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The Structure of Financial Strategy: Patterns in Financial Decision Making

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A corporation's financial strategy has substantial potential to influence shareholder value creation. Financial strategy is the product of the corporation's investment, financing, and dividend decisions. The objective of this study is to demonstrate how corporations coordinate these decisions and how the resulting financial strategies are related to performance and other key operating characteristics. To accomplish this, we cluster S&P Industrial 400 firms on 2 measures of each of the three financial strategy decisions. A number of strategic and descriptive variables are also used to help in identifying and interpreting the clusters. We discuss the financial, strategic, and performance characteristics on the seven strategy archetypes that we find and offer suggestions for future research.

INTRODUCTION

The ultimate test of corporate strategy is whether it creates value for shareholders (e.g. Rappaport, 1986; Varaiya, Kerin and Weeks, 1987). An area of corporate strategy that recently has received much attention due to the prevalence of hostile takeovers and financial restructuring and because of its influence on shareholder value, is financial strategy (e.g. Kracaw, Lewellen and Woo, 1992).

The structure of financial strategy consists of three interrelated decisions: the investment decision, the financing decision, and the dividend decision (e.g. Van Horne, 1992). Investment is the allocation of capital to competing investment opportunities. The financing decision is concerned with determining the optimal capital structure for the corporation. The dividend decision determines the proportions of earnings paid to shareholders, and the proportion retained and reinvested in the corporation. Assuming that the objective of the corporation is to maximize shareholder value, 'the firm should strive for an optimal combination of the three interrelated decisions, solved jointly' (Van Horne, 1992, p. 10).

While there is considerable debate on the appropriate policies for the three decisions (e.g. Modigliani and Miller, 1958; Durand, 1989; Gordon, 1989; Weston, 1989; Myers, 1990), very little has been done to describe how corporations actually interrelate the decisions.[1] The purpose of this study is to develop an empirical typology of corporate financial strategies. We then assess the strategic and performance characteristics of each financial strategy type and discuss the interrelationships among financial strategy, operating strategy, and performance. We conclude by offering our thoughts for fruitful future research. In the next section we briefly describe competing theories which attempt to balance the individual financial strategy decisions.

THE FINANCIAL STRATEGY DECISIONS

Research in finance has traditionally focused on individual financial strategy decisions instead of examining them collectively. This has enabled fi-

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nance scholars to separate effects of each decision on shareholder wealth outcomes. However, there is some degree of interrelationship among the decisions that has the potential to affect shareholder wealth. It is unlikely that the market is indifferent among the possible configurations of these related decisions. Thus, by identifying archetypal configurations and examining the associated strategic and performance characteristics of firms in those archetypes, we may develop a better understanding of what constitutes an 'optimal combination'.

In the following sections we briefly describe the primary theories of how each decision is made. We also consider the potential implications of a particular decision theory for the other decision areas.

The Investment Decision

The criteria for a desirable investment constitute one of the few areas of substantial agreement among finance scholars. To create value for shareholders, resource allocation decisions should be consistent with the principle of modern financial theory which states that only those investment opportunities that have a positive net present value should be funded. As Myers (1984, p. 128) explains,

> A strategic commitment of capital to a line of business is an investment project. If management does invest, they must believe the value of the firm increases by more than the amount of capital invested — otherwise they are throwing money away. In other words, there is an implicit estimate of net present value.

Major commitments of capital include investments in fixed assets, advertising and marketing, research and development (Hansen and Hill, 1991; Johnson and Pazderka, 1993), and acquisitions (e.g. Lubatkin, 1987; Seth, 1990). In contrast to the popular view that financial markets have a short-term focus (e.g. Rappaport, 1992, p. 86), recent evidence indicates that strategic investments in these areas create shareholder value (Hector, 1988; Hansen and Hill, 1991).

The investment decision at its most fundamental level determines whether the corporation will grow in size, be relatively stable, or possibly shrink. This has substantial implications for the capital structure and dividend decision which is well illustrated through the sustainable growth model (e.g. Higgins, 1977; Porter, 1980; Donaldson, 1985). The sustainable growth model shows that a business's ability to sustain investment growth is dependent on its profitability, its debt-to-equity (financing decision) ratio, and its payout (dividend decision) ratio.[2] A high growth rate, particularly one that exceeds current ROA, may require a substantial and continual injection of cash flow into the company. Firms may rely on internally generated cash flow and a low dividend payout policy to provide the necessary funds or use leverage obtained externally (Kracaw, Lewellen, and Woo, 1992).

The Financing Decision

The financing or capital structure decision has probably stimulated the most debate in finance and strategic management. Modigliani and Miller (1958) offered what is considered to be the dominant theory of corporate finance (Gordon, 1989). Their Proposition I holds that the value of a firm is independent of its capital structure. Proposition II states that the required rate of return on equity rises in a linear manner with financial leverage. The relevant cost of capital is a weighted average of the costs of debt and equity which does not change with increases in the use of leverage.

Modigliani and Miller offer proofs of the validity of these propositions in perfect capital markets. In 1963, Modigliani and Miller (M&M) introduced corporate tax effects into their model. In this model, firm value increases as more leverage is used because the deductibility of interest payments allows more of the operating income to flow through to investors. The lower cost of after-tax debt more than offsets the increase in cost of equity as leverage increases, causing the weighted average cost of capital to continue to decline and firm value to increase.

