Health insurance: an experimental approach[*]

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Abstract

We propose an experimental approach to investigate the demand for social health insurance. We implement a competition between an individual and a mutual insurance system, which permits inequality reduction and risk pooling. We introduce three kinds of sources of inequality: income, vulnerability, and prevention. We show that subjects are willing to pay to reduce inequalities and to subsidize the least well-off, and that the sources of inequality matter in their decision. We find as well that their willingness to pay is influenced by informational framings, be it the contextualization of the experiment or information on transfers implemented. Our findings suggest that citizens' demand for equality of opportunity in health might explain the existence and scope of voluntary mutual health insurance.

1 Introduction

According to the World Health Organization, 100 million people are pushed every year below the poverty line because of lack of financial protection for health risks (WHO, 2010). For this reason, the WHO promotes Universal Coverage, which aims at ensuring that all people obtain the health services they need without suffering financial hardship due to out-of-pocket payments. According to the Director-General of the World Health Organization Dr Chan, "universal health coverage is the single most powerful concept that public health has to offer".[1]

Health insurance can be either based on individual risks (individual insurance), or on risk pooling (mutual insurance). In the first case, individuals pay a premium that depends on their expected health care costs. In such a situation, the insurance costs are often much too high for individuals facing high health risks, because they are also generally among the poorest. As a consequence, high-risk and low-income individuals do not actually

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[1]Dr Chan's Address to the Sixty-Fifth World Health Assembly, May 2012.

have access to health insurance in a purely individual insurance market. On the other hand, mutual health insurances incur a premium which is either fixed (i.e., independent of individuals risk and income profiles) or proportional to members' income. Since the least well-off are at the same time the sickest, the rich and healthy pay for the poor and sick. Mutualization thus appear to be a necessary condition for universal health coverage (Savedoff, de Ferranti, Smith, and Fan, 2012).

Another important dimension of health insurance is whether it is compulsory or voluntary. While the WHO strongly advocates for compulsory health insurance, local political institutions do not always allow it, and many countries try to promote voluntary health insurance as a step towards universal health coverage (Lagomarsino, Garabrant, Adyas, Muga, and Otoo, 2012), (Mills, 2014). This requires that individuals have some degree of preference for redistribution. Otherwise, when they have the option to do so, low-risk and high-income individuals would always choose commercial insurers, who offer them lower premiums. As a consequence, mutual insurers would gather only high-risk members, and would thus be forced to impose on them a high premium (corresponding to the average actuarial price of the members). In such a scenario, no redistribution would take place, and mutuals as redistributive devices would simply disappear, giving no chance for universal health coverage. In other words, individuals' preferences towards redistribution is a necessary condition for a voluntary mutual health insurance to contribute to universal health coverage.

We propose an experimental approach to investigate if there is a social demand for redistribution in health insurance, that could support the existence of a voluntary mutual insurance system. We do so through the setting of a small community that faces a realistic situation with wealth and health inequalities, with a possibility to buy either individual or mutualized health insurance, or to remain uninsured. We show that the market share of the mutualized health insurance is not zero, indicating a will to share risk, even at one's own expense. This is reminiscent of a recent literature on social preferences, that has emphasized the importance of altruistic motives in individual behavior, resulting from inequality aversion (Fehr and Schmidt, 1999), reciprocity (Rabin, 1993), or the *warm glow* induced by the act of giving (Andreoni, 1990).

Our goal is also to better understand individuals' motives for being part of socialized health insurance. First, we investigate if there is anything special about health-related income inequalities. Are individuals more willing to pay in order to reduce health-related inequalities than income inequalities? Second, does the source of inequalities matter? Do individuals share Dworkin (1981a,b)'s view, according to which inequalities resulting from factors beyond individuals' control (e.g. luck, talent) should be compensated, and not inequalities resulting from factors which individuals can be considered responsible for (e.g. effort)? This question is particularly relevant in the situation of health insurance, where individual health outcome depends partially from luck, and partially from individual choices (prevention effort, lifestyle...). In order to answer these questions, we introduce in the design different framings (with or without explicit reference to health outcomes) and various sources of inequalities. We provide an identification strategy to detect which inequalities, if any, individuals are willing to compensate. Finally, in order to increase the external validity of our analysis, we complement our study with a survey depicting real-life behaviors.

Our first finding is that, while most subjects behave as predicted by standard economic theory (i.e., choose private insurance when they are wealthy and face a low risk), there is enough of them who choose the mutual insurance to allow this system to exist. When these agents explicitly report their motivations, it appears that most of them are willing to implement redistribution towards the poor (75%) and the vulnerable (68%), while only a short majority (52%) are willing to compensate for a lack of prevention effort. This first pass thus supports the idea that the mutual insurance system might exist because a sufficiently high proportion of individuals care about fairness issues. Moreover, there is evidence that these individuals roughly adopt Dworkin's view that compensating inequalities related to factors beyond individual control is more relevant than compensating inequalities for which individuals could be considered as responsible.

The second main message of our experiment is that the nature of inequalities matters. Indeed, when, with respect to a neutral setting, the framing is changed in order to explicitly introduce a health context, the share of mutual insurance (as well as the willingness to pay for it) increases substantially (from 7% to 13%), while the share of private insurance remains unchanged. This implies that the demand for redistribution is higher for health than it is for income. There is therefore a specific demand for equity in health expenditures. This implies, as a side result, that one should be very cautious when bringing results obtained in experiments involving pure monetary payments without any specific contextualization to the domain of health and health care.

The third lesson that can be drawn from our experiment is that the share of mutual health insurance is very substantially increased (from 22% to 39%) when explicit information about the transfers implied by this system is provided to individuals, while both the shares of privately insured and uninsured subjects decrease (respectively from 44% to 37% and 33% to 23%). These differences support the idea that individual demand for mutual insurance is motivated by redistributive issues. The dynamics of individuals' behaviour in the experiment also support this view. Thus, on top of providing identification, the framings considered are likely to show how information policies are likely to affect insurance behaviors.

The policy relevance of our findings is supported by external validity checks. We find that both individuals' characteristics (in particular risk aversion and altruism) and their answers to an additional survey concerning their social and political opinions, health coverage, and psychological traits are consistent with their behavior in the experiment. This is an important point, as we have shown that framing could matter a lot for the issues we contemplate in this paper. We leave to the conclusion the implications of our study and the rationale for actually doing an experiment on the topic.

The paper is organized as follows. In Section 2, we present a very simple theoretical framework, that allows to precisely define the variables and concepts of the experiment. Section 3 describes the experimental design, and Section 4 contains the results.

2 Theoretical model

We consider in this section a very basic theoretical model of insurance choice. The aim of this model is mainly to introduce our notations and the design of the experiment (in particular the structure of the insurance systems we consider). Of course, since this model predicts that mutual insurance should not survive when competing with private insurance, it could not explain our findings. Rather, it can be used as a simple benchmark to describe to what extent our results differ from what the standard theory predicts. In our framework, we disregard management costs of insurers, without loss of generality.

2.1 Health insurance systems

Let N be a finite set of agents. Agent i's health $h_i \in H = \{\underline{h}, \bar{h}\}$ results from a random process, that depends on two variables. The first one is her initial vulnerability $v_i \in V = \{\underline{v}, \bar{v}\}$, which is exogenous, and is related, for instance, to age, sex, or genetic factors. The second one is the effort $e_i \in E = \{\underline{e}, \bar{e}\}$ she devotes to prevention, and results from a choice made by the agent. Formally, the probability of illness (i.e., $h_i = \underline{h}$) of an agent who is endowed with a vulnerability factor v_i and makes prevention effort e_i is given by a function $f(e_i, v_i) : E \times V \to [0, 1]$, satisfying $f(\underline{e}, v_i) > f(\bar{e}, v_i)$ and $f(e_i, \bar{v}) > f(e_i, \underline{v})$. Agents are also endowed with initial wealth $w_i \in \mathbb{R}_+$.

We consider two insurance systems: a classical private insurance system, and a mutual insurance system. In the private health insurance system, agent i contributes $t_i^p = f(e_i, v_i)c$ to the insurance, and receives c in case of illness. This corresponds to a complete coverage of monetary costs of sickness, at the actuarial fair price. Note that individuals' contributions to the private health insurance are independent of their wealth.

The mutual insurance system is based on risk pooling. Consider a group $G \subseteq N$, made of $n(e, v, w)$ agents with effort e, vulnerability v and income w. We further assume for simplicity[2] that $w_i \in \{\underline{w}, \bar{w}\}$, with $\underline{w} < \bar{w}$, and let w_G be the total wealth of group G, i.e., $w_G = \sum_{e,v,w} n(e, v, w)w$. Mutual insurance is characterized by a flat tax t_G^m on initial wealth, and full coverage:

$$t_G^m = \frac{\sum_{e,v,w} f(e, v)n(e, v, w)c}{w_G},$$

which implies that an agent with income w_i has to pay $t_G^m(w_i) = t_G^m w_i$ for the mutual insurance, whatever her vulnerability or prevention efforts are.

[2]This assumption is without loss of generality.

2.2 Behavior

Agent i's *ex post* utility $u_i : \mathbb{R}_+ \times H \times E \to \mathbb{R}$ depends positively on her wealth $w_i \in \mathbb{R}_+$ and her health status (i.e., $u_i(w_i, \bar{h}, e_i) > u_i(w_i, \underline{h}, e_i)$) and negatively on her effort e_i (i.e., $u_i(w_i, h_i, \underline{e}) > u_i(w_i, h_i, \bar{e})$). We assume that it is separable in income, that is $u_i(w_i, h_i, e_i) = \phi_i(w_i) + \psi_i(h_i, e_i)$. Furthermore, we assume that being ill entails a monetary cost c. Thus, the expected utility of agent i, who provides prevention effort e_i and is endowed with income w_i and vulnerability v_i is:

$$f(e_i, v_i)u_i(w_i - c, \underline{h}, e_i) + (1 - f(e_i, v_i))\, u_i(w_i, \bar{h}, e_i).$$

If agent i participates to the private insurance, her expected utility is:

$$\phi_i\left(w_i - f(e_i, v_i)c\right) + f(e_i, v_i)\psi_i(\underline{h}_i, e_i) + (1 - f(e_i, v_i))\psi_i(\bar{h}_i, e_i).$$

If she participates to the mutual insurance inside group G, her expected utility is:

$$\phi_i((1 - t_G^m)w_i) + f(e_i, v_i)\psi_i(\underline{h}_i, e_i) + (1 - f(e_i, v_i))\psi_i(\bar{h}_i, e_i).$$

Observe that, although the monetary costs related to sickness are totally covered by the insurance, there remains a non monetary cost that is not covered by the insurance. If that cost is high enough, it might still be optimal for insured individuals to provide a high effort of prevention.

