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# Social norms on rent seeking and preferences for redistribution

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## Abstract

Empirical studies have shown that preferences for redistribution are significantly correlated with expectations of future mobility and the belief that society offers equal opportunities. We add to previous research by investigating the role of individual and social norms on rent seeking. We find that the individual propensity for stigmatizing rent seeking significantly and positively affects preferences for redistribution. On the other hand, living in an area where most citizens do not stigmatize rent seeking, makes men more favourable to redistribution, which may be seen as a social equalizer in an unfair society that does not offer equal opportunities to all. This effect does not hold for women, whose preference for redistribution is negatively associated to the regional tolerance of rent seeking.

## JEL Codes:

**Keywords:** redistribution, welfare state, civic values, social norms, social capital.

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# 1 Introduction

In these times of economic crisis and public finance distress, the issue of welfare state legitimacy has become a central theme in the political and economic debate. Low economic growth, rising unemployment rates, and the diffusion of income insecurity have produced contradictory pressures on European welfare states. On the one hand, the financial viability of public social protection schemes has been increasingly questioned. On the other hand, the demand for social protection has dramatically risen. In Southern Europe, conflicting views on social solidarity and public finance adjustment have gained growing attention in electoral campaigns.

The sustainability and legitimacy of the welfare state ultimately depend on citizens' preferences for redistribution, which, according to standard economic reasoning, might be basically determined by self-interest. Previous studies have extensively analyzed self-interested reasons to support redistribution in theoretical and empirical models, focusing on the effect of income inequality, future income and mobility prospects, the perceived equality of opportunities, and feelings of social rivalry (e.g. Meltzer and Richard, 1981; Piketty, 1995; Bénabou and Ok, 2001; Fong, 2001; Corneo and Grüner, 2002).

The role of social norms and social interactions has so far been neglected by the literature, with a few remarkable exceptions. Bergh and Bjørnskov (2011, 2014) and Bjørnskov and Svendsen (2013) found a significant cross-country correlation between historical levels of trust – measured as the belief that most people can be trusted – and the current size of the welfare state. This result suggests that some linkage might also exist between support for re-distributive policies, social norms and participation at the individual level. The belief that others can be trusted (generally referred to as “social trust”) also depends on the frequency, friendliness and cooperativeness of interactions (Degli Antoni, 2006; Becchetti et al., 2008; Sabatini and Sarracino, 2014). Trusting taxpayers may be less concerned about the free riding problems intrinsically connected with universal and simple access to public goods and services (Bergh and Bjørnskov, 2011). In addition, they also may be more confident in the efficiency and honesty of bureaucrats (Rothstein, 2002; Kumlin and Rothstein, 2005). As a result, support for re-distributive policies may more easily emerge in electoral competitions (Yamamura, 2014). On the other hand, friendly and cooperative social interactions generate feelings of empathy and solidarity thereby strengthening other-regarding preferences (Degli Antoni, 2006). Luttmer (2001), Moffitt

et al. (1998), and Moffitt (1999) have modeled altruism as a major driver of preferences for redistribution. For example, the wealthiest may become increasingly empathetic towards redistribution as their interaction with others in lower socio-economic conditions increases. Poorer people who frequently interact with the well-off may advocate redistribution through the tax system instead of developing feelings of envy or, worse, criminal behaviors such as theft or vandalism aimed at reducing rich people's wealth. The hypothesis of a correlation between indicators of social interactions and individual attitudes towards redistribution has been empirically tested by Yamamura (2012), who found that, in Japan, people are more inclined to prefer income redistribution in areas where residents are more actively involved in community activities. Due to lack of data, however, this study neither tested the effect of individual beliefs and sociability, nor controlled for endogeneity bias. In one of the papers most closely related to ours, (Algan et al., 2014) theoretically analyzed and empirically tested the roles of trust and civicness at the individual level. Based on European Social Survey (ESS) data they found that there is a strong positive relation between perceived civicness of compatriots and the demand for redistribution. Algan and colleagues also used data from the World Values Survey (WVS) to provide an empirical test of their theoretical prediction that more civic individuals want less redistribution, because they are aware of the linkage between government spending and taxation, and they are less inclined toward cheating on taxes.

We add to the literature by empirically analyzing how individual preferences for redistribution are influenced by individual and social norms about rent seeking. Norms are intended here as beliefs about the right way to behave in a given context. In order to contain the bias generally induced in estimates by omitted variables in cross-country regressions, we focus on a notable case study, which has a particular interest for the study of redistributive issues.

Individual views about social issues and government actions like, for example, civil rights and conflicts resolution, are naturally influenced by subjective and societal rules of conduct. This argument may be easily extended to citizens' beliefs about re-distributive policies. Attitudes on rent seeking in particular may be relevant in determining perceptions and preferences about the tax system. Attitudes towards redistribution are a crucial issue in political economy, as they bias electoral competitions, contribute determining the size of government spending, and affect how taxpayers react to re-distributive policies.

To analyze the role of norms, we use data from the 2004 wave of the Survey on Household Income and Wealth (SHIW) conducted by the Bank of Italy on a nationally and regionally representative sample of the Italian population. We differ from previous literature in three main ways. Together with Algan et al. (2014), we are the first to investigate the role of specific norms of conduct, after controlling for several phenomena addressed by previous studies. Differently from Yamamura (2012) and Algan et al. (2014), we employ an instrumental variable specification of our empirical model to establish causality. To obtain an appropriate instrument at the community level, we match the SHIW dataset with historical data on crime provided by the Italian National Institute of Statistics (Istat). This type of study has never been conducted in Italy, which represents a valuable case study due to rising inequalities, the strong re-distributive features of the tax system and huge regional disparities.

The remainder of the paper is as follows. The next sections briefly describe the Italian background and review the literature on preferences for redistribution. Section 2 describes our data and methods. In Sections 3 we present and discuss the results of the empirical analysis. The concluding section summarizes some lessons about the determinants of preferences for redistribution and briefly discusses the implications of our study for future research.

## 1.1 Inequalities and redistribution in Italy

Several reasons make Italy a relevant case study for the analysis of preferences for redistribution. Income inequality and poverty grew rapidly, from already comparatively high levels, during the 1990s. Despite a slight fall in the late 2000s, Italy's inequality level is now steadily above the OECD average. The average income of the top 10% of Italians in 2008 was 10 times higher than that of the bottom 10%. This is up from a ratio of 8 to 1 in the mid 1980s. Wealth is distributed much more unequally than income: the top 10% hold some 42% of total net worth (OECD, 2008). In addition, the country has a long tradition of extremely low social and inter-generational mobility Felice (2012, 2013); Berloffia and Modena (2012).

