

Individual Investor Preferences: A Segmentation Analysis

Marilyn Clark-Murphy and Geoffrey Soutar

As the baby boomers age, individuals are being encouraged to take responsibility for their retirement income. Despite the importance of individual investment decisions, we know very little about what factors influence them. Having identified characteristics that are important to individual investors in shares using a conjoint analysis approach, this study uses cluster analysis and discriminant analysis to look for subgroups with differing attitudes and approaches to investment alternatives. Results suggest that four significant subgroups exist within the investor sample, each with different investment preferences and goals. The results have implications for providers of financial services and for those involved in educating individual investors.

According to the Australian Stock Exchange [2000], 41% of Australians hold shares directly in the stock market, a figure that rises to 54% when indirect share investments through managed funds are included. Share ownership in Australia has risen sharply in recent years, from 20% (direct) and 34% (in total) in 1997, probably because of the privatization of public sector organizations like the Commonwealth Bank and Qantas Airlines, and the demutualization of several large insurance companies. Direct investment in shares is now the third most popular investment choice in Australia after superannuation (retirement savings or pension accounts) and cash. Indeed, Australia has become a nation of enthusiastic shareholders in recent years, and ranks ahead of the U.K., the U.S., Canada, and Germany in both direct and total share ownership (Australian Stock Exchange [2000]).

Australian investors today have a wide choice of investment products, but there has been only limited research into the way they choose between the various alternatives. However, compulsory retirement (or superannuation) and an aging population mean that an increasing number of Australians will need to assume responsibility for their own financial futures, so understanding investment choices and the processes that lead to them is important. The financial decisions that people must make now are becoming increasingly complex and increasingly risky. Furthermore, the results of these decisions will have a significant impact on many people's lifestyles, particularly in their retirement years.

There is an obvious link between financial investment choices and consumer behavior (Thaler [1980]). Research into consumer behavior may prove useful in increasing our understanding of the extremely complex financial marketplace. Indeed, Wilcox [1999, p. 90] argues that "financial markets provide a rich environment to study consumer behavior." Despite this, however, there has been very little application of consumer behavior theory or research techniques in the finance area.

Conjoint analysis, initially suggested in the marketing arena by Green and Rao [1971], has been used extensively to examine people's choice processes in many product and service situations (see, e.g., Danaher [1997], Green and Srinivasan [1990], Markham, Diamond, and Hermansen [1998], and Ross and Gulledge [1989]). It has also been used in some non-marketing areas such as industrial relations (Savery and Soutar [1993]) and human resource management (Rivers, Savery and Soutar [1994]). Conjoint analysis provides information about the trade-offs people make when making choices, and therefore seems useful to examine investment decision making and assess the importance of relevant investment attributes.

We use conjoint analysis here in a study that examines people's share purchase decision-making processes and attempts to determine how share attributes are valued by investors when they buy a stock. Respondents were individual share investors who completed a questionnaire for background information and a computerized adaptive conjoint analysis (ACA) exercise (Green and Srinivasan [1990]) to estimate their preferences for various share attributes. We used ACA, a development from traditional conjoint analysis, because it is particularly well-suited to assessing a large number of attributes, as would be the case here (Green and Srinivasan [1990]).

We discuss the study in the next section. The results and their implications are outlined in subsequent sections.

Marilyn Clark-Murphy is an associate professor in the School of Accounting Finance & Economics at Edith Cowan University.

Geoffrey Soutar is a professor in the Graduate School of Management at the University of Western Australia.

Requests for reprints should be sent to: Dr. Marilyn Clark-Murphy, School of Accounting Finance & Economics, Edith Cowan University, 100 Joondalup Drive, Western Australia 6027. Email: m.clarkmurphy@ecu.edu.au.

The Present Study

The Sample

For the study sample, we needed individuals with direct investments in the share market who were interested in shares and active in the management of their investments. We characterize such individuals as “enthusiastic amateurs” in the investment field and we developed a sampling frame to obtain such people. The majority of respondents were members of the Australian Shareholders Association (ASA), which was established in 1968 as a non-profit information and lobbying group for Australian investors (Australian Shareholders’ Association [1999]).

