Informal networks in the Italian labor market*

Luigi Pistaferri[†]

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Abstract

In this paper I focus on the effect of informal networks on individuals' job search and earnings. In the empirical analysis, conducted on data drawn from the 1991 and 1993 Bank of Italy Survey of Household Income and Wealth, I show that while seeking work through informal networks (referrals by friends, relatives, or acquaintances to potential employers) increases the probability of receiving job offers, it is also associated with lower earnings. In a regression of annual earnings on human capital variables and a dummy for whether the worker was hired *via* informal networks, the latter displays a negative and statistically significant coefficient. I consider two alternative explanations: unobserved low skills/ability and firms' attributes. I find that while controlling for the latter halves the magnitude of the effect, it does not remove it entirely.

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1 Introduction

Theoretical models (see Montgomery, 1991, and the references therein) predict that informal networks should have two main effects on labor market outcomes.[1] First, they should increase the probability of being hired; second, they should increase wages. The reason is that informal networks reduce information asymmetry between employers and employees and secure a better matching.

At present, there is little evidence on the impact of informal networks on job search and earnings in Italy. In this paper I use data drawn from the 1991 and 1993 Bank of Italy Survey of Household Income and Wealth (hereafter, SHIW) - a representative survey of the Italian population - to show that informal networks are widely used as an allocation device in the Italian labor market and that they have a non negligible effect on earnings.

The evidence on the success of informal networks in securing job offers is in agreement with theoretical predictions. In the 1991 SHIW roughly 40 per cent of private sector employees report that they were hired through informal networks, while about 30 percent of job seekers report to be using informal networks in their job search activity. Using the panel section of the SHIW to identify labor market transitions, I show that informal networks are more successful than any other job search strategy in terms of job seekers' placement.

However, the effect of informal networks on earnings is in contrast with theoretical predictions. In a regression of annual log-earnings on human capital variables and a dummy for whether the worker was hired through informal networks, the latter displays a negative and statistically significant coefficient. This finding appears robust to various changes in specification.

This result can be interpreted in at least two different ways. One interpretation is that the informal network dummy is proxying for unobserved job characteristics. For instance, jobs where informal networks work effectively (in the sense of matching successfully job seekers to jobs) may be available only at firms that pay lower wages on average irrespective of skills. In Italy, this is particularly the case for small firms that are not bound by regulation on hiring and wage setting. If firm size is unobserved, the informal network dummy picks up the correlation between firm size and earnings.

An alternative interpretation is that pay and seeking work through informal networks are negatively related because, given observable workers characteristics, the latter picks up the effect of unobserved low skills and ability. That is, one can argue that only individuals with low skills rely on informal networks.

To discriminate between these two hypotheses I consider additional controls for firm size and family background (which may proxy for unobserved individual skills). I find that family background variables have little or no additional explanatory power, while firm size reduces both the magnitude and the statistical significance of the dummy for informal networking. Although the proxies for unobserved individual skills are undoubtedly imperfect,

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[1]Throughout the paper, I will refer to informal networks to indicate referrals by friends, relatives, or acquaintances to potential employers.

this constitutes *prima facie* evidence supporting the hypothesis that the causal relationship between job access history and earnings reflects job, rather than individual characteristics. Nevertheless, controlling for firm characteristics does not remove the effect entirely, pointing out to a more complex explanation.

The rest of the paper is organized as follows. In section 2 I discuss the economic role of informal networks in the context of the Italian labor market and provide some evidence on the empirical diffusion of the phenomenon; in section 3 I analyze the data used in the empirical section; section 4 deals with the results of the empirical analysis, while section 5 considers some alternative explanations; section 6 concludes.

2   Informal networks in the Italian labor market

I first need to discuss the importance of informal networks in the labor market in general, and in the Italian context in particular. The term "informal networks" should be interpreted very broadly: this would include letters of reference,[2] exchange of information about job applicants among entrepreneurs, social ties between job seekers and currently employed workers, and even illicit intermediation.

The literature on the relationship between informal job search methods and labor market outcomes suggests that informal networks bridge the gap between entrepreneurs willing to hire new personnel and workers willing to supply labor services. In general, informal (or even illicit) practices are a symptom of market inefficiency. For instance, when credit markets are imperfect pawnbroking (an informal practice) and *shark-lending* (an illicit practice) proliferate. A similar argument applies to the labor market as well. Given the available job opportunities and workers' characteristics, a perfect labor market would allocate individuals to available jobs according to a "matching" mechanism. If this were the case social networks would play no role. Thus, one can argue that informal networks in the labor market may only arise as one of the possible outcomes of labour market imperfections or incomplete information. The role of letters of reference, for instance, is to provide information about those workers' characteristics that are imperfectly observed, costly to achieve, or constrained by legal requirements.

