

COMPUTING THE COST OF CAPITAL FOR PRIVATELY HELD FIRMS

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Abstract

Estimating the cost of capital is critically important to all organizations. For publicly traded firms, calculating the cost of capital is predicated typically on information from the stock market. However, privately held firms do not have market based information available. Thus, owners and managers have greater difficulty in determining the capital cost for these organizations. As an alternative to traditional proxy approaches, this paper utilizes the analytical hierarchy process to determine an appropriate equity risk premium, and thereby, a cost of equity capital for privately held firms.

INTRODUCTION

An organization's financial capital represents the funds used to finance its assets and operations. The cost of capital is the rate of return required to compensate providers of those funds. An organization's cost of capital provides both a benchmark to evaluate the firm's performance and a discount rate for evaluating capital investments. Therefore, a reasonable estimate of a firm's cost of capital is essential for good decision-making. In practice, however, this cost is difficult to estimate (Brigham and Gapenski 1994).

The capital of an organization consists of two main components--debt and equity. The cost of the equity component is the more difficult to ascertain, and that is part dealt with in this paper. The cost of equity represents compensation to investors for time and for risk. While the rate for time (i.e., the "risk free rate") changes constantly, and varies with the term of the capital commitment, it is the same for all organizations. The level of compensation for risk (i.e., the "risk premium") depends, though, on the particular characteristics of the firm using the capital. Hence, a method for incorporating the risk dimension is requisite to computing an organization's risk premium and cost of capital.

Assessment of the risk associated with a firm depends on the perspective from which risk is viewed. The external capital market considers only the "systematic" risk in a well-diversified investment portfolio. This risk is commonly represented by an organization's "market beta." A beta can be estimated from historical return data

or through fundamental analysis, and then used in the capital asset pricing model (CAPM) to determine an appropriate risk premium.

Owners and managers in a privately held firm, however, do not usually view their organization as part of a diversified portfolio, but more as a capital project. From this internal perspective, "nonsystematic" risk factors are also critical to operating, investment, and financing decisions. Moreover, these nonsystematic factors have serious implications for the organization's financial statements and on investor and lender perceptions (Findlay, Gooding and Weaver 1976). Consequently, consideration of "total risk" is more relevant to estimating a cost of capital for these firms, and that is the perspective taken in developing the model presented in this paper.

In assessing the risk of an enterprise, an analyst would benefit from a method that incorporates both quantifiable and non-quantifiable risk factors, as well as both direct and indirect effects of these factors on the organization's total risk. The purpose of this paper is to offer such a method, and to demonstrate how that method can be readily applied in estimating the cost of capital for an organization.

The next section reviews some currently used methods of estimating the cost of capital for privately held firms. The third section presents an alternative approach for assessing risk, and the required rate of return, along with a discussion of the risk factors included in the model. An empirical application of this model in computing the cost of capital for a privately held firm is detailed in the fourth section. The final section provides brief summary comments.

PROXY METHODS FOR ESTIMATING THE COST OF CAPITAL

It is axiomatic that higher perceived risk in an organization (an undesirable aspect) demands higher expected return (a desirable aspect). This is referred to as the risk-return tradeoff. However, the functional relationship between level of perceived risk and level of return required to compensate for that risk is not consistent across perspectives. The risk-return tradeoff question can be seen, then, as having two distinct parts. The first is assessing the amount of risk that exists in a given organization; the second is determining the amount of risk premium necessary to justify assuming that risk. Since market stock prices are not available, and historical market betas cannot be computed directly estimating the cost of equity for privately held firms commonly involves employing proxy techniques.

One commonly used proxy technique is the "pure play." With this approach, the analyst tries to locate publicly traded firms that operate in the same line of business as the privately held firm. The manager then uses the market betas of these publicly traded firms to develop a proxy for the privately held firm's beta. While this method is appealing, in concept, it is often problematic to implement because of the difficulty in locating firms that represent adequate proxies.[8] [6] [14]

A second proxy technique is the "accounting beta." This measure is computed by running a time series regression of the company's "basic earning power" (EBIT/Total Assets) against returns on the market index.[3] [9] [4] [10] [1] This technique requires the unfounded assumption that basic earning power is a perfect substitute for ROE (Net Income/ Equity) in the regression model used to compute the "market" beta. Moreover, neither the "pure play" nor the "accounting beta" technique considers the many nonsystematic risk factors that should be included in estimating the cost of capital for a privately held firm.

