Four decades of disability benefit policies and the rise and fall of disability recipiency rates in five OECD countries

Duncan McVicar
Queen's University Belfast

Roger Wilkins
University of Melbourne

Nicolas R. Ziebarth
Cornell University, IZA Bonn, and DIW Berlin

September 2, 2016

We thank Jan Maarten van Sonsbeek for data on the Netherlands, Marten Palme and Lisa Laun for data on Sweden, and Dr. Lueg as well as Ms. Kühnapfel from the German Insurance Association (Gesamtverband der Deutschen Versicherungswirtschafte) for their data on private disability insurance policies and other background information on Germany. In particular, we thank Richard Burkhauser and Mary Daly for excellent input on an earlier version.

Abstract

This chapter summarizes and discusses developments and policy changes in the public disability benefit programs of five OECD countries—the Netherlands, Sweden, Great Britain, Germany and Australia—over the last four decades. All five countries experienced substantial increases in their disability recipiency rates (beneficiaries as a share of the working age population) at some point after 1970, followed by plateauing, and then eventually declines. This pattern reflects a commonality in the evolution of their disability benefit policies: Periods of expanding generosity were followed by rising recipiency rates. These rising rates triggered policy reforms that tightened generosity again, which reduced inflows onto the program and eventually also recipiency rates.

1. Introduction

This chapter describes the evolution of public disability benefit programs in five OECD countries—the Netherlands, Sweden, Great Britain, Germany and Australia—placing these programs in the context of the broader social welfare system in each country. We select these countries as examples of nations with similar policy goals but very different approaches to achieving them. Sweden represents the Scandinavian welfare state model and Great Britain as well as Australia the Anglo-Saxon tradition. Germany and the Netherlands are corporate welfare states with social insurance systems based on a social partnership between employers and employees whose costs are explicitly shared.

All five countries are highly developed industrialized countries. They all have carried out extensive reforms of their public disability programs over the past four decades. Together, they provide a heterogeneous mixture of case studies that illustrate how to implement structural program reforms while protecting the working age population from the economic consequences of a work limiting impairment. These countries also illustrate how they managed to slow program growth and to reduce disability benefit recipiency rates.

We begin by comparing trends in rates of public disability benefit receipt, finding that all five countries have experienced pronounced fluctuations in their disability recipiency rates since the early 1970s. We then describe policies in each country and show correlations with country-specific disability recipiency rates. These correlations are interpreted as suggestive of a link between policies and recipiency rates. Although our chapter is a descriptive comparative analysis based on case studies, it highlights the similarities of experiences across five OECD countries in their efforts to manage program growth and support the labor market integration of individuals with work limitations.

1. An Overview of Disability Recipiency Rates in Five OECD Countries

The number of working-aged people receiving social insurance benefits for disability has increased substantially in most OECD nations over the last four decades. Part of this increase is simply based on a growing working age population. However, Figure 1 shows that—even when controlling for population growth by plotting the number of beneficiaries as a share of the working age population—the disability recipiency rates in all five countries peaked above the level first observed in 1970. But in all five countries, it also fell below that peak in our most recent year of data.

[Figure 1 about here]

Figure 1 shows that all five countries have in common a pattern of initially rising recipiency rates, followed by a levelling off and subsequent declines. There are, however, substantial differences in initial rates and in the timing and magnitudes of both the increases and decreases in recipiency rates. Table 1 summarizes these differences, showing the timing (year) and level (recipiency rate) of the initial year, the peak year, and the final year observed over the four decades of our analysis.

[Table 1 about here]

At the beginning of the 1970s, the disability rates were, in ascending order: 1.6 percent in Australia, 2.7 percent in Great Britain, 3.1 percent in the Netherlands, 3.5 percent in Sweden and 4.2 percent in Germany. As can be seen in Figure 1, this ordering changed over the next four decades.

The Netherlands and Sweden experienced their peak levels in 2003 and 2005, respectively. Growth in the recipiency rate in the Netherlands was substantial between the mid-1970s and mid-1980s. The rate peaked at 9.1 percent in 2003 before falling over the next ten years to 7.4 percent

in 2013. In contrast, Sweden's growth was steadier and more sustained between 1970 and 2000, but then followed by a sharp rise to 9.6 percent in peak year 2005 before falling substantially over the next nine years to 5.9 percent in 2014.