Membership in ASA generally identifies a person as an active and interested investor, so this group was a particularly appropriate respondent group. The ASA distributed a postage-paid card with its newsletter, asking members to indicate their willingness to take part in the study. A smaller number of respondents came from 1) contacts with members of investment groups, 2) circulating material to those attending courses at the Australian Stock Exchange, and 3) contacts obtained from media publicity about the study. A total of 488 questionnaires were distributed

to people willing to participate in the study, and 361 useable responses were returned.

The Questionnaires

Respondents completed a one-page questionnaire that collected personal background information and provided an indication of their involvement in the share market. They then answered a computer-based adaptive conjoint analysis (ACA) survey with relevant share attributes and their levels determined from prior focus groups and an examination of relevant finance and accounting research (see Table 1). As noted earlier, conjoint analysis has been used in many product and service choice situations, but we use it here to determine which share attributes individual investors value.

Data Analysis

We initially obtained descriptive statistics for the background data and for the responses to the ACA questionnaire. We then calculated the relative importance of each attribute and the average importance of each attribute level to examine respondent preferences between attributes.

Table 1. *Attributes and Levels Used in the ACA Questionnaire and Their Estimated Utilities*

No.	Name	Level	Text	Utility
1	Dividend	1	Pays a regular dividend	110.51
		2	Not currently paying a dividend	1.42
2	Yield	1	High yield	101.49
		2	Average yield	62.31
		3	Low yield	2.67
3	Management	1	Management has a track record in industry	106.64
		2	Some managers have a high public profile	19.91
		3	Management are known to you personally	33.29
4	Industry Sector	1	Sector has a history of slow but steady growth	65.74
		2	Sector has periods of growth and contraction	22.28
		3	Stock is in an emerging industry sector	58.13
5	Knowledge Base	1	You have personal knowledge or experience of the industry	51.76
		2	You use the company’s products	16.46
		3	You know of the company’s products	31.70
6	Price Trend	1	Price has been rising in the last few months	64.61
		2	Price has been falling in the last few months	22.65
		3	Price has been steady in the last few months	44.46
7	Price Earnings Ratio	1	High price earnings ratio	25.40
		2	Average price earnings ratio	58.06
		3	Low price earnings ratio	62.91
8	Price Volatility	1	Price is often volatile	23.40
		2	Price is usually steady	54.35
9	Market Status	1	Blue chip stock	98.47
		2	Growth stock	107.38
		3	Speculative stock	8.36
10	Source of Recommendation	1	Recommended by your stockbroker	91.02
		2	Recommended in the financial press	80.50
		3	A tip or rumor from a friend	6.76
11	Principal Place of Operation	1	Company mainly operates in Australia	90.11
		2	Company mainly operates in Asia	10.93
		3	Company mainly operates in Europe or the U.S.	49.75

The results suggested that subgroups with differing attitudes and approaches might exist. Cluster analysis and discriminant analysis were subsequently used to determine whether subgroups existed, and to examine their implications for stockbrokers, finance researchers, and government regulators. We used stock simulations to further explore and validate the results of the cluster analysis.

The ACA software includes a suite of programs to allow the simulation of possible products and the testing of respondents' likelihood of purchasing those products. We used these programs to simulate six stocks that were then tested against the utilities of the investor group as a whole and the four investor groups identified by the cluster analysis. The results are outlined in the following section, and the implications and some conclusions are discussed in subsequent sections.

Results

Respondents' Background Characteristics

Respondents were primarily older, married males. Almost 70% had a long-term interest in the stock market, and 75% stated they were active investors. Most held a range of stocks (68% held between ten and fifty stocks). The majority (62%) sought a combination of income and capital growth from their investments.

