Understanding the growth path of the small private retail firm using the sustainable growth model in a financial growth cycle context

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ABSTRACT

An analysis was conducted to evaluate the cross-sectional variations of financial ratios among privatively held retail companies measured as different growth cycle stages. The study examines four financial ratio categories for the retail sector over the high growth period of 1998 to 2000 to include: (1) profitability, (2) activity, (3) leverage, and (4). liquidity. Results provide strong evidence that small or early growth cycle stage retail firms perform differently than larger or later growth cycle stage retail firms in all categories, across all time periods. The results of the ratio study are used as the basis for setting forth growth cycle behavioral propositions of the small retail firm within the framework of the sustainable growth model.

INTRODUCTION AND LITERATURE REVIEW

One of the key components of any valuation model is earnings growth. As such, an awareness of the behavior (i.e.; sources and constraints) of small private retail firm growth is critical for anyone concerned with the business' operations (i.e.; owners, suppliers, and lenders) or valuation. However, much of the research has been devoted to the role of capital structure in a firm's growth cycle. Capital structure is only one of several other important financial dynamics affecting firm growth.

Of particular interest is the underlying behavior of several important financial ratios for small private retail firms during the various stages of the growth cycle. The sustainable growth rate model is used in this study as an appropriate framework for such an analysis. Research by Vos et al (2007) suggests that, in general, small and medium sized enterprises do not seek growth beyond their ability to control and sustain the business. This finding is consistent with the assumptions of the sustainable growth model.

Understanding differences in firm financial performance has motivated a significant number of research efforts in the area of financial statement analysis. For instance, several studies have examined internal financial ratios and found that these ratios vary across different size public firms (i.e., Ferri and Jones 1979, and Marsh 1982). Gupta and Huefner (1972), Johnson (1979), and Gombola and Getz (1983) found that retailers and manufacturers exhibit substantially different financial ratio characteristics. More specifically, Osteryoung, Constand, and Nast (1992) showed that significant differences exist in financial ratios between large public and small private firms using total assets as the size proxy and included manufacturers, wholesalers, and retailers. Wholesalers and retailers constituted the dominant sectors in the sample. The authors concluded that small private firms use more debt, have larger activity ratios and are more profitable than the larger public firms. Hall, Hutchinson, and Michaelas (2000) found that small and medium sized enterprises long term debt exhibited a positive relationship with firm size while short term debt was negatively related to firm size. Other studies have concluded that financial ratios vary significantly between the retail and manufacturing sectors (i.e.; Gupta and Huefner 1972, Johnson 1979). The financial ratio studies that focus only on small private firms are either dated or focus on the nature of the ratios and why they are important (i.e.; Kristy 1994, and Patrone and Dubois 1981).

Other studies have taken a different approach at attempting to describe and understand small firm growth dynamics. Life cycle stages have been used to study small business performance and issues faced by managers (i.e.; Churchill and Lewis 1983, Dodge and Robbins 1992). Berger and Udell (1998) developed a financial growth cycle model that focuses on financing and capital structure options by firm size, and in different stages of firm maturity. The findings indicate that optimal capital structure and financial needs varies by firm size and age. Gregory et al (2005) re-visited the Berger and Udell (1998) study and concluded that small business financing behavior could not be collapsed into one universal explanatory model.

Absent from the literature is an empirical analysis of the potential differences in internal financial ratios across different size (growth cycle stage) private retail firms using the sustainable growth model (Higgins 1977) as a structural framework. As such, the purpose of this study is to address this gap by examining how financial performance metrics vary by stage of growth cycle for private retail firms, using the sustainable growth model. Expanding our understanding of how small private firms' financial performance varies during different growth cycle stages is fundamental to analyzing, benchmarking, educating small business owners, and valuing these enterprises.

DATA AND METHODOLOGY

The sample for financial performance of small retail firms was drawn from data in "Financial Studies of the Small Business (FSSB) published by the Financial Research Associates." The study includes financial performance metrics for all firms classified as being in the retail sector during the high growth period of 1998-2000. Since this study is interested in the growth behavior of small private retail firms, the 1998-2000 data period represents three of the highest consecutive real GDP growth rates in the last two decades (U.S. Department of Commerce-Bureau of Economic Analysis). The real GDP growth rates were identified as 4.36%, 4.83%, and 4.14%, for 1998, 1999, and 2000, respectively.

