CHAPTER 1 – Financial Economics

End-of-Chapter Problems

Defining Finance

1. What are your main goals in life? How does finance play a part in achieving those goals? What are the major tradeoffs you face?

SAMPLE ANSWER:

- Finish school
- Get good paying job which I like
- Get married and have children
- Own my own home
- Provide for family
- Pay for children's education
- Retire

How Finance Plays a Role:

SAMPLE ANSWER:

- Finance helps me pay for undergraduate and graduate education and helps me decide whether spending the money on graduate education will be a good investment decision or not.
- Higher education should enhance my earning power and ability to obtain a job I like.
- Once I am married and have children I will have additional financial responsibilities (dependents) and I will have to learn how to allocate resources among individuals in the household and learn how to set aside enough money to pay for emergencies, education, vacations etc. Finance also helps me understand how to manage risks such as for disability, life and health.
- Finance helps me determine whether the home I want to buy is a good value or not. The study of finance also helps me determine the cheapest source of financing for the purchase of that home.
- Finance helps me determine how much money I will have to save in order to pay for my children's education as well as my own retirement.

Major Tradeoffs:

SAMPLE ANSWER

- Spend money now by going to college (and possibly graduate school) but presumably make more money once I graduate due to my higher education.
- Consume now and have less money saved for future expenditures such as for a house and/or car or save more money now but consume less than some of my friends

Financial Decisions of Households

2. What is your net worth? What have you included among your assets and your liabilities? Would you list the value of your potential lifetime earning power as an asset or liability? How does it compare in value to other assets you have listed?

SAMPLE ANSWER:

$ ____________ (very possibly negative at this point)

Assets:
- Checking account balance
- Savings account balance
- Furniture/Jewelry (watch)
- Car (possibly)

Liabilities:
- Student loans
- Credit card balance
- If renting, remainder of rental agreement (unless subletting is a possibility)
- Car payments (possibly)

Students typically don't think about the high value of their potential lifetime earning power when calculating their net worth but for young people it is often their most valuable asset.

3. How are the financial decisions faced by a single person living alone different from those faced by the head of a household with responsibility for several children of school age? Are the tradeoffs they have to make different, or will they evaluate the tradeoffs differently?

A single person needs only to support himself and therefore can make every financial decision on his own. If he does not want health insurance (and is willing to bear the financial risks associated with that decision) then no one will be affected by that decision other than that single person. In addition, this person needs to make no decisions about allocating income among dependents. A single person is very mobile and can choose to live almost anywhere. The tradeoffs this individual makes generally concern issues of consuming (or spending) today versus saving for consumption tomorrow. Since this person is supporting only himself, the need to save now is less important than for the head of household discussed next.

The head of household with several children must share resources (income) among dependents. This individual must be prepared to deal with risk management issues such as how to be prepared for potential financial emergencies (such as a serious health problem experienced by a member of the family or home owners insurance in case of a fire or other mishap). Because there are more people in this household than with a single person, there are greater risks that someone will get sick or injured. And because there are dependents, the wage earner(s) should think carefully about life and disability insurance. In addition, the family is not as mobile as the single individual. Because of the school age children, the family might want to live near "good schools" thinking that a stronger education will eventually help those children's future well being and financial situation. Thus, the tradeoffs for the head of household are more complex: more money is needed to consume today (he or she needs to support more dependents), but a lot more money is also needed to save for future expenses such as education and housing and more money is needed for risk management such as life and disability insurance.

4. Family A and family B both consist of a father, mother and two children of school age. In family A both spouses have jobs outside the home and earn a combined income of $100,000 per year. In family B, only one spouse works outside the home and earns $100,000 per year. How do the financial circumstances and decisions faced by the two families differ?

With two wage earners, there is less risk of a total loss of family income due to unemployment or disability than there is in a single wage earning household. The single wage earning family will probably want more disability and life insurance than the two wage earning family. On the flip side, however, the two wage earning family may need to spend extra money on child care expenses if they need to pay someone to watch the children after school.

5. Suppose we define financial independence as the ability to engage in the four basic household financial decisions without resort to the use of relative's resources when making *financing decisions*. At what age should children be expected to become financially independent?

Students will have differing responses to this question depending upon their specific experiences and opinions. Most will probably say independence should come after finishing their education, and they have a significant flow of income.

6. You are thinking of buying a car. Analyze the decision by addressing the following issues:

a. Are there are other ways to satisfy your transportation requirements besides buying a car? Make a list of all the alternatives and write down the pros and cons.

