Social Capital and Personal Contacts in a Labour Market with Search Frictions

Anna Zaharieva *

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1 Extended abstract

The importance of social networks and personal contacts has been largely recognized in the empirical literature. Staiger (1990), Granovetter (1995), Addison and Portugal (1998), Pistaferri (1999) and Margolis and Simonnet (2003) show that between one and two-thirds of the employees in different countries have obtained their current job with a help of a friend or a relative (see table 1). In addition, one further refinement of this result presented in Capellari and Tatsiramos (2010) highlights the relevance of the employment status of a personal contact: "... employed social contacts are expected to be better informed about job opportunities available in the market and to pass this information to non-employed network members." (p. 2). However, despite the general agreement about the importance of personal contacts, empirical evidence on the effect of networks on wages is rather mixed. In particular, Pelizzari (2010) shows that in the European Union "... premiums and penalties to finding jobs through personal contacts are equally frequent and are of about the same size." (p. 1).

The starting point of this paper is to incorporate these empirical findings into an equilibrium model with search frictions and the informal job market, where vacancy information is only transmitted through employed personal contacts. Wages in the public job market are set competitively, exploiting the fact that a more generous wage offer attracts a larger number of applications. The concept of competitive search employed in this paper is originally introduced in Moen (1997). In contrast, wages in the informal job market are set through bargaining reflecting the possibility of wage premiums or wage penalties observed in Pelizzari (2010).

*Institute of Mathematical Economics, University of Bielefeld, 33501 Bielefeld, Germany, E-mail: azaharieva@wiwi.uni-bielefeld.de

Study	Incidence	Wage effects	Sample	Country
D.N. Margolis V. Simonnet (2003)	36%	$W^I < W^M < W^P$	11275	France
D. Staiger (1990)	40%	$W < W^P$	965	US
L. Pistaferri (1999)	47%	$W > W^P$	1894	Italy
M. Granovetter (1995)	56%	$W^M < W^I < W^P$	275	US
J.T. Addison P. Portugal (1998)	47%	$W^I < W^P < W^M$	2281	Portugal

Table 1: Empirical evidence on job search through personal contacts; W^M – wage obtained through a direct market application, W^P – wage obtained through a personal contact, W^I – wage obtained through an intermediary.

The network structure of personal relations is kept simple, specifically it is assumed that every worker in the labour market has exactly one social link, which can be interpreted as a close relative, a friend or an acquaintance. In the baseline model of the paper a pair of connected individuals are fully sharing their labour income and therefore are treated as a single family. The model is further extended to relax the assumption of income sharing, which allows to analyze the inherent difference of a personal contact being a friend or a close relative. This research study is then the first to combine the literature on family search with income sharing, represented by Guler, Guven and Violante (2010) and Ek and Holmlund (2010) with the literature on social networks.

The aim of this paper is to analyze the implications of job search through personal contacts on equilibrium welfare and wage inequality using a search model with a free-entry of firms both into the public and the informal job market. Upon the decision to enter the labour market firms face a trade off between a high cost vacancy in the public job market with a large number of searching unemployed workers versus a low cost vacancy only available to workers with an employed personal contact. The closest study to analyse social welfare in an equilibrium search model with a free-entry of firms is Cahuc and Fontaine (2009). The choice of search methods by firms is also endogenous in their model, however there is only one search method prevailing in the equilibrium, whereas in this study both search methods are simultaneously used by workers with employed social contacts. This model property allows to study the spillovers between the public and the informal job market.

Specifically, the model predictions can be summarized in the following way. First of all, the model implies wage differentials among equally productive risk-neutral workers. This is due to the ex-post differentiation of reservation wages among unemployed workers depending on the employment status of their contact. In the baseline model

wage competition between firms opening a vacancy in the public job market results in a segmentation of the public job market into the low wage segment targeted at unemployed workers with low social capital and a high wage segment for workers with a high reservation wage stemming from the additional possibility to obtain job offers from an employed personal contact. Wages in jobs obtained through personal contacts are then lower or higher than the market wages depending on the bargaining power of workers.

Furthermore, this paper shows that competitive equilibrium with family search and bargaining in the informal job market is constraint efficient for the Hosios value of the bargaining power. The new contribution of this paper is then to prove that wage dispersion between workers with high and low social capital in the public job market is maximized for the efficient value of the bargaining power. If the bargaining power parameter is low, meaning that wages paid in jobs obtained through personal contacts are low, then a higher value of this parameter has a positive effect on wage dispersion in the public job market. The funtional relationship between the bargaining power and wage dispersion is reversed if the bargaining power parameter is large.

The model is then extended in two directions. First the income-sharing assumption within a pair of connected workers is relaxed. This allows to treat workers as friends or acquaintances helping each other to find a job. In this case workers bargaining over wages in the informal job market do not internalize the positive externality imposed on their social contacts inducing firms to pay higher wages. As a consequence too few job vacancies are filled in the informal job market, while job creation in the public submarket is excessive compared to the optimal allocation. There is no direct distortion in the public job market, so the inefficent job creation is explained by a spillover effect from the informal submarket. Specifically the inefficient wage setting in jobs obtained through personal contacts has a negative effect on the reservation wages of workers which is then exploited by firms opening vacancies in the public submarket. In addition, this paper shows that there exists an optimal value of the bargaining power parameter below the Hosios benchmark value decentralising the efficient allocation.

The second extension of the baseline model is to consider Nash bargaining in the public job market as an alternative to competitive search. Ex-post wage setting in the public job market implies that the separating equilibrium is not any longer incentive compatible. In the resulting pooling equilibrium firms in the public job market open general vacancies and employ both types of workers – with employed or unemployed social contacts. Moreover there does not exist a bargaining power parameter that could decentralize the efficient allocation of labour. Job creation in the public job market is excessive at the Hosios value of the bargaining power parameter. Nevertheless, welfare in the decentralized equilibrium can be improved by introducing a pair of taxes, reducing both the exprected profits of firms and wages. It can be shown then that workers'

gain from a provision of public good financed from the collected tax payments more then offsets their loss from lower wages and a lower probability to find a job. Finally, wage inequality is higher when the optimal system of taxes is implemented.

These results are closely related to the study by Blazquez and Jansen (2008) investigating the efficiency of the equilibrium allocation in a matching model with heterogeneous workers and firms. There are two types of vacancies in their model – simple and complex and there are two types of workers – skilled and unskilled. Moreover, only skilled workers can send applications to complex vacancies. This setup is similar to the one analyzed in the present study with two types of vacancies – formal and informal and two types of workers depending on the employment status of their contact. Similarly, only unemployed workers with an employed social contact have access to vacancies in the informal job market. Despite the similarity in the model framework, the overall conclusions are divergent. Whereas in their model the high wages of low ability workers discourage the creation of unskilled jobs, the job creation in the public job market is excessive in the current study. This comparison illustrates the importance of the source of worker heterogeneity, the crucial assumption in the model by Blazquez and Jansen (2008) is a large productivity difference between the skilled and the unskilled workers, in contrast all workers are equally productive in the current study, so that the worker heterogeneity is purely endogenous.