As compared to the Netherlands and Sweden, Great Britain and Australia not only had lower recipiency rates in the early 1970s, but also relatively little growth until the late-1980s (Great Britain) and the early-1990s (Australia). In Great Britain, growth was then very rapid until 1996, but much less thereafter—the rate peaked at 6.7 percent in 2003. Over the next eleven years it fell back to 5.8 percent. For Australia, the rate of growth was noticeably higher in the 1990s than in the previous two decades, but slowed thereafter. In peak year 2011 the recipiency rate was 5.4 percent and only fell slightly thereafter, to be 5.2 percent in 2013.

While Germany's disability recipiency rate was the highest of all these countries in the early 1970s, and grew to 5.8 percent in peak year 1984, it fell susbtantially between 1984 and 1990 and again immediately following reunification in 1990. Since 1991 it has remained relatively steady and was 3.3 percent in 2013. Germany has had the lowest disability recipiency rates of all five countries since 1992.

In what follows, we discuss the evolution of each country's disability programs. We focus on the relationship between policy changes and recipiency rates in the context of wider social policy and economic conditions in these countries. By extending the set of countries considered and/or the time span over which they are studied, this chapter complements a number of recent cross-country reviews including Burkhauser et al. (2014), Burkhauser et al. (2015), and Böheim and Leoni (2016).

1. Disability Policies in Five OECD Countries

In the industrialized world, social insurance against income losses due to work disability is just one pillar of a broader social welfare system designed to protect working-age individuals from the loss of labor market income. Because labor market work is the primary source of income for most families, OECD nations have generally built complex social protection schemes to support individuals who are unable to earn wages in the labor market. All OECD countries provide some form of universal state-guaranteed social insurance coverage for people who are considered long-term work disabled. Because long-term work disability is typically the outcome of a longer process of having health issues, this chapter also discusses closely related social insurance schemes which cover employees unable to work on health grounds before they become eligible for longer- term disability benefits. These programs include government regulated or provided short-term and long-term sickness benefits, accident and medical rehabilitation programs, as well as workplace accommodation programs.

One complication that arises with disability programs is the lack of a precise definition or easily verifiable marker for work disability. Work disability is not a static concept and social conceptualizations of disability evolve over time. For example, over the last 20 years, the medical model of disability underlying categorical disability programs has been replaced by a conceptualization that recognizes the social environment as an important determinant of an individual's ability to participate in society (WHO, 2001).[1] Under this model, work disability is a changeable state that depends on a number of factors, including an individual's health impairment,

[1]There is no clear consensus on the most appropriate conceptualization of disability, although the most widely used is the World Health Organization's (WHO) International Classification of Disability, Health, and Functioning (WHO, 2001).

the level of accommodation offered in the workplace, and the relative economic payoffs associated with working or exiting the labor force to receive disability benefits.

Below we discuss how changes in disability policies in the Netherlands, Sweden, Great Britain, Germany and Australia have been associated with changes in disability recipiency rates in each country. Earlier versions of these discussions can be found in Burkhauser et al. (2014) and Burkhauser et al. (2015). Figure 2 (Panels A through E) shows disability recipiency rates along with major policy changes and recessions during this period for each country.

1.1 The Netherlands

The disability system in the Netherlands contains both a social insurance program that protects workers against lost labor earnings (WAO/WIA) and a program that provides a social assistance minimum income for disabled adults with little or no work history ("Wajong"). A separate social minimum scheme for the disabled self-employed (WAZ) was closed to new entrants from 2004. Together with sickness benefits which cover the initial part of a disability spell, the Dutch social insurance program provides a comprehensive system of both partial and total disability benefits to workers, based on lost labor earnings, regardless of how or where their disability occurred.

One likely reason for the rapid growth in the Dutch disability program over the 1970s was the relatively generous benefits that the system provided (Figure 2, Panel A). The first level of disability protection for Dutch workers was universal sickness benefits. In the 1970s, government payments from this program replaced up to 80 percent of net-of-tax wage earnings for up to one year. Moreover, most workers had the rest of their net-of-tax earnings replaced under collective-bargaining agreements with their employers. Sickness benefits were payable for up to twelve

months and, after one year, employees still receiving benefits were eligible for disability benefit screening. Workers with chronic conditions that caused a reduction in their work capacity were eligible for disability benefits. Those judged fully disabled were eligible for benefits, again equal to 80 percent of their previous before-tax earnings. Those judged partially disabled (with some residual earnings capacity) were eligible for partial benefits; the minimum degree of impairment for eligibility was 15 percent.

