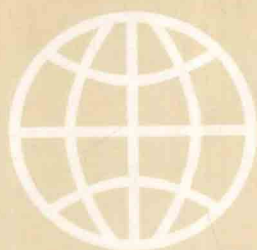


CASES IN FINANCIAL MANAGEMENT



Second Edition

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John S. Dunkelberg

Cases in Financial Management

Second Edition

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P R E F A C E

This book contains fifty-seven cases divided among ten parts and was written with three criteria in mind. First, we wanted situations based on real firms, real products, real individuals and—most of all—real issues. Second, we wanted the cases to require the thoughtful application of financial concepts. Finally, we felt the cases should incorporate some of the complexities that are characteristic of real-life problems. Therefore, in order to develop reasonable solutions, students must first be able to apply financial theory. But they also must be sensitive to “real-world complications” surrounding the problems, such as any qualitative issues and the reliability of the information they are analyzing.

Case studies, therefore, provide an essential link between the classroom and the real world. Applying theory generates student excitement and develops the problem-solving skills that students need to become valuable members of any organization. In addition to reasoning out answers to questions and ultimately deciding upon solutions to cases, students must be able to communicate their recommendations effectively. Thus, working on cases develops the integrated thinking and communication skills required for success in the business world.

It is also possible to have students solve cases together in pairs or small groups, enabling them to practice oral communication and develop forms of co-operation that will also benefit them. Therefore, cases provide a transition between the academic setting in which students have learned their theory and the business setting in which they will be applying their knowledge.

A NOTE TO INSTRUCTORS

Some casebooks emphasize skill development where each case, in essence, is a separate problem set. At the other extreme are books that are completely unstructured and each case is virtually identical to a difficult real-life problem. This book is generally in the middle of the spectrum, though it does contain both a number of straightforward cases and a few others that approach the more in-

volved Harvard ones. There is sufficient structure for students with one finance course to solve each “puzzle.” Yet most of the cases incorporate a variety of issues, and students need to “fit all the pieces together” in order to devise sensible recommendations.

In our view the book is best used in either an undergraduate case course, or as a supplement in the second undergraduate or the first graduate corporate finance course. Still, a number of cases are relatively simple and resemble an extended problem set. In addition, the more involved cases can be “toned down” by having the students ignore some of the issues. Thus, it is possible to use the book as a supplement in the first undergraduate course. There is also a section called “Comprehensive Cases” for instructors who wish to test their students’ ability to handle unstructured situations. Students typically require some guidance before undertaking such cases, and this section is preceded by a “note” that contains suggestions on how to approach unstructured problems. The *Instructor’s Manual*, however, does provide a set of questions that can be used if desired.

As all instructors who use cases know, it is quite time-consuming to incorporate cases into a course. With this in mind, the *Instructor’s Manual* contains a brief abstract of the case, including any subtopics covered, the difficulty of each case, and most important, a detailed set of answers.

FEATURES OF THE SECOND EDITION

There are 57 cases, up from the 50 in the first edition. Thirteen cases are completely new including ones on divestiture, bankruptcy, working capital policy and capital budgeting procedures. The old “Financial Analysis and Planning” section has been split into two parts, and the Comprehensive Section now contains nine cases (up from seven).

The narrative and at least some of the numbers to eighteen cases have been changed, and the narrative to five others has also been altered. Nearly all cases have been updated in terms of dates and economic events.

There is user-friendly software for 25 cases. Each of these cases contains a “software question” that extends the analysis in an unforced and natural way using sensitivity/scenario analysis. These questions are marked with an icon.

THE SOFTWARE

The software was developed by Joseph Sulock and Delvin Hawley (of the University of Mississippi). Twenty-five cases have software that is compatible with Windows-based versions of Lotus, Quattro Pro, and Excel.

The main objective of the software is to help students extend the case analysis. We accomplish this by developing sensitivity/scenario analysis templates. A user will be able to change the values of selected inputs and immediately see

the impact on “outputs of interest.” This type of analysis could easily change a recommendation that is based only on a single set of estimates.

One problem, though, is that students may need to be guided in the analysis. We provide this guidance by supplying for each case a software question that requires students to analyze specific scenarios.