One of the most evident imperfections of the Italian labor market was the tight constraint imposed by the regulation on hiring and firing in force until 1991. I summarize the main aspects of the hiring regulation in the Appendix. According to the law, firms had to submit a request to the local state employment agency (*Ufficio di Collocamento*) or hire from mobility lists when recruiting was needed. *Half* of any additional employment was then allocated to the firm according to a pure rank ordering criterion, which implied little decision power.[3] The regulation was less stringent in the case of small firms, highly-skilled workers, or for particular sectors.

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[2]An obvious example is given by the academic job market. More in general, letters of reference provided by previous employers may be useful to ascertain workers' quality and other unobserved characteristics (such as loyalty to the firm, committment to overtime work, etc.).

[3]The regulation implied additional hiring costs for firms constrained by the *half-half* rule: in order to hire the desired worker they had to hire an additional worker from the state employment agency list.

As reported by Del Boca - Rota (1995), hiring through mobility lists or state employment agencies provides the firms with workers who are less than perfectly suitable for available jobs and more difficult to integrate in a new work environment. This increases training costs. Moreover, firms may attach *social stigma* to workers on mobility lists because previously dismissed by other firms. Given the higher cost of hiring through formal channels, firms might have looked for regulation avoidance or relied on state employment agencies' "benign neglect". Based on a survey of 61 manufacturing firms located in Northern Italy, Del Boca and Rota report for instance that "in order to recruit a particular worker to a vacant position, a medium sized company could arrange with a firm with less than ten employees, often a supplier, to hire the desired worker and then transfer him/her to the vacant job in the original company, since in this case the transfer would not be regulated".

When regulation would not bind, informal networks (private contacts, teachers at local schools, etc.) were used to fill the informational gap Italian firms had about job applicants' characteristics. As argued by Montgomery (1991), firms might find convenient to hire via employee referrals not only "because this is less expensive than more formal methods" but also because employee referrals "serve as a useful screening device". Del Boca - Rota report that in their sample 16 percent of new hires came from local state employment agencies or mobility lists, 56 percent from other firms, and 24 percent were first job seekers found through informal networks.

On the job seekers' side, social networks play an important role as well. Checking with relatives and friends is a widespread job search method not only in Italy, but also in the US and in the UK, as documented by Holtzer (1988) and Gregg - Wadsworth (1994). Holzer reports that in his US National Longitudinal Survey sample "the two most frequently used methods of search are friends and relatives and direct application, respectively"; he also calculates that 18 percent of job seekers received job offers from use of informal networks, as opposed to 19 percent from use of direct application and 10 percent from use of other methods. Using the UK Labor Force Survey, Gregg - Wadsworth find that job centres, media and friends/contacts are the main search strategies used by unemployed job seekers. The percentage of successful placements is 32 percent for the informal network channel, as opposed to 19 percent of job centres and 18 percent of media.

The evidence available for other countries suggests that the use of informal networks as a job search method is quicker and less costly than other methods. Moreover, it is usually more productive in terms of job offers. In general, one should expect people to seek work through informal channels when more formal channels work poorly or are inexistent and firms value reference letters and other informal contacts. This is likely to be the case in Italy, where state employment agencies perform badly and private employment agencies are prohibited from operating by the regulation. One can argue that while highly skilled workers may use more formal job search methods and expect to be successful with a high probability, low skilled workers may have no better alternative than to rely on social connections and family networks to find work. I will address this argument in the remainder of the paper.

3 The data

This section briefly describes the construction of my sample. I use the 1991 and 1993 Survey of Household Income and Wealth conducted by the Central Bank of Italy. The SHIW is widely used in empirical work since it contains information on income, consumption, wealth, household characteristics, and individual labor supply. For more details about the survey, see Brandolini - Cannari (1994).

For the 1991 survey, a sample of 8,188 households is interviewed (8,072 in 1993). The survey is usually conducted in the summer of the following year and all the variables refer to the previous calendar year. The unit of observation is the *de facto* household, which includes all persons residing in the same dwelling and who are related by blood, marriage, affection, or adoption. Households are randomly selected through a two-stages-stratified sampling procedure, and the design of the survey is such that the final sample is representative of the Italian population. Since 1989, the survey also contains a panel component.

Since entrepreneurship does not require a formal hiring process, I exclude the self-employed and focus only on household heads working full-time in the public or private sector. The original data set included 3,509 such individuals. Since jobs in the public sector can only be obtained by competition, not through referrals by relatives or friends (at least in principle and with some legal or illegal exceptions), I exclude those working in the public sector (1,393 observations). I also exclude individuals aged above 65 or below 20 (6 observations), those working in agriculture (123 observations) and those with missing values on the variables I use in the empirical section (56 observations). Finally, to prevent my estimates to be contaminated by influential values or measurement error, I trim the sample at the bottom and top percentile of the distribution of earnings (37 observations). The final 1991 sample includes 1,894 individuals.