Transportation Mode	Pros	Cons
Walking	• Takes you directly where you want to go • No out of pocket costs • Convenient	• Takes a long time • Destination may be too far
Bicycle	• Takes you directly to where you want to go • No out of pocket marginal costs • Convenient	• Requires physical strength and endurance • Destination may be too far
Bus	• Inexpensive • Reaches more distant destinations	• May not take you directly where you want to go • Inconvenient schedules to go • Many stops, not efficient
Subway	• Inexpensive • Fast	• May not take you directly where you want to go • Local destinations only on limited network
Train	• Reaches distant destinations	• Moderately expensive • May not take you directly where you want to go
Airplane	• Reaches distant destinations • Fast	• Most expensive • Will not take you directly where you want to go

b. What are the different ways you can finance the purchase of a car?
Finance through a bank loan or lease, finance through a car dealer with a loan or a lease or finance the car out of your own savings.

c. Obtain information from at least three different providers of automobile financing on the terms they offer.

d. What criteria should you use in making your decision?

Your decision will be to select the financing alternative that has the lowest cost to you.

When analyzing the information, you should consider the following:

- Do you have the cash saved to make an outright purchase? What interest rate would you be giving up to make that purchase? Do you pay a different price for the car if you pay cash rather than finance?

- For differing loan plans, what is the down payment today? What are the monthly payments? For how long? What is the relevant interest rate you will be paying? Does the whole loan get paid through monthly payments or is there a balloon payment at the end? Are taxes and/or insurance payments included in the monthly payments?
- For differing lease plans, what is the down payment today? What are the monthly payments? For how long? Do you own the car at the end of the lease? If not, what does it cost to buy the car? Do you have to buy the car at the end of the lease or is it an option? Is there a charge if you decide not to buy the car? What relevant interest rate will you be paying? Are taxes and/or insurance payments included in the monthly payments? Are there mileage restrictions?

7. Match each of the following examples with one of the four categories of basic types of household financial decisions.

- **At the Safeway paying with your debit card rather than taking the time to write a check**
- **Deciding to take the proceeds from your winning lottery ticket and use it to pay for an extended vacation on the Italian Riviera**
- **Following Hillary's advice and selling your Microsoft shares to invest in pork belly futures**
- **Helping your 15-year old son learn to drive by letting putting him behind the wheel on the back road into town**
- **Taking up the offer from the pool supply company to pay off your new hot tub with a 15-month loan with zero payments for the first three months**

The first is the most difficult since in practice it is simply a cash transaction involving no financing. As such the purchase is a consumption decision only and the payment choice is not a financing decision. The second is also a consumption/saving decision. The third is an exchange of one financial asset for another and therefore an investment decision. The fourth is a risk-management decision since you have subjected yourself to increased risk that is not covered by insurance. The final example is a financing decision involving a loan to finance a purchase.

Forms of Business Organization

8. You are thinking of starting your own business, but have no money.

a. Think of a business that you could start without having to borrow any money.
Any business that involves a student's own personal service would be cheap to start up. For instance he or she could start a business running errands for others, walking their dogs, shopping etc. Along those same lines they could start some kind of consulting business. Both of these businesses could be run out of their dorm room or their own home and could be started with very little capital. If they wanted to hire additional workers, they would have to be paid on a commission basis to limit upfront expenses.

b. Now think of a business that you would want to start if you could borrow any amount of money at the going market interest rate.

Certainly there are many interesting businesses that could be started if one could finance 100% of the business with borrowed capital and no equity. Since you will be able to borrow 100% of the financing, you will be willing to take a lot greater risk than if you were investing your own money.

c. What are the risks you would face in this business?

[Answer is, of course, dependent on answer to question "b."]

d. Where can you get financing for your new business?

Depending upon the size of the financing needed, students should be looking for both debt and equity financing. The sources of this financing ranges from individuals and credit cards (for very small sums) to banks, venture capitalists, public debt and equity markets, insurance companies and pension funds

9. Choose an organization that is not a firm, such as a club or church group and list the most important financial decisions it has to make. What are the key tradeoffs the organization faces? What role do preferences play in choosing among alternatives? Interview the financial manager of the organization and check to see if he or she agrees with you.

SAMPLE ANSWER:

Local Church group. Most important financial decisions:

- Whether or not to repair damage done to church and grounds during last big hurricane (specifically repairing the leaking roof)
- What project to put off in order to pay for repair damage
- How to pay for renovations to downstairs Sunday school rooms
- How to increase member attendance and contributions
- How to organize and solicit volunteers for the annual Church Sale (largest fund raiser of the year)

Key Tradeoffs and Preferences:

Church group funds are severely limited, so the organization needs to prioritize expenses based upon cost and need. Not all projects that are needed will be undertaken due to the expense involved. An equally large amount of time will be spent trying to raise financing since funds inflow is variable. Since not all projects can be financed, preferences of different important individuals (such as the pastor) take on great significance in the decision-making process.