Models have been developed since the original M&M theorems to include other market imperfections such as personal taxes, bankruptcy and agency costs, and information asymmetries. These models show the offsetting costs and penalties imposed when leverage increases beyond reasonable levels and help to reconcile M&M theory with the variety of capital structures and actual

practices of modern corporations (see Weston, 1989, for an extensive review).

The finance literature has developed theories that view the firm as a set of contracts among the factors of production, with each factor motivated by its self-interest. Under these conditions, there is good reason to believe that managers (agents) will not always act in the best interest of the shareholders (owners or principals in the firm). Owners influence managers to act in their interest by offering incentives to managers and by incurring costs to monitor managers' activities. The incentive, monitoring, and bonding costs are agency costs borne by the principals and result when the owners turn over the day-to-day operations of the firm to agents.

Other agency costs occur when the firm issues debt. The bondholders realize that agents acting in the interests of the owners of the firm may undertake activities which adversely affect the value of the debt. Bondholders require the owners to enter into costly covenants (bonding expenditures) and to monitor (auditing, etc.) to protect themselves from these adverse activities. These expenditures are the agency costs associated with debt financing. The optimal capital structure occurs at the point where total agency costs among shareholders, agents, and bondholders is minimized. This is the foundation of agency theory (Jensen and Meckling, 1976; Fama, 1980).

Managers have incentives to avoid the monitoring that occurs in the capital market when new securities are issued and will restrict dividend payments in an attempt to fund investment proposals internally. Furthermore, managers may grow firms beyond their optimal size to increase the resources under their control since managers' compensation is often positively related to sales growth and because size often reduces their exposure to firm-specific risk. These value-reducing activities can be minimized by forcing managers to distribute free cash flow and by requiring firms to raise funds for investments externally. Increasing dividend pay out reduces free cash flow and forces firms into the external markets where they are monitored, which results in an overall reduction in agency costs (Easterbrook, 1983; Jensen, 1986).

The pecking-order theory of capital structure (Myers, 1990) holds that there is no well-defined debt to equity ratio. However, there is a preference for certain forms of financing because of their costs and because of the messages sent to the capital markets. In general, firms prefer internal (retained earnings) to external financing. Dividend payout ratios are aligned with investment opportunities to avoid unanticipated changes in dividends or trips to the capital market. This leads to a buildup of cash during some periods and a drawdown of 'financial slack' in others. If firms do require external financing, they will issue the safest securities (e.g. debentures) before riskier ones (e.g. convertible issues) with new equity being the least desirable choice. The preference for safer securities stems, in part, from information asymmetries in the capital markets. Information asymmetries occur when managers have more information than investors about expected future cash flows. If a firm attempts to issue new equity, investors assume managers believe the stock is overvalued (new issues would not be sold if they were undervalued) and devalues both existing shares and the new issue.

Taking the 'business policy' perspective, Andrews (1980) proposed that the capital structure decision is an important element of the overall corporate strategy of the firm. While the economic component of corporate strategy greatly influences decision making, it also is well accepted that top managers may satisfice, rather than maximize, with respect to economic objectives (Cyert and March, 1963; Simon, 1976). This allows them to pursue their own agendas once the minimum requirements of the owners have been met. The result may be under utilization of leverage due to risk aversion or investment in low NPV projects that still enable the business to grow (Barton and Gordon, 1987, 1988).

The collective evidence on capital structure indicates that moderate use of debt does increase firm value and lowers the cost of capital. However, at some point the costs associated with leverage more than offset any benefits from further increases in the level of debt. Firms maximize value at the point where the marginal benefits are balanced against the marginal cost of increasing debt. Moreover, firms may adapt their capital structure to minimize the total agency costs and the negative signals that may be sent out as a result of information asymmetries. The investment and dividend decisions clearly play an

important role in setting the optimal capital structure.

The Dividend Decision

Several theories have evolved over the payments of dividends. Modigliani and Miller (1961) argue that dividend policy is irrelevant in perfect capital markets. Gordon (1963) and Lintner (1962) advocate high dividend payout arguing that investors place more value on dividend distributions than expected capital gains because they are less risky.[3]

In contrast, Litzenberger and Ramaswamy (1979) advance a tax-based argument for low dividend payout. Since capital gains realized from stock ownership are taxed only when the stock is sold, there is a tax advantage to paying small or no dividends to shareholders and deferring capital gains taxes to the time when the stock is sold.

There are additional considerations when setting dividend policy. Certain groups including retired individuals, trusts, and endowment funds prefer dividends over capital gains (Lewellen *et al.*, 1978). Ross (1977) and Bhattacharya (1979) suggest that dividends contain information and can be used as reliable signals of firms' future prospects. Firms that increase dividend payments are signalling the market of higher prospects while dividend decreases signal lower future expected cash flows.

