Comments of

Humayon Dar[*]

on

Income Ratio and the Risk-sharing Structure of Optimal Contracts: The Break-even Theory of *Muḍārabah*

By Seif el-Din I. Tag el-Din

Introduction

This paper attempts to bring a very important issue into the realm of Islamic economics, namely, the problem of risk-aversion (on part of the two contracting parties) in the context of contract choice. While a vast amount of literature exists on contract choice when both parties are risk-neutral or at least one of them is risk-averse, the extant literature is scarce on the issue of contract choice in the wake of two risk-averse contracting parties. Raising this issue in Islamic economics is certainly a welcome step. The paper, nevertheless, sets up an agenda, which cannot be resolved in a single document; a comprehensive analysis of the problem will only emerge once the issue is thoroughly debated.

Some Specific Comments

Equality of Risk-neutrality of the Contracting Parties

The paper claims that it is an improvement over the existing literature in Islamic economics, as it attempts to bring in the issue of risk-aversion in the theory of contact choice. However, it does not unambiguously incorporate risk-aversion of the contracting parties in the analysis. The so-called break-even theory of *muḍārabah* and solution to the problem of contract choice at $\alpha = \frac{1}{2}$ is tautological. Income-equality is ensured only when the two parties are equally risk-averse, which is no more than saying that the two parties are risk-neutral. In fact, the solution at $\alpha = \frac{1}{2}$ critically hinges upon the assumption of symmetry of information and not on the attitude towards risk. How?

The utility functions for the two parties are given in Eq. (10).[1]

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[*] Vice President, Dar Al Istithmar, 1 Appold Street, London, EUU EC2A, United Kingdom, E-mail: humayon.dar.1991@pem.cam.ac.uk
[1] There are typos in Eqs.(10) and (11), which I am not reporting as per instructions of the Academic Committee of the conference.

$$U_A(\theta_1, \sigma_1) = a_0 + a_1\theta_1 + a_2(\theta_1^2 + \sigma_1^2)$$
$$U_B(\theta_2, \sigma_2) = b_0 + b_1\theta_2 + b_2(\theta_2^2 + \sigma_2^2)$$

The above set of equations assume that the contracting parties A and B have different information on the parameters θ and σ, which implies asymmetry of information. However, if we assume equality of information sets available to the two contracting parties, i.e., $\theta_1 = \theta_2$ and $\sigma_1 = \sigma_2$, then it implies that $a_2 = b_2$, the case of risk-neutrality or what the author says equality of risk-aversion. This is the only assumption that ensures the solution at $\alpha = \frac{1}{2}$. If that is the case, the real contribution of the paper is no more than re-stating the problem in a different format.

The Relationship between Income Ratio and Profit Ratio

The paper does not explicitly derive the negative relationship between income ratio and profit ratio (Eq. (16)). This is an important exclusion, given that the whole analysis depends on this crucial relationship. In fact, the Eqs. (11) and (12) are not only wrong (there are some typographical errors) but also the implications drawn from them are misleading. The correct versions of Eqs. (11) and (12) are:

$$a_1 + 2a_2\theta_1 > 0$$
$$b_1 + 2b_2\theta_2 > 0$$

and

$$a_2 = \frac{1}{2\sigma_1} \cdot \frac{\partial U_A}{\partial \sigma_1} < 0$$
$$b_2 = \frac{1}{2\sigma_2} \cdot \frac{\partial U_B}{\partial \sigma_2} < 0$$

If $a_2 > b_2$, it implies that Party A is more risk averse than Party B, and not the other way around, as argued by the author on page 11. In the presence of typographical mistakes and wrong implications like this, the paper is not as comprehensible as one would expect it to be.

The Issue of Competitive Markets

In my opinion, the inclusion of the assumption of competitive markets is unnecessary in the present context. Not to say that it is not an important issue, but its exclusion to focus more deeply on the informational asymmetries and attitude towards risk would have enriched the analysis. Furthermore, passing remarks on the non-suitability of profit-ratio as a tool of monetary policy and a reference to it in the concluding remarks cannot be justified.

Risk-sharing and Return-sharing

The paper focuses on a special case in which risk always equals return (the assumption of 45^0 line in Figure 1). Deviations from the optimum solution (say $\alpha = \frac{1}{2}$) are attributed to either informational asymmetries or attitude towards risk. The nature of the project is not of a major focus of the analysis. In fact, this may very well be the case that both the parties may agree on a profit ratio other than of $\frac{1}{2} : \frac{1}{2}$ if the underlying project is either too risky or relatively risk-free. For example, CC and DD in the following figure represent profit-sharing lines for the two projects for which A and B seek finance, respectively. In these two cases, optimum points for contacting will be X and X', although they do not represent equality of profit sharing between the two parties. These two will be the chosen points by the two parties when both parties are equally informed and probably are risk neutral.

Suggestions for Improvement

The issue of incorporating risk-aversion of both the agent and the principal is complicated and not as simple as the author argues. The analysis can be improved to a great deal by employing the tools of economics of information. There is a rich body of literature on the economics of information and contract choice pioneered by economists like James Mirrlees and further enhanced by Paul Milgram and others.

Figure
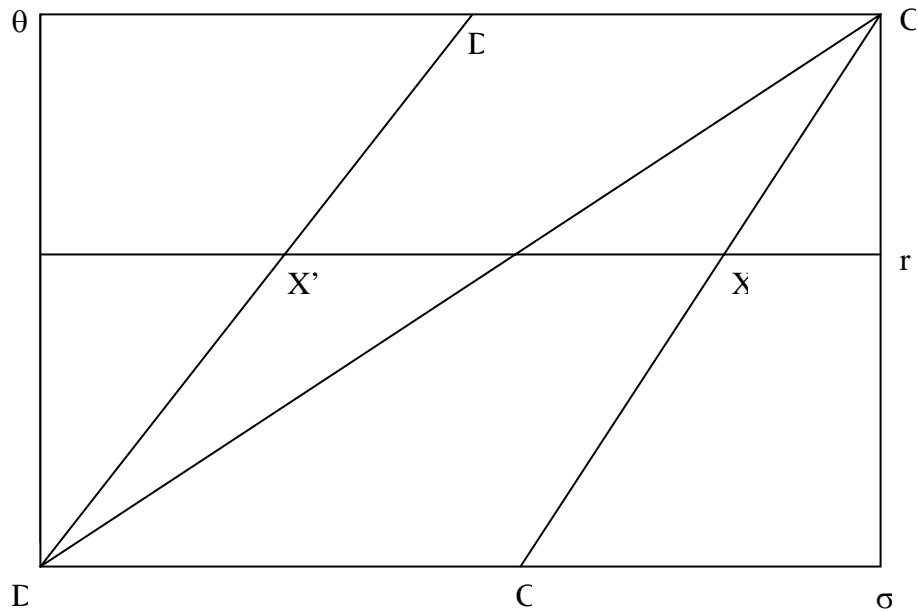
This figure should be read in conjunction with the Figure 1 in the paper.

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