The FSSB ratios are compiled from data provided by certified public accounting firms across the United States. The FSSB produces pre-calculated mean ratios arranged by sector and sales size dimensions. The financial growth stage proxy used in this study was total sales. Specifically, the financial growth stage categories are as follows: (1) $10,000-$250,000, (2) $250,000-$500,000, (3) $500,000-1,000,000, and (4) above $1,000,000. In this study, we use the above four sales size categories as a proxy for the four stages of the financial growth cycle. Using sales is consistent with Gup and Agrrawal (1996) who use sales growth as their stage of life cycle proxy. Other studies have used management problem type (Dodge and Robbins 1992), financing structure (Gregory et al 2005), or growth policy (Vos et al 2007) as a means to identify stage of the growth or life cycle.

Berger and Udell (1998) developed a financial growth cycle model, based on firm size, age, and information. The model suggests a firm's financial needs and abilities move through a financial growth cycle in a similar way to an industry life cycle. The Berger and Udell (1998) model attempts to explain firm financial behavior for firms ranging across a size continuum from small private to large public firms. Gregory et al (2005) empirically tested the financial growth model and found ambiguous results. The authors suggest that the financial growth model proosed by Berger and Udell (1998) was not intended to be a "one size fits all" framework. In this study, we agree that a financial growth cycle exists for most firms. However, we believe that there exists several financial growth cycles for firms of different size. In this regard, we propose that the financial growth cycle model be adapted to apply to and explain the financial characteristics of only one part of the Berger and Udell (1998) continuum. Secifically, the model should be applied to that portion of the size continuum describing only the financial behavior of different growth stages for small private firms. In a similar fashion to the Berger Udell model (1998),, we identify the financial growth stages as: Stage 1: Very Small, Stage 2: Small, Stage 3: Medium and Stage 4: Large.

The following categories of ratios are of interest in this study: (1) liquidity, (2) activity, (3) leverage, and (4) profitability. Several ratios representing the above mentioned categories were examined in this study. First, in order to assess liquidity, the current ratio and the current assets to total assets ratios were examined in order to help in the interpretation of the results and are not of

primary interest in the study. Activity was measured by one primary ratio and one secondary ratio, sales to assets and sales to inventory, respectively. Leverage ratios examined included debt to assets as the primary metric and short-term debt to total debt as a secondary measure. Examination of the profit to sales and profit to net worth ratios were used to provide an assessment of profitability. Statistical significance was assessed through the use of t-tests for differences in the means for all possible pairs of firm growth cycle stage.

Recent research by Vos et al (2007) suggests that, in general, small and medium sized enterprises do not seek growth beyond their ability to control and sustain the business. Ou and Haynes (2003) found that most small and medium sized enterprises rely on internal sources of funds as opposed to external capital in financing their businesses operations. The sustainable growth rate model (Higgins 1977) is used in mainstream finance to analyze the maximum growth rate in sales that a firm can achieve while maintaining a relatively stable set of financial policies. Specifically, the primary financial assumptions are that the owners are either unwilling or unable to raise new equity capital and the firm has a target capital structure and payout rate that its desires to preserve.

The model as set forth below provides the structure for our description of the empirical results for small private retail firms within the various financial growth cycle stages.

$$\text{MAXIMUM SALES GROWTH RATE} = \frac{\text{NET PROFIT}}{\text{SALES}} \times \frac{\text{SALES}}{\text{ASSETS}} \times \frac{\text{ASSETS}}{\text{EQUITY}} \times \text{RETENTION RATE}$$

WHERE: RETENTION RATE = % OF NET PROFIT RETAINED

The first two terms represents return on assets. Combining the first two terms with the third term represents return on equity. The last term represents the profit that is retained in the business. The four terms taken collectively represent the firm's growth rate in equity. The maximum growth rate in sales is the only sales growth rate that is consistent with stable values of the determinant ratios. If the firm grows at any rate different than the maximum growth rate; one or more of the determinants must have changed.

FINANCIAL RATIO/GROWTH CYCLE RESULTS

The results of the statistical tests are presented in Table 1 below and show that growth cycle stage is an important determinant of financial performance for firms in the retail sector.

