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How will disabled workers respond to a higher retirement age?

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DESIGN PAPER 161

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Summary

A higher statutory retirement age implies higher labor participation among older people, a longer period of tax and social security contributions, and a shorter period of pension claims. On the other hand, not everyone will be willing or able to work longer. Individuals may exit from the labor market through various routes before they reach the higher state pension age. While some may claim an early occupational pension or use their accumulated financial or housing wealth, a drawback of a higher statutory retirement age is that it will probably also lead to more claims of disability and unemployment benefits. We first document how many more people in different age groups claim partial and full disability benefits since the statutory retirement age was raised. We then focus on older workers who receive partial disability benefits and analyze to what extent they manage to utilize their remaining work capacities instead of claiming full or partial disability benefits. We provide strong evidence for a negative age gradient in remaining work capacity utilization, which suggests that a higher statutory retirement age leads to sick workers utilizing their remaining work capacity less. Compared to younger workers on disability, older sick workers are much less likely to go back to work and much more likely to depend on unemployment benefits in case they are not eligible for disability insurance benefits. Furthermore, a higher disability degree leads to a higher earnings loss among the older partially disabled workers than among the young.

These results have implications for public policy. They show that the increasing statutory retirement age is a serious concern for older age groups with a work disability. Reforms to raise labor market participation among older workers are likely to have unintended (and costly) negative spill-over effects on the use of other social security programs. Policies need to be considered that better exploit the remaining work capacity of older workers with health issues. On the supply side, this calls for policies that make work more attractive and disability insurance programs less attractive for older employees who have work-limiting health problems but who can still work although with reduced effort and/or productivity. Partial retirement schemes can be one such policy. On the demand side, policies should be considered that make older workers more attractive for employers who are hesitant to hire older workers because of associated risks regarding sickness and disability.

Samenvatting

Een hogere AOW-leeftijd resulteert in hogere arbeidsparticipatie van ouderen, een langere periode waarin ouderen belastingen en premies betalen, en een kortere periode van AOW- en pensioenuitkeringen. Niet iedereen zal echter langer willen of kunnen doorwerken. Er bestaat een aantal mogelijkheden om nog voor de AOW-leeftijd met pensioen te gaan. Sommige mensen kunnen aanspraak maken op een vervroegd bedrijfspensioen of kunnen hun opgebouwde financiële vermogen of het vermogen in het eigen huis gebruiken. Mensen zonder een vervroegd bedrijfspensioen en met onvoldoende andere middelen kunnen een beroep doen op andere sociale-zekerheidsuitkeringen. Daardoor zal een hogere AOW-leeftijd waarschijnlijk ook leiden tot meer aanspraken op arbeidsongeschiktheids- en werkloosheidsuitkeringen. In dit onderzoek documenteren wij eerst hoeveel meer mensen aanspraak maken op een gedeeltelijke of volledige arbeidsongeschiktheidsuitkering sinds de AOW-leeftijd werd verhoogd; we splitsen dit uit naar verschillende leeftijdsgroepen. Vervolgens richten we ons op oudere werknemers die een gedeeltelijke arbeidsongeschiktheidsuitkering ontvangen en analyseren we in hoeverre zij erin slagen hun resterende werkcapaciteit te benutten in plaats van aanspraak te maken op uitkeringen bij volledige of gedeeltelijke arbeidsongeschiktheid.

Onze resultaten wijzen op een sterk negatief effect van leeftijd op het benutten van de resterende werkcapaciteit. Dit suggereert dat een hogere wettelijke pensioenleeftijd ervoor zorgt dat zieke werknemers hun resterende werkcapaciteit minder zullen benutten. In vergelijking met jongere arbeidsongeschikte werknemers, hebben oudere arbeidsongeschikten veel minder kans om weer aan het werk te gaan en zijn zij veel meer afhankelijk van een werkloosheidsuitkering wanneer zij geen aanspraak kunnen maken op een arbeidsongeschiktheidsuitkering. Bovendien leidt een hogere mate van arbeidsongeschiktheid tot een hoger inkomensverlies onder oudere dan onder jongere gedeeltelijk arbeidsongeschikte werknemers.

Deze resultaten hebben gevolgen voor het overheidsbeleid. Ze laten zien dat de stijgende AOW-leeftijd ernstige gevolgen kan hebben voor personen in oudere leeftijdsgroepen met een arbeidsongeschiktheidsprobleem. Hervormingen die tot doel hebben om de arbeidsparticipatie van oudere werknemers te verhogen, zullen waarschijnlijk onbedoelde (en kostbare) negatieve neveneffecten hebben op het gebruik van andere sociale zekerheid. In het beleid zou overwogen moeten worden om de resterende werkcapaciteit van oudere werknemers met gezondheidsproblemen beter te benutten. Aan de aanbodkant suggereert dit dat het beleid erop moet zijn gericht om werk aantrekkelijker en arbeidsongeschiktheids-verzekeringsprogramma's

minder aantrekkelijk te maken voor oudere werknemers met werkbeperkende gezondheidsproblemen die toch kunnen werken, zij het met verminderde inspanning en/of productiviteit. Flexibelere pensioenregelingen met mogelijkheden tot deeltijdpensioen kunnen hierin een belangrijke rol spelen. Aan de vraagkant moet worden nagedacht over beleidsmaatregelen die oudere werknemers aantrekkelijker maken voor werkgevers die aarzelen om zulke werknemers in dienst te nemen vanwege de daarmee samenhangende risico's op het gebied van ziekte en arbeidsongeschiktheid.

1. Introduction

The costs of old age social security are rising due to the aging of the population. Governments implement social security reforms to stimulate employment among older workers. A widely implemented reform is raising the statutory retirement age, the age at which older individuals can claim a state pension. For a given life expectation, a higher statutory retirement age leads not only to a shorter period of state pension claims, but also to a higher average retirement age. This implies higher labor market participation among older individuals and a longer period of tax and social security contributions (cf., e.g., Atav et al. 2019).

The reform to increase the statutory retirement age in the Netherlands took effect in 2013. While a higher retirement age certainly leads to higher labor market participation among older age groups, the gains for public finances and the effects on the well-being of older workers remain unclear. Not everyone will be willing or able to work until the higher state pension age, and alternative labor market exit routes exist to bridge the gap to the higher state pension age. Some individuals will claim an early occupational pension or use other household resources, e.g. partner's earnings, accumulated financial (non-pension) wealth, or housing wealth. These possibilities are limited, however, particularly for households in the lower income and wealth groups. For example, in the Netherlands, self-insurance within the household through an added-worker effect (in response to a negative income shock of one partner, the partner works more) seems to be very limited (Cammeraat, 2019, Ch. 3). Knoef et al. (2016) show that private savings are, on average, rather small compared to pension wealth. Moreover, the average Dutch household has substantial housing wealth but does not liquidate it to finance retirement, mainly because of a bequest motive (Van Ooijen et al. (2015); Knoef et al. (2016); Suari-Andreu et al. (2019). The concern is therefore that many others will rely on disability benefits, unemployment benefits, or, in case of insufficient income of the partner, on social assistance benefits. This concern applies in particular to individuals with work-limiting health problems, who often also work in occupations where working until a higher age is challenging. Vermeer et al. (2016) and Kok et al. (2018) argue, for example, that people working in physically demanding occupations struggle to work longer. They also point to the public opinion that workers in physically demanding occupations should be able to retire before the higher statutory retirement age.