The 1991 SHIW contains a special section (section B9 of the questionnaire) collecting information on job mobility and job search.[4] The survey question I use to discriminate between individuals who obtained work through informal networks and individuals who did it using different job search methods is the following:

"How did you get your current job? (Please provide just one answer)".

Possible answers are:

i) through a state employment agency (*Ufficio di Collocamento*);

ii) through an open competition in the public administration or other public institution;

iii) replying to a job advertisement published on a newspaper/magazine;

iv) sending a CV to a potential employer;

v) through a "head-hunter" agency;

vi) through referrals by friends, relatives, or acquaintances to potential employers (informal networks);

vii) inserting the CV in a database;

viii) helping a relative in his/her job;

ix) becoming self-employed;

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[4]These data have been already analyzed by Casavola - Sestito (1995), who focused on observable differences across the groups of workers who use the various job-finding channels.

x) receiving a direct job offer by a firm;

xi) other.

Table 1 shows that 47 per cent of individuals in my sample obtained their current job through informal networks. This is a striking figure, highlighting the quantitative importance of this job search methods even in the presence of tight regulation on hiring procedures. State employment agencies found work only to 11 percent of my sample, despite their near-monopoly; this is *prima facie* evidence confirming their inefficient role in the allocation of workers to available jobs.

People interviewed in the 1991 SHIW are also asked to report whether and how they are seeking work. Possible options are again i) to xi) as in the question above, but up to three different answers are allowed. For the sub-sample of currently unemployed job seekers (1,242 individuals), I find that seeking work through informal networks is not the preferred first option (it is chosen by only 8 per cent of job seekers, see table 2). However, when I focus on individuals choosing just one option, I find that seeking work through informal networks is the preferred search strategy for roughly 28 per cent of the sub-sample. Table 3 shows that the use of social networks in the job search activity declines with education and age, it is higher in the South and in small towns and is equally used by males and females in my sample.[5]

4   The results

Table 4 presents simple statistics for the two groups of workers I am dealing with: those who found work through informal networks and those who did not. As the table shows, these individuals are on average fairly different. Workers hired *via* informal networks are less educated, with less labor market experience and more likely to live in the Centre. They are also more likely to live in a small town (perhaps because in the local labor market hiring regulations can be avoided more easily or social contacts are more valuable). As far as labor market characteristics are concerned, they work longer hours, have lower earnings (implying lower wage rates), and are mainly blue collar employees of manufacturing or construction firms. On average, workers who obtained their job through referrals by relatives and friends also spent less time unemployed than those who obtained it using more traditional search strategies (3.37 *vis-à-vis* 3.49 years).[6] This tallies with the idea that informal networking increases the chance of finding a job and shorten the time devoted to job search.

A somewhat different way to address the same question is to use longitudinal data. To this aim, I construct a panel of individuals surveyed in both 1991 and 1993. There are 4,242 such individuals. Of them, 598 (14 percent of the original sample) report to be unemployed seeking work in 1991. I focus my attention on this group; this is because I am more likely

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[5]In Table 3 I use data on individuals chosing just one search option.

[6]This is obtained as $(age - education - experience - 6)$: it is the number of years between school leaving age and age when firstly entering the labour market. It is fair to say that, due to measurement error, it might be a very poor measure of the variable of interest. Moreover, it does not take into account that in the survey people report the higher degree obtained, rather than school leaving age. If people enrol in school and then quit, this would lead us to underestimate the time they spent unemployed; of course, the amount of bias could be different in the two groups.

to assess the effectiveness of informal networks on employment opportunities by looking at individuals whose initial state is that of unemployment. In other words, I can assess whether labor market transitions are affected by the use of informal networks.

Table 5 reports labor market transitions between 1991 and 1993 and shows that only 20 percent of the 1991 unemployed job seekers make a transition towards employment. Table 6 shows that about 40 per cent of the latter were employed through informal networks. This evidence confirms the theoretical prediction that informal networks help finding a job more easily (and perhaps more quickly) than any other job search strategy available to the unemployed job seekers. This is consistent with the evidence available for other countries.

In table 7 I relate log-earnings to human capital variables (Willis, 1986), job characteristics, and the dummy for informal networks. I present three different specifications: (1) one with labor market experience[7] and its square term, education, gender, region of residence and the dummy for informal networking; (2) adding industry dummies; (3) adding occupation dummies. In the simplest specification the dummy for informal networking displays a statistically significant coefficient of -0.046. Adding job characteristics to control for industry or occupation earnings differentials reduces the point estimate of the effect, but in the extended specification (3) having been hired *via* informal networks still amounts to a negative *premium* of about 3 per cent. In absolute value, seeking and obtaining work *via* informal networks appears to be more costly then giving up school one year earlier. Moreover, it implies an annual loss of roughly 1 million Italian lire *vis-à-vis* hiring through different methods.

