

Mimicking Behavior in Repurchase Decisions

Mike Cudd, Harold E. Davis and Marcelo Eduardo

Behavioral biases associated with base rate neglect, anchoring, ambiguity aversion, and robust control may foster an environment in which mimicking may influence decision-making. This study tests for the presence of mimicking behavior in security repurchase decisions. After controlling for variables reflecting financial operating motives and mispricing associated with limits to arbitrage, results show that debt-equity choices in repurchase events are significantly enhanced by the occurrence of recent similar choices made by the firm's competitors. Specifically, the probability of opting to repurchase equity (debt) is positively associated with the size of the firm conducting the largest percentage equity (debt) repurchase in the same industry in the prior year. Moreover, the mimicking activity is observed for smaller-sized firms, but not for larger firms. The findings are consistent with the premise that managers of smaller firms are generally less skilled and experienced, and more prone to be influenced by decision shortcuts such as mimicking the actions of peers.

Literature Review

Financial decision-making patterns that cannot be explained by conventional financial theory are the province of *behavioral finance*. Behavioral influences may be related to psychological factors, or to market imperfections that permit sustained mispricings by inhibiting arbitrage activity (Shleifer and Summers [1990], Barberis and Thaler [2002]). This study explores the presence of mimicking influences on repurchase choices made by corporate managers.

Behavioral finance can be described as a process in which people use cognitive shortcuts in decision analysis (McGoun and Skubic [2000]), and it may involve ceding some decision accuracy in exchange for reduced effort (Payne [1993]). Moreover, if management decisions are reversible (as repurchase decisions inherently are), they may also become more intuitive (Olsen [1998]).

Mimicking behavior in other decision areas, such as acquisitions, is well documented by the existence of merger waves (e.g., Auster and Sirower [2002]), despite overwhelming evidence that acquirers do not gain from such actions (Roll [1986]). Consequently, it is not absurd to consider that mimicking behavior may also be used as shortcuts in other areas of financial decision making, such as repurchase decisions.

Behavioral Literature

The behavioral literature cites several biases in decision-making, such as *base rate neglect*, *anchoring*, *ambiguity aversion*, and *robust control*. The presence of such biases may support a decision environment that enhances the probability of mimicking activity. We next discuss how such biases can foster mimicking behavior in repurchase decisions

The tendency of individuals to place excessive weight on more recent and important events is called *base rate bias*. Kahneman and Tversky [1974] posit that individuals evaluate probabilities according to the degree to which one event reflects the basic characteristics of another. Thus, in evaluating repurchase decisions, managers may overestimate the homogeneity of their company in relation to competitors.

The probability of mimicking may also be enhanced when network ties to other firms exist, because of greater access and trust concerning competitor actions (e.g., Haunschild [1994], Galaskiewicz and Wasserman [1989]). An increase in the number of competitor firms conducting similar actions may also play a role (Abrahamson [1991] and Mezias and Lant [1994]).

In addition, in more complex decision environments, managers may be more prone to using analogies or other associative processes (Epstein [1994], Busemeyer [1995], and Hammond [1996]). The complexity of repurchase choices may induce an exaggerated weighting of the similarities with competitor firms, and an understatement of the actual differences.

The tendency for individuals to place excessive weights on events that are recent and involve retrievable information is termed *anchoring bias* (Kahneman and Tversky [1974]). In repurchase decisions, managers

Mike Cudd is an Associate Professor of Finance at Mississippi College.

Harold Davis is an Assistant Professor of Accounting at Southeastern Louisiana University.

Marcelo Eduardo is the Dean of the School of Business at Mississippi College.

Requests for reprints should be sent to: Mike Cudd, Mississippi College, Box 4014, Clinton, MS 39058. Email: rcudd@bellsouth.net

may place too much emphasis on the market conditions faced by competitors in recent repurchase actions, and too little weight on changes in the meantime. The tendency to “anchor” to the more recent conditions may cause managers to overestimate the probability of their success in pursuing similar choices.

The tendency of individuals to choose options in which the probability distribution for success is known (i.e., a risk), over those in which it is unknown (i.e., a gamble), is termed *ambiguity aversion bias* (Heath and Tversky [1991]). Thus, management confidence in assessing the probability of success of a repurchase choice may be influenced by the recent success of competitors conducting repurchase actions. Management may view the competitor’s event as a type of market test. The sense of competence may be further enhanced if an individual manager views his competitors to be highly qualified in reaching their repurchase decisions (Fox and Tversky [1995]). If more skilled managers are perceived to gravitate to larger firms, then repurchase actions by larger firms may be more likely to be copied.