Finally, the dividend decision is often characterized as a residual decision. That is, after investment opportunities with a positive NPV have been funded, remaining funds may be distributed as dividends. However, given the preference for internally generated funds suggested by the pecking-order theory, the double taxation on dividends, and the negative signal sent out by an equity offering or dividend decrease, corporations might prefer to retain a certain amount of 'financial slack' as suggested by Myers and Majluf (1984) to ensure that all positive NPV projects are accepted. A recent study (Sembenelli, 1993) provides some support for this position.

The conclusion to be drawn from this discussion is that financial strategies are interrelated. Investments in assets must be funded either internally by retaining corporate cash flow or externally by selling new securities. The optimal amount of debt and equity must be considered when new securities are issued to fund these projects. Dividends distribute corporate cash that otherwise would be reinvested in new or existing assets, thus affecting the financing decision. Moreover, if there are information asymmetries, managers have incentives to alter the financing, dividend, and investment decisions in an attempt to send reliable messages to investors about the future cash flows of the firm. These 'signalling effects' may lead to a reduction in investment, increase in 'financial slack', reliance on internally generated funds, and preference for debt over equity when external funds are required.

An interesting point is that there are a number of theories to explain each decision. Moreover, one theory for explaining investment behavior might preclude a particular theory for explaining the financing or dividend decision. For example, adoption of an aggressive investment strategy may constrain a firm's ability to maintain a high dividend payout policy. In Table 1 we provide a number of potential financial archetypes based on the theoretical discussion presented above. In theory, the simultaneous solution to the three decisions should be driven by the investment opportunities of the firm. As the third law of Brealey and Myers (1991) states, 'You can make a lot more money on the left-hand side of the balance sheet than on the right' (p. 464). In other words, sound investment decisions add more value than sound financing and dividend decisions. The first column of Table 1 separates investment opportunities into high, moderate, and low or none. The financing decision is determined by the available investment opportunities as well as the ability to generate internal cash flow. For example, profitable firms with many investment opportunities including acquisitions may be able to fund these opportunities primarily from internal sources with reliance on external sources. Other firms require large doses of external finance to fund opportunities and may have a preference for debt over equity. Thus, growth firms may cluster according to their financing needs with some firms generating funds internally while other rely on external sources and a preference for debt. Both of these patterns fit into a pecking-order explanation. The dividend decision for firms with many investment opportunities may be best described as a residual one.

Firms with limited investment opportunities might require little or no external funding and will use leverage strategically to lower tax payments, enhance equity return, and maximize firm

Table 1. Examples of Different Financial Archetypes

Investment decisions	Financing decisions	Dividend decisions
	Highly profitable firms may be able to fund projects internally	
High growth opportunities requiring continual and substantial investment. Many positive NPB investments are available	Firms may exhaust internal sources of funds and rely on external markets for additional funds. Following the 'pecking order' debt will be preferred to external equity	Dividend policy is set as a residual policy
Low growth opportunities requiring moderate amounts of investment. Selective investments in positive NPV projects	Internal funds may be adequate to fund investments. Leverage will be used to lower tax payments and optimize firm value	A policy of regular and increasing dividends is established. The prospects for the future and the 'dividend clientele' may determine whether the dividend is low or high
	Little need for external finance. Debt ratios could be expected to decline for firms with intangible assets	Dividends payments are high, medium, or low depending upon profits. Little or no changes in the dividend over time
No growth opportunities requiring little or no investment.	Profitable firms with tangible assets assets may add leverage to reduce taxes	High profits and an optimal use of leverage result in high dividend payments along with stock repurchases
Investment may be wasteful and have negative NPV	Low profit firms may compensate with higher levels of debt to prop up ROE	Low-profit firms may use debt to support a higher level of dividends than is warranted by cash flow. They continue to pay high dividends to avoid the 'negative signals'
		No growth, low profits, and leverage forces the firm to lower or eliminate dividends

value. The dividend decision will complement financing activity. Firms that generate consistent cash flow will develop a policy of stable dividend growth. Other firms may establish high or low dividend payout dependent upon the 'dividend clientele'.

Perhaps the most difficult archetype to describe is the situation where investment opportunities are limited or absent altogether. Firms with few investment opportunities may be very profitable but in mature or even declining industries. Alternatively, changes in industry structure or just poor management may have driven the profits from these firms. Whatever the situation, there are few investment opportunities. Although the need for external finance is low, this may not stop these firms from making trips to the capital markets for a variety of reasons. For instance, the profitable firms that generate substantial internal cash flow may continue to use external debt to optimize capital structure and lower tax payments. These companies would be expected to follow a high dividend payout policy and stock repurchases to funnel excess cash flow to stockholders. These policies would be consistent with Jensen's 'free cash flow' theory.

Low-profit firms may continue to use external debt in an attempt to prop up equity returns. The proceeds from issuing debt may be squandered on low-return projects which further reduces shareholder return and value. The continual downward spiral may end in a takeover, bankruptcy, or liqui-

dation of the firm. Other firms may be able to hand on in these industries for lengthy time periods and offer substandard shareholder return for the level of risk.

There are obviously other predictions from the interrelated financial theories. The purpose of Table 1 is to show several potential archetypes consistent with existing theory. In the next section we describe a study whose objective is to unravel the theories-in-use and to consider corporate financial strategy through combinations of theories which explain the three decisions discussed above.