To check for any bias in the sample compared to the general population of share owners, we compared the results to the 1997 Australian Shareownership Survey (Australian Stock Exchange Ltd. [1997]). The comparison showed our respondents were more likely to be older males, and to have more stocks in their portfolios

than respondents in the ASX study. These differences can be explained by the source of the samples. The ASX sample was drawn from the general population of share owners, while we focused on active and enthusiastic investors.

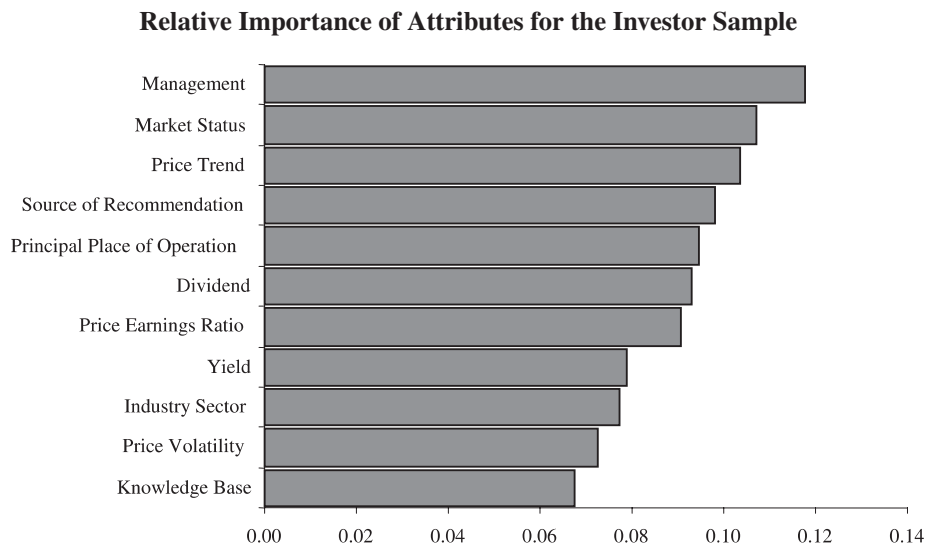
Preferences Among Share Attributes

An examination of the mean and standard deviation for each attribute level suggests they all had relevance for some investors. From the ACA data, we calculated the relative importance of each attribute. The results, shown in Figure 1, suggest the most important attribute was company management. Previous results on the importance of management quality to investors have been mixed. Potter [1971], for example, found company management was not a primary influencing factor. However, Nagy and Obenberger [1994] found statements about a company's reputation and status, which are closely connected to management quality, had a significant influence on investor decisions.

The second most important attribute was market status, i.e., whether a share was regarded as blue-chip, speculative, or a growth stock. A share's price trend was the third most important attribute, and was given priority over factors such as yield or price-earnings (P/E) ratio. Dividend and yield ranked relatively poorly, at sixth and eighth, respectively, although industry knowledge and anecdotal evidence suggests many finance professionals would consider these key indicators for individual investors.

We estimated the average importance of each attribute level, as shown in Table 1. A more detailed analysis of these results can be found in Clark-Murphy and Soutar [2003]. Our results suggest respondents in this study were primarily investors rather than speculators.

FIGURE 1



The Cluster Analysis

The ACA results suggested diversity within the sample. We used a hierarchical cluster analysis, as per Hair et al. [1995], to group the investors based on their utility scores across all attribute levels. As suggested by Milligan and Mahajan [1980], the point biserial correlation coefficient was used to determine the number of clusters. No improvement in this criterion was found beyond a four-group solution.

The four groups were investigated in a number of ways. A discriminant analysis (Klecka [1980]) examined how the groups differed over the ACA attribute levels, and also whether they differed across the background data collected in the paper-based questionnaire. To form a clearer picture of the groups, we present the results of the two discriminant analyses first, followed by a discussion of each group's overall profile.

A Discriminant Analysis of Share Attribute Utilities

The first discriminant analysis examined group differences in the ACA questionnaire. Three significant functions were found, suggesting differences between the groups were strong. This is not surprising: Cluster analysis is designed to maximize such differences. The I^2 statistic (Peterson and Mahajan [1976]) suggests that three functions explained 85% of the variance in the data.

