Siep Società italiana di
economia pubblica

THE ECONOMIC EFFECTS OF A LOCAL MINIMUM INCOME SUPPORT PROGRAM

PAOLO BRUNORI, MARIA CONCETTA CHIURI e VITO PERAGINE

The Economic Effects of a Local Minimum Income Support program

Paolo Brunori [*]   Maria Concetta Chiuri [†]   Vito Peragine [‡]

June 2009 [§]

Abstract

Since *Reddito Minimo d'Inserimento* pilot experiment ended, a number of papers have attempted to study minimum income policies in Italy with the aim of providing suggestions for possible future program implementations. In this paper we present a case study as an applied contribution to this debate. We built a dataset based on administrative data coming from a mid-size town in the South of Italy: Mola di Bari. We had access to data collected for three main local income support programs. We briefly describe Mola di Bari population and socioeconomic characteristics. The lack of data on local income distribution, which is very often a problem in local analysis of policy effects, is solved by matching data from a number of different sources to obtain a simulated equivalent income distribution. We explain the income support programs in place in Mola, and we show a number of evidence on how beneficiaries are selected and how the transfer is determined. We finally include an analysis of the programs' effects in term of income distribution and poverty alleviation.

JEL: I38 - J22 - J08
kewywords: minimum income, policy evaluation, poverty trap.

1   Introduction

Immediately after the 1998-2001 period of guaranteed income pilot experiment at the National level, *Reddito Minimo d'Inserimento* (RMI now on) was abandoned and a new *Reddito di Ultima Istanza* (RUI) was announced. The two main changes introduced under RUI are firstly a dramatic reduction of resources devoted to the program such that the majority of the literature considers RUI not a universal minimum income program (Saraceno, 2003 or Ferrera, 2005), secondly that local governments are since them directly responsible for minimum income support programs. Minimum income pilot data have been reported in details in the Ministerial Documentation presented at the Italian Parliament in June 2007(**?**). The document gives a fairly complete image of all kind of implementation issues and explains the main problems encountered by municipalities involved in the 1998-2001 pilot. However, Ministerial data do not include evaluation of effects, such as labor supply responses and welfare improvement; moreover, data about the characteristics of the population from which the recipients where selected are also missing. Given the limited data availability to evaluate income distribution effects and labor supply responses two possible methods remain. One is simulation, the other is to look at guaranteed minimum income effects studying local implementations.

In the last couple of years several researchers have adopted both approaches: Colombino (2007) simulates a number of possible minimum income policies whereas Berliri and Parisi (2006) simulate the effects of RMI extension to the whole National territory (**?**). Following the second approach, an analysis of local minimum income program implementations is proposed by Monti et al. (2007).

In Italy the analysis of minimum income programs in a local context is severely challenged by lack of data. Socioeconomic surveys are mainly collected at National level; only in few cases data can be disaggregated by Regions, as for the Bank of Italy Survey on Households Income and Wealth (SHIW), but it is nevertheless impossible to know in more details the interviewees geographical location. The only possible sources of information are therefore local statistics. Local data however, are very often incomplete or not totally reliable.

To overcome this problem we have directly designed and collected a small local dataset. The University of Bari is involved in the Socio-Economic Observatory for Development, a research project, financed by the European Commission, and joined by the local administrations of a number of towns located in Puglia. For this reason we had the chance to build a dataset based on administrative data of a town, Mola di Bari. Our dataset includes information coming from five years documentation concerning the three main income support programs. We use the dataset to study local implementation of income support programs, using as a benchmark a simulated local income distribution and complementing the dataset with a short questionnaire filled in by the council employees in charged of managing the programs.

The remaining part of the paper is organized as follows: in section 2 relevant descriptive statistics of the population in Mola di Bari are presented; the technique used to match and simulate not directly some unknown characteristics is also briefly explained. In section 3 we briefly describe the local income support programs that we have examined in the analysis, the dataset built from the application forms and payments records; section 4 presents the main empirical findings such as the effectiveness of the transfers, and the selection criteria. Section 5 concludes.

2 Mola di Bari: a demographic and economic overview

Mola di Bari is located in the center of Regione Puglia, 20 km southern than Bari. Mola is a mid town, as the population size is 26,364.The economy relies heavily on fishery and agriculture that employ around 25% of the labor force. The labor market is rather languish, participation rate is low for men (59.74%) and is close to the lowest level in EU for women (25.84%). In addition, similarly with other regions in southern Italy, unemployment rates are steadily high. The 16.01% of the male labor force is unemployed, and more than twice as much (33.7%) is the percentage of women officially searching for a job(**?**).

Income distribution in Mola di Bari was obtained by matching local and regional datasets coming from four different sources. Our starting values were based on the Italian Ministero delle Finanze (MF). The Italian Finance Minister publishes annually data on declared individual taxable income (IRPEF income); these data do not come from a sample of tax payers but include all Italian tax payers and tables are published for each municipality in Italy. We augmented the MF data with information coming from Istat data on resident population, and from the Puglia's sub-sample of the Survey on Household Income and Welfare (SHIW), published by Bank of Italy. The method used, similar in some sense to what is proposed by other authors[1], produces a simulated income distribution for Mola di Bari. The merging tecnique is based on Monte Carlo algorithm. Tax payers household characteristics are simulated by conditioning probabilities consistently with the distribution of the characteristics at regional level (recorded in SHIW).

The simulation algorithm starts from IRPEF income distribution recorded by Agenzia delle Entrate. The simulated income is then matched with households composition and socioeconomic characteristics, iterating a Monte Carlo algorithm. The algorithm defines the probability of being matched with a given socioeconomic characteristic using the characteristic distribution conditional on gross IRPEF income recorded in Bank of Italy SHIW regional sub-sample. Among some thousands of simulated socioeconomic distributions the algorithm then chooses the vector of socioeconomic characteristics that has the maximum likelihood of beeing extracted from a population with the aggregated characteristics recorded in Istat Censimento[2]. Table 1 presents the Mola di Bari main socioeconomic characteristics: note that, when no otherwise specified, we refer to 2006 monetary value.

