⁹ See Sirri and Tufano (1998) and Deaves (2004).

⁴⁰ Again, see Deaves (2005).

Before saying how people did respond, one might ask if chasing success ever makes any sense. The answer is yes, sometimes, but under very limited circumstances, and most people get it wrong. There is empirical evidence (using both U.S. and Canadian evidence) of positively serially correlated returns or momentum in risk-adjusted returns using 3- to 12-month return intervals.⁴¹ On the other hand, (again, using both U.S. and Canadian evidence) for 18-month to five-year intervals (like here) the evidence favours negative serial correlation or reversal.⁴²

Based on the evidence, arguably, the “best” answer is to put slightly more than 50% of one’s money into ‘B’ – not too much more though, since the evidence on long-term negative serial correlation is indecisive, plus one must be wary about lost diversification. This is not what the respondents did. A high percentage of them (63.8%) proved to be momentum-chasers, while 11.6% were contrarians.

Further evidence that people get it wrong is provided by Benartzi (2001) in his examination of company stock in 401(k)s. He relates the high percentage of company stock going into 401(k)s to momentum-chasing. When he divides plans into quintiles based on company stock performance over the previous 10 years, he finds that employees of the top-performing companies contribute 40% of their discretionary money into company stock vs. 10% for the bottom-performing quintile. Note again that investors are chasing *long-term* success. Not surprisingly, in the year after portfolio formation, employees who allocated the most to company stock earned 6.77% *less* than those allocating the least.

c) Investors Trade Excessively and Under-Diversify

Excessive trading and under-diversification are argued to follow from overconfidence. Deaves, Lüders and Luo (2005) performed a calibration test and then asked subjects to participate in experimental asset markets. After obtaining information on people’s relative levels of overconfidence, they succeeded in correlating this with people’s proclivity to trade: those who were most overconfident traded the most and had the worst performance. Barber and Odean (2000) conducted a comprehensive study of the trading histories of over 60,000 U.S. discount brokerage investors between 1991 and 1996. They found that on average, investors turn over 75% of their portfolios annually. While the net risk-adjusted annual return (after taking into account transaction costs, bid-ask spreads and differential risk) that an average investor

⁴¹ See Jegadeesh and Titman (1993), or, for Canada, Deaves and Miu (2006).

⁴² See DeBondt and Thaler (1985) or, for Canada, Deaves and Miu (2006). Behavioural finance models (e.g., Barberis, Shleifer and Vishny (1998)) have been formulated to explain this pattern of short-term momentum followed by long-term reversal.

received was well below the market return, most egregious were the 20% of investors trading the most who underperformed the market (again on a net risk-adjusted basis) by about 10%.

There is evidence that investors tend to be under-diversified and this has been linked to overconfidence. Intuitively, suppose you are an overconfident investor and you study a number of stocks. Your overconfidence induces you to think that you possess the skills that allow you to choose with a high degree of accuracy which stocks are likely to outperform in the future and which stocks are likely to underperform. Naturally you will overweight the former, and underweight the latter. Since most amateur investors really do not have the time to study more than a few stocks, it is likely that you will have identified just a few “winners.” But, since you are so sure that these ones are good buys, why dilute your portfolio with stocks that you have not studied? Why diversify? If this is your approach, you will tend to under-diversify.

What evidence exists on under-diversification? Kelly (1995) studied portfolio composition of over 3,000 U.S. individuals. Most held no stock at all. Of those households which did hold stock (more than 600), the median number of stocks in their portfolios was *one*. And only about 5% of stock-holding households held 10 or more stocks. It is well-known that to achieve a reasonable level of diversification, you have to hold more than 10 different stocks preferably in different sectors of the economy.⁴³ Thus, many investors were very under-diversified.

Goetzmann & Kumar (2005) undertook a careful study in order to ascertain who is most prone to being under-diversified. Not surprisingly, they found that under-diversification was less severe among people who were financially sophisticated. Moreover, diversification increased with income, wealth and age. Those who traded the most also tended to be the least diversified. This is likely because overconfidence is the driving force behind both excessive trading and under-diversification. Also less diversified were those people who were sensitive to price trends (momentum) and those who were influenced by home bias (see below).

d) Many Over-Invest in Local and Domestic Markets

People seem to be anchored to the familiar. One manifestation of this is home bias. Huberman (2001) reports an interesting example of this. In 1984, AT&T was forced by the court into a divestiture whereby seven “Baby Bells” were created along regional lines. An example is BellSouth, a telecom serving the

⁴³ See Reilly and Brown (2003).

south-eastern United States. If people favour what is familiar, then we would expect that a disproportionate number of a Baby Bell's customers to hold a disproportionate number of shares in the same Baby Bell. This is exactly what happened after the divestiture. But this is exactly the wrong state of affairs for investors. The reason is that, from a diversification standpoint, if anything one would be best to *underweight* (not overweight) local companies, since if the economy in the home region fares poorly, this will be bad both for the stock market performance of local companies and the employment prospects of local workers. In the parlance of financial economics, if one works and invests in the same region, then one's two income sources are highly correlated. And diversification theory says it is best to seek out income streams that are weakly correlated. This means that it would have been better for investors to buy stock in Baby Bells *outside* their region.

e) Many Allow Emotion to Unduly Influence Their Investment Decisions

There is evidence that emotion can lead to bad investment decisions. A good example is the so-called disposition effect, which is the tendency to sell winners too early and hold on to losers too long.⁴⁴ It is argued that fear of regret, technically an emotion about an emotion, may be driving this. Regret could be triggered by a sell transaction, which forces the investor to face the fact that the original decision turned out to be *ex post* a bad investment.

Emotion also seems to lead to alterations in risk-taking depending on prior performance. How do people behave at the local casino when they are up a few hundred? Do they play more or less aggressively? In fact, there are two conflicting effects: *mood maintenance*: "I am feeling good, let's walk away and enjoy this feeling;" and *house money*: "this is the house's money, let's have some fun now and really make some money." For some the first predominates; for others the second; and for many the moods flip-flop. Ackert, Charupat, Church & Deaves (2006) show that the first usually is the dominant force. Why are these shifts in risk-taking a bad thing? Some changes in risk-taking are fundamental (e.g., aging-related), but house-money effects, clearly non-fundamental in nature, suggest suboptimal decision-making.

f) Information Sources Accessed by Retail Investors

What information sources are used by retail investors, and to what extent might they value higher levels of disclosure? A recent U.S. survey by the National Association of Investors (2000) suggests that investors are relying less on direct sources (e.g., annual reports) and more on filtered sources (e.g.,

⁴⁴ See Shefrin and Statman (1985).

websites). For example, financial and investment websites were cited by 64% of respondents as one of their top sources, and they were also considered the most credible source by 48% of respondents. Little research on this issue seems to have been done in Canada. The current report is designed to partly remedy this shortfall, especially since, as the *Canadian Shareowners Study* of the TSX Group (2004) reports, 49% of Canadians now own publicly traded equities, either directly or indirectly through mutual funds.⁴⁵ We anticipate that the nature of the relationship between the retail investor and her advisor (if one is used) will be an important determinant of information usage. For example, do-it-yourselfers using discount brokers and purchasing individual securities are more likely to be heavy users of information relative to those only buying mutual funds on the advice of a financial advisor. Additionally, it needs to be noted that service providers to retail investors (such as brokers, financial planners and financial advisors) will be consumers of financial information. In reality, many retail investors will only access public information through the lens of these individuals.

g) Many Are Too Credulous of the Information That They Are Presented With

Daniel, Hirshleifer and Teoh (2002) argue that investors are too credulous in the following sense: “When examining an informative event or value indicator, they do not discount adequately for the incentives of others to manipulate this signal”. They reference studies that find: people are too credulous of accounting choices that increase earnings; they are too credulous when a company buys back shares or issues new stock; and they are too credulous when information is not disclosed or is disclosed in a non-salient fashion. In this regard it should be noted that there is evidence that companies are able to time buybacks and new issues.⁴⁶

These researchers argue that excessive credulity arises from two psychological factors that have been alluded to previously. These are limited processing power coupled with inattention, and overconfidence. Limited attention suggests that only certain items of information will occupy one’s mind. As mentioned above, because of “cue competition,” only salient information will be fully regarded. This implies that some signals will be disregarded or insufficiently regarded by some investors, and, given limits to arbitrage, this implies that market prices can be affected.⁴⁷ Moreover, if one forgets that some parties

⁴⁵ See TSX Group (2004). Ownership incidence was similar by age, gender and region between the TSX study and the current study.

⁴⁶ See Baker and Wurgler (2000).

⁴⁷ Shleifer (2000), in a series of articles with collaborators, describes the “limits to arbitrage” argument. The essential idea is that “smart” money managers cannot afford to fully arbitrage away incorrect prices because of the limited horizons that periodic performance assessment imposes on them. Additionally, “wrong” prices can get even more out of line because of “noise trader risk.”

have the incentive to strategically manipulate information, then there will be too little scepticism on average. Overconfidence contributes to the problem: when overconfident one fixates on private signals and downplays public signals. There is evidence that stocks more subject to investor credulity tend to be more overvalued.⁴⁸

h) Many Are Too Influenced by the Form of the Information

Given that much information is difficult to digest, and people have limited information-processing abilities and are more likely to notice salient information, it is not surprising that decisions can be influenced by the form of the information. It will be easier to process explicitly disclosed information made available in the financial statements rather than something requiring calculation that is buried in the footnotes.

When information overload occurs, there is a tendency for retail investors to simply tune out and not try to process the information at all.⁴⁹ Excessive information can have the effect for example of dissuading workers from participating in their pensions (even to the extent of leaving employer match money “on the table”). Also, the presentation of *pro forma* vs. GAAP earnings can serve to confuse investors.⁵⁰

iv. The Participation Decision: Why Is It That Some People Do Not Participate At All in Financial Markets?

One key decision that investors have to make is whether to participate in financial markets at all. The most direct form of participation is the purchase of securities through a brokerage account. For most investors this entails the purchase of equity securities. While income trusts, corporate bonds, government bonds, ETFs and the like may also be held, it is expected to be rare for individuals to be direct investors without holding any stocks at all. The most popular indirect form of participation is the purchase of mutual fund units. The aforementioned *Canadian Shareowners Study* by the TSX Group (2004) indicates that more people are indirect investors than direct investors: 81% of investors have mutual funds, and 57% are invested in stocks.⁵¹ But most people (54%) are not investors at all.⁵² It is important to consider

⁴⁸ See Chan, Lakonishok and Sougiannis (2001).

⁴⁹ See Agnew and Szykman (2004).

⁵⁰ See Elliott (2005).

⁵¹ The TSX study included stocks/income trusts, ETFs, derivatives and mutual funds as qualification criteria. The retail study described later again included stocks/income trusts and mutual funds. While it did not screen on ETFs and derivatives, it did screen on corporate bond ownership. In the current retail study, the mutual fund ownership percentage was higher (88% vs. 81%) and the stock/income trust percentage was lower (51% vs. 57%). This could

why more do not invest; and, secondarily, why more are not direct vs. indirect investors. There are likely two main reasons that play a role: first, information or transaction costs, and, second, lack of trust.

a) Transaction Costs

Beginning with the first, novice buyers must spend time and money educating themselves on basic investment principles. Time as well must be spent setting up accounts. Once one is comfortable enough to proceed, each transaction incurs commissions and spread costs. Additionally, most realize that for this process to be judiciously conducted, periodic re-assessment is required. One of the key things that must be done on a periodic basis is portfolio rebalancing so that the risk level of the portfolio is congruent with the risk tolerance and capacity of the investor. This requires an understanding of asset allocation, and there is abundant evidence that many are not well-equipped (see above for citations). Additionally, if individuals try to stock-select or market-time, there will naturally be additional costs incurred in following the markets and securities under consideration.⁵³ A less obvious cost is that security ownership can complicate the completion of tax returns. Of course one can farm out the chore to a tax accountant (or somebody less qualified), but a cost is a cost, whether or not it is in terms of time or dollars.

If financial market participation is indirectly undertaken through mutual funds, many of these same costs become dollar costs, not time costs. For example, one does not spend time personally researching securities, but instead hires professional money managers and their teams to do the same job. These people are compensated through the management expense ratio (MER). Other costs constitute compensation for salespeople. These come in the form of front- or rear-end loads (or deferred sales charges (DSCs)), and, less visibly to some, trailer fees usually embedded in MERs (along with money management services and overhead). Less obvious is the fact that execution costs for the purchase and sale of securities are being incurred: these come directly out of the fund.⁵⁴

The TSX study indicates that transaction costs, particularly relating to knowledge acquisition, were big impediments. A small survey of non-shareowners was conducted, and respondents were asked why they did not participate. Popular answers were: not enough money (66%); prefer assets in cash (56%); unsure

either suggest a move toward funds and away from stocks/income trusts, or it could be a function of the sampling procedure.

⁵² That is, the incidence rate was 46%. In the retail study conducted for this report, there was an identical 46% incidence rate.

⁵³ This is not to suggest that we recommend active management on the part of individual investors. See Deaves (2006) for abundant references showing that retail do-it-yourselfers do not tend to perform well.

⁵⁴ See Carrick (2006).

how market works (50%); not enough information about stocks/mutual funds 50%; not yet approached by anyone selling stocks or mutual funds (48%); listings in paper too hard to follow (46%); too risky (44%); too much effort to follow market (41%); and recent scandals have scared me away (37%). The first (“not enough money”) hints at set-up costs being too high relative to what could be invested; and a number of the others clearly relate to lack of knowledge. The last answer on this list, “recent scandals have scared me away,” implies a lack of trust, which takes us to the next section.

b) Trust in Financial Markets

Still, transaction costs cannot be the full explanation since such costs should not be a powerful force for wealthier households,⁵⁵ and, strikingly, we observe many wealthier individuals not participating in financial markets. The second explanation, lack of trust, is able to account for this stylized fact.

According to Guiso, Sapienza and Zingales (2005), trust can be defined as the subjective probability that individuals attach to the possibility of being cheated. These researchers formulate a model that implies that if someone believes there is a 3% probability of being cheated, then the wealth level required for entry into financial markets is five times higher than for a totally trusting individual. This can explain why some wealthier individuals are non-participants. Analyzing a survey, they are able to demonstrate that both general and financial market-specific distrust matter. The former refers to situations where because of culture and history people have a general distrust of institutions. The latter refers to a more focused distrust of financial intermediaries and markets. Of course such a trust-barometer can see its needle move after Enron- and Hollinger-type scandals. Guiso, Sapienza and Zingales demonstrate that the importance of trust is robust to the consideration of other related factors, such as risk aversion and ambiguity aversion. Further, they argue that it can be quite useful in explaining the wide differences between nations in market participation.

The regulatory environment can help to foster trust by enforcing the rules of the game. In this vein, a public goods experiment by Fehr and Gaechter (2000) provides insights on what creates trust. These authors suggest that there are three types of participants in a system: a minority who will unconditionally participate and play by the rules; a group of approximately 25% of participants who will attempt to circumvent the rules; and a large group which will participate and play by the rules *if others are seen to be complying*. A perception of compliance is abetted by effective enforcement. It is this larger group of

⁵⁵ See Vissing-Jorgensen (2003).

“contingent consenters” who must be convinced that the system is fair and trustworthy in order for them to continue to play by the rules for, if they start cheating, the system will surely break down.

v. Flawed Institutional Investor Decision-Making

a) Process of Institutional Investors

Institutional investors are investment professionals who manage assets for (and make investment decisions on behalf of) others. They often direct the investment of portfolios that range in size to the billions of dollars. They work at mutual fund companies, brokerages, insurance companies, pension funds, investment companies, investment banks, endowment funds, and, increasingly, hedge funds. What further distinguishes their activity from that of retail investors is that institutional investors operate within an environment of less protective regulation as it is assumed that institutional investors are more knowledgeable about the inherent risks of investing and are better able to protect the interests of the ultimate beneficiaries of the invested assets.

A factor that further differentiates an institutional investor from her retail counterpart is a strong reliance on process, a consistently applied method for assessing investment opportunities. The overall approach of an institutional investor, or “manager,” will be determined, to a great extent, by the investment mandate for the specific pool of assets for which the manager has responsibility. The mandate describes the objectives and constraints for a portfolio, and highlights the return and risk parameters within which the manager is expected to operate. The mandate will be shaped by the purpose that the investment of assets is expected to further. For example, a pension fund’s assets will be invested to create the resources with which to fund the retirement income for a company’s employees, while a mutual fund’s assets may be invested to provide growth in value or an income stream for unit holders. The different objectives and goals of each group will have an impact on how institutional investors make their decisions about what action to take and what information sources to use.

Working within the mandate, the manager establishes general criteria for appropriate equity investments. This first “screen” may include such price multiples as price-to-book or price-to-earnings, which indicate the relative valuation that the stock market gives to an equity issue. It is here we see the distinction made between “value” and “growth” investors. Value investors look for equities with a low price-to-book where the manager believes that the market price does not reflect the potential for the stock. Growth managers focus on stocks with a strong history of earnings growth that is expected to continue, despite a

high price-to-book. The middle ground in style classification, between growth and value, can be referred to as “core” or GARP (growth at a reasonable price).

After the initial screen has identified a selection of investment candidates that fit the basic criteria, a typical manager then turns to more in-depth analysis. At this stage, the analysis is either fundamental in nature, with a focus on a company’s financial, management and competitive elements, or technical, with a focus on the behaviour of the stock price relative to trends in the stock market. When applying a fundamental approach to analysis, a manager will rely on corporate disclosures as a primary source of information. In addition, management interviews and assessment of the competitive positioning of a company are used to formulate opinions about the prospects for a stock. It is here that managers will often rely on the input of investment analysts who provide opinions on the investment merits of specific stocks, usually within the stock market or industry sectors where they have developed specialized knowledge.

When gathering information on investment securities, a portfolio manager will often consult these investment analysts for recommendations. Analysts are typically either employed by the investing institution (called the “buy side” because their primary purpose is to aid the process of buying (or selling) securities for their firms’ portfolios) or by investment dealers (called the “sell side” because their primary purpose is to generate fees or commission revenue as a result of transactions undertaken by others). In each case, an analyst will study companies in detail with a view to understanding both the inherent risks and potential returns that investment in a company’s stock could provide. The portfolio manager takes these recommendations and pieces together a portfolio of stocks that matches the objectives and constraints set out by a fund’s investment policy and mandate.

When deciding on a specific course of action, and selecting investments appropriate to the mandate, a manager will focus on a company’s operations and its potential growth. Much of the input that is useful for this purpose is found in the information that the company is required, by legislation and regulation, to disclose to the public.

b) Knowledge Levels and Behavioural Mistakes Made by Institutional Investors

Of course while retail investors are important, the financial marketplace is more and more dominated by institutional investors. This group is likely to consume all forms of information more comprehensively than their retail counterparts. There is abundant evidence that on a *gross* return basis the average

institutional investor outperforms her risk-adjusted benchmark,⁵⁶ which indirectly suggests that information is being used to advantage. Consistent with this, El-Gazaar (1998) finds that institutional ownership is negatively related to the size of market reactions to earnings announcements, suggesting that institutional investors use a richer information set. Along the same lines, Jianbalvo, Rajgopal and Venkatachalam (2002) find that institutional ownership is positively related to the extent to which stock prices lead earnings, suggesting that institutional investors better utilize available information to predict future earnings.

This is not to say that institutional investors and others supporting them in the process of portfolio formation are not subject to the same behavioural flaws that retail investors are subject to. That is, they are likely to be subject to limited processing abilities and inattention, heuristic-based bias, overconfidence, excessive emotion and frame-dependence, just like retail investors (see Part 4, section ii). And these flaws are likely to lead to the same sort of suboptimal investment decision-making (see Part 4, section iii). For example, Suh (2001) shows that home bias is exhibited in international institutional portfolios. Deaves, Lüders and Schröder (2005) have shown that as a group stock market forecasters are egregiously overconfident. What's worse, in conformity to the dynamic model of overconfidence of Gervais and Odean (2001), successful forecasters become more overconfident, and more experienced forecasters "learn to be overconfident" and hence are more susceptible to this behavioural flaw than their less experienced peers. As for point estimates (as opposed to confidence intervals), there seems to be excessive optimism in predicting stock market indexes.⁵⁷

Turning to analysts, there is strong evidence that their forecasts and recommendations are biased. While this seems partly due to agency problems (see next section), part of it does not seem to be so assignable. Most damning is the fact that analyst forecast errors are predictable. Abarbanell and Bushee (1997) show predictability stemming from past accounting fundamentals. Teoh and Wong (2001) find a similar role for accruals (that is, the gap between cash flows and earnings). Further, La Porta et al (1997) has shown that forecast errors are predictable depending on whether a stock is a growth stock or value stock. Growth stocks, for which investors (and analysts) may have become too bullish, are more likely than not to experience negative earnings surprises, whereas value stocks, for which investors (and analysts) may have become too bearish, are more likely than not to experience negative earnings surprises.

⁵⁶ See Deaves (2004).

⁵⁷ See Lim (2001).

One reason that bias is difficult to overcome is that it also exists in the information sources used by PMs, though it is true that they do recognize this. It is well-known that sell-side analyst buy recommendations far outweigh sell recommendations.⁵⁸ This is largely because the former group of analysts is wary of offending prospective issuers. Further, long-term earnings forecasts are overly optimistic, and a step-down process leading up to the actual announcement occurs creating the likelihood of a positive surprise.⁵⁹ Cheng, Liu and Qian (2005) provide empirical evidence that, while both buy-side and sell-side analyst recommendations are considered, relative weights are a function of the perceived information content and bias. Specifically, a buy-side analyst's report is more heavily weighted when the quality of the latter's information relative to that of the typical sell-side analyst's increases, or when the sell-side analyst's degree of bias is higher.

c) Principal-Agent Issues

Suboptimal institutional investment decision-making can exist not only because of psychology, but also because of the principal-agent problem. The principal-agent problem, which is better known in the context of corporate managerial incentives, exists because shareholders (the principals), who are the ultimate owners of the firm, must entrust decision-making to managers (their agents). And, if incentives are not appropriately structured, the latter group will not act in the best interests of the former group.

