A SCENARIO-BASED CONTEXTUALIZATION METHOD: DESCRIPTION, DISCUSSION AND POSSIBLE USES

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Abstract

This paper assesses the methodology of using short scenarios, company data, and personnel information to gauge financing preferences of respondents. This method was used in a doctoral research dissertation in which the respondents were Chief Financial Officers of French publicly listed companies. Modifications are proposed to improve this instrument for use in the corporate world, including for recruitment purposes. Changes are also suggested so that the methodology may be used to teach Finance and other courses at the University level.

KEY WORDS: Contextualization method, scenarios, corporate finance, financing decision, publicly listed companies, Chief Financial Officer (CFO)

INTRODUCTION

The doctoral thesis in corporate finance used three case method scenarios derived from projective experimental designs. These three scenarios were submitted, along with questions (in form of a questionnaire) about the company and the respondent, to seventy Chief Financial Officers (CFOs) of French publicly listed companies. The officers were asked to rank, for each scenario, their internal/external financing preferences. A model was later developed to predict their financial behavior.

The theoretical starting point lies within the independence theorem of Modigliani and Miller [1962]. It states that the value created by a company does not depend on its financing choices. The agency theorem literature developed during the 1970s, stated that the financing choices would help discipline the CEO [Jensen and Meckling, 1976] and protect shareholders of publicly held managerial firms. At the same time Myers [1977] developed the argument that firms have a preference for internal versus external finance. The debate over corporate finance expanded, when the proponents of the stakeholder view of the firm [Blair, 1995] faced the first violent critics of the defendants of the shareholder supremacy norm [Sternberg, 1997]. The stakeholder view is a broader view that encompasses shareholders, banks, employees, clients, suppliers, and even the State and society.

The main defect of this ongoing debate was that it totally ignored the needs of the firms and it overlooked an essential point. The financing needs of publicly held firms are highly dependent upon general economic conditions and upon market conditions. What is needed is not a new theory, but a framing of the various peculiar situations encountered in real life on real markets by real companies and real persons. This point has been overlooked, because academic researchers in Finance only study top managers from a managerial and strategic perspective as initiated by Mason in 1984 and a recent overview by Carpenter et al. in 2004. These managers are sometimes considered in Human Resources Management studies; they do not appear in Finance studies, except as sources for expenditures of non-pecuniary benefits. In this literature, the CFO is almost never the object of study.
However, behavioral finance, experimental economics and psychology give credit to the study of human preferences in order to infer attitudes and thus probable behavior. Studies on governance problems, such as relationships between stakeholders and compositions of the Board of Directors, include actions of the Chief Executive Officer (CEO), but not of the CFO.

These points indicate that there is room, within the theory of corporate finance and following the path of the theories of the firm (and more specifically of the firm-specific human capital), to include the study of the main actor of corporate finance: the Chief Financial Officer (CFO). As the specialist for corporate financing, his/her attitudes towards internal and external funding might impact his/her recommendations. His/her biases toward the financial system, shareholders, bondholders, banks and clients, might also affect the financing choices of the publicly listed company.

THE CONTEXTUALIZATION METHOD

GENERAL METHODOLOGY

This research study about a respondent’s preference for a particular scenario was based upon both the context described and the respondent’s characteristics; the choice the respondent made provides a glimpse of his attitude. Sets of hypotheses were built on the basis of the data collected.

The general hypothesis was that the financing strategies of publicly listed companies are the result of individual decisions constrained by organizational designs and environmental contingencies. The process is not straightforward. Individuals are constrained by logistics, organizational structure and the external financial environment. These constraints cannot be manipulated as in a laboratory experiment. Thus, the real problem is to define a measure or at least an evaluation of the financing strategy. Therefore, the hypothesis was refined: individuals have different attitudes when ranking financing means in a projective situation.

Each case then began with an identical “projective inducement” sentence: You are the top executive of the company High Tech+, publicly listed on the Paris stock exchange.

DESIGN OF THE SCENARIOS

The scenarios took into account the respondents’ profile: CFOs of French publicly listed companies and graduate finance students from the University of Bordeaux.

Each case described financial elements of an investment project. The respondent’s goal was not to make a real decision, but rather to rank several financing options.

Each case had a different sector, type of investment and company financial situation. The questions were the same for each case.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Activity</th>
<th>Investment</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1</td>
<td>Financial</td>
<td>Holding company</td>
<td>High (60%)</td>
</tr>
<tr>
<td>Financial Investment</td>
<td>Investment</td>
<td>External growth - Diversification</td>
<td></td>
</tr>
<tr>
<td>Case 2</td>
<td>High Tech</td>
<td>High tech</td>
<td>Low (14%)</td>
</tr>
<tr>
<td>High Tech +</td>
<td></td>
<td>External growth – Innovation and market share</td>
<td></td>
</tr>
<tr>
<td>Case 3</td>
<td>Industrial Manufacturing</td>
<td>Industry</td>
<td>Medium (33%)</td>
</tr>
<tr>
<td>Industrial Manufacturing</td>
<td></td>
<td>External growth – Production capacities</td>
<td></td>
</tr>
</tbody>
</table>
For the study, companies from the financial sector (holding) and technological and industrial (manufacturing) were selected. Holding companies are supposed to manage according to pure financial criteria; financial ratios are more important than industrial choices. They use leverage and diversification risks in their portfolio. They usually reorganize and downsize the companies they invest in, in order to produce positive cash flows to repay debt.