3 Income support programs

A universal benefit scheme for working-age people does not exist in Italy, minimum income support policies are delegated to social security institutions, whose benefits are restricted to wage workers and, after the 328/2000 law and the Bassanini laws, to local institutions. Mola di Bari has implemented three main policies that fill this gap. They are: *Assistenza Economica Continuativa* (AEC), a monthly cash transfer to all resident families with an income below a minimum standard; *Assistenza Economica Straordinaria* (AES), an "una tantum" grant paid in cases of particular need; and *Reddito Minimo di Inserimento* (RMI), that is, the possibility to work for the Comune di Mola against a hourly wage. We built the dataset merging all pieces of information recorded in the AEC, AES and RMI application

---

[1]See for a similar approach Baruffi et al. (2007).
[2]For a complete presentation of the method see Brunori and Bonazzi (2008).

Table 1: Mola di Bari socioeconomic statistics

Variable	Mean	Year	Source
Population	26,364	2007	Comune di Mola di Bari
Household	9,861	2007	Comune di Mola di Bari
Total Added Value	170 mln	2005 est.	Comune di Mola di Bari
Participation rate	42.3%	2006	IPRES/Istat
Male participation	59.74%	2006	IPRES/Istat
Female participation	25.84%	2006	IPRES/Istat
Unemployment rate	21.55%	2006	IPRES/Istat
Male unemployment	16.01%	2006	IPRES/Istat
Female unemployment	33.7%	2006	IPRES/Istat
Simulated incomes[$]	Mean	Year	Source
Average income	10,090	2006	Authors' calculation
Gini Index	0.332	2006	Authors' calculation
Poverty Head Count	26.15%	2006	Authors' calculation
Poverty Gap ratio	36.95%	2006	Authors' calculation

Note: [$] Statistics refer to households, the poverty line is computed as 60% of the household median equivalent income. Nominal values in Euro.

forms submitted to the social Department from 2002 till 2006 included. Before describing the dataset we briefly explain how these policies were designed.

AEC is the base of the income support implemented in Mola. In the five years under evaluation, 65% of the households that applied to receive income support, were beneficiary of a monthly AEC cash transfer. Following the AEC regulation, the monthly grant should have varied between 141 and 282 euro. In our sample, however, AEC grants are often below the minimum (in 65% of cases) and in few cases above the maximum. The average monthly transfer, during five years, was around 120 euro, more detailed statistics are reported in table 2. Eligibility criteria were: residence in Mola di Bari, availability to work for the municipality in some particular occasions (such as public events), and having obtained at least 125 points as defined by the municipality score system[3].

AES is an "una tantum" transfer paid by the municipality to poor citizens in the exceptional case they need to bear some specific kind of expenditure, such as medical care expenditure. The number of AES payments is lower than AEC (only14.5% of the families in the local social programs receives the AES between 2002 and 2006). Looking at the regulation the AES payment should not have been higher than 1,700 euro, however we found a transfer higher than the maximum in 28% of cases. AES, similarly to AEC, is a means tested benefit; in top of AEC eligibility criteria AES one needs to give proof the exceptionality and remarkable nature of the expenditures.

Finally RMI program gives the opportunity to work, against the payment of a fixed salary (5.40 euro per hour), for a maximum of 70 hours a month . A household in RMI was automatically excluded from AEC and AES, however, the RMI monthly salary could reach 378 euro, which is one third more than the AEC maximum. Actually, in the five years, RMI average monthly salary was around 300 euro. Eligibility criteria were the same for AEC and RMI. Households should not have been in the RMI for more than one year and only in special cases a family could have been allowed to receive the RMI for two years. However, we found out that 23% of the households receive RMI for more than two years.

---

[3]See section 3.2 for a comprehensive explanation of the score selection system.

Table 2: Minimum Income Policies

Variable	N	mean	sd	min	max
AES					
Number of request	201				
Rejected requests	89				
Yearly AES	112	1,223.61	882.07	73.31	4,104.75
Monthly AES	112	444.95	535.79	3.21	2,445.53
Monthly equivalent AES	112	265.74	352.81	1,17	1,606.84
AEC					
Number of requests	684				
Rejected requests	188				
Yearly AEC	496	968.73	506.69	93.36	2,951.71
Monthly AEC	496	120.19	48.78	10	922.21
Monthly equivalent AEC	496	77.52	31.04	10	288.19
RMI					
Number of requests	91				
Rejected requests	25				
Yearly RMI	66	2,564.34	1,225.12	309.6	4,496.25
Monthly RMI	66	2999.07	48.67	120	374.69
Monthly equivalent RMI	66	181.32	74.5	76.43	374.69
Rejected for all policies	6				

Source: authors' calculation based on Municipality of Mola di Bari documentation.

3.1 The dataset

We merged five year cross-sections, from 2002 to 2006, obtaining an unbalanced panel of 332 different households and 934 individuals. The average number of families per year is 153 (373 individuals). The majority of households is repeated more than once, and the total number of households observations is 768 (1,967 individuals). As expected, the dataset consists of only very poor households, the average household yearly income is slightly above 203 euro. However we should underline that the method used up to 2005 to determine the households income was not reliable. In 2006, after the introduction of ISEE[4] as the way to test household means, average equivalent income among households that applied for income support got an order of magnitude higher than incomes recorded in the previous four years. In this respect, Mola di Bari offices seem unable to verify correctly households disposable income. This is confirmed by officials themselves that suspected that applicants were lying about their real income in more than 75% of the cases. The disposable income is strongly understated, as it is much lower than the values recorded in Ministerial archive, which are considered as downward biased estimate of actual incomes. Notably the correlation between declared disposable income and recorded values based on 2006 ISEE documentation is very weak (and negative). Because of this under-reporting issue in what follows we will replace household total income in 2006 by the ISEE income and we will handle with extreme care income data for previous years.Table 3 presents some relevant figures.

