

# Asymmetric Information in Couples \*

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## Abstract

There exists ample evidence for limited risk-sharing between spouses. Previous theoretical work has mostly focused on limited commitment as the friction causing the lack of insurance. Recent evidence from field experiments with married couples in developing countries points to the importance of asymmetric information. In this paper we introduce private information in models of household decision-making and explore its implications for risk-sharing. Different from standard private information models aimed to study social insurance, our household model includes three distinct features. (i) Individual income shocks imply (household) aggregate shocks, (ii) the presence of household public goods, (iii) altruism.

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# 1 Introduction

There is ample evidence of limited risk-sharing in couples. For example, Robinson (2012) conducts a field experiment with married couples in rural Kenya and finds that the recipient of random income transfers matters for expenditures. Specifically when the transfer is received by the husband, male private consumption goes up significantly. We are interested in the nature of the friction that causes such limited risk-sharing. One possibility is limited commitment (see Ligon, Thomas, and Worrall (2000)). The importance of limited commitment for couples has been analyzed by several authors (e.g. Mazzocco (2007) and Voena (2015)).

An interesting alternative is private information. One might think that there is little room for private information in couples since typically spouses see each other every day which might make hiding income and expenditures difficult. However, a recent literature has found strong evidence for the importance of private information in laboratory and field experiments in developing countries.

Ashraf (2009) analyzes the importance of private information in a randomized field experiment with married couples in the Philippines. The main finding is that when choices are private, men are more likely to put money into their own personal savings accounts, while when choices are public information, they are more likely to commit to consumption instead.<sup>1</sup>

Hoel (2014) documents the importance of asymmetric information between spouses in a lab experiment in Kenya. She shows that 36 percent of subjects give more to their spouse in a dictator game when the giving is public information compared to a dictator game where the identity of the giver is kept anonymous. Moreover, even in the public information game, hardly anyone gives the amount that maximizes total couple income.<sup>2</sup> The study also included a survey about information-sharing in the household. Interestingly, 31% of participants reported that their

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<sup>1</sup>Subjects were given money and asked to choose one of three options: deposit in private account, deposit in joint account, or gift certificates for either apparel or food.

<sup>2</sup>Tokens that were given to the spouse were worth 50% more. Thus the strategy that maximizes joint income is to give everything to one's spouse.

spouse did not know about any income that they had received in the preceding week.

Castilla and Walker (2013) conducted a field experiment with married couples in Ghana. Cash and in kind goods were distributed according to a lottery over four rounds (four weeks). Husbands and wives had an independent and equal probability of winning a prize each week. Half of the prizes were raffled in public, the other half in private. The lottery was combined with information from a survey that collected detailed information on expenditures. The main finding is that prizes that are private information are spent differently from public prizes. Public prizes increase spending on home expenses and assets, i.e. on household public goods. Private prizes, on the other hand, do not affect home expenses at all, rather spending on transportation goes up and gifts to others. These findings show that spouses do not fully share information about prizes with each other and that this private information matters for the final allocation.

Several other studies document the importance of income concealment in experiments in developing countries.<sup>3</sup> Castilla (2014) conducts an ultimatum game with married couples in India and finds that spouses are more likely to put money in a joint account when information is public. Kebede et al. (2013) confirms the importance of information treatments in a lab experiment with Ethiopian couples. Munro et al. (2014) analyzes the importance of private information in lab experiments in India. It is found that a significant fraction of subjects choose to hide assets from their spouse. Schaner (2015) shows that hidden savings are important in a lab experiment with married couples in rural Kenya. Castilla (2015) conducted a lab experiment with married couples in India. Spouses were taken to separate rooms and play a trust game where they could in principle triple the initial amount of money given. Interestingly, less than 3% of all couples played the strategy that maximized total household income. On average, only 57% of the initial amount was transferred, a number that is only slightly higher than what is found in trust games among strangers.

Somewhat more indirect evidence is given in Chen (2013) who compares allo-

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<sup>3</sup>An exception is Mani (2011) who finds no significant effects of information treatments in a field experiment with Indian couples.

cations (consumption and time) for households where one parent is a migrant with non-migrant households, controlling for a large number of observable characteristics.<sup>4</sup> The main finding is that mothers appear to consume more leisure when fathers migrate. de Laat (2014) analyzes survey data from split-migrant couples in Kenya and finds that migrant husbands invest a significant amount of resources into monitoring their wives.

In this project, we analyze the importance of private information for couples theoretically. The goal is to understand how the presence of private information shapes decisions and outcomes within couples. To do this, we build on the standard approach in the optimal contracting literature studying information frictions (e.g. Thomas and Worrall (1990) and Atkeson and Lucas (1992)). Previous applications of private information economies typically analyze the limits of social insurance, i.e. risk-sharing in the entire economy. When studying couples, three distinct features stand out. First, when analyzing risk-sharing between two people (rather than a continuum of agents), individual income shocks always imply changes in aggregate household income. Second, some goods consumed in household are public goods. Third, spouses may feel a certain degree of altruism for each other.

We first explore how adding these three features change standard results. Second, we compare the implications of limited risk-sharing caused by private information in the model to the experimental evidence discussed above. In addition to private information about income shocks, we also explore private information about preferences. Sudden preference shifts, e.g. the urge to consume a specific good immediately, are clearly not observable by a spouse and hence might be an even more important source of asymmetric information frictions than income shocks. We also explore the implications of private information in the presence of indivisible goods. A significant fraction of family income is typically spent on consumer durables, such as a house or a new car, which are largely indivisible. Preferences for one durable good over another (e.g. whether an expensive vacation is more important than a new car or not) are private information and hence may affect decision-making in couples.

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<sup>4</sup>See also Chen (2006).

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