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Job Search Monitoring, Inactivity and Reservation Wages

Anton Nivorozhkin (IAB), Laura Romeu Gordo (DZA)
& Julia Schneider (IAB)

Deutsches Zentrum für Altersfragen

Manfred-von-Richthofen-Straße 2
12101 Berlin
Telefon +49 (0)30 – 260740-0
Telefax +49 (0)30 – 7854350
E-Mail dza-berlin@dza.de
Internet www.dza.de

Anton Nivorozhkin
IAB, Institute for Employment Research
Regensburger Str. 104
90478 Nuremberg (Germany)
anton.nivorozhkin@iab.de

Laura Romeu Gordo
DZA, The German Center of Gerontology
Manfred-von-Richthofenstr. 2
12101 Berlin (Germany)
Laura.Romeu-Gordo@dza.de

Julia Schneider
IAB, Institute for Employment Research
Regensburger Str. 104
90478 Nuremberg (Germany)
julia.schneider@iab.de

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Abstract

German unemployed who turned 58 and were registered in the Public Employment Service had until the end of 2007 the option to avoid job-search monitoring without sanction if they agreed to retire as soon as they were eligible for an old age pension. In this study we analyze the impact of job search monitoring on reservation wages of older welfare benefit recipients using as identification strategy age discontinuity in the eligibility rule to participate in the program. Our results indicate that participation in the program increases reservation wages. However, the question whether this has an effect on unemployment duration remains open for further research.*

JEL classification: C41, J64, J65

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1. Motivation

Active job seeking is a primary requirement for receiving unemployment benefits in most countries. Monitoring job search efforts is often viewed as one of the major ways to activate unemployed individuals (e.g. Fredriksson and Holmlund 2006a). However, there is scant literature on the effect of job search monitoring on the different aspects of job search behavior of the unemployed.

Johnson and Klepinger (1994), Boone et al. (2001) and Fredriksson and Holmlund (2006b) present models in which job search monitoring reduces the duration of unemployment spells and increases job entry rates.[1] Van den Berg and van der Klaauw (2006) distinguish between formal and informal job search channels. In this model, an increase in job search monitoring may lead to a substitution between the two channels of job searching. Unemployed workers will increase formal job search but decrease informal job search. The overall impact of monitoring remains ambiguous and depends on the effectiveness of each type of job search. Manning (2005) concludes that unemployed workers may reduce search efforts and move to unregistered unemployment if the search requirements are set too high. Menard (2006) distinguishes between monitoring search intensity and monitoring rejection of suitable job offers. The author shows that monitoring search intensity has a positive effect on the exit rate out of unemployment while monitoring job refusals leads to a decrease in search intensity.

Empirical evidence on the effect of monitoring provides a mixed picture since it is often hard to keep apart the effect of increased monitoring and accompanying measures, such as increased job search assistance or sanctions (see Meyer, 1995; Gorter and Kalb, 1996; Dolton and O'Neill, 1996; Blundell et al., 2004;). Some recent US studies based on an experimental design solved the issue of separating the effects of monitoring and sanctions. These studies, however, produce contradictory results: while Klepinger et al. (2002) find a reduction in the length of Unemployment Insurance (UI) spells, Ashenfelter et al. (2005) provide evidence that the duration of the UI spell is not affected by intensified monitoring. However, the sample size and insufficient magnitude of monitoring of the second study may raise doubts about this conclusion (e.g. Klepinger et al. 2002). Klepinger et al. (2002) compare a group not affected by monitoring to a group which was subject to monitoring by telephone follow-up. The results suggest that monitored individuals tend to spend less time unemployed compared to the group with no monitoring.

Recent studies for Europe try to isolate the impact of monitoring from other factors. Cockx and Dejemeppe (2007) find a positive effect of the threat of monitoring on the employment probability of highly skilled workers in Belgium. However, increased reemployment probability comes at a cost. Highly skilled unemployed who were monitored accepted lower paid part time jobs. Petrongolo (2009) provides further evidence that stricter job search monitoring is a successful strategy to move individuals out of unemployment in Britain in the short run. The effect is, however, re-

[1] Provided that monitoring is not too costly.

versed in the long run; four years after the program finished the treated group had lower earnings and higher incidence of unemployment compared to the control group. McVicar (2008) explores job search monitoring policy variations in Ireland. The author finds that periods of suspension in job search monitoring led to a significantly lower exit rates from unemployment and increased duration of the unemployment spell.[2]

In the present paper we rely on a natural experiment produced by German regulators. German unemployed turning 58 years have the option to receive unemployment benefits without the obligation to search for jobs (RULE58).[3] The motivation of individuals when they decide to participate can be two-fold: some individuals may decide to keep looking for a job without the strict monitoring rules, and some individuals may decide to enroll in the program as a way of entering inactivity and stop job searching (Brussig and Wübbeke, 2008).

In the present paper, we analyze the effect of entering the program without distinguishing between these different motivations. Therefore, we will be able to conclude how reservation wages react to the elimination of strict job search monitoring, but we are not able to observe whether this reduction is associated with the decision to leave the labour market or with the decision to dispense with institutional job search support.