The use of a reference probability distribution to avoid a worst-case scenario in which the current decision-maker’s own probability distribution is misspecified is termed *robust control bias* (Epstein and Wang [1994], Anderson, Hansen, and Sargent [1998]). In estimating the probability of a worst-case scenario for a repurchase choice, a manager may again fall back on the recent repurchase actions of competitors. For example, a successful equity (debt) repurchase conducted by a competitor may improve assessment of the worst-case scenario for a similar action, and increase the probability that the manager will also opt to conduct a similar equity repurchase.

Note that mimicking behavior naturally depends on the existence of peers whose actions are recent and observable. The most immediate peers of corporate managers are their competitors. Formulating corporate strategy requires that managers be constantly aware of competitor actions. Consequently, actions by managers are inherently positioned to be monitored by their competitors, and to influence the decisions of competing managers.

This study does not attempt to discriminate among the different types of behavioral biases that support the use of decision shortcuts and mimicking behavior. We focus on testing empirically for the presence of mimicking behavior in the debt-equity choices made in repurchase decisions.

Study Variables

Financial Operating Variables

The literature offers several motives based on conventional financial theory to explain repurchase

choices. Financial operating variables typically serve as proxies for these motives. *Market timing* strategies are based on the existence of asymmetric information, and suggest that management repurchase decisions will be driven by whether the stock is perceived as over- or undervalued (Myers and Majluf [1984]). If the stock is undervalued, management will prefer to repurchase equity over debt as a signaling mechanism (Vermaelen [1981]). Firms with higher debt leverage ratios may have their cash flows discounted at higher rates, also suggesting debt repurchases would be preferred over equity repurchases (Fama and French [1992]).

Collectively, these theories all suggest a negative relationship between debt leverage and the market-to-book ratio (MB). Empirical findings, such as Jung, Kim, and Stulz [1994] and Hovakimian, Opler, and Titman [2001], support this hypothesis. A positive market response to a repurchase announcement may correct the misevaluation (Dann [1981] and Comment and Jarrell [1991]), but positive abnormal returns following the announcement year suggest it is not fully corrected (Ikenberry, Lakonishok, and Vermaelen [1995]).

In a survey of CFOs, Graham and Harvey [2001] also provide evidence that managers attempt to time the market, at least in terms of security issuance decisions, and opt to issue equity when they feel the stock is overvalued. Graham and Harvey found that roughly two-thirds of respondents considered the relative valuation of equity an important consideration in stock issuance decisions. The survey, however, does not explicitly address repurchase decisions.

Higher levels of *fixed assets* are predicted to be positively related to the debt ratio, providing more liquidation value to lenders, as well as limiting manager ability to shift risk from stockholders to bondholders (Myers [1977]). Consistent with this line of thought, firms with higher levels of fixed assets should carry higher levels of debt and a disposition to retire debt over equity. However, prior research finds the relationship between net debt issued and asset collateral value (fixed assets plus inventories to total assets) to be insignificant (Berger, Ofek, and Yermack [1997]).

To finance growth, firms may prefer retained earnings over other sources to avoid the mispricing of new equity due to asymmetric information (Myers and Majluf [1984]). This suggests a negative relationship between *profitability* (PFT) and debt leverage. More profitable firms, however, may be forced to leverage up and distribute excess cash flows, resulting in a higher debt ratio (Jensen [1986]).

Several researchers have found that distribution of funds via repurchase offers more flexibility than increased dividends (Baja and Vijh [1990], Kaplan and Reishus [1990], and Denis, Denis, and Sarin [1994]). Empirical results, however, are mixed: Some studies

find that higher profitability is associated with debt financing (Hovakimian, Opler, and Titman [2001]); some find that lower debt ratios are linked with more profitable firms (Marsh [1982]); some find no significant relationship between debt leverage and profitability (e.g., Berger, Ofek, and Yermack [1997]); and some find higher profitability is associated with leverage reductions (e.g., Baker and Wurgler [2002]).