Italian governments have partly offset the growing gap between rich and poor by increasing household taxation and spending more on social benefits. Income taxes and cash benefits play a large role in redistributing income, reducing inequality by close to 30% (OECD, 2011). Publicly provided

health, education and social housing, on the other hand, reduce overall income inequality more than in most other OECD countries. The strongly re-distributive features of the tax system have contributed keeping fiscal pressure at a steadily high level, which have been claimed to be responsible for feelings of aversion towards redistribution and persistently higher tax evasion in the political debate.

Italian inequalities can also be viewed as a result of huge regional disparities. The poorer Southern regions in fact exhibit the higher levels of inequality (Brandolini, 1999). The North-South divide, however, also concerns crime rates (Felice, 2007), civic participation (Putnam et al., 1993), the individuals' willingness to contribute to the common good (Bigoni et al., 2013), the quality of political institutions (Putnam et al., 2003), the quality of public services (Sabatini, 2008) and, most importantly, the local experience of independence across history (Felice, 2013)<sup>1</sup>. The features briefly summarized above make Italy a suitable laboratory for empirically analyzing what causes support for re-distributive policies and the welfare state. However, this issue has never been analyzed in an Italian sample.

## 1.2 The demand for redistribution

The archetypal presumption in economics is that preferences for redistribution are basically determined by self-interest. The most obvious explanatory variable that might be empirically investigated to test this assumption is current income. A number of studies have documented that right wing views, which are generally associated with aversion towards redistribution, are positively correlated with high income (Brooks and Brady, 1999; Gelman et al., 2007; Powdthavee and Oswald, 2014). From a theoretical point of view, Meltzer and Richard (1981) suggested in a seminal paper that, in democracies, high inequality should lead the politically powerful, i.e. voters at the median of the income distribution, to vote for higher levels of taxes and redistribution, which would partially offset rising inequality.

Self-interested preferences about redistribution, however, are also based on perceptions on social mobility and beliefs about the determinants of income and wealth. In his attempt to explain the fact that voters with identical incomes but different social origins vote differently, Piketty (1995) showed

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<sup>1</sup>See for example Guiso et al. (2003), about how the medieval experience of independence affected provinces' current social capital levels.

through a learning model how individual mobility experience influences attitudes towards re-distributive politics. People believing that wealth depends on luck (e.g. family background), or on having the right connections in the right places, may be more favorable to redistribution. Those who believe that socio-economic status solely depends on talent and effort may be more reluctant to support redistribution. Piketty suggested that the difference between voters may not be their differing interests but rather the information and ideas about policies that they have been exposed during their social life. Bénabou and Ok (2001) also modelled the role of the “prospect of upward mobility”, suggesting that individuals with income below the mean may oppose re-distributive policies because they rationally expect to be above the mean in the future.

The hypotheses about social mobility and personal beliefs have been tested in a number of empirical works. Fong (2001) used a 1998 Gallup survey on fairness and opportunity in the U.S. to analyse the role of beliefs about self- and exogenous-determination in reported re-distributive policy preferences. Her results show that the possibility to get individual gains is not a significant predictor, even in high and low-income subsamples. In contrast, beliefs about self- and exogenous-determination are strong predictors of support for redistribution in the full, high-income, and low-income samples.

Using data from the General Social Survey (GSS), Alesina and La Ferrara (2005) found that support for redistribution not only depends on expected gain and losses from future redistribution, but also on individual beliefs on what determines one’s position in the social ladder. *Ceteris paribus*, people who believe that the American society offers equal opportunities are more averse to redistribution.

Other motivations, such as other-regarding preferences can help explain support for redistribution. Fong (2001) suggested that norms of reciprocity may also lead taxpayers to prefer redistribution: “Wealthy people may desire a society in which members who are well-off support those in need, provided that others would do the same for them if necessary.” (p. 226).

Analysing a large international survey, Corneo and Grüner (2002) found that citizens’ support for the re-distributive role of government is strongly influenced by their vision of what constitutes a good policy for society as a whole. Dahlberg et al. (2012) argued that altruism might be a major determinant of support for redistribution. However, it suffers from in-group bias; that is, people have a tendency to favour their own kind and are more

altruistic toward others in their own group. Drawing on Swedish longitudinal data, the authors found that any increase in immigration has a significant, negative effect on support for redistribution.

The role of culture has also been recently investigated. Analyzing data from the German Socio-Economic Panel (GSOEP), Alesina and Fuchs-Schuendeln (2007) found that, after the German reunification, East Germans are more in favour of redistribution than West Germans, even after controlling for economic incentives. This result received further support in Luttmer and Singhal (2011), who analyzed the preferences for redistribution of immigrants across 32 countries using European Social Survey data. The authors showed that inherited culture plays a crucial role: the average preference for redistribution in an immigrant's country of birth is a strong predictor of her own preference for redistribution.

Despite the recent attention for other-regarding preferences in economics, the role of social norms has been so far quite neglected in empirical studies on support for redistribution, with a few remarkable exceptions. Three recent studies have shown that government spending for public social protection can be explained by the cross-country heterogeneity in trustworthiness that shapes the demand for redistribution. Bergh and Bjørnskov (2011) argued that the more the belief that most others can be trusted is spread among taxpayers, the higher is support for a large, universal welfare state. The authors used a variety of data sources to analyse the role of social trust in a sample of 77 countries. Based on instrumental variables estimates, they found that social trust is clearly associated with the size and scope of welfare state spending. This relationship might be due to the higher trustworthiness of bureaucrats and to lower levels of free riding, which prevent the increases in welfare costs that may be caused by tax evasion and rent seeking. This result is also supported in Bjørnskov and Svendsen (2013) through more sophisticated econometric techniques. However, countries with low trust and where governments are perceived as corrupt (e.g. Italy) can have welfare states as large as countries with high trust and high transparency of the government (e.g. Sweden).

Algan et al. (2014) showed the existence of a non-monotonous relationship between trust and various measures of the scope of the welfare states in OECD countries, such as its size and generosity, based on WVS and OECD Social Expenditure data. The authors explained this relationship through a theoretical model, which predicts that citizens want more welfare expenditure when they perceive to be surrounded by trustworthy individuals, because,



as argued by Bergh and Bjørnskov (2011), there are reduced risks of fraud on taxes and benefits and officials are more efficient. However, individuals with weak civic values want more redistribution, because they plan (or at least they hope) to escape from taxes and to benefit from public transfers at the same time. As a consequence, the diffusion of values of civicness and cooperative attitudes may have two opposite effects on the demand for redistribution.

