Is There a Wage Premium to Self-Employment in the Labor Market? Evidence from a Field Experiment

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Abstract

The purpose of this paper is to provide field experimental evidence on whether self-employed workers enjoy a wage premium or whether they are stigmatized when they transition back to paid work. Fictitious resumes are sent out to job openings and callbacks for interviews are recorded. It is found that those who transition out of self-employment are less likely to be called back than those who have never experienced self-employment. However, those who were self-employed in the past but have since accumulated experience in paid employment are not less likely to receive a callback. These results suggest that there is a wage penalty associated with self-employment, and are consistent with the idea of employers having preference for workers with specific (rather than general) skills.
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1 Introduction

It can be puzzling to witness that certain individuals willfully select into self-employment if we consider that the occupation is more risky and leads to lower earnings than paid employment (Hamilton, 2000; Moskowitz and Vissing-Jørgensen, 2002). One way to explain this phenomenon is to argue that non-pecuniary benefits, such as being one’s own boss and enjoying greater flexibility at work, can motivate people to choose this occupation (Benz and Frey, 2008; Blanchflower et al., 2001). Alternatively, selection into self-employment can be explained by cognitive biases such as overconfidence and overoptimism (Arabsheibani et al., 2000; Koellinger et al., 2007; Cain et al., 2015; Artinger and Powell, 2016).

While entry into self-employment can translate into lower earnings compared to staying in paid employment, it can nevertheless have an option value: when choosing between two occupations that exhibit different levels of risk, a person ought to experiment with the one that is riskier in order to find out how well he or she would fare at it (Johnson, 1978; Jovanovic, 1979; Miller, 1984). The value of such experimentation has to do, among other things, with whether self-employed workers can claim a wage premium when they transition back to paid employment (Manso, 2016).

The empirical evidence on whether there is a wage premium to self-employment is mixed. While certain studies have argued that there is a penalty associated with selection into self-employment (Bruce and Schuetze, 2004; Hyytinen and Rouvinen, 2008; Baptista et al., 2012; Failla et al., 2017), others find this not to be the case if one takes into account switching between industries, the successfulness of the entrepreneurial spells, or specificities related to certain industries (Kaiser and Malchow-Møller, 2011; Campbell, 2013; Daly, 2015). Because selection in and out of self-employment is endogenous, recent stud-
ies have tried to address this issue. The results from these studies seem to indicate that there is indeed a wage premium to self-employment (Daly, 2015; Luzzi and Sasson, 2016; Manso, 2016; Dillon and Stanton, 2017). Throughout the paper, this stream of studies is referred to as those that confirm the wage premium hypothesis.

Testing this hypothesis by resorting to observational data is inherently difficult because selection in and out of entrepreneurship is endogenous and earning differentials can often be driven by a multitude of unobserved factors. The difficulty is exacerbated by the fact that there is evidence that self-employed workers systematically under-report their income (Hurst et al., 2014). Thus finding instruments that control for unobserved factors that simultaneously address spurious correlations between entrepreneurial entry, success, and income reporting practices can be a formidable challenge to surmount.

One way to tackle these difficulties is to rely on different methodological approaches. This is done by Koellinger et al. (2015) who resort to a field experiment that tests whether a self-employment spell can be viewed as a negative signal on the job market. They run an audit study in the UK where two practically equivalent fictitious resumes are sent out to job openings advertised online, with the only difference between the two resumes being that one of them exhibits a self-employment spell. They report lower rates of callbacks to resumes that have a self-employment spell. Assuming that a lower callback rate implies a longer or costlier job search, this evidence is consistent with a wage penalty for self-employed workers. The authors argue that discrimination against self-employed workers can be one of the reasons for the penalty. This is referred to as the stigma hypothesis. Thus, the only experimental evidence appears to be hardly reconcilable with the idea that self-employed workers enjoy a wage premium when they transition back into paid

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1Theories of job search stipulate that shorter search horizons or higher search costs typically mean lower reservation wages for the job seeker (Lippman and McCall, 1976).
employment. Nonetheless, the discrepancy between findings coming from observational studies that report a wage premium to self-employment and Koellinger et al.’s (2015) field experimental evidence can be explained in at least two ways.