Conventional financial theory argues that higher *tax-loss-carry-forwards* (TLCF) should diminish a firm's ability to benefit from interest expense deductions, causing firms to prefer retiring debt over equity. Consistent with this argument, studies examining the debt-equity choice find TLCFs are negatively related to the preference for debt financing (e.g., MacKie-Mason [1990], Berger, Ofek, and Yermack [1997], and Hovakimian, Opler, and Titman [2001]).

Greater *size* is typically associated with greater market share, greater diversification, and a more stable cash flow. This suggests that firms with higher debt levels should have a preference for retiring equity over debt. Conversely, information asymmetries are less likely to affect larger firms, which are analyzed by a larger number of analysts. Diminished management concerns about transferring wealth to new shareholders should produce a preference for retiring debt over equity. Findings generally support a positive relationship between firm size and levels of debt (Marsh [1982], MacKie-Mason [1990], and Berger, Ofek, and Yermack [1997]).

A balancing strategy suggests that firms seek a target debt ratio that balances the benefits of tax deductions and leverage versus the cost of financial distress, using repurchasing to achieve that goal (Bagwell and Shoven [1988], Opler and Titman [1996]). Under this framework, a low *existing level of debt leverage* (LEV) should enhance the likelihood that a firm opts to retire equity, increasing the firm's debt ratio. Findings are again mixed, however: Some studies observe a negative relationship between existing debt levels and the preference for debt ratio increases (e.g., Berger, Ofek, and Yermack [1997], Hovakimian, Opler, and Titman [2001]); others observe either a negative relationship (Marsh [1982]), or no significant relationship (MacKie-Mason [1990]).

Arbitrage Limits

Equity mispricing may also be due to non-operating factors and yet still be associated with rational behavior. For example, a lack of perfect substitute investments may inhibit arbitrage activities and permit equity mispricings for extended time periods (Barberis and Thaler [2002]). Even without the presence of irrational trader behavior (i.e., noise trader risk), however, arbitrage can be inhibited by an inadequate supply of substitute investments (Lamont and Thaler [2003]).

There is evidence that inclusion of a stock in a major index may offer a reasonable substitute asset to support arbitrage activity. Studies show such inclusion can result in a significant price increase (Harris and Gurel [1986] and Shleifer [1986]), and that the initial mispricing is greater for stocks with weaker initial substitute investments (Wurgler and Zhuravskaya [2002]).

Wurgler and Zhuravskaya [2002] suggest that constituency in the S&P 500 may serve as a proxy of the potential equity mispricing. In this study, we set a dummy variable equal to 1 for an S&P 500 stock, and 0 otherwise. Although other indexes are now available, only the S&P 500 was in existence for the duration of our study period. The predicted sign of SPMI, the proxy variable for limits-to-arbitrage effects, is negative, implying that stocks trading in an index are less likely to be mispriced and less likely to be candidates for market timing. Their managers are thus more prone to repurchase debt.

Industry Disturbance Variables

But beyond the effects of financial operating motives and limits-to-arbitrage considerations, management repurchase decisions may also include a mimicking influence associated with recent competitor repurchase choices. In this study, we define a debt (equity) repurchase event as a 5% or greater decrease in the ratio of debt to total assets (equity to total assets) (basing total assets on prior-year values).¹

We first identify the firm with the same four-digit SIC code and the largest percentage decrease in the debt (equity) ratio in the prior year (if it is at least 5%). We then use the natural logarithm of the total assets of the repurchasing firm as the *industry disturbance variable* (DDISTURB or EDISTURB). This procedure uses a threshold to define a material competitor repurchase event, and then captures the size of the firm conducting the event. We assume the influence of competitor actions on management repurchase decisions will be greater for recent repurchase actions conducted by larger competitors.

Sample

Our repurchase sample consists of all firms listed on the NYSE, AMEX, and Nasdaq that experienced at least a 5% decrease in their debt-to-asset ratio (i.e., debt repurchase event), or a 5% decrease in their equity-to-asset ratio (i.e., equity repurchase event) from the prior year for any fiscal year from 1986 to 2001. Consistent with Berger, Ofek, and Yermack [1997], we omit financial and utility firms due to their uniqueness versus other industries. Firms experiencing both an equity repurchase event and a debt repurchase event in the same year are also excluded.