The first function is strongly related to blue-chip stocks that pay dividends and industry sectors with a history of slow but steady growth. There was a strong contrary relationship with volatile stocks. We called this function a "quality and income" function.

The second function is strongly related to stocks with a low P/E ratio, and has a contrary relationship with stocks that have steady and rising prices. We called this function a "low P/E ratio" function.

The third function was most strongly related to stocks in emerging industry sectors and to companies whose principal place of operation was in Europe or the U.S. A contrary relationship existed with stocks recommended by a stockbroker and industry sectors with a history of periods of growth and contraction. We termed this function an "emerging industries and overseas" function.

We then calculated the group means for each investor group on each discriminant function. Group 1 members valued stocks in emerging industry sectors and those operating overseas. They also obtained some value from income and low P/E ratios. Group 2 members placed a high value on quality stocks that provided a reliable income. They gained some value from stocks in emerging industry sectors, but had little concern for low P/E ratio stocks.

Group 3 members placed some value on stocks with low P/E ratios, as well as on those in emerging industry sectors and operating overseas. This group paid little regard to quality and income but were willing to seek out highly volatile stocks. Group 4 members placed a high value on stocks with a low P/E ratio and some value on quality stocks that provided a consistent income. They had no regard for stocks in emerging industry sectors or for companies operating overseas.

Note that respondents generally derived a relatively low level of utility from companies operating overseas, and, particularly, from those described as operating principally in Asia. This bias toward Australia supports the notion of a general home bias in investing around the world (French and Poterba [1991], Strong and Xu [2003]). In the case of Asia, however, it may have also resulted from the fact that the data were collected during 1999, when the Asian economic crisis of the late 1990s was still fresh in investors' minds.

A Discriminant Analysis of Backgrounds

The second discriminant analysis examined background differences between the four groups. This analysis found two significant functions. Differences did exist between the groups, but they were small. The I^2 statistic suggested that the two functions together explained only 12% of the variance in the data. The structural correlations suggest the first function was most strongly related to income or capital gain investment goals and to age. The second function was most strongly related to respondents' level of investing activity and to income and capital gain investment goals.

Table 2 shows the relative positions of the groups on the two estimated discriminant functions. Group 1 investors were seeking a combination of income and capital gain from their investments, and tended to be younger. Group 2 investors tended to be older and to favor income. Groups 3 and 4 investors were active investors whose primary goal was capital gain.

Investor Groups Reviewed

The results of the discriminant analyses enabled us to more clearly describe the four groups. The following analysis is drawn from their positions on the various discriminant functions, their average utilities on each

Table 2. *Discriminant Functions Evaluated at Group Means*

Group	Function 1	Function 2
1	-0.31	-0.22
2	0.32	-0.13
3	-0.30	0.40
4	-0.21	0.21

attribute level, their relative utility for each attribute, and a review of their background characteristics.

Group 1—The Explorers

Investors in this group value stocks in emerging industry sectors and those operating overseas. They ranked principal place of operation first in relative importance. They are also interested in stocks with a low P/E ratio. Compared to other groups, they have a relatively high regard for growth stocks and a relatively low regard for blue-chip stocks. They obtain a reasonably high utility from industries with a history of slow but steady growth, and the lowest utility of any group from industries subject to periods of growth and contraction.

Group 1 investors prefer stocks whose price is steady to more volatile stocks, but do not feel as strongly about this attribute as other groups. They place relatively little value on stockbroker recommendations. Compared to other groups, they place a slightly higher utility on tips or rumors from friends, and, along with Group 4, they value knowing the management of a company personally. They are less concerned than the other groups about income from their investments. Demographically, and in comparison to the sample as a whole, they are likely to be younger and to hold a relatively small number of stocks. They are also more likely to characterize themselves as large but inactive investors with below-average wealth.