First, it is possible that the penalty observed by Koellinger et al. (2015) is driven by specific aspects of the sector (human resource management) and region (UK) of their study. Evidence in favor of this comes from Daly (2015) who finds that the wage premium to self-employment is higher for technical professions. The study by Campbell (2013), which focuses on the semi-conductor industry, also finds a positive effect of a self-employment spell on earnings. Thus, lower callback rates to self-employed workers observed by Koellinger et al. (2015) could be driven by the fact that the experiment was conducted in a sector that performs below the average of self-employed workers who transition back to paid employment. As for the region, different settings can value self-employment experience differently (Saxenian, 1996).

Second, the discrepancy could be explained by the fact that the wage premium takes time to materialize itself. Taking Koellinger et al.’s (2015) results at face value, self-employed workers could initially experience a penalty as they transition back into paid employment, but this does not automatically imply that a wage premium cannot be enjoyed later on. Any discounting of the on-the-job training associated with a self-employment spell is likely to fade away as workers reintegrate the paid employment labor market. Previously-self-employed workers might have an edge over never-self-employed workers since the specific skills that they acquire after their self-employment spell gets complemented with general skills that they have acquired during their self-employment spell. Empirical evidence for such a claim is not entirely absent. Baptista et al. (2012) show that, although associated with a wage penalty, self-employment can also be linked with faster promotions when

\[^2\text{Self-employed workers are expected to have more balanced skills (Lazear, 2004).}\]
workers switch back to paid employment.\textsuperscript{3} Manso (2016) shows that lifetime earning for self-employed workers transitioning back to paid employment gradually catches up with those who have never experienced with self-employment even when entrepreneurial spells are short (less than two years) and therefore likely to be unsuccessful attempts.

The purpose of this paper is twofold. It first aims at testing whether field experimental evidence can be consistent with the wage premium hypothesis by addressing the above two points. Employing Koellinger et al.’s (2015) methodology\textsuperscript{4}, the current study consists in sending three fictitious resumes (instead of two) to online job openings. One type of resume does not exhibit any self-employment spell (these will be referred to as W-type), whereas the other two do so. The resumes that contain a self-employment spell differ in that one has a self-employment spell that is currently ongoing (C-type) while the other has a self-employment spell that has occurred in the past with the individual having transitioned to paid employment since (P-type). All resumes are sent to job advertisements for IT sector ‘Project Managers’ in the Boston and Philadelphia metropolitan areas.

By targeting the US job market as well as a purely high tech sector, one can test whether the difference between field experimental and observational studies come from the industry and/or the region. If it were the case that there is a wage premium to self-employment in technical fields and that general skills associated with self-employment would make them attractive for managerial positions, one should expect higher callback rates to self-employed workers in the IT project management sector. Furthermore, by comparing callbacks between the W-type and the P-type resumes, one can test whether the wage premium is gained over time. If P-type resumes receive more callbacks than W-type resumes,

\textsuperscript{3}This finding can be consistent with the idea that general skills can better lead to promotions and ascension to managerial positions (Ferreira and Sah, 2012; Lazear, 2012).

\textsuperscript{4}Audit studies involving the sending of fictitious resumes have gained popularity since the seminal work of Bertrand and Mullainathan (2004) as more than 30 such studies inquiring about discrimination in the labor markets can be accounted for (Bertrand and Duflo, 2016).
it can be concluded that the observed wage premium to self-employment takes shape over years after the worker has transitioned back to paid employment.

The second purpose of the paper is to test the source of discrimination (if any) against self-employed workers by comparing P-type and C-type resumes. Assuming that skills deprecate with time, but that personality traits do not change so much, the main difference between the two types of workers would be that C-type workers should have stronger general skills whereas P-type workers have stronger specific skills. If callback rates to P-type resumes are higher than to C-type resumes, this would be evidence that employers have a preference for specific skills. This would, in turn, suggest that the wage penalty is rooted in employers’ beliefs that a worker who is just transitioning out of self-employment has less specific skills than one that has been tied to paid employment.

528 fictitious resumes have been sent out to 188 job openings advertised online. It is found that workers who are transitioning back to self-employment (C-type) are less likely to be called back for an interview than those who have always been paid workers (W-type). However, no significant difference can be found between P-type and W-type resumes. Put together, these results do not provide evidence in favor of the wage premium hypothesis, and are consistent with the idea that the penalty associated with self-employment can be linked to employer’s belief that self-employed workers possess less of specific skills.