In its annual Labor Force Survey (Enquête Beroepsbevolking), Statistics Netherlands asks employees whether they want to reduce their number of hours of paid work. Figure 1 plots the fraction of men in full-time work wanting to work fewer

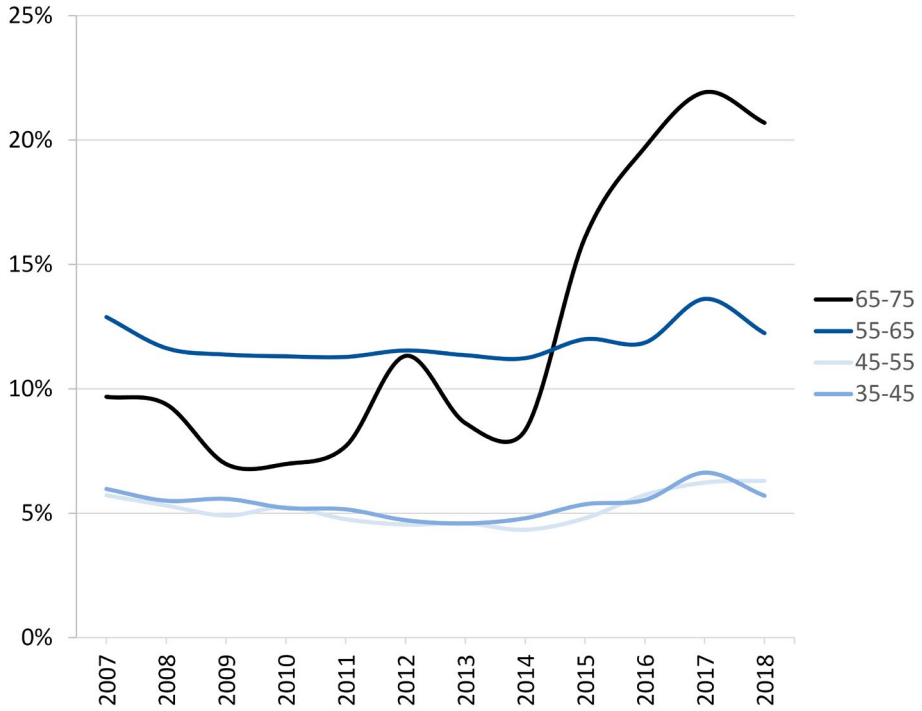

Figure 1: Fraction of men in full-time work wanting to work fewer hours, by year.
Source: Statistics Netherlands.

hours. The figure shows that among those 65 years old or older, this fraction increased by more than 10 percentage points since the statutory retirement age started to rise in 2014. No notable change is observed among the younger age groups. The large increase for older male workers might be due to increasing awareness of the opportunities of part-time work combined with part-time retirement. The timing, however, suggests that the increase is induced by the raising statutory retirement age, probably combined with the desire for a less demanding work schedule, not only among workers in physically or mentally demanding occupations, but also among workers in other occupations.

Dillingh et al. (2018) and Alblas and Koot (2014) forecast the effect of a higher statutory retirement age on the number of disability benefit recipients and on the total cost of benefits in the overall population of older persons. Dillingh et al. analyze how a higher statutory retirement age would affect disability benefit use. They forecast that, if the health status of people improves as expected, the probability of disability benefit use among the future 65-69 age group will come closer to that among the current 60-64 age group. Alblas and Koot produce long-term projections of benefit use and costs using a microsimulation model. Accounting for a higher retirement age but also for changes in the size and composition of the working population, they

forecast that disability benefit use in the WIA (Work and Income (Capacity for Work) Act) will grow from 315,800 in 2019 to 503,700 in 2040, and benefit costs will increase from 5 billion to 8 billion euros in this period.

In this study we extend the earlier research by Dillingh et al. and Alblas and Koot on the implications of a higher statutory retirement age for occupational disability. We first use publicly available Statistics Netherlands data to study the trends in disability benefit use among the older working population in relation to the rise in statutory retirement age since 2013. We then focus on older workers who are sick or assessed as disabled. Based on various empirical analyses and several data sources, we investigate to which extent the sick or disabled older workers are able to cope with their health impairment and still utilize their remaining work capacity, instead of claiming full or partial benefits. We use the results to forecast how these groups will spend the years between age 65 and the higher statutory retirement age. In particular, to get insight into the sensitivity to financial incentives of older vis à vis younger workers, we first analyze to what extent sick persons who are close to retirement are willing and able to respond to the changes in work incentives of the major disability reform in 2006. Second, we analyze the consequences of the financial incentives of the work resumption program built into the disability scheme, summarizing part of the analysis in Kantarcı and van Sonsbeek (2019). Finally, we analyze how older and younger sick people cope with a higher disability degree and manage to utilize their remaining work capacity, given demand side constraints. We base the analysis mostly on administrative data at the individual level available from the Employee Insurance Agency (UWV) and Statistics Netherlands on wages, disability benefits, unemployment benefits, information on the nature of the work disability, and a number of personal characteristics.

Our main findings are twofold. First, the higher statutory retirement age leads to an increase in disability benefit claims among older age groups. The additional benefit claims often come from older individuals with full and permanent disabilities who already were on disability benefits before reaching the former statutory retirement age of 65 years.

Second, we provide causal evidence of a negative age gradient in remaining work capacity utilization among older workers. This implies that a higher statutory retirement age reduces the extent to which partially disabled workers utilize their remaining work capacities and leads to more disability benefit claims. Overall, our results suggest that a higher statutory retirement age increases disability benefit costs not only because more people claim benefits due to a larger population of older individuals participating in the labor market, but also that a higher statutory retirement

age reduces the extent to which ill persons manage to utilize their remaining work capacity.

The implications of these findings for public policy are as follows. Our analysis confirms that increasing the statutory retirement age has unintended negative consequences for other social security programs. This is in line with other findings using Dutch data that have shown unintended spill-over effects between unemployment insurance and disability insurance for all age groups (Koning and van Vuuren, 2010), and particularly for older workers (Lammers et al., 2013; Been et al., 2017). More recently, Atav et al. (2019) have already found that raising the statutory retirement age induces spill-over effects in the use of unemployment insurance, disability insurance, and welfare benefits. As such, raising the statutory retirement age is less effective and more costly than expected a priori since such spill-overs are seldom taken into account when evaluating the costs and benefits of the policy. Our contribution to this debate is that the group of older workers with a work-limiting health problem is particularly vulnerable in this respect and faces more problems (e.g. from the demand side) than younger workers in finding a full-time or part-time job that helps them to exploit their remaining work capacities, as such reducing their financial as well as non-financial well-being. Specific policies for this vulnerable group need to be considered.

Regarding labor supply, our findings suggest that it is important to provide alternatives that are feasible and more attractive than disability schemes, which may help to smooth the transition from work to retirement. The literature has shown strong preferences for leisure and part-time work among older workers (Ameriks et al., 2020). In the Netherlands, the idea of flexible take-up of first pillar pensions (AOW) was considered but abandoned as it may have unintended redistributional effects from poor to rich and would also reduce the role of the retirement age as a social norm, which has been shown to be an important factor in retirement decisions (Vermeer et al., 2016). A different option is the further development of partial retirement schemes. Occupational pensions often allow for combining part-time work with a partial pension, but take-up is low. Further study is needed of the reasons for the low actual take-up in spite of the large stated interest of older employees. Moreover, it seems worthwhile to design schemes that stimulate part-time work instead of non-participation, avoiding the negative labor supply effects of inducing workers to work part-time instead of full-time (Bolhaar and van Vuuren, 2018; De Boer et al., 2019). Programs for sectors with a high prevalence of disability in old age (e.g. the heavy-duty jobs identified by Vermeer et al. (2015)) deserve particular attention.

Stimulating labor supply will not help if there is no demand for older workers, in particular older workers with work-limiting health issues. Policies are needed that make older workers more attractive for employers who are hesitant to hire older workers because of the associated risks of sickness and disability. Our results also show that many ill or disabled older workers have some amount of remaining work capacity that is hardly exploited. Under Dutch labor law, employers are obliged to continue payment of at least 70% of an employee's salary during the first and second years of sickness absence. This makes employers hesitant to hire older workers, as they have a higher probability of long-term sickness absence. Employer surveys confirm such concerns about the capability and employability of older workers (Van Dalen et al., 2019). Employers are likely to be less hesitant to hire older workers if it is easier or cheaper to let sick and disabled older workers go. Policies that reduce the cost and risks of hiring older workers for the employer (e.g., lower sickness and disability contributions for employers who hire older workers) and measures that can reduce negative employer attitudes towards older workers deserve to be explored.

The remainder of this paper is organized as follows. Section 2 studies the trends of disability benefit use in relation to the higher retirement age. Sections 3, 4 and 5 analyze the potential impact of a higher statutory retirement age on how partially disabled workers utilize their remaining work capacity. Section 6 discusses policy implications and concludes.