The third proxy technique used by analysts is to estimate the cost of equity by adding an "equity risk premium" (normally three to six percentage points) to the interest rate on the firm's own long-term debt. It is logical that firms with high (low) cost debt will also have high (low) cost equity. However, this approach is highly subjective at best, and entirely unworkable if the firm has little recently issued long-term debt.

An additional difficulty in applying any of these proxy methods is that management may not have sufficient information (either historical or forecast), and that the information may not be sufficiently comparable, to allow computing an appropriate risk premium for the firm. Thus, an alternative method for assessing risk, defining an appropriate risk premium, and computing the cost of capital for privately held firms would be quite useful.

THE AHP APPROACH TO ESTIMATING AN EQUITY RISK PREMIUM

Since risk cannot be measured directly, the construct is often represented by the variability of possible cash flows. The greater the variability, the greater the risk. A full examination of risk also requires, though, recognition of factors that impact variability, and the importance of these factors to the results. Factors such as the organization's financial structure, its competitive position, and the quality of its management, as well as possible interactions among these factors, can have substantial impact on risk and on organizational value.

The analytical hierarchy process (AHP) is well suited to the task of estimating an equity risk premium, and is a workable alternative to the various proxy approaches. AHP enables both objective and subjective criteria to be incorporated into a comprehensive model of a decision problem (Saaty 1996). Moreover, AHP lends itself to assessment by a group working together as well as by an individual decision-maker.

The process for determining an appropriate risk premium for a firm involves identifying risk factors that are relevant to the firm, and assessing how these factors impact on the firm's risk. A desirable aspect of this method is that the decision-maker can include all factors, tangible and intangible, that are relevant to the specific firm. Determining an equity risk premium through the analytical hierarchy process can be summarized in five steps.

Defining Alternatives

The first step in using the AHP model is to establish a range of equity risk premiums that is appropriate for the firm. Using standard AHP terminology, various levels of risk premium are called the **alternatives** in the model. In the current context, these alternatives are identified with descriptor terms as well as with numerical values.¹

For the specific AHP model presented here, the risk continuum is broken into five discreet categories, as shown in Table 1. Using this schema, "medium risk" would correspond to that level of risk associated with a firm's "average" project, and, "very high risk" would be associated with the highest risk project considered feasible for the firm. [13]²

Table 1
Levels of Risk Premia (Alternatives) for AHP Model

Descriptor Term for Risk	Risk Premium
Very Low Risk	6 percent
Low Risk	9 percent
Medium Risk	14 percent
High Risk	21 percent
Very High Risk	30 percent

While the descriptor terms for risk may be similar (or the same) across firms, the size of the risk premium corresponding to a descriptor term depends on the organization's mission and operating strategy. The term "high risk" may have a quite different connotation for, say, a company that operates as a near monopoly in the "electric utility" business than for a natural gas "wildcatter." Consequently, the range and level of risk premia must be established in context of the firm's operations.

A desirable aspect of AHP for establishing capital costs is that any appropriate number of risk levels and range of risk premia can be accommodated in the analysis. In practice, the number of alternatives and associated risk premia are set at a level relevant to the specific organization. Thus, this approach can be used by the wildcatter just as readily as by the utility company. The only difference is the size of the premium corresponding to each described alternative.

Decision Criteria

The second step in the process is specifying the important factors that impact the firm's risk. These factors are referred to as **decision criteria** in the AHP model. For the model used in this analysis, five primary decision criteria are specified. Each of these criteria has two or more subcriteria, all of which are described below and summarized in Table 2.

Traditional quantifiable factors that affect the level of risk premium include growth rate in revenues, fixed operating costs, and interest coverage. Other more "strategic" criteria in the model relate specifically to industry characteristics, management, and ownership.