RESEARCH DESIGN

The Sample

Our sample is composed of the member companies in the S&P 400 Industrial Index for 1986 through 1989. A four-year time frame is used to reduce the effect of year-to-year fluctuations around the target financial strategies. This is a diverse sample that includes corporations with widely divergent diversification profiles. All firms that remained in the S&P 400 Industrial Index for the complete study period are included. This screen resulted in a total of 342 firms over the four-year period. Additionally, 39 companies were eliminated from the sample because of incomplete information or because they were outliers.[4] Thus, a total of 303 firms are included in the final sample.

Cluster Analysis and Variables

Cluster analysis is frequently used in strategy research to derive strategic taxonomies empirically (Hambrick, 1984; Harrigan, 1985). We use Ward's minimum variance method in SAS as our clustering procedure since it has been found to be one of the methods that is most effective at revealing known group structures in a data set (Milligan, 1981; Punj and Stewart, 1983). While it is common to standardize variables before clustering, standardization is not appropriate where interrelationships among the variables exist by design (Punj and Stewart, 1983, p. 144). We have discussed in detail the theoretical rationale for the interrelationships among the investment, financing, and dividend decisions, and thus do not standardize the cluster variables.

To satisfy ourselves regarding the stability of our cluster solution, we varied the parameters of the number of clusters, the percentage of outliers trimmed, and K (kth nearest neighbor). A seven-cluster solution (with $K = 7$) based on the large increase in the semi-partial R^2 from the seven-cluster solution to the six-cluster solution seems best to represent the data.

Clustering Variables: Financial Decisions

All data for these variables are drawn from PC-Compustat. Values for the variables are averaged over the four-year study period to obtain a picture of the firms' long-term posture that is unbiased by year-to-year fluctuations in the financial strategy variables.[5] Six decision variables, two for each financial strategy decision, are used to determine the clusters.

(1) *The investment decision.* We follow the precedent set in the PIMS study (e.g. Buzzell and Gale, 1987) by operationalizing investment strategy as the change in the fixed assets of the corporation and the relative size of the corporation's investment in current assets. While it could be argued that R&D and advertising are also important strategic 'investments', we consider then current expenditures. Thus, we do not include them as clustering variables, but do examine their role in the profiles of the strategy groups as descriptive variables:

(a) Capital investment (%): the ratio of capital expenditures divided by total (net) property, plant, and equipment. This ratio indicates the rate at which the corporation's fixed asset base is growing. Capital expenditures are taken from either the statement of cash flows or statement changes in financial position and represent total outflows for additions to the companies' property, plant, and equipment. Property, plant and equipment includes the reported cost of tangible fixed property used in production.

(b) Current investment (%): the ratio of total current assets to total assets.

(2) *The financing decision* As this decision is primarily concerned with how corporations utilize leverage, we operationalize the financing decision with measures of the use of leverage in the corporation's overall capital

structure and the extent to which leverage is used to finance the corporation's investments:

(a) Debt to total capital (%): the ratio of the book value of total long-term debt to total capital. Total long-term debt represents all debt obligations with maturities greater than one year from the balance sheet date. Total capital is the book value of the corporation's total common equity, preferred stock, and long-term debt.

(b) Total debt to total assets (%): book value of current liabilities plus long-term debt dividend by total assets.

(3) *The dividend decision* The two most important aspects of dividend policy are the rate at which dividends to shareholders grow and the percentage of available funds that are distributed and that are retained to meet the investment need of the corporation:

(a) Dividend growth (%): five-year average compound growth rate in dividends. This figure represents the compound growth rate from the beginning and ending dividends. The five-year growth rate is based on total dividends paid in 1984 and 1989.

(b) Dividend payout (%): the ratio of total dollar dividends declared on common shares to net income less required preferred dividend payments of the company.

Strategic and Descriptive Variables

We also track a number of descriptive or strategic characteristics. These variables are used in the analysis to describe the characteristics of the clusters. Due to industry-specific characteristics such as high R&D expenditures for the pharmaceutical industry compared to the forest product industry, these variables are standardized within each corporation's primary SIC classification.[6]

- Sales growth (%) – the five-year average compound growth rate in sales. A five-year period beginning in 1984 and ending in 1989 is used to determine this growth rate.
- Capital intensity (%) — the ratio of total (net) property, plant, and equipment to net sales.
- Advertising to sales (%) — total expenditures associated with advertising media and promotion divided by net sales.
- R&D to sales (%) — the total research and development expense divided by net sales.
- Productivity — the ratio of net sales to employees.
- Inventory turnover (X's) — the cost of goods sold divided by the average inventory over the year.
- Size (million $) — total assets of the firm.
- Market value (million $) — the market value of the firm's common shares measured as year-end close price times the number of shares outstanding.
- ROA (%) — return on assets is defined as after-tax income before extraordinary items divided by total assets.
- ROA (%) — return on equity is after-tax income before extraordinary items divided by total common equity.
- Short-term borrowing rate (%) — the weighted average short-term borrowing rate is an indicator of the current credit worthiness of a firm.
- Beta — beta is a measure of the sensitivity of a company's market return to changes in the broader market. Compustat uses 60 monthly stock returns relative to the S&P 500 index to measure beta. In our study, this covers the period January 1985 through December 1989 inclusive.
- Market return (%) — The total market return for a given year is the difference between the fiscal year end closing price per share and the price per share at the beginning of the year plus common dividends, divided by the price per share at the beginning of the year. The annual returns are then averaged over the four-year study period.