Technological companies are supposed to be more human-capital intensive and to need capital financing to protect the firm-specific investments made by their employees. They also require higher organizational capabilities.

The Industrial sector needs regular investments and has high manpower needs. Salaries usually represent more than half of total costs. At the time of the study, February and March 2004, the French newspapers carried stories on divestment and delocalisation, rather than investment. This backdrop is important when studying the results.

The investment project needed to be in line with the general spirit of the method: critical or border line scenarios so that the respondent had no direct interpretation of the case. The goal was to link an investment to its financing. Choices had to be plausible and credible, they had to be “strategic,” out of the regular planning and budgeting realm.

THE QUESTIONS

The original questions were in French. Following are the English translations. The first question asked the respondents to rank four financing possibilities: new shares issue, bank debt, bonds and retained earnings.

FIGURE 1
FIRST QUESTION: RANKING FINANCIAL POSSIBILITIES

Choose the financing for the project by ranking the proposed financing alternatives using the following scale: most suited (1) to least desirable (4).

A. Capital financing through issuing of new shares

B. Bank debt

C. Bond debt

D. Retained earnings (internal financing)

The second question asked them to rank the best balance of debt and shares [owners’ equity]: 75% debt and 25% shares, 50% of each and 75% debt and 75% shares. This question was included to represent an alternative that is closer to the financing mix that often occurs. A significant part of the respondents only indicated their first choice for this question. So only the first choice for all the respondents was coded and used in the analysis.

FIGURE 2
SECOND QUESTION: CHOOSING A MIX OF DEBT AND CAPITAL INCREASE

If you had to choose a mix of increasing debt and increasing capital [owners’ equity], what would your recommendation be?

Rank the possibilities from the most desirable (1) to the least desirable (3)

A. 25% debt and 75% capital increase

B. 50% debt and 50% capital increase
A third question was asked for each of the three scenarios: “Have you ever encountered such a situation?” This question was to verify the plausibility of the cases and the projection of the respondents. Of the seventy CFO, seventeen answered, “yes” to Scenario 1; twelve answered: “yes” to Scenario 2.

The questionnaire used in the study consisted of demographics of the respondents: age, sex, education (level and type), occupation, job title, length of tenure, and participation, if any, on the Board of Director and information on their company: publicly listed or not, activity, employee-shareholder plan, use of a gearing target, size.

RESULTS

The major finding of the research was that the financing preferences of CFOs differed significantly from those of finance students. The CFOs have specific attitudes relating to capital structure of companies that might explain some historical evolution such as the use of a debt/capital target ratio or of specific financing techniques. Two distinct attitudes about financing appeared in the study. About one-third of the CFOs had a strong positive attitude toward capital financing (issuing new shares) and a strong negative attitude toward financing through retained earnings. Another third had a reverse attitude; they favored retained earnings and felt negatively about capital financing. The last third did not show clear differences in their preferences. To some extent, these differences can be explained by individual and social variables.

The factor analysis of the axes in Table 2 showed clustering. Data was most structured by two factors: Factor 1 represents the Axis of Debt versus New Shares. Factor 2 represents the Axis of Retained Earnings versus Bond Debt. Five groupings developed. They are described in order: from greatest concentration to greatest dispersion. The greatest concentration was made up by a central group representing the average profile of a French CFO – male, educated in the “grandes écoles,” 40 to 55 years old, shareholder of the company he works for. The second group contained younger, better educated, but less experienced professionals. Members of a third group had the least amount of experience (less than one year) or the most experience (more than 15 years), but they did not serve on the Board of Directors and they, typically, worked in medium-sized, publicly traded companies. The fourth group was populated by educated CFOs working for the smallest companies listed on the stock exchange (less than 2 million Euros in net sales). Respondents working for smaller companies made up the cluster with the highest dispersion. They were 30 to 55 years old, had the lowest level of education and little practical experience (2-3 years). Another noteworthy characteristic is that they earned their university degree while working full time.

<table>
<thead>
<tr>
<th>Case</th>
<th>First axis</th>
<th>Second axis</th>
<th>Third axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bank debt vs. New shares</td>
<td>Retained earnings vs. Bond debt</td>
<td>Bank debt vs. Retained earnings</td>
</tr>
<tr>
<td>2</td>
<td>Bond debt vs. Retained earnings</td>
<td>New shares vs. Retained earnings</td>
<td>Bank debt vs. Retained earnings</td>
</tr>
<tr>
<td>3</td>
<td>Bank debt vs. Retained earnings</td>
<td>New shares vs. Retained earnings</td>
<td>Bank debt vs. Bond debt</td>
</tr>
</tbody>
</table>

A factor analysis of the research data leads to the classification of participating CFOs. Three axes per scenario are created whereby each axis opposes two dimensions. Based on the identified axes, the classification of respondents follows.