Note that the use of these input/output spreadsheets is consistent with the main objective of the software. There is still a danger that students will not understand the financial concepts involved because it may appear to them that they are simply inputting values into a black box. The way the book is written, however, students can first work each case by hand with a minimum of number crunching. Then the software question is assigned and the software distributed to the students. This should eliminate the black box effect.

There are other uses of the software as well. For example, the templates could be used to help sharpen the students’ spreadsheet skills. This as well as other possible uses of the software are explained in the preface to the IM.

ACKNOWLEDGMENTS

Much field work has been conducted to make the settings and issues in the cases realistic and relevant. We were fortunate that forty executives generously agreed to be interviewed. These include William Brown, Darrell Crouse, Jim Daniels, Dick Esperon, Ernest “Ted” Forbes, Mark Friedrich, Rob Geitner, Gordon Greenwood, Lindsay Harper, Doug Higgins, Jesse Karr, Mike Keeler, Carl Kessler, George Knopf, Charles Lillien, John McGear, Lowell Pearlman, Phil Pressley, Jack Reinecke, Jeff Roberts, Terry Sanders, Charles Silver, William Stark, Steve Studebaker, Pat Thompson, Steve Vannucci, Gary Whalen, Robert Williams, and Vaughn Wilson.

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Though considerable effort has gone into this book, we realize that any manuscript can be improved and we cheerfully welcome all suggestions.

This book is dedicated to our families and our students.

May 1996
Joseph M. Sulock
John S. Dunkelberg



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PART I

FINANCE FUNDAMENTALS



CASE 1

FINANCIAL PLANNING TIME VALUE OF MONEY

Ambrose Studebaker received his Ph.D in history from a well-known Ivy League school at the age of 22. By the time he was 30, Studebaker was one of the most widely respected historians in the country and had published over 20 major articles and three influential books. His success at teaching has been equally impressive. Studebaker is well known among students for his quick wit, fine sense of humor, demanding but fair standards, and clear and interesting lectures. A few years ago he became "extremely dissatisfied" with textbooks dealing with the history of Western civilization and promptly wrote his own. Not surprisingly, the book is now the leading seller in the field.

His present (1996) income from his salary at the university, book royalties, and fees from guest lectures is fairly substantial. Being a frugal sort, Studebaker has accumulated a sizable portfolio of stocks, bonds, money market funds, and some fine art. He has never been especially conscious of money but, nonetheless, is desirous of acting in a prudent manner with his savings. Studebaker rarely sought any professional financial advice, yet it is hard to criticize his investment philosophy, which is based on the principles of diversification and buy-and-hold.

ROBERT MORTON

Robert Morton is president of R. G. D. Morton and Associates, a firm specializing in financial planning. Morton is licensed to sell insurance and securities and a few years ago obtained permission from the faculty welfare committee at Studebaker's university to solicit on campus. Morton had sent the faculty a memorandum "introducing a new financial product: equity transfer." (See Exhibit 1.) The basic idea was that individuals could borrow on the equity in their home and invest these funds plus any excess savings in a single-premium life insurance policy.

EXHIBIT 1
Morton's Explanation of Equity Transfer

The equity in your home is the difference between the property's market value and the balance on any mortgage. Over time the equity can increase dramatically as housing prices rise and the mortgage balance decreases. Unfortunately, homeowners have traditionally overlooked the tremendous potential in safely utilizing this equity. However, this large, dormant asset can be unlocked using a concept called equity transfer, which is nothing more than moving an asset from one coffer to another. This is done by investing excess equity within a vehicle that provides for the safe, tax-free accumulation of money. In addition, your family will be protected through the death benefit of the investment.

Studebaker knew that his home had appreciated in value and invited Morton to his office. They chatted for some 15 minutes, during which Morton talked briefly about the concept of equity transfer but mainly took information on Studebaker's personal and financial situation. Some of this information included the following:

1. Studebaker was interested in accumulating additional money for a possible early retirement in 20 years, or by 2016 at age 60. This money might also be used to defray the education expenses of his newborn child.
2. Studebaker had "an excess" of \$30,000 in a money market mutual fund that he felt "virtually certain" he would not need.
3. The balance on his mortgage was \$45,000, carried a 7 percent yearly rate with a yearly payment of \$4,248, and had 20 years remaining.