2. The retirement age reform and disability benefit claims

In 2013 the Dutch government introduced the reform to raise the statutory retirement age at which individuals are entitled to the public state pension (AOW). The relevant pattern was adjusted in 2019. For individuals born before 1948, the statutory retirement age was 65 years. The reform implies that it gradually increases for later birth cohorts. For example, for those born in 1950, it was 65 years and three months; for individuals born in 1953, the statutory retirement age is 66 years and four months; and for someone born in February 1958, it will be 67 years. In the future, the statutory retirement age will be linked to life expectancy: in the long run, an increase in life expectancy by one year will lead to an increase of the statutory retirement age by eight months. Here we conduct descriptive analyses of the implications of a higher statutory retirement age for disability benefit claims.

In Figure 2 we present the percentage of people who received disability benefits in the 2006- 2018 period. We present the total percentage of people who received benefits, but we also distinguish between subgroups of individuals with different types of disability benefits. In 2006, disability insurance law was reformed, leading to transformation of the old benefit regime with easy access to disability benefits

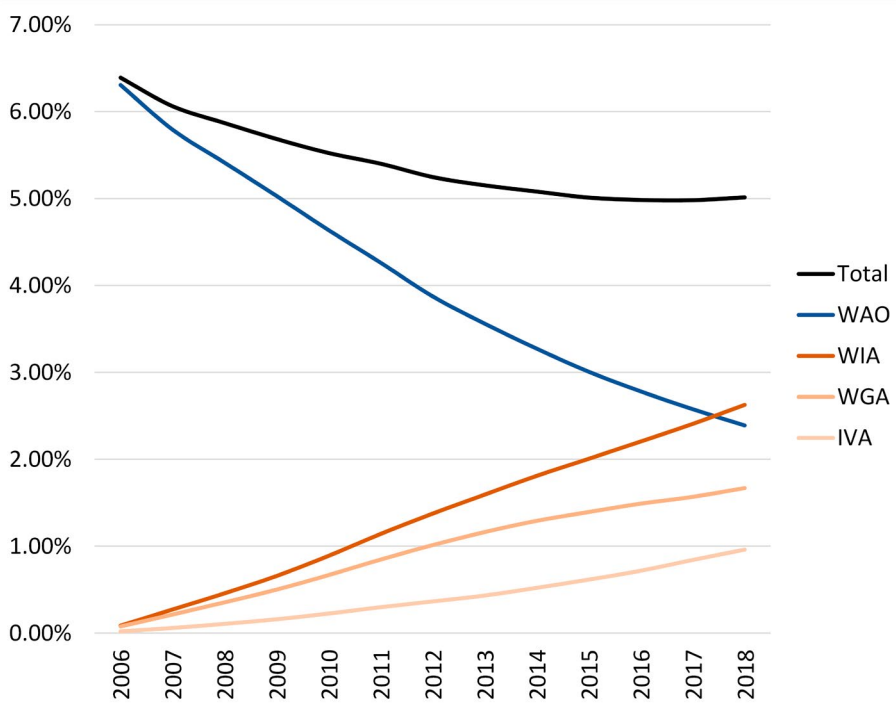

Figure 2: Percentage of age 15-65 population who received disability benefits under WAO and under WIA disability schemes; years 2006 to 2018.
Source: Statistics Netherlands.

(Disability Insurance Act, WAO) into a benefit regime with much stricter entitlement rules (WIA). In the figure, we show the percentages of the 16–65 population who received benefits under the old and new disability schemes, but also of those who received benefits due to partial or temporary disability (Return to Work Scheme for the Partially Disabled, WGA) and of those who received full and permanent disability benefits within the new system (Income Provision Scheme for Fully Occupationally Disabled People, IVA).

The figure shows, as expected, that disability benefit receipts under the WAO scheme sharply fell after 2006, when WAO was replaced by WIA. On the other hand, disability benefit receipts under the WIA scheme increased, both for partially and fully disabled individuals. A potential factor contributing to the increasing number of benefit recipients under the WIA is the increasing share of older workers in the labor market due to the increasing statutory retirement age since 2013. To confirm this, in Figures 3 and 4 we distinguish among three age groups that claim benefits due to partial and full disability. Figure 3 shows that in all age groups, the percentage of partially or temporarily disabled workers who claim disability benefits increased over the observation period. However, while benefit claims increased at a declining rate for the younger age groups, benefit claims continued to increase at the same or an even slightly higher rate for the oldest age group, exceeding those of the younger groups from the year 2014. Figure 4 shows even more dramatic differences across the three age groups of individuals who are fully and permanently disabled. Benefit claims rose

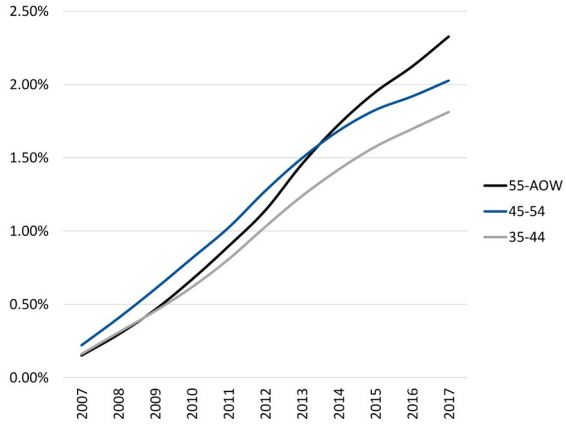

Figure 3: Percentage of partially disabled and temporarily disabled individuals who received disability benefits under the WGA scheme, by age group; years 2007 to 2018.
Source: Statistics Netherlands.

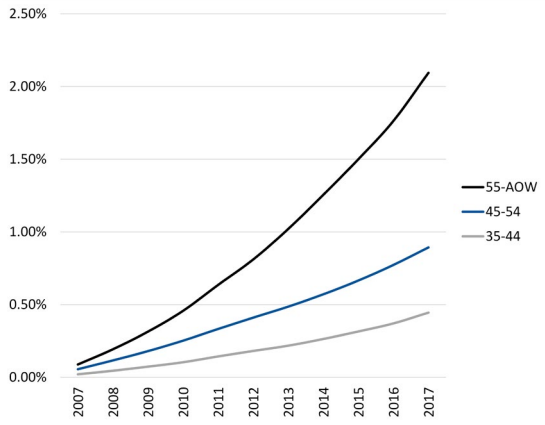

Figure 4: Percentage of fully and permanently disabled individuals who received disability benefits under the IVA scheme, by age group; years 2007 to 2018.
Source: Statistics Netherlands.

at an increasing rate for the oldest age group, while the rise was far less pronounced for the younger age groups.

The impact of the increase in retirement age on the trend of disability benefit claims is in line with the findings of recent research by Atav et al. (2019) and Berendsen et al. (2019) on the impact of the retirement age reform and inflow into the disability scheme. Based on regression analysis, Atav et al. show that, due to the retirement age reform, the probability of disability benefit receipt increased by 11.3 percentage points during the months in between the old and new statutory retirement ages. This increase appears large, given that the increase in the probability of employment due to the reform is 16.2 percentage points. Berendsen et al. show that the inflow into the WIA increased from 35,764 in 2015 to 43,419 in 2018; they argue that this is mainly due to the increasing share of older workers in the labor market as a result of the higher statutory retirement age.

In Figure 5, we extend the analysis of Berendsen et al. and study the inflow into the WIA by age group. We present the percentage of people admitted into the WIA each year from 2006 to 2018, distinguishing four age groups. The figure shows a notable increase in disability benefit claims by the oldest age group, particularly since 2015. On the other hand, the increases among younger groups in the same period are much less pronounced. The main reason for the large increase in the 55-64 age group might be due to the fact that actuarially attractive early retirement schemes (VUT) were largely phased out, particularly for individuals who reached the statutory retirement age after April 1, 2015 (VPL, legislation on the adjustment of tax treatment of early retirement, pre-pension and life-course savings schemes). Instead of using such an

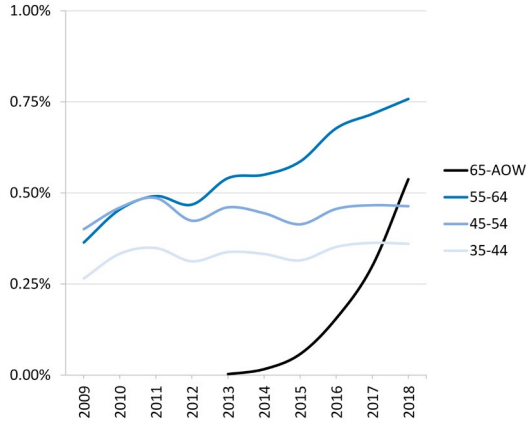

Figure 5: Percentage of individuals admitted to WIA by age group; years 2009 to 2018.
Source: UWV.