This paper contributes to the literature on wage premium/stigma hypotheses by resorting to a method that is alternative to the use of observational data, and as such attempts to contribute to the credibility of results obtained in longitudinal studies. Most importantly, the study is able to answer a specific question regarding endogenous exit in self-employment. As highlighted by Failla et al. (2017), if skills developed during self-employment are not valued in the labor market, then workers will be trapped in their self-employment spells. Observed self-employment exits are then likely to come from
self-selection. Those who are able to find jobs that pay better than their current self-employment spell are likely to make the transition to paid work. Similarly, those whose self-employment spells are drastically failing will be obliged to go back to paid employment, even if heavily penalized. The experimental nature of the current study allows to circumvent this problem through the exogenous introduction of the P-type resume.

The results also relate to the literature about the generality of human capital (Becker, 1962; Lazear, 2009; Wasmer, 2006; Gathmann and Schönberg, 2010). In fact, the present study seems to indicate that while the general skills associated with self-employment can be rewarded for jobs that require skills that can be similar (project management), workers that are specialized in those broad set of skills could fare better in labor markets.

Finally, this paper adds to the findings provided by the large set of audit studies that measure the consequences of various worker characteristics on employability (Bertrand and Mullainathan, 2004; Oreopoulos, 2011; Kroft et al., 2013; Cohn et al., 2016; Farber et al., 2016; Deming et al., 2016; Cahuc, Pierre and Carcillo, Stéphane and Minea, Andreea, 2017). In many of these studies, it is difficult to conclude whether observed discrimination is due to taste-based or statistical discrimination (List, 2004). For instance, Farber et al. (2016) show that holding an interim job that is at a lower skill level than the one applied to has a more adverse effect on callback rates than an unemployment spell. Similarly, Cohn et al. (2016) find that frequent job changes lead to lower callback rates, an observation that can be argued to be consistent with frequent job changes sending signal about a worker’s non cognitive skills (such as work attitude). The design of the present study provides evidence that the specificity of human capital can also be inferred from the nature of jobs one has had and can be consistent with statistical discrimination.
2 Conceptual Framework

Human capital is the main currency with which workers acquire jobs in the labor markets. Before actually landing an employment contract, however, workers typically undergo job search through different channels. The Internet is an increasingly important channel through which this search is conducted (Stevenson, 2008; Kuhn and Mansour, 2014). An important difference between this channel and offline search channels is that it is more impersonal, thereby ruling out preferential treatment of less skilled individuals. Job applications sent from Internet job portals are typically first examined by employers. Through an examination of the information featured in a resume, an employer attributes a set of skills (including personality traits) to the applicant. The task mainly consists in seeing whether these attributed skills would be indicative of the applicant being a good match for the vacancy.

Once a candidate is believed to have good fit with a position, he or she is typically contacted by the employer in order to set up an interview. All thing equal, lower rates of such callbacks would mean that an applicant has a lower chance of landing a job. Because there are a limited number of new offerings that appear at any given time in a region, a smaller rate of callbacks is consistent with a job search that lasts for longer, thereby translating into lower reservation wages.

Self-employed workers are expected to differ from paid employed workers in the skills that they have developed during a self-employment spell. Specifically, one would expect a self-employment spell to be associated with more balanced skills (Lazear, 2004). Thus, one way to think of self-employed workers is that they are jacks-of-all-trades whereas

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5In the present paper, no distinction is made between balanced skills confounding or being caused by self-employment: from the perspective of the employer who observes a self-employment spell, more balanced skills can be attributed to the worker.
paid workers would be viewed as specialists (Lazear, 2005). It turns out that general skills are also more useful in, and likely to be associated with promotion to, managerial positions (Lazear, 2012; Ferreira and Sah, 2012). From this point of view, workers who select into entrepreneurial occupations can be attractive for employers who are seeking to fill managerial positions.

Social skills are non-cognitive skills that have recently received attention in the labor economics literature (Borghans et al., 2008b; Heckman and Kautz, 2012). Social skills can complement cognitive skills and labor markets seem to greatly value the bundling of the two (Weinberger et al., 2014; Deming and Kahn, 2017). For instance, having social skills can be a predictor of promotion to managerial positions (Deming, 2017). Social skills can also matter in entrepreneurial settings. By looking at the German Bundesinstitut für Berufsbildung (BIBB) occupational data, Borghans et al. (2014) find that people skills is an important part of entrepreneurial occupations. Employers can thus form beliefs about a worker’s social skills when observing a self-employment spell. Here again, one can argue that selection into self-employment can lead to a candidate appearing attractive to employers because they can infer that such candidates have better social skills.