We consider three situations. First, assume that only the private insurance system is available. Note that, whenever the agent is risk averse with respect to income (i.e., ϕ_i is concave),

$$\phi_i\left(w_i - f(e_i, v_i)c\right) \geq f(e_i, v_i)\phi_i(w_i - c) + (1 - f(e_i, v_i))\phi_i(w_i).$$

Thus, risk-averse agents will voluntary contribute to the private insurance system whenever it is available.

Next, consider the case where both the private and mutual insurance systems are available. Let Δ_i be the difference between the expected utility of agent i if she adopts the private insurance system and her expected utility if she contributes to the mutual insurance in a given group G:

$$\phi_i\left(w_i - f(e_i, v_i)c\right) - \phi_i((1 - t_G^m)w_i).$$

Thus, individual i prefers private insurance to mutual insurance whenever:

$$\tilde{\Delta}_i = \frac{c}{w_G} \sum_{e,v,w} \left(f(e, v)w_i - f(e_i, v_i)w\right) \geq 0.$$

Since $f(e, w)\bar{w} \geq f(\bar{e}, \underline{v})w$ for all e, v, w, with strict inequality for $(e, v) \neq (\bar{e}, \underline{v})$, we obtain

$\sum_{e,v,w} (f(e,v)\bar{w} - f(\bar{e},\underline{v})w) > 0$. Therefore, rich individuals with low vulnerability and high prevention effort will not participate to the mutual insurance. Next, let $(\hat{e},\hat{v},\hat{w}) \in \arg\min_{(e,v,w)\neq(\bar{e},\underline{v},\bar{w})} \frac{f(e,w)}{w}$. Then $\sum_{(e,v,w)\neq(\bar{e},\underline{v},\bar{w})} (f(e,v)\hat{w} - f(\hat{e},\hat{v})w) > 0$; thus, agents with wealth $\hat{w}$, vulnerability $\hat{v}$ and effort $\hat{e}$ will also prefer private insurance to mutual insurance. Iterating again, we see that, if the mutual insurance and the private insurance systems are in competition and agents seek to maximize their expected utility, the mutual insurance will disappear.

Finally, consider the case where only the mutual insurance is available. Agent i will contribute to the insurance if and only if $\phi_i((1-t_G^m)w_i) \geq f(e_i,v_i)\phi_i(w_i-c) + (1-f(e_i,v_i))\phi_i(w_i)$, which can be written as:

$$\phi_i\left(\frac{t_G^m w_i}{c}(w_i-c) + (1-\frac{t_G^m w_i}{c})w_i\right) \geq f(e_i,v_i)\phi_i(w_i-c) + (1-f(e_i,v_i))\phi_i(w_i). \quad (1)$$

Straightforward computations show that $\frac{t_G^m \bar{w}}{c} > f(\bar{e},\underline{v})$. Thus, whenever a rich agent with low vulnerability and high effort decides to contribute to the mutual insurance, she would also have contributed to the private insurance if it had been available. The converse is not true (for instance, whenever ϕ_i is concave, the agent voluntarily contributes to the private insurance, while it might be the case that (1) does not hold). Hence, all things equal, the proportion of rich people with low vulnerability and high effort contributing to the insurance system will be lower if only the mutual insurance system is available.

2.3 Justice and redistribution

Following Dworkin (1981a,b)'s seminal contribution, normative economists drew a separation between legitimate and illegitimate inequalities: the former are those who depend of factors for which the individuals are held responsible, while the latter are those who come from factors that are beyond their control (e.g., see Roemer (1998) for a thorough analysis, Fleurbaey and Maniquet (2011) for a survey, and Cappelen and Norheim (2005, 2006) and Fleurbaey and Schokkaert (2011) for applications to fairness in health and health care).

In our model, individuals' well being depends on four factors: initial wealth (w_i), vulnerability (v_i), prevention effort (e_i) and luck (health ex-post outcome (h_i), *given* (e_i,v_i)). This allows us to study individuals' attitude towards inequalities generated by each of these factors. Preferences for different kinds of redistribution have been experimentally investigated in the case of purely monetary outcomes (Chanel, Luchini, Teschl, and Trannoy (2013), Cappelen, Hole, Sørensen, and Tungodden (2007), Cappelen, Konow, Sørensen, and Tungodden (2013)). However, to the best of our knowledge, it has not yet been experimentally studied in the particular case of health insurance.

3 The experiment

3.1 Experimental design

The experiment consists of two incentivized parts: a first one elicits preferences over risk and social preferences with four different games, the second one consists in the core experiment on health insurance which itself comprises different parts with various settings. Before describing in details the design, it is worth emphasizing that contrary to common experiments in economics, we do not try to induce a neutral setting to gain in external validity of the results. On the contrary, we run an experiment with the more framings we can in order to put subjects in a health decision-making context. We use both a between and a within subjects design to estimate the effects of various characteristics on the health insurance decisions.

The timeline of the experiment is the following: demographic questions, four games of preferences, the health insurance experiment itself that comprises three parts and finally some questions about personality and opinions.[3] The outline of the experiment can be summarized below:

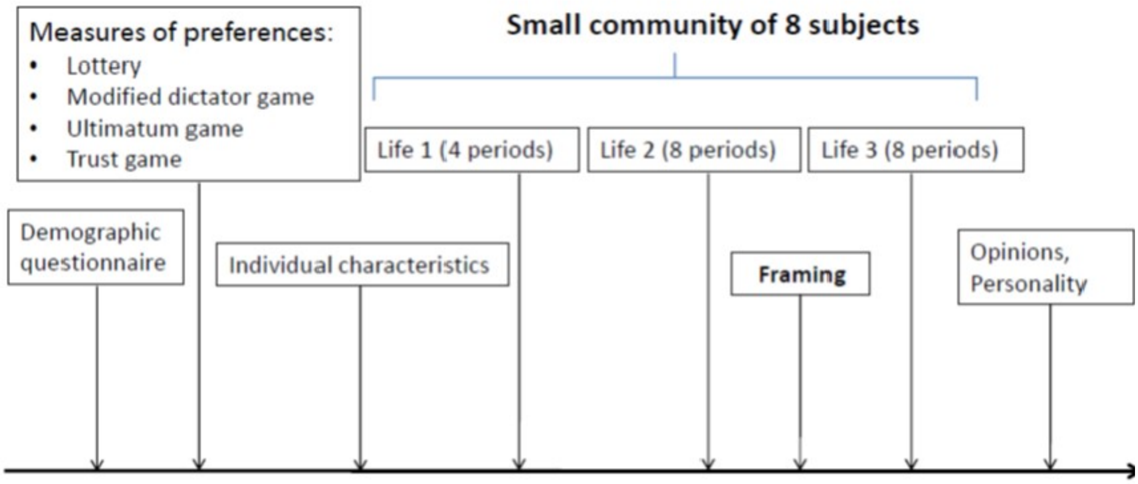

Figure 1: Experimental procedure

3.2 Health insurance

The general idea of the experiment is to induce a "society" of 8 members living a "life" comprised of a series of periods in which they can be sick or not. Each subject is defined by a level of wealth (w_i) and a degree of vulnerability (v_i). Her risk of sickness depends on her vulnerability and the effort she devotes to prevention (e_i). Individuals can take up insurance to cover the financial losses related to illness. An experimental session comprises: *(i)* the determination of subjects' characteristics, *(ii)* a first series of 4 periods whose goal

[3]Details of the design and some screenshots of the experiment are available in the Supplementary Information).

is to have subjects become familiar with the task, and *(iii)* two other series of 8 periods each. Between these two last series the mechanisms, instructions and information available may change. We will first describe the different aspects of the experiment and then we will detail all the different treatments implemented.

3.2.1 Setting

Before starting the core experiment, we determine the characteristics of the subjects, that will remain constant across all the experiment. Recall that a subject is defined by two aspects: her wealth (w_i) and her vulnerability (v_i). Vulnerability is exogenous and randomly assigned: on the 8 subjects, 4 will be randomly assigned a high vulnerability, and the 4 others a low vulnerability. The subjects' wealth is determined according to their abilities: the 4 subjects who perform best at a given task will be rich (i.e., earn €40 at each period), while the 4 others will be poor (i.e., earn €30 at each period). The task used is a memory task of visual n-back (Kirchner, 1958): the subject is presented with a sequence of stimuli, and the task consists in indicating if the current stimulus matches the one from n steps earlier in the sequence. The stimuli used are a cross appearing randomly in one cell of a four-cell table. Here we set $n = 2$ to ensure that the task is not too difficult. Thus subjects have to say if the cross appears in the same cell than two times before. After two 40-second trials we rank the subjects according to their overall performance and thus define which ones will be rich and which one will be poor for the rest of the experiment.

Knowing their characteristics, the subjects will start the three parts of the experiment. The timeline of each period is the following: first, they perform a prevention task (which corresponds to providing a prevention effort e_i in the theoretical model described above). They have to succeed to 40 seconds of the 2-back task. In order to succeed they have to obtain the same score at the beginning and at the end of the task. A success will give 1 point and a mistake -1 point. We calibrate the difficulty of the task according to the performances in order to have a constant effort. Thus the success is determined only by the fact that subjects made the effort or not. Furthermore we frame this task as a prevention task, depicting it as a real prevention effort to decrease neuro-degenerative diseases. The probability of illness $f(e_i, v_i)$ is defined as $f(e_i, v_i) = \frac{1}{6} + \mathbf{1}_{e_i=0}\frac{1}{3} + \mathbf{1}_{v_i=1}\frac{1}{3}$, where $e_i = 1$ if the subjects succeeded in the prevention task (and $e_i = 0$ otherwise), and $v_i = 1$ if the individual is assigned to a high vulnerability level (and $v_i = 0$ otherwise). The following table describe the probability of illness as a function of vulnerability and effort:

	$v_i = 0$	$v_i = 1$
$e_i = 0$	$\frac{1}{2}$	$\frac{5}{6}$
$e_i = 1$	$\frac{1}{6}$	$\frac{1}{2}$

Subjects then have the choice to take up insurance coverage against the cost of disease: if they are covered they will not suffer from any financial loss and the impact of being sick will only be to wait 15 minutes at the end of the experiment before getting their payment. But if they are sick and not covered they will lose €30 (which is deduced from their earning of the period) and have to wait 30 minutes at the end of the experiment to get their payment. Before making their insurance choice, subjects have a summary of all the relevant information about themselves and about other participants i.e. they know for each member of the group her level of wealth, state of health and success or failure to the prevention task.