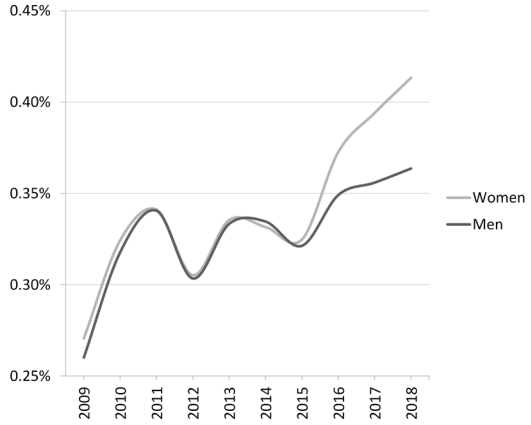

Figure 6: Percentage of individuals admitted to WIA by gender; years from 2009 to 2018.
Source: UWV.

early retirement scheme, more individuals had to either continue working or switch to disability or unemployment benefits.

Figure 6 shows the percentage inflow into WIA by gender. The patterns are largely similar for men and women, but in the most recent years the inflow among women rose faster. This is possibly due to the higher labor force participation of younger cohorts of women, particularly in the older age groups where the probability of disability is higher.

The descriptive evidence on the number of people who receive disability benefits suggests that a higher statutory retirement age leads to more disability benefit claims due to work-limiting health problems among the workers who approach the retirement age. It also suggests that increases in disability benefit claims often involve full disability rather than partial disability. This is expected since older workers are more often fully than partially disabled compared to younger workers. However, this shows that the rise in retirement age leads to an increase in the fraction of the population of older workers with very limited or no remaining work capacity. This implies that, in reforming the statutory retirement age, policymakers should carefully balance the gains for public finances from increased labor market activity among older individuals without health problems against the losses due to work-limiting health problems and increased use of the disability scheme. In fact, chances of recovery are typically very limited among fully disabled workers, implying that they effectively withdraw from the labor market earlier than at the higher statutory retirement age.

3. The work incentives of the WIA reform and responses of sick workers

The work incentives of the WIA reform

The Disability Insurance Act (WAO) came into effect in 1967 to insure against loss of earnings resulting from long-term disability. With easy access to the WAO, the annual inflow rate into the disability scheme increased to reach 1.5% of the insured working population in 2001. The WAO was amended several times, but since the main amendments in 1993 it maintained its principal features until it was replaced by the Work and Income (Capacity for Work) Act (WIA) in 2006. The WIA came into effect on January 1, 2006 for people who fell ill from January 1, 2004 onwards. It introduced major changes in both the sickness and subsequent disability scheme to facilitate work resumption. It succeeded in reducing the yearly inflow rate into the disability scheme to 0.5% of the insured working population during the first six years after its introduction (Koning and Lindeboom, 2015).

With the 2006 reform, the duration of the time individuals could spend in the sickness scheme was extended from one to two years. A strong incentive for the employer to facilitate work resumption is that the employer is obliged to compensate the employee for wage loss during these two years. As to the disability scheme, a number of new measures were introduced. First, stricter eligibility criteria were introduced that use a broader definition of the type of work that can still be done by the applicant. Second, the minimum degree of disability required to enter the scheme was increased from 15% to 35%. The argument was that workers with a modest disability can be expected to resume working with adaptations or, if they face demand-side restrictions and cannot find suitable work, that they can apply for unemployment benefits.

Third, the WIA introduced a work resumption program for partially disabled workers. This program provides strong financial incentives for persons receiving partial disability benefits to utilize their remaining earning capacity upon completion of the first stage of the two-stage disability scheme (see Section 4 below for a detailed description of the work resumption program). Finally, the WIA extended the "experience rating" period. According to experience rating, employers with high disability costs pay a higher premium. Under the old WAO, experience rating applied to employer premium contributions to disability insurance for a period of five years for all disabled workers. Under the new WIA, the experience rating period is extended to ten years and applies to employer contributions for partially disabled workers but not for fully disabled workers.

Analysis

As the benefit rules have become much stricter in the WIA compared to the WAO, sick individuals insured under the WIA are expected to increase their labor market participation and can claim fewer disability benefits compared to those insured under the WAO. The two groups of sick individuals are comparable in background characteristics, and their labor market and benefit outcomes did not differ before becoming sick. This makes it possible to compare the labor market and benefit outcomes of the two groups of sick individuals during the time that these individuals are eligible for disability benefits – The difference can be attributed to the WIA reform. Here we focus on how the effects of the reform vary across age groups, in order to investigate how older sick individuals differ from their younger counterparts in utilizing their remaining earning capacity due to a change in financial incentives.

We take a Difference-in-Differences (DiD) approach to compare the two groups of sick individuals, who are subject to different disability benefit regimes. In the DiD method, the mean of an outcome variable is calculated for both the "control" and "treatment" groups and is compared in two time periods. The control group consists of sick individuals who are subject to the disability benefit rules of the WAO, while the treatment group consists of sick individuals who face the new disability benefit rules of the WIA. The two time periods are the months before individuals fall sick and the months during which these individuals can claim disability benefits. The period before individuals fall sick correspond to January 1999 until the third quarter of 2003 for the control group, and from January 1999 until the first quarter of 2004 for the treatment group. The period during which individuals can claim disability benefits corresponds to the months from the third quarter of 2004 until July 2015 for the control group, and from the first quarter of 2006 until July 2015 for the treatment group. The DiD method is implemented using linear regression with an interaction term that is the product of an indicator of the treatment group and an indicator of the period corresponding to the period when sick individuals can claim disability benefits. The coefficient on this interaction variable is the main parameter of interest, as it gives the estimated impact of the WIA reform on the outcome variable. The set of controls includes a set of calendar month dummies for the observation period from January 1999 until December 2015. We also allow for time-invariant individual fixed effects that are potentially correlated with the control variables. The error term of the regression is assumed to be uncorrelated with all explanatory variables.

The regression model is estimated using unique administrative data from the Employee Insurance Agency (UWV). The data contain information on all individuals who fell sick in the third quarter of 2003 and the first quarter of 2004 and who

therefore became eligible to participate in the WAO and WIA schemes, respectively.[1] For these people we observe the beginning and ending dates of sickness as well as a limited number of background characteristics. Moreover, the administrative data on sickness cases were merged with administrative data on labor participation, wage, and benefits, all of which are available on a monthly basis from Statistics Netherlands. Data on benefits are from disability insurance and unemployment insurance. The data from Statistics Netherlands extend from January 1999 to December 2015, making it possible to study the differences in benefit claims and labor market behavior of the two cohorts of sick individuals over a long period of time.

The initial sample includes 51,319,668 observations for 251,567 individuals. We impose two main restrictions on the initial sample. First, we exclude individuals who participate in the disability schemes for the self-employed (WAZ) or for young people (WAJONG) since the institutional rules and incentives for work resumption are very different for them. Second, we exclude individuals who start receiving the disability benefit before they become eligible to apply for the benefit. The majority of this group consists of existing disability benefit recipients due to an earlier sickness application. Assessing the impact of the reform is much harder for this group since they participate in multiple schemes or in the same scheme multiple times. The study sample after excluding these two groups consists of 15,864,876 observations for 77,769 individuals.

A key assumption of our DiD analysis is that control and treatment groups share common time trends in labor market and benefit outcomes before and after they fall sick and face the reform incentives. The assumption is testable during the pre-reform period. This is extensively discussed in Kantarcı et al. (2019). Their analysis (Figure 2a in particular) suggests that the common trend assumptions before treatment in the employment probability and in the probability of receiving unemployment benefits are largely supported by the data.[2] With the large sample sizes, the common trend assumptions are rejected by formal tests at the usual significance levels for the months just before treatment; however, not using these months in the DiD estimation has a negligible effect on their results.