In summary, this group can be classified as “The Explorers.” They are willing to consider stocks from overseas, those in new industries, and those with a low P/E ratio. They are also attracted to any possible inside information inherent in tips and knowing company management, as compared to the “mainstream” information that prompts a stockbroker’s recommendation. However, they are not risk-takers or traders, since they are inactive and are not attracted to volatility in either individual stocks or industry sectors. They are most likely to trade when they believe they see a good opportunity that others may not have identified. The Explorers make up 20% of the investor sample.

Group 2—The Risk-Averse Investors

This group was the largest of the four groups (48%). Risk-averse investors value stable, quality stocks that pay a regular dividend. Their primary investment goal is income, and they place little value on capital gains. They place the highest utility of any group on industry sectors with a history of slow but steady growth, and on companies operating principally in Australia. They place the lowest utility of any group on stocks whose prices have been falling recently, and are the most extreme group on both levels of the price volatility attribute.

Risk-averse investors also place the highest utility on high P/E ratios and the lowest utility on low P/E ratios. They are more likely to be female and somewhat older, and they perceive themselves to be inactive investors. In summary, Risk-Averse investors seek high-quality, low-risk stocks that provide a reliable source of income.

Group 3—The Traders

This group comprised 21% of the sample. Unlike the other groups, the Traders place a high value on price volatility and were the most enthusiastic about stocks with recently rising prices. They obtained the lowest utility from industry sectors with a history of slow but steady growth and from stocks whose price was usually steady. They were the most interested in speculative stocks and favored capital gains over income, obtaining the lowest utility of any group from stocks paying a regular dividend.

Group 3 considers a company’s management an important feature of their investment decisions. They place the highest utility of any group on management with an industry track record, and on knowing the management personally. They are attracted to companies where they have personal knowledge or experience of the industry. Group 3 members were less likely to be female, more likely to be unmarried, and more likely to be aged between thirty-five and fifty-four. They were also more likely to have a lifetime interest in investing. They characterized themselves as active investors, but tended to feel their overall wealth was below average.

This group can be described as “The Traders” because they were the only group to show any significant interest in speculative stocks and price volatility, and they were strongly motivated by the prospect of capital gain. The fact that they placed a high value on management and did not obtain a high utility from tips or rumors could indicate more respect for a company’s fundamentals and less of a “gambling” approach to the market.

Group 4—The Contrarian Investors

Investors in Group 4, who comprised 11% of the sample, obtained the highest value of any group from stocks with a low P/E ratio. They obtained the highest utility from high yields and average yields, and the lowest utility from low yields. A low P/E ratio, combined with a high dividend yield, is usually an indicator that a stock is underpriced and therefore a good investment (Bennetts [1998]).

This group’s attitude toward price trends (i.e., whether a stock’s price has been rising, falling, or steady in recent months) was particularly interesting. They were the only investors not to order their utilities in descending order of rising, steady, and falling. In contrast, they obtained their highest utility from a falling price, followed by a rising price, and then a steady

price. However, they had little concern about volatility, placing that attribute last in terms of relative utility, and they had the flattest curve of any group on the choice between a volatile or steady price. This suggests they see a falling price as a potential investment opportunity but are not attracted by the short-term gains that might result from price volatility.

This group also favored capital gains over income. However, they obtained the highest utility of any group from stocks that pay a regular dividend. This may appear contradictory. But in light of their attitude toward P/E ratios and yields, these investors may interpret dividends as an indicator of a company's long-term value, rather than as a source of income.

This group had the flattest curve on the attributes for industry sector and principal place of operation, and they placed relatively less importance on the latter. They obtained the lowest utility from companies operating in Australia and Europe or the U.S., but the highest from those operating in Asia. They had the most extreme curve on the source of recommendation attribute, placing the highest utility among all the groups on recommendations from their stockbroker or the financial press. They obtained the lowest utility from tips or rumors.

Group 4 members were more likely to be male, unmarried, and between thirty-five and fifty-four years of age. They were more likely to have been trading for five years or less and to hold between ten and twenty stocks. The latter makes them more diversified and probably larger investors than members of Group 3. However, they were more likely to classify themselves as small investors.