There are at least two explanations consistent with this evidence. The first is that the use of informal networks is negatively correlated with unobserved individual skills and abilities.[8] The second explanation is that the causal relationship between job access history and earnings is, in fact, a relationship between unobserved job characteristics and earnings.

Formally, the earnings function can be written as a function of observed human capital and job characteristics X_{ij}, the informal networking dummy IN_{ij}, and a composite error term:

$$\ln y_{ij} = \beta X_{ij} + \gamma IN_{ij} + \lambda_i + \mu_j + u_{ij}$$

where i and j index individual and job characteristics, respectively, and the composite error term $\lambda_i + \mu_j + u_{ij}$ contains unobserved factors affecting earnings. If $E\left(IN_{ij}|\lambda_i\right) \neq 0$ and/or $E\left(IN_{ij}|\mu_j\right) \neq 0$, the use of informal networks is proxying for those unobserved individual and/or job characteristics. Controlling for such characteristics should allow me to discriminate between the two interpretations above.

In order to do that I need information on individual skills and job characteristics over and above those already included in X_{ij}. Unfortunately, the 1991 SHIW does not provide

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[7]The experience variable is defined as the difference between age in the year preceding the interview and age when firstly entering the labor market. The latter is available in both the 1991 and 1993 SHIW.

[8]Arguably, a negative and statistically significant dummy coefficient is a reflection of a phenomenon similar to that emphasized by Di Nardo - Pischke (1997) in their critique of Krueger (1993), who finds that the introduction of computers generated a positive wage premium of nearly 12 per cent in the US. Di Nardo - Pischke show that this is due to the fact that the dummy for computer is proxying for unmeasured ability characteristics, rather than representing a genuine "causal" relationship.

information on, say, firm size or individual ability. However, the 1993 SHIW does contain information on firm size,[9] and it includes a section on social mobility with family background variables. The latter have been commonly used as proxies for individual unobserved ability (see Hausman - Taylor, 1981). Thus, I draw another sample from the 1993 SHIW using the same selection criteria described above. The 1993 sample includes 1,456 individuals; about 42 percent were hired *via* informal networks, a figure which is very close to the 1991 one.

Results for 1993 are presented in Table 8 and are fairly similar to those for 1991 presented in Table 7, although the informal networks dummy displays a point estimate (-0.07) that is now higher in absolute value even after controlling for occupation and industry dummies (as in column 1). In column (2) I proxy unobserved individual skills with family background variables (father's education and dummies for father's occupation). Results remain virtually unchanged. In column (3) I control for firm size, while in column (4) both sets of variables are included. Controlling for firm size has a strong effect; the point estimate for the informal networks dummy halves (-0.04) and is measured less precisely (the p-value being 2.6 percent), highlighting the importance of controlling for unobserved firm characteristics.[10] However, the puzzle that *refereed* workers are paid less than observationally equivalent *non-refereed* workers remains intact (the 95 percent confidence interval being between -0.07 and -0.01). This contrasts with theoretical predictions and the empirical evidence available for other countries.[11]

5   Explanations

To sum up the results reported in Table 8, individuals hired through informal networks receive earnings that are on average 7 percent lower than those of observationally equivalent individuals hired though other channels. The strong negative correlation between the informal network dummy and firm size reduces the negative premium to about 4 percent. In this section I will consider some explanation for these findings.

First, recall that in Italy small firms are very widespread;[12] this is partly explained by

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[9]Small firms are more likely to use informal networks for a number of reasons. First, they are less bound by the hiring regulation. Second, the owner and the recruiter tend to coincide. If informal networks lower hiring costs and operate locally, the owner/recruiter will tend to use them more intensively than the recruiter in a large firm, not only because it is in her direct interest to do so, but also because she has a better knowledge of the local network. Recruiters in large firms may lack incentives in this sense and perhaps have no personal attachment to the firm's location. Third, if informal networks take the form of employees referrals, in a small firm the recuiter and the employees will tend to work closely and information exchange will be easier. In a large firm, employees are often buried within the production unit and become largely anonymous. It can be very time-consuming in this case to extract information about the ability of potential applicants from current employees.

[10]Small, medium and large firm size correspond to less than 5, between 5 and 99, and more than 99 employees, respectively.

[11]Holtzer (1988) reports that in his sample 81 percent of all offers received after seeking work *via* relatives and friends are accepted, a percentage well above that of any other search method. He claims that this implies that "job offers obtained through friends and relatives generally have higher wages and/or more appealing nonwage characteristics than those otherwise obtained".