Table 1a presents the estimated effects of the WIA reform for six different age groups. The outcomes considered are indicators of disability benefit receipt, labor participation, and unemployment benefit receipt. For example, for the youngest

1 We do not use information on individuals who fell sick in the fourth quarter of 2003, who became eligible to participate in a transitional disability scheme that inherited benefit rules both from WAO and WIA.

2 Note that the probability of disability benefit receipt before treatment is zero for both groups. As such, comparing the pretreatment trends is not necessary.

Table 1a: Effect of the 2006 disability reform on participation in paid work and benefit receipt by age group

	Younger than 40 years	40 to 44 years	45 to 49 years	50 to 54 years	55 to 59 years	60 years or older
Disability benefit receipt (possibly unemployment benefit)	-0.046*** (0.004)	-0.067*** (0.008)	-0.081*** (0.009)	-0.091*** (0.010)	-0.051*** (0.007)	-0.031*** (0.009)
Participation	0.003*** (0.005)	0.021** (0.009)	0.023** (0.010)	0.043*** (0.010)	0.013 (0.009)	0.004 (0.021)
Unemployment benefit receipt (no disability benefit)	0.007*** (0.002)	0.013*** (0.003)	0.016*** (0.004)	0.029*** (0.004)	0.030*** (0.005)	0.033** (0.014)
Observations	7,099,392	2,084,652	1,864,368	1,782,324	1,406,172	389,448
Individuals	37,724	11,087	9,915	9,481	7,486	2,076

Linear regression model with fixed effects and calendar month dummies for the periods before individuals fall sick and after they become eligible to apply for disability benefits. January 1999 is the base month for comparison. The pre-reform and post-reform periods are periods of event time and correspond to the months before individuals fall sick, and subsequently the months after individuals become eligible to apply for disability benefit. Standard errors, in parentheses, are adjusted for clustering at the individual level. ***, ** and * indicate statistical significance at the 1, 5 and 10 percent levels, respectively.

age group, the 2006 disability reform reduced the probability of receiving disability benefits by 4.6 percentage points for the average sick individual. It increased the probability of employment by 0.3 percentage points and the probability of receiving unemployment benefits by 0.7 percentage points. Overall, the stricter benefit regime of the WIA reform appears to reduce disability benefit receipt and increases participation in paid work, in line with the policy aims of the reform. However, it also raises the chance that sick individuals who can no longer receive disability benefits but also face demand-side restrictions will claim unemployment benefits. There is a clear age gradient: for sick individuals close to the statutory retirement age, the reduction in the probability of getting disability benefits is the smallest. This is also the group that does not increase its participation in paid work but instead shows the largest increase in claiming unemployment benefits. These results show that older sick individuals, especially those close to the retirement age, struggle to increase their paid hours of work in response to the work incentives of the WIA reform. They may well want to work more hours, but, due to demand side factors, they hardly manage to actually utilize their remaining earning capacity to perform paid work. Our data do not allow us to distinguish to what extent the limited response is due to a small effect on labor supply or a lack of demand for these older workers with limited work capacity.

Table 1b: Effect of the 2006 disability reform on income from work and benefit income by age group

	Younger than 40 years	40 to 44 years	45 to 49 years	50 to 54 years	55 to 59 years	60 years or older
Dis. and ben. per month possibly une.	-37.139*** (5.266)	-48.792*** (12.263)	-81.611*** (15.017)	-103.513*** (16.631)	-44.784*** (12.853)	-22.614* (12.749)
Earnings per month	95.659*** (16.581)	83.539** (32.711)	96.918*** (36.458)	157.964*** (37.188)	58.700 (43.227)	-31.836 (78.772)
Unempl ben. per month. (exc. of dis. ben.)	10.981*** (1.995)	22.582*** (4.822)	21.292*** (5.776)	41.984*** (6.730)	56.365*** (8.620)	69.712*** (23.916)
Observations	7,099,392	2,084,652	1,864,368	1,782,324	1,406,172	389,448
Individuals	37,724	11,087	9,915	9,481	7,486	2,076

Linear regression model with fixed effects and calendar month dummies for the periods before individuals fall sick and after they become eligible to apply for disability benefits. January 1999 is the base month for comparison. The pre-reform and post-reform periods are periods of event time and correspond to the months before individuals fall sick, and subsequently the months after individuals become eligible to apply for disability benefit. Standard errors, in parentheses, are adjusted for clustering at the individual level. ***, ** and * indicate statistical significance at the 1, 5 and 10 percent levels, respectively.

Table 1b presents the estimated effects of the WIA reform on income from disability benefits, income from paid work, and income from unemployment benefits. In line with the results in Table 1a, the fall in disability benefits is smallest for sick individuals close to the retirement age, who also have the largest increase in unemployment benefits. Moreover, while for younger sick individuals monthly earnings increase substantially, the oldest groups hardly have an increase in monthly earnings or not at all. Again, these results provide strong evidence of a negative age gradient in remaining work capacity utilization. This implies that a higher statutory retirement age reduces the extent to which sick workers close to the retirement age manage to utilize their remaining work capacity.

4. The work resumption program of the WIA and responses of older workers on disability

This section partly follows Kantarcı and van Sonsbeek (2019), who also analyzed the responses to the work resumption program.

The work resumption program

The WIA came into effect on January 1, 2006 for people who fell ill from January 1, 2004 onwards. In the WIA, individuals who lose any part of their earning capacity due to a health impairment are entitled to the "sickness benefit" from their employer for a period of two years. When the sickness benefit expires, the individual can apply for a disability benefit. If the wage loss of the individual is more than 80%, with no possibility of recovery, the worker is admitted to the Income Provision Scheme for Fully Occupationally Disabled People (IVA). We do not consider the responses of IVA participants, since their remaining earning capacity is very limited and as there is hardly any possibility of returning to work. If the wage loss is more than 35% but less than 80%, or if the wage loss is more than 80% but there is still some possibility of recovery, the worker is admitted to the Return to Work Scheme for the Partially Disabled (WGA). This scheme is the focus of our analysis.

The WGA consists of two stages. The worker is first entitled to the "wage-related benefit". This benefit replaces 70% of the pre-sickness monthly wage less the monthly wage earned during disability.[3] This means that the lower the earnings during disability, the higher is the disability benefit. This wage-related benefit indeed has an unemployment benefit component, which compensates individuals who are not able to utilize their remaining work capacity. The duration of the wage-related benefit depends on the person's employment history, and it is limited to a maximum of 38 months.

When the wage-related benefit expires, the individual is entitled to one of two types of benefits depending on whether (s)he utilizes more than 50% of remaining earnings capacity. If (s)he utilizes at least 50% of remaining earning capacity, (s)he is entitled to the wage-supplement benefit, which replaces 70% of the pre-sickness wage multiplied by the disability degree. If (s)he utilizes less than 50% of remaining earning capacity, (s)he is entitled to the "follow-up benefit", which replaces 70% of the pre-sickness wage multiplied by the disability degree, but the pre-sickness wage is capped at the minimum wage. These rules imply that both the wage-supplement

3 During the first two months of disability, the fraction is 75% instead of 70%.

and the follow-up benefits make flat-rate payments and thus disregard how much the individual is working below or above the threshold utilization rate of remaining work capacity. Both benefits are paid so long as the individual is disabled but expire when the individual becomes entitled to the state pension at the statutory retirement age.

When the wage-related benefit expires, the individual has two financial incentives to increase work effort. The first incentive is to utilize at least 50% of the remaining work capacity, since the wage-supplement benefit is higher than the follow-up benefit. The second incentive pertains to the reduction in the level of the disability benefit from the first to the second stage of the disability scheme, as the unemployment benefit built into the wage-related benefit expires and is not a component of either the wage-supplement or the follow-up benefit in the second stage of the disability scheme.

Figure 7 illustrates the financial incentives of the work resumption program in the second stage for different cases (three pre-sickness wage levels, utilization rates of 50% and 30% in the second stage of the scheme).[4] The figure shows income from three sources (wage, disability benefit, social assistance) in both stages of the program. The figure shows that disability benefits are always lower in the second stage of the scheme, since the unemployment benefit component expires. Second, individuals who utilize less than 50% of their remaining earning capacity (and who qualify for the lower follow-up benefit in the second stage) face a larger penalty than those who utilize at least 50% (and qualify for the higher wage-supplement benefit in the second stage). Third, individuals with higher pre-sickness wages face larger penalties; their benefit level decreases by a larger amount from the first to the second stage of the scheme.