In the context of institutional investors, agency problems are likely to be greatest in the case of pension fund managers.⁶⁰ This is so because of the very tenuous nexus between the ultimate beneficiaries, the shareholders and future pension recipients, and the money managers looking after pension funds. The intermediation of various management operatives (between these groups) exacerbates the problem. Those intermediating are keen to deflect blame *ex ante*. For this reason they are biased against internal money management and hire consultants to advise them on the suitability of external managers. As for money managers, they have an incentive to assemble "prudent" portfolios over optimal portfolios. Del Guercio (1996) argues that this leads to an overweighting of growth stocks with "tellable stories."

⁵⁸ See Womack (1996).

⁵⁹ See Daniel, Hirshleifer and Teoh (2002) for some references.

⁶⁰ This view was most forcefully proposed by Lakonishok, Shleifer and Vishny (1992). Also see Trzcinka (1998).

5. Why the Legislative and Regulatory Environments Matter

In this section three issues are briefly addressed. First, do we really need public intervention in this realm? To preview, we believe the answer is yes. Second, assuming disclosure (and its enforcement) is wise, exactly what should be disclosed? This is an important but thorny question. And, third, does the mere provision of relevant information imply effective disclosure? We suggest that the answer is probably not.

i. Should the Public Sector Intervene?

The fact that public involvement in a particular sector of the economy exists does not necessarily mean that it should. Nevertheless, recent work by La Porta, Lopez-de-Silanes and Shleifer (2006) has reinforced the importance of a public presence in securities markets. They investigate the securities legislative environments of 49 countries by analyzing the legal provisions for IPOs and correlating them with various measures of capital market development (such as aggregate market capitalization relative to GDP). Strong evidence is produced that laws mandating disclosure and facilitating private enforcement through liability rules benefit stock markets. This finding is in rebuttal to the laissez-faire view that is predicated on the notions that: (a) if disclosure does not occur, investors will assume the worst; and (b) that private monitors (e.g., auditors and stock exchanges) will ensure accuracy for reputational and liability reasons.⁶¹ Thus, La Porta, Lopez-de-Silanes and Shleifer support the countervailing view (espoused by Easterbrook and Fischel (1984) among others), which opines that the payoff to cheating is too high and private litigation too costly and uncertain, rendering the laissez-faire world suboptimal.

ii. What Should Be Disclosed?

Next consider what should be disclosed. Clearly, some sort of cost-benefit analysis is required.⁶² The problem is that, while the costs are usually fairly predictable, the benefits are much more difficult to quantify. As for the latter, how useful (and used by investors) is information that is currently disclosed on a mandatory basis (e.g., in prospectuses, financial statements and miscellaneous shareholder communications)? Are there certain items, which are currently not disclosed, that investors would find genuinely useful? Are there other items, which are currently disclosed, not perceived to be of much value? One can say that an efficient system should mandate the optimal quantity and quality of

⁶¹ See Stigler (1964).

⁶² See Kotchetova and Salterio (2003).

disclosure. Other items can be voluntarily disclosed, and the market may reward companies for doing so. Evidence that Canadian markets reward voluntary behaviour has been recently produced by Foerster and Huen (2004), who show that stock prices react favourably to positive information released related to governance rankings.

Some have argued that increased levels of disclosure can lead to a lower cost of equity capital. For example, Botosan and Plumlee (2000) document that a higher level of disclosure on financial reports lowers the expected cost of equity capital by between 50 and 100 basis points. And Leuz and Verrecchia (2000) show that liquidity measures such as the bid-ask spread and volume also improve with more disclosure. Much of the evidence comes from studies which condition on whether firms disclose more than they have to (e.g., non-U.S. firms that wish to cross-list on a U.S. exchange). What is the mechanism creating these effects? A firm has an incentive to increase disclosure as a means to lessen information asymmetries. In real institutional settings adverse selection is manifest in a reduced liquidity for shares. Commitment to an increased level of disclosure reduces the possibility of information asymmetries, hence increasing liquidity and lowering the cost of capital.

Higher disclosure levels imply more accurate information is available to investors, which can only serve to increase the information content of prices and improve market efficiency. More accurate information should lead to more accurate forecasts. Using country-level data, Khanna, Palepu and Chang (2000) find a significantly positive relation between analyst earnings forecast accuracy and an annual report disclosure metric. Enforcement also matters. Hope (2002) finds that not only does the level of disclosure matter in this way, but also that a country's enforcement of accounting standards, which gives analysts a comfort level that they can trust the information, is also positively related to forecast accuracy. The fact that "one of the main frequently repeated criticisms of the current system is that Canada does not enforce its securities laws effectively, especially when compared to the United States" is quite worrisome in this regard.⁶³

Still one must be cognizant of the negative side of the ledger. To state the obvious, an increased regulatory burden imposes costs on companies which are indirectly borne by all. To take one concrete example, smaller mutual fund companies have recently expressed unhappiness about new disclosure obligations that came into effect on June 1st of this year. Going forward, each mutual fund is to have an independent review committee (IRC) overseeing conflicts of interest. The complaint is that such new

⁶³ See *Wise Persons' Committee to Review the Structure of Securities Regulation in Canada* (2003, page 25)).

burdens favour large fund companies which can spread such costs over more unit holders.⁶⁴

iii. Disclosure vs. Effective Disclosure

One problem with the philosophy behind disclosure is that information dissemination is often viewed as tantamount to information assimilation. Our previous discussion on cognitive constraints and information overload should put us on notice that the two are not one and the same. Along these lines, Stromberg (2002) argues that *effective* disclosure requires three components: 1) identification of the appropriate disclosure items; 2) communicating the information in a way that facilitates the third component; which is 3) understanding what is disclosed. Since virtually all regulation pertains to the first component, it can be argued that reform needs to stress the second two components. Mutual fund investors, often being less sophisticated than others, might be at particular risk. For example, relevant items can be scattered among multiple documents and are not necessarily presented in a crystal-clear fashion. And this group is likely to be especially low in terms of knowledge. Another way of saying the latter is that even if they have all relevant information, they are not necessarily utilizing it optimally.

The view that retail investors need significant help has recently gained much ground in the U.S. where many are now being entrusted to manage their own retirement accounts via the 401(k) investment vehicle. Education seems to help somewhat: Bernheim and Garrett (2003) and Lusardi (2004) document that workplace financial education increases saving. Those not likely swayed by education are perhaps better influenced by judicious defaults. For example, Madrian and Shea (2001) have demonstrated that automatic enrolment is helpful in getting people to save. And Thaler and Benartzi (2004) have shown that a program, whereby people lock themselves into future scheduled deferral increases, is effective in inducing people to save more.

⁶⁴ See *Globe and Mail's Report on Business* (2005).

6. Retail Investor Survey

i. Methodology of Retail Survey

A total of 1600 web-based self-administered interviews were conducted between February 10th and 22nd of 2006 by the online field company OpenVenue e-Research Solutions. Potential respondents were restricted to those who own mutual funds, stocks/income trusts or corporate bonds. (From this point on, for simplicity, we will usually just refer to stocks rather than stocks/income trusts.) All respondents were 18 years of age or older, and had primary or shared responsibility for making financial decisions within their households. Interviews were administered using an online panel and online self-complete form. An invitation to participate was sent to a representative sample of Canadians based on age, gender and province. The overall incidence of qualification was 46%.⁶⁵ Incidence levels differed from a representative sample of Canadians as follows:

1. Men had a higher incidence because they were more likely to be investors with mutual fund, stock and corporate bond ownership than women.
2. Those aged 45-64 also had higher ownership levels than other age groups.
3. Those from the Western and Prairie Provinces and Ontario had higher ownership levels than Quebec and the Maritimes.

The resultant sample, therefore, is representative of the age, gender and provincial distribution of mutual fund, stock and corporate bond owners as opposed to the overall population of Canadians.

Because of these controls on the sampling, no weighting was required for the final sample composition. The self-administered questionnaire required up to 20 minutes to fill out. Some sections applied and were administered only to those respondents holding specific investments. There were two lengthy segments that were only pertinent for those investing in a particular asset class: one for stockholders and another for mutual fund holders. To keep the length of the questionnaire manageable (under 20 minutes), those who owned both stocks and mutual funds were randomly allocated to one section or the other (but not both). Further, within the stock section, the sample of stock holders was split when it came to a question pertaining to the factors influencing the decision to buy or sell a stock, with respondents each completing

⁶⁵ The completion rate was lower (36%), suggesting that some of those eligible (22%) did not choose to complete the survey.

only one of the questions (either the buy decision or the sell decision drivers). Finally, there was a single question that was only answered by those owning corporate bonds.⁶⁶

Some questions probed for agreement or disagreement to a statement. A Likert 10-point scale was used, with '10' indicating strong agreement and '1' indicating strong disagreement. Similarly, other statements investigated "importance," "familiarity" and "usefulness" using the same 10-point scale. As a verbal shortcut, scores of 8-10 were viewed as signifying "agreement," "importance," "familiarity," and "usefulness;" and scores of 1-3 were viewed as indicating disagreement, unimportance, unfamiliarity and lack of usefulness.⁶⁷

ii. Basic Profile of Canadian Investors

We begin by setting out the basic profile of Canadian investors. Three factors are of interest: demographics, decision-making style and portfolio composition.

a) Demographics

Demographics are important because the researcher must be comfortable that the sample is representative of the Canadian population of investors. Referring to Exhibit 1, we see that the respondents were 55% male and 49.3 years of age on average. Since people who have not yet retired plan to do so in 18.75 years, and their average age is 44.1 years, the average projected retirement age is about 63 years. Given that we are restricted to investors who are web-savvy, it is not surprising that 45% have graduated from college or university, and 38% have at least some college or university. Though quite a few people, fearing breach of confidentiality, declined to answer the income question, the average income level among those choosing to answer was \$73,000. The average wealth level (where wealth is viewed only in terms of investable assets) was \$157,000. More than two-thirds (69%) were employed full- or part-time, with many of the rest retired. The low number of homemakers (3%) and non-working students (1%) is likely due to the fact that such individuals are less likely to be investors with some say in portfolio

⁶⁶ The accuracy of the data associated with the key sample sizes is as follows:

1. Full sample (n = 1600): maximum error range ± 2.5 percentage points 19 times out of 20.
2. Mutual fund section (n = 1109): maximum error range ± 2.9 percentage points 19 times out of 20.
3. Stocks/income trusts section (n = 478): maximum error range ± 4.5 percentage points 19 times out of 20.
4. Corporate bonds section (n = 175): maximum error range ± 7.4 percentage points 19 times out of 20.

⁶⁷ Appendix B provides the full survey tabulation.

decision-making (see below).⁶⁸

b) Decision-Making Style

As for decision-making style, a majority of Canadian retail investors share decision making with someone else in their household (58%). Not surprisingly, this level is higher among those who are married (61%) than among those who are single, widowed, divorced or separated (13%).

Looking outside the household, decision-making is also often shared with financial professionals. To assess whether and the extent to which investors require assistance from financial professionals, the following question was asked:

Thinking about all of the investment decisions you made in the past 12 months, what percent of those decisions would you say you made with the help or advice from a financial professional?

Respondents could place themselves into 10% increments with the endpoints 0% and 100% also being permissible choices. Exhibit 2 shows the results. Indeed the two most popular answers were the endpoints. About one-quarter (26%) identified themselves as needing assistance every step of the way, and 18% stated they needed no assistance at all, with the rest falling somewhere between. While some were in this no-assistance category, and others were mostly doing it on their own, nevertheless the weight of the distribution was on the assistance side, with the mean assistance percentage being 58%.

As for sources of assistance, Exhibit 3 provides some data. One-third of Canadians rely on independent advisors of some form, while one-quarter look to their banker. Stockbrokers and mutual fund or insurance representatives account for just under another quarter. A portion of respondents (13%) cite themselves as the main source of investment advice. This small group of self-advisors tends to be male, higher earners, older, non-users of investment advice, evaluate their investments more often, and own stocks and bonds vs. mutual funds exclusively.

Exhibit 4 displays the frequency with which portfolio evaluation occurs. Retail investors are generally evaluating their investments at least once a year (94%), with fully 58% doing so more than twice a year. The average, which is obviously skewed by those doing weekly or monthly evaluations, is about eight

⁶⁸ The demographic profile of respondents in the retail survey is quite comparable to that of the TSX survey.

times per year. Frequency of evaluation was correlated with certain factors. Retired individuals had much higher levels (10 times per year), as did those with a higher percentage invested in equities, with more investable assets, and with stocks and/or bonds (vs. just mutual funds). Moreover, married males and those with higher levels of income also tended to evaluate more frequently. Not surprisingly, those who used investment advice for all their decisions evaluated their decisions less frequently than average (only five times per year).

c) Portfolio Composition

Next turning to portfolio composition, the asset classes invested in by the survey respondents are shown in Exhibit 5. The ability of the mutual fund industry to provide the investment vehicle of choice for Canadians is well established in this survey, with 88% of Canadian investors having some of their money so invested. Next in popularity are stocks and income trusts with 46% of investors represented. Clearly some people hold both: in fact, 75% of those who own stocks also invest in mutual funds.

Not surprisingly, the next four most popular categories were all in the fixed-income asset category: GICs/term deposits, CSBs, corporate bonds and T-bills/other bonds. Of note is the fact that small groups of Canadians are beginning to invest in private equity (7%) and exchange-traded funds (5%).

Referring to Exhibit 6, which provides information on the size of investment portfolios, mutual fund portfolios average in at \$72,000, with about half (55% of those giving an answer) of retail investors holding less than \$40,000, and 19% holding more than \$100,000 (21% of those giving an answer). For other asset classes, the average holdings were: \$79,000 for stocks; \$47,000 for corporate bonds; and \$89,000 for other assets. Overall, the average portfolio was \$148,000. Still, some were not reassured by the promise of confidentiality, as a total of 17% did provide figures and thus were excluded from these calculations.

d) Do-It-Yourselfers and Other Sophisticated Groups

From the foregoing it should be clear that there are different levels of sophistication and involvement in portfolio decisions. For certain questions, it will be interesting to know how those who take care of things on their own think and act. Without claiming that this filtering procedure is perfect, we define someone as a do-it-yourselfer (DIYer) if he/she satisfies three screens:

1. When asked what percentage of decisions is made with help, they answer 0%.
2. They must hold stocks/income trusts (perhaps in addition to other investments such as mutual funds).
3. They evaluate their portfolios at least once per year.

These DIYers comprise 9% of the overall sample. In Exhibit 7, we provide a profile of this group of investors. Additionally, we show profiles of two other groups who we might expect to be relatively more sophisticated, stockholders and high-wealth (200k plus) individuals.⁶⁹ As a benchmark, we also look at a group that we might expect to be relatively unsophisticated, mutual fund unit-holders without any other reported investments. DIYers along with the other two sophisticated groups also have higher levels of income, wealth and education than the other samples looked at. And DIYers and high-wealth individuals are also much more likely to be male.

iii. Behavioural Bias, Knowledge, Investment Personality and Trust

In examining how investors process information, and what their information needs are, it will be important to have some perspective on their knowledge level, the degree to which they are subject to behavioural bias, their investment personality and the trust they have in the financial system. Our earlier review of these issues is an indicator of what we should expect.

A number of questions scattered throughout the survey allow us to probe the following markers:

1. Are Canadian investors overconfident? Do they have an unrealistic view of their abilities in the realm of investments?
2. Do they sometimes execute transactions because of emotion rather than hard information?
3. Are they subject to representativeness in the sense that they overestimate the ability of past performance to predict future performance?
4. Do people understand diversification? This is particularly important for those who assemble their own portfolios without relying on such indirect products as mutual funds and ETFs.
5. Do people understand risk-taking and asset allocation?

⁶⁹ Some would argue that 200k does not really put people into the high wealth segment. Raising the cut-off however led to an overly small sample.

6. Where do investors fall on the planner/avoider continuum?
7. Do investors trust the financial system?

a) Overconfidence

Earlier we cited evidence that the average self-investor does not surpass risk-adjusted benchmarks, nor does the typical institutional manager better her risk-adjusted benchmarks net of all fees. Stock investors were asked if they agreed with the following statement:

The portfolios of stocks and income trusts I assemble generally beat market returns.

And mutual fund investors were asked if they agreed with the following statement:

The mutual funds I choose generally beat market returns.

Given the evidence, it smacks of overconfidence for one to believe that she can identify mispriced securities (or funds) sufficiently often to beat the market. Yet 35% of stock investors believe they have this talent. Similarly, 29% of mutual fund investors believe they can choose funds that beat the market. Many respondents, being both stockholders and mutual fund unit-holders, answered both of these questions. If we ascribe overconfidence to those who answered *one* of these questions in an overconfident fashion, then we would conclude, as shown in Exhibit 6, that 40% of the sample is overconfident. The exhibit also reveals differences in overconfidence among groups. One problem with the knowledgeable though is that they often overestimate their abilities: DIYers, stockholders and high-wealth investors have the highest levels of overconfidence.

b) Emotion

All investors were asked the importance of “gut feel or intuition” in their decision-making when considering transactions. While it is not impossible that gut feel or intuition could be tied to true knowledge or analysis, in many cases, arguably, it is a signal that emotional disposition or affect is a key driver.⁷⁰ Roughly one-quarter (24%) of investors stated this factor was important to them. DIYers tend to be more likely to make decisions based on emotion than others.

⁷⁰ “Affect” is a disposition created by an external stimulus. For example, altruism might make you favour “green” companies as investments.

c) Representativeness

Stock investors were asked to comment on the importance of past performance in choosing to buy or sell stocks. Four choices were offered: “strong market performance over the past six months”; “weak market performance over the past six months”; “strong market performance over the past three years”; and “weak performance over the past three years.” As was discussed earlier, it makes some sense to chase medium-term winners but, if anything, people should shy away from long-term winners. The corollary is that it makes some sense to shy away from medium-term losers but, if anything, people should lean toward long-term losers.

It turned out that investors were not able to intuit the difference. For those considering buy transactions, 45% (defensibly) thought that past medium-term performance was a positive; but (incorrectly) a higher percentage (48%) thought that long-term performance was desirable.⁷¹ On the sell side, an even stronger confusion is apparent, with 41% seeing weak long-term performance as a sell signal vs. 29% seeing weak medium-term performance as a sell signal.

Abstracting from this (medium-term vs. long-term) subtlety, we might ask ourselves what percentage of investors sees past strong performance (regardless of return interval) as a buy indicator, and weak past performance (regardless of return interval) as a sell indicator. These people we will say are subject to representativeness. In the case of mutual fund investors, the operative phrases to comment on the importance of were “past performance”, a “significant rise in prices”, and a “significant drop in prices” in the context of changing holdings (either buying or redeeming). We will say that if somebody assigns importance to one of these three factors then they are subject to representativeness. Overall, looking at both stock and mutual fund investors, as shown in Exhibit 6, 48% of the sample proved themselves to be subject to the behavioural bias representativeness.

d) Understanding of Diversification

All stockholders were asked to specify the minimum number of stocks that one must hold in their portfolios in order to achieve “proper diversification.” Fully 58% said they didn’t know.⁷² Now it must be acknowledged that this is a difficult question, and indeed there is no magic number. Nevertheless, as

⁷¹ The percentages presented in this paragraph are not shown in Exhibit 4a.

⁷² Exhibit 4a does not show any information on the issue of diversification. The reason is the small number of people who provided meaningful answers here.

mentioned earlier, academic studies suggest that you must hit at least 10 before you are even starting to move towards proper diversification (and most would peg the answer at 30-40). About one-fifth (19%) of respondents – that is, close to half with an opinion – thought nine or fewer would be sufficient. Thus only 22% were able to say that 10 or more stocks were needed for proper diversification.

It is also interesting to contrast what people say they should do and what they actually do. The question is: do people actually hold a sufficient number of stocks so that, arguably, they are properly diversified? Caution must be exercised. Suppose, just considering the equity side, someone holds a well-diversified Canadian equity fund and a single stock. While the amount invested in the stock relative to the amount invested in the fund matters, it is certainly arguable that this investor is diversified despite their overweighting of a single security (which perhaps they have some special knowledge of). To obviate this problem, suppose we look at only stockholders who do not *also* hold mutual fund units. If these people hold nine or fewer securities we will claim that they are undiversified. Of the 36 respondents who only invested in stocks (that is, they had no mutual funds) *and* who expressed a *correct* view on the number of stocks needed for diversification, remarkably 26 of them (72%) were not diversified (despite their displaying knowledge of what was needed).⁷³ One supposes they espouse the “do as I say, not as I do” philosophy.

e) Understanding of Asset Allocation

Next, do people understand asset allocation? A signal that they misunderstand is a revealed divergence between their statement of agreement with the statement “I consider myself an aggressive investor”, and their equity share. (We discuss the distribution and determinants of equity share below.) To operationalize this comparison, we convert the level of agreement to an equity share. A Likert score of ‘10’ corresponds to 90-100% equity; ‘9’ corresponds to 80-89%; ‘8’ corresponds to 70-79%; and so on, down to ‘1’ which corresponds to 0-9%. Thus we have 10 bins. We then compare where one is located in terms of these bins to her actual equity exposure bin location. Our criterion for divergence is if an investor’s objective (what they do) and subjective (what they say on the “aggressiveness” question) risk tolerance are three or more bins apart. For example, if someone supplied an ‘8’ on the aggressiveness question which we translate into a subjective risk tolerance bin of 70-79%, but they actually hold 40-49%

⁷³ All those expressing an *incorrect* view were not diversified, so at least they practiced what they preached.

equities (which implies they are three bins apart), then we infer that they do not understand asset allocation. Using this approach, 49% exhibited confusion.⁷⁴

f) Investment Personality

Research has been conducted by Vanguard (in the U.S.) and SEI Investments (in Canada) into the investment (or money) personality of those entrusted with managing their own money, with planners vs. avoiders being the major continuum of interest.⁷⁵ The following questions on the survey were used to assign people to locations on this continuum:

1. If people agreed with the statement “I feel very confident managing my investments on my own”, they were given a point.
2. If people agreed with the statement “I find managing my investments enjoyable”, they were given a point.
3. If people looked at their portfolio more often than every six months, they were given a point.