[12]According to the 1996 census of firms, in the private sector small firms (with less than 10 employees)

the fact that hiring and firing regulation is binding at a threshold defined by the number of employees.[13] Small firms can therefore use virtually any hiring strategy. Also, and this is clear from the results reported in columns (3)-(4) of Table 8, they pay lower wages on average irrespective of skills or qualifications.[14] If individuals hired through informal networks were segregated in this particular segment of the labor market (for instance, if regulation would prevent large firms to hire through informal channels), finding a negative association between the dummy for informal networks and earnings would be hardly surprising in the absence of a control for firm characteristics, as in Table 7. This is in fact an important part of the story; individuals hired by firms with less than 5 employees are almost twice more likely to be hired via informal networks than otherwise (65 vs. 35 percent). Yet, this is not the whole story, because controlling for a full set of firm size dummies reduces the effect of social networks but it does not eliminate it entirely. Since going any deeper in controlling for firms' characteristics is hardly thinkable (at least with the data I have available), one needs to consider alternative explanations.

One possibility is that the dummy for social networks accounts for some further (individual or job) characteristics that are not fully captured by the set of variables I am controlling for. I will examine two alternatives: the interaction between the firm's hiring policy and hiring costs, and the peculiarity of contractual arrangements in the Italian labor market.

Due to regulation, hiring and firing costs are higher in Italy than in other OECD countries. Del Boca - Rota (1995) calculate that hiring a new employee costs between 2 and 2.6 months of annual earnings, and that to some extent this varies with skill levels. Due to high hiring costs, the firms' hiring policy may become more articulate the more complex is the job they have to hire for.[15] At the bottom end, a formal recruiting process is not worth, for instance when a low skill position has to be filled. In this case, the use of informal networks can be the cheapest and quickest available option. At the top end, firms meet a relatively high cost of hiring in order to minimise future firing costs (individual firing is in fact very expensive in Italy; moreover, a high skill worker who leaves the firm, either by choice or by involuntary lay-off, entails an additional cost associated to the loss of specific human capital). They can even distrust letters of reference if these are easily and cheaply available to all applicants: informal contacts may then fail to play the role they were expected to play in the first place, i.e. that of transmitting reliable information.[16] This holds true not only between observable

account for as much as 95 percent of all firms and employ about 47 percent of all workers.

[13]As I explain in the Appendix, a law passed in 1949 set the threshold to 5 employees. The 1971 *Statuto dei Lavoratori* raised the threshold to 15 employees.

[14]As reported by Guiso - Jappelli - Pistaferri (1999), employees of small firms face also higher earnings and unemployment risk.

[15]A formal recruiting process usually consists of CV screening, one or more interviews, and perhaps a set of written tests. Letters of reference are likely to play a role only at the initial stage of the recruiting process, i.e. to get an interview. Given the length of the recruiting process and the opportunities offered to the recruiters to read beyond both the CV and the letters of reference, firms have no reason to discriminate informal network candidates, especially if the practice is well established.

[16]At the very top end, informal networks may become valuable again if social networks are formed according to worker abilities, as pointed out by Montgomery (1991). His argument is that references provided by capable individuals are valuable to the firm, as the latter expect the refereed person to be capable if friendship is more likely among people of similar ability.

ability groups (i.e., the use of informal networks declines with education), but also within observable ability groups (i.e., given education, firms may use informal networks if they need to recruit a worker with standard characteristics, but search through different channels if they wish to recruit a worker with some particular characteristics which is not easy to find through local networks).

Informal networks are thus mainly used to fill low skill positions; these positions command low wages by their very nature; therefore, it is not surprising to find a negative association between earnings and job access history even after controlling for firm size. Controlling for education (or other ability indicators, such as father's education) does not eliminate the statistical significance of the informal networks dummy because while it is true that schooling is correlated with individual skills and abilities, it is just a dimension of them.

To understand this point, consider a firm that needs to fill two secretarial positions. One position requires standard attributes such as the ability to type, photocopy, fax, and phone-answering. A social network can easily fill the gap because the required attributes are unsophisticated. The other position requires instead the possession of some non-standard attribute (not necessarily sophisticated, such as the ability to speak a foreign language or manipulate a web page), and the social network may fall short of the right person for the job, which leads the firm to look on the market or advertising. The workers hired for the two jobs will classify themselves as secretary, i.e., they will have similar observable characteristics, but they will probably receive different compensation to reflect the fact that the latter has a set of skills that are valuable to the firm, even though useless in other working environments (e.g., in a domestic-oriented firm or a firm that has no access to Internet). But the crucial fact is that informal networks operate locally, have no access to wider information, and may have difficulty filling all the positions in a firm, even though the use of a network is always less costly than a formal hiring process.[17]

Another possibility is related to contractual arrangements in force in the labor market. Consider the case in which informal networks help the candidate to avoid *all* the hurdles of a recruiting process; for instance, she inherits her father's job by a contractual agreement. In Italy it is possible in some cases to *bequeat* one's job to a child by renouncing to a fraction of the severance pay (*liquidazione*); the firm only requires the child to possess a minimum level of education needed to access the post. This is usually a contractual arrangement and represents an additional instance of how family networks allocate workers to jobs.[18] Since firms cannot oppose such contractual arrangement, they may rationally decide to pay this worker a lower starting salary simply because they do not have any way to test her abilities or skills. Of course, in the following periods the salary can be updated according to productivity performance; however, since it takes some time before updating beliefs and ascertaining workers' productivity on the job, and since salary progression is usually strictly tied to seniority rules, workers hired *via* family or other informal networks may end up being paid less than observationally equivalent individuals because of the initial belief held by the employer. Of course, from the survey question it is impossible to assess whether informal

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[17]In this sense, the negative premium for the refereed secretary (conditioning on other observable characteristics) should be read more correctly as a positive premium for the unrefereed secretary.