Further sample size restrictions are associated with the availability of industry averages for all financial variables. Baker and Wurgler [2002] identify outliers as firms with market-to-book ratio values greater than 10.0; Hovakimian, Opler, and Titman [2001] identify outliers as those firms with ratio values in the highest and lowest 0.5%. We use both methods to ensure the integrity of our findings. Sample inclusion requirements result in a final list-wise complete sample consisting of 6,544 repurchase events occurring from 1986 through 2001 (see Table 1).

Results and Analysis

Sample Profile Characteristic

Table 2 gives a profile of the sample's financial characteristics. Relative to their industry norms, sample firms have above-average levels of market-value debt ratios (LEV), market-to-book ratios (MB), and tax-loss-carry-forward ratios (TLCF). They exhibit below-average levels of profitability (PFT) and fixed-assets ratios (FA). The low profitability of repurchasing firms is consistent with the findings of Hertz and Smith [1993], who observe that roughly half their sample consists of financially distressed firms.

Sample profile data in Table 3 show that the majority of repurchase events are debt repurchases. An even

Table 2. *Descriptive Characteristics of Financial Economic Variables*

Financial variables for sample firms and industry averages are based on values for the year immediately preceding the repurchase event and include: LEV—the ratio of total debt to total debt plus the market value of equity; FA—the ratio of fixed assets to total assets; MB—the ratio of total debt plus the market value of equity to the book value of assets; PFT—the ratio of earnings before interest, taxes, and depreciation to sales; TLCF—the ratio of tax loss carryforwards to total assets; SIZE—the natural log of sales; and EDISTURB, DDISTURB—the natural log of the dollar size of the largest equity (debt) repurchase in the prior year by any firm with the same four-digit SIC code (i.e., competitor firm) in the same size class. $n = 6,544$.

Variable	Firm Mean (Std. Dev.)	Industry Mean (Std. Dev.)	Δ^a Mean (Std. Dev.)
LEV	0.254 (0.234)	0.214 (0.152)	0.040** (0.112)
FA	0.304 (0.216)	0.319 (0.199)	-0.015** (0.145)
MB	1.366 (0.948)	1.254 (0.583)	0.112** (0.841)
PFT	-22.081 (490.092)	15.750 (9.093)	-37.831** (490.505)
TLCF	0.367 (1.084)	0.077 (0.253)	0.290** (1.062)
SIZE	4.725 (2.267)		
Competitor Firm			
EDISTURB	1.228 (2.144)		
DDISTURB	2.237 (2.453)		

** $p < 0.01$, * $p < 0.05$.

Δ^a = Firm Ratio—Industry Average Ratio.

Table 1. *Repurchase Events by Year*

A repurchase event consists of any non-financial company listed on the NYSE, AMEX, or Nasdaq experiencing at least a 5% decrease in total debt to total assets (debt repurchase event), or a 5% decrease in equity to total assets (debt repurchase event), over the prior year (with total assets based on prior year values). Firms experiencing both in the same year are excluded.

Year	Number of Repurchase Events	
	Debt Repurchases	Equity Repurchases
2001	283	151
2000	287	159
1999	236	178
1998	272	128
1997	373	130
1996	273	95
1995	312	86
1994	353	60
1993	367	60
1992	423	50
1991	364	90
1990	300	85
1989	323	83
1988	313	96
1987	258	71
1986	216	68
Subtotals	4,954	1,590
Total	6,544	

Table 3. *Breakdown of Coded Variables*

An equity repurchase event is defined as a 5% decrease in equity/total asset, and a debt event is defined as a 5% decrease in debt/total assets. In both definitions, total assets are based on beginning-of-year values. CODE equals 1 for an equity repurchase, and 0 for a debt repurchase. Firms experiencing both debt and equity repurchase events are excluded. SPMI equals 1 if the firm is a constituent of the S&P 500 index, and 0 otherwise. $n = 6,544$.

Variable	Coding	Number/ (Percent)
CODE	0—debt repurchase 1—equity repurchase	4,954/(75.7%) 1,590/(24.3%)
SPMI	0—not index constituent 1—index constituent	5,839/(89.2%) 705/(10.8%)

greater majority of the sample firms are not in the S&P 500, which is not surprising, however, given the large number of micro/nano-cap sized firms in our sample.

Regression Results for All Firms

Table 4 gives the initial regression results for the sample. Model A shows only financial operating variables; Model B shows all the study variables. The findings of both models for the financial operating variables are generally consistent with those of prior studies. Higher values for the TLCF and LEV ratio are associated with debt repurchases; higher values for size (SIZE) and market-to-book (MB) are associated with equity repurchases.