We created a planner index (PI) by adding all these points together. Note that the sum ranged between ‘0’ and ‘3,’ with high values putting people in the planner camp, and low values putting people in the avoider camp. Referring back to Exhibit 6, not surprisingly, we see that DIYers are much higher than other groups on the planning index.

g) Trust in the Financial System

As we discussed earlier, trust in the financial system is likely to have an impact on the involvement of investors in the financial system. People lacking in trust may: 1) hold off becoming investors; 2) if currently indirect investors, may hold off becoming direct investors; and 3) if either indirect or direct investors (or both), may hold off increasing their overall investments. Since our sample is entirely made up of investors, we can only explore the last two.

To construct a distrust index (DI), we used the following two questions:

⁷⁴ Exhibit 4a does not show any information on the issue of asset allocation confusion. The reason is the small number of people who provided meaningful answers here.

⁷⁵ See MacFarland, Marconi and Utkus (2004), Marconi and Utkus (2002) and SEI Investments (2004) for recent examples of attitudinal segmentation.

1. If people disagreed with the statement: “Regulatory bodies effectively enforce legislation around mandatory disclosure of information”, they were given a point.
2. If people disagreed with the statement: “Legislation around mandatory disclosure of information protects the investor”, they were given a point.

The distrust index was constructed by adding up the points received on these two questions. It was our view that people disagreeing with the first statement might be sceptical that regulators were serious about enforcement. Further, we believed that those disagreeing with the second statement might be doing so because of a view that investor protection was not a high priority of regulators. Thus disagreement on these questions signalled distrust. Only 12% disagreed with the first statement (vs. 33% agreement), while 9% disagreed with the second statement (vs. 46% agreement), suggesting a fairly trusting group of investors.⁷⁶

iv. Using Investor Characteristics to Account for Behaviour

a) Listing of Demographic and Behavioural Variables

Exhibit 8 reviews the demographic variables and behavioural indicators/indexes described up to now. In the next two sections, we will illustrate how these variables can potentially account for risk-taking and foreign exposure.

Exhibit 9 presents a correlation matrix of all pair-wise correlations. Most significant correlation signs accord with intuition. For example, the DIY indicator and PI are positively correlated: planners are likely to be do-it-yourselfers. Planners are also likely to be overconfident: one possibility is that past success (whether by luck or skill) gives people the (perhaps illusory) view that they have the ability to invest on their own. The representativeness indicator is correlated with both the emotion and overconfidence indicators.⁷⁷

b) Determinants of Risk-Taking

⁷⁶ Of course one reason for the fairly high level of trust was those whose distrust kept them away from investing were not represented in the sample.

⁷⁷ It has been found that people subject to one behavioural flaw are also likely to be subject to other behavioural flaws. One example is that self-attribution bias and overconfidence often go hand in hand. See Barber and Odean (2000).

With recent suggestions that people do not understand asset allocation and risk-taking (see previous discussion), the extent to which investors allocate their money to equities is of obvious interest. Exhibit 10 tells the story. Alarming, one in five was not able to say what the equity exposure of their portfolios was. Additionally, there are hints of insufficient risk-taking, especially for the less sophisticated. Of those who were able to answer, 27% had less than 20% of their money in stocks. This clearly does not tally with the oft-used dictum of financial planners that equity exposure should be 100 minus age, and the fact that virtually no one in the sample was as old as 80. Moreover the average equity share was 46%, which is about 15% below the typical defined benefit pension fund equity share.⁷⁸

Multivariate analysis is conducted to investigate which certain factors are able to account for risk-taking. Specifically, multiple regressions are run where the demographic and behavioural independent variables are considered as possible determinants of investor behaviour. The metric of investor behaviour here, risk-taking, is used as the dependent variable, that is, the variable to be potentially “explained” by the independent variables. Note that such an approach is preferable to merely looking at (pair-wise) correlations, since often the latter, induced by other factors, will be spurious. Exhibit 11 shows a regression of equity share on our full slate of demographic and behavioural variables. Additionally, here (and in other cases) we perform a second regression where variables not passing a first-round 10% significance cut are omitted from consideration. The regressions reveal results consistent with previous research: overconfident males farther from retirement take on more risk. The positive coefficient on age is anomalous, suggesting older people take on more equity risk. Two things must be kept in mind. First, the years-to-retirement coefficient is as expected, with people approaching retirement reducing equity exposure. Second, previous evidence documents a humped relationship between risk-taking and age, with people gradually taking on more risk as they age and become comfortable with risk-taking, and then reducing risk as they near retirement.⁷⁹

c) Determinants of Foreign Exposure

The removal of foreign content restrictions has recently attracted much attention. We argued earlier that because of home bias many investors tend to shy away from offshore exposure. Indeed Exhibit 12 corroborates this. The average level of foreign content (17.5%) was well below the previously legislated 30% for registered investments. In fact, almost one-quarter of investors had no foreign content at all.

⁷⁸ A conventional stock-bond mix for a defined benefit pension fund is 60/40, which suggests that a 60% equity exposure is appropriate for an average individual. This roughly conforms to the dictum of financial planners that one’s equity exposure should be 100 minus age, if the average worker begins employment at 20 and retires at 60.

⁷⁹ See, for example, Ameriks and Zeldes (2001).

In Exhibit 13 we again explore the determinants of foreign exposure via multiple regression. Overconfident young people with high income levels tend to invest more outside the country. One interpretation of the youth factor is that foreign exposure is a recent phenomenon and the young tend to be less anchored in the old ways. There is weaker evidence that people who have distrust in the Canadian financial system also tend to invest more outside the country, perhaps in jurisdictions (the U.S., for example) where they have a higher level of trust because of more consistent enforcement.

v. Process of Decision-Making and the Use of Information

There are a number of issues to be addressed:

1. What information sources are actually accessed by investors? We consider both mandated corporate disclosures and filtered third-party providers (such as the business press).
2. Are there preferences for hardcopy vs. electronic format? Do retail investors know of and access SEDAR?⁸⁰ Would people be comfortable going forward with an electronic default delivery?
3. What information sources are perceived to be useful by those who actually access them?
4. What information (or misinformation) triggers transactions? Are there any differences between buy and sell transactions?
5. How familiar are investors with key characteristics of their portfolios, such as performance, current holdings, risk, turnover and fees? How often do people consider these and related issues?

Note that these questions are likely to have different answers depending on whether one invests in direct or indirect securities. For this reason we partition the sample into those who invest in stocks and those who invest in mutual funds. Recall from the methodology discussion that those in the former category are asked one set of questions, and those in the latter category are asked another set of questions. Recall as well that those who invest in *both* stocks and mutual funds were randomly assigned to one set of questions or the other.⁸¹

⁸⁰ SEDAR is an acronym for “System for Electronic Document Analysis and Retrieval.” This website holds mandatory company disclosures in a publicly accessible fashion.

⁸¹ The 13 respondents only investing in corporate bonds were required to answer neither set of questions.

a) What Information Sources Are Accessed?

Referring to Exhibits 14 and 15, we see what information sources are accessed by investors. First, in Exhibit 14, which is pertinent for stock investors, usage of company information in aggregate (79%) is on par with the use of other information provider sources (81%). The former include annual financial statements, annual reports, interim statements, annual information forms (AIFs), prospectuses, management and discussion and analyses (MD&As), proxy and information circulars and material change reports; while the latter include business news, the internet, analyst reports, newsletters, various data providers, credit reports, books and seminars. Within the company information category, the sources relied upon most included annual financial statements, annual reports, interim statements and AIFs.

As for non-company sources, most popular were business news, the internet, analyst reports and newsletters. One in ten reported not using any of the suggested information sources. Not surprisingly, many of these people rely extensively on investment advice: 20% of those who make 100% of their investment decisions with professional advice are in this category.

What demographic and behavioural factors are associated with information usage? Refer to Exhibit 16 where the results of multiple regressions are displayed. The dependent variable examined is the total number of information items accessed. We see that male planners with high income access the most sources. It is reassuring to detect a correlation between information and likely sophistication markers.

Turning to Exhibit 15 which is pertinent for mutual funds, annual statements followed by quarterly statements are the key information sources for unit holders. Overall, however, fund holders are relying less on information sources than their stock counterparts: this is evidenced by the fact that they use 3.6 sources on average vs. 6.3 for stock/income trust investors.⁸² Still, this latter finding must be interpreted with care since mutual fund holders had less information sources to tick off. Direct comparisons though are more revealing: 57% of stockholders access the business news vs. 47% of mutual fund unit holders; and 55% of stockholders access the internet vs. 45% of mutual fund unit holders.

Referring to Exhibit 17, which is analogous to Exhibit 16 except that mutual fund holders are considered, we see once again strong evidence that planners utilize information sources. Interestingly, those

⁸² In fact, looking back at Exhibit 4a, it is comforting to note that the three sophisticated groups of investors, DIYers, stockholders and high-wealth individuals, are all more active consumers of information.

displaying representativeness also use information. This is not surprising since the only way that people can chase winners is to know the identity of these winners (which requires using information sources).

b) Hardcopy vs. Electronic Preferences

Most mandatory disclosure information is still used in hardcopy format. Given recent initiatives by regulators, such as the *Notice and Access* proposal which is currently being discussed south of the border, it is of interest to see what receptivity exists in Canada for electronic disclosure.⁸³ Electronic disclosure has two obvious advantages: cost savings and enhanced timeliness.

For each source that a respondent ticked off, they were asked whether they accessed it via hardcopy, SEDAR or other electronic. In some cases, individuals ticked off more than one delivery mechanism. Exhibit 18 displays the results for stock investors. In general terms, what we find is that at present Canadian investors still access disclosure information in paper form. Among stockholders, the percentage using paper varied from 58% to 81%; the percentage using SEDAR varied from 6 to 12%; and the percentage using other electronic sources varied from 15 to 32%.

Note that the level of softcopy use was highest for MD&As, interim financial statements and material change reports. As well, it is of interest that in each case small proportions of respondents indicated they did not know the format, suggesting they do not actually read the items themselves.

While current usage is important, future usage intentions and comfort levels also matter. Exhibit 20 shows that retail investors are generally receptive to receiving mandatory financial disclosure information only in electronic format, with 54-67% (depending on the item) expressing comfort with receiving information *only* in electronic format. Interestingly, proxy and information circulars appeared to have the greatest potential with 67% indicating comfort. This may be due to the fact that this particular information source is seen as the least useful of all tested (see below).

Exhibits 19 and 21, which are analogous to 18 and 20, apply to mutual fund unit holders. Not surprisingly, mutual fund investors, being less sophisticated, had lower levels of electronic information usage and comfort levels. For example, SEDAR usage was 3-7% (vs. 6-12%); and electronic receptivity was 44-60% (vs. 54-67%). In the latter regard, people were quite comfortable having the prospectus online, again, arguably, because it is not an item intensively used.

⁸³ See <http://www.sec.gov/rules/proposed/34-52926.pdf>.

Looking back at Exhibit 6, we note that the three sophisticated groups of investors, DIYers, stockholders and high-wealth individuals, are more likely to be open to electronic disclosure. We also explored, in Exhibits 22 and 23, the demographic and behavioural determinants of the openness to electronic disclosure. Little in the way of significant determinants was found here, other than a greater openness on the part of male mutual fund holders, perhaps a not surprising finding given the greater openness shown by males in many realms to all things electronic.

c) What Information is Viewed as Useful?

All those accessing a particular information source were asked how useful they found the item of information. Exhibits 24 and 25 tell the story. One would expect that which is used to be found useful, but there are shades of grey. For stockholders, found to be most useful among mandatory disclosure items were annual material change reports (at 57%), annual financial statements and annual reports, with interim statements and MD&As also receiving high usefulness scores. Still one might ponder why none of the disclosure items was found to be useful by large majorities of users. Possible candidates for blame are the possibility that disclosures are often not written in plain language – plus it can be difficult to extract useful information from the avalanche of verbiage. Information overload leads to frustration. Least useful were the proxy and information circulars, followed by AIFs: in the former case, only one-third of the users found them useful. Turning to information intermediaries, usefulness ratings were highest for internet sources (at 64%), with all other sources being more on par with the scores received for most of the mandatory disclosure sources.

As for mutual fund investors, the usefulness of information sources coming from fund companies and third-party providers was at similar levels to what was found for stockowners. One notable similarity is that mutual fund holders also find prospectuses of quite limited value.

d) What Information Triggers Transactions?

Investors were asked the importance of a number of possible transaction triggers. Exhibit 26 pertains to stockholders and Exhibit 27 pertains to mutual fund holders. For stockholders, half of the sample was asked the question in the context of purchases; and the other half was asked the question in the context of sales. Here we do not distinguish between the two groups. The items of interest were media stories, internet coverage, discussion board content, gut feel/intuition, analysts recommendations, advisor

recommendations, the recommendations of friends and family, impressions coming from the financial statements, impressions coming from MD&As, strong (or weak) market performance in the last six months, strong (or weak) market performance in the last three years, ratios and earnings growth. It is fair to say that some transaction triggers are more defensible on fundamental grounds than others (financial statements and MD&As vs. gut feel/intuition and the recommendations of friends and family), though any kind of ranking in this regard would be difficult.

The top drivers of transactions were strong market performance over the long haul, earnings growth and advisor recommendations. The financial statements trail somewhat, and MD&As are (perhaps unfortunately) on a par with gut feel/intuition. Interestingly, internet sources, while much used and rated as being useful, are not seen as being a key driver in triggering trade.

Turning to mutual fund transaction decision drivers, the decision to change a mutual fund is most likely to be driven by financial advisor recommendations, followed by past performance. Given that past performance is what likely influences the recommendations of many advisors, it is no surprise that past performance largely determines flows.⁸⁴ A second cluster of drivers surrounds fees, changes in unit price, release of statements and the length of time a fund has been held (likely because of declining DSC schedules). Much less important were media sources (particularly discussion boards), friends/family and gut feel/intuition.

d) Investor Familiarity with Portfolio Characteristics

How familiar with key aspects of their portfolios are Canadian investors? Retail investors appear quite familiar with certain key aspects of their portfolio. Exhibit 28, which is pertinent for stockholders, examines the following portfolio characteristics: overall performance, current holdings, risk level, turnover and portfolio fees (amount, type and management fees). Familiarity levels ranged from 50% for turnover to 66% for management fees. The highest levels of *low* familiarity were around turnover and fees (amount and type).

Not surprisingly, familiarity increased with age, income and investable assets, as well as proximity to retirement. The nature of one's holdings also impacted familiarity, as those with higher proportions of equities and foreign investments were more in tune.

⁸⁴ Again, see Sirri and Tufano (1998) and Deaves (2004).

Another way of getting at familiarity is to ask how often people undertake certain portfolio activities. Turning to Exhibit 30, the most common portfolio activity is to compare performance with the market, with almost half doing so more than once a year, and over one-quarter making the comparison every year. Additionally, many even do so with the fees removed (56% at least once a year or more often). Consideration of fees, or discussing them with one's advisor, is a less common activity, but more than half review them at least annually. The least common portfolio activity is to discuss the educational credentials of your financial advisor with the latter individual. The level does increase with investable assets, and among those who use independent advisors (where there might be less brand comfort).

Turning to Exhibits 29 and 31, which are pertinent for mutual fund unit-holders, familiarity levels are generally lower. Highest familiarity is measured on overall performance (52%) and risk level (50%), and lowest familiarity on turnover (29%). Of particular concern are the high levels of unfamiliarity with fees and loads: 32% were not certain whether they were paying loads; and 25% did not seem to know that ongoing fees (MERs) normally include a deferred sales commission component (the trailer fee). Additionally, 28% were unfamiliar with turnover, an activity that also eats into returns.

In general, portfolio activities are performed less frequently by mutual fund investors. For example, fees are reviewed every year or more often by 46% of them (vs. 56% for stockholders); and performance is assessed vs. the market for 64% of them (vs. 73% for the stockholders).

vi. Corporate Bonds and Decision-Making

Corporate bond owners, of which there were 175, were asked to rate the importance of three items in "deciding to change a corporate bond holding": mandatory corporate disclosure information; corporate bond yields/coupons; and credit rating information. Exhibit 32 illustrates that all three items were viewed to be important by at least half of all respondents, with, on the high side, yields and coupons mattering to 57%, and, on the low side, credit rating information mattering to exactly half.

vii. Attitudes and Desires

a) Attitudes about Disclosure

Attitudes about disclosure and regulation were also explored. Referring to Exhibit 33, while bare majorities agree that "financial professionals require mandatory disclosure information to do their jobs

effectively” (51%), and “having mandatory disclosure of information provides equal access to information for all investors” (again at 51%), one could argue that these agreement percentages are on the low side, as these two principles underlie much securities regulation and legislation.

All market participants gain from increased liquidity. If distrust in the system is holding some people back from participation, then reform of securities legislation and regulation might serve to alleviate distrust on the part of some, thus deepening financial markets. The following question was designed to explore this issue:

I would increase my investments in the market if there was a higher degree of mandatory disclosure of information required.

Again referring to Exhibit 33, only 30% agree with this statement. Twenty percent disagree, and 15% expressed no opinion. Those agreeing are prime candidates for increased market participation. With this in mind, in Exhibit 34, the agreement level of respondents was regressed on the demographic and behavioural variables previously used. We see that the strongest determinants are two behavioural proclivities and distrust. The coefficient on the latter suggests that those with a *higher* level of distrust are *less* likely to increase their investments. One possible interpretation is that those with low levels of trust are much more interested in seeing better enforcement within the current system before committing themselves to greater involvement.

b) Desires to be Addressed

Finally, some desires potentially served by securities reform were explored. Exhibit 35 explores whether investors were interested in certain items of information. The greatest desire seems to be greater clarity on fees and returns, with 64% expressing interest in seeing the “rate of return on your investments based on actual return with contributions/withdrawals and fees separated out”. Moreover 62% desire a “clear breakdown on all mutual fund fees paid” and 61% desire a “clear breakdown on all brokerage account fees paid.”

Since of late some have been calling for one “continuously updated disclosure document available on-line that consolidates all relevant information”. A bare 51% agreed that this would be desirable, which is, arguably, a fairly respectable percentage given the overall lack of use of electronic sources at present.

viii. Summary

1. Most retail investors make most of their investment decision decisions with the help of financial professionals. There is, however, a small minority of do-it-yourselfers.
2. Knowledge levels are often low and decisions are tainted by behavioural bias. Some are overconfident, subject to emotion and chase winners (when they should be contrarians). Plus the ability to understand diversification and asset allocation is quite limited.
3. Despite these problems, mandatory disclosures and third-party information are being used by many investors.
4. Interestingly, that which is used is not viewed as particularly useful by some. Information overload and lack of plain language may be factors.
5. Greater information usage is linked with markers of sophistication.
6. Mutual fund unit holders rely much less on information than direct investors.
7. Information does not tend to be accessed electronically (except by a small minority), but there is a reasonable level of openness to electronic disclosure.
8. Along these lines, a slim majority embraced a “continuously updated disclosure document available on-line that consolidates all relevant information”.
9. There seems to be a desire for greater (and clearer) disclosure on fees and returns. The needs and desires for greater fee disclosure are strongest for mutual fund holders.

7. Institutional Investor Survey

i. Methodology of Institutional Investor Survey

For this study, we conducted in-depth interviews with institutional investment managers (and a few related practitioners) in Canada to solicit their views and opinions and to determine their approaches to the investment process. Forming the basis of the interviews was a questionnaire with 65 questions. As in the retail survey, some questions probed for agreement or disagreement to a statement. Once again, a 10-point scale was used, with '10' indicating strong agreement and '1' indicating strong disagreement. Unlike in the retail survey, there were other questions inviting narrative responses. The interviews were conducted either in person or by telephone.

ii. Basic Profile of Institutional Investors

In this section, we will look at demographics, decision-making style, portfolio characteristics, performance attribution, and investment style and security analysis.⁸⁵

a) Demographics

Our survey participants reflect the general demographic profile of their institutional investor cohort in Canada. The group of twenty investment managers and analysts interviewed is responsible for \$105.0 billion in investment assets, with a group median of assets managed of \$3.0 billion. At an average age of 47 years, these managers have significant tenure in their craft, with an average of 20 years of industry experience and an average of 15 years of portfolio management experience. Their predominate degree designations are Chartered Financial Analyst (15) and MBA (8).

The majority of the managers interviewed are from the "buy-side" of the industry, with two "sell-side" analysts providing information to institutional and retail clients on a full service brokerage platform at different firms. We interviewed individuals managing assets for public and private pension funds, mutual funds, pooled funds for high net worth individuals, and hedge funds. The three largest asset vehicles of

⁸⁵ Davis and Steil (2001) provide a good source here. Additionally, their international comparisons are useful for benchmarking purposes.

the group were public pension funds (\$52 billion in aggregate), mutual funds (\$22 billion) and pooled funds for high net worth clients (\$14 billion).