As regards insurance, subjects have the choice of two types of insurance: a system labeled "A" which is in fact private insurance, and a system labeled "B" which in fact is a mutual one. Labeling is deliberately neutral. With system A they know that the insurance premium equals their individual expected loss i.e. the price of the insurance is the cost of being sick (€30) times their probability of disease (this corresponds to the private insurance in the theoretical model, with premium t^p). To elicit their willingness to get this insurance we ask the following question: the price of system A is €x for you, do you accept to pay this price? They have to answer yes or no. For the mutual insurance they are told that everyone involved in the insurance will pay a same percentage of their wealth and that the amount of payment will be equal to the expected cost of the cumulated diseases of the insured (which corresponds to t_G^m in the theoretical model, with G the set of insured subjects). We ask their willingness to pay for this system, while they know that if the price of system B exceeds this amount they will not be part of this insurance system. To determine the price and the number of subjects involved, we solve sequentially the problem in order to maximize the number of insured within the mutual system. We determine a first group with the largest number of subjects who accept to pay the most and for which we can find an equilibrium price below the willingness to pay. Then we set a second group with the members not included in the first one and we determine the maximum amount of members included in it with the same principle. We go on with this mechanism up to the point where no additional group can be created to form a mutual. Subjects are aware that if we cannot include them in the mutual system, they will join the private one if they accepted to pay for it.

At the end of the period subjects have a full feedback on what happened: they get a recap of the price of the private insurance and if they accepted it, their willingness to pay for the mutual, the equilibrium price of this system and thus if they are included in it or not. They know if they have been sick or not, and their final income. We also give information about the affiliation of other members: private, mutual or uninsured. Eventually, we ask subjects to rate their satisfaction about the results of the period on a 10-point scale.

All this sequence forms one period. Subjects will play a first part consisting of a series of 4 periods, and then two parts each consisting of a series of 8 periods. The first part is used as a training to become familiar with the mechanisms of the experiment. The other two parts allow comparing different treatment effects by varying some aspects of the design.

3.2.2 Treatments

Our design allows changing many aspects of the experiment both between and within sessions. The first component that stays constant during all the experiment but that can change between sessions is the sequence of health states. Three treatments have been implemented. In the *risky profile* the low (resp. high) risk will have low vulnerability 3/4 (1/4) of the periods and high vulnerability 1/4 (3/4) with a random order of the vulnerability states sequences. The proportion of low and high risk subjects is however held constant across periods to ensure stability of insurance schemes. In the *stable profile* the low (resp. high) risk will benefit from low (high) vulnerability during all periods. In the *overlapping profile* the number of periods with low or high vulnerability is identical to the first treatment but half of subjects always start their 8-period life in low vulnerability and end it in high vulnerability, in order to mimic the real life situation while the other half live the opposite. The second component that remains constant is linked to the implementation of a group identity in some sessions. We follow Chen and Li (2009) to create a group identity within subjects by ranking canvases from two famous painters. Before starting the experiment, the 16 subjects in the room have to give their preferences between pairs of paintings, each pair comprising one by Klee and the other by Kandinsky. Subjects are aware that they are pooled with 7 people sharing their painting taste, so that two 8-subject groups are formed on that basis.

We also vary other components within a session (between the two 8-period parts) and between sessions. These aspects are the following: *(i)* the framing of the experiment in terms of health decision as opposed to a neutral context, *(ii)* the quantity and quality of information about the mutual insurance system, and *(iii)* the availability or not of the private insurance system. In the neutral setting all references to health are removed: we do not refer to disease, low or high vulnerability, private or mutual health insurance and prevention task. Subjects play a risky game with a probability of loss that depends of endogenous and exogenous aspects with two different coverage mechanisms, labeled in a neutral way. As regards information available on the mutual system, we implement an informational setting where, given their declared willingness to pay, and assuming that all other subjects would be willing to pay that same proportion of their wealth, each subject has the opportunity to simulate what would happen in terms of number of people included in the mutual system and its final price. Thus subjects can see for all possible amounts of contribution what mutual system would emerge and how the money would be used: how much the rich eventually transfer to the poor, how the cost is shared between low and high vulnerability, between people whose succeed to the prevention or not, and how much members of the system will earn overall. Furthermore they have at the end of each period some additional information about the realization of the mutual system: they have information about the distribution of payments between members for the realized mutual system if they belong to it, and if they don't they are given the hypothetical information of what would have happened if they had chosen to give a certain amount of money defined as the minimal willingness to pay necessary to be included in the mutual system. Eventually, the last change focuses on the possibility to subscribe to the private insurance or not. If not, subjects have the choice between the mutual system and no coverage only.

Overall we implemented 7 different treatments by varying the different conditions between part 2 and part 3: *Neutral* with no reference to health in the second part and health contextualization in the third one; *NoPrivate* without the possibility to choose the private insurance in any part and with the supplementary information about the mutual system in part 3; *NoMorePrivate* with the private system disappearing in the third part while the supplementary information about the mutual system appears; *RiskProfile* with the sequences of health states following a random order; *StableProfile* with a constant state of health; *OverlapProfile* with overlapping profiles (good health followed by bad health or the opposite); and *IdentityProfile* with the implementation of a common identity in each group. Treatments are non exclusive ; headcounts for each treatment are provided in the Results section.

3.3 Estimation of preferences

Before playing the core experiment, subjects have to play four games to allow an estimation of their preferences (see Supplementary Information for details and screenshots of the games). The first game deals with risk elicitation while the others focus on the estimation of social preferences. In a first game we use a Holt-Laury mechanism (Holt and Laury, 2002) to estimate their level of risk aversion. Subjects have to choose between two risky options A and B offering different rewards with same probabilities. Option A offers rewards of €20 with a probability p and €16 with a probability $(1-p)$ while option B offers rewards of €38.5 with a probability p and €1 with a probability $(1-p)$. Nine levels of probabilities are used going from $p = 0.1$ to $p = 0.9$ with steps of 0.1.

The social preferences games are the following: a modified dictator game (Blanco, Engelmann, and Norman, 2011), an ultimatum game playing both roles (Guth, Schmittberger, and Schwarze, 1982) and a trust game (investment game) (Berg, Dickhaut, and McCabe, 1995). In the dictator game, subjects have to choose an allocation of outcomes between another subject and themselves. One option remains constant, and offers €26 for themselves and €2 for the other player. The second option proposes an identical reward for both players and we vary the level of rewards form €0 for both to €30 for both by steps of €2. Thus subjects have to choose between the two options 16 times. The ultimatum game comprises two parts. First subjects take the proposer's role and have to make one choice between a list of share rewards between themselves and another player. Then they take the receiver's role and they have to decide for different distribution schemes if they accept the offer or refuse it (and thus imply a null reward for both players). The distributional choices are the same for both roles: they choose between €30 - s for themselves and €s for the other player with s going from 0 to 30 by steps of 2. Thus in the first part they have to choose one distribution over a set of 17 and in the second one they have to tell if they accept or not the distribution for the 17 different situations. The trust game is also split in two parts: first subjects get €10 and can send an amount of this money to another player knowing that the amount will be multiplied by 3 and that the other player will send back some money. Subjects have to decide one sending between 6 options going from keeping €10 and sending nothing to keeping nothing and sending €10 with steps of €2. In the second part of the game they face the 6 potential situations and they have to decide which amount they send back to the other player with respect to the amount received. The amount sent back is going from €0 to 3 times the amount received by steps of €2.

Note that all these games are financially incentivized (see section Incentives below).

3.4 Individual characteristics

In addition to the incentivized parts of the experiments we collected numerous data on various individual characteristics. At the beginning of the experiment we asked for classical demographic data (age, sex, education, etc.) as well as two questions relative to their health: how they rate their present health with respect to other people of their ages and sex and how they estimate their future health at the age of 75 years old (both on a Likert scale from 0 to 10). At the end of the experiment we asked various questions related to their personality and their opinions. First they filled the Big Five Inventory (BFI) 44-Question Personality Test (John, Donahue, and Kentle (1991) translated in French by Plaisant, Courtois, Réveillère, Mendelsohn, and John (2010)) that allows clustering subjects according to five personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism). Then we asked questions about social opinions, health coverage and social security as well as political opinions (see Supplementary Information for the complete list of questions).

3.5 Incentives

In terms of incentives both the health insurance game and the four games of preferences are incentivized. Subjects know that one of these two parts will be randomly selected with a probability of 2/3 for the health experiment and 1/3 for the games. If the preferences games are picked, one of the four games is randomly selected and after that one of the choices of the selected game (or sub-game if there are two parts) is randomly drawn and paid for real. If the health experiment is drawn, subjects will be paid on the basis on what happened during one random period of one of the three parts, i.e. according to their decision (effort, insurance) and the occurrence of disease. In order to induce a cost of sickness, we add a non-monetary consequence of being ill: if they were sick on the period selected and not covered, they have to wait 30 minutes at the end of the experiment before getting their payment and 15 minutes if they were covered (to approximate the fact that even with coverage being sick has a non-monetary cost). In addition to this variable payment, subjects have a show-up fee of €5.

4 Results

In this section we present the results. A first paragraph presents the descriptive statistics of the sample. We then describe the average situation of our economy. Next, we focus on the impact of framings: we show that it is significant and that it reinforces the mutualization behaviors. Then, we investigate in details how sensitive subjects are to others' situations: in particular, we observe that subjects won't compensate lack of effort. Next, we investigate the dynamics of behaviors and show that subjects who in the previous period were able to mutualize (either as recipients or contributors) are eager to participate again to the mutual, same for subjects who in the previous period found that the mutual performed redistribution as they wanted. Last, we present material supporting the external validity of our experiment.