In five years Comune di Mola di Bari received 975 requests, 195 per year but varying from around 185 in 2002, 2003 and 2006, to slightly more than 200 in 2004 and 2005. The majority of requests were accepted, on average 69% of the families that applied for a given program received the benefit. Moreover almost all families that applied for income support were accepted in at least one of the three

---

[4] *Indicatore della Situazione Economica Equivalente.*, an equivalence scale introduced in Italy in 1997 for social purposes.

Table 3: The dataset

Variable	N	mean	sd	min	max
Households					
Number of members	768	2.57	1.3	1	7
Children/household	768	0.68	0.9	0	5
Over 65/household	768	0.08	0.29	0	2
Single parent	768	0.338			
Disposable income	768	965.43	723.73	0	4,758.194
Electricity bill*	663	29.53	26.36	0	372.15
Telephone bill*	252	31.67	18.10	0	132.6
Gas bill*	589	32.41	26.33	2	263
Medical expenditure**	768	6.36	150.11	0	4,147.32
Individuals					
Women	1,967	0.547			
Over 65	1,967	0.031			
Under 16	1,967	0.264			
Handicap	1,967	0.159			
Workers	1,967	0.063			
International migrant	1,967	0.038			
Age	1,967	33.09	19.63	0	86
Individual income	1,967	365.24	585.66	0	4,465.75

Note: * Monthly expenditure, ** Yearly expenditure.
Source: authors' calculation based on Comune di Mola di Bari documentation.

Table 4: All Policies Over Time

Variable	2002	2003	2004	2005	2006
Applications					
Households	138	150	156	160	164
Individuals	347	362	399	418	441
Under 16 years old	0.279	0.257	0.263	0.273	0.249
Over 65 years old	0.021	0.033	0.045	0.019	0.363
All policies					
Total expenditure	169,721.26	137,512.32	165,612.38	172,034.42	141,902.00
Number of requests	185	184	217	203	186
Number of payments	130	131	149	146	116
Average transfer	1,414.34	1,108.97	1,208.49	1,246.63	1,244.75
AEC/RMI months	7.25	8.19	8.01	8.42	9.16

Source: authors' calculation based on Comune di Mola di Bari documentation.

programs (99.4%).

Although the number of requests is rather constant, we note that the number of households seeking income support has slowly but steadily increased during these five years. Since 2002 the number of households applying for local benefits has increased by 17%, and the number of individuals asking for support by 24%. The number of payments is also similar through time for all policies, however in 2006 the number of household covered is lower than in the past (21% less than in 2005). The total expenditure for the three policies is also quite stable varying between 137,512 euro in 2003 and 172,034 euro in 2005. In the last year the total expenditure, after two years of rise, decreased by 18%.

The majority of the resources financed AEC (around 60%), while the other two policies account for the remaining 40%. In the data there is also clear evidence of a change in the way the Municipality supported poor households. In particular, in the last years we observe a dramatic shift of resources from AES to RMI. This witnesses the political willingness to invest in activation programs rather than to use resources for passive policies[5].

3.2 Elegibility criteria

The eligibility criteria are based on a point system. The use of this index to assess the households socio-economic conditions is particularly interesting. Since 2003, in Italy, there is a method to evaluate the household economic condition, this is the ISEE index of household income and wealth. ISEE is something more than the application of an equivalence scale: in fact ISEE not only weights incomes as a function of household composition but also accounts for property and other socio-characteristics to assess the household economic condition. Mola point system is alternative to the ISEE index recommended to all institutions on the national territory, and therefore it is interesting to compare how it performs in comparison with ISEE.

The starting point is 100 for all households, but the minimum to be eligible for any of the three minimum income policy is 125. Points are added and subtracted from 100, following the scheme presented in table 5.

Table 5: Points system

Variable	Points
Equivalent income	
up to 1,800 per year	+15
from 1,800 to 3,400	+10
from 3,400 to 4,000	+5
from 4,000 to 5,000	0
from 5,000 to 6,000	-5
from 6,000 to 7,000	-10
Subjective evaluations	
Social conditions	from 0 to +20
Health conditions	from 0 to +15
Consumption	from -15 to 0

Source: Comune di Mola di Bari documentation.

The points system in Mola di Bari includes three indices that are evaluated by the Social De-

---

[5]This is also consistent with what stated by the Mola di Bari policy makers in many occasions.

partment officers. In particular, the category social conditions is very broad, including consideration on dwelling condition, psychological situation of the household members, and other non-objectively measurable considerations on socio-economic conditions. It is interesting to compare how the point system ranks households by the poverty condition in comparison to ISEE. Unfortunately we have ISEE only for the last year, so we can apply this exercise only using an approximation for ISEE, which is equivalent income, weighted by the same household composition coefficients[6].

The points system ranking differs by a large extent from ISEE method. While the objective part of the point systems, that contains disposable income and household composition, is very close to the ranking obtained applying ISEE equivalence scale to disposable income, introducing also the subjective variables, based on officers evaluation of social conditions, we get a ranking which differ largely from the one based on the equivalent income. Figure 2 shows how the use of the subjective evaluations allows to differentiate households that from an objective evaluation, would seem almost identical. The figure is a scatter plot with the objective score on the horizontal axis and the total point, accounting also for subjective measure of poverty, reported on the vertical axis. The cloud shows a strong correlation, but it proves as well that there is a lot of variability of conditions among households with the same equivalent income. To give an example, we have drawn a line at 115 points. We note that households with 115 objective points have very different total scores, ranging from 115 to 156, with a 25% of households below the score necessary to get income support[7]. The relevance of the subjective indexes is clear if we decompose the total variance into the equivalent based part (57%) and the subjective indexes based part (43%).
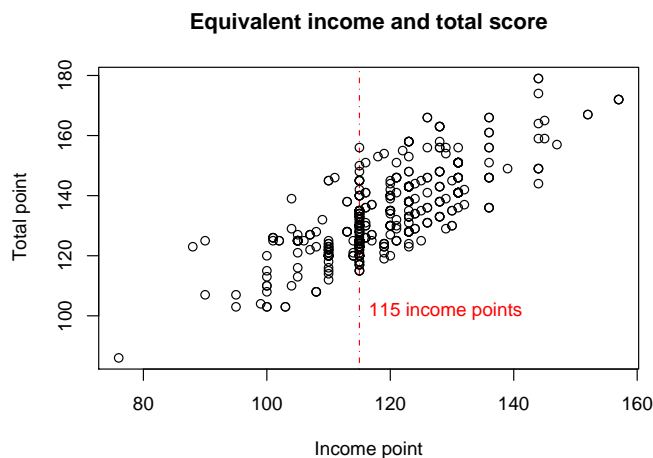