In a significant loosening of access to full disability benefits in the mid-1970s, Dutch courts determined that unless disability evaluators could prove otherwise, they were required to attribute a partially disabled worker's lack of employment to discriminatory behavior. The result was that it became "administrative practice" to treat partially disabled unemployed persons as if they were fully disabled. That interpretation of the law made assessing lost earnings capacity unnecessary beyond the minimum 15 percent, since it became sufficient to entitle a person to full benefits. This practice essentially made the Dutch partial disability system a very generous full disability benefit system. Changes in eligibility together with the generosity of the system are prime candidates for explaining the rapid growth in Dutch disability benefit recipiency rates during the 1970s.

The serious recession of the early 1980s and the growing costs of disability benefits put pressure on the Dutch government to reduce the growth of disability-based transfers. Reforms initiated between 1982 and 1987 were the first of three major efforts over the next two decades to regain control of the Dutch disability benefit program. By 1985, a series of cuts in the replacement rate effectively lowered it from 80 percent of before-tax income to 70 percent of after-tax income, for both new entrants and existing beneficiaries. In subsequent years, system growth slowed down but did not halt completely. In 1987, the labor market consideration rule was abolished. However, disability adjudicators still tended to either grant full benefits or deny any benefits. Denial rates

remained quite low, suggesting that the legal change did not stop the de facto use of labor-market considerations in the adjudication process. Nonetheless, the slower growth in disability recipiency rates in the second half of the 1980s brought the Netherlands more in line with disability growth in Australia, Great Britain, and Sweden over the decade.

In 1993, disability recipiency rates began to drop. This just preceded 1994 reforms that included further tightening of eligibility criteria. Additionally, in a new policy, firms were made responsible for an employee's first six weeks of sickness benefits. The introduction of this type of privatization of the disability system, although echoing a similar reform introduced in Great Britain in the mid-1980s, was unprecedented in the Netherlands. It represented a deliberate change in policy intended to encourage firms to provide accommodation, rehabilitation, and continued employment opportunities to workers as an alternative to moving them onto long-term cash benefits. The mandate that firms would bear the full responsibility for sickness benefits was extended from six weeks to one year in 1996. However, the decline in the Dutch disability recipiency rate stopped in 1997 and the rate began to slowly climb again, ending the decade slightly above where it started.

In 2002, the Dutch disability system began to phase in the third and most significant set of reforms. These reforms culminated in the establishment of a new disability benefit scheme in 2004—WIA—which, for new claimants, replaced the WAO scheme that had been in place since 1967. These systemic reforms fundamentally changed disability policy in the Netherlands. The reforms made work rather than cash benefits the expectation and enforced this by increasing the incentives of both employees and their employers to invest more time and effort in accommodation and rehabilitation following the onset of a disability. Foremost was the extension from one year to two years of the mandate that firms (including small employers) bear full responsibility for

employees' sickness benefits. These changes effectively meant that during the first two years following a health shock, workers were the responsibility of the firm and not eligible for long-term government-provided disability benefits. During these two years, employers must allow workers receiving sickness benefits to remain with the firm, and can only dismiss employees who refuse to cooperate with a reasonable work-resumption plan. The reforms also gave firms a list of prescribed rehabilitation and accommodation activities that they (via a private occupational health agency) must provide to workers to assist them in remaining on their job or finding alternative employment. This new set of responsibilities upon firms is known as the "Gatekeeper protocol."

After two years, workers become eligible to apply for long-term disability benefits, but have to provide documentation regarding return-to-work efforts during the two-year period. In 2007, nearly 14 percent of disability benefit claims were returned to employers and the employer continued to be responsible for employing the worker until the claim was processed or the worker had returned to work.

Reforms at the front end of the disability process were accompanied by significant reforms in the longer-term disability benefit program. All employers were required to pay for the fully-disabled (permanent) disability benefit program through a uniform pay-as-you-go premium. Employers were also required to fund the publicly-run partial disability benefit program, but could opt out by instead enrolling their workers with a private insurer.

Either way, employers have to pay experience-rated premiums that cover the first ten years of partial disability benefit receipt. After ten years, benefits are covered by the uniform pay-as-you-go premiums. Reintegration services for disability benefit recipients were also enhanced at this time, with a move to more individually-tailored packages of schooling, training, interviewing and/or work placements, either purchased by the benefits agency from the private sector

('Trajectories') or designed by the individuals themselves given a budget from the benefits agency ('Individual Reintegration Plans'). For an initial period those finding work could also receive wage supplements, and employers of Wajong recipients could also receive dispensation allowing them to pay a wage below the minimum wage.