4.1 Descriptive statistics of the sample

The experiment took place between April and December 2012, at the Laboratory of Experimental Economics in Paris (LEEP). Subjects were recruited using LEEP's database. The experiments lasted for about 120 minutes plus the waiting time in case of "illness". Subjects were paid €23 on average. Overall, 256 subjects participated to the experiment with the allocation among the 7 treatments reported in the following table, which also details some framing characteristics:

	Size	Information framing	Permanent health context	Profile
Neutral	48	No	No	Risky
NoPrivate	48	Yes	Yes	Risky
NoMorePrivate	48	Yes	Yes	Risky
RiskProfile	16	Yes	Yes	Risky
StableProfile	16	Yes	Yes	Stable
OverlapProfile	32	Yes	Yes	Stable
IdentityProfile	48	Yes	Yes	Overlap

Subjects are aged 18 to 57 (85% between 18 and 25, all under 36 except 2 participants aged 55 and 57), 46% female, 84% currently students. Among these students, 43% are enrolled in a master's degree or above, 25% study economics, 15% law, 12% the social sciences. Among the non-students, 66% hold a master's degree or higher. 88% currently hold a complementary health insurance. This reflects the French health insurance market: health insurance coverage is mandatory through the mutualized *Sécurité Sociale*, that covers 70% of expenditures, and individuals can purchase complementary health coverage (often mutualized) to cover the remaining out of pocket. 10% of the sample suffer (or have suffered) from a severe health problem, and 31% have a close friend or relative who suffers from a severe health problem. 30% belong to a non-profit association. 60% of our subjects declare being left-wing (from far-left to center-left). 90% of subjects think the *Sécurité Sociale* should remain mandatory, and the same proportion think that it should be the role of the government to take care of health issues.

4.2 The average situation of our economy

Outcomes of interest Outcomes of interest are type of coverage (uninsured, mutual or private insurance), satisfaction, and net willingness to pay (WTPnet) defined as the willingness to pay for the mutual insurance minus the cost of private insurance (equal to the expected cost of the individual) for the given time period. A positive WTPnet indicates that the individual is ready to pay more for insurance in order to subsidize others in the group, so it is obviously a good indicator of the propensity to engage in mutual coverage. Subjects are characterized by three dimensions: income level (Poor/Rich), vulnerability (Low/High), and prevention (Failure/Success). Raw descriptive statistics show that on average, WTPnet is higher for the rich, less vulnerable and successful in prevention. Detailed findings can be found below, where we run regressions of the outcomes of interest on a constant and a dummy coding for the category of individuals, with inference corrected through individual clustering (4096 observations, individual clusters, significance level 10%).

Results show that with respect to the rich, the poor express significantly less WTPnet (€-1.0), are more often uninsured (+5.6%), belong less often to the private insurance system (−10.4%) and more often to the mutual system (+4.8%). The same kind of regressions show that with respect to the subjects who were successful in the prevention task, the subjects who failed express significantly less WTPnet (€-2.2), are less often uninsured (−9.5%), have the same propensity to belong to the private insurance system, and belong more often to the mutual system (+8.9%). Last and in the same fashion, we find that with respect to non-vulnerable subjects, vulnerable subjects express significantly less WTPnet (€-1.8), are more often uninsured (−14.3%), have the same propensity to belong to the private insurance system, and belong more often to the mutual system (+14.8%). Graphs below summarize these findings.

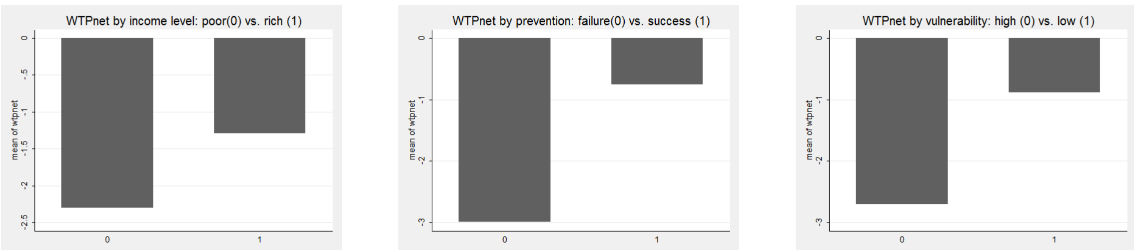

Figure 2: Average WTPnet by dimension

Our economy is similar to what we could expect from a real economy: poor and risky subjects are less insured but when they are, are more likely to be covered by the mutual system.

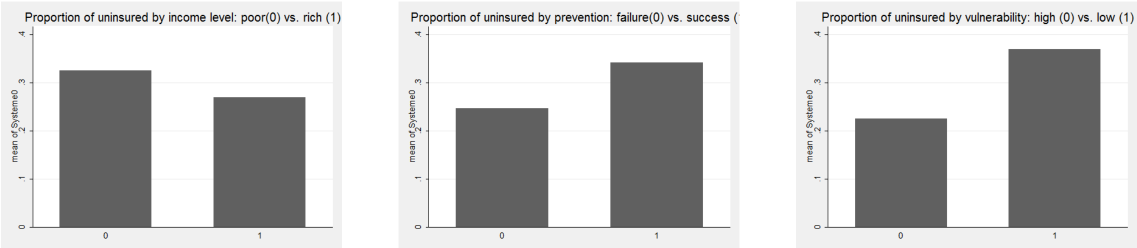

Figure 3: Proportion of uninsured by dimension

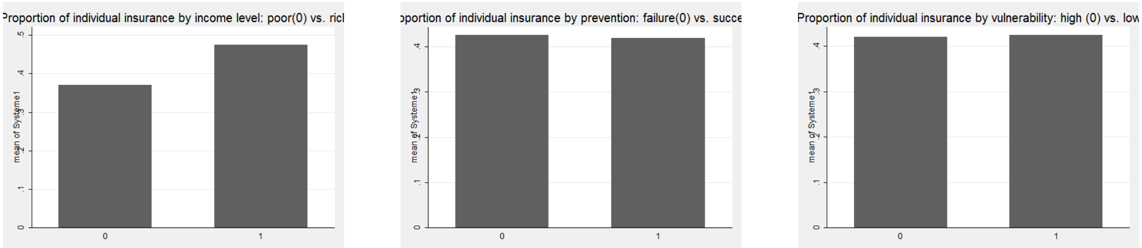

Figure 4: Proportion of private insurance by dimension

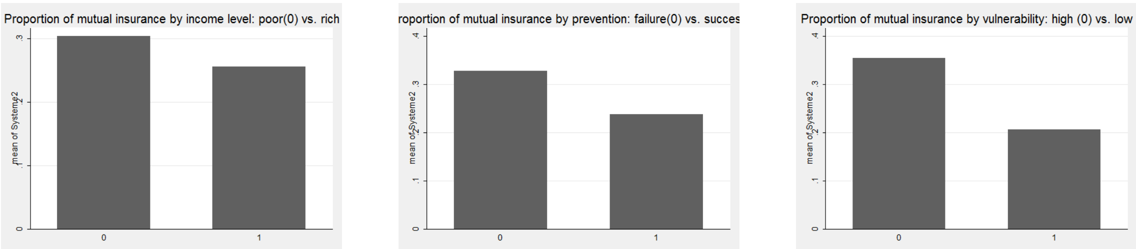

Figure 5: Proportion of mutual insurance by dimension

Vulnerability vs. No prevention Since expected illness cost is due to individual characteristics, the design of the experiment is such that subjects with an expected cost of illness equal to €15 are either vulnerable with a successful prevention task, or non-vulnerable with a failed prevention task. To gain a deeper understanding of behaviors, we select these individuals and investigate if vulnerability or success in the prevention task have a differing impact on the outcomes of interest. On the subsample of subjects whose expected cost of illness is €15, we run a regression of the outcomes of interest on a constant and a dummy coding for success in the prevention task (2035 observations, individual clusters, significance level 10%). We find that these two dimensions do not differ as regards WTPnet and the fact of belonging to the private insurance system. We find as well that subjects who failed the prevention task while being non-vulnerable are more likely to be uninsured and less likely to belong to the mutual system. However, when controlling for the framings implemented, these effects disappear and we find no significant difference between the two groups (using framing dummies and interactions between failed prevention and framings). Surprisingly, we thus find that the source of the risk has no impact on the mutualizing outcomes.

Opinions To capture how subjects reacted to the experiment, we asked subjects in the end of the experiment if they were in favor of the mutual system because the healthy would pay for the sick (dummy variable $Favor\_mut\_vulnerable$, 68% agreed), because the rich would pay for the poor (variable $Favor\_mut\_poor$, 74%), because the subjects who succeeded in the prevention task would pay for the ones who failed ($Favor\_mut\_noprev$, 52%), and because this system reduces earnings inequality ($Favor\_mut\_inequality$, 74%). In that respect, failure in the prevention task is significantly less accepted. T-tests prove that these percentages are significantly different (see A.1). We also asked subjects if they had taken interest in the mutual system in their decision process (dummy $Interest\_mut$), if they considered others' situation in their decision process ($Interest\_situation$), and if they had considered others' behavior in their decision process ($Interest\_behavior$): roughly half the subjects did agree. Complete results are available in A.1.

Opinions and outcomes of interest Last, we regressed outcomes of interest on opinions to check if the subjects' behaviors were consistent with their self-statements (a stepwise regression was used). We observe significant higher WTPnet for subjects who declare themselves in favor of the mutual system because the healthy would pay for the sick (+€ 2.4) or because this system reduces earnings inequality (+€ 1.6), as well as for subjects who had taken interest in others' situation (+€ 1.9) or in the mutual system (+€ 1.5). We also find consistent results for the participation to the mutual system: subjects in favor of the mutual system because the rich would pay for the poor or because the subjects who succeeded in the prevention task would pay for the ones who failed, as well as subjects who had taken interest in the mutual system or in others' behavior significantly participate more. Complete results are available in A.2.