[18]As pointed out to me by a referee, bequeating a job to a child "has been (and still is, even if at a declining rate) a contractual outcome in several sector". See Fabbri - Rossi (1997).

networks helped to avoid one or *all* the hurdles of a formal recruiting process.

To sum up, most of the negative effect of informal networks on earnings is due to the fact that informal networks allocate workers especially to small firms (either because small firms are less bound by the regulation, or because informal networks develop ties especially with small firms). The residual part may be interpreted as a result of low unobserved skills which occur to be correlated with the use of informal networks.[19]

6 Conclusions

In this paper I have tried to uncover the statistical relationship between earnings and the likelihood of being hired through referrals by relatives, friends or acquaintances. The paper is also a modest attempt to shed light on an issue that is widely discussed in the popular press, but that has rarely received attention at academic level.

In theory, informal networks should have two main effects on labor market outcomes. First, they should increase the probability of being hired; second, due to information transmission, they should increase wages. I find that the evidence for Italy is consistent with the first prediction, but not with the second. After controlling for a full set of individual and job characteristics, being hired *via* informal networks attracts an earnings penalty of about 4 percent. To explain such evidence one needs to consider the large imperfections of the Italian labor market. As suggestively noticed by Bertola - Ichino (1995), this is quite far from "crossing the river" of deregulation and flexibility.

The empirical findings are best explained by the fact that in Italy informal networks play a very important role in small-sized firms (at all levels of skill), low-skill jobs (at all levels of firm size), and perhaps in the context of contractual arrangements that are peculiar to the Italian labor market. Small firms are not bound by the regulation on hiring and firing and pay on average low wages irrespective of skills. Likewise, individuals searching *via* informal networks are allocated to small firms because the network is more likely to have developed social ties with firms where the recruiter and the owner tend to coincide with the same person, and this is very much likely to happen with a small firm. Moreover, the evidence shows that Italian workers tend to seek work locally and are highly averse to geographic mobility. In fact, controlling for firm size halves the effect of informal networking on earnings, but it does not remove it entirely.

On the other hand, firms that need to fill jobs where no qualifications are required usually recruit through informal networks in an attempt to reduce hiring costs, which are particularly high in Italy (in the absence of hiring costs firms would be indifferent between the use of informal networks or other hiring channels). Firms may go through a much longer recruiting

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[19]A further possibility is that the negative premium on informally refereed workers reflects the dualistic nature of the Italian labour market. Suppose that there is a primary labor market that offers permanent good jobs for which job seekers are formally screened (and where informal networks are of no use), and a secondary labor market which offers transitory bad jobs where informal networks are widely used by both employers and job seekers. To check whether this interpretation is valid, one should have reliable controls for job quality, which unfortunately are absent in the SHIW. I experimented by interacting job dummies, firm size dummies and region dummies with the informal network indicator and in no case did I find statistically significant deviations from the pattern of my results.

process only when a high-skill position has to be filled (choosing the wrong manager is in fact much more costly than choosing the wrong manager's typist) or if they require workers with non-standard attributes *within* similar observable skill groups. Local informal network can be of no use in these circumstances. Thus, the firms' hiring policy may become more articulate the more complex is the job they have to hire for. This occurs irrespective of firm size, and it may thus explain the residual effect of informal networking on earnings over and above the set of typical controls I have considered (i.e., human capital characteristics, job, industry, and firm size dummies).

Finally, firms may rationally choose to pay low wages to workers that are hired without screening, for instance when workers inherit their parent's job. As in the standard agency problem, the *ex-ante* unobservability of individual abilities lead rational firms to pay the lowest wage available and then to update it in the future periods conditioning on performance observation. This strategy is not applied to workers hired through formal channels because their ability is tested *ex-ante* during the recruiting process.