Analysis

With the financial incentives of the work resumption program, partially disabled individuals are expected to increase their work effort during the second stage of the scheme. We compare the labor market outcomes of partially disabled individuals before and after the start of the second stage. We then explore heterogeneity in the effects of the program across age groups to investigate how older partially disabled individuals differ from their younger counterparts in utilizing their remaining work capacity.

4 In all cases, individuals utilize their remaining earning capacity at the same 50% rate during the first stage of the disability scheme. Furthermore, they all have a disability degree of 40%.

We take a regression discontinuity (RD) approach and check if there is a discontinuous change in the mean of the labor market outcomes at the time individuals enter the second stage and become subject to the financial incentives for work resumption.[5] The RD method is implemented using a linear regression, including as an explanatory variable a treatment indicator that is 1 during the second stage of the scheme, when partially disabled individuals are subject to the financial incentives of the work resumption program. The coefficient on the treatment indicator is the main parameter of interest; it is the causal impact of the work resumption program around the date when individuals face the financial incentives of the program ("cut-off date"). The set of controls includes a linear time trend (in months) for the period during which individuals participate in the disability scheme, marital status, degree of disability, whether the individual receives the social minimum supplement, and calendar month indicators for the observation period from January 2006 to December 2013. We also allow for individual specific fixed effects to control for heterogeneity across individuals. The error term in the regression is assumed to be uncorrelated with the controls.

The key identifying assumptions of the RD approach are twofold. First, individuals should not be able to manipulate their transition from the first to the second stage. This is plausible since the transition is mechanically determined by their employment history and cannot be influenced after they have entered the disability program (the beginning of the first stage). Second, there must be no other discontinuous changes that might affect employment status or income from paid work, other than the transition from the first to the second stage of the disability scheme. This also seems plausible, since the timing of the transition to the second stage is specific to entry into the sickness and disability program. We therefore believe that the identifying assumptions are quite reasonable, although we cannot formally test them using the data.[6]

We estimate the regression model using administrative data supplied by UWV. The data set contains monthly observations for all employees who claimed disability benefits in the WIA scheme between January 2006 and December 2013. It includes information on personal, work, and disability characteristics such as pre-sickness

5 We tried a difference-in-differences approach but found that the common trend assumption before treatment was not supported by the data.

6 One way to test this is to check whether exogenous variables not affected by the treatment do not change discontinuously at the threshold. However, we do not have such exogenous variables. We do have the disability degree registered by UWV (and this changes discontinuously when entering the second stage), but this is a consequence of the re-examination at that time, which is part of the work resumption program.

wage, wage during disability, degree of disability, and type of health impairment. The initial sample includes 1,065,765 observations for 20,804 individuals. We exclude individuals who make multiple entries into the disability scheme or switch between different types of benefits during their participation in the disability scheme. For these individuals it is difficult to analyze the impact of the work resumption program as their work and income trajectories are too complicated. This means that our sample data includes only those individuals who start claiming the wage-related benefit in the first stage of the scheme and then claim the wage-supplement or the follow-up benefit in the second stage. This sample restriction leads to an unbalanced panel of 538,146 observations for 9,766 individuals.

Figure 8 presents regression discontinuity plots for labor participation and daily earnings, based on nonparametric linear prediction using the entire sample (pooling all age groups). For both outcomes, there are obvious discontinuities at the cut-off date (represented in the figure by 0, indicating the month when individuals exhaust their first-stage disability benefits and face the financial incentives of their work resumption program), and the jumps are in the expected direction. The figure suggests that the work resumption program has a causal impact on participation and earnings.

Table 2 presents the estimated effects of the work resumption program from separate regressions for six age groups. The outcomes considered are participation in paid work and daily wages earned while receiving disability benefits. For example, for participation in paid work by the youngest age group, the work resumption program increases the probability of working by 5.4 percentage points, on average. The program increases daily earnings by 4.37 euros. The effects of the work resumption

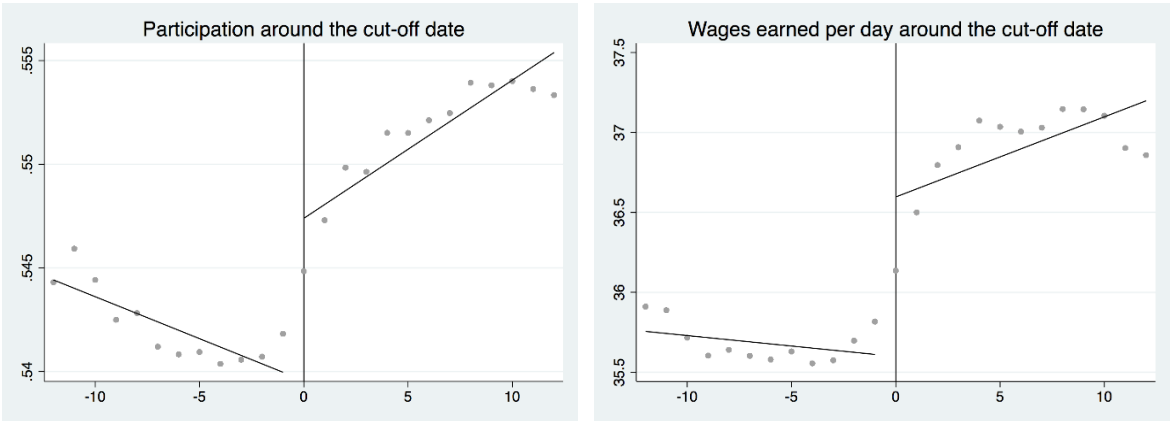

Figure 8: Nonparametric linear fit for labor participation and wages earned per day before and after the date when individuals face the financial incentives of the work resumption program.