Employers are also likely to expect self-employed workers to differ from paid employees in their personality traits. An obvious inference made about the preferences of someone who is self-employed has to do with their willingness to take risk. Indeed, a natural way of characterizing self-employed workers is to argue that they are less averse to risk and uncertainty (Knight, 1921; Kihlstrom and Laffont, 1979). It can also be said that individuals selecting into self-employment might have a preference for income skewness (Åstebro, 2003). The decision to become self-employed is also associated with a preference for autonomy: being one’s own boss is often cited as a non-pecuniary benefit for being self-employed (Hamilton, 2000; Benz and Frey, 2008). According to a meta-analysis
performed by Zhao et al. (2010), self-employed individuals also differ in terms of the Big Five personality traits: they are more conscientious, more open to new experiences, more extroverted, less agreeable, and less neurotic. Self-employment can also be attributed to overconfidence (Koellinger et al., 2007), and to both being a star or a misfit (Åstebro et al., 2011). It can also be said that entrepreneurs are more self-efficacious, have a more internal locus of control, and more proactive (Frese and Gielnik, 2014). The hardships of self-employment are also likely to have employers attribute certain traits related to perseverance and grit. For instance, stress tolerance is something that one would expect to see from a self-employed individual (Frese and Gielnik, 2014).

The above list of dimensions on which self-employed workers would differ from paid workers does not easily allow for the prediction of how currently- or previously-self-employed workers would fare in the labor markets compared to workers who have always been paid employees. While traits such as conscientiousness and emotional stability can be linked with positive labor market outcomes (Borghans et al., 2008a), it cannot easily be argued that all the traits that are associated to entrepreneurship would be desirable from an employer’s perspective. Furthermore, while employers may value general skills, it cannot be argued that they value them more than skills that would be specific to the job. This could explain why Kaiser and Malchow-Møller (2011) observe that self-employed workers who transition back to paid work are not penalized as long as they stay within the same industry. In fact, skill matching is likely to be of better quality when workers and firms are picked from the same industry.

Assuming that personality traits are stable, however, one can take conclusions after observing how the timing of a self-employment spell impacts callback rates. Indeed, if personality traits are believed to be stable over time, the effects that a self-employment spell has on the likelihood of being called for an interview should not change over time:
those who were self-employed in the past should be as likely as those who are just transitioning out of self-employment to receive a callback.

If employers are willing to pay for hiring a worker that has personality traits associated with entrepreneurship, they should do it for self-employed workers who have transitioned from self-employment long ago as much as those who are just transitioning out of it. For the same reason, if employers dislike traits associated with entrepreneurship, the penalty associated with a self-employment spell should stick over time with a worker even when the self-employment spell has happened in the past. Such sticking of a penalty would indeed be consistent with the stigma hypothesis.

On the other hand, if employers are mainly concerned with either general or specific skills, one should expect that the time at which self-employment spells have occurred to have an impact on callback rates. Indeed, it can be argued that practically all jobs require a combination of general and specific skills. It can equally be argued that there are diminishing marginal returns to either type of skill: the increase in expected productivity for a worker rises by less as he or she gains experience in a specific task. Finally, it can be argued that skills depreciate with time if they are not maintained: the strongest skills are the ones that can be inferred from the most immediate tasks that one has performed. This would imply that the immediacy of a self-employment spell can lead to employers forming different beliefs about a worker’s expected productivity. Currently-self-employed workers are expected to have a greater share of general skills with their specific skills being more depreciated, whereas previously-self-employed workers would be expected to have a greater share of specific skills with the generality of their skills being more depreciated. Paid workers who have never been self-employed, on the other hand, would have the greatest share of their skills being specific.
3 Experimental Design

The method consists in sending three fictitious resumes to each job offer. One of the resumes will not contain any self-employment spell (W-type). The other two will each contain a self-employment spell that has lasted for 2 years: one of the resumes (P-type) exhibits a self-employment spell that has started 9 years ago (and stopped 7 years ago, with the person having since transitioned back to paid employment), while the other resume (C-type) is someone that has been self-employed for the last two years. For P-type resumes, the self-employment spell starts four years after the first professional position.

Different US Internet job search portals are used for searching job openings and sending applications. For each advertised job opening, information about the description of the opening (including whether it consists of a full-time position) and the name of the employer are recorded. Internet search is conducted to gather information about the size of the firm as well as whether it consists of a staffing and recruiting agency.