RESULTS

Means, standard deviations, and correlations among the variables are presented in Table 2. Results form the cluster analysis and the associated ANOVA are presented in Table 3. Cluster characteristics are presented descriptively and quantitatively for ease of interpretation and presentation. Characterization of a cluster as being low, medium, or high is based on statistical significance (employing Scheffe's multiple comparison test) for the financial decision variables.[7]

Table 2. Means, Standard Deviations, and Correlation Analysis

		Mean/Std dev[a]	1	2	3	4	5	6	7	8	9	10
1	Capital investment	0.20/0.08	–									
2	Current investment	0.44/0.17	0.43	–								
3	Debt to total capital	0.34/0.27	−0.28	−0.24	–							
4	Total debt to total assets	0.26/0.16	−0.31	−0.24	0.93	–						
5	Dividend growth	0.08/0.14	0.07	−0.06	−0.28	−0.25	–					
6	Dividend payout	0.46/1.27	−0.15	−0.08	0.19	0.22	−0.20	–				
7	Sales growth	8.47/9.59	0.34	0.11	−0.11	−0.10	0.24	−0.26	–			
8	Capital intensity	0.36/0.28	−0.34	−0.59	0.10	0.11	0.03	0.14	−0.16	–		
9	Advertising/sales	0.04/0.04	0.07	0.12	−0.07	−0.08	0.16	0.00	0.04	−0.11	–	
10	R&D sales	0.03/0.03	0.48	0.32	−0.26	−0.28	−0.04	−0.10	0.15	−0.07	−0.02	–
11	Productivity	166.460/140.868	−0.23	−0.25	0.04	0.06	0.01	0.09	−0.17	0.33	0.11	−0.21
12	Inventory turns	6.65/4.83	−0.18	−0.42	0.09	0.05	0.07	0.03	−0.15	0.21	−0.14	−0.41
13	Size	$4.9m^2/11.9m^2$	−0.02	−0.31	0.03	0.04	0.03	0.04	−0.02	0.10	−0.07	0.00
14	Market value	$3.4m^2/6.6m^2$	0.01	−0.19	−0.09	−0.08	0.05	0.00	0.02	0.08	0.11	0.14
15	ROA	6.15/4.67	0.25	0.10	−0.28	−0.31	0.32	−0.15	0.37	−0.11	0.22	0.11
16	ROE	14.24/18.39	0.04	0.05	−0.10	−0.15	0.41	−0.16	0.13	−0.08	0.12	−0.04
17	Borrowing rate	9.45/5.43	−0.03	0.08	0.02	0.02	−0.05	−0.01	−0.11	−0.11	0.15	0.13
18	Beta	1.13/0.30	0.25	0.11	0.08	0.08	−0.05	−0.12	0.26	−0.14	−0.13	0.32
19	Market return	17.68/16.82	0.02	−0.11	0.09	0.06	0.09	−0.09	0.34	0.07	0.19	−0.16

Correlation analysis

		11	12	13	14	15	16	17	18	19
1	Capital investment									
2	Current investment									
3	Debt to total capital									
4	Total debt to total assets									
5	Dividend growth									
6	Dividend payout									
7	Sales growth									
8	Capital intensity									
9	Advertising/sales									
10	R&D sales									
11	Productivity	–								
12	Inventory turns	0.33	–							
13	Size	0.18	0.06	–						
14	Market value	0.20	−0.03	0.77	–					
15	ROA	−0.01	0.00	−0.06	0.13	–				
16	ROE	0.02	0.02	−0.01	0.06	0.24	–			
17	Borrowing rate	−0.10	−0.16	0.09	0.12	−0.12	−0.04	–		
18	Beta	−0.14	−0.13	−0.10	−0.17	0.04	−0.08	−0.01	–	
19	Market return	0.19	0.04	0.02	0.08	0.37	0.12	−0.02	0.01	–

Means and standard deviations for the raw (unstandardized) variables. Capital investment is the ratio of capital expenditures divided by total property, plant, and equipment. Current investment is the ratio of total current assets to total assets. Debt to total capital is the ratio of total long-term debt to total capital. Total debt to total assets is defined as current liabilities plus long-term debt dividend by total assets. Dividend growth is the five year average compound growth rate in dividends. Dividend payout is the ratio of total dollar dividends declared on common shares to net income less required preferred dividend payments.

The strategic and descriptive variables are defined as follows. Sales growth is the five-year average compound growth rate in sales. Capital intensity is the ratio of total property, plant, and equipment to net sales. Advertising to sales is total expenditures associated with advertising media and promotion divided by net sales. R&D to sales is the total research and development expense divided by net sales. Productivity is the ratio of net sales to employees. Inventory turnover is cost of goods sold dividend by the average inventory over the year. Size is total assets of the firm. Market value is common shares times year end close price. Return on assets is defined as after-tax income before extraordinary items divided by total assets. Return on equity is after-tax income before extraordinary items divided by total common equity. Short-term borrowing rate is the weighted average short-term borrowing rate is an indicator of the current creditworthiness of a firm. Beta is a measure of the sensitivity of a company's market return to changes in the broader market. Market return is the total market return for a given year is the difference between the fiscal year-end closing price per share and the price per share at the beginning of the year plus common dividends, divided by the price per share at the beginning of the year.