A priori, it is not clear whether participation in RULE58 increases reservation wages. In a theoretical job search framework, the unemployed person perceives job search monitoring on the one hand as having costs and thus, disutility, leading to reduced reservation wages. Furthermore, since for some participants, participation in RULE58 is associated with a transition into inactivity, it is likely that for those participants a job offer has to be very attractive to be accepted. Thus, we can assume that the effect of transition into inactivity leads to an increase in reservation wages. But monitoring the job search might also increase the skills of unemployed workers to find work and therefore be perceived as additional utility, leading to increased reservation wages. However, taking into account the characteristics of our population (older long term unemployed) we expect this second effect to be small and hence we expect the general effect of RULE58 on reservation wages to be positive.

The empirical analysis confirms this prediction. In all specifications considered, enrolment in RULE58 implies a substantial increase in reservation wages. Thus, results suggest that job search monitoring indeed changes the job search behavior of unemployed individuals by reducing their reservation wages.

The remainder of the paper is organized as follows. The following section describes the institutional framework of the German RULE58. Section 3 describes the data and the sample selection. Our identification strategy and results are presented in Section 4. Finally, Section 5 concludes.

2 The author reports similar findings using local administrative data (see McVicar, 2009)

3 Although this program (RULE58) was terminated by the end of 2007, for simplicity reasons we use the present verbal conjugation.

2. Institutional framework

Germany entered the new century with symptoms of economic stagnation. At this time, the country was seen as unable to proceed with the reforms needed to react to the adverse economic situation (Eichhorst and Zimmermann, 2007; Kemmerling and Bruttel, 2005). In response to these critics, the government set up a policy commission in the year 2002 in order to reform labor market policies including the unemployment benefit system and Germany's Public Employment Service (PES). Labor market reform, which rooted in the recommendations of this commission (Hartz-Reform), was implemented in four subsequent steps between 2003 and 2005 and can be grouped in three clusters.

The first cluster involved a reform of the Public Employment Service designed to introduce more efficiency with new public management ideas. The second cluster reformed the unemployment benefit system. Before the reforms, unemployed individuals were first entitled to unemployment insurance (UI) benefits. Periods of contributory employment prior to benefit claim defined first of all eligibility for UI and second its potential duration. The maximum duration of UI was 32 months and depended on the length of contributory work-history during a specific period prior to the benefit claim together with age. The amount of UI benefits depended on the previous wage and whether or not a person was childless (67 % of the last wage for parents and 60 % for childless people.). After the expiration of UI benefits, unemployed were entitled to an unlimited period of unemployment assistance,the level of which depended on income earned before unemployment. Additionally, individuals entitled neither to unemployment benefits nor to unemployment assistance (mainly individuals without any contribution period) were receiving welfare which was means tested.

The new benefit system introduced by the Hartz IV Act reduced the maximum period of entitlement to UI benefits to 12 months for individuals aged 45 to 54 and 18 months for individuals aged at least 55 (Unemployment Benefit I (UB I)).[4] Furthermore, unemployment assistance and welfare were brought together in the so-called Unemployment Benefit II (UB II) which is comparable to welfare in other countries since it is a means-tested benefit designed to protect the recipient from poverty. It is paid by the government to all needy individuals who are classified as able-to-work. In the following, we refer to welfare recipients when we discuss recipients of UB II. Finally, there is a possibility for all needy individuals not entitled to UB I and UB II to receive social assistance.

The third cluster reformed active labor market policy. In order to activate jobseekers, some push factors were introduced in the benefit system like tailored assistance, a strict regime with respect to job-search requirements, the introduction of stricter benefit sanctions and the obligation to take up suitable work.

Although the Hartz-Reform was a comprehensive reform, there were older regulations which survived even if they were contradictory to the main principles of the

[4] At the beginning of 2008 entitlement lengths were again raised to 15 months for 50 to 54 years olds and to 24 months for those over 57.

reform. An example of such a regulation is RULE58, which was first introduced in 1986.[5]

According to this regulation, unemployed aged 58 and over who are entitled to an old-age pension can choose to be exempted from standard job search requirements while still receiving unemployment benefits and are not counted as unemployed.[6] If unemployed choose to enroll in RULE58, they have to declare that they will apply for their old-age pension as soon as they are eligible without reductions due to early retirement. Enrollment in RULE58 implies that participants are not intensively monitored as non-participants, they are not offered jobs and active labor market measures, and they are not sanctioned for not looking actively for a job.

In practice, most people do not receive an unreduced old-age pension before they turn 65 years; hence, from 58 to 65 years, participants in the RULE58 program receive regular welfare benefits and are allowed to use placement services of the employment office without obligations to prove that they fulfill job search requirements.[7] They have neither to prove search efforts of their own, sign an individual action plan, report regularly to the employment office nor accept any suitable job offer or activation measure. Individuals are allowed to travel up to seventeen weeks per year as opposed to three weeks for individuals not affected by RULE58.