The SPMI variable is positive and significant, indicating that inclusion of a firm in a market index increases the likelihood that management will opt to repurchase equity rather than debt. Subsequent inspection reveals this result is driven by larger-sized firms.

We find that the sign of the coefficient is counter-intuitive to the premise that managers attempt to time

the market in equity repurchases. It is possible that managers exhibit different behavior with repurchases. They may be influenced more by risk aversion than timing considerations, and may believe that the risk of purchasing an overpriced stock is less if the firm is an S&P 500 constituent.

Another explanation is that the market timing aspect of repurchases may be captured by the MB ratio, and risk aversion may be a secondary effect. The lack of evidence of market timing efforts by larger firms is also supported by the argument that larger firms, which are generally tracked by more security analysts, offer less potential for mispricing (e.g., Arbel [1985]).

The two industry disturbance variables (DDISTURB, EDISTURB) are both significant, and carry signs consistent with mimicking competitor actions. EDISTURB is positive, indicating that the likelihood management will opt to repurchase equity is positively related to the size of the firm conducting the largest percentage equity repurchase in the same industry in the prior year. DDISTURB is negative and significant, indicating the likelihood that management will opt to repurchase debt is positively related to the size of the firm conducting the largest percentage debt repurchase in the same industry in the prior year. Both findings support the existence of mimicking behavior by managers when reaching security choice decisions in repurchase events.

Because the sample is dominated by nano/micro-cap firms, we also examine the findings for different firm-size categories. We discuss those results in the following sections.

Table 4. Binary Logistic Regression Results

Financial variables based on first differences from industry average values are: LEV—the ratio of total debt to total debt plus market value of equity; FA—the ratio of fixed assets to total assets; MB—the ratio of total debt plus market value of equity to book value of assets; PFT—the ratio of earnings before interest, taxes, and depreciation to sales; and TFCF—the ratio of tax loss carryforwards to total assets. Additional financial variables are: SIZE—the natural log of sales of event firm; and EDISTURB, DDISTURB—the natural log of the dollar size of the largest equity (debt) repurchase in the prior year by any firm in the same size category with the same four-digit SIC code. SPMI is 1 if the firm is a constituent of the S&P 500 index, and 0 otherwise. Dependent variable (CODE) is 0 for a debt repurchase event, and 1 for an equity repurchase event. Coefficient/(standard error) $n = 6,544$.

Variable	Model A All Firms	Model B All Firms
LEV	-1.734** (0.176)	-1.764** (0.179)
FA	-0.086 (0.222)	-0.108 (0.224)
MB	0.169** (0.040)	0.152** (0.040)
PFT	0.000 (0.000)	0.000 (0.000)
TLCF	-0.680** (0.089)	-0.682** (0.086)
SIZE	0.235** (0.015)	0.174** (0.019)
SPMI	—	0.609** (0.104)
DDISTURB	—	-0.032** (0.012)
EDISTURB	—	0.076** (0.014)
-2 Log-Likelihood	6511.966 **	6437.093**

Regression Results by Size Category

Table 5 (Models C-F) gives logistic regression findings for four different firm-size categories. There is variation in the significance of financial operating variables across size groups, but evidence of mimicking behavior as indicated by DDISTURB and EDISTURB is restricted to the smaller firms. The signs of the coefficients of the industry disturbance variables indicate that for nano/micro-cap firms (Model C), the probability of a manager opting to repurchase equity (debt) is positively associated with the occurrence of similar choices made by competitors in the previous year. We also find mimicking behavior with regard to equity disturbances (EDISTURB) in small-cap firms (Model D).

The fact that the mimicking behavior is observed only for smaller-sized firms is consistent with the premise that managers of smaller firms are generally less skilled and less experienced, and may be more prone to using decision shortcuts such as mimicking the actions of other managers.