4.3 The effect of framings

The two main framings we create consist in implementing health context in the experiment, and providing information about transfers performed through risk pooling.

4.3.1 Raw impact of framings

Health context Simple t-tests were performed to assess the raw impact of framings on the outcomes of interest, on an intra-subject perspective, where the framing is implemented between the two 8-period lives (parts 2 and 3) lived by the subjects. Implementation of health context with respect to neutral context (384 observations) increases significantly the WTPnet (from €-3.6 to €-2.7), does not change the propensity to buy private insurance (58%) but significantly decreases the propensity to be uninsured (market share goes from 33% to 28%), and significantly increases the propensity to belong to the mutual insurance (market share jumps from 7% to 13%).

Information We assess in the same fashion the impact of information on transfers (1280 observations), and find that this framing increases significantly WTPnet (from €-2.2 to €-1.5), significantly decreases the non insurance rate (from 33% to 23%) as well as the market share of the private insurance (from 44% to 37%), while it significantly increases the propensity to belong to the mutual insurance (market share jumps from 22% to 39%).

Information and removal of private insurance We expect the removal of private insurance coupled with information to increase the willingness to participate to the mutual insurance on the sample (384 observations). Indeed, this framing increases significantly WTPnet (from €-1.9 to €1.6), providing the only positive WTPnet among the various framings. We also find that it significantly increases the non-insurance rate (from 24% to 43%), while it significantly increases the propensity to belong to the mutual insurance, whose market share jumps from 14% to 57%.

4.3.2 Framing and subject dimensions

Framing and income Regressions of subject characteristics interacted with framing dummies on outcomes of interest (4096 observations, 256 individual clusters) show that information increases significantly the WTPnet of both rich and poor, this increase being significantly higher for the poor (+€2 vs. +€1). Health context increases equally the WTPnet of both rich and poor (+€1). As regards non-insurance, information significantly decreases it for the poor only (−7%), while health context does not have any significant impact on either rich or poor subjects. Both framings decrease the propensity to belong to the private insurance, equally for the rich and the poor (information: rich: −23.6%, poor: −18.7%, non significantly different - health context: rich: −7.2%, poor: −12.3%, non significantly different), and symmetrically, increase equally the propensity of both rich and poor to belong to the mutual sector (information: rich: +22.9%, poor: +25.8%, non significantly different - health context: rich: +12.8%, poor: +10.5%, non significantly different).

Framing and prevention Using the same kind of regressions, we find that information increases significantly the WTPnet of subjects whether they were successful or not in the prevention task (on average +€1.5, not significantly different) while health context increases WTPnet of the successful subjects only. As for non-insurance, information decreases significantly the propensity to be uninsured for the subjects who failed prevention only, while health context has no impact on either group. Both framings decreases significantly and equally the propensity to belong to the private insurance for the two groups. Symmetrically, both framings increase significantly the propensity to belong to the mutual insurance for the two groups, with a significantly higher effect for the subjects who failed the prevention task.

Framing and vulnerability Last and in the same fashion, we find that information increases significantly the WTPnet of subjects whether or not they were successful in the prevention task (on average +€ 1.5, not significantly different), similar to health context (on average +€ 1.3, not significantly different). As for non-insurance, information decreases significantly the propensity to be uninsured for the vulnerable subjects only, while health context has no impact on either group. Both framings decreases significantly the propensity to belong to the private insurance for the two groups, except health context for the non-vulnerable. Symmetrically, both framings increase significantly the propensity to belong to the mutual insurance for the two groups, with a significantly higher effect for the vulnerable subjects.

Detailed results are available in B, where outcomes of interest are regressed on subject dimensions raw and interacted with the presence of informational framing (prefix I) or presence of health context (prefix HC).

Interim conclusion The various dimensions imposed on the subjects indeed have an impact on the outcomes of interest (WTPnet and insurance choice): in particular, rich subjects demonstrate a propensity to contribute to the mutual insurance market, which is reinforced by the framings.

We find as well that the structure of the insurance market for each period is highly influenced by the framings implemented: the aforementioned results show that framings increase coverage and the market share of the mutual system.

4.4 Are subjects sensitive to others' situation ?

As mutualization decisions depend on others' situations, we expect participants to demonstrate sensitivity to others. Framings are likely to reinforce altruistic behavior of subjects who express such a sensitivity. To investigate this issue, we run regressions explaining WTPnet by the following variables:

- **Context** We control for framing types: health context, information, identity, no private insurance.
- **Own situation** Dummy variables were created representing interactions between income (rich/poor), prevention (success/failure) and vulnerability (low/high), for a total of 7 dummies coding for each individual's case.
- **Others' situation** For each period, we matched each individual with the number of subjects who were vulnerable and with a high risk profile, except herself.
- **Opinions on the experiment (health)** We asked participants how much they were interested in health and prevention issues during the sessions. As for health, in the end of the experiment, we asked subjects if they were in favor or not of the

mutual system because the healthy would pay for the sick, if they had taken interest in the mutual system in their decision process, and if they had considered others' situation in their decision process.

- **Interactions** In addition to the aforementioned variables, we interact Others' situation, Opinions on the experiment and Information (coded with I) to capture the impact of transfer information and propensity to mutualize on sensitivity to others. Variables are self-explanatory and are coded following this example: $Poor\_V\_noP$ stands for a poor, vulnerable, with no prevention, while $OVHR$ is an acronym that stands for the number of Other subjects in the room that are Vulnerable and have a High Risk profile.

Unsurprisingly, being in favor of the mutual system significantly increases WTPnet (+€3). In addition, findings show clearly that *being favorable to the mutual system* interacted with *observing others in a bad situation* (vulnerable and with a high risk profile) has a significant positive impact on WTPnet (both for *considered the mutual in their decision process* and *if they considered others' situation*: +€0.5). Presence of information doubles that impact, adding another €0.5. Detailed results are provided in C.1.

We then run the same regressions replacing opinions on the experiment as regards health with opinions as regards prevention, and modify accordingly the variables depicting others' situation:

- **Opinions on the experiment (prevention)** As for prevention, we asked subjects if they were in favor or not of the mutual system (labeled system B) because the subjects who succeeded at the prevention task would pay for the subjects who failed, if they considered system B in their decision process, and if they considered others' behavior in their decision process.

- **Others' situation** For each period, we matched each individual with the number of subjects who were rich and had failed the prevention task, and the number of subjects who were poor and had failed the prevention task, except herself. Detailed results are provided in C.2, where variable name $OPnoP$ is an acronym that stands for the number of Other subjects in the room that are Poor and have no Prevention, while $ORnoP$ is an acronym that stands for the number of Other subjects in the room that are Rich and have no Prevention.

We find that for subjects not interested in prevention and without information, the presence of other subjects who failed the prevention task decreases significantly their WTPnet (on average -€0.4). However, the presence of information on transfers and interest in prevention have a positive impact on WTPnet when the subject observes the presence of subjects who failed the prevention task. A logistic regression explaining propensity of belonging to the mutual insurance by the same variables as C.2 supports this finding (see C.3).

4.5 Are subjects sensitive to the past ?

Since the experiment is a continuum of periods lived by the same individuals, it is natural to think that past events might influence present behavior. Our experiment is specifically designed to decompose each individual's transfer be it positive (benefit) or negative (contribution) in three additive dimensions, one due to income, the second to prevention and the last to vulnerability. Recall that transfers could be either real (indeed transferred) or simulated (information provided when the individual eventually did not enter the mutual insurance). We regressed WTPnet on lags of the following variables, where positive transfers are received by the subject and negative ones are given by the subject:

- Real (resp. simulated) positive transfers due to prevention: lag_tpPos_real (resp. lag_tpPos_simu)
- Real (resp. simulated) positive transfers due to income: lag_trPos_real (resp. lag_trPos_simu)
- Real (resp. simulated) negative transfers due to prevention: lag_tpNeg_real (resp. lag_tpNeg_simu)
- Real (resp. simulated) negative transfers due to income: lag_trNeg_real (resp. lag_trNeg_simu)
- Dummy indicating whether the subject had a positive WTPnet and was successful (resp. not successful) in entering the mutual insurance: $lag\_Mut\_success$ (resp. $lag\_Mut\_unsuccessful$)
- Number of other subjects who are vulnerable and belong to the mutual insurance: $lagOther\_Mut\_V$

Where lag_tpPos_real has value 0 when $lag\_tpNeg\_real < 0$ and conversely, $lag\_tpNeg\_real = 0$ when $lag\_tpPos\_real > 0$ with all the other variables following that same rule.

Detailed results are provided in D, and show significant negative coefficients on lag_tpNeg_real and lag_trNeg_real : the more subjects were able to give during the previous period, the greater their WTPn in the current period. Coefficients for lag_tpPos_real and lag_trPos_real are significantly positive, indicating that the more a subject received in the previous period, the greater her WTPn in the current period. This demonstrates a real sense of reciprocity and altruism among the subjects. $lag\_Mut\_success$ and $lag\_Mut\_unsuccessful$ have significantly positive coefficients, indicating that subjects willing to participate to the mutual insurance are encouraged by their success and not discouraged by their failure to join. $lagOther\_Mut\_V$ has a negative sign, indicating that the presence of vulnerable individuals in the mutual insurance discourages subjects from joining. However, this variable interacted with the dummy coding for taking interest in the mutual system (variable $lagOMV\_Interest\_mut$) and the same interacted with the dummy coding for being in favor of the mutual system because it transfers money from the non-vulnerable to the vulnerable (variable *lagOMV_Favor_mut_vulnerable*) provides significantly positive coefficients that totally compensate the negative one from *lagOther_Mut_V*. In other words, people in favor of the mutual system will increase their WTPnet if they see that deprived subjects were part of the mutual system in the past, while people not in favor of the mutual system will do the opposite. As for transfers, we see a negative coefficient on variable *I_lagOTrnoP_Interest_mut* which is the interaction between variables Information, Interest in the mutual system, and Lagged transfers to the subjects who failed in the prevention task: we see that informed subjects tend to refrain from joining a mutual that comprises subjects who failed in the prevention task, possibly because it involves a voluntary effort. On the contrary, variable *I_lagOMPoor_Interest_situation*, which is the interaction between Information, Interest in others' situation and Lagged transfers to the poor subjects, has a positive coefficient: we see that informed subjects are attracted to a mutual that comprises poor subjects. It is likely that subjects won't help others who do not make any effort while are willing to subsidize those whose risk depends on fate.