Studebaker invited Morton to his home for a formal review of his situation not only out of curiosity as to what Morton's analysis would show, but also because of concern that he was not handling his financial affairs in a prudent manner. At this meeting Morton brought over 20 pages of illustrations, all very nicely bound. Morton first explained that Studebaker could "unlock \$25,000 of equity" by obtaining a new mortgage. (See Exhibit 2.) This amount plus the excess \$30,000 in the money market could be repositioned into a single-premium life insurance policy. According to Morton, \$176,392 would be accumulated in 20 years, when Studebaker would reach age 60. "This," Morton triumphantly noted, "represents an annual return of 6 percent, which is above the 5 percent you are receiving now."

"Of course," Morton said with a smile, "there is a cost. No such thing as a free lunch, you know." He then explained that Studebaker's yearly mortgage would increase by \$3,052 (from \$4,248 to \$7,300) but quickly added that the increase in the yearly earnings from the life insurance policy would far exceed this cost. (See Exhibit 3.) For example, after the first year the \$55,000 would grow to

EXHIBIT 2**Morton's Calculation of the Amount of Studebaker's Equity That Could Be Transferred to Another Investment**

Current market value of property	\$100,000
Amount of new mortgage (75% of mkt. value)	75,000
Less balance on existing mortgage	45,000
Less closing costs on new mortgage	3,000
Less other costs	2,000
Total available equity	\$25,000

EXHIBIT 3**Morton's Illustration of the Annual and Cumulative Cost to Studebaker of the Life Insurance Policy Compared to the Policy's Annual and Cumulative Accumulation Value**

End of Year	Policy Payment	Accumulation Value	Increase in Accumulation Value	Annual Cost ^a	Cummulative Cost
0	\$55,000				
1		\$58,300	\$3,300	\$3,052	\$3,052
2		\$61,798	\$3,498	\$3,052	\$6,104
3		\$65,506	\$3,708	\$3,052	\$9,156
4		\$69,436	\$3,930	\$3,052	\$12,208
5		\$73,602	\$4,166	\$3,052	\$15,260
6		\$78,019	\$4,416	\$3,052	\$18,312
7		\$82,700	\$4,681	\$3,052	\$21,364
8		\$87,662	\$4,962	\$3,052	\$24,416
9		\$92,921	\$5,260	\$3,052	\$27,468
10		\$98,497	\$5,575	\$3,052	\$30,520
11		\$104,406	\$5,910	\$3,052	\$33,572
12		\$110,671	\$6,264	\$3,052	\$36,624
13		\$117,311	\$6,640	\$3,052	\$39,676
14		\$124,350	\$7,039	\$3,052	\$42,728
15		\$131,811	\$7,461	\$3,052	\$45,780
16		\$139,719	\$7,909	\$3,052	\$48,832
17		\$148,103	\$8,383	\$3,052	\$51,884
18		\$156,989	\$8,886	\$3,052	\$54,936
19		\$166,408	\$9,419	\$3,052	\$57,988
20		\$176,392	\$9,984	\$3,052	\$61,040

^aCalculated as the increase in Studebaker's yearly mortgage payment.

\$58,300, an increase of \$3,300. And during year 20 the amount invested in the life insurance would increase by \$9,984, or over three times the yearly increase in Studebaker's mortgage payment.

FINANCIAL RAZZLE-DAZZLE

When Morton left, Studebaker leafed through the illustrations wondering what to do. On the one hand, he felt like all this was a bit of financial razzle-dazzle that he did not understand. On the other hand, he had the gnawing suspicion that something was not quite right with his present investment situation. He decided to call a colleague of his from the economics department, Phyllis Comer. They were frequent tennis partners, and Studebaker had much confidence in her.