Table 2
AHP Decision Criteria (Risk Factors)

1) Revenue factors

- a) Level of sales
- b) Variance in sales
- c) Growth rate in sales

2) Operating factors

- a) Amount of fixed operating costs
- b) Operating leverage

3) Financial factors

- a) Interest coverage
- b) Debt capacity
- c) Composition of debt

4) Management /Ownership factors

- a) Confidence of investors in management
- b) Organizational experience
- c) Control

5) Strategic factors

- a) Suppliers
- b) Buyers
- c) New entrants
- d) Industry rivalr

e) Substitutes

Revenue Factors¹

Inherent in the total risk of an organization is the level, variability, and growth rate of revenues and earnings. The higher and more stable a firm's revenues, the lower the perceived risk and, thereby, the required risk premium. Accordingly, the three specified subcriteria associated with this main factor are total revenue (sales), variability of revenues, and revenue growth rate.

Operating Factors²

Risk premia are driven also by the nature of a firm's operations. An important factor in operating risk is the extent to which a firm's operating costs are fixed. If fixed costs are high, even a small decline in sales can lead to a large decline in operating profits. Therefore, other things held constant, the higher a firm's fixed costs the greater its risk and required risk premium. Higher fixed costs are generally associated with more highly automated, capital-intensive firms and industries. Hence, the two subcriteria used here are total amount of fixed operating cost, and operating leverage.

Financing Factors

This dimension focuses on the firm's use of debt financing. If fixed financial costs are high, a small decline in operating income can lead to a large decline in return on equity. In addition, a firm's risk level is affected by its ability to service its debt and to obtain additional funds if needed. Generally, the higher the debt coverage ratios and the greater the borrowing capacity, the lower the risk and required risk premium. The three financing subcriteria included in the model are interest coverage (EBIT/Interest Expense), debt capacity (unutilized borrowing), and composition of debt (term structure and variable interest rates).

Management/Ownership Factors

This criterion relates to the perceived ability of the organization's management team to successfully create value. One subcriterion here is level of confidence (by providers of capital) in the senior management leading the organization. This considers such things as whether the organization has developed a workable strategic plan, and whether the personnel involved will be competent to carry out the plan. The "people factor" is paramount to success in any project and organization.

¹ El nivel de riesgo en los ingresos depende del número y diversidad de clientes. A mayor número de clientes menor riesgo.

² El tiempo de respuesta a los cambios debería incluirse en este criterio.

The second subcriterion relates to the organization's experience. Typically, previous experience will be associated with progress along the "learning curve." This means efficiency improvements have been achieved beyond the level displayed by a novice. Having experience would be expected to increase the likelihood of effectively employing resources in the value creation process.

The third subcriterion relates to ownership and control factors specific to the organization. These factors include such considerations as amount and type of minority ownership, family/ownership disputes, buy/sell agreements of minority shares, and likely marketability of ownership shares.

Strategic Analysis Factors

The consideration here is how the firm's competitive position is seen as impacting the organization's risk. Considerations beyond the directly measurable free cash flows include such things as "positioning" of the organization in the market and whether the firm will further the creation of a strong brand identity.

The subcriteria for strategic analysis are derived from the five competitive forces that impact an organization and industry (Porter 1980, 1985). These forces are (1) bargaining power of suppliers, (2) bargaining power of buyers, (3) threats of new entrants, (4) threats of substitutes, and (5) rivalry among existing competition.

Examining the impact of each of these forces on the firm provides significant additional information about the firm's ability to create value on an ongoing basis. For example, relative to new entrants, the question would be posed as, "How does the threat of new entrants affect the likelihood the firm will meet expectations?" If an organization has a weak competitive position in a market, and concludes there is substantial threat of new entrants, this may reduce the probability of its success--increase risk. The impact of each of the other forces would be analyzed in a parallel fashion.

Relating Criteria to Alternatives

In the third stage of the analysis, the AHP participants assess the condition of each factor (criterion) in the model, and then select the most appropriate descriptor term for a level of risk premium relative to that criterion. In the current model, for example, one question posed is, "Given that variability in revenues for the firm is XX percent, which of the five levels of risk premium ("very low" to "very high") would be most appropriate?" This step typically involves considerable discussion before arriving at consensus.

