Notes on Family Firms

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Abstract

In many countries even large companies are family firms, closely controlled by one family but with much of the capital supplied by minority shareholders. Since close control allows the owner to operate to the detriment of the minority shareholders, this is a puzzle, especially in countries where legal protection of the minority is weak. We suggest a solution: that by giving the family a positive but limited opportunity to obtain rents from the firm, this corporate form causes the family to avoid undesirable risk that a more responsive directors might accept.

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1. Introduction [same as abstract now]

In many countries even large companies are family firms, closely controlled by one family but with much of the capital supplied by minority shareholders. Since close control allows the owner to operate to the detriment of the minority shareholders, this is a puzzle, especially in countries where legal protection of the minority is weak. We suggest a solution: that by giving the family a positive but limited opportunity to obtain rents from the firm, this corporate form causes the family to avoid undesirable risk that a more responsive directors might accept.

2. The Model

There is a unit length of investors. Fraction α of the investors are risk-averse passive investors with wealth density w_p, and fraction $(1-\alpha)$ are active risk-neutral investors with wealth density w_a. Investors' rate of time preference is r. An investor may invest various portions of his wealth in cash, in the debt of one or more individuals, or in the equity of one or more firms.

There is a unit interval of infinitesimal firms (infinitesimal to avoid integer problems). Each period a firm undertakes one of two kinds of projects: safe and risky. The safe project has a certain return of $[B - f(X)]V$ per dollar invested, where $B < 1$, X is the amount of perks taken, and $[B - f(0)]V > 1$. The risky project has an $f(X)$ probability of an end value of 0 per dollar invested and a $(1 - f(X))$ probability of V. The risk is systematic— if a project with $X = X'$ fails, so will every project with $X \geq X'$.

Corporate governance is as follows. There are two forms of control. Under open control, the firm is controlled by one of its active shareholders chosen randomly each period with a probability proportionate to his shareholdings. Under closed control, the firm is controlled permanently by one of its active shareholders who retains control from period to period. The form of control is decided when the firm is formed and cannot be changed. The controller makes two decisions: the type of project in which to invest, and the amount X of perks. Each share gets an equal fraction of the value of the firm at the end of each period and may transfer it to a different firm.

The order of play is as follows.

1. Investors make loans to each other.

2. Risk-averse investors invest, either in corporate stock, individual debt, or cash.

3. Risk-neutral investors invest, either in corporate stock, individual debt, or cash.

4. The identity of the controller is established in each firm.

5. Firms choose projects according to the desires of their controllers.

6. The project returns are realized.

7. Debt is repaid.

8. Perks are paid out in closely held firms.

9. The value of the firm is paid out equally to shareholders.

I should say, too, that the controller can loot the firm. That affects the project return, though, so it is not good in the long term. That is really a separate idea.

What Happens without Family Firms?

If there were no family firms, the equilibrium will be for the risk-neutral investors to invest in stock in firms which would invest in the risky project and for the risk-averse investors to hold mostly cash and to hold a small amount of stock.

The reason all firms will invest in risky projects is simply that the active investors are all risk-neutral, and they make the decisions.

Whoever is the controller will choose X based on his shareholdings, but it will be very high, because control is reassigned in the next period.

Active investors will invest evenly across firms, because the probability of becoming the controller is greatest in a firm with the fewest active investors.

Here is the controller's payoff:

$$\pi(x, safe) = \left(\frac{1}{1+r}\right)(x + w_a(B - f(x))V) \tag{1}$$

or

$$\pi(x, risky) = \left(\frac{1}{1+r}\right)(x + w_a(1 - f(x))V) \tag{2}$$

The first order conditions are

$$\frac{d\pi(x, safe)}{dx} = \left(\frac{1}{1+r}\right)(1 + w_a(-f'(x))V) = 0 \tag{3}$$

or

$$\frac{d\pi(x, risky)}{dx} = \left(\frac{1}{1+r}\right)(1 + w_a(-f'(x))V) = 0 \tag{4}$$

Thus, x^* is the same for both types of investment. The controller will choose the risky project, since its expected return is higher because $B < 1$.

Consider what happens if one of the risk-averse investors only has a choice between cash and the risky project. If his initial wealth is g and he invests z in the risky project, his utility will be

$$.5U(g - z) + .5U(g + [1 - C](2)(S + K)z) \tag{5}$$

Maximizing yields

$$-.5U'(g - z) + .5[1 - C](2)(S + K)U'(g + [1 - C](2)(S + K)z) = 0 \tag{6}$$

and there exists some z sufficiently small to make this first order condition true. This result that risk-averse investors would put some of their wealth in a risky asset is a basic result in portfolio theory, and uninteresting in this context.