Social trust is often considered as a “cognitive” dimension of the broader concept of social capital, in opposition to its “structural” dimensions given by social networks and participation<sup>2</sup>. There are several reasons to argue that social interactions, i.e. the “structural” component of social capital, may also influence individuals’ support for redistribution. First, friendly and cooperative interactions generate feelings of empathy and solidarity, which may stimulate other-regarding preferences for redistribution. Second, when the social environment is rich of participation opportunities, the likelihood to repeat interactions between any pair of agents in society increases, thereby increasing the cost of free riding and the importance of reputation. In a socially rich environment, the behavior of most others is then more easily foreseeable, and this may lead individuals to believe that most others can be trusted (Sabatini, 2008; Antoci et al., 2012, 2013). Third, social participation creates room for self-interested support for redistribution that are not directly related to economic incentives. Interpersonal interactions expose to social comparisons, which may be particularly hurtful for the poor. As sustained by Luttmer (2001), “The negative effect of a neighbor’s earnings on well-being is real and it is most likely caused by a psychological externality” (p. 990). The frequency of contacts with neighbouring people reinforces this effect (Stutzer, 2004). In addition, the wealthy may want a more re-distributive tax system in order not to become the object of feelings of envy and hate by their poorer fellow citizens. As suggested by Fong (2001) and Yamamura

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<sup>2</sup>Following Uphoff (1999), it is possible to distinguish between structural and cognitive dimensions of the concept. Structural social capital deals with individuals’ behaviours and mainly takes the form of networks and associations, which can be observed and measured, through surveys. Cognitive social capital derives from individuals’ perceptions resulting in norms, values and beliefs that contribute to cooperation. These latter aspects involve subjective evaluations of the social environment. Both structural and cognitive dimensions include several sub-dimensions whose relationship with health variables in turn varies depending on the context and on the effect of other individual and local potentially influential factors (Degli Antoni and Sacconi, 2011; Yamamura, 2011).

(2012), redistribution may also be seen as a way to prevent criminal acts of theft and vandalism to the detriment of the wealthiest.

Yamamura (2012) used Japanese survey data to empirically test the role of social participation in individuals' preferences for redistribution. He found that people are more likely to prefer income redistribution in areas where there are higher rates of community participation. The effect is stronger for individuals with a higher propensity for socialization. These findings, however, require further investigation to be generalized, as Japan is a very specific case study due to its cultural background and tradition of racially homogeneous society. In the conclusion to this study, the author stressed the need to test his findings in a Western country and to control for endogeneity bias.

In this paper we take over from Yamamura (2012) and test his hypotheses on Italy. After controlling for the role of community social interactions, we follow Bergh and Bjørnskov (2011) and Algan et al. (2014) and move our focus to norms of conducts, with a special attention to the role of individual and social attitudes toward rent seeking.

### 1.2.1 Main hypotheses

A social norm can be defined as a rule of conduct shared by a group, a community, or a society. It can be sustained both by sanctions and by emotions of guilt and shame, which lead its followers to forego selfish benefits in the name of the group's welfare. We argue that social norms may have an important influence on agents' preferences, especially when it comes to their opinions and behaviors related to the tax system. If the prevalent social norm imposes a stigma on rent seekers, then the individual is likely to perceive the majority of her fellow citizens as honest and trustworthy. Utility maximizing taxpayers may want to support redistribution even when they are unlikely to benefit from it for at least three reasons (in addition to other-regarding concerns for fairness and solidarity): there are reduced risks of free riding, redistribution may support efficient forms of social insurance, and it lowers the exposure to negative feelings and criminal behaviors by the poor.

**Hypothesis 1:** social norm imposing a stigma on rent seekers increases individuals' preference for redistribution.

Individual norms are private beliefs about what should be done in certain

situations. They may be inherited from the family, or shaped by everyday experience about the others' behaviors and beliefs. Non-rent seekers may advocate for redistribution due to reciprocity concerns, and may feel more confident in the fairness and honesty of their fellow citizens and of bureaucrats. They may also have altruistic concerns and a preference for income equality.

**Hypothesis 2:** individual norm stigmatizing rent seeking raises individuals' preference for redistribution.

## 2 Data and methods

To analyze the effect of individual and social norms on preferences for redistribution, we used a section of data drawn from the 2004 wave of the SHIW, which is conducted every two years by the Bank of Italy<sup>3</sup>. The sample includes about 8,000 households and it is representative of the Italian population at the national and region level (Bank of Italy, 2010). The sample was drawn in two stages (municipalities and households), with the stratification of the primary sampling units (municipalities) by region and demographic size. Within each stratum, the municipalities in which interviews would be conducted were selected to include all those with a population of more than 40,000 inhabitants (self-representing municipalities), while the smaller towns were selected on the basis of probability proportional to size (Bank of Italy, 2004). The individual households to be interviewed were then selected randomly. In the 2004 wave of the survey, a special section on public spirit and taxation was included in the questionnaire, in which respondents were asked to give their opinions on the tax system.

We followed Yamamura (2012) and used as dependent variable in the empirical analysis the 5 points-score given by respondents to the following statement: "The more someone earns, the more (in percentage) he/she should contribute to Government spending", with 1 meaning "not at all" and 5 meaning "very much".

To assess the individual attitudes toward rent seeking, we use the 10 points-score used by respondents to assess whether "Keeping money you obtained by accident when it would be possible to return it to the rightful owner

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<sup>3</sup>SHIW data can be downloaded from the Bank of Italy's website at the url: <http://bit.ly/shiw2004>

(for example, if you found a wallet with the owner’s name and address, or if you were given too much change at the supermarket check-out)” is justifiable or not. With 1 meaning “Never justifiable” and 10 meaning “Always justifiable”. We also computed and included in regressions the average value of the scores at the region level, in order to measure the trustworthiness of the people with whom respondents are more likely to interact.

Following seminal studies in the field (e.g. Knack and Keefer, 1997; Guiso et al., 2003), we believe that these items well capture individuals’ attitudes toward rent seeking and free riding. Opinions about the justifiability of keeping an accidentally retrieved wallet are a particularly reliable indicator of the propensity for free riding, as this scenario only deals with moral concerns and it can hardly be influenced by respondents’ risk aversion because there is no chance of being caught in the act.