Criteria Weights³

The fourth step of the process determines the relative importance of each criterion to the total risk in the organization. These are the weights in the AHP model. Computing these weights is accomplished via the systematic pairwise comparison technique that is integral to the analytical hierarchy process.

With this method, the importance of each criterion is assessed relative to each other criterion, and expressed as a numeric ratio. A low ratio indicates the two criteria are close in importance; a large ratio indicates that one criterion is much more important than the other. As an operational guide, a range for these ratios might be pre-established from, say, 1:1 (same importance) to 9:1 (much more important). The "normalized" average of these ratios for a criterion provides the relative "weight" for that criterion in the model. As in stage three, this step usually requires discussion and consideration of various opinions before arriving at a consensus.

When the model includes subcriteria, as in the present case, this pairwise comparison is done in two stages. The technique is applied first to determine the relative importance of each main criterion to the decision problem. Then the relative importance (and weights) for each of the subcriteria to the associated main criterion are determined in the same fashion. Lastly, multiplying the weight of a subcriterion by the weight of its associated main criterion results in the relative importance of that subcriterion to the total risk in the organization.

To illustrate this, assume the pairwise comparison of the five main criteria in the model resulted in a weight for "revenues" being 20 percent. Further, assume comparison of subcriteria within "revenues" indicated that "variability" accounted for 70 percent of the importance in "revenues" and "growth rate" the other 30 percent. In the AHP model, then, the weights for the subcriteria "variability" and "growth rate" would be computed as shown in Table 3. Weights for the other criteria and subcriteria are determined in parallel fashion.

³ El peso relativo puede estimarse con modelos de montecarlo variando cada factor aleatoriamente dentro de unos limites razonables (o con la curva de probabilidad de ocurrencia) y medir las desviaciones de los resultados.

Table 3
Computation of Weights for Revenue Subcriteria in AHP Model

Subcriterion	Subcriterion Weight in Main Criterion	Main Criterion Weight in Model	Subcriterion Weight in Model
Variability	70 percent	20 percent	$.7 \times .2 = .14$ (14 percent)
Growth Rate	30 percent	20 percent	$.3 \times .2 = .06$ (6 percent)

Weighted Average Risk Premium

As a final stage in the analytical hierarchy process, the numerical values corresponding to the descriptor terms selected for each criterion (and subcriterion) are multiplied by the weight computed for that criterion. The resulting products are then summed. That total is the "weighted average" equity risk premium for the organization being analyzed.

This logically computed risk premium is then added to the current risk free rate to estimate the firm's cost of equity capital. An empirical illustration of this process is given in the next section.

THE COST OF CAPITAL FOR GEMINI FOODS CORPORATION

Overview of the Firm

Gemini Foods Corporation (Gemini) is a meat processor and food service distributor headquartered in the mid-Atlantic region. Gemini enjoys a reputation for providing high quality processed meats and specialized distribution of more than 2,800 restaurant products. The firm's sales growth has been stunted, due largely to a lack of facility space and insufficient capitalization. While Gemini has always enjoyed a fine reputation, it has only recently achieved renewed profitability.

In order to sustain profitability in the dynamic and highly competitive restaurant marketplace, Gemini must market aggressively to its existing customers, cultivate potential new customers, develop new products, and increase efficiency and productivity. To do this, however, the firm must expand both its production and distribution facilities. That expansion will require substantial outside long-term capital. To implement its strategy and effectively evaluate both investment and financing opportunities, Gemini must develop a reasonable estimate of its cost of capital.

Gemini management decided to use the Analytical Hierarchy Process as a method for assessing its risk and estimating an equity risk premium.

Computing Gemini's Cost of Equity

Prior to applying the AHP in computing the cost of capital for the firm, management of Gemini Foods engaged in a strategic analysis. This proved to be quite valuable and provided an important reference for determining Gemini's risk factors and expectations for return on investment. A summary of this strategic analysis is given in the Appendix to this paper.

To estimate their cost of capital, Gemini management followed the five-step analytical hierarchy process described above. They first agreed on levels of risk premia that corresponded to various descriptors of risk. The descriptors of risk and associated risk premia used by Gemini are shown in Table 4. This range of risk premia was consistent with Gemini's past experience and with the required returns specified by the firm's owners.