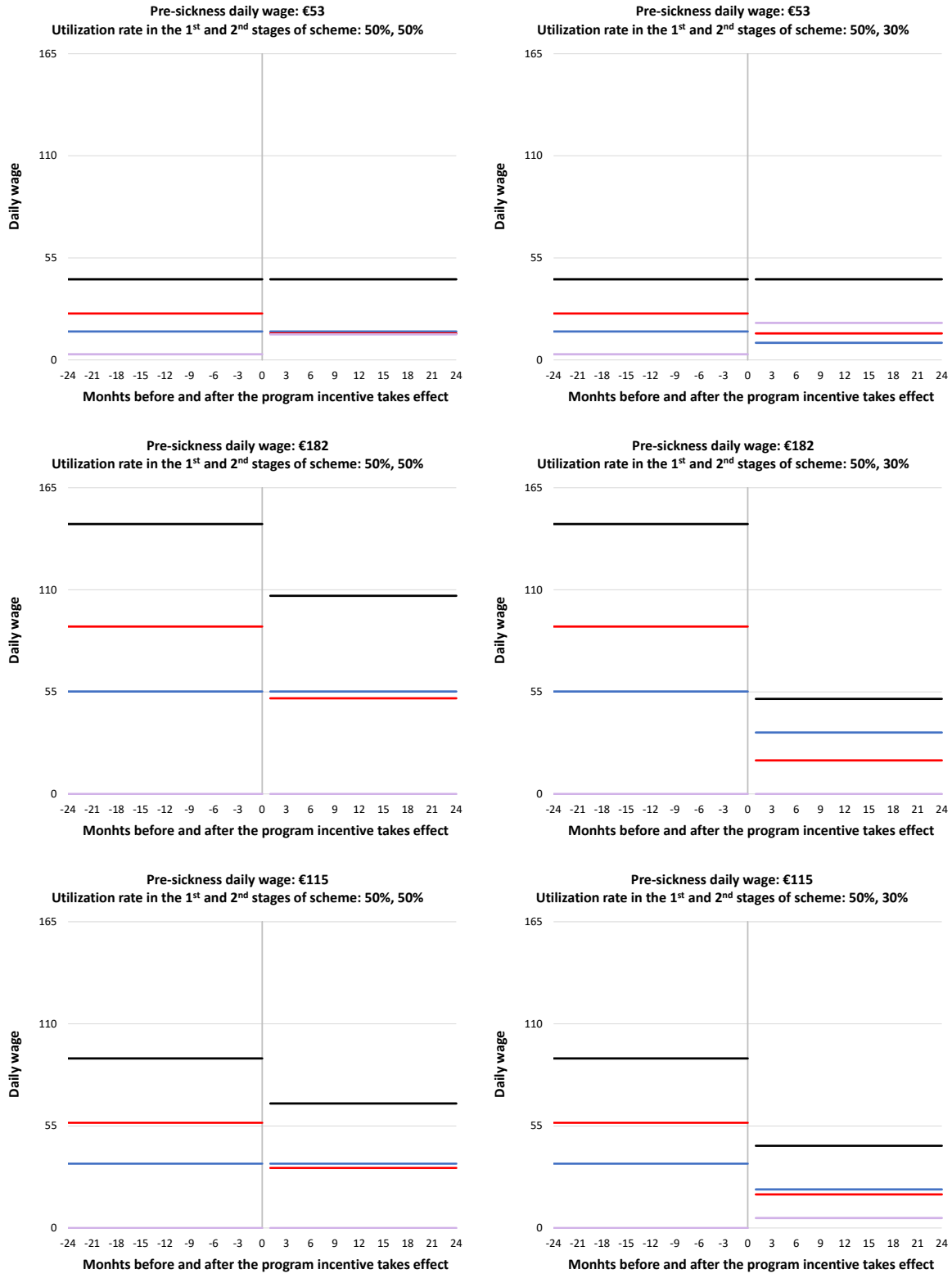

Figure 7: Wage income (blue), disability benefit (red), social minimum supplement (pink), and total income (black) on a daily basis, in euros, by pre-sickness wage groups when individuals utilize 50% of their remaining earning capacities during the wage-related period, and when they utilize 50% (left panel) and 30% (right panel) of their remaining earning capacities during the follow-up period.

Table 2: Effect of the work resumption program on participation in paid work and daily earnings by age group

	30 to 39 years old	40 to 44 years old	45 to 49 years old	50 to 54 years old	55 to 59 years old	60 years old or older
Participation	0.054*** (0.007)	0.034*** (0.009)	0.020** (0.007)	−0.010 (0.006)	0.001 (0.005)	−0.011* (0.005)
Wages earned per day	4.368*** (0.562)	3.784*** (0.642)	2.055*** (0.553)	0.224 (0.468)	1.108** (0.358)	−0.172 (0.376)
Observations	72,011	60,930	79,248	100,715	123,241	87,658
Individuals	2,016	2,134	2,702	3,458	4,072	2,717

Linear regression model with fixed effects and calendar month dummies for the observation period from January 2006 to December 2013 for the periods before and after exhaustion of the wage-related benefit. December 2013 is the base month for comparison. The pre-program and post-program are periods of time that correspond to the months that individuals are entitled to the wage-related benefit, and subsequently the months that individuals are entitled to the wage supplement or the follow-up benefit. Standard errors, in parentheses, are adjusted for clustering at the individual level. ***, ** and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

become smaller and statistically insignificant for older ages (and even negative).[7] These results show that partially disabled individuals close to the retirement age, more than other age groups, struggle to respond to the financial incentives of the work resumption program and to utilize their remaining work capacity. Assuming that they want to resume paid work, the demand side restrictions that they face prevent them from utilizing their remaining earning capacity. Perhaps older individuals with a work disability find working to be more burdensome than younger individuals, but it can also be that older individuals face labor market restrictions that limit their opportunities to resume working. In particular, employers may be hesitant to let them resume work due to the risk of negative financial consequences of repeated disability. A third possibility is that older workers use non-labor income to finance labor inactivity around the retirement age. As discussed earlier, however, formal insurance or self-insurance instruments are limited for this group. In the Netherlands, private liquid wealth is low compared to other resources that are illiquid, even among older age groups (Knoef et al., 2016). Liquidating housing wealth is very uncommon, partly due to a substantial bequest motive (Van Ooijen et al., 2015). This is also visible in statistics

7 In our estimation, for each individual we use the complete period of participation in the disability scheme. A narrower time window around the cut-off date leads to smaller effects for most age groups except for the oldest age group. For example, a time window of 48 months (24 months before and 24 months after the cut-off date) leads to coefficient estimates that are 0.028***, 0.007, 0.003, −0.004, 0.007, and −0.010* for labor participation, and 2.280***, 1.404*, 0.800, 0.521, 1.318***, and −0.283 for daily earnings, for the age groups 30–39, 40–44, 45–49, 50–54, 55–59, and 60 and over, respectively.

that show the lack of decumulation of (housing) wealth in retirement (Suari-Andreu et al., 2019). We therefore believe that the third explanation is unlikely to be the most important one.

5. Health shocks and responses of elderly disabled workers

Health shocks

In the preceding sections, we studied how work incentives induced by a disability reform and the work resumption program of the disability insurance scheme changed the chances of employment and earnings. We found that older individuals respond less to a change in financial incentives than younger individuals do, implying that it is harder for older workers than for younger workers to use their remaining work capacity. In this section we study how health status drives the variation in the ability of different age groups to utilize their remaining work capacity. We use the degree of disability registered by UWV as our measure of health. We compare the labor market outcomes of individuals with a low degree of disability to those of individuals with a high degree of disability across different age groups. We then investigate whether a higher degree of disability has a more negative effect on labor market outcomes for older workers than for younger workers. In particular, if deteriorating health leads disabled workers close to the retirement age to exhibit a higher earnings loss and lower employment opportunities compared to younger disabled workers, this would suggest that a higher statutory retirement age will not help much to make older workers with a disability utilize their remaining work capacity. They may wish to work but do not succeed in this because of demand side restrictions.

Analysis

The higher the degree of disability of a disabled worker, the less such worker is expected to work and to earn. Here we compare the negative effect of a higher degree of disability on paid work participation and the loss of earnings among older and younger partially disabled workers, in order to establish how older partially disabled workers differ from their younger counterparts in utilizing their remaining earning capacity when their health deteriorates. We estimate the regression model using administrative data supplied by the UWV. These are the same data that were employed to conduct the analysis of the preceding section. For the current analysis the main information used is the ages of the partially disabled workers and their degrees of disability.

We compare groups of partially disabled workers with different degrees of disability and different ages, focusing on the difference between older and younger age groups in the difference in the means of outcome variables between groups with different degrees of disability. The "control group" consists of partially disabled individuals with a degree of disability between 35% and 65%, while the "treatment

group" consists of those with a degree of disability of 66% to 80%. Various older age groups are considered and compared to the age group of individuals younger than 40 years. The comparison is implemented using linear regression, where the parameter of interest is the coefficient on the interaction of an indicator of the treatment group with a number of other indicators of older age groups. The set of controls includes a dummy that indicates the treatment group, dummies that indicate the age groups, a dummy for marital status, and a dummy to indicate the receipt of the benefit that supplements the disability benefit up to the social minimum income level. The error term in the regression equation is assumed to be uncorrelated with the controls. We use this regression to study how health status is associated with the ability to utilize remaining work capacity across different age groups.

Table 3 presents the estimated effect of a higher degree of disability (the change from 35–65% to 66–80%) across age groups compared to the group of individuals younger than 40 years. The outcomes considered are participation in paid work and daily wages earned while receiving (partial) disability benefits. We find no significant differences between the younger-than-40 group and the 40–44 age group. For the oldest age group, a higher degree of disability reduces daily earnings by 4.80 euros more than for the younger-than-40 age group, on average. The effect is substantial as it corresponds to 13.5% of average daily earnings of this age group. The employment rate of this group also falls by 1.7 percentage points more than for the younger-than-40 age group. For participation in paid work, we do not find significant differences with the young for the group of partially disabled workers aged 55 to 59 years old.[8] The reduction in participation probability is second largest, and that in earnings is largest among those close to the retirement age. This suggests that the oldest group of partially disabled workers struggles more than almost all other age groups to utilize their remaining work capacity when their health status deteriorates. It suggests that a higher statutory retirement age makes partially disabled workers financially vulnerable to deteriorating health conditions. Whether this is a supply or demand issue is not quite clear. They may wish to work more but may nonetheless not be much in demand due to assumed lack of productivity or the risk of discontinuing in their job due to further health issues.