Because the self-employment spell lasts for two years, and that it could have happened as far as 9 years prior to when the application is sent out, and that the entrepreneurial spell happens four years after the first entry in the employment history of the resume, all individuals portrayed in the fictitious resumes are between 38 and 42 years of age.\footnote{This is not made explicit in the resumes, but can be inferred from the year at which undergraduate studies have been completed.}

As a result, jobs that require more extensive professional experience will be targeted. IT Project Manager openings posted online in the Boston and Philadelphia metropolitan areas are considered. The same employer never receives applications for more than one job opening.

Self-employment spells are made salient by having the applicant’s initials followed by either “Consulting” or “Solutions” as the employer name, as well as a sentence stipulating
that the applicant owned and managed a project management consulting company in the employment history entry corresponding to the self-employment spell.\footnote{If there is a wage premium to self-employment, then one ought to make it salient in order to send the right signal. Furthermore, it is fair to assume that one cannot easily masquerade a self-employment spell as a proper paid employment spell in order to avoid stigma effects.} Because both the self-employment and IT sectors mostly consists of men, all fictitious resumes have a male gender.

All resumes have a bachelor degree in computer science and an MBA from equivalent Business Schools at the bottom tier of the FT Global MBA Ranking list. Task definition in the employment history part of resumes are similar and of general nature: they do not correspond to any specific technology and apply to practically all types of IT projects. Furthermore, employers for paid employment spells are taken from a set of large IT consulting companies, avoiding that any resume suggests know-how in any particular sector or industry (e.g. finance or health-care) other than general IT.

Because two of the resumes display their self-employment spell in a very salient way, and that receiving two of such resumes can be unusual (especially for job openings that receive fewer overall applicants), a set of precautions have been taken to avoid suspicion by employers. First, resume types where sent out with a one day interval in random order. This ensures that one of the resumes is not fresh in an employer’s memory when another is sent. Second, resumes have been made to differ in terms of the cities where the employment spells have occurred. None of the resumes has an educational degree from the same city where job openings are posted. The three resumes further differ in that the initial work experience happens in the same city where the MBA has been obtained. This procedure led to the creation of three templates which are randomly assigned to one of the three types (P, C, or W) of resumes for each application.

Inspiration for the content of the resumes come from Indeed.com with individuals em-
ployed as IT Project Managers in large IT consulting companies in the Washington D.C. area. This allows for resumes that are representative of what employers are accustomed with receiving. Following Bertrand and Mullainathan (2004), task descriptions are modified in order to avoid any resemblance between the fictitious resumes and actual people.

To collect callbacks, virtual phone numbers and emails are set up. The content of the messages are examined to match the callback with the right application. After receiving a callback, employers are contacted to state that the application is withdrawn. Callbacks are allowed to occur for up to six weeks after the date the application is sent out. To be considered a callback, an email or a voice message has to refer to a job application that was actually sent out for an advertised opening. It is common practice for staffing and recruitment agencies to keep a database of applicants to previous job openings and to solicit them for new job openings that are either not advertised online or have not been applied to. These messages are typically sent out automatically (and are often a poor match with an applicant’s profile) to an email list and involve the request of an updated resumes (even on the same day the application was sent).

4 Results

Data collection was performed between February and May 2017. 528 fictitious resumes were sent out in reply to 188 job openings for IT project management positions. Not all job applications received all three resumes. This is due to some job openings being no longer available at the time that a specific resume were to be sent. However, the majority (165) of the job openings received all three resumes. The analysis will be focused on these 165 applications. It was revealed that a gap was inadvertently introduced in one of the templates. Because templates are randomly assigned to worker types (W, C, or P), observations in which a template contains a gap can be
et al. (2015): the latter sent out applications to a total of 98 job openings.

Panel A in Table 1 provides summary statistics on the job openings. Most of the jobs (near 60.67%) are in the Boston area and a smaller share (43.03%) where full-time positions. A little more than half of job openings were made by medium-sized companies (between 50 and 1,000 employees) and the rest are equally split between small and large companies. Moreover, half of the job openings where made by ‘Recruiting and Staffing’ companies. Most of the jobs were found on Indeed, Dice and Career Builder. These descriptives show that applications were sent out to a balanced set of employers and job types using a variety of job search portals.

Panel B shows that a total of 69 (27 through voicemail and 57 through email) callbacks were made by employers. This leaves an overall callback rate of 13.94% which is similar to other audit studies. The majority of callbacks were received by email: only 12 of the 69 callbacks where made exclusively through voicemail, meaning that more than half of the voicemail callbacks where accompanied by emails. 21 employers called back only one of the resumes, 12 employers called back two out of three resumes, and 8 employers called back all three resumes. This means that no callbacks were received for 124 (75.15%) of the job openings.