The relationship between preferences for redistribution and individual and social norms (*ind\_norms<sub>i</sub>* and *soc\_norms<sub>i</sub>* respectively) about rent seeking was investigated through an ordered probit model with robust standard errors reporting marginal effects. If the dependent variable is ordered in  $K$  categories, then the model for social interactions is:

$$Y_i = \begin{cases} 1 & \text{if } y_i \leq 0, \\ 2 & \text{if } 0 < y_i \leq c_1, \\ 3 & \text{if } c_1 < y_i \leq c_2, \\ \vdots & \\ K & \text{if } c_{K-1} < y_i. \end{cases} \quad (1)$$

where  $0 < c_1 < c_2 < \dots < c_{K-1}$ ;  $Y_i = \alpha + \beta_1 \cdot ind\_norms_i + \beta_2 \cdot soc\_norms_i + \boldsymbol{\theta} \cdot \mathbf{X}_i + \epsilon_i$ ,  $\epsilon_i \sim N(0, 1)$ ; the index  $i$  stands for individuals;  $c_{K-1}$  are unknown parameters to be estimated, and  $\boldsymbol{\theta}$  is a vector of parameters for the vector of control variables  $\mathbf{X}_i$ .

Vector  $\mathbf{X}_i$  includes:

- A measure of income inequality, which was identified by previous literature as a major responsible of individuals’ preference for redistribution (Meltzer and Richard, 1981). Our indicator is the Gini index computed at the region level using SHIW data for 2004;
- Regions’ per capita income, population, and unemployment rate in 2003 provided by the Istat (Istat, 2005);

- An indicator of regional social capital given by the number of people who did unpaid work for volunteering associations in 2003 for every 100 people living in the same area (Istat, 2005);
- An indicator of regional religious participation, given by the percentage of the population who went to a place of worship in 2003 (Istat, 2005);
- The total income earned by respondents in 2004, obtained as the sum of: 1) the product between the average monthly net earnings (including overtime) and the number of months worked; 2) Any additional monthly salary (e.g. 13th month salary or Christmas bonus, 14th month salary, etc.); 3) Bonuses or special payments; 4) Other compensations (e.g. productivity bonuses, commissions, etc.);
- Age, sex, civil status, and education (four categories);
- Indicators of the regional share of households adopting precaution measures to protect their homes against theft and vandalism (Istat, 2004). These measures include the habit of leaving the light on when away from home (labelled as “lights on” in the tables), the habit of asking neighbors to look after one’s homes when away (“neighbors”), the adoption of a watch dog to guard against unwanted or unexpected people (“dogs”), the purchase of a home safety system connected with a private vigilance service (“security”), the ownership of weapons for personal defence (“weapons”), the subscription of an insurance against theft (“insurance”), and the installation of a burglar alarm system (“burglar alarm”). A summary of descriptive statistics is reported in Table 1.

The coefficients from equation 1 indicate the sign and magnitude of partial correlations among variables. However, attitudes toward rent seeking might be endogenous to preferences for redistribution. Individual effects such as personal characteristics or exogenous shocks may in fact be correlated with both individual norms about rent seeking and support for redistribution.

People who support redistribution may be motivated by other-regarding preferences that can also stimulate concerns for fairness and reciprocity and a stigma on rent seeking and free riding behaviors. On the other hand, particularly selfish individuals who do not care about inequalities may also be less sensitive to fairness and reciprocity, and may want to take advantage of any possibility of free riding that happens by chance, such as the retrieval of a lost wallet.

Table 1: Descriptive statistics.

| variable   | mean  | sd    | min    | max   | obs  |
|--|-------|-------|--------|-------|------|
| preference for redistribution                            | 2.553 | 0.699 | 1      | 3     | 3798 |
| keeping money you are not entitled to                    | 8.754 | 2.012 | 1      | 10    | 3798 |
| keeping money you are not entitled to (regional average) | 0.087 | 0.001 | 0.083  | 0.091 | 3798 |
| regional gini index                                      | 0.257 | 0.020 | 0.221  | 0.310 | 3798 |
| regional income (log)                                    | 10.09 | 0.233 | 9.647  | 10.38 | 3798 |
| regional population (log)                                | 14.95 | 0.744 | 11.71  | 16.04 | 3798 |
| volunteering (regional average)                          | 0.092 | 0.034 | 0.038  | 0.210 | 3798 |
| religious participation (regional average)               | 0.334 | 0.078 | 0.203  | 0.453 | 3798 |
| total earned income                                      | 1.471 | 0.778 | 0.025  | 10    | 3798 |
| age  | 46.09 | 21.71 | 0      | 99    | 3798 |
| gender   | 0.507 | 0.500 | 0      | 1     | 3798 |
| high-school  | 0.260 | 0.439 | 0      | 1     | 3798 |
| associate's degree                                       | 0.007 | 0.085 | 0      | 1     | 3798 |
| university   | 0.074 | 0.263 | 0      | 1     | 3798 |
| post-university  | 0.001 | 0.039 | 0      | 1     | 3798 |
| married  | 0.537 | 0.499 | 0      | 1     | 3798 |
| divorced   | 0.025 | 0.157 | 0      | 1     | 3798 |
| unemployed   | 0.016 | 0.127 | 0      | 1     | 3798 |
| lights on  | 0.222 | 0.042 | 0.171  | 0.318 | 3798 |
| neighbours   | 0.395 | 0.021 | 0.343  | 0.433 | 3798 |
| dogs   | 0.126 | 0.026 | 0.072  | 0.179 | 3798 |
| security   | 0.039 | 0.008 | 0.025  | 0.066 | 3798 |
| weapons  | 0.128 | 0.042 | 0.086  | 0.255 | 3798 |
| theft insurance  | 0.165 | 0.077 | 0.041  | 0.277 | 3798 |
| burglar alarm  | 0.147 | 0.038 | 0.0780 | 0.202 | 3798 |
| % of people reported for crime                           | 0.843 | 0.384 | 0.300  | 2.200 | 3798 |

To deal with these problems, we employed instrumental variables estimates using a two stage least squares (2SLS) model (Wooldridge, 2002) where, in the first stage, we instrumented our measures of the individual norms about rent seeking.

