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Distributional effects of hiring through networks

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A B S T R A C T

How would a policy that bans the use of networks in hiring (e.g. anti-old boy network laws) affect welfare? We answer this question in a random search model in which there are two hiring methods, formal costly channels and referral channels, and there are two types of workers, networked workers, who can be hired through both channels, and non-networked workers, who cannot be hired through referrals. We show that the effect of a referral-restricting policy on non-networked workers can be either positive or negative, depending on model parameters. In our calibration such a policy would make non-networked workers slightly worse off and networked workers substantially worse off.

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1. Introduction

Workers' social networks are widely used in the labor market (Ioannides and Loury, 2004; Topa, 2011).[2] Albert Rees (1966) points out that workers' social networks can alleviate informational frictions that are present in the 'unstandardized' market of labor. Both workers and jobs are highly heterogeneous due to workers' skills, specializations and personality, as well as jobs' characteristics, locations, workplace culture, and so on. Therefore, firms normally have to incur a large cost to find a good match, including the cost of assessing applications, of interviews and internships. In such circumstances, workers' social networks (e.g. relatives, friends, neighbors, school alumni, etc.) provide firms with an alternative means to resolve uncertainty about the quality of a potential match. That is, an employee occasionally acts as a 'matchmaker' and produces a referral.[3] Because the referrer personally knows the qualities of a candidate, and because he himself is an insider of the company, the referrer can tell if the candidate is suitable for the job. This way, referrers act as a better alternative to public and private placement agencies while reducing firms' costly screening activities.

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[2] A large proportion of workers attempt to use their personal networks in their job search (e.g. Holzer, 1987a, 1987b; Elliott, 1999) and many of them actually find their jobs through referrals (e.g. Corcoran et al., 1980; Lin et al., 1981; Granovetter, 1995; Elliott, 1999). Also, some surveys report positive effects of the use of referrals on wages (e.g. Korenman and Turner, 1996).

[3] Rees (1966) points out that referral can provide good screening as referrers care about their own reputation and that asking for referrals is usually costless for firms. He also points out that candidates can get better information about the workplace from referrers prior to hiring.

This paper examines the welfare implications of the use of referrals. Our main interest is how policies that restrict referrals for the sake of fairness in hiring practice can affect worker welfare. Today, we observe many public institutions avoiding referrals and going through more formal channels by publicly posting job openings. In addition, employers may be required by law to keep their job advertisement up for a certain period of time before interviewing, and to have a certain number of interviews per post. Also, anti-nepotism laws and affirmative action regarding race, sex, nationality, caste, etc. restrict one from hiring a person who belongs to the same social group. These policies make hiring through referrals more difficult or less attractive for firms and often involve high costs to implement.[4] Do these policies benefit people who do not have personal connections or access to referrals?

To answer this question, we study a version of Galenianos's (2014a) random search model with formal hiring and referral hiring. In our model, there are two permanent types of workers: workers with a social network and workers without one. Networked workers can be hired both through formal channels and through referrals, while non-networked workers cannot be hired through referrals. We show that a stationary equilibrium exists and it is a unique steady state under some moderate conditions. In this steady state, networked workers have lower unemployment and higher wages than non-networked workers. In this framework, we consider a hypothetical policy that bans hiring through referrals. We compare welfare before and after the policy starts, taking into account the transition to the new steady state. We show that this policy can lower the welfare of non-networked workers depending on model parameter values, typically in the economy with small bargaining power of workers. The calibrated version of the economy shows that a ban on referrals reduces the welfare of all workers; non-networked workers are made slightly worse off and networked workers substantially worse off. The former result may appear surprising if one imagines a fixed number of unemployed workers competing over a fixed number of posts so that networked workers 'crowd out' non-networked workers in the job queue. In a general equilibrium framework, however, the presence of network hiring not only reduces the number of posted vacancies but also the number of unemployed workers in the job queue by mitigating search frictions. When the latter effect dominates, the job-finding rate of non-networked workers is higher than in the absence of network hiring. In this way, the crowding-out effect of network hiring on non-networked workers is more delicate when unemployment and vacancy are endogenous. Our simple model suggests that the effectiveness of a policy that has the side effect of increasing search frictions is ambiguous even for policy-makers who care about people without any connections or access to referrals.

The effect of worker networks in the labor market has been widely studied. Montgomery (1991, 1992, 1994); Calvo-Armengol and Jackson (2004, 2007), Mayer (2011), Zenou (2015), and Sato and Zenou (2015) employ a partial equilibrium framework. These models feature exogenous job finding rates for workers so they cannot be used to study firms' reaction to a policy that limits network hiring. Another set of models, Calvo-Armengol and Zenou (2005), Fontaine (2008), Kuzubas (2010), Galeotti and Merlino (2014), and Galenianos (2013), study network hiring in a general equilibrium search framework in which the firm free-entry condition determines the number of jobs posted. Many of these models add a network component to the matching function a la Mortensen–Pissarides (1994). That is, when a firm is matched with a worker after costly screening, this worker, if already employed, passes on that job offer to one of his unemployed friends. This assumption does not fit the idea of unmodeled heterogeneity behind the matching function.[5] Moreover, in such models firms bear the same cost whether referral is used or not. In this paper, we take Rees's (1966) view of referrals as a matching technology that is distinct from and cheaper than more formal hiring methods. For our purpose, we use Galenianos's (2014a) framework because his model incorporates Ree's view of referrals into a simple general equilibrium search framework.[6] We extend his model to a model with heterogeneous types of workers (networked and non-networked) to study the effect of a referral-restricting policy on non-networked workers.[7]

Finally, the use of online social network services (SNS) in hiring has become common in modern society. Taking Rees's notion of network hiring, however, our view is that the development of SNS does not necessarily change our framework. There are two potential impacts of SNS. First, SNS enables people to track more easily their friends' current situations such as employment status and location (perhaps raising the efficiency of referral channels). Second, SNS enables workers to post 'ads' of themselves just like firms post job ads. Therefore, firms can direct their search to a group of workers with characteristics desirable to them. This feature can partly replace the role played by public agencies and private placement companies, that is, the role as a loose matchmaker that has some limited information about both sides (perhaps raising the efficiency of formal channels). At this point, firms' use of SNS seems close to a formal costly method in that firms still have to engage in further costly screening.

The rest of the paper proceeds as follows. Section 2 states the model and theoretical results. Section 3 demonstrates calibration and a policy experiment. Section 4 proves that the model's assumption that one firm employs one worker is innocuous. Section 5 concludes.

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[4] See for instance Fair Employment in Northern Ireland Code of Practice (1989) issued by the Equality Commission for Northern Ireland.

[5] Such models emphasize the function of worker networks to pass on job opening information. However, searching for job openings is not a hard matter nowadays and does not seem to be a major source of search friction, nor does coordination failure among searchers.

[6] Montgomery (1994) and Galenianos (2013) also distinguish formal channels and referral channels. Montgomery (1994) is a partial equilibrium model. Galenianos (2013) focuses on the relative use of referrals so that the use of referrals has no effect on the aggregate matching efficiency.

[7] His other paper, Galenianos (2014b), allows for two types of workers that can differ in terms of productivity and network size. However, this model cannot be used to deal with our question because it does not allow a group of workers to have no network at all and the two types are assumed to have equal population.