TABLE 1: Retail Sector Financial Performance Test Results

GROWTH CYCLE	1 vs 2	1 vs 3	1 vs 4	2 vs 3	2 vs 4	3 vs 4

STAGE[1]							
LIQUIDITY							
Current Ratio							
	2000		> **	> **			
	1999			> **		> *	> **
	1998	> **		> ***	< **		> ***
CA/Assets							
	2000						
No significant	1999						
differences	1998						
ACTIVITY							
Sales/Assets							
	2000	< *	< *	< **			< *
	1999	< **	< **	< **		< *	< *
	1998	< **	< ***	< ***		< **	< **
Sales/Inventory							
	2000	< *	< *	< ***			
	1999		< *	< *			
	1998	< *		< *			
LEVERAGE							
Debt/Assets							
	2000						
	1999						
	1998	< *			> **	> **	
ST Debt/Total Debt							
	2000	< *	< ***	< ***	< **	< ***	
	1999	< *	< ***	< ***		< **	< *
	1998		< **	< ***	< *	< ***	
PROFITABILITY							
Profit/Sales							
	2000		> **	> ***	> **	> **	
	1999					> **	> *
	1998			> *	< **		> ***
Profit/Net Worth							
2000							
No significant	1999						
differences	1998						
Direction of Impact	>= Small growth cycle stage is Greater than Large growth cycle stage < = Small growth cycle stage is Less than Large growth cycle stage						

Level of Significance:	* =10% **=5% ***=1%
[1]Growth Cycle Stage :	Very Small =1 Small =2 Medium =3 Large =4

SUSTAINABLE GROWTH ANALYSIS: PROFITABILITY

There were no significant differences in the profit/sales ratio (net profit margin) between firms in the smallest two growth cycle categories. The net profit margin systematically declines at a significant rate for the remaining two growth cycle stages. The profit/net worth ratio (return on equity) showed no significant difference for any stage of the growth cycle.

Assuming that the product mix and cost structure remain stable over the growth cycle, the results from the net profit margin analysis suggest that these firms become subject to increased competition. Increased competition creates pricing pressures that produce profitability declines as firms mature through the growth cycle.

Finance theory demands that whenever return is discussed, risk must be considered as well. A firm's total risk can be partitioned into business and financial risk components. Basic business risk is greatly influenced by the amount of fixed costs used in a firms operation. Generally, the greater the reliance on fixed costs, the lower the variable costs and vice versa. Greater fixed costs create a higher breakeven level which translates into greater business risk. Financial risk arises whenever fixed cost debt is added to the firms' capital structure. Fixed costs magnify both gains and losses in profitability for a given change in sales.

The data in this study suggest less relative reliance on operating fixed costs as firms move through the financial growth cycle which means that business risk is reduced as firms move into different growth stages. The data also points to a stable debt structure which translates into stable financial risk throughout the growth cycle. As such, total risk also falls over the growth cycle. The specific logic of these propositions is presented in the next two paragraphs.

First, the argument for decreasing business risk is presented. A declining net profit margin as firm sales grow implies that either total costs are rising; prices are falling, or some combination of both effects. Increasing variable costs don't make sense since product costs should not increase as items are bought in larger quantities as firms grow, assuming a stable product mix. Additionally, an increasing sales/assets ratio in Table 1 suggests that fixed costs are relatively

stable throughout the growth cycle. Therefore, pricing pressures are the likely cause of a falling net profit margin.

Second, the argument for stable financial risk is presented. Table 1 results show that the debt/asset ratio is stable over the growth cycle. Increases in ST-debt/total debt observed in Table 1 over the financial growth cycle serves to offset the amortized portion of the long term debt. Therefore, the results suggest that financial risk is stable over the growth cycle.

In summary, business risk is declining systematically over the financial growth cycle. Decreasing business risk, with stable financial risk, produces lower total risk as firms move through the financial growth cycle. A falling net profit margin with decreasing risk is consistent with finance theory in that lower risk should be related to lower returns. However, profitability as measured by return on equity from Table 1 is stable while total risk is decreasing, which is inconsistent with finance theory. Another interesting point is that the magnification effect derived from the use of fixed costs is reduced as firms move through the financial growth cycle. This reduced impact on profit as sales increase adds support to the proposition that profitability is subject to pricing pressures as firms move through the growth cycle. The final observation in this section is that the net profit margin is declining which implies that maximum growth rate in sales must decline unless other ratios change to offset the effect.