Table 2 shows differences in callback rates between resume types for different splittings of the sample. The first row shows callback rates for the whole sample of 165 job openings for which three resumes were sent out. W-type resumes receive \((16.97 - 10.30)/10.30 = \) 64.47% more callbacks than C-type resumes. This difference is statistically significant dropped while still being able to compare the three worker types. Doing so leads to the same results reported here. Further regression analysis controlling for those resumes that contained a gap also leads to the same conclusion. For brevity, these checks are not reported here.

Fewer applications were made through the Monster job portal. This is mainly due to most of the job openings on Monster being redirected on the company’s website and requiring to register on the company’s job portal, which made the application process too cumbersome.
(\(p = 0.0776\); two-sided Z-test of proportions). As we can see, the difference between W-type and P-type resumes is much smaller: the former are \((16.97 - 14.55)/14.55 = 16.43\%\) more likely to receive a callback than the latter. This difference, however, is not statistically significant. This result suggests that, even if P-type resumes are penalized compared to W-type resumes, this penalty is smaller than the one between C-type and W-type resumes. In other words, the penalty is likely to be higher the more recent the self-employment spell happens to be.

The second row shows callback rates by type of resume when dropping the 8 job openings where the employer made callbacks to all three resumes. This leads to a reduced sample of 157 job openings. As we can see, W-type resumes receive \((12.74 - 5.73)/5.73 = 122.34\%\) more callbacks than C-type resumes. A two-sided Z-test of proportions suggests that this difference is significant \((p = 0.0320)\). Furthermore, P-type resumes are 1.78 times more likely to receive a callback than C-type resumes. This difference is significant on a one-sided Z-test of proportions \((p = 0.0722)\). Again, the W-type resumes are \((12.74 - 10.19)/10.19 = 25.02\%\) more likely to receive a callback than P-type resumes, but this difference is not significant by any standard \((p = 0.4786)\).

The third row shows the distribution of callbacks between the three types of resumes only for the subset of 21 job openings by employers that made callbacks to only one of the resumes. As we can see, more than 80\% of the callbacks are made to P-type and W-type resumes whereas the rest of the callbacks go to C-type resumes. A two-sided Z-test of proportions indicates that W-type resumes receive significantly \((p = 0.0495)\) more callbacks than C-type resumes. Again, no statistically significant difference is found between P-type and W-type resumes.

As we can see, the difference between P-type and W-type resumes becomes statistically more significant as we drop the observations where all three resumes were called back.
One explanation for this could be that employers who did not contact all of the resumes received a much larger volume of applicants overall. If C-type resumes usually rank lower than the two other types, and that employers only call back a threshold number of top applicants, then they are less likely to receive a callback on those job openings that have received a lot of applicants.

Table 3 shows the results of hierarchical probit regressions of the reception of a callback on the type of resume as well as control variables related to the job opening and the firm. Model 1 simply regresses callback on the type of resume. This model replicates the results in the first row of Table 2: compared to W-type resumes, C-type resumes are significantly less likely to receive callbacks, but this is not the case for P-type resumes. In model 2, control variables (the template chosen, and whether the job opening was in Boston and contractual) are added. As we can see, positions that are contractual or in Boston receive less callbacks. Model 3 controls for firm size as well as whether the job opening is advertised by a recruitment and staffing agency. As we can see, medium-sized companies are less likely to call back than large companies. Also, staffing agencies are less likely to call back applicants as well. In all three models, coefficients and marginal effects for the differences in callbacks between the three worker types are stable. Thus, differences in callback rates between types of workers does not seem to be driven by specific job- or firm-related characteristic.

5 Discussion and Conclusion

Overall, the above results make the following suggestions. First, the results do not seem to provide evidence in favor of the hypothesis that self-employed workers who transition back to paid work enjoy a wage premium. Indeed, after 7 years of moving out of self-
employment, workers are not more likely to receive callbacks for an interview than those who have never experienced self-employment. Second, although individuals who are only recently transitioning out of self-employment are penalized compared to those who have never experienced self-employment, this does not seem to be the case for those whose self-employment spell occurred in a distant past. Assuming that employers believe that the personality traits that lead to selection into self-employment do not change over time, and that they dislike those traits, one should expect to observe a penalty that is sustained over time. The evidence does not support this idea. Instead, it is consistent with the idea that employers have a preference for specific skills and that coming out of self-employment could be a signal that specific skills might be lacking or have been deprecated compared to a paid worker.