The program is popular and the number of persons opting for it has grown over time (Brussig and Wübbeke 2008). While in the 1990s, less than 1/3 of unemployed persons of age 58 to 64 participated in the program, in 2007, around 60% of the UB I benefit recipients and 23% of the welfare recipients aged 58 to 65 enrolled in the program (statistics of the Federal Employment Agency; Schneider and Stuhler, 2007; Brussig and Wübbeke, 2008). Schneider and Stuhler (2007) estimate the total fiscal costs of the RULE58 to be 850 million Euro per year in the absence of spillover effects. The costs further increase to 2.6 billion Euros if one accounts for possible displacement effects of RULE58. These estimations can be seen as an upper bound of the costs of the program since Schneider and Stuhler (2007) take as comparison an average worker who continues to work until turning 65 years, arguably a positive selection for the comparison group of participants in RULE58. Even so, the fiscal costs of program implementation mirror the high take-up-rates.

5 A conservative government introduced RULE58 for recipients of UI benefits one year before the parliamentary elections of 1987, in the face of a dramatic increase in unemployment rates (from 3.8% in 1980 to 9.3% in 1985). Individuals enrolling in this scheme disappear from the unemployment statistics. Therefore, this program has been criticized as a way of 'retouching' unemployment statistics. The regulation was extended in 2005 for recipients of the new welfare benefit (unemployment benefit II) (Manow and Seils 2000).

6 '58er Regelung', §428 SC III and §65,4 SC II. Brussig and Wübbeke (2008) offer a comprehensive description of the program.

7 For UI recipients it was possible until to the end of the 1990s to exit employment at age 58 into unemployment with UI entitlements of up to 36 months and to enter a deduction-free pension at the age of 60. Today, UI entitlements last for a maximum of 18 months, and deduction-free pensions start at the age 63 or 65. For our sample, i.e. the population of welfare recipients, deduction-free pensions start at 65.

Special rules for older unemployed workers are widespread in European countries. In most member states of the European Union there are special rules for older unemployed workers which offer more generous benefits and longer entitlement periods. Also regulations which relax for them conditions regarding availability for work and job search like the RULE58 are widespread (European Commission, 2004). These regulations have in common that they may reduce the labour supply of older workers by reducing incentives to look for a job. Although these programs have been criticised in the context of promotion of longer working lives, they still exist and further discussion on them is needed.

3. Data

The empirical analysis is based on the data from a cross-sectional survey called "Life situation and social security 2005" which was conducted on the behalf of the Institute for Employment Research (IAB) in winter 2005/2006. The study aimed at an examination of the effects of the recent Hartz IV reform in Germany. The survey addressed 20,832 individuals affected by the reform: first, a sample of unemployed recipients of the new welfare benefit (UB II) in January 2005 and second, a sample of unemployed recipients of unemployment assistance in December 2004, who lost their entitlement to benefits as consequence of the reform.[8]

This study focuses on the first stock sample of 15,219 needy and able-to-work welfare recipients in January 2005. The interviews took place in winter 2005/2006. The topics of the survey include among others individual characteristics, family background, education and work history, receipt of benefits, participation in employment and training schemes sponsored by the public employment service, old-age provisions and plans for the transition from work to retirement.

The study contains detailed information on reservation wages and participation in RULE58. The survey measures two sets of wages. The first wage is the wage job seekers expect to earn in a post unemployment job. The second wage measures the minimum wage job seekers are willing to accept, i.e. the reservation wage.[9] Arguably, the graduated compilation of hourly reservation wages transmits the idea of

8 Unemployed are defined as registered with the employment agency as unemployed or job-seeking. Most welfare recipients are long-term unemployed but long-term unemployment is not a precondition for welfare receipt. Welfare recipients include all those who work and do not achieve sufficient earnings to cover the needs of their household and unemployed who did recently work, but not under social insurance or long enough to be entitled to UI benefit when they lost their job. Our sample, though, only includes unemployed welfare recipients.

9 The exact questions are: 1.) „What net wage do you expect to earn per month?" together with a question asking how many hours per week the person would expect to work for the reported amount. 2.a) Persons who answered question 1) are asked in a second step if they would be willing to work for a monthly net wage lower than the first reported value. If so, they are asked about the minimum level of this lower wage for them still to be willing to work. Again, persons are asked for the working hours per week they expect to work for this reported wage. 2.b). Persons who refuse to answer question 1) are in a second step asked: "What is the lowest net wage per month for which you would still be willing to work?" together with the working hours they would expect to work.

the reservation wage better to the respondents than a one-stage compiling of monthly information as typically done in similar surveys (e.g. the SOEP) leading to higher reliability of results. Regarding participation in RULE58, individuals aged 58 to 65 years in winter 2005 are asked if they entered RULE58 and the exact month and year of entry.

3.1 Sample selection and descriptive analysis

Our dataset contains information on 15,219 unemployed who entered a welfare spell between January to March 2005. We restrict our sample to individuals born between December 1945 and December 1949 (14,170 observations are deleted) and who are eligible to an old age pension (178 observations are deleted). We further delete individuals with missing and implausible values of reservation wages.[10] The resulting sample consists of 670 observations.[11]

Table 1 presents descriptive statistics for individuals not eligible to participate, eligible non-participants and participants in the program. We do not observe dramatic differences in the variables presented between eligible and non-eligible individuals; this implies that these variables are not highly correlated with eligibility status. The only variables where we observe some differences between both groups are gender and family status. Non-eligibles are more likely to be women and to have a partner than eligible individuals.