SUSTAINABLE GROWTH ANALYSIS: ACTIVITY

The activity ratio results for the sales/ assets ratio from Table 1 indicate a positive relationship as firm's progress in the growth cycle. In addition, there are significant differences in performance across all growth cycle stages. Significance for sales/assets exists in every growth cycle pairing, across all three years, except in the 2 vs. 3 category growth cycle comparison. This is inconsistent with Osteryoung, Constand, and Nast (1992) who found that small private firms (early in the growth cycle) had greater activity ratios than large public firms (later in the growth cycle).

The sales/inventory ratio from Table 1 shows that the very small growth cycle category had significantly lower sales/inventory ratio than firms in small growth cycle category. However, the sales/inventory ratio was not significantly different for any other growth cycle category comparison. This implies that inventory gains must have roughly matched sales gains. Basically, efficiency is maximized early in the growth cycle.

The sales/asset ratio from Table 1 shows that the first growth cycle category had significantly lower sales/asset ratios than firms in later growth cycle stages. These sales/assets ratio results suggest that small firms typically put their long-term productive assets in place at inception. As such, sales gains are achieved with no significant additions of long-term assets during the growth cycle. This

also, suggests that owners of small firms plan for maximum capacity at the beginning of the growth cycle when financing for these assets is most likely to be procured. Additionally, growth in sales is achieved largely with increases in inventory over the growth cycle rather than increased inventory turnover for each financial growth cycle stage. The final thought in this section with regard to the sustainable growth rate model is that the asset turnover ratio is increasing systematically over the growth cycle. If no other ratio in the sustainable growth rate model changes the growth rate in sales can also increase.

SUSTAINABLE GROWTH ANALYSIS: LEVERAGE

The financial ratio results available in Table 1 do not provide a direct measure of financial leverage (assets/equity). However, using the accounting identity: Assets = Debt + Equity, we have proposed in earlier sections that assets and debt are relatively stable over the financial growth cycle. In order for the identity to hold, equity must also be relatively stable over the financial life cycle. Therefore, using debt/assets is a valid proxy.

With regard to the interpretation of the results, the debt/assets ratio results from Table 1 indicate that total debt is unrelated to growth cycle stage. The secondary leverage measure, ST-debt/total debt indicates a positive and significant relationship with growth cycle stage. This is inconsistent with Osteryoung, Constand, and Nast (1992) who found that small firms (early in their growth cycle) had higher total leverage and relied more heavily on short-term debt than large firms (later in their growth cycle). It is also inconsistent with Hall, Hutchinson, and Michaelas (2000) who found that long term debt exhibited a positive relationship with firm size (stage of growth cycle) while short term debt was negatively related to firm size (stage of growth cycle).

These results suggest that long term debt is put into place at the inception of the business and is amortized over the growth cycle. Additionally, short-term debt is used to replace the amortized portion of the long-term debt. As firms mature, suppliers and financial institutions should become more willing to lend short term to more experienced firms. The final thought in this section with regard to the sustainable growth rate model is that the leverage ratio is stable over the growth cycle.

SUSTAINABLE GROWTH ANALYSIS: RETENTION RATE

In general terms, retention rates are a function of growth policy, subject to resource availability. The findings in most studies on small firm financing suggest that resources for growth are obtained mostly from internal (i.e.; retained earnings) rather than external sources. The results of this study suggest that sales growth is obtained from both internal sources (retained earnings) and from external sources (short-term credit). The specifics are outlined below.

The ca/assets, debt/assets, and st-debt/debt ratios from Table 1 imply that the asset structure of retail firms is stable over the growth cycle. Therefore, resources for sales growth are not being obtained from investing or financing activities.

The results of the current ratio from Table 1 show that current liabilities are increasing relative to current assets over the growth cycle. This combined with the results obtained from the st-debt/total debt in Table 1 suggest that growth in sales is at least being partially supported by growth in short-term credit (i.e.; accounts payable).