This group can be termed "The Contrarian Investors" because they are prepared to go against the market's perception of a stock to seek capital gains from underpriced shares. This is reflected in their extreme position on a number of attributes and levels. However, they are not speculators, seeing no benefit in price volatility, and rely on fundamentals and well-sourced recommendations to make investment decisions.

Stock Simulation Exercise

The Stocks

Six stocks were created for the simulation, one designed to appeal to each investor group and two to fill any gaps we felt were left. Due to the range of attributes and levels in the ACA questionnaire, it was not possible to make the simulated stocks represent real companies. However, once we identified the key attributes and levels for each stock, we were able to make the total profile reflect market reality by setting other attributes and levels at realistic levels while still keeping the groups' preferences in mind. The following section

describes the profile of each simulated stock and the group to which it was designed to appeal.

Stock Profile 1—Biotech Ventures Ltd.

The first investor group, the Explorers, should prefer growth stocks in emerging industry sectors whose prices tend to be steady rather than volatile. In current market conditions, this description seems to most closely fit the biotechnology sector.

Biotech Ventures Ltd. is a biotechnology company with substantial operations in the U.S. via a joint venture with an American research company. Since its operations are still at the research stage, it is not currently paying a dividend, and hence offers a relatively low yield. The market does not expect Biotech to have a lucrative product for quite some time, so the company's P/E ratio has tended to be low compared to other companies in the same sector.

Biotech Ventures has recently had some favorable press as a result of good test results for one of its potential products as well as confirmation by the company that testing will progress to the next stage. This has led to recent increases in the share price. The company is generally well regarded by the press because its senior managers have a track record in biotechnology, and this has led to good public exposure of its current and likely future products.

Stock Profile 2—Bank Australia Ltd.

The second group, the Risk-Averse investors, seeks low-risk, income-producing stocks with a steady growth record. This suggests a stable but high-performance sector such as banking.

Bank Australia Ltd. is the country's fifth largest bank. It has an extensive retail and corporate banking operation in all Australian states and territories, but only limited overseas operations when compared to the four larger Australian banks. Bank Australia is the only bank to offer some benefits in the form of fee discounts and extra services to its shareholders; hence customers are heavily represented among shareholders.

As with the banking sector as a whole, the company's history has been one of steady growth, and there is every indication this will continue into the future. Bank stocks are not generally subject to a high level of price volatility. Bank Australia has a stable dividend policy and has paid a regular dividend to shareholders for many years. The company's dividend and performance are average for the sector, as is its yield.

The market rates Bank Australia very highly. It has recently augmented its senior management team from within the industry, and the enhanced team is exploring ways of increasing domestic market share. For this reason, earnings prospects are considered good and the P/E ratio is currently relatively high. The stock is defi-

nately considered a “blue-chip,” and, because of its good future prospects and shareholder benefits, stockbrokers often recommend it to their more conservative and income-dependent clients.

Stock Profile 3—Potential Gold & Diamonds NL

The Traders’ characteristics most closely reflect those of the speculator. They seek price volatility and speculative stocks, but have little regard for dividend income. This group would be the most interested in the resources sector.

Potential Gold & Diamonds NL has a number of promising leases in Western Australia and the Northern Territory, plus a joint venture in Eastern Europe expected to come into production within twelve months. This property has shown some unexpectedly good results recently from test drilling, and this has led to a rise in the share price. The company’s share price, like that of the resources sector in general, tends to be volatile, and this has been accentuated over the last few years by fluctuating gold prices and mixed messages from central banks around the world on gold sales. The stock is certainly considered speculative, with no foreseeable likelihood of dividend payments and many unknowns in both its onshore and offshore operations.

Some of the Australian leases in which Potential hopes to find diamonds are in regions whose geology is being hotly debated within the industry. The formations are atypical compared to those where diamond pipes are traditionally found, but the company’s management and some geologists believe the prospects are good. For this reason, the shares are tightly held, which adds to the price volatility, with current and former industry practitioners well represented on the share register.