Figure 1: The point system

We believe that the relevant amount of variability that can be detected by subjective evaluation has a fundamental policy implication: local civil servants have an informative advantage and can evaluate the multidimensionality of poverty condition in a much more efficient way[8]. Note also that

---

[6]In other words in the analysis we do not consider the part of ISEE that includes the 20% of the property value.

[7]Even the point system seems not to be too stringent to decide whether to transfer money to households. An 8.72% of the involved population, for example, scored below 125 but got anyway a positive public transfer. Note, however, that rules exceptions are only inclusive as there is no household with a score higher than 125 that did not get any transfer.

[8]This is consistent with what underlined by a growing literature that claims the need to use more complex ranking

problems in applying national criteria to implement RMI arose also during the national pilot, see Ministero della Solidarietà Sociale (2007). Consequently we believe that the 2003 reform correctly identifies the Comune as the proper government level to manage minimum income programs and that the possibility to satisfactory manage crucially relays on the availability of well-prepared officers.

4 Implementation analysis

In what follows we present some findings on the policy implementation: section 4.1 attempts to determine how households decide whether to apply for RMI or for AEC and AES, in section 4.2 we then show which are the main variables influencing the amount transfered to households, section 4.3 illustrates a short geographical analysis of income support interventions, finally section 4.4 presents the policies' effect in term of equivalent income distribution and poverty alleviation.

4.1 Which households choose passive income support programs?

A critical issue, when local institutions implement a minimum income policy, is to distinguish individual attitude towards work. There are individuals that cannot work, for them a means tested cash transfer is the only possible way to survive, there are others that have very strong preferences for leisure and household production, that need very high incentive to be convinced to work, and there are also individuals that can be easily involved in working activities. It is important to distinguish between these categories of support seekers in order to plan effective anti-poverty programs. In Mola di Bari the involvement in RMI excluded the household from AEC and AES; in other words, an eligible household had two strategies: one was to apply for a program in which payments were determined by work and the other to apply for AEC and AES, in which benefits were conditional only upon a generic availability for work. Therefore, observing which households apply for RMI and which apply for AEC or AES may help to understand more about households characteristics and effectiveness of minimum income schemes. The number of applications for RMI was around seven times lower than for AEC, this may be explained by the existence of a small proportion of individuals that had a relative high preference for income and were willing to accept a job in order to increase their disposable income. It is crucially important to disentangle this kind of individuals as they represent the part of the poor population that could be more easily brought back into the labour force. We run a probit model to assess whether it is possible to characterize categories of individuals that were more likely to be discouraged to work by a policy such as AEC. Table 6 gives the estimated marginal effects for the probability to apply for AEC/AES instead of RMI, recall that the sample is a pooled cross-section in which all years are included.

Not all variables included in the model significantly affect the probability of applying to AEC and AES instead of RMI, however the *pseudo-R^2* is high, showing that recorded socioeconomic characteristics may be sufficient to explain with a satisfactory approximation households attitude toward minimum income programs[9]. Table 6 reports marginal effects calculated at the means of the indepen-

---

systems to determine welfare programs eligibility criteria (**?**). Moreover, council employees claim that they used subjective points component to correct for unrealistically low income declared (see Appendix A).

  [9]Aware that many controls are likely to be correlated we have run more than one model, excluding different regressors and checking for multicollinearity problems.

Table 6: Probability to apply for passive income support programs: results from a Probit model

	marginal effect	std. error
Male	- 0.0331	(0.0261)
Unemployed	- 0.1236***	(0.0250)
Disp. income	- 0.0001	(0.0001)
Age	0.0049***	(0.0005)
Family size	0.0360***	(0.0135)
N psy. handicap	- 0.1492	(0.1062)
N phy. handicap	- 0.1024	(0.0827)
N over 65	0.1386*	(0.0768)
N under 18	0.0477**	(0.0239)
N under 3	0.0890**	(0.0428)
$Pseudo\text{-}R^2$	0.1399	
N	768	

Note: Confidence levels: $*** = 99\%, ** = 95\%, * = 90\%$

dent variables. To be unemployed has a negative and significant effect on the probability of opting for passive programs; this result can be explained by the status of unemployed, which by definition implies "to be willing to work". On the contrary the number of household members together with the age of the head of the family has a positive effect on the probability to apply for AEC or AES. A large number of dependent children significantly reduces the probability to apply for RMI and the probability is even lower if there are children under 3 years old: in particular, each additional child under 3 years old reduces by 9% the probability to apply for RMI. Finally, having one or more relatives with physical or psychological handicap and the disposable income are not significantly related with the probability to apply for AEC and AES[10]. These results provide evidence that young individuals are more sensitive to activation programs, however a crucial issue seems also to be the presence of dependent relatives. This second consideration suggests that a policy such as RMI may not be very attractive if there are not accessible services able to support parents in their child rearing activity[11]. Moreover the regression output suggests that it is hard to distinguish individuals for whom it would have been more attractive to be in a passive income support program on the basis of objective measures, while other indicators, that can be considered proxies for psychological attitude, may suit better this aim. Such implicit finding again suggests a direct and non-automatic management of income support policy, in which the role of well prepared officers appear to be crucial.