A reliable instrumental variable must meet at least two criteria. First, it must be theoretically justified and statistically correlated with the norms about rent seeking (“relevance” condition), after controlling for all other exogenous regressors. Second, it must be uncorrelated with the disturbance term of the equation determining individual preferences for redistribution (“orthogonality” condition).

We identified two econometrically convenient instruments in the crime rates registered in respondents’ area of residence. More specifically, we instrument the individual stigma towards rent seeking with the rate of reported crimes for which a judicial procedure was started by the authorities, and with the rate of juvenile offenders who were reported for crimes for which a judicial procedure was started by the authorities in respondents’ area of residence.

Criminality may affect stigma towards rent seeking in a number of ways. People who live in an area where criminality is widely spread may consider keeping money obtained by accident (e.g. by retrieving a wallet on the floor) as a venial sin. On the other hand, the diffusion of criminality generally nurtures feelings of mistrust towards unknown others. So people may reasonably expect that the restitution of money obtained by accident would hardly be reciprocated, thus making the action of keeping it less despicable. In addition, higher crime rates also raise the likelihood that unknown others are delinquents, further reducing the incentive to return the money.

As for the orthogonality condition, it is reasonable to expect that, in areas with higher crime rates, citizens advocate for a stronger effort of public institutions to fight criminality, which would question the validity of instruments. Public actions against crime, in fact, may require more public expenditure and eventually more redistribution. However, in the empirical analysis we controlled for a number of respondents’ actions to protect themselves against criminality, which capture citizens’ demand for safety – and the associated demand for redistribution – in a fairly precise way.

The inclusion of the individual demand for safety in the analysis allows us to reasonably assume that any possible influence of criminality on respondents’ demand for redistribution cannot be related to the need of protection and should eventually be attributed to the effect of crime on the social norms and beliefs shared by individuals, i.e. our endogenous variable.

### 3 Results

We first report, in Table 2, how the covariates correlate with the dependent variable. Preferences for redistribution are significantly and positively associated with respondents' tolerance of rent seeking, as measured by the degree to which keeping money that was obtained by accident is considered justifiable. This result is highly statistically significant for the whole sample ( $t = 8.83$ ) and for both the subsamples of men ( $t = 8.51$ ) and women ( $t = 4.12$ ).

For women, preference for redistribution shows a significant and negative association with the intensity of regional stigma towards rent seeking. This variable, however, is not statistically significant for men and for the whole sample.

Inconsistently with previous studies (e.g. Luttmer and Singhal, 2011), the economic variables – i.e. income, education, and work status – are not significantly correlated with preference for redistribution. This result may be explained by our ability to control for a number of economic and social characteristics of respondents' area of residence, and, most importantly, for the diffusion of precaution measures against micro criminality. In particular, regional social capital is significantly and negatively correlated with the dependent variable. In the sample of men, the regional level of religious participation also shows a significant and negative association with the dependent variable. Higher regional income inequality as measured by the Gini index, on the other hand, is associated with lower preference for redistribution. This result is statistically significant for the whole sample and for the sample of women, but not for men, and requires further empirical investigation for a credible interpretation.

Among precaution measures against theft and vandalism, the habit of leaving the lights on is negatively associated with the dependent variable (coefficients are significant for men and for the whole sample, but not for women). Respondents living in areas where people are used to look after their neighbours' homes when they are away also show a significantly higher preference for redistribution. This indicator, however, may also reflect the regional level of social cohesion and cooperativeness, in addition to respondents' actual concern for micro criminality. The average incidence of home alarm systems in the area of residence, on the other hand, is negatively associated with the dependent variable for men ( $t = -5.69$ ), for the whole sample ( $t = -3.59$ ), and more weakly for women ( $t = -1.78$ ). Regional income and population are not significantly correlated with the dependent variable. The



Table 2: Norms of rent seeking and preferences for redistribution. Ordered probit estimates.

|  | all       |         | men       |         | women     |         |
|--|-----------|---------|-----------|---------|-----------|---------|
| preference for redistribution                            |           |         |           |         |           |         |
| keeping money you are not entitled to                    | 0.073***  | (8.47)  | 0.090***  | (8.58)  | 0.052***  | (3.60)  |
| keeping money you are not entitled to (regional average) | 8.470     | (0.68)  | 49.845**  | (3.21)  | -30.541*  | (-2.54) |
| regional gini index                                      | -3.458**  | (-3.11) | -1.129    | (-0.88) | -5.058*** | (-3.92) |
| regional income (log)                                    | 0.004     | (0.05)  | 0.196**   | (2.70)  | -0.120    | (-0.94) |
| regional population (log)                                | 0.128**   | (3.05)  | 0.156***  | (3.70)  | 0.082     | (1.66)  |
| volunteering (regional average)                          | -2.977*** | (-3.93) | -2.678*** | (-3.33) | -3.827*** | (-4.21) |
| religious participation (regional average)               | -0.156    | (-0.71) | -0.639**  | (-2.98) | 0.410     | (1.51)  |
| total earned income                                      | 0.009     | (0.34)  | 0.027     | (0.85)  | -0.010    | (-0.30) |
| age  | 0.000     | (0.13)  | -0.000    | (-0.23) | 0.001     | (0.52)  |
| gender   | -0.083    | (-1.54) |           |         |           |         |
| high-school  | 0.062     | (0.97)  | 0.021     | (0.22)  | 0.103     | (1.35)  |
| associate's degree                                       | -0.023    | (-0.10) | -0.093    | (-0.29) | 0.072     | (0.21)  |
| university   | -0.113    | (-1.44) | -0.117    | (-1.02) | -0.100    | (-0.95) |
| post-university  | 0.077     | (0.15)  | 3.731***  | (26.86) | -0.418    | (-1.04) |
| married  | 0.015     | (0.32)  | 0.015     | (0.15)  | 0.017     | (0.35)  |
| divorced   | -0.211    | (-1.30) | 0.011     | (0.05)  | -0.365*   | (-2.45) |
| unemployed   | -0.035    | (-0.33) | -0.114    | (-0.79) | 0.226     | (0.71)  |
| lights on  | -1.671*** | (-6.46) | -2.534*** | (-8.09) | -0.810**  | (-3.09) |
| neighbours   | 5.257***  | (5.73)  | 7.340***  | (6.37)  | 3.969***  | (4.33)  |
| dogs   | -0.473    | (-0.94) | 1.819***  | (3.37)  | -3.116*** | (-3.88) |
| security   | 13.744*** | (4.34)  | 6.320     | (1.66)  | 19.323*** | (5.35)  |
| weapons  | -0.063    | (-0.20) | -2.127*** | (-7.09) | 1.857***  | (3.51)  |
| theft insurance  | 0.590     | (1.53)  | -0.034    | (-0.09) | 1.249*    | (2.16)  |
| burglar alarm  | -5.009*** | (-4.13) | -6.428*** | (-5.34) | -3.749**  | (-3.07) |
| cut1   |           |         |           |         |           |         |
| Constant   | 2.441     | (1.87)  | 9.087***  | (5.72)  | -3.200*   | (-1.97) |
| cut2   |           |         |           |         |           |         |
| Constant   | 3.180*    | (2.43)  | 9.817***  | (6.16)  | -2.443    | (-1.51) |
| Observations   | 3798      |         | 1873      |         | 1925      |         |
| Pseudo $R^2$   | 0.016     |         | 0.028     |         | 0.015     |         |