4.6 External validity

We chose to add a survey focused on opinions and demographics to check the external validity of our experiment. We describe here how the sample characteristics relate to experiment outcomes, namely WTPnet, satisfaction at the end of each period, and probabilities for the period either to be uninsured, to buy individual insurance, or to belong to the mutual system. Corresponding regressions are available in E, where outcomes of interest are regressed on personal characteristics (demographics, health features, psychological features, risk aversion and altruism, opinions on politics), while a summary is provided below.

Age has a negative impact on WTPnet and satisfaction, while holding a master's degree has the opposite effect. Health features have almost no impact. This is a satisfactory result since it shows that we can be confident that the circumstances and framings imposed on the subjects are the main source of variability in behaviors and that their real health characteristics did not interfere.

We chose to use the Big Five Index (BFI) inventory to capture the various dimensions of individual psychological features. Agreeableness (i.e. friendly/compassionate vs. analytical/detached) and Extraversion (i.e. outgoing/energetic vs. solitary/reserved) are positively related to WTPnet, while Agreeableness is positively correlated to being part of the mutual insurance.

At the beginning of each session, each subject is proposed a series of games designed to assess her risk aversion and altruism, namely: Holt & Laury lottery choices (Holt and Laury, 2002), modified dictator game, ultimatum game, and trust game. When significant, signs of parameters are as expected.

Preferences towards a type of health care insurance scheme are highly correlated to the political party individuals feel closest to: being left-wing increases participation to the mutual system. On the contrary, those who declare that it is the role of the government to take care of inequality are less willing to mutualize. They probably consider it is not their individual role to subsidize the least well off.

Last, we examine the link between opinions on the experiment and personal characteristics. We use stepwise regressions to make the output more concise (results are available in E.1. Significant variables include belief that the Government should take care of inequalities, participation to the trust game, Agreeableness, belonging to a non-profit association.

Political opinions, attitude toward risk and altruism, agreeableness and extraversion translate into observed behavior in the experiment. Again, this supports the external validity of the experiment.

5 Conclusion

Basic economic theory predicts that mutual insurance systems should not exist when private insurances are available, as long as individuals seek to maximize their expected utilities. In that respect, the existence and scope of mutual insurances, particularly in Europe, might seem puzzling. We tried to understand how mutual insurance could survive when competing with private insurances by explicitly letting individuals choose between the two systems in an experimental setting. This method allowed us to accurately control the framing of choices as well as individuals' characteristics and behaviors, and to better understand what motives could explain that wealthy individuals facing low risk nevertheless subscribe to mutual insurances, thereby allowing their existence. The need for an experimental setting was three-fold: *(i)* wealth and health inequalities were controlled by the experimenter, thus breaking the usual correlation between wealth and good health, *(ii)* our identification strategy involved the use of various informational *framings* that were likely to affect behaviors and to allow intra-subject analysis, and *(iii)* actual risk sharing behaviors were observed and matched to a survey depicting real-life behaviors, guaranteeing the external validity of our results.

In terms of methodology, this experiment shows that we can implement a strong context in the lab. Indeed the effects of the health framings are in favor of a success of our contextualization: subjects were more willing to help others when the session dealt with health. Thus, even a context as complex as the health care one can be almost reached during an experiment, with the help of convenient framings. While the standards of experimental economics focus on context neutrality, this paper shows that lab experiments can be used to study decisions with strong context dependencies and thus infer some public policies tools. The contextualization of this experiment was necessary to consider any external validity of our results. The fact that our framings provided identification supports the hypothesis that social preferences might be context-dependent. Information policies are likely to affect insurance behaviors. Our results suggest the existence of a demand for socialized health insurance, that could possibly be used to motivate universal health coverage. To take the example of France, since increasing risk segmentation on the market of complementary health insurance has been documented, coverage failure could be avoided by implementing convenient information policies on the operation of health mutuals.

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A Opinions on the experiment

A.1 Opinions on the experiment (raw)

Table 1: Summary statistics

Variable	Mean	Std. Dev.
Favor_mut_poor	0.746	0.435
Favor_mut_vulnerable	0.684	0.465
Favor_mut_noprev	0.523	0.5
Favor_mut_inequality	0.746	0.435
Interest_mut	0.516	0.5
Interest_situation	0.516	0.5
Interest_behavior	0.434	0.496
N	4096	

```
. ttest Favor_mut_poor  = Favor_mut_noprev  if periode == 1 & vie ==2

Paired t test
------------------------------------------------------------------------------
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interva
---------+--------------------------------------------------------------------
Favor_~r |     256    .7460938    .0272561    .4360972    .6924181    .7997
Favor_~v |     256    .5234375    .0312768    .5004287    .4618438    .5850
---------+--------------------------------------------------------------------
    diff |     256    .2226563    .0359373    .5749973    .1518845     .2934
------------------------------------------------------------------------------
     mean(diff) = mean(Favor_mut_poor - Favor_mut_noprev)         t =    6.1
 Ho: mean(diff) = 0                              degrees of freedom =      

 Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) 
 Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0

. ttest Favor_mut_vulnerable  = Favor_mut_noprev  if periode == 1 & vie ==2,

Paired t test
------------------------------------------------------------------------------
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interva
---------+--------------------------------------------------------------------
Favor_~e |     256    .6835938     .029124    .4659845    .6262355     .740
Favor_~v |     256    .5234375    .0312768    .5004287    .4618438    .5850
---------+--------------------------------------------------------------------
    diff |     256    .1601563    .0333104    .5329665    .0945577    .2257
------------------------------------------------------------------------------
     mean(diff) = mean(Favor_mut_vuln~e - Favor_mut_noprev)       t =    4.8
 Ho: mean(diff) = 0                              degrees of freedom =      

 Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) 
 Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0

. ttest Favor_mut_vulnerable  = Favor_mut_poor  if periode == 1 & vie ==2

Paired t test
------------------------------------------------------------------------------
```

A.2 Opinions on the experiment and outcomes of interest

A.2.1 WTPnet

Table 2: Estimation results : regress

Variable	Coefficient	(Std. Err.)
Favor_mut_vulnerable	2.397**	(0.618)
Interest_behavior	1.922**	(0.528)
Interest_mut	1.479*	(0.575)
Favor_mut_inequality	1.574*	(0.750)
Intercept	-6.204**	(0.815)
N	4096	
R^2	0.087	
$F_{(4,255)}$	13.275	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

A.2.2 Satisfaction

Table 3: Estimation results : regress

Variable	Coefficient	(Std. Err.)
Interest_behavior	0.544**	(0.185)
Intercept	5.574**	(0.133)
N	4096	
R^2	0.006	
$F_{(1,255)}$	8.656	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

A.2.3 Uninsured

Table 4: Estimation results : logistic

Variable	Coefficient	(Std. Err.)
Favor_mut_poor	-0.417**	(0.157)
Interest_situation	0.377**	(0.145)
Interest_mut	-0.352*	(0.142)
Intercept	-0.575**	(0.162)
N	4096	
Log-likelihood	-2460.905	
$\chi^2_{(3)}$	15.473	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

A.2.4 Private insurance

Table 5: Estimation results : logistic

Variable	Coefficient	(Std. Err.)
Interest_situation	-0.458**	(0.164)
Interest_behavior	-0.342*	(0.168)
Intercept	0.061	(0.113)
N	4096	
Log-likelihood	-2734.849	
$\chi^2_{(2)}$	19.052	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

A.2.5 Mutual insurance

Table 6: Estimation results : logistic

Variable	Coefficient	(Std. Err.)
Interest_behavior	0.526**	(0.131)
Favor_mut_vulnerable	0.401**	(0.155)
Interest_mut	0.442**	(0.136)
Favor_mut_noprev	0.301*	(0.138)
Intercept	-1.882**	(0.153)
N	4096	
Log-likelihood	-2339.412	
$\chi^2_{(4)}$	61.008	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

B Framing effects by dimension

B.1 Framing and income

B.1.1 WTPnet

Table 7: Estimation results : regress

Variable	Coefficient	(Std. Err.)
poor	-2.059*	(0.986)
I_rich	0.971**	(0.372)
I_poor	2.032**	(0.425)
HC_rich	1.016	(0.688)
HC_poor	1.698*	(0.808)
Intercept	-2.605**	(0.668)
N	4096	
R^2	0.025	
$F_{(5,255)}$	7.956	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_rich = I\_poor$
F(1, 255) = 3.53
Prob > F = 0.0612

$H_0 : HC\_rich = HC\_poor$
F(1, 255) = 0.41
Prob > F = 0.5214

B.1.2 Non-insurance

Table 8: Estimation results : regress

Variable	Coefficient	(Std. Err.)
poor	0.021	(0.075)
I_rich	0.008	(0.023)
I_poor	-0.072**	(0.024)
HC_rich	-0.056	(0.051)
HC_poor	0.018	(0.055)
Intercept	0.318**	(0.052)
N	4096	
R^2	0.007	
$F_{(5,255)}$	2.441	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_rich = I\_poor$
F(1, 255) = 5.56
Prob > F = 0.0191

$H_0 : HC\_rich = HC\_poor$

F(1, 255) = 0.96
Prob > F = 0.3287

B.1.3 Private insurance

Table 9: Estimation results : regress

Variable	Coefficient	(Std. Err.)
poor	-0.078	(0.080)
I_rich	-0.237**	(0.032)
I_poor	-0.187**	(0.033)
HC_rich	-0.072	(0.053)
HC_poor	-0.123†	(0.064)
Intercept	0.635**	(0.048)
N	4096	
R^2	0.066	
$F_{(5,255)}$	22.183	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_rich = I\_poor$

F(1, 255) = 1.16
Prob > F = 0.2831

$H_0 : HC\_rich = HC\_poor$

F(1, 255) = 0.37
Prob > F = 0.5409

B.1.4 Mutual insurance

Table 10: Estimation results : regress

Variable	**Coefficient**	**(Std. Err.)**
poor	$0.057^{\dagger}$	(0.033)
I_rich	0.229^{**}	(0.023)
I_poor	0.259^{**}	(0.025)
HC_rich	0.128^{**}	(0.023)
HC_poor	0.105^{**}	(0.033)
Intercept	0.047^{**}	(0.018)
N	4096	
R^2	0.091	
$F_{(5,255)}$	55.816	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_rich = I\_poor$
F(1, 255) = 0.74
Prob > F = 0.3912