The results from the sales/inventory ratio and the ca/total asset ratio from Table 1 suggests that inventory levels increase systematically with sales increases over the growth cycle. These results also imply that there must be some reduction in other current asset accounts. It seems reasonable to assume that since financing is difficult for small firms to obtain until the firm matures; initial financing includes extra cash for expected sales gains early in the growth cycle. In this regard, excess cash is systematically reduced to help support sales growth in the early stages of the growth cycle.

The profit/net worth ratio from Table 1 implies that net worth is increasing at about the same rate as profit growth. Therefore, sales growth is being at least partially supported by retention of earnings and no increase in total external financing.

THE ROLE OF LIQUIDITY

As stated previously, liquidity had no direct role in the sustainable growth model. The ratios were useful for interpretation of the results. However, liquidity analysis is useful in describing how small private firms progress through the financial growth cycle. The specific results for liquidity are discussed below.

Liquidity results from Table 1 was found to vary significantly in each of the three years examined between the smallest and largest growth cycle stages (1 vs. 4). Every other growth stage pairing yielded less conclusive results for the three years investigated. These results conflict with the findings of Osteryoung, Constand, and Nast (1992) who found no difference in the liquidity between large public and small private firms. However, these results are consistent with Fieldsend, Longford, and McLeay (1987) who found that current ratios were extreme for small public firms and trended toward the industry norm as firm size increased. Current Assets/ Total Assets showed no significance in any time period or financial growth cycle stage. The implication is that the mix of current assets are changing but not the relative size as firms move through the financial growth cycle. Specifically, the data suggest that inventory levels are increasing while cash is diminishing through the life cycle

SUMMARY

In summary, the findings in this study suggest that growth in sales over the financial growth cycle is very aptly defined by the sustainable growth rate model. Specifically, small private retail firms are achieving sales growth roughly in line with their maximum sales rate. The net profit margin is falling over the growth cycle but is being offset by increases in efficiency and retention via the activity ratio and retention rate, respectively.

Additionally, the findings in this study suggest that growth in sales during the first stage of the growth cycle is achieved with existing cash reserves from start-up financing. As the growth cycle progresses, cash for growth is obtained from retained earnings and from increases in short-term credit. These growth cycle observations are depicted in the Table 2 below:

Table 2: Small Private Retail Firm Financial Performance over the Growth Cycle

RATIO TYPE \ STAGE	VERY SMALL	SMALL	MEDIUM	LARGE
PROFITABILITY	VERY HIGH	HIGH	MODERATE	LOW
ACTIVITY	LOW	MODERATE	HIGH	VERY HIGH
LEVERAGE	HIGH	HIGH	HIGH	HIGH
LIQUIDITY	VERY HIGH	VERY HIGH	MODERATE	MODERATE

CONCLUSIONS

The findings demonstrate that the sustainable growth model provides an accurate description of the growth path of small private retail firms over the growth cycle. The findings also demonstrate that growth cycle, as measured by relative firm sales, is a critical factor in the behavior of the financial performance of small, privately-held retail companies. Specifically, small private retail firms in the earliest and latest growth cycle stages exhibit significant differences in their respective liquidity, activity, leverage, and profitability ratios.

An important implication of these results is that growth cycle stage, as measured by sales, needs to be considered when using financial ratio data as a benchmarking tool. Also, the sustainable growth rate model provides an excellent structure to describe the growth path of small private retail businesses.

The empirical results suggest that small private retail firms move through the various sales stages within the constraints of the sustainable growth models major assumptions, applying a high percentage of retained net profit to support sales growth. Specifically, the data points to stable financial policies across size categories.

In a growth-cycle context, these findings suggest a behavioral view of the growth path for small retail operations. Liquidity is highest during the early phase when the capital structure is first put in place. Since small firms do not have easy access to long-term financing after the initial financing is in place, growth occurs from existing liquidity, liquidity generated from ongoing operations, and from increases in the use of short-term financing. Total debt capacity is relatively stable as the companies grow; only the relative mix between short and long term debt changes over the growth cycle stages. The findings also may suggest that competition is increasing with the sales gains since profitability is falling. Additionally, as firms grow in sales, the relative proportions of current assets to total assets remains stable. As such, asset structures tend to be set in the initial phase of the growth-cycle for retail firms. If the firms in the stability stage want to continue their growth path, they are in a position to enter a new growth cycle that begins with access to different financing structures. Otherwise, harvesting is the appropriate strategy.

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