Although the majority of the managers reside in Ontario, we spoke with three managers in British Columbia, two in Quebec, and one in Nova Scotia. There were three women and seventeen men interviewed for the study. The most frequent roles reported were Portfolio Manager (15), Analyst (10) and Chief Investment Officer (8), with many reporting dual roles.

b) Decision-Making Style

Exhibit 36 provides insight on the decision-making style of the interviewees. Our survey participants primarily counted themselves as “charismatics”, that is, “those intrigued by new ideas while making decisions based on balanced information”. 85% agreed with this characterization of their decision-making style. Conversely, 50% rejected the idea that they were “sceptics”, or suspicious of data that did not fit their world view making decisions based on gut feel.⁸⁶

c) Portfolio Characteristics

The majority of the assets managed by those interviewed are in Canada (87% or \$91 billion), while \$60 billion (58%) are in equity markets and \$44 billion (42%) in fixed income, with one manager alone accounting for \$35 billion of the fixed income amount. This would not reflect a home bias of the manager as the approach to asset management would be dictated by an investment mandate to focus on Canadian equity. It may, however, reflect a behaviour of the issuer of the mandate to prefer Canadian equity or, perhaps, a reflection of the expectation that Canadian-based managers would have an expertise in Canadian markets. Our sample size, however, was not sufficient to substantiate these observations. The overwhelming majority of the assets managed were focused on large-capitalization equity issuers. Managers reported annual portfolio turnover rates of 20% to 40%.⁸⁷

⁸⁶ See Williams and Miller (2002) for a discussion of these decision-making styles.

⁸⁷ The portfolio turnover rate is defined as the percentage of a portfolio that is sold (and replaced with other stocks, or cash) each year.

d) Performance Attribution

When asked what percentage of portfolio return they would attribute to their decisions, all managers indicated that security selection contributed the most to their returns, followed by sector selection and then asset allocation. It was noted that sector selection, in recent years, was a more important contributor to manager returns in Canada than in the U.S. due to the positive dominance by two sectors of the Canadian stock market, namely energy and financials.

e) Investment Style and Security Analysis

The most common equity management style was core (34% of assets), followed closely by value (19% of assets). Most managers (56%) described their decision-making as a team effort. Interviewees were asked the importance of various approaches to their investment process. Referring to Exhibit 37, the dominant one was described as a “bottom up” approach (88% agreement) which, along with a focus on fundamental analysis (100% agreement), supports the performance attribution weighting to security selection. Although some managers complement their “bottom up” approach with a “top down” view, it was rated to be of less importance.

Managers were also asked to rate the importance of various decision-making inputs. Referring to Exhibit 38, 58% saw information about company management and strategy as important, followed by corporate earnings (53%), relative valuation (47%) and discounted cash flow (42%). Most were neutral (58%) on news about a company.

iii. Financial Reporting

a) Importance and Quality of Disclosure

Financial disclosure by reporting issuers is critical to valuation and investment decisions by institutional investors. Still, the investment community is looking for improved quality of financial information from companies and, it follows, companies have an opportunity to differentiate themselves through the quality of the disclosures they provide.

The institutional investors in our study strongly agreed that financial reporting was of the highest importance (89% agreement) to their investment process, but rated the quality of reporting in Canada

lower, with 68% expressing neutrality on the quality. When asked about the timeliness of information, the respondents were generally satisfied (82% agreement on timeliness) with the situation in Canada.

Our findings are consistent with those of a 2003 AIMR (now the CFA Institute) survey which found that more than 80% of the analysts and portfolio managers who responded worldwide considered financial statements and footnotes to be “extremely” or “very” important to their analysis and investment decision-making.⁸⁸ Problematically, however, they only gave public companies an average grade of C+ for the overall quality of financial reporting and corporate disclosure.

The issue of the quality of disclosed information is a key to improving the investment decision-making process for institutional investors. Although the perception is that the quantity of disclosed information has increased in recent years, institutional investors are looking for more salient reporting of material information. Recall that one problem with quantity is it can lead to information overload. While retail investors are more susceptible to the influence of information overload, no one is immune. One suggestion was to have large corporations report separately within their financial statements for different business segments in order to allow for a more transparent look at what has been contributing to the company’s success.

b) The Impact of Regulation FD

On August 15th, 2000, the U.S. Securities and Exchange Commission (SEC) adopted Regulation FD (Fair Disclosure) to address the selective disclosure of information by publicly traded companies and other issuers. Regulation FD stipulates that when an issuer discloses material non-public information to certain individuals or entities (that is, securities market professionals, such as stock analysts, or holders of the issuer's securities who may well trade on the basis of the information), the issuer must make public the disclosure of that information. In this way, the new rule aims to promote full and fair disclosure.⁸⁹

A Canadian perspective is in order.⁹⁰ Experts in securities legislation in Canada argued that, since Canada’s insider trading laws were tighter than those in the U.S., there was no strong reason for a homegrown Regulation FD. In fact, without any new rules, there were some high-profile sanctions. For

⁸⁸ For details on this AIMR survey (“Member Survey of Global Corporate Financial Reporting Quality and Corporate Communications and Disclosure Practices”) see www.cfainstitute.org/pressroom/pdf/financial_report_qlty.pdf.

⁸⁹ See SEC website at www.sec.gov/hot/regfd.htm.

⁹⁰ See MacIntosh and Nicholls (2002) for details.

example, in 2000 Air Canada was fined for releasing earnings guidance to a select group of analysts. Nevertheless, Regulation FD did renew attention to the practice of selective disclosure in Canada. To clarify matters and to tighten regulations, a comparable regulation, National Policy 51-201, was brought forward in 2002.

When asked about the impact of Regulation FD, we heard that there had been little overall impact on the forecast capabilities of analysts, and that, in general, the influence of sell-side analysts had only been marginally reduced, despite the reduced access to selectively disclosed information. There was acknowledgement of the need to create an even playing field for market participants. Nevertheless, since companies were left unsure of what they could say (and when and where they could say it), the result was that management erred on the side of saying less rather than more in their meetings with analysts, and relied more heavily on their legal departments to vet communications. The result was “information chill”, where reporting issuers, instead of providing earnings guidance as in the past, now provided no more than “broad hints” about earnings expectations. One investor referred to this as a “democratized” system of access to information.

Clearly institutional investors rely heavily on disclosed financial information to help formulate their investment decisions, but for the most part they do not believe that the reduction in the practice of providing earnings guidance has hampered their ability to evaluate investment opportunities (with 32% expressing this view and the rest neutrality). Rather, information chill has influenced institutional investor decision-making to rely more now on sources of information that were not emphasized when earnings guidance was provided. These sources include, among others, company competitors and customers, who are contacted to “test out a management story line”. Finally, there is also the perception that there is a greater incidence of information chill in U.S. markets due to more efficient enforcement of regulations.

c) Disclosure Reliability, Trust and Enforcement

Institutional investors expressed the view, for the most part, that the disclosure system in Canada was reliable (53% agreement), that is, reporting issuers deliver the information that is required by regulation. One investor said, “I trust the system to give me information” and “the nature of the game is OK, as long as I know the rules”. When asked directly whether they trust the disclosure system, our investors mostly responded positively, with 63% expressing trust.

While any lack of trust is not going to lead to institutional investors leaving the playing field (unlike retail investors who can more easily vote with their feet), their views on enforcement are revealing. Recall that, in our earlier discussion of trust, evidence was presented that enforcement can be an effective tool for enhancing trust, if notice of enforcement activity is appropriately publicized.

When asked whether the enforcement of disclosure regulation is effective, institutional investors were, at best, ambivalent in their assessment: a large majority (79%) expressed neutrality on this issue, hardly a vote of confidence for regulators. One investor offered that “government does not put enough resources into enforcement,” while another averred that “insider trading in Canada could be enforced better.” When asked directly whether enforcement increases trust in the system, there was some weak support (32% agreement vs. 29% disagreement) for the notion that, as one investor put it, there should be “more penalties for misleading information”. This group was largely of the opinion that enforcement leads to beneficial results, offering such comments as “more penalties would make for greater market participation” and “enforcement leads to trust”.

d) Information Burden and Standardization of Reporting

The increasing cost of disclosure is seen as a problem by some. This is largely driven by increases in accounting fees, director and officer insurance premiums, and legal fees. As is well known, the egregious corporate abuses, particularly south of the border, that came to light early in the millennium led to a siren call for government intervention and reform. The U.S. Sarbanes-Oxley Act of 2002 had as its stated objective, “to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws”. Some have argued that the bill was rushed through and is seriously flawed. Most damaging is the charge that some of the increased (costly) burden does not seem to have an obvious payoff.⁹¹ In Canada, a series of regulations were brought forward on CEO and CFO certification of disclosure (Multilateral Instrument 52-109); the role and composition of audit committees (Multilateral Instrument 52-110); and oversight of auditors (National Instrument 52-108) which accomplished some of the same purposes as Sarbanes-Oxley.⁹²

While the benefits of increased disclosure requirements (though likely quite real) are hard to pin down,

⁹¹ One example is Nofsinger and Kim (2003). And a business reporter (New York Times (2006)) recently wrote that large U.S. companies complain because of Sarbanes-Oxley that “there is a feeling among some managers that being public hinders the fundamentals of their business, from the quality of boards to decision-making and recruiting talent.”

⁹² See Stikeman Elliott (2004).

the costs are easier to pinpoint, and some of the institutional investors interviewed did so. An example of the burden imposed by the Act is the mandatory reporting of corporate risk factors. One survey respondent opined that “disclosure of risk factors, according to Sarbanes-Oxley, is elementary but must be provided. It is of little value, similar to warnings on consumer products that say not to put your head in the plastic bag”.

There was concern expressed by institutional investors about the information burden placed on reporting issuers, especially smaller companies. One cited an estimated fixed cost of regulatory reporting of up to \$3.0 million for one of the smaller companies he followed, a significant financial burden for the company. Opinions expressed included instituting a less frequent, and more standardized, set of reporting requirements for smaller companies. It was thought that “information burden is not in the best interests of shareholders in aggregate”.

A suggestion was made by an investor in the pension fund sector that information burden could be reduced by moving to a “principles-based” regulatory approach, as opposed to a “rules-based” approach. The logic was that there are “some things that cannot be regulated” and that “CAP-like guidelines could be applied to the disclosure system”.⁹³

e) Additional Disclosure

A majority (63%) of institutional investors did not feel that additional disclosure would improve the decision-making process for retail investors. Information needs to be made available to retail investors, but the nature of the data “requires learning and is therefore not very usable by retail investors”. Often, due to the sheer volume of information, investors must apply significant time and effort to find the facts that are material or relevant.

For institutional investors, the issue is similar, but the resources and economies of scale exist to make it more practical. One manager reported frustration at trying to decipher information in the 300-page SEC mandated annual Form 10-K report filed by one of the companies in his portfolio. In addition, he received, during a two-week period, over 80 email messages from a U.S. company, each containing

⁹³ This reference refers to the Capital Accumulation Plan Guidelines. In May 2004, the Joint Forum of Financial Market Regulators released a final version of the Guidelines for Capital Accumulation Plans, also known as CAPSA Guideline No. 3. While these Guidelines are voluntary in nature, most industry observers see them as a codification of best practices. That is, to avoid future liability it is the expectation that registered pension plans with CAP components will operate in accordance with the CAP Guidelines.

details of a different executive's stock option plan. Although he has both the resources and scale to do the homework, he is clearly not satisfied with the flood of what he considers to be non-material information. Although respondents felt that additional disclosure would be more of a benefit to investment decision-making for institutional investors than retail investors, the caveat they placed on this assessment was that the disclosed information come in a consumable format and be categorized to highlight material information.⁹⁴

One survey question asked whether institutional investors would be prepared to pay to receive corporate financial information. While some said yes, others rejected the idea outright. It seemed, for the most part, that they felt they already pay to receive information through data providers and their own research, and that it is the reporting issuers themselves that should be interested in making sure their investors, and potential investors, receive adequate information to allow for a supply of capital.

f) Electronic Dissemination

When asked whether electronic dissemination of disclosure information meets their needs, 84% of institutional investors agreed that it did (with the rest being neutral). They went on to say that they would prefer to receive, electronically, prospectuses (79%), annual financial statements (75%) and MD&As (75%). Most were of the view that electronic dissemination alone was sufficient (70%). One investor placed a caveat on the last statement saying that he would prefer to also see anything over 50 pages in hardcopy form. This comment likely is based on the fact that information in electronic format is often not well organized. Thus a uniform method of reporting electronically would be a great benefit to investors.

A number of institutional investors offered the opinion that they found the Canadian SEDAR system superior to the U.S. EDGAR⁹⁵ system in terms of the availability and accessibility of data. One often hears the contention that the U.S. has superior overall corporate disclosure requirements, but Canada seems ahead of the game in terms of the not unimportant issue of electronic format of disclosure documents.

⁹⁴ 63% disagreed that it would help retail investors (vs. 16% for institutional investors).

⁹⁵ EDGAR, the U.S. equivalent to SEDAR, is an acronym for "Electronic Data Gathering, Analysis, and Retrieval."

iv. Views on Efficiency and Risk

a) Market Efficiency

An efficient securities market is one where the prices of securities traded on that market at all times incorporate and reflect all information that is publicly known about those securities. Problematically, the exact equivalence between value and price at all points in time leads to the following paradox: if there are no bargains to be uncovered, there is no payoff to analysis, but if no one is doing analysis, who is ascertaining value to start with? This has led to a more operational version of the hypothesis that states that markets are efficient if one cannot consistently outperform the market through expert stock selection or market timing net of all fees and costs (including the cost of undertaking analysis).⁹⁶

One would expect that institutional investors, who make their living by trying to outperform the market, to be sceptical about market efficiency. Referring to Exhibit 39, indeed, 95% of them agreed that there are exploitable market anomalies, and that they make their investment decisions based on the belief that markets are not efficient. Moreover, 65% believe that they take advantage of such anomalies. For the most part, however, they were not convinced that these anomalies persist beyond two years (35% agreement vs. 29% disagreement), and, when looking at longer investment horizons, leaned more in the direction of anomaly dissipation. It is not surprising to note that value investors are less likely to believe in anomaly disappearance as their style, after all, is based on the view that investing in low price-to-book companies will provide long-term, persistent above-market returns.

b) Passive Investment

Consistent with the consensus view that securities markets are likely efficient in the long term, institutional investors see a place in the investment spectrum for the use of passive investments, that is, those indexed to a market (or sector) return. The prevailing view was that passive investments are useful for large, efficient markets, or in markets where a portfolio allocation is mandated but where either economies of scale or sufficient specific knowledge is lacking. One institutional investor also expressed the view that indexation might make sense for retail investors because the fees that they have to face when investing in mutual funds may be too high relative to any gross return enhancement.

⁹⁶ See Bodie, Kane, Marcus, Perrakis and Ryan (2003).

c) Risk

One source of risk in the financial sector arises from asymmetric information. Simply put, providers and users of the funds each have some knowledge that others do not. Asymmetric information can distort investment decisions and create opportunities for some market participants to manipulate and exploit others.

Institutional investors do not feel strongly that asymmetric information risk poses a risk to their portfolios (37% agreement vs. 32% disagreement), and there is a sense that this risk will diminish over a longer time horizon. Therefore the important question then becomes “Where is the finish line?” for institutional (and retail) investors when attempting to mitigate risk. Another method of mitigating this risk is not relying solely on management discussion for insights, but also talking with employees involved in the execution of strategies. There is a sense that markets comprised of larger companies (e.g., S&P/TSX 60) are more efficient and not subject to as high a degree of asymmetric information as is the case of markets for smaller companies. With smaller companies, although this may result in more investment opportunities, they can also be more difficult to exploit.

Asymmetric information risk also contributes to the potential for principal/agent conflict for institutional investors. “There is a penalty to not be in the herd; you could lose your job”, said one experienced manager. He cited the example in Canadian markets of the rise and fall in the stock price of Nortel when it constituted a significant component of the index. Those analysts “who said to sell, as Nortel’s stock price was going up, were right, but they still lost their jobs”. The decision-making process of the institutional investor will be affected not only by analysis in isolation, but also by analysis in the context of the expectations and biases of the marketplace.

v. Process of Decision-Making and the Use of Information

a) Potential Information Sources

Institutional investors rely heavily on data to provide the foundation for their decision-making. The most important source of data for this fundamental analysis is reporting issuers, either through the mandatory disclosure of financial information or through contact with company management. Institutional investors also receive analyses from internal analysts (buy-side) and third-party analysts (sell-side) usually employed by an investment dealer. Data providers, such as Thomson and Bloomberg, are a part of the

information flow for most institutional investors, as are, increasingly, internet sources. Business press and television, books and academic studies, as well as industry conferences and seminars also play a role.

b) What Information is Viewed as Useful?

The type of information that institutional investors value most comes from reporting issuers. Exhibit 40 provides the results. The statement of cash flow ranks highest in importance (90%). Also of substantial importance were prospectuses (68%), income statements (65%), balance sheets (65%) individual meetings with company management (65%), interim financial statements (65%), and MD&As (65%). Of somewhat less importance were group meetings with management (55%) and material change reports (45%).

To provide perspective, cash flow seems to earn its top rank due to the belief that it provides a number that is not as easily managed as earnings and that it reveals much about the ongoing operations as well as the longer-term investment activities of reporting issuers. Corporate governance practices are considered important as “better-governed companies perform better” but rated at a lower level primarily, it would seem, because the practices “tend to all sound the same”. Group meetings with management have a low rating with some investors while others rely heavily on following the “thread of questioning” that results from group meetings. Indeed, some subscribe to services that transcribe the discussion to allow for more in-depth review.

Exhibit 41 provides information on the perceived importance of accounting information not coming directly from reporting issuers. The only highly valued source is internal analysts (with 82% finding their views important). Only 28% find external analysts with their well-known biases of value. One manager indicated that third-party analysts are valued more as “broad strategists” than for their specific company analysis.

Of moderate importance (42%) were data providers (such as Thomson and Bloomberg), with internet sources (32%), credit rating reports (32%) and industry conferences, seminars or meetings (30%) also having a following. The business press and television (10%), and books and academic studies (15%) lagged considerably.

c) Institutional Investor Best Practices

Although our survey did not explicitly explore for best practices, there are some areas of common practice that we can highlight. Our sample was small, selective and focused on those who use disclosed information as an important aspect of their process. It follows then that the common practices relate to this type of analytical process for investment decision-making.

One practice that is consistent among the managers interviewed is the use of disclosed information in a process that was described by the managers as “fundamental” and “bottom-up”. A “fundamental” approach refers to the focus of the decision-making process on the financial and business attributes of a listed company to ultimately determine earnings projections, which, in turn, lead to price forecasts. The “bottom-up” approach refers to a process that looks first at the merits of individual stocks before looking at the investment merits of a particular asset class or sector.

A second common practice is placing primary importance on cash flow information from reporting issuers. Balance sheet and income statement information, though also rated as important, appear to be of secondary value. One survey participant explained that the reporting of cash flow information is less susceptible to manipulation than balance sheet or income statement information and is, in this way, deemed more reliable and valid.

A third common practice is the reliance by investment managers on their own analysis, or that of their internal analysts, in making investment decisions. This contrasts with a lower level of reliance on other sources of information or analysis from third parties, including the business press, brokerage company research or credit rating reports.

vi. Summary

1. There is basic institutional investor confidence that the disclosure system and company reporting are reliable.
2. The quantity of information is seen as sufficient, but a higher degree of quality is desired. Improved quality could include, for example, providing a more segmented reporting of financial information for large companies, especially by business line.

3. Electronic dissemination is sufficient to meet most institutional investor needs.
Electronic disclosure format could be streamlined and better organized. SEDAR is viewed as superior to EDGAR.
4. Investment decision-making is still reliant upon unique insights. Information chill has moved the focus from company management-watching to other sources.
5. Enforcement, though an effective tool for enhancing trust, needs to be tightened up. Enforcement actions, especially if notice is appropriately publicized, can benefit the system.
6. Information burden is viewed as a concern. Costly disclosure requirements, for example, can be a major burden for smaller issuers, and may drive some companies from public markets.

8. Recommendations and Discussion

We close this report by suggesting that the *Task Force* consider making the following recommendations to securities legislators and regulators:

Recommendation #1: Regulators need to recognize and explicitly take into account the limitations of retail investors.

We have cited ample evidence that retail investors are having problems. Some of this evidence is based on previous studies, and some of the evidence is based on the original research (the retail investor survey) conducted for this study. Retail investors are often subject to information processing constraints and inattention, cognitive biases, overconfidence and emotional confusion. Typical results are excessive credulity, poor asset allocation, inappropriate risk-taking, insufficient diversification and over-trading.

What can be done about all this? One concrete example might be helpful. Securities laws do not mandate mutual fund prospectus delivery prior to completion of the transaction. It is believed that protection is afforded by the right to rescind the sale up to 48 hours after receipt of the prospectus. Such reversal will in fact be rare due to several psychological predispositions: status quo bias (which was previously discussed), inertia and procrastination (both of which were not previously discussed). Inertia says that many of us do not get around to doing something unless we see a pressing need. The thinking might go: “When the mutual fund salesperson advised me to buy the fund, it seemed like a good idea. Where’s the rush to look at the prospectus? I will file it away and look at it later”. Inertia exists because there is *perceived* to be no pressing need. Indeed, many will never get around to looking at the prospectus (procrastination). And, over time, many will become convinced (whatever evidence to the contrary may exist, such as noticing that the MER and DSC are both high, and the performance unimpressive) that the original purchase was a wise one (status quo bias).

For all these reasons, a good case can be made that delivery (and explanation) of the mutual fund prospectus (or, preferably, some simpler document accomplishing the same purpose: see next recommendation) should be required *before* the completion of the transaction. Now some will say that this constitutes excessive regulation, and will needlessly delay many transactions. Still, use of the phone and electronic delivery (see below) can mitigate some of these concerns.