Table 3. Characteristics of Financial Archetypes

Descriptive label *N*	Stable maintainers 42	Wasteful agents 60	Financial Risk avoiders 78	Textbook managers 29	Leverage strategists 46	Equity strategists 34	Sinking ships 14	ANOVA *P*-value
Clustering variables: financial decisions								
Capital investment	Ave. 0.172	Ave. 0.206	Ave. 0.205	Low 0.155	Low 0.162	High 0.329	Low 0.139	0.0001
Current investment	Low 0.303	High 0.529	High 0.515	Low 0.231	Ave. 0.344	High 0.586	Ave. 0.362	0.0001
Debt/ total capital	Ave. 0.301	Ave. 0.351	X Low 0.116	Ave. 0.398	High 0.573	Low 0.217	High 0.532	0.0001
Debt/ total assets	Ave. 0.229	Ave. 0.271	Low 0.120	Ave. 0.285	High 0.413	Ave. 0.184	High 0.404	0.0001
Dividend growth	Flat 0.017	Ave. 0.107	Ave. 0.111	High 0.214	Low 0.050	Low 0.057	Flat 0.020	0.0001
Dividend payout	High 0.457	Ave. 0.342	High 0.401	Low 0.245	Ave. 0.275	Low 0.188	X hi 2.599	0.0001
Strategic characteristics[a]								
Sales growth	Low −0.361	Ave. 0.142	Ave. −0.040	High 0.369	Ave. 0.231	High 0.462	Low −0.796	0.0001
Capital intensity	High 0.418	Low −0.326	Low −0.325	High 0.677	Ave. 0.175	Ave. 0.000	High 0.458	0.0001
R&D/sales	Low −0.285	Ave. −0.198	High 0.300	Ave. −0.210	Low −0.232	X Hi 0.735	X Low −0.678	0.0001
Productivity	High 0.292	Low −0.374	Ave. −0.188	High 0.475	Ave. 0.032	Low −0.257	Ave. −0.014	0.0001
Performance variables[a]								
ROA	Ave. −0.190	Ave. −0.035	High 0.576	Ave. 0.120	Low −0.603	Ave. 0.187	X Low −0.946	0.0001
ROE	Ave. −0.066	Ave. 0.077	Ave. 0.181	High 0.351	Ave. 0.003	Ave. −0.0108	X Low −1.011	0.0001
Beta	Ave. −0.211	Ave. −0.085	Low −0.243	Ave. 0.021	Ave. 0.171	High 0.487	Low −0.418	0.001
Market return	Ave. −0.041	Ave. −0.081	Ave. −0.082	High 0.452	Ave. 0.091	Ave. −0.067	X Low −0.732	0.01
Risk-adjusted return[b]	Ave. 0.067	Ave. −0.040	Ave. −0.027	High 0.526	Ave. −0.31	Ave. −0.178	Low −0.588	0.01
Size variables[a]								
Total assets	Ave. 0.215	Low −0.239	Ave. −0.098	High 0.518	High 0.274	Low −0.306	Ave. 0.035	0.01
Market value	Ave. 0.132	Low −0.235	Ave. 0.138	High 0.293	Ave. 0.184	Ave. −0.210	Low −0.273	0.10

[a]All strategic variables have been standardized within industry groups.
[b]The risk-adjusted return is calculated by subtracting the capital asset pricing model expected return from the actual return.

For descriptive variables, characterizations are based either on statistically significant differences or on substantial (albeit non-significant differences) among the means of the variables. In gen-

eral, though, clusters characterized as high on a descriptive variable are significantly different from clusters we characterize as low on that variable. We also report cluster characteristics only for variables where significant differences exist among the clusters based on analysis of variance (p-values are reported in the final column of Table 3). Thus, we do not find significant differences among clusters for inventory turnover, advertising to sales, or short-term borrowing rate. We justify the use of this somewhat subjective approach as this study is clearly exploratory, is not intended as a test of any hypotheses, but is meant to motivate other researchers to further explore the relationships suggested by this study.

Finally, Table 4 presents industry representation in each of the clusters. For each cluster, we list the four industries, by SIC classification, with the highest company representation in the particular cluster.[8] Note that industries are represented in multiple clusters and the formed clusters do not result because of an industry effect.

