

Small Firm Finance

A. Overview

We talked about the role of financial institutions in writing and enforcing efficient financial contracts. Recall that financial contracting is hard because of:

Transaction Costs (Economies of Scale in Financial Contracting)
Asymmetric Information / Adverse Selection
Moral Hazard

In this section, I will describe how these contracting problems affect small firms' access to capital.

B. The financial life cycle

First stage of finance: *Entrepreneur's wealth*

Contracting difficulties tend to be most severe very early in the life of a firm for at least two reasons. First, when a business is new the entrepreneur has little to lose; this means that it can be hard for potential financiers to punish the entrepreneur if they do not pay up. Second, information tends to be very hard to acquire at the early stages of a business. Thus, it is hard for the financier to know whether the entrepreneur is not paying because he is stealing the money, wasting the money, or really has fallen on hard times...

For these reasons, entrepreneurs usually begin using their own money, or money from friends and relatives.

Second stage of finance: *Financial Institutions (Indirect Finance)*

As a firm grows and becomes well established, two things happen. First, its demands for capital increase. Second, its ability to convince an outsider of both its willingness and ability to repay a loan also increase. Thus, the second stage in the financial life cycle is for the firm to raise capital from a financial institution.

Questions: Why bother with a financial institution at this stage? Why not simply issue bonds, or sell stock to the public in an IPO?

Third stage of finance: *Financial Markets (Direct Finance)*

For the same reasons that a firm graduates from using its own money to using the bank's money (i.e. greater demands and greater willingness/ability to repay), a firm may eventually issue equity and debt to the public. That is, as demands for capital get sufficiently high, it becomes more

worthwhile to incur the fixed costs of issuing public debt and equity. These fixed costs include the costs of underwriting as well as costs of meeting SEC rules on disclosure. Moreover, the firm becomes increasingly transparent to investors (or their agents: ratings agencies, investment banks, stock analysts, etc.), thereby reducing the adverse selection and moral hazard problems.

C. Relationship Lending

The main problem for firm's very early in their life is the constraint of not having enough access to external finance! There is a fascinating research study showing that people who inherit large sums of money are much more likely to open a new business than otherwise identical people who do not receive inheritances. The conclusion drawn is that many people have business concepts that never get off square one due to financial constraints. We will talk in class about financial contracting issues that arise in the first stage of finance when firms borrow from friends & family, and also when they attempt to borrow from strangers.

In the second stage of finance, most firms try to get a loan from a bank.

Review question: How do lenders reduce the moral hazard and adverse selection costs of raising capital from an outside investor? Why are loans/fixed income contracts more common than equity claims in external finance of small businesses?

Once a firm begins borrowing from banks, it typically needs to concentrate its business with just one institution. This concentration of business allows the bank to have greater confidence that it knows how the business is doing.

Notice that this so-called relationship lending involves an important tradeoff. On the one hand, concentrating your business with a single lender allows that lender to economize on collection of information about the business. If you borrow from 2 banks, for example, then both would have to do the "due diligence" to understand the nature and risk of the business, they would both have to draw up a loan agreement, if the firm got into trouble, they would both have to try to foreclose on assets, etc.

On the other hand, the firm borrowing from a single bank faces a potential expropriation problem because they will have difficulty borrowing from anyone else.

Question: You have been running a small business for many years and have always used Sovereign bank for your checking account, cash management and credit needs. Sovereign has been raising its fees in recent years and you want to take your business to Citizens. What is the first question that the loan officer at Citizens is likely to ask?

This potential expropriation problem tends to decline over time as your business matures and prospers (let's hope that it does). What do you think firms tend to do as they get bigger and more prosperous? They tend to spread their business across more than a single financial

institution.

D. Venture Capital

Some businesses have both low cash flow and very high risk. Such projects are not likely to borrow from banks. U.S. banks typically make loans and, until very recently, have been constrained by regulation from engaging in equity investments in non-financial firms. (These constraints on bank equity investments (called merchant banking) were relaxed in 1999 with passage of the Financial Modernization Act. More on this Act later.)

For businesses with low cash flow and high risk, debt contracts don't work. First, businesses without cash flow can not make payments very easily, which would have to be very high for projects that are risky. Second, debt itself creates incentive problems that are quite bad when projects involve a lot of risk. Why? Because the debt holder does not participate in the upside potential of the project. Remember that a debt contract has a fixed payment unless the borrower defaults. The key thing to remember is that, in the absence of very intense scrutiny by the debt holder, the entrepreneur has control of the assets of the firm. This means that there may be temptation for them to *change* the assets of the firm in ways advantageous to them - for example, by adding risk. This so-called asset substitution is a very big problem for firms in certain industries where there are great opportunities to take risk. For example, industries such as biotech or computer hardware and software.

The bottom line: Bank loans do not work very well for certain very high risk, potentially high growth firms, especially when their current cash flow is low. Instead, these firms use private equity in the second stage of finance. Private equity is closely held and, in contrast to bank loans, comes with very intense monitoring. Firms in the business of using private equity to finance start ups are known as venture capital firms. (The other kind of private equity are buyout firms, which we will not talk a lot about in this class.)