Each axis is defined by a unique combination of variables: personal data such as duration in the job or education, company data such as sector of activity or size measured by revenues, and personal/company data such as membership on the Board of Administration or shareholding.
LIMITATIONS AND SUGGESTED MODIFICATIONS FOR REPLICATION

The letter used in the research to invite participation worked sufficiently well in attracting CFOs of companies listed in the main stock market index (CAC 40) and for mid-caps [medium sized companies], they were well represented. A stronger introductory letter might result in greater participation by CFOs working in high-tech companies and fast growing firms. A more consistent presentation of the scenarios might assist participants in understanding that they are expected to play a role in the study.

Survey questions used: ranking four possibilities, choosing the best possibility out of three (two slightly different projective questions), should be reworded to represent the same cognitive status. The question about the plausibility of the case is important, but could have been better placed on the questionnaire. To increase the likelihood that a busy manager would take the time to complete the questionnaire prompted the researcher to limit the questionnaire to one page. Additional demographic information about the education and work experience of the respondents (including work at other companies), might be helpful in gaining further insights into the decision making behavior of CFOs.

The classification of a company by sector and size measured by total sales is always open to criticism. The classifications by sector vary greatly depending on the source. Economic newspapers use up to three different classifications, INSEE (French Institute for Economic Statistics) uses a different classification system and academic researchers use several additional systems. The system used for the research, thirteen categories, was too detailed and too synthetic; too detailed, because there were up to eight observations per category, and too synthetic, because more accurate descriptions would have allowed the construction of a more precise data set.

Using total sales as a proxy for company size (refer to the last question) could also be seen as leading to imprecision because in the indexes public companies were listed as having sales ranging from less than one million Euros to more than one billion. Since the time of the study, Euronext has reorganized the range (January 2005) and created three segments according market capitalization. The new classification is now widely recognized as a measure for size.

TEACHING AND RECRUITING APPLICATIONS

TEACHING

Financial decision scenarios could be used as a pedagogic tool for finance classes at graduate and post-graduate levels. Textbooks usually present finance theories and their empirical test. They then conclude with the need for additional research. Many textbooks include Excel worksheet based exercises. Using the Scenario-Based Contextualization Method (SBCM) could complement teaching in an interactive way.

The procedure would be as follows:
- Based on a sector or a strategic investment opportunity, design (or adapt) a single scenario.
  Include brief details of a financial structure and consider cultural components.
- Ask only one question:
  "Rank the proposed financing means from 1 to 4 (from highly adapted to inappropriate):
  issuing new shares, bank debt, bonds, retained earnings".
- Demographics: gender, age, prior finance courses taken.

There are two pedagogic benefits in using the scenario method.
- The students arguments for their choices would reflect the theories they have learned:
  - The target ratio of debt
  - The hierarchical hypothesis
- The discussion between students and the teacher would expose the adequacy of the choices given the situation in the scenario. Moreover, the discussion can be expanded to real situations found in economic newspapers such as an interview of a CEO or CFO speaking about a financing strategy.

This procedure can be extended through the use of two or three scenarios. The analysis can be more detailed and can use more data (market data, sector data). It can also be used as a test: at the beginning of the course and a second time at the end. In this case a multiple scenario design is recommended,
guarding against the learner repeating the answers given earlier. An analysis of the answers might measure the progress achieved.

The SBCM approach could be adapted for use in other disciplines such as management, strategy and strategic management, experimental economy, social and psychology to determine how theories are used and applied by practitioners. When two or three theories are competing, the method can assist to determine, not which theory has more validity, but how widely a theory is accepted and used.

RECRUITING OF FINANCE OFFICERS

Applying the SBCM approach to screen CFO applicants could work as follows: An applicant for a financial position with a public company would be asked to respond to the research scenarios and the questionnaire. His answers would be compared to the profile the research yielded. The analysis might provide, prior to a formal interview, an indication if the candidate’s financial planning views and practices is in line with company expectations. The application is straightforward for the French environment. Applications in other countries would require consideration of cultural differences and an appropriate classification system.

CONCLUSION

The design of the scenario-based contextualization method (SBCM) was guided by two main objectives: getting to know the CFO financing preferences and their representations, based on the answers to the three cases and to the personal/company questionnaire. The initial research goal was achieved thanks to the adoption of this innovative method (in the field of finance research).

The SBCM can be used as a complementary tool in teaching classes in finance. The approach could be adapted for use in other disciplines such as strategic management and experimental economics. Moreover, the results suggest that the SBCM could be used as a recruiting tool for finance officers. Applications in other closely related cultural contexts would require additional research in order to confirm the observations made during this initial research.

REFERENCES