Larger firms, however, produce unique findings in terms of the non-operating variables (Models E and F). The coefficient for the index inclusion variable (SPMI)

Table 5. *Binary Logistic Regression Results – By Size Category*

Financial variables based on first differences from industry average values are: LEV—the ratio of total debt to total debt plus market value of equity; FA—the ratio of fixed assets to total assets; MB—the ratio of total debt plus market value of equity to book value of assets; PFT—the ratio of earnings before interest, taxes, and depreciation to sales; and TLCF—the ratio of tax loss carryforwards to total assets. Additional financial variables are: SIZE—the natural log of sales of event firm; and EDISTURB, DDISTURB—the natural log of the dollar size of the largest equity (debt) repurchase in the prior year by any firm in the same size category and with the same four-digit SIC code. SPMI is 1 if the firm is a constituent of the S&P500 index, and 0 otherwise. Dependent variable (CODE) is 0 for a debt repurchase event, and 1 for an equity repurchase event. Coefficient/(Standard Error)

Variable	Model C <i>n</i> = 4,749 Nano/Micro-cap	Model D <i>n</i> = 1,118 Small-Cap	Model E <i>n</i> = 514 Midcap	Model F <i>n</i> = 163 Large-Cap
LEV	−1.978** (0.210)	−1.130** (0.435)	−1.652* (0.725)	−5.657** (2.119)
FA	−0.247 (0.271)	−0.316 (0.518)	1.199 (0.816)	−0.978 (1.678)
MB	−0.094 (0.058)	0.336** (0.090)	0.096 (0.137)	0.293 (0.218)
PFT	0.000 (0.001)	0.001 (0.006)	0.021 (0.012)	0.096** (0.028)
TLCF	−0.555** (0.084)	−1.820** (0.421)	−0.320 (0.515)	1.275 (0.835)
SIZE	0.142** (0.027)	0.081 (0.078)	−0.090 (0.120)	−0.071 (0.260)
SPMI	−0.097 (0.654)	0.252 (0.179)	0.836** (0.210)	2.162** (0.730)
DDISTURB	−0.073** (0.019)	−0.006 (0.022)	0.033 (0.027)	−0.036 (0.061)
EDISTURB	0.066** (0.021)	0.077** (0.027)	0.039 (0.029)	0.105 (0.069)
−2 Log-Likelihood	4081.533**	1396.004**	676.232**	160.257**

** $p < 0.01$. * $p < 0.05$.

is positive for medium- and large-cap firms. This suggests larger firms are driven more by risk aversion than by market timing considerations in security choice repurchase decisions, and may opt to repurchase equity when mispricing is less likely to exist.

In summary, our findings support mimicking behavior among smaller firms, but not among larger ones. The results fail to reveal limits-to-arbitrage behavior as captured by the SPMI variable, and instead indicate the presence of risk aversion behavior among larger firms.

It is possible that if better managers gravitate to larger firms, then managers of larger firms may be more experienced and skilled, and more prone to trust their own judgment, rather than copying competitor actions. This argument would support the absence of mimicking behavior among the larger size categories.

Implications for Valuation

Mimicking behavior involves policy implications for investors. If the activity is detectable by investors, the mimicking firm's management may be judged as less qualified. Investors may become skeptical of management's ability to cope with less observable decisions (those less disposed to decision shortcuts). The firm's market value may subsequently be penalized. Conversely, if a firm's management scrutinizes each situation carefully and only mimics competitor actions when the same decision criteria apply (i.e., when the decision parameters of the firm and the copied competitor are truly identical), the cost savings produced by

the clever use of heuristics could result in increased share value.

Also, to the extent that mimicking repurchase actions within an industry causes firms to be more homogeneous in terms of capital structure, intra-industry portfolio diversification benefits are lessened. The greater similarity in capital structure resulting from such herd mentality should foster a higher correlation of profits and cash flows among industry firms. The result would be an increase in the variance of portfolio returns to intra-industry portfolios, or to sector funds comprised of intra-industry or intra-sector firms. In the absence of any offsetting benefits, the inherently higher risks would lower the values of such portfolios.

Summary

Behavioral finance theories suggest the possible influence of peer actions on management decisions driven by biases such as *base rate neglect*, *anchoring*, *ambiguity aversion*, and *robust control*. If this behavior is present in security repurchase events, managers may be influenced by the recent choices made by competitors facing similar decisions. Managers may perceive that the repurchase actions of competitors reflect the perceptions of mispricing in competitor equity, and, due to industry association, may believe it is connected to the mispricing of their own equity.

This study explores security repurchase events over 1986–2001, and examines the relationships between security choice decisions and competitor actions. Our

findings support the existence of *mimicking* behavior in management security choice repurchase decisions for smaller companies. The relationships are consistent with the use of decision-making shortcuts as presented in behavioral theory. We do not, however, address the specific source of the biases that drive the findings.