Equity investments do not create asset substitution problems like debt, but when information to the outside equity holder is scarce, there are many potential moral hazard problems. The entrepreneur (insider) has an incentive to:

- Not work hard
- Lie about how well the firm has done
- Exaggerate about how well the firm will do next time...
- Spend too much money on the business (perks, etc.)

Financial economists call these problems managerial "agency" problems or "control" problems.

How does the venture capitalist deal with these issues? The answer is twofold. First, they do not use straight equity. Instead, they use a hybrid security known as convertible preferred. Convertible preferred acts like debt if the firm does poorly, and it acts like equity if the firm does well. Convertible preferred is basically the same thing as a convertible bond, except that it has no maturity date; thus the venture capitalist can wait as long as they deem necessary before converting their preferred into regular equity. They usually do the conversion to equity at the IPO, if things go well for the firm. (Or if the firm is acquired.)

Question: How does convertible preferred help the venture capitalist with the asset substitution problem (relative to non-convertible preferred or straight debt)? How does convertible preferred help the venture capitalist solve the incentive problems outlined above relative to regular equity?

However, the venture capitalist realizes that this does not solve either problem (asset substitution or the agency problems of equity) fully.

They use the following additional tools:

Staged Finance: Start out by giving the entrepreneur a little bit of capital; after a predetermined milestone has been reached (e.g. working prototype of the product), give the firm some more money; after a second milestone has been reached (product brought to market), give them more; etc.

Direct Monitoring: Often venture capitalists will hold multiple seats on the board of directors. In addition, the VC sometimes helps the firm hire key managers to bring the firm from the stage of some brilliant engineer's garage to operating as a professional business. By bringing in their own people, the VC has a better chance of insuring quality and receiving accurate information from the firm.

Covenants: Like bank loans, VC contracts with firms constrain their ability to shift the nature of the business by selling assets. This aspect of VC finance is similar to other kinds of intermediated finance.

Syndication: VC finance is typically arranged by a lead firm who then brings in other VC firms. Again, this structure is also common in bank lending and helps diversify each venture firm's portfolio.

Incentive compensation: VC-backed firms tend to use options to compensate key employees to give them a stake in the success of the firm. Since the VC is on the board and has a large block of voting rights, they can insist that such incentive compensation packages be used. (Note that with a firm borrowing from a bank, these are not necessary since the entrepreneur holds 100% of the equity. This means they have good incentives to work hard anyway.)

E. IPOs

The hope of the VC investor is that the firm does very well and grows to sufficient size to be able to sell equity to the public in an IPO. This is the exit strategy. (Sometimes the firm can be sold to a competitor or supplier and allow the VC investor to exit without an IPO.) The conversion feature of the convertible preferred allows the VC to capture a portion of the gains that occur at the IPO. The remainder of the gains accrue to the entrepreneur.

How do you do an IPO?

First, you must register with the SEC. This involves lots of paperwork. Then, you must have the assistance of an underwriter. IPOs are typically arranged by a syndicate of underwriters, but it is the lead underwriter that does most of the work. The underwriters will sell your shares to their clients.

The key thing that the underwrite must do is come up with the offer price. This is the first price at which the shares will be sold. After that, they can be traded in secondary markets.

Setting the IPO Offer Price

Management knows the firm's operations well, but is less well-equipped to value the firm.

Underwriters have clients (investors) who are better equipped to value the firm.

- underwriters can estimate firm value, but the market ultimately determines the worth of the firm (e.g. MBAs who can compute the DCF of the firm, or do multiples analysis. Hopefully you all know how to do this from your corporate finance classes. It will not be the focus here.)

- underwriters go to the public with some of the firm's management to pitch the firm to investors on "road shows". The "public" consists mainly of large institutional investors.

By combining information from their own analysts and from the road show, the investment banker constructs the offer price.

Underpricing

One of the most interesting things about IPOs is that they are underpriced on average. That is, the offer price is usually lower than the price that would satisfy the demand for the stock. How do we know this? Because the first-day return on IPOs averages 24% (1990-2003). Most of this return occurs on the first trade!

So, what the investment banker seems to do is figure out what the market clearing price of the share is, then lower it by some amount. You might think this hurts the issuer because they are

getting less for their shares than they are really worth. It also seems to hurt the investment banker, who's fee is typically 7% of the amount of funds raised by the IPO.

Underpricing can be very costly to the firm and the investment banker.

Example: Suppose the offer price is \$10 per share and the firm issues 10 million shares to the public. At the first trade, the stock price rises to \$12 per share. How "much money was left on the table"? That is, how much did the firm lose?

Thought-provoking question (this means that we don't have a fully compelling answer): Why would the investment banker do this? Why would the issuer put up with it?

(You might be tempted to say that the investment banker simply made a mistake about the market demand for the stock. This is not the case. It is well known that IPOs that are oversubscribed go up on the first trade. The investment banker knows this before the shares are sold...)

Here are some more facts to deepen the puzzles surrounding IPOs and underpricing:

IPOs come in waves (high ebb in 1999-2000, low ebb now)

Underpricing is higher at the crest of wave (underpricing in 1999 was 71%!!!)

Long-term returns tend to be VERY POOR! IPOs *underperform* the market over the first 5 years. (And, they underperform a portfolio of stocks with similar risk characteristics.)

The worst 10% of IPOs have returns of -90% in the first 5 years!

Long-term under-performance is worse if the IPO is sold in a hot year.