DISCUSSION

The following are our interpretations of the characteristics of the financial strategy clusters obtained from the analysis:

- *Cluster 1: Stable maintainers*. This group appears beyond the period of rapid growth and

Table 4. Industry Representation by Cluster

Cluster	*N*	The four industries, based on 4-digit SIC classification, with the largest numbers of firms in the cluster (number of firms in parentheses)
1. Stable maintainers	42	Transportation equipment (9), Petroleum products and related products (7), Paper and allied products (6), Chemicals and allied products and Industrial, commercial machinery, computer equipment (each with four firms)
2. Wasteful agents	60	Food and kindred products (12), Transportation equipment (8), Industrial, commercial machinery, computer equipment (7), Chemicals and allied products (6)
3. Financial risk avoiders	78	Chemicals and allied products (21), Electrical, other electrical equipment, except computers (9), Food and kindred products (8), Industrial, commercial machinery, computer equipment (7)
4. Textbook managers	29	Paper and allied products (7), Food and kindred products (5), Primary metal industries (3), Printing, publishing and allied, Chemicals and allied products, and Transportation equipment (each with two firms)
5. Leveraged strategists	46	Transportation equipment (7), Food and kindred products and Paper and allied products (each with 6 firms), Petroleum products and related products (5)
6. Equity strategists	34	Industrial commercial machinery, computer equipment (9), Electrical, other electrical equipment, except computers (6), Transportation equipment and measuring instruments, photo goods, watches (each with four firms)
7. Sinking ships	14	Chemicals and allied products (4), Petroleum products and related industries, Primary metal industries, and Industrial, commercial machinery, computer equipment (each with two firms)
8. Trimmed firms	39	Industrial, commercial machiner, computer equipment (8), chemicals and allied products (6), Primary metal industries (5), Food and kindred products and Petroleum products and related industries (each with three firms)

is now making selective investment in capital with only small changes in current assets. This implies a relatively stable portfolio of businesses, substantiated by their low sales growth rate. Spending on R&D is low relative to others in their industry, giving them the overall look of cash generators. The stable generation of cash along with a low need for new capital allows this group to maintain a high dividend payout policy. The financial configuration is consistent with the policy implications of Jensen's 'free cash flow' theory in that cash flow generators with few investment opportunities reduces agency cost and increase firm value by paying out excess cash flow in dividends and share repurchases.

- *Cluster 2: Wasteful agents.* The high investment in current assets and low capital intensity may be cuase for concern in this cluster. The substantial investment in current assets might reflect either bad past operating decisions that resulted in obsolete inventories or an intentional strategy of using current assets to create 'financial slack'. The 'slack' may allow these businesses to undertake most investments without the need for external financing. It may also indicate companies that by accumulating current assets are not managing these resources effectively and are wasting shareholder resources. The relatively low dividend payout, ROA, and market return are all consistent with this interpretation. These companies use moderate amounts of debt to prop up ROE but this does not appear to have fooled the market.
- *Cluster 3: Financial risk avoiders.* This financial strategy appears to be consistent with the predictions of agency theory in that these businesses seem to avoid debt, maintain significant 'financial slack' and satisfy their need for reinvestment and their aggressive R&D strategy with the cash generated internally. To reduce the principals' monitoring motives, they maintain a high payout ratio through average dividend growth. Unfortunately for stockholders, their high ROA translates into only average market performance because of their conservative financial policies. These firms may be poised for a takeover or other form of control change. Similar to the previous group, the high investment in current assets indicates that corporate resources are not being utilized to their value-maximizing potential. What differentiates the two groups is the higher return on assets in place for this group which allows management to fund the dividend from internal cash flow rather than debt. Agency costs for this group may be higher than the previous group because of relatively few trips to the financial market.
- *Cluster 4: Textbook managers.* The low rate of investment by these businesses may stem from a desire to restructure their asset base and reduce their high level of capital intensity. Their investment needs seem to be funded through retained earnings evidenced by good profitability and low dividend payout. This group appears to use debt to its advantage to lower the cost of capital and to complement other tax shields. This approach seems to be consistent with the pecking-order theory of financial structure. It seems that their focused investment strategy and use of low cost retained earnings enables them to generate a high ROE and a high return to shareholders.
- *Cluster 5: Leverage strategists.* The financial strategy of these otherwise nondescript corporations seems to be consistent with the prediction from the Modigliani and Miller corporate tax model that high levels of debt are in the best interests of shareholders. These corporations' rather modest investments and expenditures in R&D are likely to be focused on high NPV opportunities and their leverage-intensive capital structure does not appear to produce a substantial risk penalty, the combination of which allows them to turn a low ROA into average ROE and return to shareholders.
- *Cluster 6: Equity strategists.* These corporations are, on average, the smallest in the sample, but do not appear to be satisfied to remain small. To sustain their high growth rates, they make substantial investments in current and fixed assets and in R&D. The risk of this investment strategy is demonstrated by a high beta. Their investment is financed through externally and internally generated equity funds. While we characterize these businesses as average on ROA, ROE, and market return, they are at the high end of the range on ROA and at the low end for both ROE and market return (further accentuated when comparing risk-adjusted returns). Thus, their reluctance

to use debt may turn an average ROA into a low ROE, which coupled with their high beta may provide a suboptimal return to shareholders. It seems that the agents, rather than the principals, may be in control of these organizations.

- *Cluster 7: Sinking ships*. These corporations appear to be heading for the rocks of financial distress. Over the period, these companies have experienced low profitability, no growth, and have taken on substantial amounts of debt. As a proportion of earnings, their dividend payout is high but flat. Since they have such poor profitability, the high payout ratio is probably misleading. Their profit position is probably the result of historically poor investment decisions, an inability to cope with new competitive pressures, or some event which has had an extremely detrimental effect on the company. Sinking ships could be yesterday's leverage strategists who were unable to keep pace in changing markets, thus possibly demonstrating the downside to extensive utilization of leverage. Currently, their management seems to be milking them of cash through low reinvestment, and low expenditures on R&D. The market appropriately has rewarded them with a low return to shareholders.