Some limitations pertain to this study. Obviously, wages are not directly measured. It is not guaranteed that all types of workers are equally likely to obtain an offer, or better wages, after being interviewed. It is possible that those who experienced self-employment have a better callback-to-offer conversion rate than those who have only experienced paid employment. However, to the extent where lower callback rates are rooted in standard hiring procedures that are shared between employers, lower callback rates for a group is likely to be common knowledge among both employers and workers. If so, lower callback rates are likely to correspond to weaker bargaining power during employment contract negotiation stages.

Sample bias could also be an issue since the sending of fictitious resumes were restricted to companies that posted job opening on online job search platforms. Many large corporations rely on their own portals. If larger firms tend to differ from smaller firms in terms of their preference for worker skills, then this could introduce bias into the results. This issue is partly addressed in the regression frameworks where firm size is added as a
control. Furthermore, it is likely that hiring practices within larger firms penalizes even more self-employment as larger corporations are more likely to prefer specific skills.

A further limitation to this study is that the lack of experimental control over the hiring process on the employer’s side makes it difficult to take conclusions about the mechanisms through which employers assess applicants’ qualifications. For instance, it cannot be ruled out that employers perceive a self-employment spell as being a necessity (or hidden unemployment) or as a signal of a worker being a ‘misfit’ (Åstebro et al., 2011), and that a stable reintegration to paid work would signal overcoming of those ‘weaknesses’. Such an account would also lead to observing lower callback rates to currently-self-employed workers and no difference for previously-self-employed workers. However, given that all paid employment spells in the fictitious resumes are within large IT consulting companies and also exhibit obtainment of an MBA in well ranked business schools, employers should be less likely to perceive a self-employment spell as necessity entrepreneurship or a signal of misfitness.

As another limitation, it is possible that results from observational studies that support the wage premium hypothesis come from channels other than the one tested by audit studies. Indeed, people tend to use a variety of channels when searching for jobs while audit studies only test outcomes related to one of them.

Tapping into one’s social network is an important channel through which workers find jobs (Montgomery, 1991). If one’s social network gets developed better through self-employment than through paid employment, then there would be grounds to believe that there is a wage premium to self-employment, and that it is obtained through referrals. However, it should be noted that the evidence in that literature suggests that the value of referrals comes from the fact that they signal greater productivity on the part of the referred worker (Burks et al., 2015; Schmutte, 2015; Dustmann et al., 2016; Ekinci, 2016;
Pallais and Sands, 2016; Hensvik and Skans, 2016). If referrals are effective only for workers that are productive, it is not warranted that more social ties will lead to more referrals for all those who have experienced self-employment, even if self-employment leads to more and better social ties. In fact, only those more productive self-employed workers are likely to be referred by their ties.

It is also possible that any wage premium coming from a self-employed person’s social network could be linked to trust-based relationships where those who employ workers who were previously self-employed pay them a premium because of a greater weight put on the value of trust. This would suggest that trust might be a substitute for specific skills. Given that there is evidence that hiring through relatives may be linked to favoritism (Pinkston, 2012), and that family ties are often formed prior one’s career, it would be of interest to further study whether a self-employment spell is more likely to lead to the creation of better social ties and whether this relationship mediates higher wages for those who transition from self-employment to paid employment. One can consider the use of registered data in order to further this analysis.

Other future directions to this research would be to consider different types of exits from self-employment. One way to achieve this would be to introduce variations into the duration of self-employment. A self-employment spell that lasts for 5 or 10 years is likely to be perceived in a different way than one that lasts for 2 years. Consistent with an empirical regularity that the hazard of exit decreases with self-employment tenure (Evans and Leighton, 1989), one could argue that longer self-employment spells could imply greater success in business. As a result, longer spells could send a stronger signal regarding a worker’s ability.
References


Table 1: Descriptives for the 165 job openings where 3 resumes were sent out.

Panel A: Employers and Openings

<table>
<thead>
<tr>
<th>Area</th>
<th>N = 165</th>
<th>%</th>
<th>Contractual</th>
<th>N = 165</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>105</td>
<td>63.64</td>
<td>Yes</td>
<td>71</td>
<td>43.03</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>60</td>
<td>36.36</td>
<td>No</td>
<td>94</td>
<td>56.97</td>
</tr>
</tbody>
</table>

Firm size† N = 162 %  Staffing† N = 162 %

<table>
<thead>
<tr>
<th>Firm Size</th>
<th>N = 162</th>
<th>%</th>
<th>Staffing</th>
<th>N = 162</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>38</td>
<td>23.31</td>
<td>Yes</td>
<td>78</td>
<td>47.85</td>
</tr>
<tr>
<td>Medium</td>
<td>86</td>
<td>52.76</td>
<td>No</td>
<td>85</td>
<td>52.15</td>
</tr>
<tr>
<td>Small</td>
<td>39</td>
<td>23.93</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† Two firms could not be found.

