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“Confidentially Yours”: Restricting Information Flow Between Trustees Enhances Trust-Dependent Transactions

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We study how restricting information flow between trustees can enhance trust and reciprocity in trust-dependent transactions using experimental economics techniques. We focus on different information conditions regarding whether each trustee only knows the amount received by herself or also knows the amount received by other trustees. Results from theoretical reasoning and two experiments suggest that, compared with the full information condition, when information flow between trustees is restricted: (a) total investment is larger, (b) the number of trustees receiving non-zero investment is not significantly different, and (c) the investor sends out a larger variety of invested amounts to different trustees.

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EXTENDED ABSTRACT

In marketing and social networking it often happens that an agent would like to build relationships with a multitude of other agents under resource constraints. For example, a firm may give discounts to a portion of customers to cultivate loyalty, but it cannot do too much of that to too many customers at the peril of profit margins. Moreover, discounts or other forms of relationship building gestures do not guarantee future benefits; much depends on the reciprocating propensity of the receiving agents.

Another important factor that potentially influences such strategizing is whether the receiving agents are allowed to communicate with each other about how much benefit they have received. The extent of information flow between receiving agents varies from case to case. In some types of buyer-supplier contracting, for example, the transacting parties are bound by the contract terms not to disclose deal information to third parties.

Our main objective in this paper is to study how restricted information flow influences the amount and distribution of resources put into relationship building. We attempt to abstract the relationship building aspects of the above mentioned scenarios into one involving a trusting agent and a number of potentially reciprocating agents, and study it through an extension of the well-known trust game or investment game in experimental economics. We investigate how restricting information flow between trustees can enhance trust and reciprocity in trust-dependent transactions through extending the traditional one-to-one trust game to settings involving $N > 1$ trustees. We consider: (a) investor's strategy in deploying investments, and (b) trustees' responding behavior, under conditions that vary in two parameters—the value of N and, more importantly, an information condition relating to whether a trustee only knows the amount received by her or whether every trustee knows the investment received by every other trustee.

We propose that, if the investor considers the problem based on a simplified, “baseline” model of expected trustee reciprocity, the optimal strategy of a risk neutral investor is one with which positive investment packages at no more than two different levels are sent out to some—but not necessarily all—of the trustees, while the remaining trustee(s) receive nothing (a set of investment packages has one level if all the packages are of the same amount, two levels if all the packages are of either one of two different amounts, and similarly for higher levels). We then investigate the effect of non-baseline concerns including investor risk aversion and, under the unconstrained information condition, (a) effects on reciprocity induced by uneven distribution of investments, (b) free-riding of the moral obligation to reciprocate, and (c) distributional fairness. In our theoretical development, we argue that the basic characteristics of the investor's optimal strategy in the baseline model would be preserved even if these additional concerns are included under the constrained information condition. Under the unconstrained information condition, our theoretical conclusion is that the investor's optimal strategy would include up to only one positive investment level, rather than two in the constrained information condition. Moreover, total investment would decrease when information flow is unconstrained, compared to when it is constrained.

We then report two experiments designed to investigate investor strategy and trustee behavior. In Experiment 1, we focus on investor behavior. Subjects were randomly divided into investors and trustees (neutral terms were used in the instructions). The

investor had an endowment of HK\$50 (1US\$=HK\$7.8) in each played game, while the trustees had no endowment. Any investment of the investor was tripled when it reached the trustee. The strategy method was used on the investors' side. That is, each investor was asked to decide how to invest in seven games varying in information condition and number of trustees; at the end, only one of those games was actually played with randomly and anonymously matched trustee(s). Within-subject analysis of the data lends support to all our investor hypotheses. Total invested amount increases and investment portfolio exhibits a greater variety (i.e. more levels of investment) when information flow between trustees is restricted, compared to when it is not so. We also observe, as predicted, that the number of trustees receiving positive investments does not change across information conditions; the increase in total investment is predominantly driven by an increase in average investment among trustees who receive positive investments.

Experiment 2 was designed to test trustees' behavior—in particular to try to isolate evidence of reaction to unfairness and moral obligation free-riding. Again, subjects were randomly assigned to be investors or trustees such that each investor was matched randomly and anonymously with two trustees. Both investors and trustees were presented with a menu of six investment patterns for the $N=1$ game and 12 investment patterns for the $N=2$ game with full information condition. The players' endowments and the general rules of the games were as in Experiment 1. Each trustee was then asked to decide, for each investment pattern, how much to reciprocate (if at all) if that investment pattern was chosen by the investor to be actually played. Within-subject analysis of the trustees' stated reciprocated amounts supports our conjectures regarding trustee behavior and considerations. Fundamentally, it shows that, in the full information condition, a trustee's reciprocating behavior is dependent not only on her received amount but also on the other trustee's received amount. The data are also consistent with our hypotheses about trustees' reaction to non-uniform investment distribution and moral obligation free-riding, although reaction to increased overall generosity may have weakened some of the predicted effects. In particular, we find evidence that a trustee's propensity to reciprocate in the full information condition can be undermined in the face of any unfair distribution of investments, including when the trustee him/herself is receiving more than the others—a significant example of scenarios in which being treated preferentially does not necessarily lead to better “performance” in return.

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