Stock Profile 4—Pan-Pacific Industries Ltd.

The Contrarian investors, the smallest investor group, are willing to seek out companies with good fundamentals whose stocks are currently out of favor with the market.

Pan-Pacific Industries Ltd. is a large, diversified Australian-based company with substantial operations in Asia. The company was one of the first Australian businesses to make a significant move into Asia, seeing it as both a manufacturing base and a source of customers. This early move offshore, combined with a solid history, has led to the company being regarded as something of an Australian icon, though it is currently somewhat tarnished. The company’s main focus is in the clothing and textiles industry, but during the 1980s it acquired a number of smaller businesses ranging from food to vehicle distributors.

The company has suffered several setbacks recently, most especially the dramatic contraction of its Asian operations due to the economic and political upheavals in the region. This situation has been exacerbated by substantial cost overruns on a state-of-the-art dairy processing and distribution facility in New Zealand and a general impression of management ineptitude in recent years. The adverse publicity has led to a significant decrease in the share price. Although the company continues to pay a good dividend, it is currently poorly regarded by the market and has a very low P/E ratio compared to others in its sector.

In an attempt to turn the company around, a new CEO was recently hired who is well known for success in other corporate restructurings. There are rumors that Pan-Pacific will sell off some of its divisions in an effort to get back to its core businesses and derive maximum benefit from an Asian recovery. For this reason, some stockbrokers are now recommending the stock to their more intrepid clients.

Stock Profile 5—Aussie-ecom Ltd.

No stock market at the start of the twenty-first century would be complete without a “dot-com” company. Aussie-ecom Ltd. was established two years ago by a group of young information technology graduates who believed there was a gap in the market for an internet company that could tie together all the disparate arms of e-commerce. The company seeks, via its web site, to offer the best goods, services, and pre-purchase information in a wide range of categories. Companies pay to have their products listed on the site, but Aussie-ecom management insists they will not accept a product that does not meet high standards of production and performance. The company is unashamedly aiming at young, high-income consumers, arguing that this group is the most willing to buy over the internet and is the one they understand the best. The company’s managers, who are also the principal shareholders, are somewhat more flamboyant than many in the sector, and have become a regular feature on both the financial and the social pages.

Aussie-ecom was listed on the Australian Stock Exchange one year ago. Its shares have consistently traded well above their issue price, although they have been volatile due to fluctuations in technology stocks on both Australian and American markets. Like most in its sector, the company has an extremely high P/E ratio but no immediate likelihood of dividend payments.

Stock Profile 6—Telco Ltd.

In the modern stock market, the gap between growth stocks in emerging industries and large, traditional blue-chips is being bridged by some of the telecommunication companies. Telco Ltd. is typical of

these older companies adapting to a new future. Telco Ltd. is an American company that established a substantial presence in Australia as soon as the telecommunications market was deregulated. It listed on the Australian Stock Exchange at the same time in order to attract local investors and to enhance its image as a local operator.

Telco has been providing telephone services to consumers across North America for over seventy years, and is now trying to ensure its continuing role in the new communications landscape of the twenty-first century. It is perceived by the market as a solid performer that nonetheless needs to slim down its operations, particularly its management bureaucracy, to adapt to a new era. The company has recently purchased a number of internet operators, seeking to buy market share and product. There is some concern that this may be seen by management as an alternative solution to fundamental change in the company's operations.

Investor Preferences

We undertook simulations for the total investor sample and for each of the investor groups identified in the cluster analysis. The results for each are shown in Table 3. The investor sample as a whole would have been most likely to purchase shares in Bank Australia Ltd., followed by Telco Ltd. and Pan-Pacific Industries. These three stocks would generally be regarded as the lowest-risk and the most likely to pay a regular dividend. This reflects the already suggested profile of the sample as long-term investors who dislike speculation and desire income from their investments. The results for the sample are strongly influenced by the Risk-Averse group, which was 48% of the sample. Potential Gold and Diamonds NL, the most speculative stock, was the least favored overall.

