

Hidden Costs of Job-Search through Job-Boards

Empirical Evidence from Germany

- Extended Abstract -

Abstract

Internet-based job search allows job seekers to find vacancies according to job title, company name, industry or mobility constraints within seconds and thus decrease costs associated with this first step of their job search. However, I firstly provide empirical evidence that the largest international job boards do not provide any information about wage differences or firm productivity and as such cannot overcome these highly relevant information asymmetries. Instead, they provide an opportunity to effectively hide bad signals about performance indicators of employers at low costs that turns into an incentive for low performing firms to make use of the job board. To confirm this conjecture of adverse selection I secondly provide empirical evidence from a large sample of matched vacancies – firm productivity observations from the German job market, which confirms an overrepresentation of low performing firms in job boards. This effect imposes two types of hidden costs that negatively impact the efficiency of the economy. First, it limits the ability of high performing companies to separate from low performer. Second, job seekers are exposed to a loss of expected wages of derived from firm effects in comparison to a random firm selection. In other words, job boards and low performing firms gain rents from keeping asymmetric information about productivity upright and externalize the accompanied costs to job seekers and high performing companies.

I. Introduction

Internet-based job search allows job seekers to find vacancies according to job title, company name, industry or mobility constraints within seconds and thus decrease costs associated with this first step of their job search. Labor market search theory predicts that lowering the cost of job search will raise productivity (Mortensen, 2000; Pissarides, 1990). However, it remains unclear whether the efficiency of the economy increases by these new technologies or create new problems. Potential disadvantages have early been named by Autor (2001) who argued that decreased costs might cause adverse selection effects that lead to an increase of mismatched applicants.

Empirical studies have reported mixed effects of online job search have already been reported by Kuhn and Mansour (2003), who first found no significant effect, but found in (2014) that the average duration of unemployed worker who look online for vacancies is 25% shorter than offline job-seekers. Prakash (2014) found lowered exit rates by 28% when the internet is used as a job search tool.

In this paper I argue that recent job boards incentivize an adverse selection effect that is different from the one described by Autor (2001). I provide empirical evidence that recent job boards do not provide any information about wage differences or firm productivity to overcome the most relevant information asymmetries. Instead, they provide an opportunity to effectively hide bad signals about performance indicators of employers at low costs that turns into an incentive for low performing firms to make use of the job board. Assuming the costs for job posts decreased tremendously in comparison to offline marketing, it becomes increasingly affordable for low performing firms to re-enter the market and compete for attention of job seekers again. Due to imperfect signaling they can now pool with the high performing companies again and gain attention of the workforce, who in turn are less able to sort according to their needs. This adverse selection constitutes an overseen pooling that externalizes costs from low to high performing companies. As a consequence, job boards impose hidden costs on highly productive firms who are less able to separate from low performing firms on job boards.

Employing the absence or the undersupply of information about job properties may seem strange from the available economic theories, because neither the competitive standard view (e.g. Becker

(1962, 2009) nor job search theories (e.g. Diamond (1971), Mortensen (1984), Pissarides (1987)) do account for any costs related to lacking information about wages or firm productivity, due to their assumptions or theoretical implication. While competitive models usually assume that information about jobs is already perfect, also competing recent job search theories derive the same conclusion as a result of equilibrium search dynamics (e.g. Moen 1997, Burdett & Mortensen (1998), Mortensen (2014)). Accordingly, I will briefly show in section 2 that there are fundamentally different strands in labor economics that show no interest in information about wages and costs associated with their provision. Therefore, these costs are theoretically hidden costs, too.

Addressing this problem first, I provide empirical evidence on the mere availability of information about wages or firm productivity, that do account for approximately 20% of the wage differential (Abowd et al. (1999); Abowd et al. (2018); Card et al. (2018)). Although empirical studies show that wages account for the most important part of job utility, former research revealed that information about wages is relatively limited. Findings from Villena-Roldan et al. (2018) show that “[...] most employers do not explicitly post wages, and if they do, the advertised positions are clearly different from those in which wages are not revealed” (Villena-Roldan et al. 2018:3). I will extend their results in a direct comparison of the 64 largest international job boards in section 3, which confirms that job seekers usually lack sufficient information to make well-informed decisions choosing an employer that meets their needs.

In section 4 I argue that lacking sufficient information does not only motivate job seekers to gather information in the first place, like early job search theory already suggested (e.g. Phelps 1971), but imposes hidden costs for optimal decisions making under risk. Since no job board, even not in Austria, where this information must be revealed by law, provides any possibility for effective comparisons of wages or firm productivity the job seeker faces the increased risk of applying at a low performing employer. The central claim of this paper is that the adverse selection leads to an overrepresentation of low performing firms in job boards.

While wage differences are hardly observable directly, information about labor productivity is available to me through a proprietary data set that contains 84546 firms from Germany employing more than 29 million employees. This data set is a good proxy for TFP and allows a

control for industry fixed-effects on a 5-digit industry level. To prove the central conjecture, I additionally web scraped over 3.6 million vacancies, 1.88 Million in December 2018 and 1.75 Million in March 2019 from different job boards across Germany. I was able to match a final sample of 354176 vacancies from 11671 firms in December and 315984 vacancies from 13042 firms in March with data about firm productivity. This matched vacancies – firm productivity data confirms an overrepresentation of low performing firms in German job boards. As a consequence, using job boards worsen job seekers chance of getting a job even at an average productive employer and therefore recent job board technologies impose a high risk to match job seekers with low performing firms. As such recent job search technologies impose new hidden costs, which account on average for up to 3.9% of the entire wage differential, which very likely exceed their expected search cost reductions. In other words, job boards and low performing firms gain rents from keeping asymmetric information about productivity upright and externalize the accompanied costs to job seekers and high performing companies.