What is more interesting is why the risk-averse investor is restricted to either cash or the risky project, rather than debt, or equity in a firm which invests in the safe project.

First, consider debt. Risk-neutral individuals would like to borrow, so they could leverage themselves and buy more equity. Risk-averse investors,

however, would not lend, knowing that the borrower would invest in equity and if he were leveraged enough would be unable in the bad state to repay. Firms would like to borrow too, for leverage, but risk- averse investors would not lend to them either, for the same reason.

Second, consider equity in a safe firm. Risk-averse investors would like to own shares in a firm that would invest just in the safe project. If they were the controlling shareholders, that is what they would do. But they are assigned to firms randomly before they know how many risk-neutral investors will buy shares in the firm. There is a risk– or even a certainty– that more than 51% of the shares of a firm will be owned by risk-neutral investors, in which case the risky project will be chosen.

There are multiple equilibria. The certainty (actually near certainty here) of firms being controlled by risk-neutral investors is the equilibrium described above: all risk-averse investors choose to invest very little in equity.

The other extreme is an equilibrium in which all the risk-neutral investors do invest everything in equity. They are more willing to do this, knowing that since they are all investing in equity, some firm will happen to be controlled by them and will choose safe projects. This equilibrium can exist if enough firms end up being controlled by risk-averse investors. The percentage of firms so controlled is a function of θ that we will denote as $h(\theta)$. This kind of equilibrium will exist if for both $w = g$ and $w = f$,

$$h(\theta)U([1+S]w)+[1-h(\theta)][.5U(0)+.5U([1-C](2)(S+K)w)] \geq U(w). \quad (7)$$

Otherwise, the only equilibrium is that in which all firms invest in risky projects.

Note that this is an adverse selection problem, exacerbated by the greater awareness of the risk-neutral investors. Under our assumptions, no risk-neutral investors are caught as minority shareholders in safe firms. Rather, they withdraw and reinvest in risky firms– further increasing the chances (if we fix the model–flaw here) that firms are risky. The safe firms will be 100% owned by risk-averse shareholders.

(xxx If we had more classes of risk, we could get more extreme adverse selection in a more complicated model. Once the most active risk-averse

invetors left a firm, it woudl adtop riskier policies, and the next most risk-averse acive investors would leave, and so forth. Maybe this is the way to go— a firm chooses a risk level based on its median shareholder. But then the risk-neutal ones would elave too....)

What Happens with Family Firms?

Can you re-start a family firm?

There are two reasons why the family firm will do better. First, it has a longer time horizon, so it will make x less.

I don't yet have a reason why it chooses the safe project.

What if we introduce family firms?

The family firms are risk-neutral, so for their investment return, they prefer the risky project. That might bankrtupt hte firm, though, in whcih case they lose their future perks. Also, they will choose the perks to be lower.

It may be that they can only attract investors if they invest enough of their wealth, too.

Suppose first that the family owns an infinitesimal amount of the firm's assets. That means the family's payoff is its perks, M, minus the effort cost C if it picks the risky project. As a result, the family has two motives for avoiding the risky project: the direct cost C and the possbility of failure and not getting M. So the family firm will only invest in teh safe project.

As a result, risk-neutral investors will not want to invest in the family firm.[1] They will stick to shareholder-controlled firms. Risk- averse investors, however, will happily invest in a family firm if it is big enough. If it has A in assets, they will invest if $(1 + R)A - M > A$. They won't care whether they are holding equity or bonds.

[1]MOdified model: make the safe project somewhat risky too. Then the risk-neutral investors will be willing to invest in the family firm with teh safe project because of the leverage: the firms as a whole bears little risk, but the equity will bear a lot of risk. This will generate an endogenous debt/equity ratio.

Thus, in equilibirum there will be θ shareholder-controlled firms and $(1-\theta)$ family firms.

In this model, the family does not have to own a significant number of shares in the firm. A modification would be to say that family control requires a significant amount of ownership. That does not alter things if the family is risk averse, adn knwon to be. If hte family is risk-neutral, then the family's incentive to switch to the risky project for its higher return must be balanced against its liking for the safe project because of the perks and effort.

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