4.2 Who gets what?

In this section we show which are the households that get support, which applications are instead rejected and to explain transfer magnitude can be explained by household socioeconomic characteris-

---

[10]Note, however, that the results of the probability model may be biased by how the application forms are filled. Are individuals deciding on their own to apply for a specific policy? Or are households guided in the decision by the officers themselves? In the latter case, our regression are simply recording that some households are invited to apply for RMI by officers that consider it the right option for men or for head of household in which there are individuals with psychological or physical handicap

[11]Note that in 2003-2004 the Comune paid a part of the kinder garden fees only for 17 babies under three years old (Comune di Mola di Bari, 2006). On the other hand, the number of children under three years old, reported to be 926 in Mola di Bari, see **?**.

tics. The correct way to carry out this analysis would be to run a regression model to explain transfer magnitude conditionally both on the probability to apply and on the probability to be accepted in the income support programs. However we do not have information on eligible households that did not apply for the programs and, most importantly, we were not able to find a control variable in order to run a regression including a Heckman correction for sample selection bias (**?**) (that is, a variable that influences the probability to be accepted in the program but do not influences the magnitude of the transfer). Given the households applications, the Comune rejected some of them. Among the requests accepted the amount transferred varies a lot. We first try to assess if there are socio characteristics that increase the probability to be excluded from RMI and from all policies. Then we try to determine if there are socio-demographic characteristics that, ceteris paribus, increases the value of the benefit transferred.

We run three probit models in order to assess if families with some determined characteristics are more likely to be involved in income support programs. We have regressed the probability to be excluded from each policy. In table 7 we present the regression coefficients.

Table 7: Probability to be rejected from income support programs: results from a Probit model

	RMI		AEC		AES	
	marginal effect	std. error	marginal effect	std. error	marginal effect	std. error
Male	0.0254	(0.1171)	- 0.0052	(0.0404)	- 0.0499	(0.0884)
Unemployed	0.0370	(0.1253)	0.0751*	(0.0381)	0.3451***	(0.0796)
Age	- 0.0005	(0.0027)	0.0057**	(0.0008)	0.0006	(0.0019)
Family size	- 0.1244*	(0.0640)	0.0213	(0.0201)	- 0.0444	(0.0391)
Psy. handicap	0.8448***	(0.0359)	- 0.0589	(0.1041)	0.3345*	(0.1594)
Phy. handicap	0.0226	(0.2265)	- 0.1355***	(0.0529)	0.1114	(0.1489)
N psy. handicap	- 0.3618***	(0.0564)	- 0.0329	(0.1099)	- 0.3286**	(0.1489)
N phis. handicap	0.7293***	(0.0815)	0.1026	(0.0884)	- 0.2463**	(0.1300
N over 65			- 0.0679	(0.0944)	- 0.2596	(0.1692)
N under 18	0.0961	(0.1120)	0.0323	(0.1099)	- 0.1074*	(0.0650)
Disp. income	0.0005***	(0.0001)	0.0011*	(0.0007)	0.0002*	(0.0001)
Pseudo-R^2	0.2323		0.0454		0.1660	
N	91		684		201	

Note: Confidence levels: $*** = 99\%, ** = 95\%, * = 90\%$

In the first column the probability model explains what are the characteristics that affect the probability to be excluded from RMI. A number of coefficients result significant: a psychological handicap increases the probability to be excluded from RMI, consistently with the fact that often psychological handicap can be incompatible with a working activity. On the contrary the number of old individuals (head excluded) is dropped as it perfectly predicts failure. The presence of an handicapped dependent household member reduces the probability to be excluded in case of psychological handicap and increases it in case of physical handicap. As expected, the effect of disposable income is positive. For the other two policies we observe significant and positive coefficients for both age and unemployment status. These two effects may be explained with eligibility criteria for other income support programs. Unemployed and old individuals should in principle be covered by social security programs not included in our analysis. Finally we notice that for some variables for which we would have expected a clear and negative coefficient we have instead found a non significant effect, this is the case of family size. Given the variability of payments transferred by the municipality we have run

a number of regression models in order to see if the magnitude of the transfer is correlated with some socio-characteristics and with years.

Table 8: AEC and RMI transfer magnitude: results from an OLS regression

	coefficient	std. error
Male	164.66**	(77.35)
Unemployed	255.2655***	(63.92)
Age	8.73***	(3.14)
Intern. migrant	-155.43	(135.01)
Family size	-76.75**	(35.01)
Psy. handicap	147.97	(191.56)
Phys. handicap	252.19**	(111.26)
N psy. handicap	333.84*	(189.14)
N phys. handicap	46.12	(158.03)
N over 65	-154.68	(155.59)
N under 18	99.83*	(56.95)
Disp. income	- 25.71**	(12.33)
2002	546.70***	(197.64)
2003	302.40*	(188.19)
2004	394.17**	(201.11)
2005	441.67**	(202.89)
2006	434.58**	(205..91)
N	768	
R^2	0.5334	

Note: Confidence levels: $*** = 99\%, ** = 95\%, * = 90\%$

The regression explains annual total transfer magnitude and shows a number of significant coefficients. We note that there are socio demographic characteristics that, ceteris paribus, significantly affect the total amount per household paid by the municipality of Mola di Bari. There are two significant and negative coefficients: disposable income and family size. One euro increases in disposable income decreases by 0.25 euro the total amount transferred. This first result is consistent with the aim of the policies, while family size negative coefficient is harder to interpret, however, among regressors there are also the number of under 65 and under 18 years old, therefore the family size variable may be interpreted as number of non-over 65 and non-under 18 members.

There are then several characteristics that are positively related with the benefit magnitude: the number of psychological and physical handicapped in the family is very relevant in determining the benefits amount. The physical handicap of the head of the family shows also to have a positive effect on the transfers. Moreover, the number of dependent children and the age of the head increase the amount paid by the administration. Male heads and unemployed heads get higher payments. In interpreting the regression output we should keep in mind that we are observing transfer amount for household that were accepted in the program. The sample is therefore biased by the selection modelled in table 7. Finally note the coefficients associated with dummies for years. The regression is run including all years but no constant term, therefore the coefficients estimate the intercept of a regression line for each year, the intercepts are all significant and differ considerably from year to year. They to some extent they correct the negative trend shown in table 4 . Here we show that the trend in expenditure is less clear when controlling for socio-economic characteristic variability and it shows a decline from 2002 to 2003 but a considerable growth from 2003 to 2006.