We designed Biotech Ventures Ltd. to appeal to The Explorers, as it was a company in an emerging but not highly speculative industry sector. However, the results indicate that The Explorers preferred Telco and Bank Australia. Ultimately, this group's preference for Telco is not surprising, because it offers the benefits of blue-chip status and a regular dividend with an emerging industry classification as a result of its current and likely future internet involvement.

Aussie-ecom and Potential Gold and Diamonds were the least attractive to The Explorers. Both stocks tended to be volatile and were more speculative in nature, not characteristics The Explorers would be expected to value.

Bank Australia Ltd. was designed to appeal to The Risk-Averse Investors, because it was a high-quality, low-risk stock with a regular dividend payment. Bank Australia was, in fact, the group's preferred stock, followed by Telco and Pan-Pacific. All three stocks pay a regular dividend, a very significant factor for this group of investors. As expected, the most speculative and risky stock, Potential Gold and Diamonds, came in a distant sixth in preference for these investors.

The Traders' results were interesting, as the stock designed for them (Potential Gold and Diamonds NL) ended up being fourth in appeal for them. Instead, this group favored Telco and Bank Australia. The group profile established through the cluster and discriminant analysis suggested that, although they were the most like speculators, they still had a high regard on a company's fundamentals and did not appear to be true gamblers. This was borne out by the simulation results.

The difference in preference between stocks was smaller for the Traders than for the other investor groups. The group's preferences ranged between 22 and 11, compared to a range of 49 to 2 for the Risk-Averse investors. This suggests the choice between the six stocks was less clear-cut for the Traders.

We designed Pan-Pacific Industries Ltd., the blue-chip stock weathering a difficult period, to appeal to the Contrarian investors, and it did indeed place first in their preferences. The Contrarian Investors should also be attracted to Telco and Bank Australia and, as expected, they rated these second and third. Their least favored stocks were Aussie-ecom and Potential Gold and Diamonds. These results reinforce the view that this group's members are not speculators but are willing to take a risk if they perceive an investment opportunity due to short-term adversity.

Except for the Traders, the stocks we designed were given the highest level of preference from the groups we designed them for, which provides support for our earlier suggestions. The result for the Traders was not unexpected. Although members of this group were the most like speculators among the sample, they still dis-

Table 3. *Simulation Results for Sample and Segments (Percentage "Preferring")*

Simulated Share	Sample	Explorers	Risk-Averse	Traders	Contrarian Investors
Biotech Ventures	11	17	6	15	8
Bank Australia	35	22	49	22	25
Potential Gold and Diamonds	6	5	2	16	5
Pan-Pacific Industries	15	16	13	11	32
Aussie-ecom	8	9	6	16	5
Telco	25	31	24	20	25

played a respect for company fundamentals, which suggested they were not outright gamblers.

Conclusions

We used adaptive conjoint analysis, cluster analysis, and discriminant analysis to explore the share preferences of a sample of individual share investors. The results suggest there are distinct investor segments that value different share attributes. The four groups identified (The Explorers, The Risk-Averse Investors, The Traders, and The Contrarian Investors) had different attitudes and preferences, and financial services professionals would do well to recognize such differences when dealing with clients.

The sample included members of The Australian Shareholders Association, who were active and interested investors. As such, we might have expected a large proportion to be active traders and not to demonstrate highly risk-averse behavior. However, 48% of respondents were in the Risk-Averse group, which is similar to Lease et al.'s [1974] findings, and may be indicative of individual investor attitudes.

The results have implications for the marketing of financial products and for financial consultants. Those providing advice to the growing market of individual investors need to understand client attitudes to investment in general and risk in particular. Failure to grasp such differences may make it extremely difficult to provide appropriate advice and to satisfy clients over the long term.

Future research is needed to examine how accurately those advising individual investors perceive their clients' preferences and attitudes, and how they take such opinions into account in client interactions.

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