Comer was eager to accommodate a friend and readily agreed to meet the next evening. She first queried Studebaker about his life insurance situation, and both concluded that it was quite satisfactory. As she examined the material Morton had left, she quickly saw a number of problems. First, the analysis completely ignored taxes. Second, the movement of Studebaker's equity into the life insurance policy would involve \$5,000 of fees. Third, Studebaker would have to give up his 7 percent mortgage and take out a new mortgage at 9 percent. Finally, Comer noted that Studebaker would be paying for life insurance that he didn't need. That is, the life insurance provided an annual yield of 6 percent, but 7 percent could be earned on a long-term investment of similar risk. The difference, of course, pays for the insurance. "I am quite confident," summed up Comer, "that more money can be accumulated by simply investing the \$30,000 and the yearly \$3,052 (the increase in the annual mortgage payment) in some other long-term investment. You avoid the commission, you can keep your attractive 7 percent mortgage, and you'll earn a higher return."

"What you say makes perfect sense," Studebaker said glumly. "Why, then," he asked, referring to Exhibit 3, "does it *appear* that this is such a good deal? It looks to me that if I do what Morton recommends, all it would cost is the increase of \$3,052 in my annual mortgage payment. And—or so it seems—the yearly earnings from the life insurance policy more than cover this increase. Am I missing something?"

"Economics," she responded, "teaches you to be alert for missed opportunities in addition to any out-of-pocket expenses. I like to think of these missed opportunities as hidden opportunity costs or hidden sacrifices." Comer then pointed out two subtle costs that the analysis ignored. First, by using the \$3,052 a year to meet the increased mortgage payment, Studebaker gives up the opportunity to invest this money and earn interest. Second, by using the excess \$30,000 in the money market to buy the life insurance policy, Studebaker loses the interest that this money could have earned.

"These numbers," she continued as her fingers pointed to the last two columns of Exhibit 3, "do not consider all this lost interest. The annual cost should consider not only the increase in your mortgage payment for that year but also the increase in the lost interest during the year. For example, with these adjustments the annual cost in year one is \$5,152. This includes the extra \$3,052 paid at the end of year one plus \$2,100 of lost interest on the \$30,000 assuming a 7 percent rate of interest. By year 20 this annual cost becomes \$18,632. Notice that both of these amounts exceed the yearly increase in earn-

ings from the life insurance investment. Thus, properly adjusted, this analysis indicates that the purchase of the single-premium life insurance policy is a bad deal."

Studebaker was obviously upset at his failure to detect these flaws, and Comer quickly added that Morton's proposal had uncovered two extremely important facts. First, Studebaker had an obvious need for some type of safe, long-term, tax-sheltered investment; and second, he had excess yearly income in addition to the money market funds that could be placed in such an investment.

QUESTIONS

Ignore taxes in all your answers.

1. Morton notes that the \$55,000 invested in the single-premium life insurance policy would grow to \$176,392 in 20 years for a return of 6 percent a year. Explain how this return was calculated.
2. In order to reposition the equity in his home, Studebaker would have to take out a 30-year, \$75,000 mortgage at 9 percent. Explain how the yearly mortgage payments on this loan were obtained.
3. For the 9 percent mortgage in Exhibit 4, find the loan balance at the end of years 19 and 20.
4. Exhibit 3 indicates that \$176,392 will be accumulated after 20 years in the life insurance policy. Is this really true? (*Hint: If Studebaker were to make this investment, what would his debt position look like in year 20?*)
5. (a) If the excess \$30,000 were invested in a long-term asset yielding 8 percent a year, how much would be accumulated after 20 years?
(b) Suppose Studebaker placed \$3,052 a year into a long-term investment paying 8 percent a year. How much would be accumulated after 20 years (amounts invested at the end of each year)?
6. Repeat problem 5 but assume a 7 percent return can be earned.
7. Comer's criticisms implied that the single-premium life insurance policy is an unattractive investment for Studebaker. What do your previous answers suggest?
8. (a) Suppose Studebaker's goal is to accumulate \$400,000 in 20 years. Assume the \$30,000 is invested at 8 percent. How much will he have to save in equal amounts at the end of each of the next 20 years if he can earn 8 percent per year on any investments?
(b) Repeat part (a) but assume he will not be able to save any money in years 13 to 20. This is, he will save an equal amount at the end of years 1 to 12 and nothing thereafter.