4.3 A thematic map of income support programs

With administrative data we were also able to carry on a spatial analysis of the income support policies. The thematic map obtained may be considered as a proxy for deprivation dispersion in the territory (aware of the non take up potential bias), or more precisely a spatial analysis of the programs. In both cases such an exercise is one of the few attempt to present a spatial analysis of income distribution and social exclusion in our country[12]. The relevance of the spatial dimension of the socioeconomic characteristics is underlined by many authors that claims that the "spatial concepts of proximity and distribution" play a substantial role in determining the welfare condition of a resident population (Chakravorty, 1996 p. 1672).

We draw a map of the Mola di Bari territory, the area is divided in 200 by 200 squares meters and each square is associated with colors that get darker with the number of supported resident households in 2006.

As underlined by Pacione the economic characteristics of the Italian Southern regions, where land was for long the only possible investment assets, participated in determining the urban structure and social stratification of the Southern Italian cities and towns, where phenomena of segregation are more frequent than in the North of the Country (Pacione, 1987). Consistently with other empirical evidence Mola di Bari presents clusters, areas in which the supported households tend to leave. The presence of clusters is a frequent condition in spatial distributions as values are not random but tend to correlate, "being similarly affected by similar processes" (Chakravorty, 1996 p. 1672). However the analysis shows few clusters concentrated in the city centre. This evidence seems in contradiction with some part of the sociological literature on the socioeconomic stratification of Southern Italian towns (see Smith (1985) which however represents an out dated point of view).

4.4 Effects in terms of equivalent income distribution

A further piece of evidence is obtained by adding RMI, AES, and AEC transfers to the simulated income distribution[13]. The cash is ideally transferred to the simulated household that best approximate the characteristics of the households recorded in the documentation (in terms of equivalent income). This exercise gives us a measure of the Comune di Mola di Bari minimum income programs impact in terms of equivalent income distribution. The benefits paid by the municipality of Mola di Bari represent a safety net for households in situation of extreme poverty, therefore we do not expect the programs to have any relevant effect for households above the poverty line. In principle, there should not be any improvement in the Poverty Headcount Ratio, however there are 5 individuals that move outside poverty thanks to the benefits paid. Larger effects are expected for individuals below the poverty line, and in particular for very poor households. Figure 2 shows an approximation of the effects of the income for poor households.

We note how, after the public transfers, the number of households with an income close to zero is greatly reduced. The blue income distribution line lies on the left of the line representing income before the introduction of the policies. We also see that these families get around 1,000 equivalent euro per year, as between 1,000 and 2,000 we now find a larger number of individuals. As expected the two

---

[12]One of the few analysis on Naples urban area is proposed by Pacione (1987), more recently Baruffi (2007) has applied a similar analysis for the Comune di Modena territory.

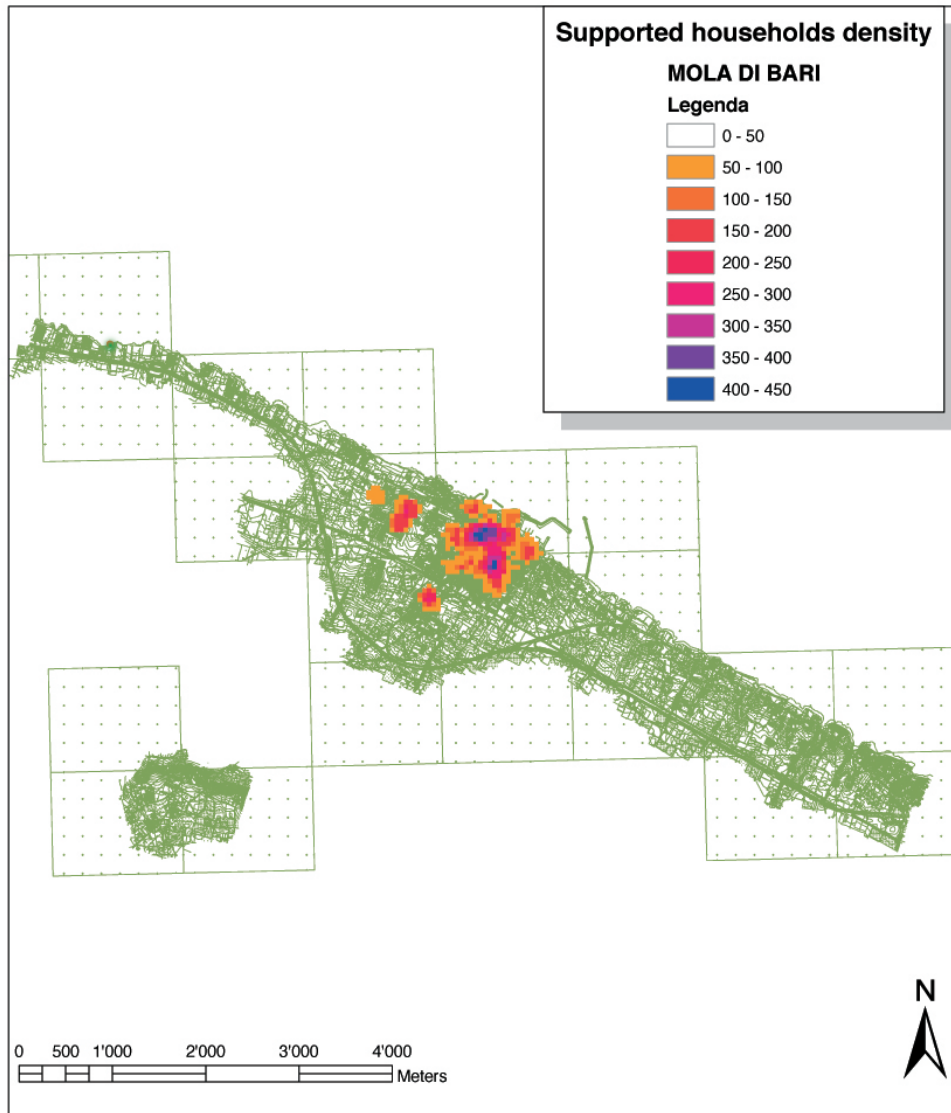[13]The simulation is based on a matching technique see **?**.