Table 4
Levels of Risk Premia for Gemini Foods

Descriptor Term for Risk	Risk Premium
Very Low Risk	8 percent
Low Risk	13 percent
Medium Risk	18 percent
High Risk	23 percent
Very High Risk	28 percent

In the second step of the process, Gemini management identified the criteria they would employ to assess the risk of their business. These criteria are the same as those shown above in Table 1 (thus, not repeated here).

Gemini management then discussed each criterion, and based on their assessment of the condition of each, selected the appropriate risk premium relevant for each. This was done by answering the question, "Given the condition represented by [criterion] for Gemini, what level of risk premium is most appropriate?" Through open discussion of rationale, the analysis team reached consensus on a descriptor of risk premium relative to each criterion.

Perhaps the most difficult step in the process was determining the relative importance (weights) for the criteria and subcriteria included in the model. To do

this, Gemini management employed the pairwise comparison technique. Based on information specific to Gemini, the relative importance of each main criterion was expressed as a numeric ratio to each other main criterion. The descriptors of relative importance and associated ratios used in the analysis are shown in Table 5.

Table 5
Ratios for Relative Importance of Criteria for Gemini Foods

Descriptor of Relative Importance	Ratio Used in the Model
The same in importance	1:1
Somewhat more important	3:1
Considerably more important	5:1
Much more important	7:1
Extremely more important	9:1

Agreement on the relative importance of the many factors included in the analysis was reached following lengthy discussion and consideration of diverse opinions. The normalized average of the ratios selected by Gemini management provided the relative weights for each main criterion in the AHP model. Rather than just accept the criteria weights as computed, though, Gemini management also applied a "rule of reason," asking if the criteria weights derived with the paired comparison technique seemed "reasonable" for Gemini. When concern was expressed, further discussion ensued until consensus on the participants achieved consensus on the weights.

The established paired comparison ratios and the resulting weights for the main criteria used by Gemini are shown in Table 6.

Table 6
Paired Comparison Ratios for Main Criteria for Gemini Foods

Criteria	Revenue Factors	Operating Factors	Financing Factors	Mgmt./ Ownership	Strategic Factors	Sum	Weight (%)
Revenue	1.00	2.00	3.00	4.00	0.50	10.50	26.8
Operating	0.50	1.00	0.25	0.33	0.25	2.33	6.0
Financing	0.33	4.00	1.00	1.00	0.20	6.53	16.7
Mgmt.	0.25	3.00	1.00	1.00	0.50	5.75	14.7
Strategic	2.00	4.00	5.00	2.00	1.00	14.00	35.8
Sum						39.12	100.0

Note: For all ratios, row criteria is numerator and column criteria is denominator

The paired comparison analysis revealed that the most important criterion for Gemini is "strategic analysis factors," with a weight of almost 36 percent. The second most important main criterion turned out to be "revenue factors," with a weight of nearly 27 percent. Of substantially less importance were "management/ownership factors" and "financing factors." With a weight of only six percent, "operating factors" were the least important contributors to risk for the firm.

Gemini is characterized by strong operations and a strong experienced management team. Ergo, management felt operating factors would not be a primary contributor to the firm's total risk. This is consistent with the relatively low derived weights for these factors in the paired comparison. Moreover, as indicated in the subcriteria analysis, the computed weight for "management/ownership factors" is pushed upward somewhat due to issues deriving from dissatisfaction by one minority shareholder.

Gemini management also felt that the highly competitive conditions in their market and the limits on control of both suppliers and customers were consistent with the high relative weights on "strategic analysis factors." Similarly, the recent decline in sales and greater variability in revenues supports the relatively high weight on "revenue factors."

After all the main criteria weights were established, the relative importance of each subcriterion within each main criterion was computed in similar fashion. The resulting weights for all main criteria and subcriteria are shown in Table 7.

