Human capital and the private equity premium

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Abstract

When capital market is imperfect, an entrepreneur has to invest substantial personal funds to start a firm and has to bear large firm-specific risk. Furthermore, if a typical entrepreneur is risk averse, private equity should earn a premium for idiosyncratic risk. In this paper I explore the interaction of human capital with the decision to become an entrepreneur. I calibrate a model of entrepreneurial choice to illustrate a significant attenuating effect of human capital on the premium for firm-specific risk. When an entrepreneur can quit the business and work for hire, the firm-specific risk premium is order of magnitude lower than without this option. While an entrepreneur puts at risk a substantial fraction of financial wealth, she does not commit all human capital to the current business. At stake is only the labor income forgone while managing the firm and the rest of human capital is unaffected by the business risk. Empirical evidence suggests that private equity does not earn any significant premium over publicly traded equity. The model with human capital is consistent with this observation, assuming typical entrepreneur forgoes a small expected return (1.5%) in lieu of intangible benefits of entrepreneurship.
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1. Introduction

It is a well-known fact in financial economics that when markets allow perfect risk sharing, the diversifiable or firm-specific risk is not "priced" and that this risk does not affect the decisions of companies and individuals. While risk sharing works relatively well for corporations with many shareholders, capital market frictions prevent perfect risk sharing for small businesses. Risk sharing in a small private firm is usually possible only

among the entrepreneurs managing it.[1] In this paper I study how imperfect risk sharing in a small firm affects the decision to become an entrepreneur and consider explicitly the role of human capital in such a decision. The entrepreneurial choice problem considered here is a part of the broader questions about what motivates entrepreneurship and what are the major hurdles entrepreneurs face. These questions often become of practical interest in the context of public policies which target small businesses. The model presented in this paper points at the potential labor earnings opportunities as a critical element in the entrepreneurial decisions and suggest that a careful policy analysis should account for heterogeneity in such opportunities across the entrepreneurs.

Before describing the key features of the model and the main results, it helps to summarize findings of the related literature and empirical stylized facts. Entrepreneurial risk is substantial for two reasons. First, the returns to entrepreneurial investment are very volatile. As documented in Moskowitz and Vissing-Jorgensen (2002), a standard deviation of return of 50% per year or even more is not unreasonable for small privately held firms. Compared to a standard deviation of 15–20% per year for a diversified publicly traded equity portfolio, private equity is quite risky. Second, most entrepreneurs have to invest a large fraction of personal net worth in their firm, the fractions of 30–60% are typical according to Heaton and Lucas, Gentry and Hubbard (2001) and Bitler et al. (2002). Given these stylized facts, one should expect a risk averse entrepreneur to require a premium for firm-specific risk. Heaton and Lucas (2001) demonstrate this point in a model with adverse selection. They study how firm-specific risk affects capital structure of the private firm, capital budgeting decisions, and financial portfolio choice outside of the firm. They show that the expected return entrepreneur requires to invest in a private business may be considerably higher than a benchmark based only on systematic risk. However, recent empirical evidence suggests that entrepreneurs apparently receive no monetary compensation for idiosyncratic risk. Moskowitz and Vissing-Jorgensen (2002) estimate the average total returns on investments in privately held companies, accounting for business transfer sales and IPOs. They find that the expected returns on private equity are about the same as on publicly traded equity. Hamilton (2000) finds that the earnings of entrepreneurs, on average, are substantially lower than the earnings of comparably skilled and experienced workers for hire.[2] Moreover, Bitler et al. (2002) find that concentration of ownership is virtually unaffected by the differences in risk across entrepreneurial firms and by the non-business wealth of the entrepreneurs.[3]

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[1] There exists large theoretical literature on this topic going back to Jensen and Meckling (1976) who show that manager must commit all personal funds to the firm in the presence of asymmetric information about managerial effort.

[2] Hamilton finds that after 10 years in the business average self-employed individual earns 35% less than on the paid job that requires similar skills and experience. However, this estimate does not reflect the total expected return to entrepreneurship because it does not include potential private or public sales of the successful businesses.

[3] While statistically significant these effects are very small economically. For example, in the regression where ownership fraction is a dependent variable, the coefficient on the log of non-business net worth is only 0.02 (see Table II in Bitler et al., 2002). Thus, a change in the total net worth by $100,000 (around the median of $233,000) results only in 0.7% marginal change in ownership share ($0.007 \approx 0.02 \times \log(333/233)$, this calculation is assuming that along the perturbation the non-business net worth is increasing in the same proportion as the total net worth. This is a very small change relative to a median of 100% ownership share. At the same time, a change