share of households owning a home safety system connected with a private vigilance service is positively related to individual preferences for redistribution for men, women, and for the whole sample. The ownership of weapons for personal use is negatively correlated with men's preference for redistribution.

The positive association between the individual tolerance towards rent seeking and preference for redistribution is counter-intuitive and not expected. Algan et al. (2014) suggested that rent seekers might be more airily favorable to redistribution as they also consider cheating on taxes as a feasible option. The estimates presented in Table 2, however, may be biased by omitted confounding factors, as explained in Section 2. For example, in areas historically affected by criminality and corruption, such as Italian Southern regions, people may feel rent seeking as the only possible way to effectively advance their interests. Redistribution entails higher levels of public expenditure, which in turn may create higher opportunities for rent seeking. On the other hand, people who are less tolerant towards free riding may also feel more concerned about public finance adjustment and thus prefer less redistribution.

The main result of the ordered probit is challenged by the estimates obtained by instrumenting our main explanatory variable, which allow us to control for endogeneity bias. Coefficients are reported in Table 3 (where  $z$ -values are reported in brackets).

Individuals' tolerance towards rent seeking is significantly ( $t = -4.58$ ) and negatively correlated with preference for redistribution. Gender effects are presented in tables 4 and 5. The correlation seems to be stronger for women ( $t = -5.38$ ) than for men ( $t = -1.84$ ).

The regional level of tolerance is not statistically significant in the whole sample. However, interesting gender effects emerge when splitting the sample: men who live in areas where free riding is more tolerated present a significantly higher preference for redistribution ( $t = 3.42$ ). The opposite holds for women ( $t = -2.22$ ).

Hypothesis 1 apparently holds for women but not for men. The fact of living in an area where free riding is more tolerated, in fact, raises men's preference for redistribution. In a society where most people would not return a wallet that was found by accident, individuals may perceive that most of their fellow citizens are potential rent seekers. This perception is likely to be associated with the belief that socio-economic status can hardly be changed with talent and effort and that one's position in the social ladder basically

Table 3: Norms of rent seeking and preferences for redistribution: marginal effects.

|  | No                    | So so                 | Yes                  |
|--|-----------------------|-----------------------|----------------------|
| keeping money you are not entitled to                    | -0.0142***<br>(0.000) | -0.0114***<br>(0.000) | 0.0256***<br>(0.000) |
| keeping money you are not entitled to (regional average) | -1.660<br>(0.500)     | -1.331<br>(0.499)     | 2.991<br>(0.499)     |
| regional gini index                                      | 0.678**<br>(0.002)    | 0.544**<br>(0.002)    | -1.221**<br>(0.002)  |
| regional income (log)                                    | -0.000692<br>(0.961)  | -0.000555<br>(0.961)  | 0.00125<br>(0.961)   |
| regional population (log)                                | -0.0251**<br>(0.003)  | -0.0201**<br>(0.002)  | 0.0452**<br>(0.002)  |
| volunteering (regional average)                          | 0.583***<br>(0.000)   | 0.468***<br>(0.000)   | -1.051***<br>(0.000) |
| religious participation (regional average)               | 0.0306<br>(0.477)     | 0.0245<br>(0.471)     | -0.0551<br>(0.474)   |
| total earned income                                      | -0.00179<br>(0.735)   | -0.00144<br>(0.735)   | 0.00323<br>(0.735)   |
| age  | -0.0000166<br>(0.897) | -0.0000133<br>(0.897) | 0.0000299<br>(0.897) |
| gender   | 0.0162<br>(0.123)     | 0.0130<br>(0.123)     | -0.0292<br>(0.122)   |
| high-school  | -0.0121<br>(0.331)    | -0.00967<br>(0.335)   | 0.0217<br>(0.333)    |
| associate's degree                                       | 0.00454<br>(0.919)    | 0.00364<br>(0.919)    | -0.00818<br>(0.919)  |
| university   | 0.0221<br>(0.147)     | 0.0177<br>(0.155)     | -0.0399<br>(0.150)   |
| post-university  | -0.0150<br>(0.882)    | -0.0121<br>(0.882)    | 0.0271<br>(0.882)    |
| married  | -0.00299<br>(0.747)   | -0.00240<br>(0.748)   | 0.00538<br>(0.747)   |
| divorced   | 0.0414<br>(0.190)     | 0.0332<br>(0.196)     | -0.0746<br>(0.192)   |
| unemployed   | 0.00678<br>(0.741)    | 0.00544<br>(0.739)    | -0.0122<br>(0.740)   |
| lights on  | 0.327***<br>(0.000)   | 0.263***<br>(0.000)   | -0.590***<br>(0.000) |
| neighbours   | -1.030***<br>(0.000)  | -0.826***<br>(0.000)  | 1.857***<br>(0.000)  |
| dogs   | 0.0927<br>(0.344)     | 0.0744<br>(0.352)     | -0.167<br>(0.347)    |
| security   | -2.694***<br>(0.000)  | -2.160***<br>(0.000)  | 4.854***<br>(0.000)  |
| weapons  | 0.0123<br>(0.844)     | 0.00986<br>(0.844)    | -0.0222<br>(0.844)   |
| theft insurance  | -0.116<br>(0.123)     | -0.0927<br>(0.130)    | 0.208<br>(0.126)     |
| burglar alarm  | 0.982***<br>(0.000)   | 0.787***<br>(0.000)   | -1.769***<br>(0.000) |
| Observations   | 3798                  | 3798                  | 3798                 |

depends on luck or having the right contacts in the right places. In this case, individuals may see redistribution by the public sector as the only possible way to reach decent standard of living in a society that does not offer equal opportunities to all or, as suggested by Algan et al. (2014), as a source of rent seeking opportunities.