Regarding differences between participants and non-participants (both eligible), we observe that living in East-Germany is positively associated with participation (almost 60% of all eligible non-participants but only 43% of all participants live in West-Germany). We find other differences between participants and non-participants in the level of household income and in debts. Non-participants are more often in the highest household income level considered (>900€) and more often have debts than participants. Note that the correlation of the observed characteristics with eligibility status is not problematic for our identification strategy as long as there is no discontinuity at age 58.

The average hourly reservation wage in the total sample is slightly lower than six Euros. The low values of hourly reservation wage in the sample may be explained by the fact that we analyze the population of older welfare recipients.[12] Eligible sample members have considerably higher reservation wages than non-eligibles: Participants report a reservation wage of 6.22 Euro and eligible non-participants one of 5.86 Euro.

[10] Missing values in reservation wage do not systematically differ between participants and non-participants (Pearson's chi-squared (1) = 0.6400 p = 0.424). To delete outliers we trim the first upper and lower percentile of the reservation wage.

[11] When interviewed, most people are still unemployed; only 6% are in unsubsidized employment.

12 Net wages of six Euros per hour correspond to a wage offered by low-wage jobs in Germany.

It is important to keep in mind the possible causes for differences in reservation wages between participants and non-participants. Participants in the program are labeled as inactive while at the same time they are not intensively monitored, are not offered jobs and active labour market measures, and they are not sanctioned for not looking actively for a job. In our empirical analysis we do not distinguish between the different factors that may influence differences in reservation wages. We consider that it is a combination of the different factors what may cause different job search behavior of participants and non-participants.

4. Identification strategy

Ideally, to make a correct inference on the effect of monitoring, we need to observe reservation wage y_i and a binary treatment (participation) indicator t_i for each individual i in two states (monitoring and not monitoring) simultaneously. The evaluation problem arises because each individual is either monitored or not monitored and is never observed in two states simultaneously.[13]

Let $y_i(1)$ be the reservation wage given monitoring, and $y_i(0)$ the reservation wage in case of no monitoring. Then, the observed outcome can be defined as: $y_i = t_i y_i + (1-t_i) y_i(0)$ and a common regression model for the observed outcome can be written as

$$y_i = \beta + \alpha_i t_i + u_i \quad (1)$$

where $\alpha_i = y_i(1) - y_i(0)$ and $y_i(0) = E[y_i(0)] + u_i = \beta + u_i$. Non-random assignment between monitoring and non-monitoring state would generally not provide us with valid treatment effect estimate.

In this paper, the source of identifying information of the effect comes from the fact that eligibility to the non-monitoring state changes discontinuously at age 58. This makes it possible to use a regression discontinuity design (RD).[14]

Under a sharp RD, individuals are assigned to treatment solely on the basis of a cut-off score of an observed continuous variable x, which in our case is age. Those individuals who fall above some distinct cut-off $\bar{x}$ (i.e. age of 58) are placed in the non-monitoring group $(t_i = 1)$, while those below the cut-off are placed in the monitoring group $(t_i = 0)$. Thus assignment occurs through a known and measured deterministic decision rule: $t_i = t(x_i) = 1\{x \geq \bar{x}\}$ where $1\{\cdot\}$ is the indicator function. As the

13 This section draws heavily on van der Klaauw (2008).

14 For contributions to the development of the RD see, Trochim (1984); Hahn et al (2001) and a special issue of the Journal of Econometrics 2008, Volume 142, Issue 2. An up-to-date review of the application of the RD in economics is presented in Lee and Lemieux (2009).

assignment variable itself may be correlated with the outcome variable, the assignment mechanism is clearly not random. However, if it is reasonable to believe that individuals close to the threshold with very similar x are comparable, then we may view the design as almost experimental near the cut-off $\bar{x}$. The idea underlining RD is to compare individuals who are marginally above or below some known eligibility threshold where the probability of being placed into the non-monitoring group changes discontinuously. Such individuals should have similar characteristics except for participation in the program. In other words, inference made on the sample of individuals marginally above and below the eligibility threshold can be as good as a randomized experiment (e.g., Lee, 2008).

An important assumption used in the identification strategy is the so-called Local Continuity (LC) assumption. The Local Continuity assumption rules out the possibility that other programs, which use precisely the same cut-off, will influence the outcome. Moreover, the LC assumption prohibits a certain type of behavior on the part of participants and administrators. It is assumed that potential treatment recipients as well as program administrators can neither manipulate assignment variable nor the cut-off.[15]

Application of the sharp RD assumes that all individuals who reach the threshold would participate in the program. In practice, some individuals choose to participate in the program while others continue to search for a job and be subject of monitoring. In this case, where assignment to treatment often depends on x in a stochastic manner we have a so-called fuzzy RD. Fuzzy RD design implies a change in the treatment probability less than one. In the latter case, one may instrument participation status by the “eligibility status”. The instrument “eligibility status” (i.e. reaching age 58) will only influence the decision to participate in the program, but not the outcome reservation wage.