Note also that the observed mimicking behavior among smaller firms may not be driven by the decision biases cited in the behavioral literature. Instead it may be associated with strategic responses not captured by the financial operating variables typically used in repurchase studies.

Further study in this area might be devoted to 1) refining the timing of competitor influences (e.g., examining effects defined on a monthly basis), 2) attempting to isolate the type of mimicking behavior measured, and 3) exploring firm groupings other than SIC classifications (e.g., Almazan and Molina [2001]).

Note

1. A similar procedure is used by Hovakimian, Opler, and Titman [2001] to identify repurchase events.

References

- Abrahamson, E. "Managerial Fads and Fashions: The Diffusion and Rejection of Innovations." *Academy of Management Review*, 21, (1991), pp. 254–285.
- Almazan, A., and C. Molina. "Intra-Industry Capital Structure Dispersion: How Do Capital Structures Differ among Competitors?" Working paper, University of Texas, 2001.
- Anderson, E., L. Hansen, and T. Sargent. "Risk and Robustness in Equilibrium." Working paper, University of Chicago, 1998.
- Arbel, A. "Generic Stocks: An Old Product in a New Package." *Journal of Portfolio Management*, 11, (1985), pp. 4–13.
- Auster, E., and M. Sirower. "The Dynamics of Merger-and-Acquisition Waves." *Journal of Applied Behavioral Science*, 38, (2002), pp. 216–244.
- Bagwell, L., and J. Shoven. "Share Repurchases and Acquisitions: An Analysis of Which Firms Participate." In Alan J. Auerbach, ed., *Corporate Takeovers: Causes and Consequences*. Chicago: University of Chicago Press, 1988.
- Baja, M., and A. Vihj. "Dividend Clienteles and the Information Content of Dividend Changes." *Journal of Financial Economics*, 26, (1990), pp. 193–219.
- Baker, M., and J. Wurgler. "Market Timing and Capital Structure." *Journal of Finance*, 57, (2002), pp. 1–32.
- Barberis, N., and R. Thaler. "A Survey of Behavioral Finance." Working paper 9222, National Bureau of Economic Research, 2002.
- Berger, P., E. Ofek, and D. Yermack. "Managerial Entrenchment and Capital Structure Decisions." *Journal of Finance*, 52, (1997), pp. 1411–1438.
- Busemeyer, J. *Decision Making From a Cognitive Perspective*. San Diego: Academic Press, 1995.
- Comment, R., and G. Jarrell. "The Relative Signaling Power of Dutch-Auction and Fixed-Priced Self Tender Offers and Open-Market Share Repurchases." *Journal of Finance*, 46, (1991), pp. 1243–1271.
- Dann, L. "Common Stock Repurchases: An Analysis of Returns to Bondholders and Stockholders." *Journal of Financial Economics*, 9, (1981), pp. 113–138.
- Denis, D., D. Denis, and A. Sarin. "Information Content of Dividend Changes: Cash Flow, Signaling, Over-Investment and Dividend Clienteles." *Journal of Financial and Quantitative Analysis*, 29, (1994), pp. 567–587.
- Epstein, S. "Integration of the Cognitive and the Psychodynamic Unconscious." *American Psychologist*, 49, (1994), pp. 709–724.
- Epstein, L., and T. Wang. "Intertemporal Asset Pricing under Knightian Uncertainty." *Econometrica*, 62, (1994), pp. 283–322.
- Fama, E., and K. French. "The Cross-Section of Expected Returns." *Journal of Finance*, 46, (1992), pp. 427–466.
- Fox, C., and A. Tversky. "Ambiguity Aversion and Comparative Ignorance." *Quarterly Journal of Economics*, 110, (1995), pp. 585–603.
- Galaskiewicz, J., and S. Wasserman. "Mimetic Processes within an Interorganizational Field: An Empirical Test." *Administrative Science Quarterly*, 34, (1989), pp. 454–479.
- Graham J., and C. Harvey. "The Theory and Practice of Corporate Finance: Evidence from the Field." *Journal of Financial Economics*, 60, (2001), pp. 187–243.
- Hammond, K. *Human Judgment and Social Policy*. New York: Oxford Press, 1996.
- Harris, L., and E. Gurel. "Price and Volume Effects Associated with Changes in the S&P500: New Evidence for the Existence of Price Pressure." *Journal of Finance*, 41, (1986), pp. 851–860.
- Haunschild, P. "How Much is That Company Worth? Interorganizational Relationships, Uncertainty and Acquisition Premiums." *Administrative Science Quarterly*, 39, (1994), pp. 391–441.
- Heath, C., and A. Tversky. "Preference and Belief: Ambiguity and Competence in Choice under Uncertainty." *Journal of Risk and Uncertainty*, 4, (1991), pp. 5–28.
- Hertzel, M., and R. Smith. "Market Discounts and Shareholder Gains for Placing Equity Privately." *Journal of Finance*, 48, (1993), pp. 459–485.
- Hovakimian, A., T. Opler, and S. Titman. "The Debt-Equity Choice." *Journal of Financial and Quantitative Analysis*, 36, (2001), pp. 1–24.
- Ikenberry, D., J. Lakonishok, and T. Vermaelen. "Market Underreaction to Open Market Share Repurchases." *Journal of Financial Economics*, 39, (1995), pp. 181–208.
- Jensen, M. "Agency Costs of Free Cash Flow, Corporate Finance and Takeovers." *American Economic Review*, 76, (1986), pp. 323–339.
- Jung, K., Y. Kim, and R. Stulz. "Investment Opportunities, Managerial Discretion and the Security Issue Decision." Working Paper 4907, National Bureau of Economic Research, 1994.
- Kahneman, D., and A. Tversky. "Judgment under Uncertainty: Heuristics and Biases." *Science*, 185, (1974), pp. 1124–1131.
- Kaplan, S., and D. Reishus. "Outside Directorships and Corporate Performance." *Journal of Financial Economics*, 27, (1990), pp. 389–410.
- Lamont, O., and R. Thaler. "Can the Market Add and Subtract? Mispricing in Tech Stock Carve-Outs." *Journal of Political Economy*, 111, (2003), pp. 227–268.
- MacKie-Mason, J. "Do Taxes Affect Corporate Financing Decisions?" *Journal of Finance*, 45, (1990), pp. 1471–1493.
- Marsh, P. "The Choice Between Equity and Debt: An Empirical Study." *Journal of Finance*, 37, (1982), pp. 121–144.
- McGoun, E., and T. Skubic. "Beyond Behavioral Finance." *Journal of Psychology and Financial Markets*, 1, (2000), pp. 135–144.
- Mezias, S., and T. Lant. "Mimetic Learning and the Evolution of Organizational Populations." In J. Baum and J. Singh, eds., *Evolutionary Dynamics of Organizations*. New York: Oxford University Press, 1994, pp. 179–198.