This result may be interpreted as the legacy of a solid tradition of corruption that has been plaguing the Italian public sector at least since the post-war period. Empirical studies on Italy suggest that a dramatic rise in corruption took place in the period between 1970 and 1993 (Marselli and Vanini, 1997; Golden, 2000; Golden and Picci, 2005; Del Monte and Papagni, 2007; Felice, 2007)<sup>4</sup>.

The existence of a causal relationship between corruption and public expenditure has been repeatedly argued both in the academic and in the Italian political debate (see for example Golden, 2000; Del Monte and Papagni, 2007). According to Golden (2000), the steep growth of government intervention in the economy that took place in the 1970s and the 1980s created new opportunities for corruption. On the other hand, public expenditure also rose due to the pressure of special interest groups on corrupted politicians. The interaction of these forces “produced a change toward a higher level of equilibrium of corruption” (Golden, 2000, p. 15). At the micro level, the vicious circle described by Golden probably exacerbated the feelings of mistrust towards public institutions and unknown others that, according to the literature, already were typical of the Italian society (see for example Putnam et al., 1993; Degli Antoni, 2006; Sabatini, 2009; Felice, 2013). In his seminal work on the moral basis of Italian backwardness, Banfield (1958) first introduced the concept of “amoral familism” to describe Southern Italian households’ inability “to act together for their common good or, indeed, for any end transcending the immediate, material interest of the nuclear family” Banfield (1958, p.10). According to the author, social relationships in

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<sup>4</sup>According to some authors (Golden, 2000; Del Monte and Papagni, 2007), 1993 represents a turning point in the Italian trend of corruption for at least two reasons. First, the Maastricht Treaty signed in 1991 that set strict fiscal convergence criteria, jointly with the currency crisis that forced Italy out of the European Monetary System in 1992, forced the government led by Giuliano Amato (1992-1993) to start new restrictive budgetary policies to reduce public debt. Second, in 1993, judicial inquiries known as “Mani Pulite” severely contrasted the system of political patronage. Immediately after “Mani Pulite” a reduction in the cost of public works for government was registered (Golden, 2000; Del Monte and Papagni, 2007).

Table 4: Norms of rent seeking and men' preferences for redistribution: marginal effects.

|  | No                    | So so                  | Yes                  |
|--|-----------------------|------------------------|----------------------|
| keeping money you are not entitled to                    | -0.0106***<br>(0.001) | -0.00823***<br>(0.000) | 0.0188***<br>(0.000) |
| keeping money you are not entitled to (regional average) | 6.187**<br>(0.010)    | 4.822*<br>(0.014)      | -11.01*<br>(0.011)   |
| regional gini index                                      | 1.025***<br>(0.000)   | 0.799***<br>(0.000)    | -1.823***<br>(0.000) |
| regional income (log)                                    | 0.0243<br>(0.350)     | 0.0190<br>(0.344)      | -0.0433<br>(0.347)   |
| regional population (log)                                | -0.0166<br>(0.100)    | -0.0130<br>(0.094)     | 0.0296<br>(0.096)    |
| volunteering (regional average)                          | 0.775***<br>(0.000)   | 0.604***<br>(0.000)    | -1.380***<br>(0.000) |
| religious participation (regional average)               | -0.0831<br>(0.128)    | -0.0648<br>(0.141)     | 0.148<br>(0.133)     |
| total earned income                                      | 0.00204<br>(0.762)    | 0.00159<br>(0.760)     | -0.00364<br>(0.761)  |
| age  | -0.000141<br>(0.597)  | -0.000110<br>(0.603)   | 0.000251<br>(0.600)  |
| high-school  | -0.0209<br>(0.182)    | -0.0163<br>(0.167)     | 0.0371<br>(0.175)    |
| associate's degree                                       | -0.0145<br>(0.831)    | -0.0113<br>(0.830)     | 0.0258<br>(0.830)    |
| university   | 0.0203<br>(0.339)     | 0.0158<br>(0.348)      | -0.0361<br>(0.342)   |
| post-university  | 0.0846<br>(0.299)     | 0.0660<br>(0.299)      | -0.151<br>(0.299)    |
| married  | -0.00344<br>(0.723)   | -0.00268<br>(0.724)    | 0.00611<br>(0.723)   |
| divorced   | 0.0739*<br>(0.012)    | 0.0576*<br>(0.019)     | -0.131*<br>(0.014)   |
| unemployed   | -0.0459<br>(0.474)    | -0.0358<br>(0.482)     | 0.0816<br>(0.478)    |
| lights on  | 0.164**<br>(0.001)    | 0.128**<br>(0.004)     | -0.292**<br>(0.002)  |
| neighbours   | -0.804***<br>(0.000)  | -0.627***<br>(0.000)   | 1.431***<br>(0.000)  |
| dogs   | 0.631***<br>(0.000)   | 0.492***<br>(0.001)    | -1.123***<br>(0.000) |
| security   | -3.915***<br>(0.000)  | -3.051***<br>(0.000)   | 6.965***<br>(0.000)  |
| weapons  | -0.376***<br>(0.000)  | -0.293**<br>(0.001)    | 0.669***<br>(0.000)  |
| theft insurance  | -0.253*<br>(0.030)    | -0.197*<br>(0.035)     | 0.450*<br>(0.031)    |
| burglar alarm  | 0.760**<br>(0.002)    | 0.592**<br>(0.003)     | -1.351**<br>(0.002)  |
| Observations   | 1925                  | 1925                   | 1925                 |

the Italian Mezzogiorno were rooted in distrust, envy, and suspicion, to the point that fellow citizens generally would refuse to help each other except where one's own particular material gain was at stake.

In this scenario, the rise in corruption and the country's worsening economic situation, which resulted in the currency crisis that forced Italy out of the European Monetary System in 1992, may help explaining the positive correlation existing in our sample between preferences for redistribution and the regional level of people's trustworthiness, as a result of two main factors. 1) The desire to improve equality in opportunities, to possibly counterbalance the effect of rent seeking and patronage in a society that is believed not to offer equal opportunities to all. 2) The strengthening of amoral familism, which leads individuals to see public expenditure as a source of rent seeking opportunities.