More formally, assuming a homogeneous effect of participation in the program on reservation wage and one fix threshold we can write the fuzzy RD model (see van der Klaauw, 2002):

$$Rw = \gamma E(Treat \mid x) + a(x) + u \qquad (2)$$

$$E(Treat \mid x) = \eta 1(\{x \geq \bar{x}) + b(x) \qquad (3)$$

where Rw is the reservation wage, $Treat$ is the dummy of participation in RULE58. Finally $a(\cdot)$ and $b(\cdot)$ are flexible functions of enrolment, and $E(u \mid x) = 0$.[16] The parameter γ captures the casual effect on individuals, whose treatment status, participation in RULE58, changed as they crossed the eligibility threshold (i.e. became older than 58) and thus corresponds to the Local Average Treatment Effect.

15 Lee (2008) shows, in the context of a sharp RD, that the continuity assumption will be satisfied if individuals do not have a perfect control over the position of the assignment variable relative to a cut-off.

16 For simplicity we omit individual subscripts.

4.1 Results

Figure 1 shows enrolment in RULE58. We observe a sharp increase in the number of participants in RULE58 after crossing the eligibility threshold (i.e. 58). At the same time not everyone participates in the program. It follows that participation in the program is neither sharp nor fuzzy in the classical sense. Battistin and Rettore (2008) describe such an intermediate case and label it “partially fuzzy design” and provide its identification. The authors point out that the estimation of the “partially fuzzy design” is similar to that of a fuzzy design. Yet, “partially fuzzy design” offers a greater degree of flexibility when it comes to testing the assumptions underlying RD. We will describe the test suggested by Battistin and Rettore (2008) below.

Figure 2 shows reservation wage means 24 months before and after eligibility to participate in the program. We observe that although there is a high degree of dispersion, there is an increasing trend in reservation wages after eligibility.

We estimate the model equations (2) and (3) accounting explicitly for clustering of the regression errors at the age cell level to account for a possible specification error due to the fact that age is discrete in our data (see Lee and Card, 2008). Enrolment in RULE58 is instrumented by the eligibility status. The instrument “eligibility status” (i.e. reaching age 58) will only influence participation in treatment, but not the outcome reservation wage.

We present three specifications based on linear, quadratic polynomials and linear spline to account for nonlinearities and restrict the observation window to 24 months before and after the threshold. Another approach would be to restrict the data to a narrower observation window to avoid the problem of having to rely on functional form assumptions about the control function in identifying the effect. This approach could, however, produce imprecise measures of the effect since the regression-discontinuity method is subject to a large degree of sampling variability.

Initially, in all specifications we control for individual level covariates: gender, region (East/West Germany) and marital status (single). The main reason for the inclusion of the additional controls is to enhance the efficiency of the estimates (e.g., Lee, 2008). Moreover and since our observation window is relatively wide, we may expect that baseline covariates may correlate with participation in the program and outcome (see Lee and Lemieux, 2009). The outcome reservation wage is transformed into the logarithmic form.

We start by presenting the results of the baseline specification in Table 2. The first stage regression predicting participation in RULE58 is instrumented by the eligibility status and yields satisfactory results (see Panel A). The coefficient of the dummy “eligible” is above 0.38 and is highly statistically significant. The goodness of fit statistics R^2 exceeds 0.27 in all specifications.

Results of the estimation of equation (2) are close in absolute value, and correspond to a 22-23% increase in reservation wages.[17] All effects are statistically significant at five or ten percent level (see Panel B, Table 2).[18]

To test the validity of our results, we implement two specification tests as suggested by Battistin and Rettore (2008) and McCrary (2008), Lee (2008). The test suggested by Battistin and Rettore (2008) aims at comparing the outcomes of the non-eligible groups and the group of eligible non-participants.[19] In the absence of heterogeneous response to the program, we should not find significant differences in the outcomes for the two groups. Presence of response heterogeneity will cast serious doubts on the validity of our identification strategy. We restrict the sample to individuals who are not eligible to participate in the program and individuals who are eligible but choose not to participate and test for the difference in reservation wages between two groups using linear regression.[20] Panel C, Table 2 presents the coefficient and standard error of γ. The results do not indicate significant differences in the outcomes; moreover the coefficients are close to zero in all specifications.

The second test due to McCrary (2008) and Lee (2008) aims to examine whether the observed baseline covariates are locally balanced on either side of the eligibility threshold.[21] The test exploits outcomes that are on a logical ground not affected by the eligibility status and are likely to affect the reservation wage. Consider for instance the case of individual wealth. Wealth is known to affect the reservation wage (e.g. Bloemen and Stancanelli, 2001). At the same time wealth is accumulated prior to eligibility; thus the effect of eligibility on wealth should be close to zero. We apply the same procedure as described in Section 4 on a battery of outcomes (see Table 3). We select a number of covariates capturing individual socio-economic and demographic variables which should satisfy the condition described above. The results in Table 3 indicate that the casual effect of eligibility on the selected variables is close to zero and not statistically significant.