- Myers, S. "Determinants of Corporate Borrowing." *Journal of Financial Economics*, 5, (1977), pp. 146–175
- Myers, S., and N. Majluf. "Corporate Financing and Investment Decisions when Firms Have Information that Investors Do Not Have." *Journal of Financial Economics*, 13, (1984), pp. 187–221.
- Olsen, R. "Behavioral Finance and its Implications for Stock-Price Volatility." *Association for Investment Management and Research*, March/April, (1998), pp. 10–18.
- Opler, R., and S. Titman. "The Debt-Equity Choice: Analysis of Issuing Firms." Working paper, Ohio State University, Columbus, 1996.
- Payne, J. *The Adaptive Decision Maker*. Cambridge, UK: Cambridge Press, 1993.
- Roll, R. "The Hubris Hypothesis of Corporate Takeovers." *Journal of Business*, 59, (1986), pp. 197–216.
- Shleifer, A. "Do Demand Curves for Stocks Slope Down?" *Journal of Finance*, 41, (1986), pp. 579–590.
- Shleifer, A., and L. Summers. "The Noise Trader Approach to Finance." *Journal of Economic Perspectives*, 52, (1990), pp. 35–55.
- Vermaelen, T. "Common Stock Repurchases and Market Signaling: An Empirical Study." *Journal of Financial Economics*, 9, (1981), pp. 139–183.
- Wurgler, J., and K. Zhuravskaya. "Does Arbitrage Flatten Demand Curves for Stocks?" *Journal of Business*, 75, (2002), pp. 583–609.

Copyright of Journal of Behavioral Finance is the property of Lawrence Erlbaum Associates and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.