This result and its interpretation are in line with previous studies on the topic claiming that a lower confidence in self-determination is associated with a higher preference for redistribution (Piketty, 1995; Fong, 2001; Alesina and La Ferrara, 2005), and that, in a society characterized by low civic values, citizens may want to exploit the higher public expenditure connected with greater redistribution for their own rent seeking purposes, as suggested in Algan et al. (2014).

On the other hand, these effects seem not to hold for women, whose preference for redistribution decreases with the regional tolerance for rent seeking. This difference may be due to women's greater concern for the rent seeking behaviours potentially connected with higher levels of public expenditure, which seems consistent with previous behavioral studies that found women to be more trustworthy and public-spirited than men. For example, as reported in Dollar et al. (2001), women have been found more likely to help others in need (Eagly and Crowley, 1986), to vote based on social issues (Goertzel, 1983), to score more highly on "integrity tests" (Ones and Viswesvaran, 1998), and to take stronger stances on ethical behaviour (Glover et al., 1997; Reiss and Mitra, 1998). Using a variety of independent data sources, Swamy et al. (2001) presented evidence that in hypothetical situations women are less likely to condone corruption, and that women managers are less involved in bribery.

Hypothesis 2, on the other hand, is fully supported by the empirical evidence. Individual values of honesty and respect towards unknown others are associated with a higher preference for redistribution. Honest and respectful people may, in fact, also share feelings of altruism and be more

inclined towards reciprocity. This result is consistent with previous claims about altruism as a major determinant of support for redistribution (Corneo and Grüner, 2002; Dahlberg et al., 2012), and does not provide support to findings in Algan et al. (2014), according to which more civic individuals want less redistribution, probably because they are aware of the linkage between government spending and taxation, and they are less inclined toward cheating on taxes. The size and significance of all the other covariates are confirmed in CMP estimates.

## 4 Conclusions

This paper shows that individual and social norms of tolerance of rent seeking are associated with preference for redistribution in a non-trivial way. Our findings challenge the mainstream assumption that individual attitudes about redistribution can satisfactorily be explained by the individual pecuniary incentives involved. Preferences for redistribution are higher among citizens who report to be less tolerant towards rent seeking. These honest citizens would hardly consider exploiting redistribution to fraudulently gain personal advantages. Rather, their opinion about re-distributive issues seems to be linked to altruistic and moral concerns. On the other hand, living in an area where most citizens do not stigmatize rent seeking makes men more favorable to redistribution, that may be seen as a social equalizer in an unfair society that does not offer equal opportunities to all. This effect, however, does not hold for women, whose preference for redistribution is negatively associated to regional tolerance of rent seeking.

These results suffer from some weaknesses related to the unavailability of data. First, the cross-sectional nature of the analysis dictates caution in the interpretation of correlations as causal linkages. Second, we were not able to control for the local levels of social trust, which may play a role in shaping the relationship between citizens' attitudes towards rent seeking and their vision of the re-distributive role of public policies. In addition, our proxies of preference for redistribution and attitudes towards rent seeking are definitely susceptible of improvement.

On the other hand, this study is the first to analyze how individual and social norms about rent seeking are associated to individual preferences for redistribution, which ultimately are the foundations of welfare state legitimacy. Our findings should encourage further empirical research based on

Table 5: Norms of rent seeking and women' preferences for redistribution: marginal effects.

|  | No                    | So so                 | Yes                  |
|--|-----------------------|-----------------------|----------------------|
| keeping money you are not entitled to                    | -0.0167***<br>(0.000) | -0.0138***<br>(0.000) | 0.0305***<br>(0.000) |
| keeping money you are not entitled to (regional average) | -9.287**<br>(0.001)   | -7.649**<br>(0.002)   | 16.94**<br>(0.001)   |
| regional gini index                                      | 0.210<br>(0.380)      | 0.173<br>(0.379)      | -0.384<br>(0.379)    |
| regional income (log)                                    | -0.0366**<br>(0.006)  | -0.0301**<br>(0.009)  | 0.0667**<br>(0.007)  |
| regional population (log)                                | -0.0291***<br>(0.000) | -0.0240***<br>(0.000) | 0.0532***<br>(0.000) |
| volunteering (regional average)                          | 0.499***<br>(0.001)   | 0.411**<br>(0.001)    | -0.910***<br>(0.001) |
| religious participation (regional average)               | 0.119**<br>(0.003)    | 0.0981**<br>(0.003)   | -0.217**<br>(0.003)  |
| total earned income                                      | -0.00497<br>(0.402)   | -0.00409<br>(0.380)   | 0.00906<br>(0.392)   |
| age  | 0.0000814<br>(0.818)  | 0.0000671<br>(0.819)  | -0.000148<br>(0.818) |
| high-school  | -0.00400<br>(0.827)   | -0.00329<br>(0.827)   | 0.00730<br>(0.827)   |
| associate's degree                                       | 0.0172<br>(0.776)     | 0.0142<br>(0.774)     | -0.0314<br>(0.775)   |
| university   | 0.0218<br>(0.304)     | 0.0180<br>(0.306)     | -0.0398<br>(0.305)   |
| post-university  | -0.695***<br>(0.000)  | -0.573***<br>(0.000)  | 1.268***<br>(0.000)  |
| married  | -0.00288<br>(0.883)   | -0.00237<br>(0.883)   | 0.00526<br>(0.883)   |
| divorced   | -0.00213<br>(0.960)   | -0.00175<br>(0.960)   | 0.00388<br>(0.960)   |
| unemployed   | 0.0213<br>(0.430)     | 0.0175<br>(0.427)     | -0.0388<br>(0.429)   |
| lights on  | 0.472***<br>(0.000)   | 0.389***<br>(0.000)   | -0.861***<br>(0.000) |
| neighbours   | -1.368***<br>(0.000)  | -1.126***<br>(0.000)  | 2.494***<br>(0.000)  |
| dogs   | -0.339***<br>(0.001)  | -0.279***<br>(0.001)  | 0.618***<br>(0.001)  |
| security   | -1.177<br>(0.100)     | -0.970<br>(0.097)     | 2.147<br>(0.098)     |
| weapons  | 0.396***<br>(0.000)   | 0.326***<br>(0.000)   | -0.723***<br>(0.000) |
| theft insurance  | 0.00637<br>(0.926)    | 0.00525<br>(0.926)    | -0.0116<br>(0.926)   |
| burglar alarm  | 1.198***<br>(0.000)   | 0.986***<br>(0.000)   | -2.184***<br>(0.000) |
| Observations   | 1873                  | 1873                  | 1873                 |



more comprehensive and longitudinal data.

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