We further examine heterogeneity of the effect by splitting the sample into Males and Females, East and West Germany. The results of the estimation are presented in Table 4-7. The results are broadly consistent with the previous findings with the stronger effect for females and individuals living in the West Germany. The effect of

17 Marginal effect is calculated according to the following formula: $(\exp(\gamma)-1)$

18 To get some guidance on the choice of polynomial functional form we implement Lee and Card (2008) test based on the goodness of fit statistics. The test does not reject any of the specifications. (Results are available on request).

19 Section 4.2 of Battistin and Rettore (2008) link this result to earlier literature on testing non-experimental estimators (e.g. Heckman and Hotz (1989)).

20 We estimate the following specification: $Rw = \gamma 1(\{x \geq \bar{x}) + b(x) + u$

21 In other words we test if other potentially confounding factors are the smooth functions in the proximity of the threshold.

participation in RULE58 remains large and positive, although statistical significance is often affected.

4.2 Robustness check

In this section we implement a robustness check. We narrow our observation window to include individuals who are close to the threshold and check for the robustness of the results. Next, we access robustness of our results towards exclusion of explanatory variables. We present results for an 18 and 12 month observation window. Tables 8 and 9 show the results.

Restricting the observation window results in higher estimates of the effect of the program as compared to our baseline estimates (see Table 2). At the same time we do not observe great disparities in the estimated effect between the 18 and 12 month observation window. As expected, the statistical significance of our results is affected.

In the final check, we restrict the sample to a narrower observation window and additionally exclude the explanatory variables gender; region and marital status (see Table 9).[22] Exclusion of explanatory variables should not affect the estimates since in the neighborhood of the threshold, controls should be as good as randomly assigned conditional on $a(\cdot)$ and $b(\cdot)$. The estimates are close to that of reported in Table 2. As we move to a narrower observation window, the statistical significance of our results decline, yet our main result on the strong positive impact of participation in RULE58 holds.

5. Conclusion

Although job search monitoring increased in almost all OECD countries over the past two decades, there is an ongoing discussion in the literature on how exactly monitoring affects job search behavior (see OECD, 2000).

In this paper we investigated the effect of a reduction of job search monitoring on the reservation wage of older recipients of welfare benefits in Germany. In Germany, unemployed welfare recipients turning 58 years had until the end of 2007 the option to receive benefits without having to prove their job search efforts.

A priori, it is not clear whether participation in this program increases reservation wages. However, assuming that monitoring has no real skill-enhancing effects for the analyzed population, the general effect of RULE58 on reservation wages would be positive. In our empirical analysis we confirm this prediction. In all specifications considered, enrollment in RULE58 implies a substantial increase in reservation wages of around 23 percentage points.

22 Small number of observations prevents us from considering a “narrower“ window.

This result suggests that job search monitoring indeed affects job search behavior by reducing reservation wages. If tighter job search requirements for unemployment benefit recipients significantly reduce their reservation wages, they might help them to find a job faster. However, our results should be interpreted with caution. First, the analyzed population of older unemployed welfare recipients might react stronger to job search requirements than the average unemployed benefit recipient since some participants use the program as a way to quasi-early retirement. Second, the analyzed population has a lower labor market attachment than the average unemployed benefit recipient. Therefore, their reservation wages might respond stronger to job search monitoring. Third, changes in reservation wages in the analyzed population might imply only small changes in their reemployment chances.

Hence, the question which remains open for further research is whether the observed differences in reservation wages among benefit recipients subject or not subject to standard job search requirements lead to differences in unemployment duration. This research will need data with a longer observation period.

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Table 1: Descriptive Statistics

	Non-eligible	Eligible non-participants	Eligible participants
Female	0.51	0.41	0.45
West	0.53	0.59	0.43
Child in household	0.10	0.07	0.05
Disabled	0.26	0.30	0.27
German	0.67	0.65	0.69
Partner in household			
Single	0.38	0.42	0.43
Non-employed partner	0.15	0.17	0.13
Employed partner	0.37	0.32	0.34
Equivalent net monthly household income (Euro)			
<= 600	0.20	0.19	0.14
601 - 900	0.62	0.56	0.67
> 900	0.18	0.25	0.19
Qualification			
Low qualified	0.25	0.27	0.19
Middle qualified	0.61	0.57	0.64

High qualified	0.04	0.04	0.07
Very high qualified	0.18	0.25	0.19
Personal wealth			
House Owner	0.19	0.18	0.12
Debts	0.33	0.41	0.31
Duration of the last Unemployment spell (in months)			
<= 30	0.40	0.39	0.36
30 - 90	0.43	0.43	0.44
> 90	0.17	0.19	0.20
Number of observations	426	154	90

Table 2: Effect of participation in the program '58 regulation' on reservation wages

(24 months before and after eligibility)

	(1)	(2)	(3)
A. Eligible	0.382***	0.396***	0.387***
	(0.0401)	(0.0512)	(0.0468)
N	670	670	670
Adj. R^2	0.272	0.273	0.271
B. Treat	0.218*	0.230**	0.219*
	(0.115)	(0.112)	(0.112)
C. Test	0.0641	0.0636	0.0551
	(0.0529)	(0.0565)	(0.0549)

Notes. Standard errors in parentheses. Additional controls are: Living in the West, Male and Single.
* p<0.10, ** p<0.05, *** p<0.01
(1): Linear specification; (2): Quadratic polynomials; (3): Linear spline.
A: First stage regression (prediction of program participation).
B: Estimation of participation effect (equation 7).
C: Test on differences between non-eligibles and eligible non-participants (Battistin and Rettore, 2008).