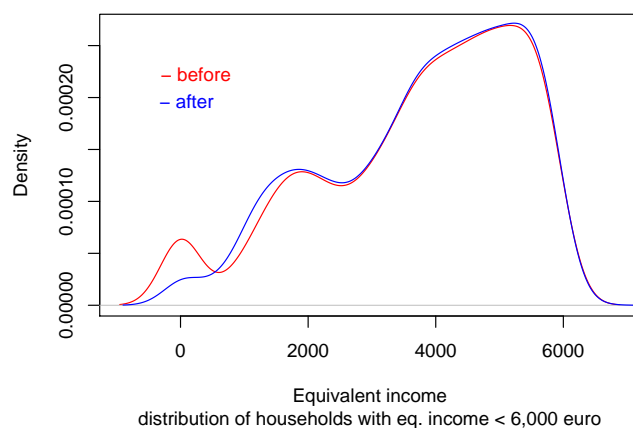Figure 2: A spatial representation of income support programs

Figure 3: Effects on equivalent income distribution

lines tend to overlap approaching the poverty line. The effects on income distribution are summarized in Table 9: the Gini index is reduced by less than 1%, there is also an unexpected reduction of the indices of poverty diffusion. Poverty gap and squared poverty gap sensible reductions are in line with what expected.

Table 9: Equivalent income distribution effects

	Before	After	Difference
Gini Index	0.333	0.331	-0.60%
Poverty HR	20.77%	20.71%	-0.29%
Poverty Gap	36.95%	35.88%	-2.95%
Sq. Poverty Gap	20.84%	19.24%	-7.96%

Source: authors calculation on Istat, MF and SHIW data.

4.5   Does RMI foster labour market participation?

When introducing an income support scheme a primary concern is labor supply. To guarantee a benefit to households with no income makes more attractive to reduce working hours, and this may induce some categories of worker to reduce working effort. However in Mola minimum income support includes both RMI and AEC. RMI is more generous, but under RMI one of the household component is forced to work to get the benefit. Generosity and working activity works in opposite direction as far as labor supply is concerned. In order to assess if the RMI program has somme positive effects in terms of attracting workers into the labor force, we have run a duration model based on our panel. A similar exercise can be found in Monti et al. (2007). In this excercise the phenomenon under scrutiny is for how many months a family is involved in income support schemes. In particular we are interested in checking if being involved in RMI has some effect on the duration of income support. We are aware that any significant effect cannot be interpreted as effects in terms of labor supply or likelihood to move out from the sample of households in need. In fact this interpretation of the household flows out as a program effect suffers of two major drawbacks. The first question is whether it is correct to

consider a household not recorded in the program in a given year as still resident in Mola and self sufficient in terms of income. The fact that he is no longer involved in the program may be related to geographical mobility or death. The second problem is that some households join and leave the sample more than once in the five years, complicating the possibility to model program duration and outcome. We partially correct for the first simplification cutting the sample at 64 years of age. As far as the second issue is concerned, for sake of simplicity we rearrange the panel structure considering as a new household a household that enters into the panel after it went out. We are aware that this shortcut unavoidably affects our understanding of the phenomenon, that is the meaning of two households being involved in the program is not the same of a single household being involved twice[14].

We estimated a survival function with a Cox model, leaving the baseline hazard unspecified and including four covariates assumed to influence the hazard linearly (**?**).

The model (1) explains the hazard (instantaneous probability to leave the program) at time t ($h(t)$) with a non parametric function of time ($h_0(t)$) and with a linear function of age, sex, number of household components and the type of program in which the household is involved (RMI or AEC)[15].

$$h(t) = h_0(t)exp(\beta_1 x_1 + ... + \beta_4 x_4) \tag{1}$$

Table 10 presents coefficients estimates that show a significant but negative role of RMI involvement to explain income support program exit time. Age, as expected plays also a negative role while the number of components in the family does not.

Table 10: Probability to leave the income support program: Cox Proportional-Hazards Model

	coefficient	std. error	exp(coeff.)
RMI	-0.7415**	(0.3142)	0.476
Age	-0.0193***	(0.0067)	0.981
Male	0.0151	(0.1632)	1.015
N component	0.1673***	(0.0621)	1.182
N	274		
Likelihood ratio test	26.6***	4 df	

Note: Confidence levels: $*** = 99\%, ** = 95\%, * = 90\%$

Figure 4 show the survival function for two groups of households those involved in RMI and those receiving AEC. The RMI receivers blue line shows a higher probability to remain supported by RMI or AEC after any time spell. This result may be considered consistent, or at least not in contradiction, with what obtained with a similar exercise by Monti et al. (2007) that found not significant difference between RMI and RUI receivers groups. Moreover results obtained reinforce the intuition of the council employees that daily managed RMI. In the Questionnaire we asked wether they considered RMI a valid program to take workers in the labor force. They all say that RM almost never succeeded in taking potential workers in the labor force.