Table 7
Weighted Average Risk Premium Computation for Gemini Foods

Criteria	(1) Weight (%)	(2) Descriptor	(3) Risk Premium	(4) Product (1*3)
Revenue Factors	26.9%	N/A		
Level	1.7%	Low	13%	0.22%
Variability	17.5%	Low	13%	2.28%
Growth	7.7%	Low	13%	1.00%
Operating Factors	6.0%	N/A		
Fixed Costs	4.0%	Medium	18%	0.72%
Capital Intensity	2.0%	Medium	18%	0.36%
Financing Factors	16.8%	N/A		
Coverage	9.5%	High	23%	2.19%
Capacity	3.6%	Very High	28%	1.01%
Composition	3.7%	High	23%	0.85%
Mgmt./Ownership	14.8%	N/A		
Confidence	5.9%	Medium	18%	1.06%
Experience	4.9%	Medium	18%	0.88%
Control	4.0%	High	23%	0.92%
Strategic Factors	35.8%	N/A		
Suppliers	1.4%	Low	13%	0.18%
Buyers	12.4%	Medium	18%	2.23%
New Entrants	2.5%	Low	13%	0.33%
Substitutes	9.5%	Medium	18%	1.71%
Rivalry	10.0%	High	23%h	2.20%
Weighted Risk Premium				18.24%

In the last stage of the analysis, the numerical values corresponding to each descriptor term for risk were selected for each criterion, and a weighted average of these values was computed. This resulted in a weighted equity risk premium for Gemini of 18.24 percent. With a long-term risk free rate estimated at 5.6 percent, the estimated cost of equity for Gemini is computed at about 24.84 percent. Detail of these calculations is also shown in Table 7.

SUMMARY AND CONCLUSION

One of the continuing challenges in financial management is determining the cost of capital for a privately held firm. While several techniques are commonly used, all these have limitations--in assumptions, in data availability, or in practical application. This paper presented an alternative approach for estimating the cost of equity through application of the analytical hierarchy process (AHP). An important advantage of the AHP approach is that the analysis can accommodate any risk factors the analyst deems important objective or subjective, direct or indirect. Moreover, the various levels of risk are first specified in descriptor terms, and then corresponding numeric values that are most relevant to the specific organization are associated with these terms. This allows the decision-makers to separate the focus on the relevant risk factors from the specific numerical calculations.

Application of the AHP method to defining a cost of capita for a privately held food products company was accomplished without difficulty. The analysis team identified the relative importance of several risk factors, and confirmed through discussion that the resulting weights were logical. Similarly, the team had no difficulty in selecting descriptor terms for the relative risk for each criterion,

Having demonstrated that the AHP approach is conceptually sound and workable for computing the cost of equity for a privately held firm, the objective now is to confirm the desirability of the approach. Extensions of this research will expand the application of this method to a number of different firms, with different characteristics, across various industries.

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APPENDIX

ABBREVIATED STRATEGIC ANALYSIS OF GEMINI FOODS CORPORATION

Overview

The Gemini Foods Corporation (Gemini) is a meat processor and food service distributor headquartered in the mid-Atlantic region. Gemini enjoys a reputation for providing high quality processed meats and specialized distribution of over 2,800 restaurant products. The firm has generally been considered a leader in its market

segments. Gemini's sales growth has been stunted due to a lack of facility space and adequate capitalization.

In order to sustain profitability, Gemini must aggressively market to its existing customers, cultivate potential new customers, develop new products, and increase its efficiency and productivity. In the near future, Gemini expects to undertake a substantial increase in its production and distribution facilities and to seek outside long-term financing. Obtaining a reasonable estimate of its cost of equity is of utmost importance to evaluate its opportunities.

Gemini's current mission statement is:

Gemini Foods strives to provide its customers with excellent service, quality products and competitive prices through an organization which promotes loyalty, communication, and growth of its employees. In order to achieve these goals, Gemini Foods emphasizes professionalism in the organization. We plan to serve the Mid-Atlantic region and expand the national market with a wide array of deli products and produce an extensive line of deli items for a reasonable profit. [Reasonable net profit = 2% of gross sales.]