Table 3: Test on other discontinuities around age 58 (Lee, 2008)

	(1)	(2)	(3)
Child in household	-0.691	-0.868	-0.934
	(0.499)	(0.633)	(0.672)
Disabled	-0.043	-0.192	-0.143
	(0.362)	(0.420)	(0.424)
German	-0.017	0.083	0.019
	(0.508)	(0.573)	(0.564)
Partner in household			
Non-employed partner	0.703	0.468	0.470
	(0.488)	(0.484)	(0.480)
Employed partner	-0.703	-0.468	-0.470
	(0.488)	(0.484)	(0.480)
Equivalent net monthly household income (Euro)			
<= 600	-0.432	-0.480	-0.521
	(0.426)	(0.507)	(0.504)
601 - 900	0.461	0.385	0.450
	(0.356)	(0.391)	(0.387)
> 900	-0.045	0.256	0.170
	(0.587)	(0.543)	(0.514)
Qualification			
Low qualified	0.540	0.484	0.517
	(0.340)	(0.336)	(0.325)
Middle qualified	-0.312	-0.333	-0.351
	(0.303)	(0.309)	(0.290)
High qualified	0.010	-0.655	-0.487
	(0.986)	(1.144)	(1.162)
Very high qualified	-0.309	0.145	-0.012
	(0.550)	(0.453)	(0.431)
Personal wealth			
House Owner	0.731*	0.574	0.621

	(0.378)	(0.409)	(0.394)
Debts	0.471	0.294	0.326
	(0.322)	(0.318)	(0.313)
Duration of the last Unemployment (in months)			
<= 30	0.279	0.217	0.207
	(0.406)	(0.439)	(0.431)
30 - 90	-0.182	0.084	0.054
	(0.425)	(0.404)	(0.398)
> 90	-0.158	-0.445	-0.406
	(0.425)	(0.380)	(0.403)

Notes. Standard errors in parentheses, Additional controls are: Living in the West, Male and Single. * p<0.10, ** p<0.05, *** p<0.01
1): Linear specification; (2): Quadratic polynomials; (3): Linear spline.
All information refers to the month before our observation period (December 2004).
a. Definition of qualification dummies: Low qualified refers to no graduation or graduation from Sonder-/Haupt- and Realschule and no vocational training, middle qualified refers to (Fach-) Abitur and no vocational training, or graduation from Sonder-/Haupt- and Realschule and apprenticeship, high qualified refers to (Fach-) Abitur and apprenticeship or master craftsmen; very high qualified refers to university degree.

Table 4: Effect of participation in the program ’58 regulation’ on reservation wages (24 months before and after eligibility, males)

	(1)	(2)	(3)
Eligible	0.382***	0.394***	0.387***
	(0.0694)	(0.0784)	(0.0740)
Adj. R^2	0.248	0.248	0.247
Treat	0.113	0.127	0.115
	(0.164)	(0.161)	(0.163)
N	349	349	349

* p<0.10, ** p<0.05, *** p<0.01
(1): Linear specification; (2): Quadratic polynomials; (3): Linear spline.
Notes. Standard errors in parentheses. Additional controls are: Living in the West and Single.

Table 5: Effect of participation in the program ’58 regulation’ on reservation wages (24 months before and after eligibility, females)

	(1)	(2)	(3)
Eligible	0.387***	0.397***	0.386***
	(0.0558)	(0.0776)	(0.0710)
Adj. R^2	0.298	0.296	0.296
Treat	0.300*	0.300	0.292
	(0.176)	(0.202)	(0.200)
N	321	321	321

Notes. Standard errors in parentheses. Additional controls are: Living in the West and Single.
* p<0.10, ** p<0.05, *** p<0.01
(1): Linear specification; (2): Quadratic polynomials; (3): Linear spline.

Table 6: Effect of participation in the program ’58 regulation’ on reservation wages (24 months before and after eligibility, East Germany)

	(1)	(2)	(3)
Eligible	0.396***	0.373***	0.380***
	(0.0707)	(0.0842)	(0.0730)
adj. R^2	0.334	0.335	0.337
Treat	0.160	0.235	0.194
	(0.168)	(0.176)	(0.164)
N	315	315	315

Notes. Standard errors in parentheses. Additional controls are: Male and Single.*
p<0.10, ** p<0.05, *** p<0.01
(1): Linear specification; (2): Quadratic polynomials; (3): Linear spline.