$H_0 : HC\_rich = HC\_poor$
F(1, 255) = 0.32
Prob > F = 0.5710

B.2 Framing and prevention

B.2.1 WTPnet

Table 11: Estimation results : regress

Variable	Coefficient	(Std. Err.)
noprev	-1.676*	(0.831)
I_prev	1.246**	(0.311)
I_noprev	1.985**	(0.431)
HC_prev	1.860**	(0.546)
HC_noprev	0.819	(0.886)
Intercept	-2.915**	(0.527)
N	4096	
R^2	0.047	
$F_{(5,255)}$	18.241	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_prev = I\_noprev$
F(1, 255) = 2.22
Prob > F = 0.1371

$H_0 : HC\_prev = HC\_noprev$

F(1, 255) = 1.23
Prob > F = 0.2691

B.2.2 Non insurance

Table 12: Estimation results : regress

Variable	Coefficient	(Std. Err.)
noprev	-0.118†	(0.062)
I_prev	0.001	(0.022)
I_noprev	-0.062**	(0.024)
HC_prev	-0.042	(0.051)
HC_noprev	0.014	(0.047)
Intercept	0.379**	(0.051)
N	4096	
R^2	0.013	
$F_{(5,255)}$	7.5	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_prev = I\_noprev$
F(1, 255) = 4.29
Prob > F = 0.0393

$H_0 : HC\_prev = HC\_noprev$

F(1, 255) = 0.77
Prob > F = 0.3812

B.2.3 Private insurance

Table 13: Estimation results : regress

Variable	Coefficient	(Std. Err.)
noprev	0.060	(0.062)
I_prev	-0.200**	(0.027)
I_noprev	-0.226**	(0.031)
HC_prev	-0.082	(0.053)
HC_noprev	-0.118*	(0.052)
Intercept	0.571**	(0.052)
N	4096	
R^2	0.055	
$F_{(5,255)}$	18.817	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_O : I\_prev = I\_noprev$

F(1, 255) = 0.52
Prob > F = 0.4695

$H_O : HC\_prev = HC\_noprev$
F(1, 255) = 0.33
Prob > F = 0.5656

B.2.4 Mutual insurance

Table 14: Estimation results : regress

Variable	**Coefficient**	**(Std. Err.)**
noprev	0.059*	(0.030)
I_prev	0.199**	(0.022)
I_noprev	0.288**	(0.026)
HC_prev	0.124**	(0.021)
HC_noprev	0.105**	(0.034)
Intercept	0.050**	(0.016)
N	4096	
R^2	0.097	
$F_{(5,255)}$	57.824	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_prev = I\_noprev$

F(1, 255) = 7.22
Prob > F = 0.0077

$H_0 : HC\_prev = HC\_noprev$
F(1, 255) = 0.29
Prob > F = 0.5934

B.3 Framing and prevention

B.3.1 WTPnet

Table 15: Estimation results : regress

Variable	Coefficient	(Std. Err.)
nonvulner	2.197**	(0.645)
I_vulner	1.803**	(0.405)
I_nonvulner	1.200**	(0.300)
HC_vulner	1.431†	(0.741)
HC_nonvulner	1.283*	(0.540)
Intercept	-4.733**	(0.708)
N	4096	
R^2	0.036	
$F_{(5,255)}$	11.288	

Significance levels : † : 10% $*$: 5% $**$: 1%

$H_0 : I\_vulner = I\_nonvulner$
F(1, 255) = 2.00
Prob > F = 0.1582

$H_0 : HC\_vulner = HC\_nonvulner$

F(1, 255) = 0.04
Prob > F = 0.8375

B.3.2 Non insurance

Table 16: Estimation results : regress

Variable	Coefficient	(Std. Err.)
nonvulner	0.125*	(0.052)
I_vulner	-0.036†	(0.020)
I_nonvulner	-0.028	(0.025)
HC_vulner	-0.027	(0.046)
HC_nonvulner	-0.011	(0.048)
Intercept	0.266**	(0.045)
N	4096	
R^2	0.026	
$F_{(5,255)}$	9.508	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_vulner = I\_nonvulner$

F(1, 255) = 0.09
Prob > F = 0.7649

$H_0 : HC\_vulner = HC\_nonvulner$

F(1, 255) = 0.09
Prob > F = 0.7614

B.3.3 Private insurance

Table 17: Estimation results : regress

Variable	Coefficient	(Std. Err.)
nonvulner	-0.089	(0.055)
I_vulner	-0.254**	(0.026)
I_nonvulner	-0.170**	(0.030)
HC_vulner	-0.130**	(0.050)
HC_nonvulner	-0.065	(0.052)
Intercept	0.641**	(0.046)
N	4096	
R^2	0.057	
$F_{(5,255)}$	23.792	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_vulner = I\_nonvulner$

F(1, 255) = 6.97
Prob > F = 0.0088

$H_0 : HC\_vulner = HC\_nonvulner$

F(1, 255) = 1.31
Prob > F = 0.2536

B.3.4 Mutual insurance

Table 18: Estimation results : regress

Variable	Coefficient	(Std. Err.)
nonvulner	-0.036	(0.033)
I_vulner	0.290**	(0.024)
I_nonvulner	0.198**	(0.019)
HC_vulner	0.157**	(0.030)
HC_nonvulner	0.076**	(0.025)
Intercept	0.094**	(0.027)
N	4096	
R^2	0.119	
$F_{(5,255)}$	67.476	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

$H_0 : I\_vulner = I\_nonvulner$

F(1, 255) = 11.09
Prob > F = 0.0010

$H_0 : HC\_vulner = HC\_nonvulner$

F(1, 255) = 5.08
Prob > F = 0.0250

C Sensitivity to others' situation

C.1 WTPnet and others' health

Table 19: Estimation results : regress

Variable	Coefficient	(Std. Err.)
NoPrivateInsurance	3.422**	(0.543)
Favor_mut_vulnerable	2.965**	(0.629)
Poor_V_noP	-3.859**	(0.746)
I_OVHR_Interest_mut	0.507**	(0.179)
Rich_V_noP	-2.030**	(0.693)
Poor_notV_noP	-1.506**	(0.524)
OVHR_Interest_mut	0.472*	(0.207)
OVHR_Interest_situation	0.438*	(0.200)
Intercept	-5.483**	(0.668)

N	3328
R^2	0.199
$F_{(8,207)}$	20.462

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

C.2 WTPnet and others' prevention

Table 20: Estimation results : logistic

Variable	Coefficient	(Std. Err.)
NoPrivateInsurance	1.739**	(0.125)
Information	0.820**	(0.125)
Other_Poor_noP	-0.524**	(0.056)
Rich_notV_noP	1.224**	(0.187)
Interest_mut	0.704**	(0.152)
Rich_V_noP	1.925**	(0.189)
Poor_V_P	1.963**	(0.182)
Favor_mut_noprev	0.337**	(0.113)
OPnoP_Interest_behavior	0.160**	(0.060)
Rich_V_P	1.510**	(0.185)
Poor_notV_noP	1.604**	(0.199)
Poor_V_noP	1.482**	(0.189)
Overlapping	0.528**	(0.178)
HealthContext	0.734**	(0.259)
ORnoP_Interest_mut	-0.267**	(0.076)
L_ORnoP_Interest_mut	0.249**	(0.086)
Intercept	-3.731**	(0.328)

N	4096
Log-likelihood	-1809.049
$\chi^2_{(16)}$	755.417

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

C.3 Mutual insurance and others' prevention

Table 21: Estimation results : logistic

Variable	Coefficient	(Std. Err.)
NoPrivateInsurance	1.739**	(0.125)
Information	0.820**	(0.125)
Other_Poor_noP	-0.524**	(0.056)
Rich_notV_noP	1.224**	(0.187)
Interest_mut	0.704**	(0.152)
Rich_V_noP	1.925**	(0.189)
Poor_V_P	1.963**	(0.182)
Favor_mut_noprev	0.337**	(0.113)
OPnoP_Interest_behavior	0.160**	(0.060)
Rich_V_P	1.510**	(0.185)
Poor_notV_noP	1.604**	(0.199)
Poor_V_noP	1.482**	(0.189)
Overlapping	0.528**	(0.178)
HealthContext	0.734**	(0.259)
ORnoP_Interest_mut	-0.267**	(0.076)
I_ORnoP_Interest_mut	0.249**	(0.086)
Intercept	-3.731**	(0.328)
N	4096	
Log-likelihood	-1809.049	
$\chi^2_{(16)}$	755.417	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

D WTPnet and past

Table 22: Estimation results : regress

Variable	Coefficient	(Std. Err.)
lag_tpNeg_real	-0.412**	(0.058)
lag_tpPos_real	0.362**	(0.089)
lag_Mut_unsuccessfull	3.716**	(0.325)
lag_Mut_success	3.320**	(0.397)
lag_trNeg_real	-0.968**	(0.197)
lag_trPos_real	1.151**	(0.188)
Poor_V_P	-2.313**	(0.432)
Poor_V_noP	-6.135**	(0.761)
lagOMV_Interest_mut	0.649**	(0.152)
Rich_V_noP	-3.807**	(0.742)
lag_trPos_simu	-0.412**	(0.154)
lag_tpPos_simu	-0.212*	(0.086)
NoPrivateInsurance	1.347**	(0.391)
lagOther_Mut_V	-0.859**	(0.167)
lagOMV_Favor_mut_vulnerable	0.587**	(0.168)
Poor_notV_noP	-2.910**	(0.478)
Rich_V_P	-2.119**	(0.471)
Rich_notV_noP	-1.749**	(0.489)
lag_trNeg_simu	0.401**	(0.137)
I_lagOTrnoP_Interest_mut	-0.297*	(0.141)
lag_satisf	0.092*	(0.043)
lag_tpNeg_simu	0.096†	(0.050)
I_lagOMPoor_Interest_situation	0.227†	(0.137)
Intercept	-1.601**	(0.405)
N	3840	
R^2	0.299	
$F_{(23,255)}$	20.909	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