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A   Labor hiring regulations in Italy

Labor hiring procedures in Italy have been regulated by two laws: law no. 264, passed in 1949, and law no. 223, passed in 1991. The bills passed between these two dates were all directed towards making the original rules more flexible for the employers. According to law no. 264, half of any labor increase due to hiring of involuntary unemployed workers and those seeking work was to be supervised by state employment agencies (*Uffici di Collocamento*), with few exceptions (mainly in agriculture, the arts, and maritime and air transport). Firms willing to hire new personnel were to submit a request to the local state employment agency, which would provide them with a list of potential employees to be hired. Workers were sorted according to needs (family size and length of unemployment spell), qualifications and merits. This was known as the numerical call (*chiamata numerica*) criterion. Exceptions to such criterion were to be applied only to special categories of workers: the employers' relatives, precision craft and highly skilled workers hired via an open competition and those hired by firms whose size was below five (later raised to ten). A further exception was allowed for those employed in other firms for at least six months.[20] The alternative criterion to the numerical call was known as the nominative call (*chiamata nominativa*). The restrictions imposed by such regime generated high rigidity in the labor market and frequent avoidance of the regulation. Due to such state of play, exceptions to job allocation schemes were extended by law to domestic workers (1973), apprentices (1987), those hired through job sharing contracts (*contratti di solidarietà*, 1984), young workers hired on a temporary basis through training contracts (*contratti di formazione e lavoro*) and receiving a firm offer for a permanent position up to 32 months after the expiring of their contract (1984), and workers with hiring priorities (e.g., those previously fired by the firm due to demand shortage). The job allocation scheme devised as far as in 1949 was eventually abolished in 1991 by the law no. 223. According to the latter, starting from 1989 onward (and hence retrospectively) firms willing to hire new personnel would apply fully discretionary procedures. Bertola - Ichino (1995) interpret the law no. 223/1991 as an important step towards flexibility in the Italian labor market.

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[20]I am grateful to a referee for pointing this out.

Table 1
How current job was obtained (1991 sample)

This table is based on the following survey question: "How did you get your current job? (Please provide just one answer)".

Possible answers are: (i) through a state employment agency (*Ufficio di Collocamento*); (ii) through an open competition in the public administration or other public institution; (iii) replying to a job advertisement published on a newspaper/magazine; (iv) sending a CV to a potential employer; (v) through a "head-hunter" agency; (vi) through referrals by friends, relatives, or acquaintances to potential employers (informal networks); (vii) inserting the CV in a database; (viii) helping a relative in his/her job; (ix) becoming self-employed; (x) receiving a direct job offer by a firm; (xi) other.

Methods used	N. of obs.	Percentage
State employment agency	202	10.67
Public competition	243	12.83
Newspapers	73	3.85
Direct application	384	20.27
Informal network of relatives, friends, etc.	891	47.04
Data bank	18	0.95
Self-employment	10	0.53
Others	73	3.86
Total	1,894	100.00

Table 2
Search strategies of the unemployed job-seekers (1991 sample)

This table is based on the following survey question: "How are you seeking work?".

Possible answers are: (i) through a state employment agency (*Ufficio di Collocamento*); (ii) through an open competition in the public administration or other public institution; (iii) replying to a job advertisement published on a newspaper/magazine; (iv) sending a CV to a potential employer; (v) through a "head-hunter" agency; (vi) through referrals by friends, relatives, or acquaintances to potential employers (informal networks); (vii) inserting the CV in a database; (viii) helping a relative in his/her job; (ix) becoming self-employed; (x) receiving a direct job offer by a firm; (xi) other. Each respondent is allowed three possible answers (1st option is the first answer to the question).

Job search strategy	1st option	2nd option	3rd option
State employment agency	799	0	0
Public competition	130	270	0
Newspapers	109	187	73
Direct application	75	152	83
Informal network of relatives, friends, etc.	96	260	273
Data bank	0	6	17
Self-employment	5	5	14
Others	0	1	0
Not reported	28	361	782
Total	1,242	1,242	1,242

Table 3
Individual characteristics and job search (1991 sample)

The entries in this table are percentages.

	State employment agency	Public open competition	Informal networks	Other methods
Compulsory schooling or less	43	5	31	21
More than compulsory schooling	26	29	19	26
Male	38	11	26	25
Female	34	18	26	21
North	44	10	15	31
Middle	31	10	27	32
South	35	16	29	30
Small town	31	10	33	26
Large town	39	15	20	26
Metropolitan area	36	21	30	13
Age <20	31	4	36	29
Age 20-24	40	11	27	22
Age 25-29	32	22	24	22
Age >29	42	24	15	19

Table 4
Individual characteristics (1991 sample)

Standard deviations are reported in parenthesis. Variables labelled with "*" are proportions.