Table 7: Effect of participation in the program ’58 regulation’ on reservation wages (24 months before and after eligibility, West Germany)

	(1)	(2)	(3)
Eligible	0.363***	0.391***	0.381***
	(0.0582)	(0.0694)	(0.0683)

adj. R^2	0.210	0.217	0.214
Treat	0.279	0.253	0.245
	(0.172)	(0.159)	(0.158)
N	355	355	355

Notes. Standard errors in parentheses. Additional controls are: Male and Single.
* p<0.10, ** p<0.05, *** p<0.01
(1): Linear specification; (2): Quadratic polynomials; (3): Linear spline.

Table 8: Effect of participation in the program '58 regulation' on reservation wages (18 and 12 months before and after eligibility)

18 month	(1)	(2)	(3)
Eligible	0.355***	0.354***	0.354***
	(0.0481)	(0.0542)	(0.0483)
adj. R^2	0.266	0.264	0.265
Treat	0.347**	0.332**	0.342**
	(0.128)	(0.129)	(0.128)
N	514	514	514
12 month			
age58	0.253***	0.259***	0.268***
	(0.0482)	(0.0252)	(0.0225)
adj. R^2	0.269	0.276	0.276
	(1)	(2)	(3)
Treat	0.340	0.348*	0.355*
	(0.201)	(0.197)	(0.188)
N	363	363	363

Notes. Standard errors in parentheses. Additional controls are: Living in the West, Male and Single.
* p<0.10, ** p<0.05, *** p<0.01
(1): Linear specification; (2): Quadratic polynomials; (3): Linear spline.

Table 9: Effect of participation in the program ’58 regulation’ on reservation wages (18 and 12 months before and after eligibility, excluding covariates)

18 month	(1)	(2)	(3)
Eligible	0.366***	0.366***	0.365***
	(0.0537)	(0.0537)	(0.0482)
adj. R^2	0.264	0.264	0.264
Treat	0.224*	0.224*	0.239*
	(0.128)	(0.128)	(0.127)
N	514	514	514
12 month			
Eligible	0.277***	0.277***	0.285***
	(0.0237)	(0.0237)	(0.0213)
adj. R^2	0.271	0.271	0.272
Treat	0.208	0.208	0.230
	(0.197)	(0.197)	(0.191)
N	363	363	363

Notes. Standard errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.01
(1): Linear specification; (2): Quadratic polynomials; (3): Linear spline.

Figure 1: Discontinuity in ‘58 regulation’ participation

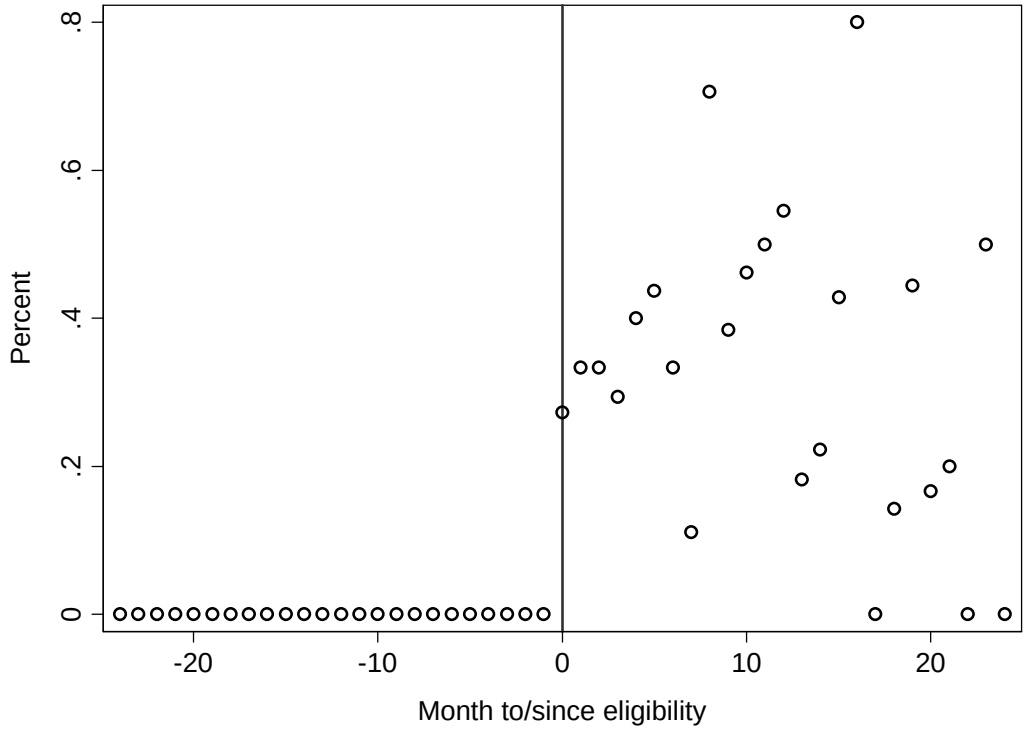

Figure 2: Discontinuity in hourly reservation wages