E External validity

E.1 Opinions on the experiment and personal characteristics

Logistic regression — Number of obs = 4; Wald chi2(3) = 32.; Prob > chi2 = 0.0; Pseudo R2 = 0.1

Log pseudolikelihood = -2056.2441

(Std. Err. adjusted for 256 clust

Favor_mut_poor	Odds Ratio	Robust Std. Err.	z	P>|z|	[95% Con
Government_inequality	1.715008	.2752026	3.31	0.001	1.246456
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Logistic regression — Number of obs = 4; Wald chi2(3) = 25.; Prob > chi2 = 0.0; Pseudo R2 = 0.1

Log pseudolikelihood = -2295.7987

(Std. Err. adjusted for 256 cluste

Favor_mut_vulnerable	Odds Ratio	Robust Std. Err.	z	P>|z|	[95% Conf.
Trust_game	1.196343	.0565158	3.79	0.000	1.090547
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Logistic regression — Number of obs = 4; Wald chi2(5) = 29.; Prob > chi2 = 0.0; Pseudo R2 = 0.1

Log pseudolikelihood = -2536.7476

(Std. Err. adjusted for 256 clusters i

Favor_mut_noprev	Odds Ratio	Robust Std. Err.	z	P>|z|	[95% Conf. Int
Trust_game	1.184311	.0499378	4.01	0.000	1.09037 1.
BFI_A	2.354819	.6053065	3.33	0.001	1.42284 3.
Severe_health_pb	3.30159	1.767146	2.23	0.026	1.156446 9.

Logistic regression — Number of obs = 4; Wald chi2(8) = 38.; Prob > chi2 = 0.0; Pseudo R2 = 0.2

Log pseudolikelihood = -1811.3895

(Std. Err. adjusted for 256 clust

Favor_mut_inequality	Odds Ratio	Robust Std. Err.	z	P>|z|	[95% Con
BFI_A	3.395947	1.058801	3.92	0.000	1.84319
Government_inequality	1.987213	.4075054	3.35	0.001	1.329517
Trust_game	1.172979	.0616354	3.04	0.002	1.058188
Lotery	1.398218	.1606194	2.92	0.004	1.116333
Height	.9629388	.0169521	-2.15	0.032	.9302799

Logistic regression — Number of obs = 4; Wald chi2(2) = 10.; Prob > chi2 = 0.0; Pseudo R2 = 0.0

Log pseudolikelihood = -2759.407

(Std. Err. adjusted for 256 clusters in ni

Interest_mut	Odds Ratio	Robust Std. Err.	z	P>|z|	[95% Conf. Interv
Trust_game	1.111284	.0429574	2.73	0.006	1.030199 1.19

```
Logistic regression                               Number of obs    =        4
                                                  Wald chi2(3)     =       20.
                                                  Prob > chi2      =      0.0
Log pseudolikelihood =  -2628.485                 Pseudo R2        =      0.0

                                   (Std. Err. adjusted for 256 clusters
```

Interest_situation	Odds Ratio	Robust Std. Err.	z	P>|z|	[95% Conf.
BFI_A	2.208877	.5475386	3.20	0.001	1.35886
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

```
Logistic regression                               Number of obs    =        4
                                                  Wald chi2(7)     =       33.
                                                  Prob > chi2      =      0.0
Log pseudolikelihood = -2478.6069                 Pseudo R2        =      0.1

                                       (Std. Err. adjusted for 256 clus
```

Interest_behavior	Odds Ratio	Robust Std. Err.	z	P>|z|	[95% Co
BFI_A	2.637685	.7899832	3.24	0.001	1.46652
Compl_health_insurance	6.59708	3.546877	3.51	0.000	2.29989
Female	.62968	.1836218	-1.59	0.113	.355549
Dictator_mod	1.081001	.0427043	1.97	0.049	1.0004
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

E.2 WTPnet

Table 23: Estimation results : regress

Variable	Coefficient	(Std. Err.)
Age	-0.266**	(0.051)
Female	-0.089	(0.670)
Student	-0.566	(0.842)
Master_degree	1.756**	(0.618)
Weight	0.038*	(0.017)
Height	-0.020	(0.027)
Self_rated_health	-0.107	(0.163)
Compl_health_insurance	0.920	(0.959)
Severe_health_pb	-0.728	(0.944)
Close_relative_health_pb	0.341	(0.593)
Non_profit_asso	-0.198	(0.545)
BFI_E	0.564†	(0.318)
BFI_A	2.450**	(0.528)
BFI_C	-0.665	(0.487)
BFI_N	-0.330	(0.383)
BFI_O	-0.266	(0.502)
Lotery	0.456**	(0.154)
Dictator_mod	0.307**	(0.079)
Ultimatum_game	0.060	(0.066)
Trust_game	0.292**	(0.078)
Pol_opi	-0.472**	(0.174)
Government_health	-0.376	(0.368)
Government_inequality	-0.734*	(0.315)
Intercept	-4.482	(6.624)

N	4096
R^2	0.144
$F_{(23,255)}$	7.258

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

E.3 Probability of being uninsured

Table 24: Estimation results : logistic

Variable	Coefficient	(Std. Err.)
Age	-0.035	(0.025)
Female	0.085	(0.193)
Student	-0.101	(0.197)
Master_degree	0.174	(0.172)
Weight	-0.004	(0.006)
Height	0.003	(0.007)
Self_rated_health	0.057	(0.043)
Compl_health_insurance	0.147	(0.204)
Severe_health_pb	-0.304	(0.237)
Close_relative_health_pb	0.237	(0.146)
Non_profit_asso	0.216	(0.156)
BFI_E	-0.128	(0.080)
BFI_A	-0.206	(0.139)
BFI_C	0.063	(0.126)
BFI_N	-0.083	(0.102)
BFI_O	0.008	(0.132)
Lotery	-0.199**	(0.038)
Dictator_mod	-0.057**	(0.020)
Ultimatum_game	-0.031†	(0.018)
Trust_game	-0.018	(0.022)
Pol_opi	0.067	(0.048)
Government_health	0.150	(0.119)
Government_inequality	-0.008	(0.088)
Intercept	1.646	(1.779)
N	4096	
Log-likelihood	-2384.155	
$\chi^2_{(23)}$	82.263	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

E.4 Probability of buying individual insurance

Table 25: Estimation results : logistic

Variable	Coefficient	(Std. Err.)
Age	0.036	(0.022)
Female	-0.126	(0.194)
Student	-0.064	(0.205)
Master_degree	-0.133	(0.177)
Weight	-0.002	(0.005)
Height	-0.003	(0.007)
Self_rated_health	-0.070	(0.048)
Compl_health_insurance	-0.188	(0.222)
Severe_health_pb	0.544*	(0.252)
Close_relative_health_pb	-0.235	(0.176)
Non_profit_asso	-0.142	(0.171)
BFI_E	0.066	(0.095)
BFI_A	-0.169	(0.164)
BFI_C	0.058	(0.143)
BFI_N	0.126	(0.112)
BFI_O	-0.016	(0.162)
Lotery	0.150**	(0.047)
Dictator_mod	-0.018	(0.024)
Ultimatum_game	0.002	(0.019)
Trust_game	-0.006	(0.025)
Pol_opi	0.031	(0.054)
Government_health	-0.105	(0.127)
Government_inequality	0.148	(0.104)
Intercept	-0.600	(1.884)

N	4096
Log-likelihood	-2698.119
$\chi^2_{(23)}$	36.166

Significance levels : $\dagger$: 10% $*$: 5% $**$: 1%

E.5 Probability of being part of the mutual insurance

Table 26: Estimation results : logistic

Variable	Coefficient	(Std. Err.)
Age	-0.011	(0.021)
Female	0.067	(0.161)
Student	0.176	(0.197)
Master_degree	0.001	(0.151)
Weight	$0.008^{\dagger}$	(0.004)
Height	0.000	(0.006)
Self_rated_health	0.026	(0.039)
Compl_health_insurance	0.077	(0.202)
Severe_health_pb	$-0.400^{\dagger}$	(0.242)
Close_relative_health_pb	0.035	(0.153)
Non_profit_asso	-0.053	(0.149)
BFI_E	0.050	(0.079)
BFI_A	0.414^{**}	(0.145)
BFI_C	-0.155	(0.118)
BFI_N	-0.052	(0.099)
BFI_O	-0.003	(0.124)
Lotery	0.023	(0.037)
Dictator_mod	0.077^{**}	(0.021)
Ultimatum_game	0.030^{*}	(0.015)
Trust_game	0.026	(0.020)
Pol_opi	-0.101^{*}	(0.048)
Government_health	-0.034	(0.109)
Government_inequality	$-0.162^{\dagger}$	(0.086)
Intercept	-3.174^{*}	(1.559)

N	4096
Log-likelihood	-2347.181
$\chi^2_{(23)}$	50.175

Significance levels : $\dagger$: 10% $*$: 5% $**$: 1%

E.6 Satisfaction at the end of each period

Table 27: Estimation results : regress

Variable	Coefficient	(Std. Err.)
Age	-0.082**	(0.026)
Female	-0.144	(0.240)
Student	-0.140	(0.255)
Master_degree	0.544*	(0.216)
Weight	0.008	(0.006)
Height	-0.013	(0.008)
Self_rated_health	-0.011	(0.053)
Compl_health_insurance	0.454	(0.333)
Severe_health_pb	0.076	(0.267)
Close_relative_health_pb	-0.051	(0.193)
Non_profit_asso	0.041	(0.212)
BFI_E	0.030	(0.109)
BFI_A	-0.007	(0.173)
BFI_C	0.088	(0.149)
BFI_N	-0.010	(0.125)
BFI_O	-0.156	(0.170)
Lotery	0.096†	(0.058)
Dictator_mod	0.009	(0.028)
Ultimatum_game	0.072**	(0.023)
Trust_game	0.033	(0.030)
Pol_opi	-0.005	(0.063)
Government_health	0.537**	(0.145)
Government_inequality	-0.103	(0.125)
Intercept	6.611**	(2.291)
N	4096	
R^2	0.034	
$F_{(23,255)}$	2.546	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%