CONCLUSIONS AND MANAGERIAL IMPLICATIONS

Rather than attempting to prove the benefits of a particular theory of financial strategy decisions as has been the case in the majority of previous studies (e.g. Myers and Majluf, 1984; Agrawal and Mandelker, 1987), this study undertakes to determine theories-in-use by S&P 400 corporations. As expected, we find the theories-in-use to resemble the theoretical perspectives suggested by academics. In particular, we find substantial support for predictions from agency theory and evidence of adherence to the pecking-order theory, to the theory that the prudent use of leverage does increase shareholder value, and to a managerial values theory that leads to an aversion to rely on the capital markets for new financing.

We believe that this study is an important step in better understanding the types of financial strategies in use by major corporations. However, its descriptive nature should be extended in a number of ways, as follows.

Bower's (1970) *Managing the Resource Allocation Process* is one of the most important contributions to understanding how financial strategy (the investment decision) is developed. The importance of its contribution is largely the result of it being an intensive study of process in a small number of firms. To truly understand how financial strategy is developed and what its motivations are, more in-depth studies of this type must be done.

While drawing statistically valid conclusions about the performance outcomes of different financial strategies was not an objective of this study, our descriptive approach does suggest that some financial strategies may be more or less effective than others at creating shareholder value and thus may offer opportunities for market performance improvement through selective asset and financial restructuring. We believe that future research should address this issue more thoroughly. In particular, we believe that future research should consider moderators of the financial strategy-performance relationship. For example, is one strategy more appropriate for conglomerates than for related diversifiers? Does financial strategy selection change as the rate of sales growth for a corporation changes (Kracaw, Lewellen, and Woo, 1992)?

As is typical of stratey research, this study utilizes a cross-sectional research design. It would be useful and interesting to assess the stability of these financial strategy types over time and over industry groupings, to study the internal and external influences on changes in financial strategy, and to evaluate whether changes in financial strategy are associated with changes in accounting and market perfomance.

Longitudinal stability of the taxonomy would also increase confidence in the empirical taxonomy derived here. While cluster analysis is commonly used for developing taxonomies, cluster analysis is not based on probability theory and may generate a solution that is not a valid representation of the strategy gestalts (Barney and Hoskisson, 1990). While we believe the use of theoretically interrelated variables and the consistency of many of the strategic types with theoretical predictions strengthens our conclusions, the limitations of cluster analysis must be recognized.

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NOTES

1. Several papers do examine two of the three contemporaneous decisions. McConnell and Muscarella (1985) study the investment and financing decision, while Loderer and Mauer (1992) and Doyle and Zwirlein (1992) review the dividend and financing decision.
2. From Porter (1980, p. 66), sustainable growth of investment = return on assets × (assets/equity) × earnings retention rate.
3. The argument is often referred to as the 'bird-in-the-hand' fallacy. Although dividends are easier to predict than capital gains, it is the overall cash flow that determines the firm's risk.
4. SAS recommends trimming or deleting a certain percentage of the data points when the Ward method is used during the cluster procedure since the clusters can be severely distorted by outliers when this particular method is used.
5. Two of the variables, dividend and sales growth, were compounded over a five-year growth period based on year-end figures from 1984 and 1989. Compustat uses a five-year horizon to calculate these variables.
6. SIC codes have been used extensively as the basis for assessing relatedness in diversification research (e.g. Montgomery, 1982; Davis and Duhaime, 1992; Nayyar, 1992) and have been recommended as the starting point for the development of a multidimensional organizational taxonomy due to their ability to differentiate between dissimilar organizations (Rich, 1992, p. 773). We combined SIC codes into nine groupings that we believe share some common characteristics. The groups and their SIC codes are: (1) agriculture, forestry, mining, and construction, 0-1999; (2) food products, clothing and retailing, 2000-2399; (3) lumber, wood products, paper and printing, 2400-2799; (4) chemicals, drugs, and fertilizer 2800-2899; (5) petroleum products, rubber, leather, stone, glass, and clay products, 2900-3299; (6) metal, wire, and fabricated metal products, 3300-3499; (7) machinery and equipment, 3500-3599; (8) electronic and electrical equipment, computers, measuring devices and instruments, 3600-3999; (9) wholesale and service businesses, 4000-8711. Standardization of each variable was done by subtracting the mean value of the SIC group from the firm's average and dividing by the standard deviation.
7. Several characterizations fo the clustering variables appear to be incorrectly specified based on the means reported in Table 2. For example, the mean dividend payout for the sample is 0.56, yet we classify a payout above 0.40 as high. The characterization of a variable within cluster is based on the statistical significance using Scheffe's multiple comparison test. Thus, a characterization may be reported as high and still be below the mean. Similarly, a characterization may be reported as low within a cluster but be above the mean reported in Table 2.
8. More than four industries are listed when there are ties.

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