Management of Gemini Foods identifies several distinctive characteristics of the firm:

- The firm has a family oriented corporate culture. The company has many long-term employees. The labor force is entirely non-union.
- Gemini has a small, lean organization with few middle management personnel, allowing easy access to top decision-makers. Concentration is on producing and distributing a quality product.
- Second and third generations of the family are managing the business.
- Senior executives maintain tight controls on the work product through hands-on contact.
- Gemini Foods has two primary lines of business: processing of deli meats, and full-line food distribution. This combining of meat processing and food service distribution is unique in the industry. The full product line comprises over 2,800 different items stocked on a regular basis.
- Gemini Foods produces and distributes a range of unique products. The company utilizes special processing methods and flavorings that are unique. The flavorings used for the corn beef, roast beef, pastrami, and tongue are "secret recipes" that are considered by many as the best on the market.
- The Gemini deli line is the dominant deli line in the area. The firm is currently expanding the distribution of its meat products beyond the mid-Atlantic region by increasing its national sales force and using other distributors in markets that are more distant. In addition, Gemini provides private label processing for a few high- end users such as supermarket chains. This includes roast beef, corn beef, pastrami, and other selected products.

Market Factors

Gemini Foods fits into the Standard Industrial Classification (SIC) 2013, Sausage and Other Prepared Meats on the processing side, and into SIC 5149, Groceries and Related Products--Wholesale, on the distribution side. The food and beverage-processing sector of the United States economy is considered mature and highly developed.

Gemini is faced with increased competition from large, well-financed companies in some market segments, increased merger and acquisition activity, and slower growth in some of its traditional markets. Population growth, economic conditions, and foreign trade patterns affect industry growth. Processors of name-brand products will strive to stem the flow of less-costly generic goods while retailers will attempt to offset the effects of new, non-traditional competition.

Adjusted for inflation, the value of aggregate industry shipments is forecast to rise only about one percent per year over the next five years. Consolidation of distributors will continue. Thus, Gemini competes, on the processing side, in a mature, slowly growing, and price competitive industry. Gemini's distribution business may grow at a somewhat faster rate due to increased consumer expenditures on food not prepared at home. However, this part of their business is also mature and highly competitive.

The economic environment in which Gemini will compete over the next few years is forecast as follows:

- Gross Domestic Product will grow in real terms at an average of 3.0% per year through 2002.
- Price inflation will remain moderate. Price increases as measured by the Consumer Price Index will average about 3.0% per year through 2002.
- Long-term interest rates on high-grade corporate bonds are projected to be about 8.0% per year through 1999.
- The economy in Gemini's market area (which expanded at a moderate rate in 1997) is expected to continue to grow moderately throughout 1998 and 1999.

SUMMARY OF SWOT ANALYSIS

Through an overall assessment, Gemini management had determined the following internal and external characteristics that are relevant to the analysis.

Strengths

- Aggressive sales force with a strong relationships with customer base
- Excellent reputation; strong niche market
- Good inventory control

- Improved quality control
- Excellent internal control
- Good gross profit
- Generally good real estate assets
- Many long time employees; low turnover
- Good talent in key positions
- Long business history
- Aggressive management; receptive to new ideas
- Good reputation as an ethical company providing quality products
- Quick decision making capability
- Strong family commitment
- Issues concerning control, responsibilities, succession, etc., being resolved.

Weaknesses

- Lack of cash to put into mass marketing
- Lack of name recognition out of state
- Capital and surplus low
- Cash flow is low
- Too much leverage
- Weak working capital position; current ratio, quick ratio below acceptable standards
- Limited capital for equipment and facilities

Opportunities

- Grow distribution sales/expand customer base through increased product line
- Grow national sales
- Improve name recognition
- Improve technical capability

Threats

- Increased concentration in the industry resulting in increased competition from large, well capitalized national firms
- Increased levels of technology being utilized in the industry
- More sophisticated processing plants putting Gemini at a cost disadvantage
- Customer base confined to a few large geographical areas
- Lack of brand image outside of region
- Consumer tastes shift to less red meat consumption

Footnotes

¹While the distribution of risk premiums is continuous, it is necessary to express alternatives as discrete values. This is consistent with other risk classification schemes, such as determining bond ratings.

²This approach is consistent with the notion of qualitatively defined risk premia within the framework of modern capital market theory.