Panel B: Callbacks

<table>
<thead>
<tr>
<th>Callback</th>
<th>N = 495</th>
<th>%</th>
<th>Resumes Called Back</th>
<th>N = 165</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>69</td>
<td>13.94</td>
<td>0</td>
<td>124</td>
<td>75.15</td>
</tr>
<tr>
<td>No</td>
<td>426</td>
<td>86.06</td>
<td>1</td>
<td>21</td>
<td>12.73</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>12</td>
<td>7.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>8</td>
<td>4.85</td>
</tr>
</tbody>
</table>

Table 2: Callback rates by resume type.

<table>
<thead>
<tr>
<th></th>
<th>C-Type (%)</th>
<th>P-Type (%)</th>
<th>W-type (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All 165 openings</td>
<td>10.30</td>
<td>14.55</td>
<td>16.97</td>
</tr>
<tr>
<td># of callbacks ≠ 3 (%)</td>
<td>5.73</td>
<td>10.19</td>
<td>12.74</td>
</tr>
<tr>
<td># of callbacks = 1 (%)</td>
<td>19.05</td>
<td>33.33</td>
<td>47.62</td>
</tr>
</tbody>
</table>

^a C-type callback rate significantly smaller than W-type at 10% level (two-sided z-test of proportions).

^b C-type callback rate significantly smaller than P-type at 10% level (two-sided z-test of proportions).

^ Significant difference at 10% level on one-sided z-test of proportions.
Table 3: Coefficients and marginal effects for probit regressions predicting the likelihood of receiving a callback.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resume type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Type</td>
<td>-0.3091*</td>
<td>-0.0667*</td>
<td>-0.3192*</td>
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<tr>
<td></td>
<td>(0.1754)</td>
<td>(0.0376)</td>
<td>(0.1783)</td>
</tr>
<tr>
<td>P-Type</td>
<td>-0.1008</td>
<td>-0.0242</td>
<td>-0.1017</td>
</tr>
<tr>
<td></td>
<td>(0.1668)</td>
<td>(0.0401)</td>
<td>(0.1692)</td>
</tr>
<tr>
<td>Template</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Template 1</td>
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<td>-0.0177</td>
<td>-0.0881</td>
</tr>
<tr>
<td></td>
<td>(0.1793)</td>
<td>(0.0366)</td>
<td>(0.1821)</td>
</tr>
<tr>
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<td>0.0203</td>
<td>0.0994</td>
</tr>
<tr>
<td></td>
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<td>(0.0385)</td>
<td>(0.1746)</td>
</tr>
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<td>Boston=1</td>
<td>-0.3436**</td>
<td>-0.0773**</td>
<td>-0.3953***</td>
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<tr>
<td></td>
<td>(0.1483)</td>
<td>(0.0347)</td>
<td>(0.1526)</td>
</tr>
<tr>
<td>Contractor=1</td>
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<td>-0.0766**</td>
<td>-0.3099**</td>
</tr>
<tr>
<td></td>
<td>(0.1516)</td>
<td>(0.0304)</td>
<td>(0.1571)</td>
</tr>
<tr>
<td>Firm size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>-0.3587***</td>
<td>-0.0806*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.1747)</td>
<td>(0.0416)</td>
<td></td>
</tr>
<tr>
<td>Small</td>
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<td>-0.0523</td>
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<tr>
<td></td>
<td>(0.2043)</td>
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<td></td>
</tr>
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<td>Staffing=1</td>
<td>-0.3324**</td>
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<tr>
<td></td>
<td>(0.1509)</td>
<td>(0.0312)</td>
<td></td>
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<tr>
<td>Constant</td>
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<td>-0.6062***</td>
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</tr>
<tr>
<td></td>
<td>(0.1156)</td>
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<td>Observations</td>
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<tr>
<td>df</td>
<td>2</td>
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<td>p-value</td>
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<td>0</td>
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<tr>
<td>$\chi^2$</td>
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<td>Log-likelihood</td>
<td>-198.3034</td>
<td>-193.0607</td>
<td>-187.2920</td>
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</tbody>
</table>

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$