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ON THE USE OF PC FINGAME IN AN UNDERGRADUATE FINANCE COURSE

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This paper is to review the use of *PC Fingame*; a simulation-game that I have been using in my undergraduate finance courses for several years (Brooks, 1996). This latest version is an evolution of a game developed during the early 1970's (Brooks, 1975).

While most finance simulations advertised seem to focus on processes within financial markets (ie. buying and selling of financial securities), games focused on the financial management of the firm appear harder to find.

PC Fingame is a comprehensive game where students make decisions in production and finance. Some of the benefits I have experienced using *PC Fingame* in teaching undergraduates are as follows: - ability to adjust the level of complexity to the different skill levels of the participants. The level of complexity student can range from having no control over any decision variables to control of all variables,

- while finance textbooks tend to stress problem solving by focusing on a few decision areas within a single time period, *PC Fingame* allows students to see interrelationships between several variables over several periods,
- students are encouraged to recognize the importance of maintaining flexibility for future decision making,
- exposure to various subject areas within finance such as: working capital management, production management, capital budgeting, financial leverage, and dividend policy,
- learning to adapt to surprise events such as a labor strike or a fire.

Examples of decisions that affect the asset side of the company's balance sheet include: acquiring short-term money market instruments, setting collections discounts, the acquisition of machinery and plant and engaging in capital budgeting projects. On the other side of the balance sheet, finance decisions would include issuing and

retiring of short-and long-term debt as well as issuing and retiring preferred and common stock.

The playing of *PC Fingame* requires both the instructor and the student to quickly learn the rules and constraints of the game's business environment. Each iteration of play provides feedback on prior decisions in the form of financial statements and a summary sheet with helpful data. The student must make decisions within this environment to either maximize the company's stock price or quarterly profit or whatever the instructor defines as the objective for playing the game.

Instructors Manual and Disk

Before the game begins, the instructor needs to review the instructor manual, as she may want to set some parameters that provide the context for students to make decisions.

The instructor's disk allows:

- for the simulation to be run by the instructor,
 - the setting of 25 quarterly advance codes,
 - changing student control decisions,
 - resetting a student's disk to an earlier quarter,
 - changing the external parameters,
 - changing economic index numbers,
- or - initiate "one shot" events (ie. a fire, a labor strike).

During the course, the instructor can modify the student-company environment by changing the student disk through the instructor disk. The instructor's software allows for the altering of the control of up to 20 variables. That is, students can begin the game by not having any control over any of the decisions that are available and then as the semester progresses, the instructor can adjust the student's disk by allowing for more controllable variables. This is done so that the instructor can discuss the different aspects of financial decision

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making anti then marginally release control of the discussed variables over to students in order to avoid either morale problems from too much complexity or inadvertent decisions that become difficult for the students' companies to recover from during the semester. (This is also why the instructor can choose to require the use of advance codes. An advance code is a six-digit number that the instructor issues to the student prior to each period run. This allows for the instructor to control when the students begin a period in order to prevent premature trial and error attempts on the part of the student.)

By allowing participants to control one variable at a time, it is intended for students to become sufficiently familiar with the discussed variable and its impact on the company. This method of selectively adding decisions to the participant's control hopefully increases student confidence.

Also, this version of the instructor's manual (as well as the student manual) attempts to be more explicit by disclosing at the outset some suggestions for possible strategies for successful use of the game in the classroom. It also discusses underlying models and conditions of the company environment not discussed in the student manual.

The game's author also feels that the process of preparing pro forma financial statements would be helpful, as *it* would force students to acquire knowledge of the rules and conditions affecting the firm's statements and performance. While he recommends students first try to prepare pro forma statements by hand, a "pro forma statement" feature is provided within the software.

Summary

My goals for using this simulation have been the following:

- exposing students to the different aspects of financial management,
- recognizing the relationships between various business and finance functions,

- assisting students in identifying problems through financial analysis,
- using of the game as a basis for written and oral presentations,
- providing a variety of experiences in the classroom.,
- recognizing of the importance of integrated strategies, as well as
- enhancing student motivation and interest.

PC Fingame is very challenging for the instructor both for its comprehensive nature as well as adapting it to one's teaching style. The simulation may generate anxiety for the student because it potentially requires the student to synthesize large amounts of possibly conflicting information. For most students this decision process may be more complicated than previously experienced. Strategies are often being formed ad hoc as they are learning new analytic techniques from their text as well as from reviewing the participant manual. (Note: Some instructors may prefer that students have prior knowledge of the following: the ability to construct a pro forma balance sheet and income statement and maybe a cash budget, familiarity with the economic order quantity (EOQ) model and capital budgeting techniques.)

Problems from premature use of the game might include:

- learning may be happening on a trial and error basis and not as formally as the instructor wished,
- students may feel better prepared with previous exposure to some of the analytical techniques that are traditionally taught in the finance class
- instructors must carefully consider the benefits of individual versus group play (ie. if the game proves too difficult some of the groups may deteriorate due to poor performance).

REFERENCES

- Brooks L. (1975). *The Financial Management Decision Game*. Homewood, IL: R.D. Irwin.
- _____ (1996) *PC Fingame* Burr Ridge, IL.: RD. Irwin.