Market Discipline: Takeovers

10. ***Challenge Question:*** **While there are clear advantages to the separation of management from ownership of business enterprises, there is also a fundamental disadvantage in that it may be costly to align the goals of management with those of the owners. Suggest at least two methods, other than the takeover market, by which the conflict can be reduced, albeit at some cost.**

One way is to provide incentives for the managers so that they increase their pay when owners interests are improved. An example would be compensating managers with stock options, the value of which increase with the market value of shareholder's interests. A second method is to more closely monitor the behavior of the managers. Outside management consultants and auditors serve this role in part particularly to the extent that they report their findings to representatives from ownership groups. Both of these solutions assume the management cannot effectively deceive markets or consultant/auditors through misleading information or actions to inflate the market value of the ownership shares or there performance records.

11. ***Challenge Question:*** **Consider a poorly run local coffee shop with its prime location featuring a steady stream of potential clients passing by on their way to and from campus. How does the longtime disgruntled, sloppy and inefficient owner-manager of Cup-a-Joe survive and avoid disciplining from the takeover market?**

This is not a question about a misalignment of the goals of the owner(s) and manager(s) of a firm since we have explicitly said the firm is owner-managed. If in fact the coffee shop is mismanaged the potential exists for an outsider to purchase a controlling interest in the operation and put more efficient management into place if the purchase price does not exceed the value of profits to be generated by the efficiently managed firm. If the present owner chooses not to sell he must value the firm for more than the value of the profits generated by an efficiently managed firm. Therefore his position in the firm must generate for him non-pecuniary benefits, or benefits unrelated to the firm's profitability and he is therefore not a value maximizer. Perhaps he enjoys making fun of his clients or takes pride in his eclectic tastes in interior decorating. In any case the takeover market does discipline him in the sense that he will be forced to pay for his non-pecuniary benefits in the sense that he trades off profits.

The same could be said of an owner-manager who lacks the required specialized skills to properly run the firm but never the less continues to operate the company inefficiently because he 'likes' the work!

The Role of the Finance Specialist in a Corporation

12. Which of the following tasks undertaken within a corporate office are likely to fall under the supervision of the treasurer? The controller?

- **Arranging to extend a line of credit from a bank**
- **Arranging with an investment bank for a foreign exchange transaction**
- **Producing a detailed analysis of the cost structure of the company's alternative product lines**
- **Taking cash payments for company sales and purchasing U.S. Treasury Bills**
- **Filing quarterly statements with the Securities and Exchange Commission**

The first two and the fourth items are responsibilities of the treasurer while the third and fifth items fall under the workload of the controller's office.

Objectives

- Define finance.
- Explain why finance is worth studying.
- Introduce two of the main players in the world of finance—households and firms—and the kinds of financial decisions they make. The other main players, financial intermediaries and government, are introduced in chapter 2.

Contents

Summary

Finance is the study of how to allocate scarce resources over time. The two features that distinguish finance are that the costs and benefits of financial decisions are spread out over time and are usually not known with certainty in advance by either the decision maker or anybody else.

A basic tenet of finance is that the ultimate function of the system is to satisfy people's *consumption preferences.* Economic organizations such as firms and governments exist in order to facilitate the achievement of that ultimate function. Many financial decisions can be made strictly on the basis of improving the trade-offs available to people without knowledge of their consumption preferences.

There are at least five good reasons to study finance:

- To manage your personal resources.
- To deal with the world of business.
- To pursue interesting and rewarding career opportunities.
- To make informed public choices as a citizen.
- To expand your mind.

The players in finance theory are households, business firms, financial intermediaries, and governments. Households occupy a special place in the theory because the ultimate function of the system is to satisfy the preferences of people, and the theory treats those preferences as given. Finance theory explains household behavior as an attempt to satisfy those preferences. The behavior of firms is viewed from the perspective of how it affects the welfare of households.

Households face four basic types of financial decisions:

- *Saving decisions:* How much of their current income should they save for the future?
- *Investment decisions:* How should they invest the money they have saved?
- *Financing decisions:* When and how should they use other people's money to satisfy their wants and needs?
- *Risk-management decisions:* How and on what terms should they seek to reduce the economic uncertainties they face or to take calculated risks?

There are three main areas of financial decision making in a business: capital budgeting, capital structure, and working capital management.

There are five reasons for separating the management from the ownership of a business enterprise:

- Professional managers may be found who have a superior ability to run the business.
- To achieve the efficient scale of a business the resources of many households may have to be pooled.
- In an uncertain economic environment, owners will want to diversify their risks across many firms. Such efficient diversification is difficult to achieve without separation of ownership and management.
- To achieve savings in the costs of gathering information.
- The “learning curve” or “going concern” effect: When the owner is also the manager, the new owner has to learn the business from the former owner in order to manage it efficiently. If the owner is not the manager, then when the business is sold, the manager continues in place and works for the new owner.

The corporate form is especially well suited to the separation of ownership and management of firms because it allows relatively frequent changes in owners by share transfer without affecting the operations of the firm.

The primary goal of corporate management is to maximize shareholder wealth. It leads managers to make the same investment decisions that each of the individual owners would have made had they made the decisions themselves.

A competitive stock market imposes a strong discipline on managers to take actions to maximize the market value of the firm’s shares.