---

[14]Note also that our sample is both left and right censored as we do not know when household observed in 2002 were first recorded and we ignore when household still involved in 2006 will leave the program

[15]The model have been estimated on a relatively small set of variables given the sample size of RMI receiver.
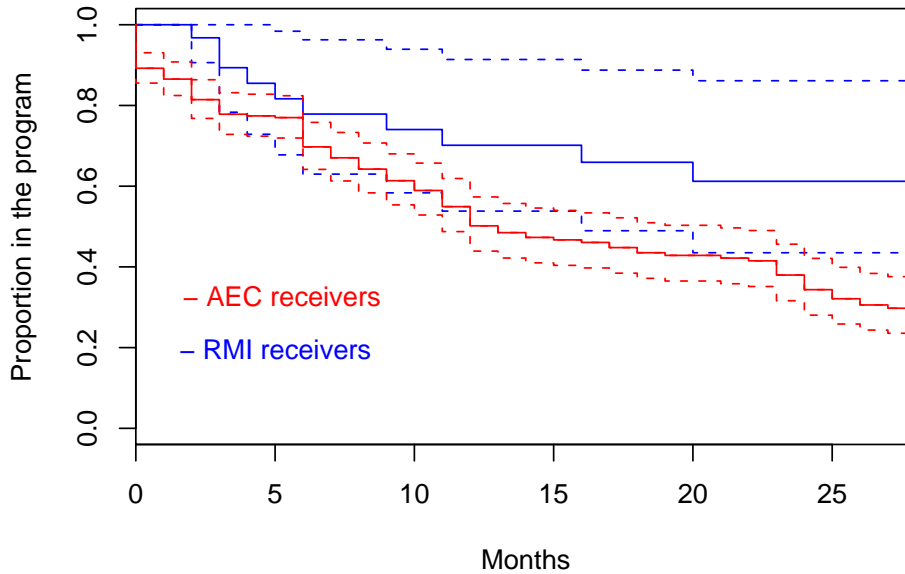
Figure 4: Estimated survival functions for those involved in RMI and not involved

Conclusions

Studying the Mola di Bari implementation of a minimum income program we provided evidence concerning a number of issues. The most relevant result is in the informative advantage that a local administration, such as an Italian municipality, has in managing a minimum income policy. The simple use of a national measure of poverty and of social exclusion tends to flatten out individual situations, making impossible to distinguish among poor people in need of public support. This issue is particularly relevant in cases of fund shortages, which is almost always the case in Italy and in the Southern regions in particular.

A second relevant issue goes exactly in the opposite direction, local administrations seem unable to verify correctly the income level of households: a comparison of Ministerial data with data coming from the municipality documentation makes clear that potential minimum income recipients systematically lie about their real income.

The study has also shown which categories of individuals are more "activable" and which households are more likely to be under-covered by minimum income policy in Mola di Bari. The analysis of the effects of RMI shows how a relevant number of households improve their economic conditions thanks to the public transfer. Nevertheless a simulation exercise shows quite high non-take up and insufficient coverage rates.

Finally, we have attempted to verify if, as the policy aims, individuals involved in the RMI program tend to be in the sample of the income supported with a lower probability in the following months. We did not find any evidence of a such an effect.

References

Baruffi G. (2007), "Disuguaglianze di Reddito a livello Locale: il Caso di Modena", presented at the workshop on *Politiche locali e disuguaglianze, Strumenti e metodologie di conoscenza*, Modena, June 2007.

Berlen N. (2008), "Pubblica Amministrazione e Politiche Sociali Territoriali", Presented at *Seminario Ricerca Innovazione, Povertà Sociale*, Mola di Bari 21 maggio 2008.

Berliri C. e Parisi V. (2006), "The Distributive and Labor Supply Impact of the Minimum Insertion Income: The Case of Italy", *International Advances in Economic Research, 12 (2)*.

Brunori P. and Bonazzi A. (2008), "Datasets Matching to Simulate Local Income Distributions: Method and Applications", *unpublished*, July 2008.

Chakravorty S. (1996), "A Measurement of Spatial Disparity: The Case of Income Inequality", *Urban Studies*, 33.

Castañeda T. (2005), "Targeting Social Spending To the Poor with Proxy Means Testing: Colombia's SISBEN System", *The World Bank Social Protection Discussion Paper N. 0529*.

Colombini S. (2007), "Disuguaglianze di Reddito a livello Locale", presented at the workshop on *Politiche locali e disuguaglianze, Strumenti e metodologie di conoscenza*, Modena, June 2007.

Ferrera M. (2005), "Welfare states and social safety nets in Southern Europe, an introduction", in Ferrera M. ed. *Welfare States Reform in Southern Europe. Fighting povert and social exclusion in Italy, Spain, Portugal and Greece* , Routledge, pp 1- 32.

Fox J. (2002), "Cox Proportional-Hazards Regression for Survival Data", *Appendix to An R and S-PLUS Companion to Applied Regression*, unpublished.

Heckman J. J. (1993), "What Has Been Learned About Labor Supply in the Past Twenty Years?", *The American Economic Review*, 83 (2).

IPRES (2006), *La Puglia in Cifre*, Sedit, Bari.

Ministero della Solidarietà Sociale (2007), *Relazione al Parlamento: Attuazione della sperimentazione del Reddito Minimo di Inserimento e risultati conseguit*, 26 Giugno 2007.

Monti, P., Pellizzari M. and Boeri T. (2007), "Reddito minimo di inserimento: an analysis of local experiences", *Presented at Collegio Carlo Alberto*, 8 November 2007.

Pacione M. (1987), "Socio-Spatial Development of the South Italian City: The Case of Naples", *Transactions of the Institute of British Geographers, New Series*, 12 (4).

Salvati A. (2008), "Relazione sui bisogni delle famiglie", *Presented at Seminario Ricerca, Innovazione, Povertà sociale*, Mola di Bari, 21 May 2008.

Saraceno C. (2003), *Una Bolla di Sapone chiamata RUI*, www.lavoce.info.

Smith G. O. (1985), "Piazza e periferia. Spazio e stratificazione sociale a Celano", *La Ricerca Folklorica*, 11.

A 4 Questions to Council employees in charged for social policy

The answers were averaged across employees.

1) Did you suggest households which program to apply for?

Around 40% of the cases.

2) Did you have suspect that the some applicants were laying about their real income?

Above 75% of the cases.

3) Did you use the subjective points system to correct for suspicious low disposable income

Around 50% of the cases.

4) Do you think that RMI is a valid program to take workers in the labor force?

Almost never (all employees answer the same).