Recommendation #2: Greater attention in the future should be paid by regulators to the form (rather than the content) of disclosure.

There is evidence that retail investors have particular trouble with large amounts of information presented in an opaque fashion: too much information can lead to information overload, and poor presentation can lead to frame-dependence and confusion. In other words, people will shut down if they are confronted with a mountain of ill-presented data. Plus they will be unlikely to find what is needed if they have to access multiple documents. It sometimes seems that disclosure is aimed at the intermediary, not at the retail investor.

Again, mutual fund investors may be most at risk. Some have critiqued the fragmentation of information in this context.⁹⁷ One problem is that key information is scattered among the prospectus, annual information form and financial statements. Even knowing what sources to look at doesn't necessarily help if people don't know how to analyze the data once they painstakingly assemble it. One suggestion that has been made is to require delivery of a simple "fund summary" containing all key information.⁹⁸ Other items would have to be requested. This fund summary could be the item required to be delivered and explained *prior* to completion of the transaction (see previous recommendation). Of course great care would have to be taken that this document truly contains the right information presented in the right way. We recommend a careful study investigating the form and content of such a document.

Recommendation #3: Regulators should move toward increased disclosure on fees and rates of return.

Ultimately people need to be concerned about the bottom line: what do they earn on their investments after all fees, costs and taxes have been netted out? While fees and costs reflect the provision of (usually) important guidance on the part of well-trained financial professionals, it is crucial that investors know exactly what they are paying, and what services they are paying for. This requires itemization and unbundling. In the case of mutual funds, it is important to carefully spell out (preferably in a fund summary) all fees, their purpose and their recipients. Only then can investors understand what creates the difference between gross and net returns.

⁹⁷ See Stromberg (1998).

⁹⁸ See Stromberg (1998).

There is evidence that investors have a more sanguine view of portfolio performance (both past and future) than reality reflects.⁹⁹ A mechanism contributing to this confusion is the absence of a clear rate of return figure on statements. Additionally, a comparison to a benchmark would be helpful. That said, it must be acknowledged that there can be valid disagreements as to what constitutes the right benchmark. And respondents to the retail survey also expressed a desire for increased disclosure and clarity on fees.

It should be noted that this report is not the only one to recommend greater clarity and information in such areas. A notable recent example is *The Fair Dealing Model*, a concept paper of the Ontario Securities Commission, whose purpose was to document the gap between the minimum standards set out by regulators and the industry's best practices in the area of interaction between financial service providers and retail clients, with the goal of eventually bridging this gap.¹⁰⁰ Three principles provide a foundation for all recommendations made in the latter report: clear, documented allocation of rights and responsibilities; full transparency in all dealings with the retail investor; and appropriate management of any potential conflicts of interest. The authors of the present study endorse these principles and many of the ensuing recommendations, greater disclosure on fees and rates of return being prime examples.

Recommendation #4: Careful attention needs to be paid by regulators to the practices and credentials of registered representatives, especially those selling mutual funds.

Given the above evidence on lack of knowledge and the existence of bias, it is not surprising that so many retail investors rely on the guidance of financial professionals. The problem is that they may be too trusting. This blind trust is not always deserved. Few people question the qualifications of registered representatives. Few people understand the conflicts of interest inherent in the incentives advisors have to recommend commission-rich products. Perhaps part of the mandatory KYC process¹⁰¹ should be a mandatory KYA ("know your advisor") component, where such things as educational credentials and compensation (along with concomitant incentives) are discussed.¹⁰²

⁹⁹ See Charupat, Deaves and Lüders (2005).

¹⁰⁰ See OSC (2004).

¹⁰¹ See MFDA (2004), where evidence is presented of inconsistent KYC procedures.

¹⁰² *The Fair Dealing Model* (OSC (2004)) referred to earlier suggests the use of an account opening contract, known as "The Fair Dealing Document," that "would document the relationship chosen, the investor's financial situation and objectives, the full range of services to be provided, and the fees to be charged (page v)." A KYA component could easily be added. Another possibility -- less preferred, because it still requires the consumer to be proactive -- is to have a centralized database listing registered representatives, their credentials, experience and compensation model (commission vs. fee for service).

Advocis (on its website) provides a list of pertinent questions that retail investors can ask of their advisor prior to retaining them.¹⁰³ For example, on the issue of qualifications, they suggest such questions as: “What is your professional training? What is your experience as a financial advisor? How many hours of continuing education do you complete each year? Are you a member of any professional association?” The problem is that many retail investors will be reticent to conduct such job “interviews.” Thus mandating such a discussion seems to be called for.

Mutual fund investors may be most at risk. It is clear that they are less savvy than those directly investing. They access fewer information sources than stockholders. And they use the advice of financial professionals more often. While many highly ethical professionals sell mutual funds, there is some evidence of abuse by registered representatives in this environment.¹⁰⁴

Of course there is no easy fix here. A recalcitrant problem is that different financial professionals have different levels of education and professional accreditation, and have demonstrated proficiency to different regulatory gatekeepers. Some have high levels of education and wide experience. Others fall short of this ideal. Recent calls for greater professionalism of this group, partly by upgrading education and accreditation barriers, and partly by moving to a fee-based model, could be encouraged by regulatory authorities (perhaps through guidelines vs. rules).¹⁰⁵

Recommendation #5: Regulators should encourage the movement towards greater reliance on electronic disclosure that is already in full swing.

While Canadian retail investors do not currently access any financial information sources electronically in large numbers, and they access SEDAR in even smaller numbers, they appear to be open to using disclosures electronically more and more in the future. Moreover, a slim majority, despite no explanation being offered as to what such a document would (or should) look like, are also open to a “continuously updated disclosure document available on-line that consolidates all relevant information”. As for institutional investors, perhaps not surprisingly, they are completely open to electronic disclosure.

Like it or not – and we believe regulators should embrace it – the world is moving towards virtual information provision. The (previously mentioned) U.S. *Notice of Access* proposal that is currently

¹⁰³ Advocis is a trademark of The Financial Advisors Association of Canada. These and other questions to ask of one’s prospective advisor are available at <http://www.advocis.ca/content/consumers/minding.html>.

¹⁰⁴ See Kivenko *et al* (2004) and other references cited there.

¹⁰⁵ See De Goey (2003) for a good discussion.

receiving comments is an example of this. The savings are significant in eliminating paper, printing and mailing costs. There are other clear advantages. Information can be disseminated in a more timely fashion. Additionally, the navigability of a web document can yield productivity gains.

All these advantages aside, we believe that provision should continue to be made for all those stating a preference for paper disclosure. There are, of course, people, especially older individuals who have never become comfortable with computer technology, who would find electronic access *alone* somewhat daunting. These people should continue to have the right to request to receive in paper form all disclosures currently requiring delivery. Traditionalists aside, we should always remember that the internet is not an unmitigated good. One problem seems to be that having so much information within a mouse click can engender a type of overconfidence known as “illusion of knowledge”.¹⁰⁶

Recommendation #6: Enforcement needs to be strengthened by regulators.

One area that is perceived to be weak is enforcement.¹⁰⁷ This was an area of particular concern to some institutional interviewees. Enforcement is important because it is much easier for reticent individuals to trust the financial system if they see that well-intentioned rules are truly being enforced. And “contingent consenters”, who constitute a large segment of market participants, will likely shy away from inappropriate activity if they see that an honest attempt is being made to bring malfeasance to justice.

We would like to close this report by saying that on balance there is a lot right with the current state of Canadian securities legislation and regulation. People for the most part feel that the right information is getting to them, and that disclosures can be trusted. The “if it ain’t broke, don’t fix it” dictum applies here as elsewhere. It has been argued that Sarbanes-Oxley with all its apparent weaknesses was rushed through because no politician wanted to seem to side with the scandalous corporate behaviour in the U.S. which came to light at the end of the millennium.¹⁰⁸ Still, as we have discussed above, there are certain issues that do require address.

Many issues focus on retail investors who lack sophistication. Most will agree that society as a whole will be better off if judicious investment decisions are made. Citizens will be better prepared for their retirement and will have less need of a government safety net. While it is not within the purview of

¹⁰⁶ See Konana and Balasubramanian (2005) for a discussion.

¹⁰⁷ Again, see AIMR (2003).

¹⁰⁸ See Nofsinger and Kim (2003).

securities legislation and regulation to mandate educational initiatives, a good case can be made that basic financial education should be part of a standard high school curriculum. Does it make sense (with apologies to geologists) that a high school student should graduate with greater clarity of the distinction between sedimentary and igneous rocks than between a stock and a bond?

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EXHIBITS

Exhibit 1: Table of demographic variables

Variables	Mean	Median	10th percentile	90th percentile
Age	49.3	49	30	68
Retirement Proximity	18.8	18	4	34
Gender (Male=1; female=0)	0.55	----	----	----
Income	\$73,428	\$62,500	\$37,500	\$137,500
Education (Graduate=1; Non-graduate=0)	0.45	----	----	----
Employment (Employed=1; Unemployed=0)	0.69	----	----	----

Exhibit 2: What percentage of time was assistance used?

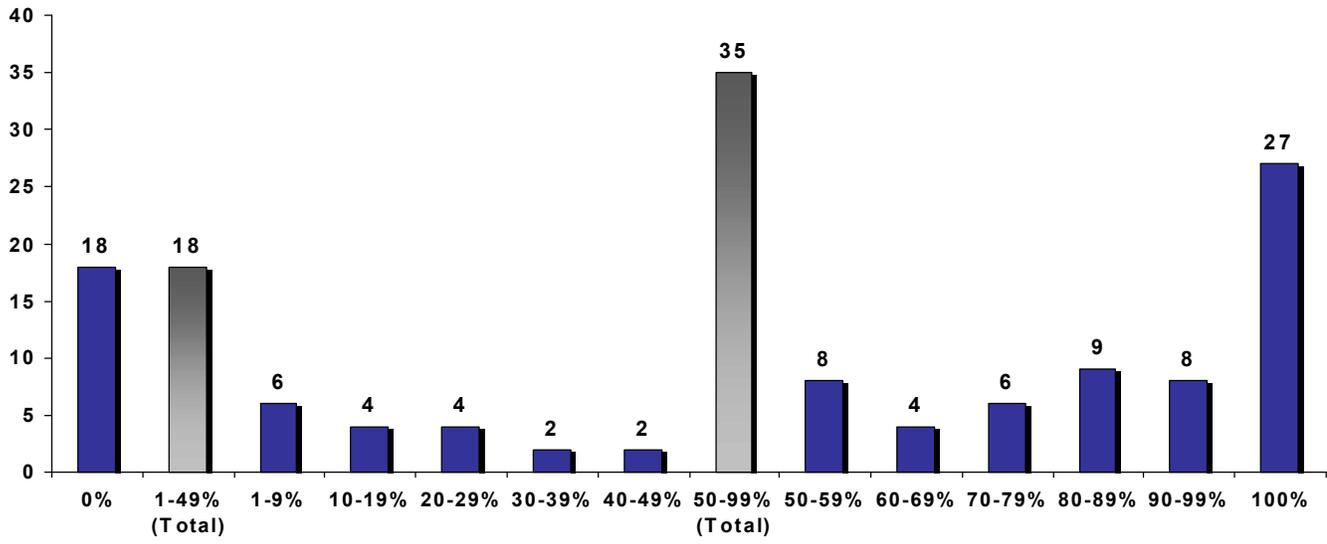


Exhibit 3: What types of advisors were used?

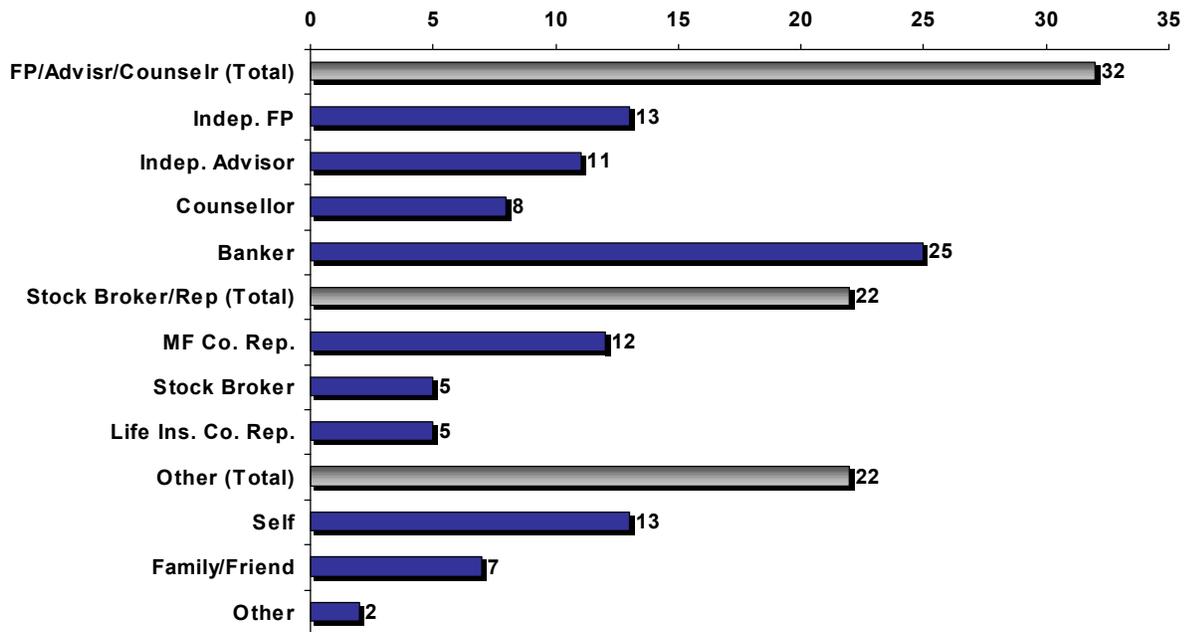


Exhibit 4: How often was the portfolio examined?

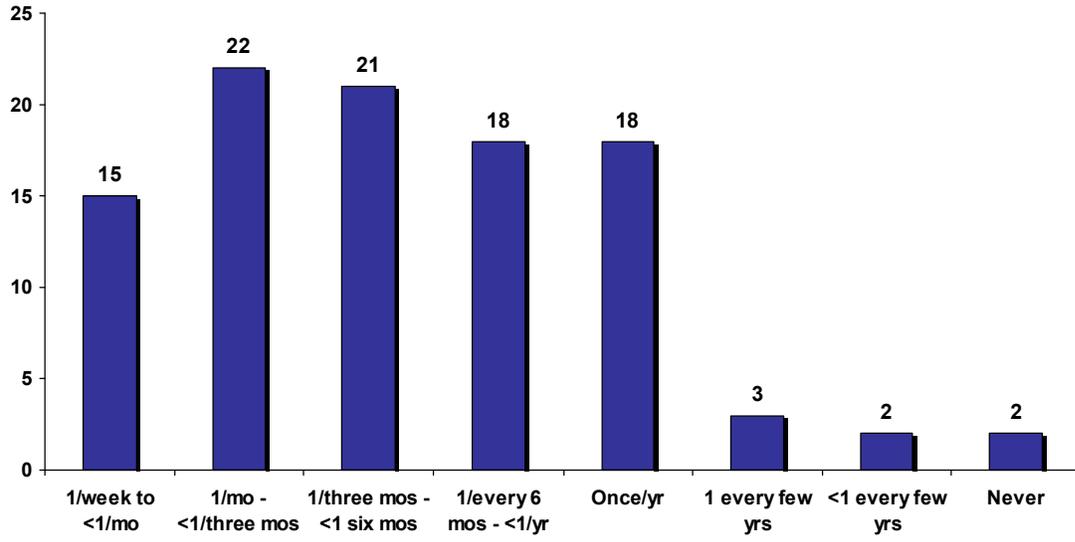


Exhibit 5: Asset classes

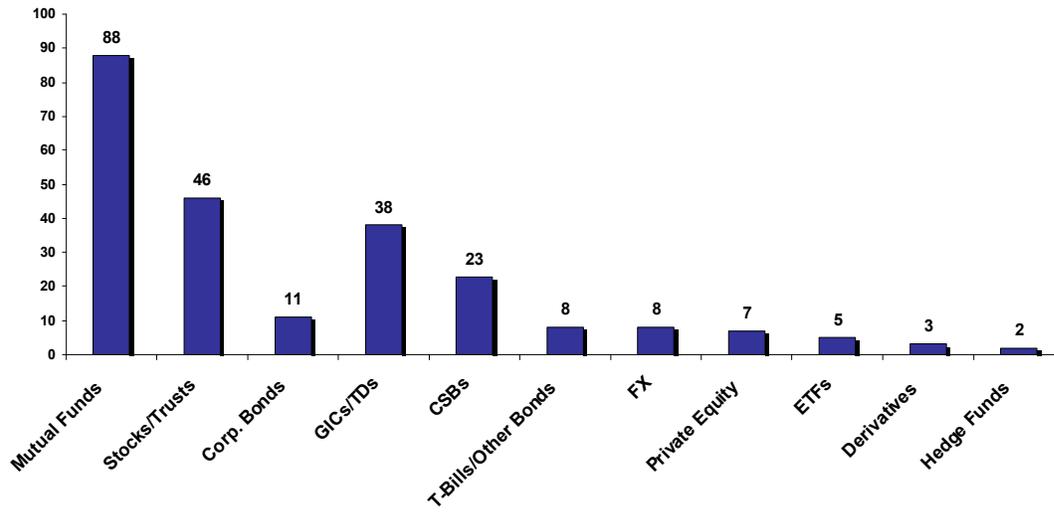


Exhibit 6: Total investable assets

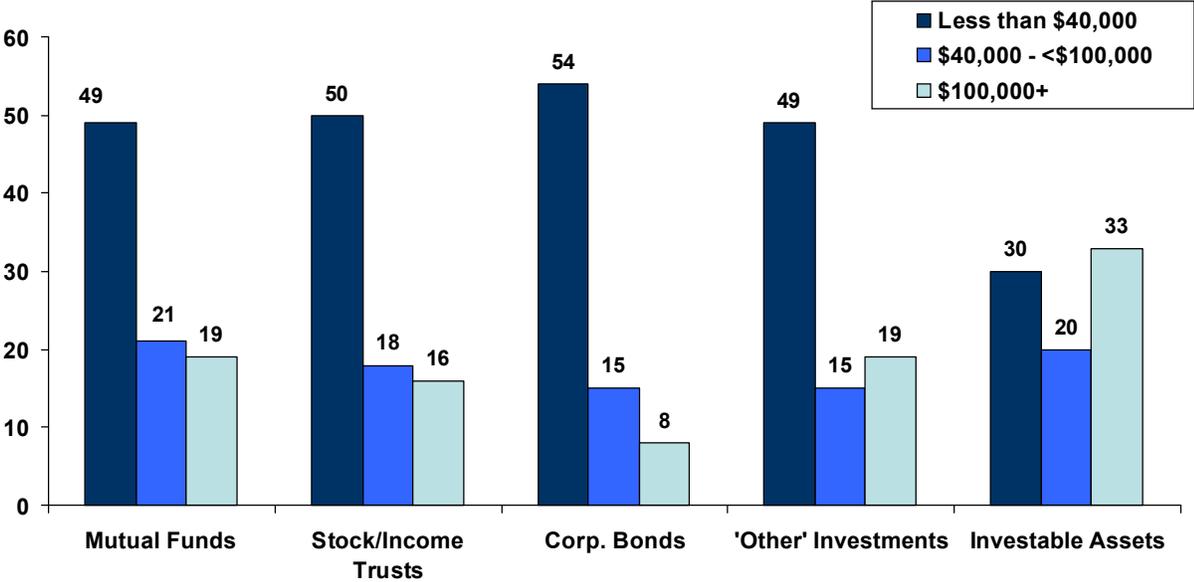


Exhibit 7: Characteristics of investor subsamples

	Full sample (n=1600)	DIYers (n=140)	Stockholders (n=743)	Only MFs (n=384)	High wealth (n=327)
	Demographics				
Gender	55%	69%	58%	50%	68%
Age	49	49	50	47	56
Income	\$73,000	\$76,000	\$80,000	\$62,000	\$98,000
Wealth	\$157,000	180,000	\$234,000	\$55,000	\$480,000
Education	45%	49%	48%	45%	50%
	Biases / sophistication / information usage				
Overconfidence	40%	49%	48%	34%	50%
Emotion	24%	31%	27%	19%	22%
Representativeness	48%	38%	45%	48%	47%
Planner index	1.1	1.9	1.36	0.74	1.34
Distrust index	25%	30%	23%	29%	33%
Aid percentage	58.3%	0%	53.4%	65.6%	61.1%
Risk-taking	46.2%	55%	50.7%	50.1%	48.2%
Foreign content	17.5%	14.4%	17.7%	19.4%	19.8%
Total info. sources	4.4	5.5	5.7	3.25	5.35
Disclosure sources	2.8	3.1	3.3	2.28	3.25
Other sources	1.6	2.5	2.4	1.01	2.14
Elect. openness	50%	55%	60%	44%	54%

Exhibit 8: Description of all independent variables

Independent Variables (Notation)	Category	Description	Type
age	Demographics	Age (years)	Continuous
ret_prox		Proximity (years) to retirement	Continuous
gender		Gender	Indicator
income		Income	Categorical (Converted to numerical)
education		Education	Indicator (1 = College graduate)
employed		Employment	Indicator (1 = Employed)
e		Behavioural biases (Constructed)	Emotion
oc	Overconfidence		Indicator (1 = Exhibit overconfidence)
rep	Representativeness		Indicator (1 = Exhibit representativeness)
pi	Investment temperament variables (Constructed)	Planner index	Indicator (1 = Exhibit planner attributes)
diy		Do-it-yourselfer	Indicator (1 = Tendency to be DIYer)
di		Distrust index	Indicator (1 = Tendency for distrust)

Exhibit 9: Correlation matrix

	e	oc	rep	pi	diy	di	age	ret_prox	gender	income	graduate	employed
e	1.00											
oc	0.16 (0.00)	1.00										
rep	0.22 (0.00)	0.24 (0.00)	1.00									
pi	0.16 (0.00)	0.41 (0.00)	0.12 (0.00)	1.00								
diy	0.05 (0.04)	0.06 (0.03)	-0.06 (0.02)	0.26 (0.00)	1.00							
di	-0.02 (0.60)	-0.10 (0.00)	-0.08 (0.01)	-0.10 (0.00)	0.03 (0.37)	1.00						
age	-0.01 (0.82)	0.04 (0.12)	0.14 (0.00)	0.00 (0.92)	0.00 (0.99)	0.07 (0.01)	1.00					
ret_prox	-0.04 (0.19)	-0.02 (0.59)	-0.09 (0.01)	0.03 (0.39)	0.07 (0.01)	-0.06 (0.10)	-0.77 (0.00)	1.00				
gender	-0.07 (0.00)	0.02 (0.57)	-0.03 (0.30)	0.17 (0.00)	0.08 (0.00)	0.05 (0.09)	0.00 (0.84)	0.05 (0.08)	1.00			
income	-0.02 (0.56)	0.06 (0.06)	-0.04 (0.19)	0.15 (0.00)	0.02 (0.45)	0.00 (0.91)	-0.06 (0.04)	-0.10 (0.00)	0.12 (0.00)	1.00		
Graduate	-0.03 (0.24)	-0.02 (0.56)	-0.07 (0.01)	0.04 (0.17)	0.03 (0.23)	-0.02 (0.51)	-0.10 (0.00)	0.07 (0.01)	0.06 (0.01)	0.21 (0.00)	1.00	
Employed	-0.01 (0.74)	-0.05 (0.08)	-0.09 (0.00)	-0.04 (0.15)	-0.02 (0.33)	-0.02 (0.43)	-0.53 (0.00)	-0.09 (0.00)	0.03 (0.21)	0.18 (0.00)	0.12 (0.00)	1.00

Note: All these variables are defined in Exhibit 5 (and more carefully throughout the text of the report).