Variable	Informal networking	Formal search methods
Annual earnings	21323.42 (6653.98)	23730.72 (7596.97)
Hours of work	42.27 (4.59)	41.69 (4.53)
Age	42.41 (9.48)	42.95 (8.85)
Years of education	8.15 (3.64)	9.71 (4.04)
Years of labour market experience	24.88 (10.30)	23.74 (10.07)
Male*	0.9517 (0.2144)	0.9432 (0.2316)
Married*	0.8878 (0.3158)	0.8804 (0.3247)
Living in the North*	0.4422 (0.4969)	0.4796 (0.4998)
Living in the South*	0.3143 (0.4645)	0.3370 (0.4729)
Blue collar*	0.7194 (0.4495)	0.5145 (0.5000)
Manufacturing*	0.4837 (0.5000)	0.4845 (0.5000)
Construction*	0.2009 (0.4009)	0.0957 (0.2943)
Working days lost because of illness	8.49 (17.15)	8.14 (15.54)
Small town*	0.2379 (0.4261)	0.1545 (0.3616)
Large town*	0.4186 (0.4936)	0.4397 (0.4966)
Metropolitan area*	0.1414 (0.3486)	0.1994 (0.3997)
Number of observations	891	1,003

Table 5
Labour market transitions in 1993
of the 1991 unemployed job-seekers

Labour market status in 1993	N. of obs.	Percentage
Employed	117	19.57
Unemployed	395	66.05
Unemployment benefits	3	0.50
Occasional work	2	0.33
Not reported	81	13.55
Total	598	100.00

Table 6
How 1991 unemployed job-seekers obtained their 1993 job

Method used	N. of obs.	Percentage
State employment agency	5	4.20
Public competition	19	15.97
Newspapers	5	4.20
Direct application	16	13.44
Informal network of relatives, friends, etc.	45	37.82
Data bank	0	0.00
Self-employment	13	10.92
Others	11	9.24
Not reported	5	4.20
Total	117	100.00

Table 7
The economic return from informal networking (1991 sample)

All regressions include a constant. Excluded attributes are: Centre, Services and Manager. Standard errors are reported in parenthesis under the coefficient estimate.

Variable	(1)	(2)	(3)
Experience	0.0210 (0.0026)	0.0208 (0.0025)	0.0169 (0.0024)
Experience^2	−0.0003 (0.0001)	−0.0003 (0.0001)	−0.0003 (0.0000)
Education	0.0408 (0.0017)	0.0393 (0.0018)	0.0183 (0.0021)
Male	0.1552 (0.0257)	0.1672 (0.0260)	0.1688 (0.0254)
South	−0.0169 (0.0157)	−0.0133 (0.0157)	−0.0270 (0.0149)
North	0.0385 (0.0148)	0.0393 (0.0149)	0.0326 (0.0138)
Manufacturing		−0.0214 (0.0132)	0.0013 (0.0124)
Constructions		−0.0794 (0.0182)	−0.0557 (0.0176)
Blue collar			−0.5724 (0.0402)
Clerical			−0.4608 (0.0376)
Craft precision			−0.2700 (0.0380)
Informal networking	−0.0457 (0.0119)	−0.0396 (0.0119)	−0.0305 (0.0111)
R^2	0.3025	0.3091	0.4055

Table 8
Controlling for ability and firm size (1993 sample)

All regressions include a constant. Excluded attributes are: Centre, Services, Manager, Father unemployed, and Firm size: large. Standard errors are reported in parenthesis under the coefficient estimate. Regressions in columns (2) and (4) also includes dummies for father's occupation.

Variable	(1)	(2)	(3)	(4)
Experience	0.0169 (0.0038)	0.0178 (0.0038)	0.0137 (0.0037)	0.0145 (0.0036)
Experience^2	−0.0002 (0.0001)	−0.0003 (0.0001)	−0.0002 (0.0001)	−0.0002 (0.0001)
Education	0.0180 (0.0037)	0.0143 (0.0038)	0.0157 (0.0036)	0.0126 (0.0037)
Male	0.3220 (0.0336)	0.3313 (0.0334)	0.2848 (0.0319)	0.2953 (0.0317)
South	−0.1149 (0.0249)	−0.1195 (0.0250)	−0.1152 (0.0244)	−0.1205 (0.0245)
North	0.0251 (0.0199)	0.0239 (0.0197)	0.0175 (0.0194)	0.0163 (0.0193)
Manufacturing	0.0336 (0.0204)	0.0392 (0.0205)	−0.0022 (0.0202)	0.0029 (0.0204)
Constructions	−0.0879 (0.0328)	−0.0761 (0.0333)	−0.0821 (0.0331)	−0.0730 (0.0334)
Blue collar	−0.7288 (0.0643)	−0.6975 (0.0643)	−0.6974 (0.0626)	−0.6703 (0.0625)
Clerical	−0.4482 (0.0587)	−0.4267 (0.0587)	−0.4482 (0.0567)	−0.4290 (0.0567)
Craft precision	−0.1706 (0.0623)	−0.1567 (0.0625)	−0.1762 (0.0609)	−0.1640 (0.0610)
Father's education		0.0054 (0.0028)		0.0039 (0.0027)
Firm size: small			−0.2796 (0.0372)	−0.2784 (0.0373)
Firm size: medium			−0.1115 (0.0184)	−0.1083 (0.0184)
Informal networking	−0.0724 (0.0179)	−0.0711 (0.0178)	−0.0392 (0.0175)	−0.0388 (0.0174)
R^2	0.4518	0.4613	0.4809	0.4897