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Risk-bearing and entrepreneurship

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Abstract

In the "Knightian" theory of entrepreneurship, entrepreneurs provide insurance to workers by paying fixed wages and bear all the risk of production. This paper endogenizes entrepreneurial risk by allowing for optimal insurance contracts as well as occupational self-selection. Moral hazard prevents full insurance; increases in an agent's wealth then entail increases in risk borne. Thus, even under decreasing risk aversion, there are robust instances in which workers are wealthier than entrepreneurs. This empirically implausible result suggests that risk-based explanations for entrepreneurship are inadequate.
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1. Introduction

Entrepreneurship has long fascinated economists. The way we understand it affects our thinking about the processes generating growth and development, policies for influencing productivity and mitigating unemployment, even mechanisms underlying business cycles. One influential and intuitively appealing theory of entrepreneurship can be traced back to Cantillon [5] and Knight [14] and was formalized more recently by Kanbur [11] and Kihlstrom and Laffont [12]. In this theory, entrepreneurs—through the institution of the fixed wage contract—are viewed essentially as providers of insurance. Individuals choose between the safety of wages and the hazards of entrepreneurship according to their attitudes toward risk. More risk averse people (and with decreasing risk aversion, the poor) receive sure wages and work for the less risk averse (rich), who are the residual claimants. An attractive feature of this theory, if we accept decreasing risk

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aversion, is that it easily explains one of the oldest stylized facts in economics, namely the tendency for entrepreneurs to be richer than workers.

Granting the basic presumption that being an entrepreneur is riskier than being a worker, the theory is nevertheless incomplete, for it does not account for why the risks are exogenous, or more precisely that the choice of occupation is the *only* institutional arrangement available for risk sharing. After all, there are alternatives, most prominent among them the market for insurance contracts. The first question that needs answering, then, is why entrepreneurs should be bearing risk at all. One response is that the relevant risks are aggregate, and therefore cannot be insured away. Another is that while the risks may be idiosyncratic, some information problem prevents full diversification.

Either way, one is led to ask whether the Knightian theory still make plausible predictions if we take proper account of reasons for the inability of the market to provide perfect insurance. This paper address this question by examining how moral hazard on the part of entrepreneurs modifies the basic story (we shall briefly say something about alternative reasons for imperfect insurance at the end). We embed the risk-sharing choices of entrepreneurs into a standard principal–agent framework and show that for a broad class of utility functions, competitive equilibrium will entail that entrepreneurs are poorer than workers, rather than the other way around. Thus a plausible modification of the basic Knightian model leads to an implausible prediction. The fragility of this theory's empirical predictions suggests that we probably should look elsewhere for explanations of the roles and sources of entrepreneurship.

The intuition behind the result is quite simple and depends on the existence of an apparently little-noticed property of the principal–agent model: when utility is separable in income and effort, the wealthier an agent is, the more risk he needs to bear in order to remain incentive compatible at a given effort level. The reason for this is that at low wealth levels, the income utility is very steep, so it only takes a small spread in the income "lotteries" generated by different effort levels to maintain a utility differential that will offset the cost of effort. But as the income utility flattens with greater wealth, the spread in incomes must be increased in order to maintain the differential. Thus, wealthy agents need to bear more risk. Finally, for the class of utility functions we identify (namely those in which the marginal income cost of providing utility is a convex transform of the utility function), this "increasing risk effect" swamps decreasing risk aversion, and we are led to the result.

The same intuition underlies a related result that we obtain for the standard formulation of the principal–agent model: agents with higher (expected) wages are monitored more than those with lower wages. The evidence on this is perhaps less clear than that on the relative wealth of workers and entrepreneurs. Nevertheless, both results point to a larger issue, which is to sort out the relative *empirical* importance of the two fundamental trade-offs in the theory of moral hazard, namely that between risk sharing and incentives (our focus) and that between surplus extraction and incentives (the focus, for instance, of the efficiency-wage and credit-constraint literatures).[1] While the risk-sharing trade-off is the one commonly emphasized, the present results suggest that the surplus extraction trade-off is at least as pertinent in the real world.

[1] The latter trade-off arises when limited liability or other lower bounds on the agent's payoff limit the punishment for outcomes indicative of undesired behavior; as a substitute, rewards for outcomes indicative of desired behavior must be paid, and this is costly to the principal. Often, models focusing on surplus extraction assume a risk-neutral agent.

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