Exhibit 10: Equity exposure

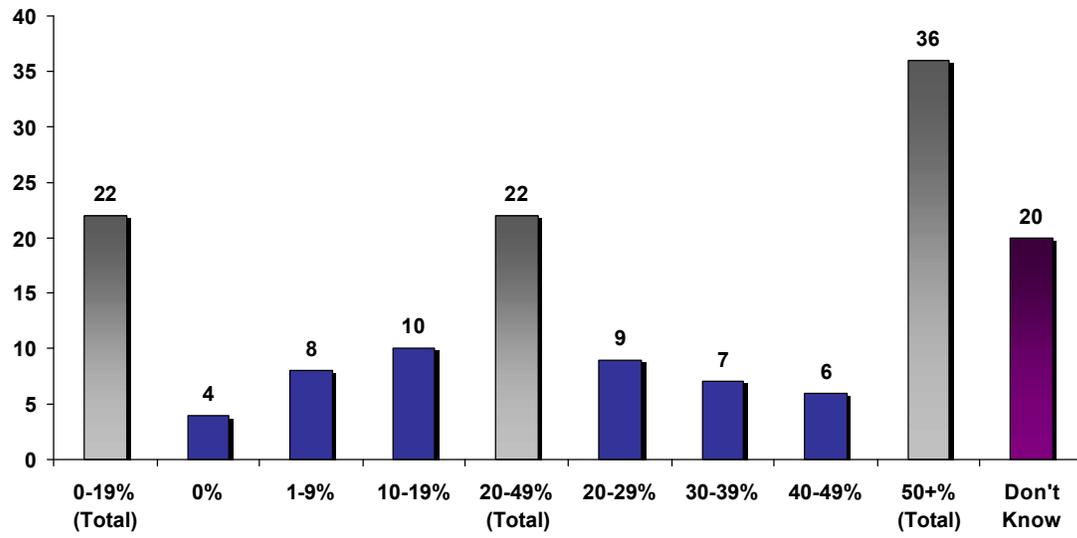


Exhibit 11: Determinants of equity exposure

Variables	All variables included		Variables sig. at 10%	
	Coefficient	p-value	Coefficient	p-value
Constant	3	0.81	10.19	0.28
e	0.85	0.78	----	----
oc	6.97	0.02	7.65	0.001
rep	-2.99	0.28	----	----
pi	1.26	0.42	----	----
DIY	0.29	0.95	----	----
di	2.44	0.29	----	----
age	0.57	0.00	0.54	0
ret_prox	0.46	0.01	0.39	0.01
gender	5.08	0.07	2.38	0.31
income	0.00	0.24	----	----
graduate	1.51	0.58		----
employed	-1.62	0.80	----	----
R ²	0.05		0.03	

Exhibit 12: Foreign exposure

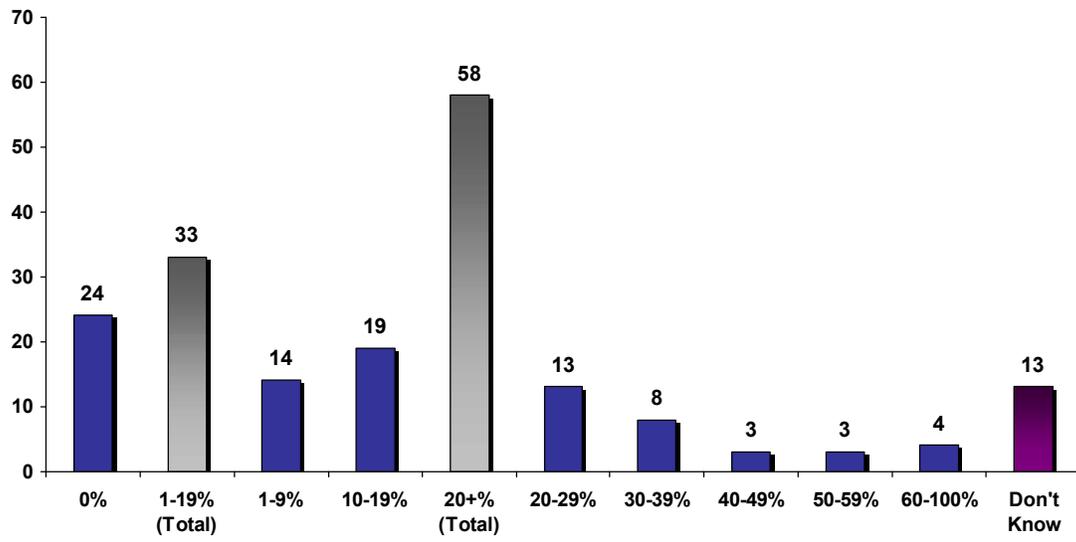


Exhibit 13: Determinants of foreign exposure

Variables	All variables included		Variables sig. at 10%	
	Coefficient	p-value	Coefficient	p-value
Constant	18.55	0.02	17.46	0.00
e	-2.10	0.29	----	----
oc	5.03	0.01	2.66	0.06
rep	0.54	0.75	----	----
pi	-0.57	0.55	----	----
diy	-2.10	0.47	----	----
di	3.08	0.03	1.72	0.15
age	-0.22	0.05	-0.10	0.03
ret_prox	-0.13	0.25	----	----
gender	1.56	0.37	----	----
income	0.00	0.01	0.00	0.00
graduate	1.22	0.47	----	----
employed	4.46	0.27	----	----
R ²	0.05		0.02	

Exhibit 14: Information sources accessed (stockholders)

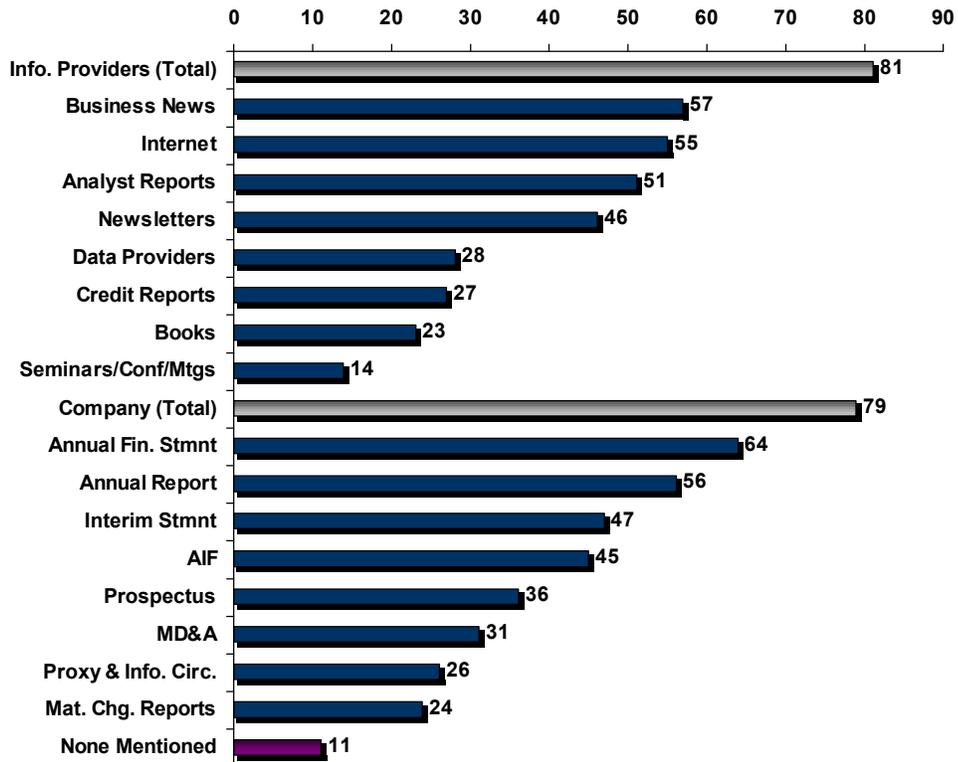


Exhibit 15: Information sources accessed (mutual fund unitholders)

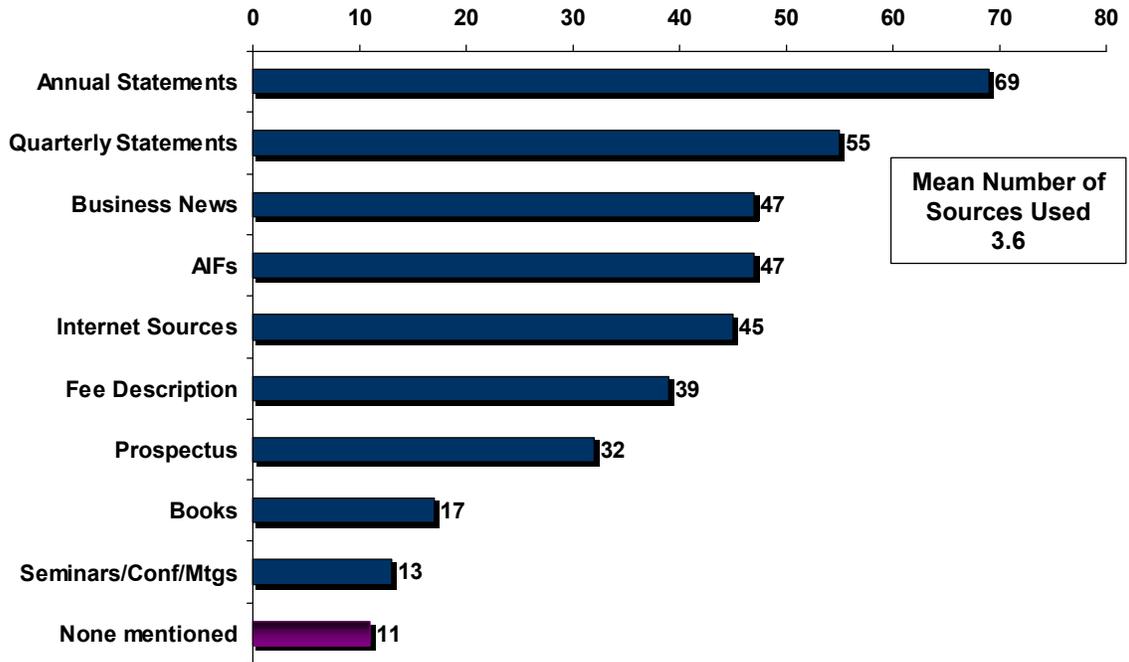


Exhibit 16: Determinants of information usage (stockholders)

Variables	All variables included		Variables sig. at 10%	
	Coefficient	p-value	Coefficient	p-value
Constant	5.73	0.04	2.39	0.00
e	0.61	0.37	----	----
oc	-0.20	0.75	----	----
rep	0.48	0.52	----	----
pi	0.88	0.01	1.22	0
diy	-0.92	0.23	----	----
di	-0.32	0.51	----	----
age	-0.04	0.26	----	----
ret_prox	0.01	0.90	----	----
gender	1.47	0.04	0.91	0.03
income	0.00	0.04	0.00	0.00
graduate	0.05	0.93	----	----
employed	-1.17	0.44	----	----
R ²	0.18		0.21	

Exhibit 17: Determinants of information usage (mutual fund unitholders)

Variables	All variables included		Variables sig. at 10%	
	Coefficient	p-value	Coefficient	p-value
Constant	2.85	0.01	2.79	0.00
e	0.30	0.27	----	----
oc	0.11	0.66	----	----
rep	0.60	0.01	0.59	0.00
pi	0.80	0.00	0.90	0.00
diy	-0.99	0.12	----	----
di	-0.02	0.89	----	----
age	0.00	0.87	----	----
ret_prox	-0.02	0.24	----	----
gender	0.31	0.17	----	----
income	0.00	0.92	----	----
graduate	0.30	0.18	----	----
employed	0.26	0.63	----	----
R ²	0.21		0.18	

Exhibit 18: Electronic usage (stockholders)

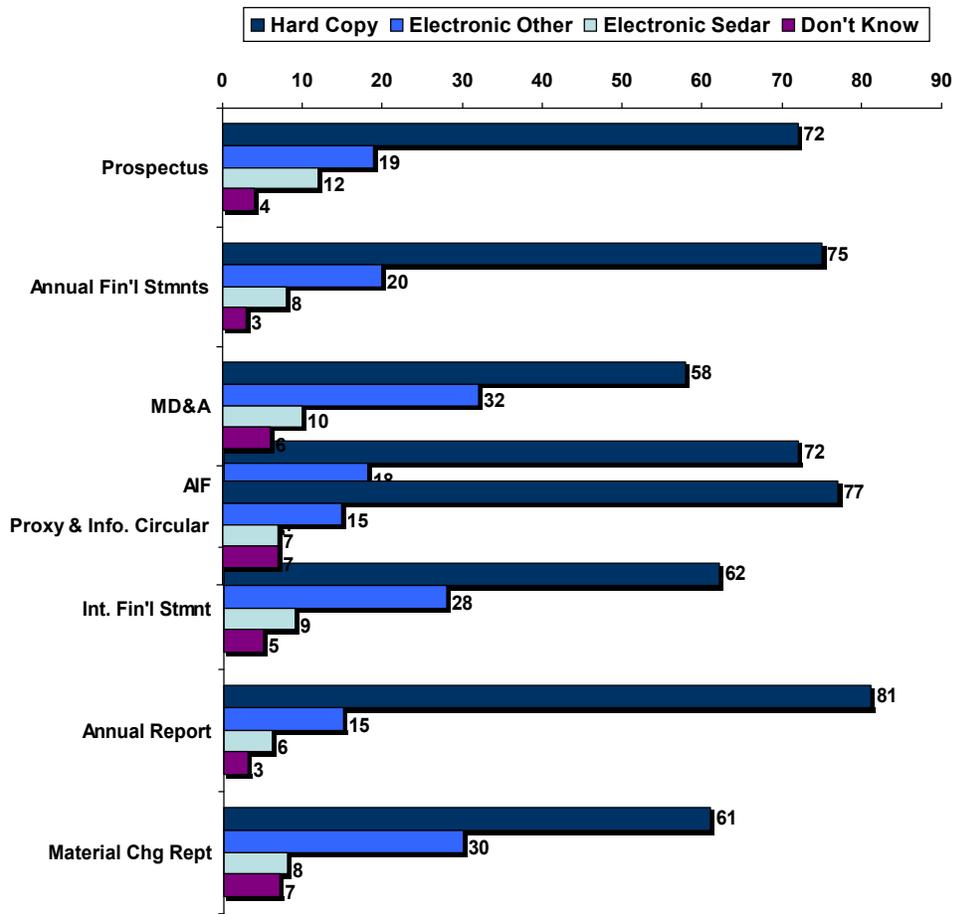


Exhibit 19: Electronic usage (mutual fund unitholders)

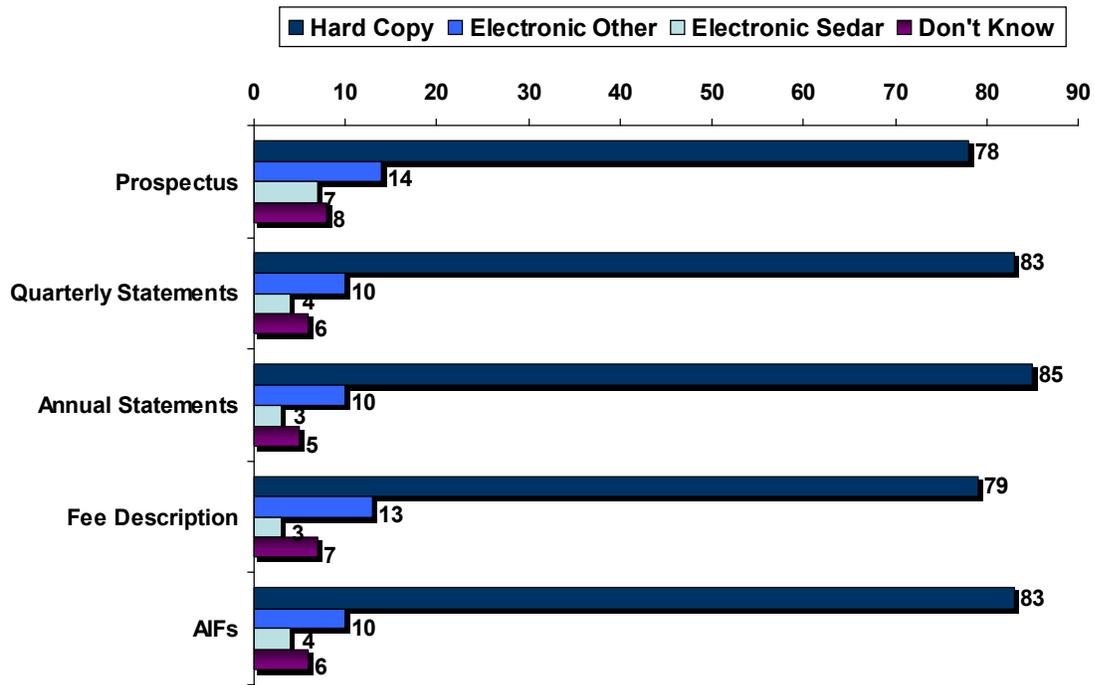


Exhibit 20: Comfort in electronic access (stockholders)

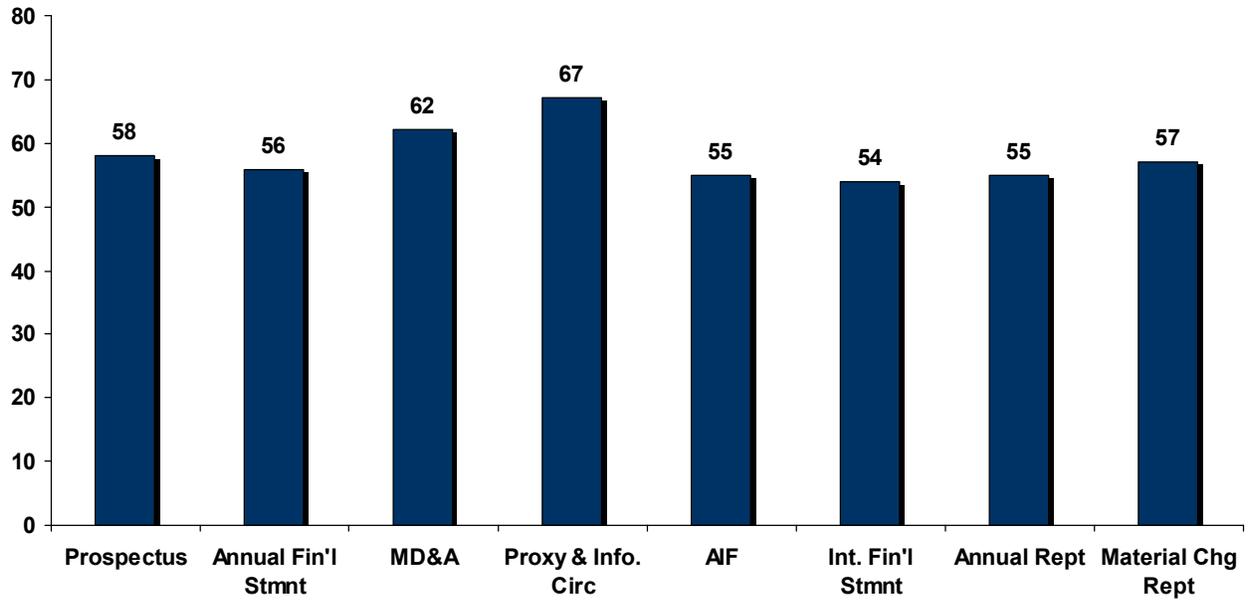


Exhibit 21: Comfort in electronic access (mutual fund unitholders)