8 The non-monotonic pattern is surprising. Using a finer age grid with three-year age intervals gives the coefficient estimates −0.006, 0.013*, −0.021***, −0.038***, 0.008, 0.004, −0.017***, and −0.009 for the age categories 42–44, 45–47, 48–50, 51–53, 54–56, 57–59, 60–62, and 63–65, respectively. This does not make the pattern any clearer.

Table 3: Effect of a higher degree of disability on participation in paid work and daily earnings by age group

	40 to 44 years	45 to 49 years	50 to 54 years	55 to 59 years	60 years or older
Participation	0.008	−0.012*	−0.029***	0.002	−0.017***
	(0.006)	(0.006)	(0.006)	(0.005)	(0.006)
Wages earned per day	0.031	−3.569***	−4.049***	−1.189***	−4.811***
	(0.482)	(0.440)	(0.426)	(0.413)	(0.431)
Observations	237,926				

Linear regression model. Control group is partially disabled workers with 35% to 65% degree of disability . Treatment group is partially disabled workers with 66% to 80% degree of disability. Standard errors, in parentheses, are adjusted for heteroskedasticity. ***, ** and * indicate statistical significance at the 1, 5, and 10 percent level, respectively.

6. Conclusions

The extent of the gains of a higher statutory retirement age for public finances and for the well-being of older workers remains unclear. Not everyone will continue working until this higher age and alternative exit routes to bridge the gap to the higher state pension age will become more common. Possibilities to claim an early occupational pension or to use other household resources, such as a partner's earnings, accumulated financial (non-pension) wealth, or housing wealth may be limited, particularly for households of lower socio-economic status. The concern is justified that many individuals will rely on social security programs, i.e. disability, unemployment, or social assistance benefits. This applies in particular to individuals with work-limiting health problems, who often also work in occupations where working until a higher age may be challenging. The focus of this paper is how the group of older workers who have become ill fare in terms of labor market participation or participation in social security programs and how this has changed with the reforms in the disability programs.

The disability reform of 2006 and the work resumption program built into the WIA created incentives for workers on disability benefits to resume work and to increase the number of hours of paid work. Taking advantage of the labor supply responses that these incentives generate, we studied the labor market and benefit claiming behavior of individuals who rely on the partial or temporary disability benefits program close to the statutory retirement age. Our results show that, much more than younger age groups, these individuals struggle to respond to the work incentives and hardly manage to utilize their remaining earning capacity. Facing constraints on the demand for their labor, they have more trouble to find paid work or to raise their earnings. This implies that a higher statutory retirement age will not help much to raise participation in paid employment among individuals with a work-limiting health problem. It will mainly increase disability benefit claims during the additional years before the statutory retirement age.

It is clear that a higher statutory retirement age leads to more disability benefit claims since the population of older workers, and hence the number of individuals with a work-limiting health problem, is larger. Moreover, since disability benefit claims are paid until the statutory retirement age, beneficiaries claim benefits for longer periods of time. Our results suggest that an additional factor contributing to the increasing disability benefit costs is the decreasing remaining work capacity of individuals with work-limiting health problems due to the higher statutory retirement age. In other words, a higher statutory retirement age does not imply prolonged

periods of labor market participation, where individuals on disability benefits fully utilize their remaining work capacity. The ability to respond to work incentives decreases with age.

The implications for public policy are clear. Our results show that the higher statutory retirement age raises serious concerns for the employability of older age groups with a work disability. Reforms to raise labor market participation among older workers are likely to have unintended (and costly) negative spill-over effects on the use of other social security programs, i.e. disability and unemployment benefits. Policies need to be considered that exploit the remaining work capacity of older workers with health issues, keeping them active in the labor market. On the supply side, this calls for policies that make work more attractive and disability insurance programs less attractive for older employees who have work-limiting health problems but who can still work with reduced effort or productivity. Partial retirement schemes can be one such policy. On the demand side, policies should be considered that make older workers more attractive for employers, who are hesitant to hire older workers because of associated risks of sickness and disability.

References

Alblas, R., Koot, P. M., 2014. Langetermijnraming WIA, WAO en WAZ. Rapportage, Ministerie van Sociale Zaken en Werkgelegenheid.
URL *https://archief06.archiefweb.eu/archives/archiefweb/20180309011035/https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/rapporten/2014/06/24/langetermijnraming-wia-wao-en-waz/langetermijnraming-wia-wao-waz-2013-2014.pdf*

Ameriks, J., Briggs, J., Caplin, A., Lee, M., Shapiro, M. D., Tonetti, C., 2020. Older Americans would work longer if jobs were flexible. American Economic Journal: Macroeconomics 12 (1), 174–209.

Atav, T., Jongen, E., Rabat´e, S., 2019. The effects of the increase in the retirement age in the Netherlands. CPB Discussion Paper.

Been, J., Knoef, M., 2017. Job-search requirements for unemployed at the end of working life: Effects on unemployment dynamics and self-employment probabilities. The Journal of Human Resources 52 (2), 491–530.

Berendsen, E., van Deursen, C., van Sonsbeek, J.-M., 2019. Stijging WIA-instroom nog geen reden tot zorg. Economisch Statistische Berichten 104 (4773), 230–232.

Bolhaar, J., van Vuuren, D., 2018. Geleidelijke uittreding en de rol van deeltijdpensioen. Netspar Design Paper 100.

Cammeraat, E., 2019. Economic effects of social protection. Ph.D. thesis.
URL *http://hdl.handle.net/1887/78947* LeidenUniversity

De Boer, H.-W., Kantarcı, T., van Vuuren, D., Westerhout, E., 2019. Deeltijdpensioen geen wondermiddel voor langer doorwerken. Netspar Design Paper 129.

Dillingh, R., Bolhaar, J., Lever, M., ter Rele, H., Swart, L., van der Ven, K., 2018. Effect van stijging AOW-leeftijd op arbeidsongeschiktheid. CPB Achtergronddocument.
URL *https://www.cpb.nl/sites/default/files/omnidownload/CPB-Achtergronddocument-18sept2018-Effect-van-stijging-AOW-leeftijd-op-arbeidsongeschiktheid.pdf*

Kantarcı, T., van Sonsbeek, J.-M., 2019. Do financial incentives stimulate work among partially disabled workers in the Netherlands? Netspar Design Paper, forthcoming.

Kantarcı, T., van Sonsbeek, J.-M., Zhang, Y., 2019. The impact of the disability insurance reform on work resumption and benefit substitution in the Netherlands. Netspar Discussion Paper 01/2019-013.

Knoef, M., Been, J., Alessie, R., Caminada, K., Goudswaard, K., Kalwij, A., 2016. Measuring retirement savings adequacy: developing a multi-pillar approach in the Netherlands. Journal of Pension Economics and Finance 15 (1), 55–89.

Kok, L., Lammers, M., van Soest, A., ter Weel, B., 2018. Vroegpensioenregelingen voor zware beroepen. Economisch Statistische Berichten 103 (4758).

Koning, P., Lindeboom, M., 2015. The rise and fall of disability insurance enrollment in the Netherlands. Journal of Economic Perspectives 29 (2), 151–172.

Koning, P., van Vuuren, D. J., 2010. Disability insurance and unemployment insurance as substitute pathways. Applied Economics 42 (5), 575–588.

Lammers, M., Bloemen, H., Hochguertel, S., 2013. Job search requirements for older unemployed: Transitions to employment, early retirement and disability benefits. European Economic Review 58, 31–57.

Suari-Andreu, E., Alessie, R., Angelini, V., 2019. The retirement-savings puzzle reviewed: the role of housing and bequests. Journal of Economic Surveys 33, 195–225.

Van Dalen, H. P., Henkens, K., Mulders, J. O., 2019. Increasing the public pension age: employers' concerns and policy preferences. Work, Aging and Retirement 5 (3), 255–263.

Van Ooijen, R., Alessie, R., Kalwij, A., 2015. Saving behavior and portfolio choice after retirement. De Economist 163, 353–404.

Vermeer, N., Mastrogiacomo, M., van Soest, A., 2015. Is maatwerk wenselijk bij de verhoging van de pensioenleeftijd? De mening van de Nederlandse bevolking. Netspar Opinion 63.

Vermeer, N., Mastrogiacomo, M., van Soest, A., 2016. Demanding occupations and the retirement age. Labour Economics 43, 159–170.

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