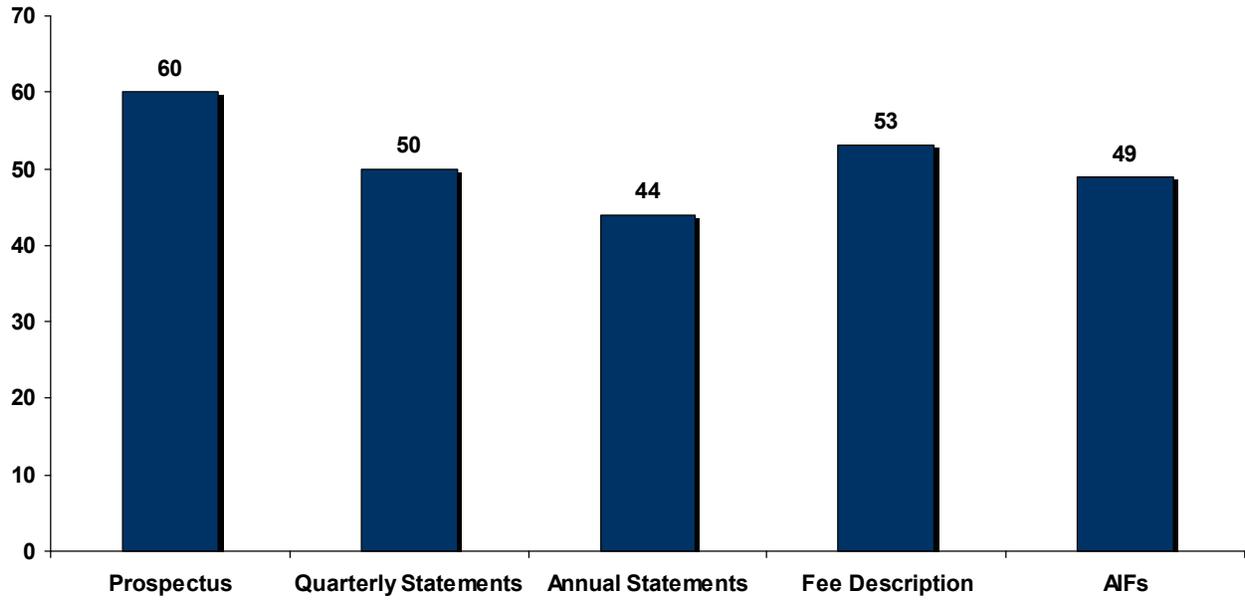


Exhibit 22: Determinants of comfort in electronic access (stockholders)

	All variables included	
Variables	Coefficient	p-value
Constant	0.93	0.51
e	-0.34	0.24
oc	0.29	0.29
rep	0.41	0.17
pi	0.07	0.64
diy	0.04	0.90
di	-0.22	0.37
age	0.01	0.68
ret_prox	0.00	0.93
gender	-0.13	0.64
income	0.00	0.11
graduate	0.20	0.45
employed	-0.82	0.32
R ²	0.06	

Exhibit 23: Determinants of comfort in electronic access (mutual fund unitholders)

Variables	All variables included		Variables sig. at 10%	
	Coefficient	p-value	Coefficient	p-value
Constant	-1.31	0.06	-1.03	0.03
e	-0.06	0.74	----	----
oc	-0.26	0.11	----	----
rep	0.17	0.24	----	----
pi	0.13	0.13	----	----
diy	-0.73	0.08	-0.35	0.19
di	-0.04	0.76	----	----
age	0.02	0.03	0.01	0.17
ret_prox	0.02	0.06	0.01	0.09
gender	0.40	0.01	0.53	0.00
income	0.00	0.28	----	----
graduate	0.02	0.91	----	----
employed	-0.47	0.20	----	----
R ²	0.03		0.03	

Exhibit 24: Perceived usefulness of information (stockholders)

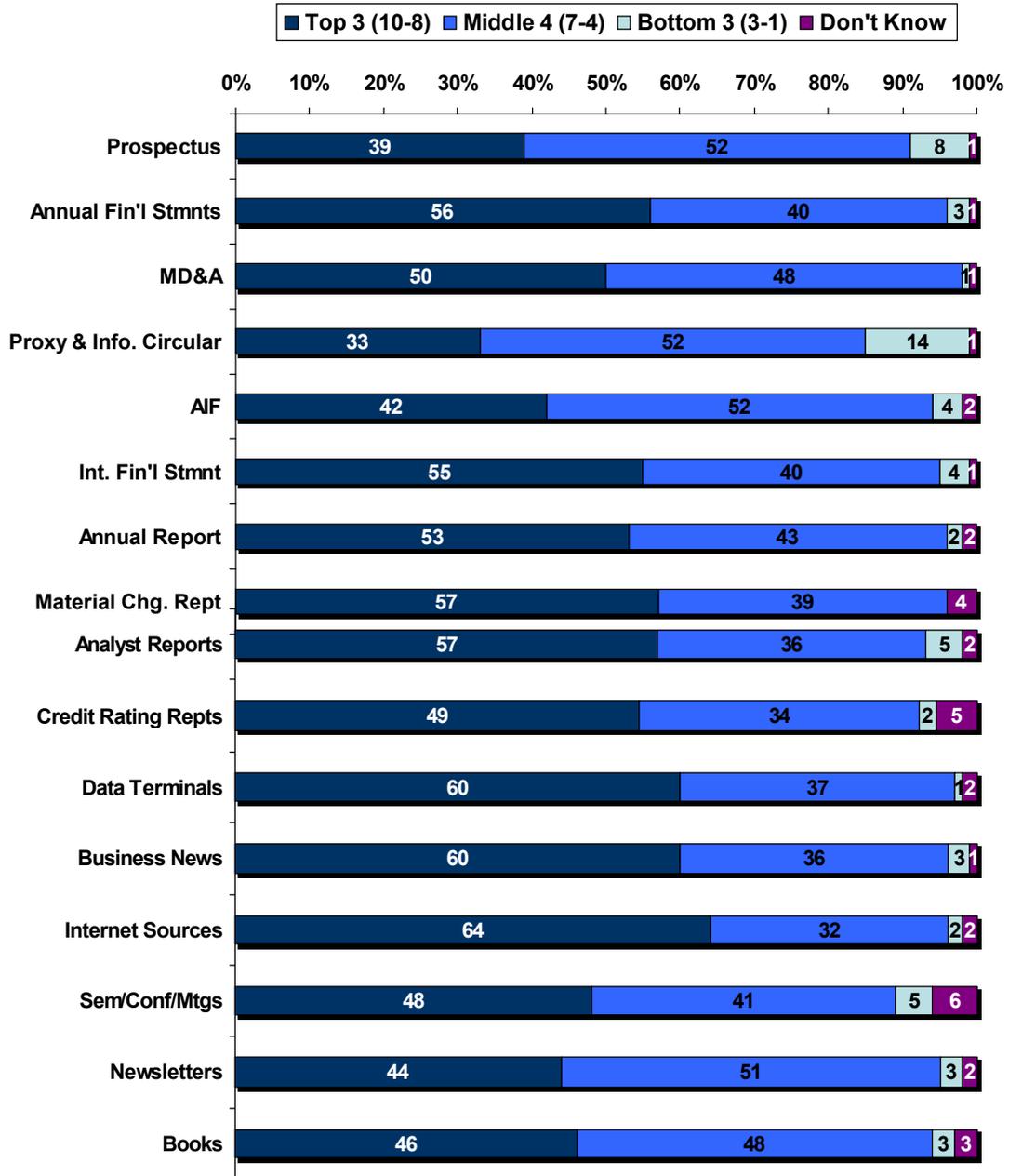


Exhibit 25: Perceived usefulness of information (mutual fund unitholders)

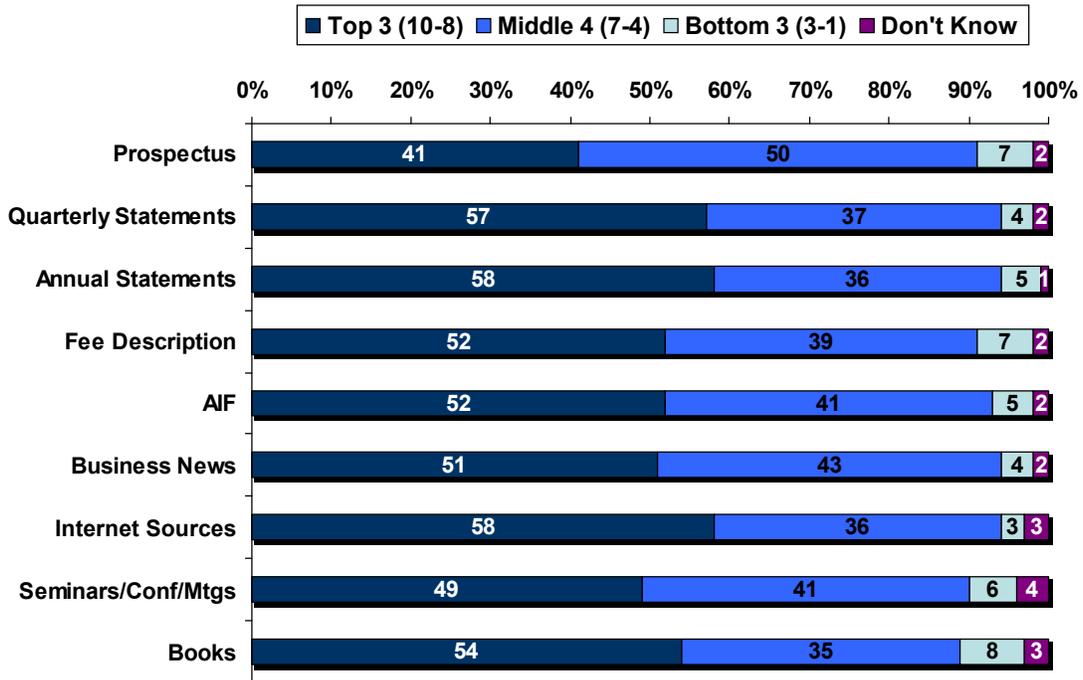


Exhibit 26: Transaction triggers (stockholders)

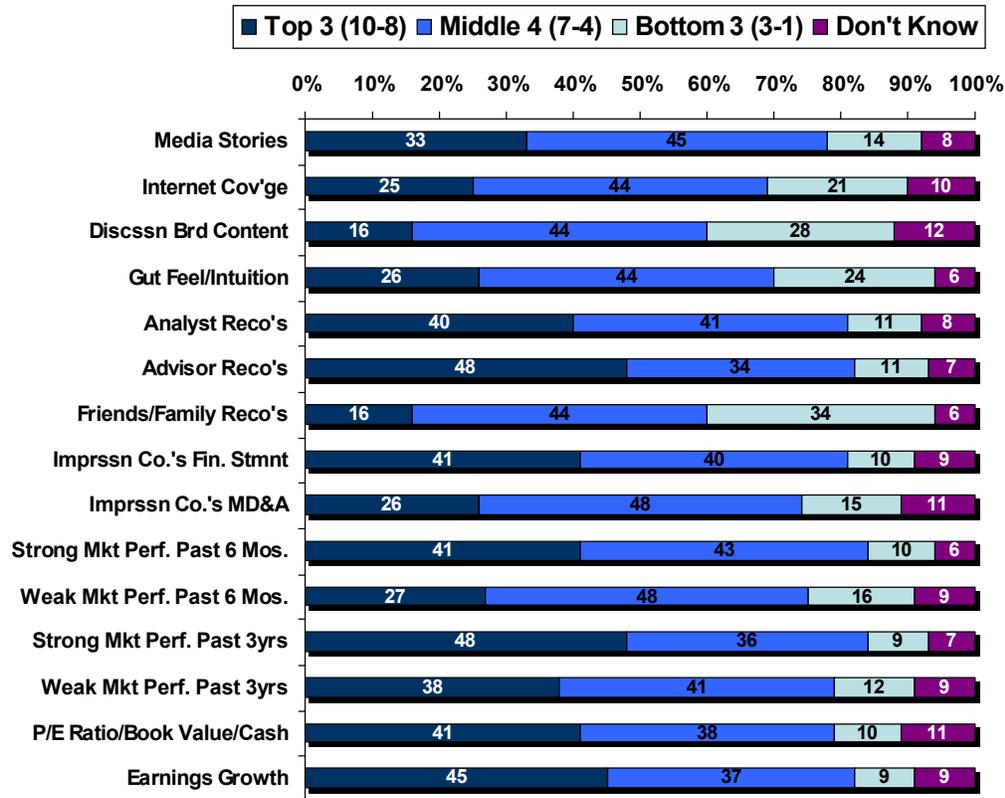


Exhibit 27: Transaction triggers (mutual fund unitholders)

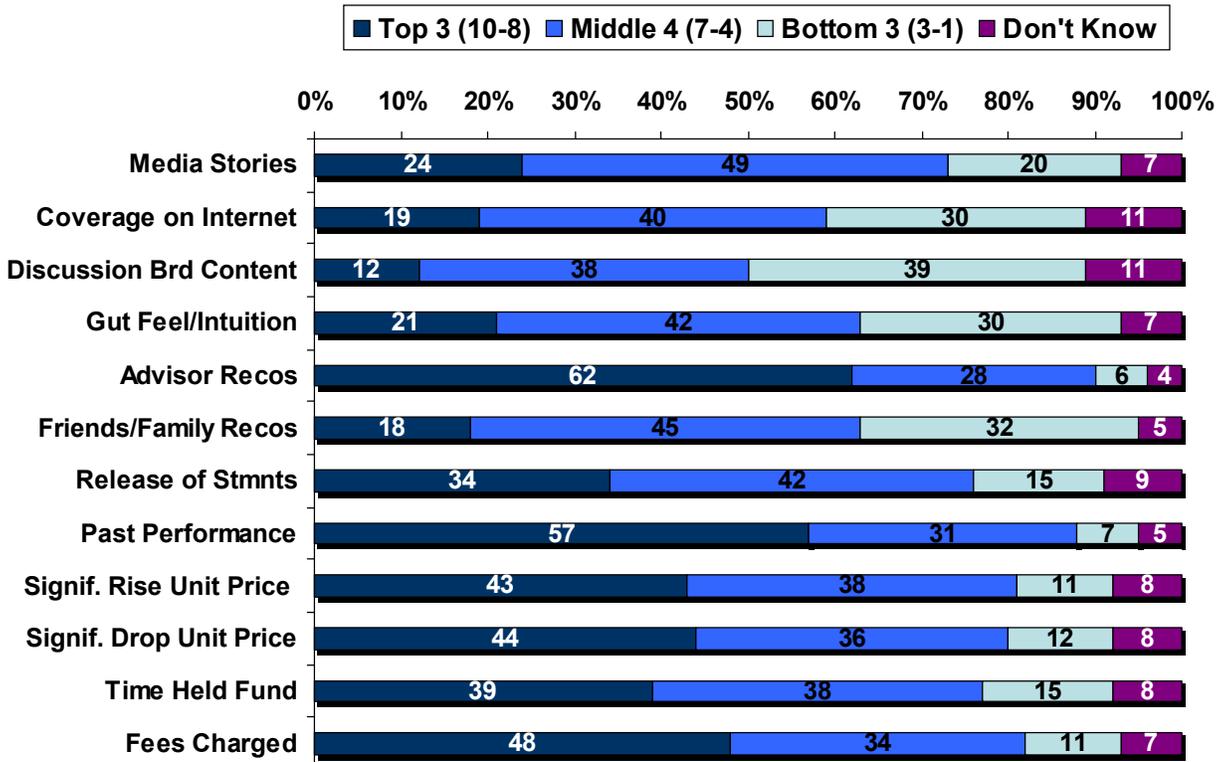


Exhibit 28: Familiarity with portfolio characteristics (stockholders)

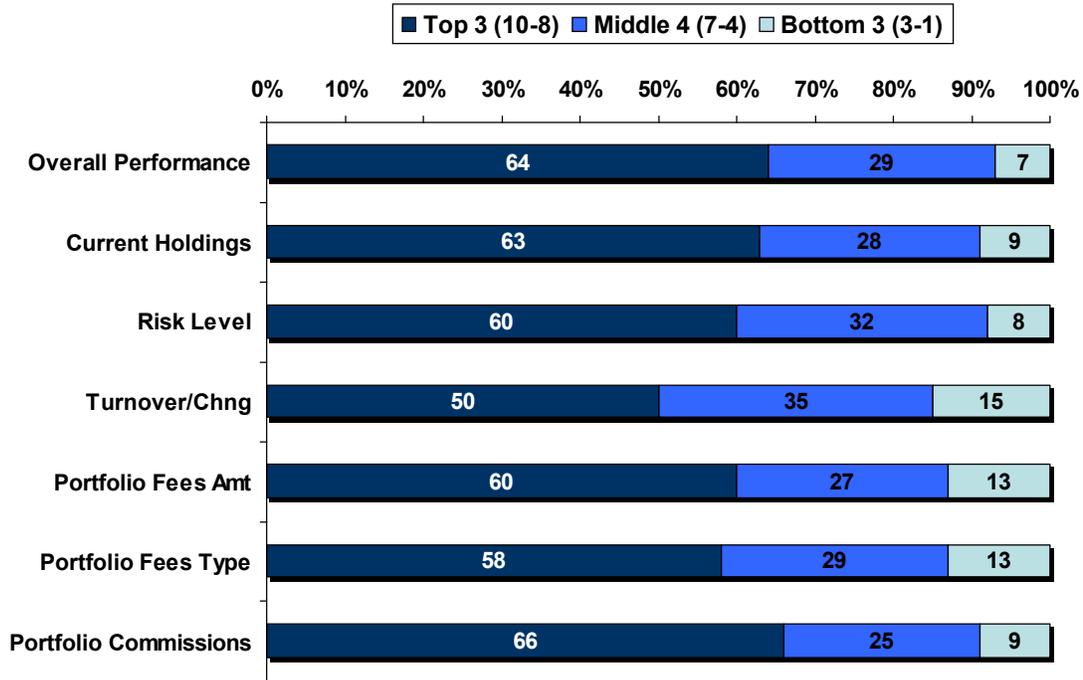


Exhibit 29: Familiarity with portfolio characteristics (mutual fund unitholders)

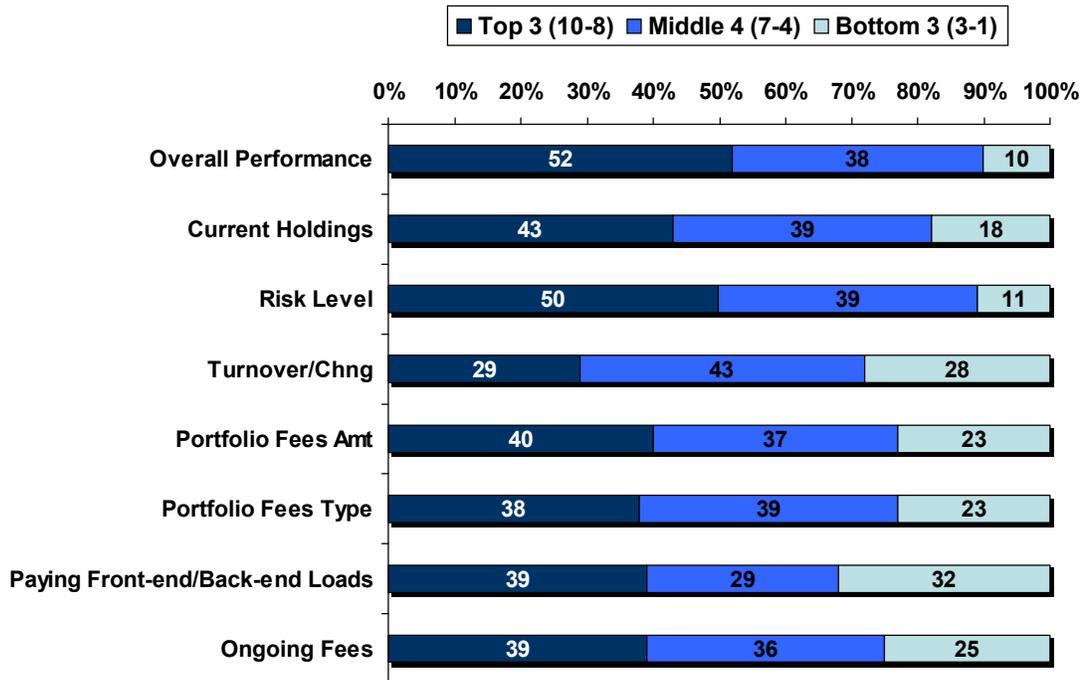


Exhibit 30: How often are certain portfolio activities conducted? (stockholders)

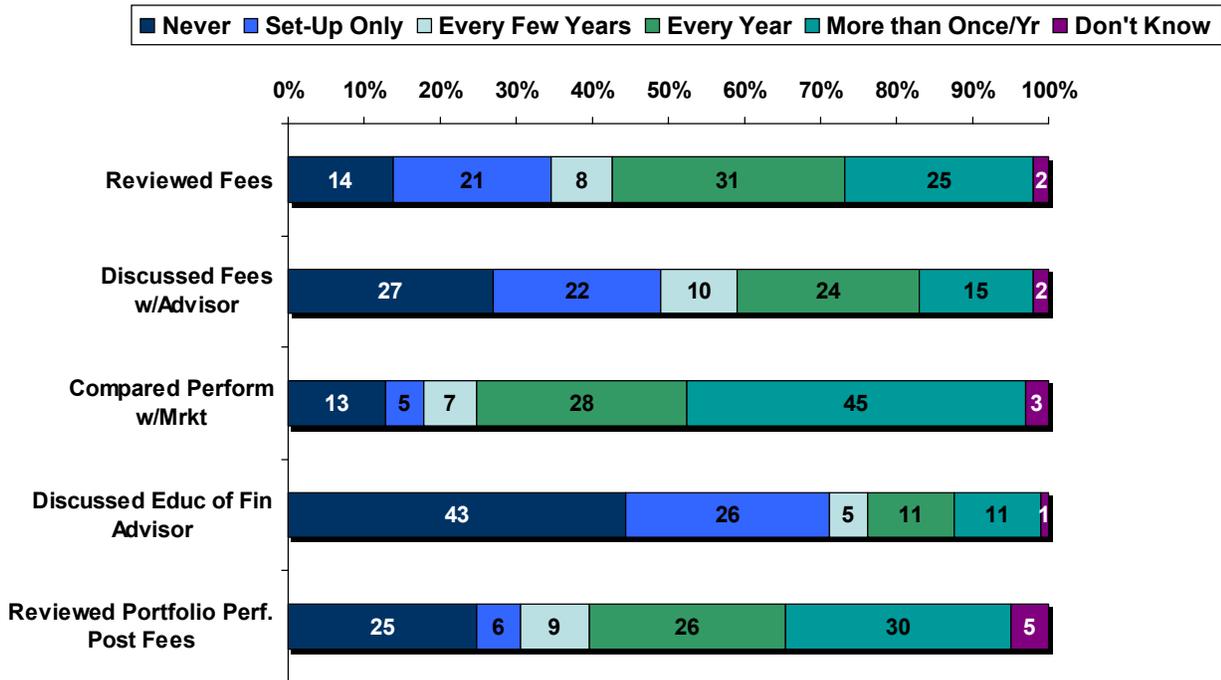


Exhibit 31: How often were certain portfolio activities conducted? (mutual fund unitholders)



Exhibit 32: Transaction triggers (corporate bondholders)

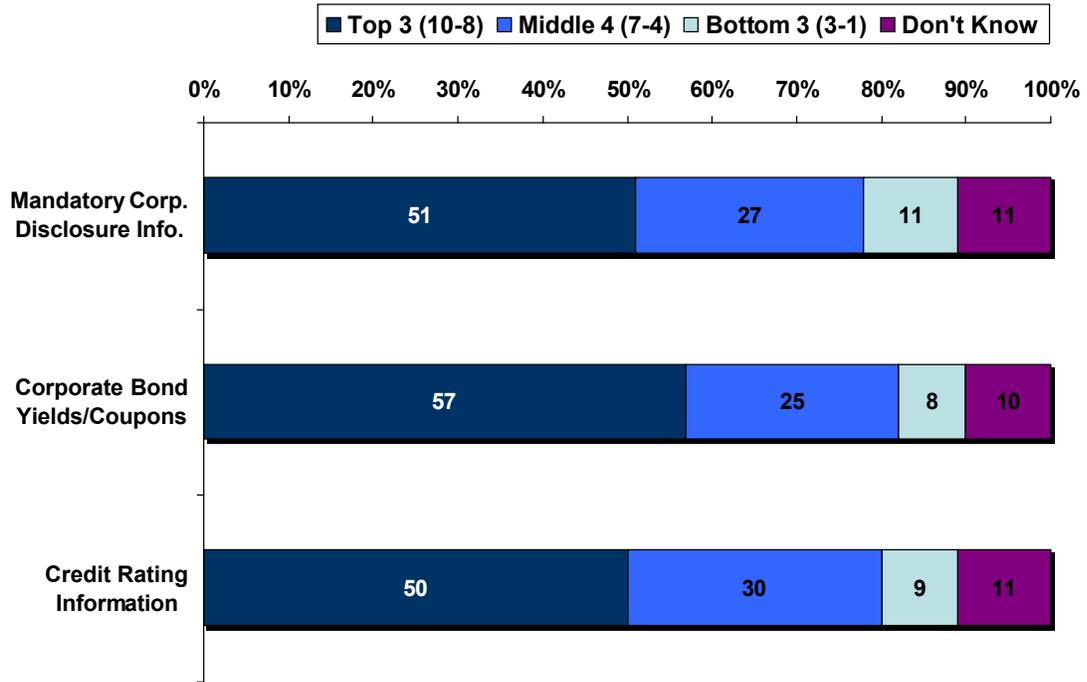


Exhibit 33: Attitudes about mandatory disclosure of information

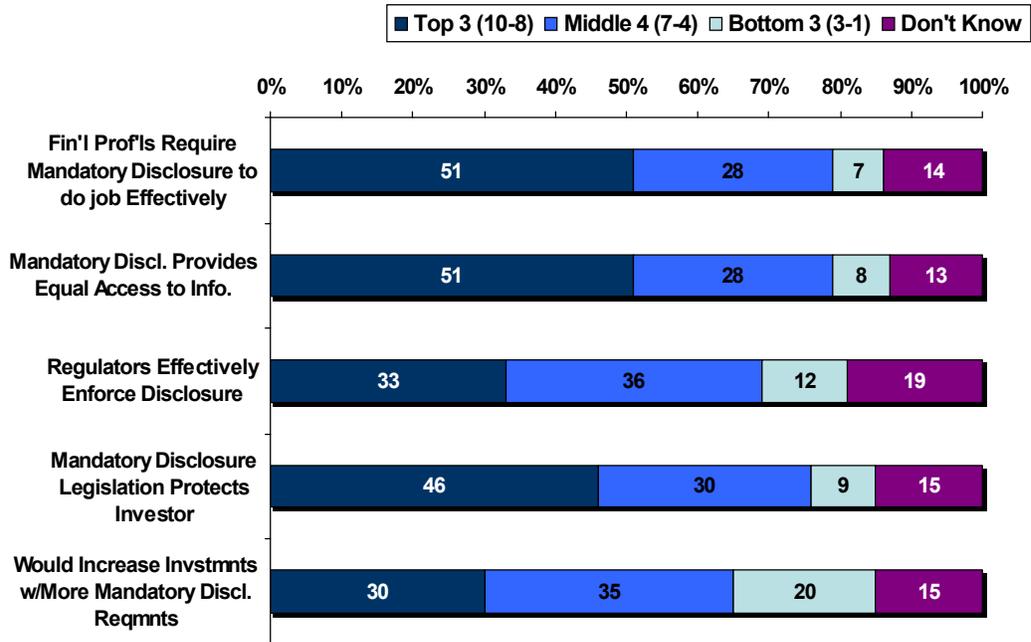


Exhibit 34: Determinants of willingness to increase investment

Variables	All variables included		Variables sig. at 10%	
	Coefficient	p-value	Coefficient	p-value
Constant	7.91	0.00	7.38	0.00
e	0.63	0.01	0.75	0.00
oc	-0.30	0.21	----	----
rep	0.71	0.00	0.75	0.00
pi	0.13	0.27	----	----
diy	-0.12	0.74	----	----
di	-1.27	0.00	-1.28	0.00
age	-0.04	0.01	-0.03	0.03
ret_prox	-0.03	0.05	-0.02	0.09
gender	0.47	0.03	0.31	0.09
income	0.00	0.61	----	----
graduate	-0.06	0.76	----	----
employed	-0.11	0.82	----	----
R ²	0.14		0.13	

Exhibit 35: Desires to be addressed

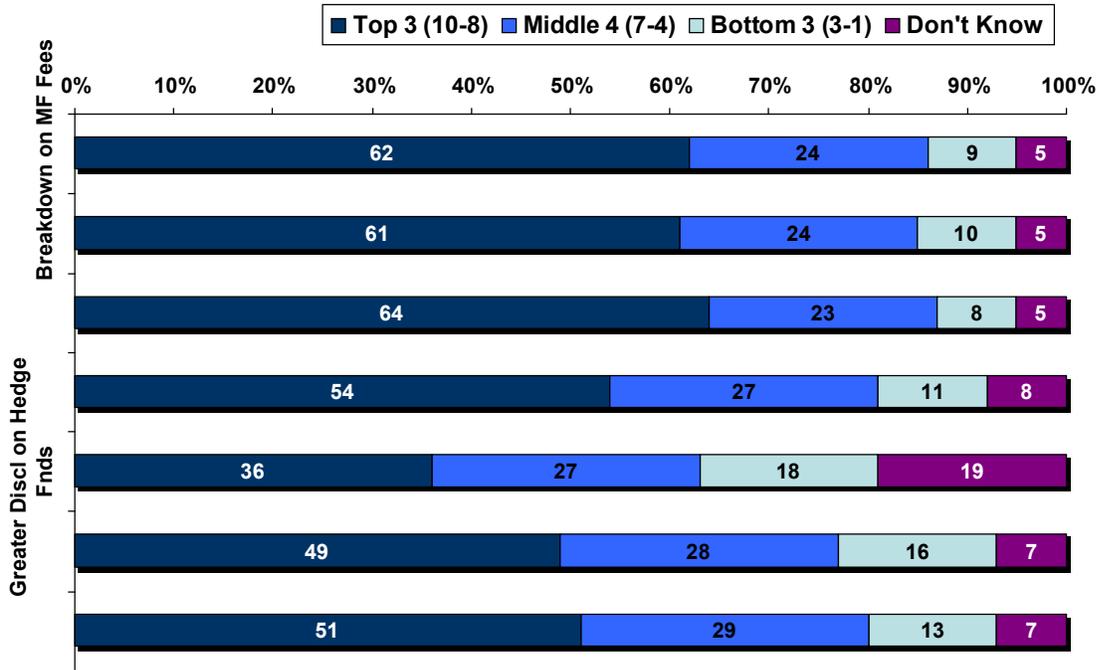


Exhibit 36: Decision-making style of institutional investors

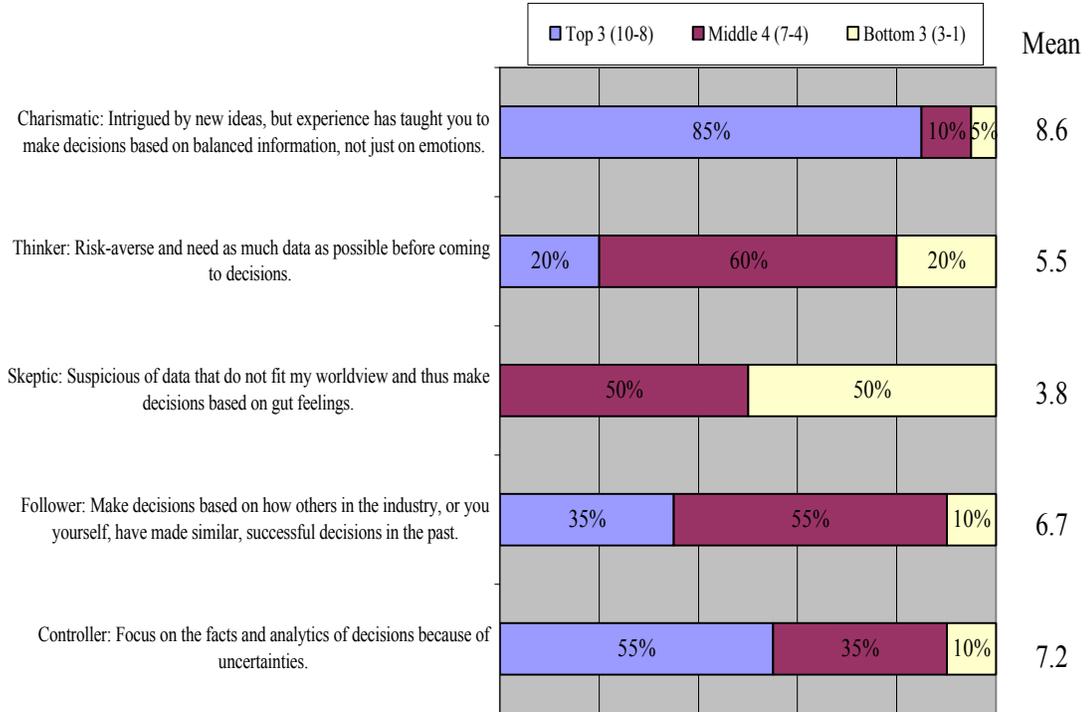


Exhibit 37: Importance of various approaches to the investment process

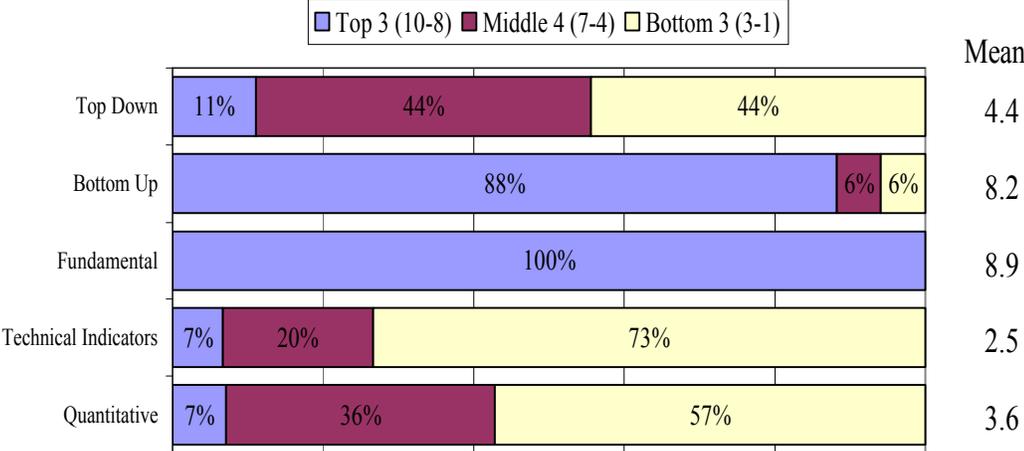


Exhibit 38: Importance of various inputs to security analysis process

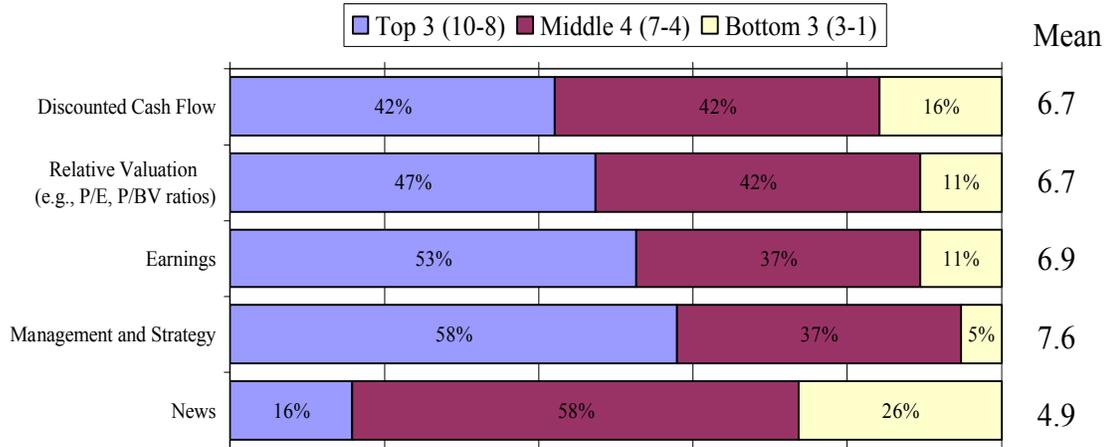


Exhibit 39: Beliefs about market anomalies

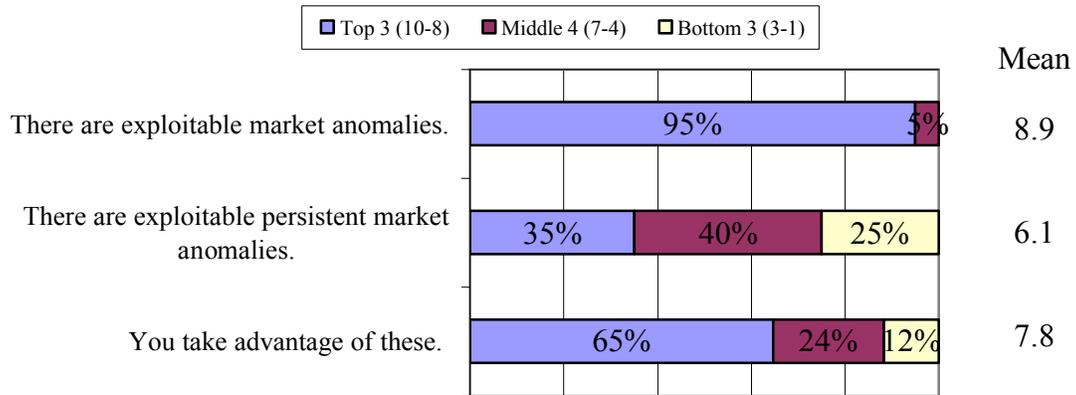


Exhibit 40: Importance of information disclosed by reporting issuers

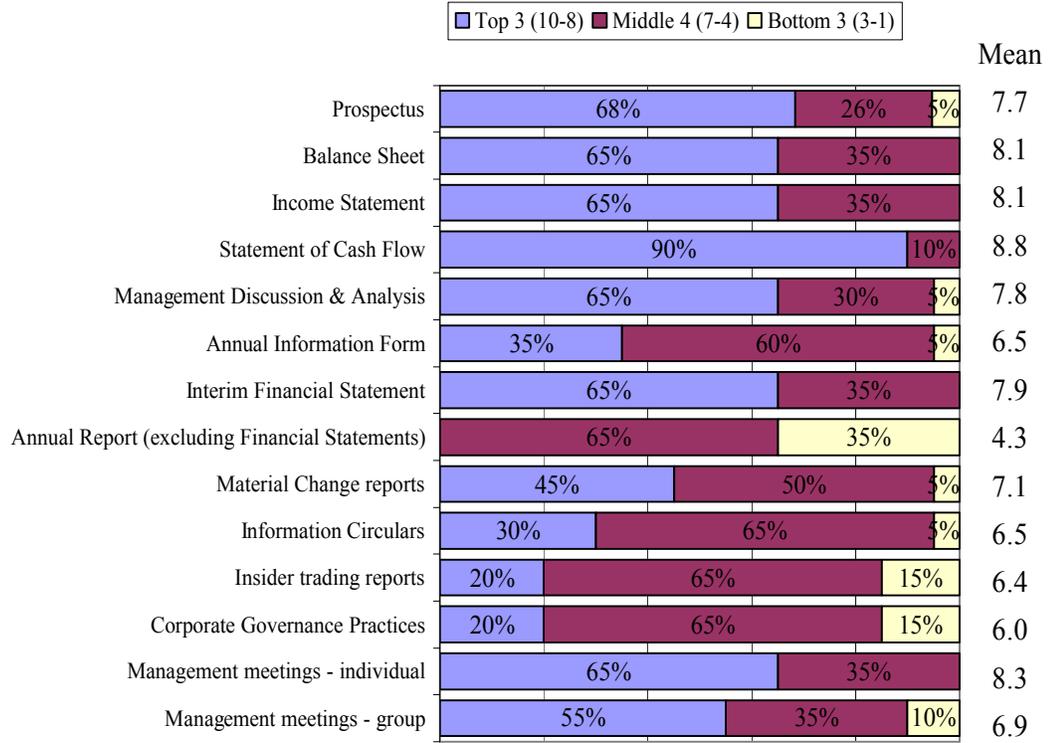
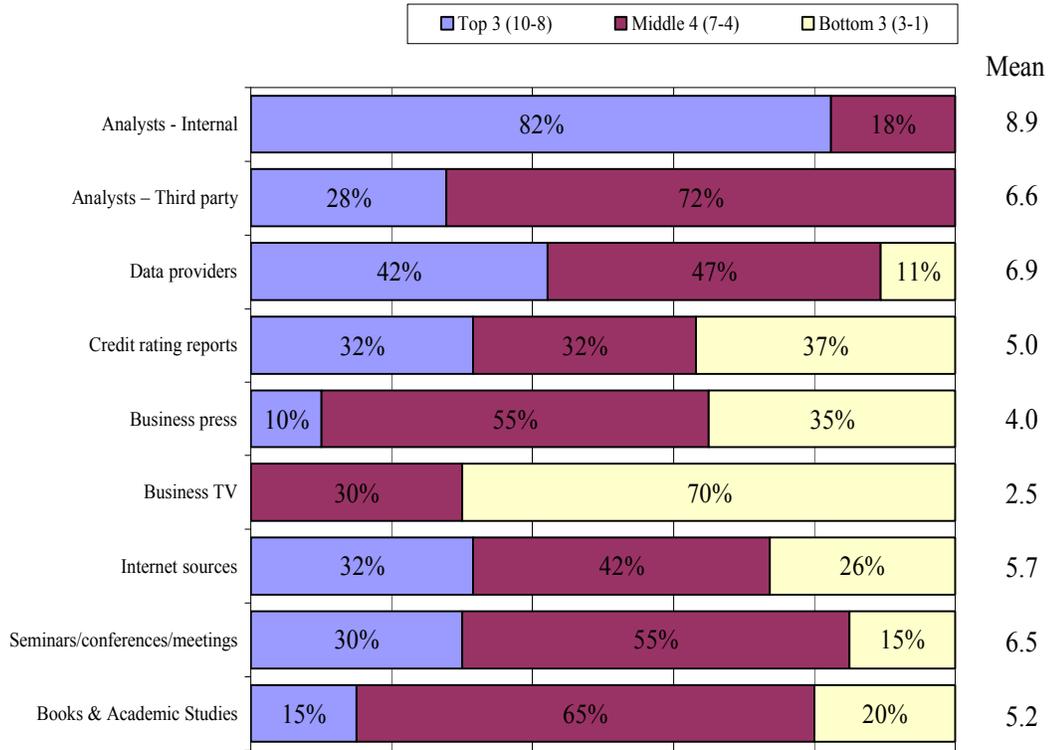


Exhibit 41: Importance of other information



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