Based on these reforms, the Dutch disability benefit system, long seen as out of control, is now considered by Prinz and Thompson (2009) as one that has learned from its mistakes and provides an example for other OECD countries to follow. Böheim and Leoni similarly (2016) identify the Netherlands as the country with the most extensive disability benefit reforms over the period from 1990 to 2007, along both 'integration' (activation) and 'compensation' (payment generosity) dimensions.

It is likely no coincidence that its disability recipiency rate peaked in 2003 and has been falling ever since, with a particularly rapid decline between 2005 and 2007. The recent review by Koning and Lindeboom (2015) draws a similar conclusion. Indeed the disability benefit recipiency rate is now back to the level of the early 1980s. Van Sonsbeek and Gradus (2011) presents micro-simulation evidence on the consequences of the post-2002 round of policy changes discussed above. They estimate that the combined impact of the introduction of experience rating together with the introduction of the statutory Gatekeeper protocol and stricter examinations will reduce the projected long-term number of disability beneficiaries by 600,000. They also estimate that the introduction of the new WIA scheme will further reduce that number by 250,000 by 2040, as compared to a "no-change scenario." To put this in perspective, the number of disability benefit recipients in the Netherlands peaked at 1 million in 2003.

Koning and Lindeboom (2015) raise the possibility that the increased responsibility borne by employers under the reformed system may reduce incentives to hire workers with discernible

health conditions, or at least to hire such workers on permanent contracts given that temporary workers do not initially impact employers' experience-rated premiums. Although there is as yet little hard evidence of such effects, they have the potential to take some of the shine off the Dutch reforms. Further, Koning and Lindeboom (2015) note that although employment rates among men with health impairments have increased following the mid-2000 reforms, the proportion of men with health impairments who are neither working nor in receipt of disability benefits has also increased.

1.2 Sweden

Sweden provides sickness and disability benefits through a combination of programs. For those with an earnings history, the bulk of the protection is provided based on a social insurance program financed by statutory employer and employee contributions. Many employers in Sweden also pay into occupational-based insurance programs on behalf of their employees. Like most European nations, Sweden additionally has a long-standing universal needs-based cash transfer program that provides a guaranteed social minimum income floor to all its citizens. This protection is funded out of general revenues and is available to everyone who lives or works in Sweden. Although benefits provide a minimum income to anyone in need, applicants apply for benefits based on income and particular circumstances, such as disability, parental needs, or old age. Benefits are set nationally and indexed to keep pace with the price level.

As in the Netherlands, a key reason for the rapid growth in the Swedish disability program over the 1970s (Figure 2, Panel B) was the relatively generous benefits that the system provided. This generosity was apparent in both the ease of entry onto the program and the benefit replacement rate.

The first level of protection for Swedish workers with health problems are sickness benefits. In the 1970s, sickness benefits replaced about 90 percent of expected earnings for individuals with "abnormal physical or mental conditions" that reduced their normal work capacity by at least 25 percent. Workers claiming sickness absence for more than eight days were required to obtain a certificate from a doctor. This was primarily facilitated by primary-care physicians with no centralized screening.

After one year, employees still receiving benefits could apply for long-term disability insurance. Workers with functional limitations that reduced their work capacity were eligible for disability benefits. Benefits were awarded for partial (50 percent) and full disability. Those under age 60 were also offered support for rehabilitation and vocational training. Like sickness benefits, disability benefits were very generous, replacing the vast majority of expected lost earnings.

Over the course of the 1970s, standards for obtaining long-term disability benefits were loosened to make it easier for the long-term unemployed to move onto the program. For workers of all ages, unemployment spells of more than one year were added to the list of criteria considered in the disability screening process. For workers over age 60, long-term unemployment became a sufficient condition for moving onto the disability benefit rolls, even without a certifiable functional limitation. Similar to the Dutch case, these changes meant that the disability benefit program was increasingly being used as a very generous long-term unemployment benefit program. Econometric studies of the Swedish system support this view. See, for example, Rebick 1994 and Larsson 2006.

Generous benefits and easier access resulted in continued steady growth in disability recipiency rates over the 1980s. These features also left the program vulnerable to rapid growth related to the triple-dip recession in the early 1990s. As shown in Figure 2, Panel B, following the

foreign-exchange crisis in 1990 and ensuing deep recession, disability recipiency rates surged. Policymakers responded by lowering the replacement rates on sickness benefits, by making employers pay for the first 14 days of sickness absence, and by removing the labor market criteria for disability benefits for older workers. With these policy changes and an improving economy, recipiency rates stabilized for most of the rest of the decade. However, they remained high and at a level that policymakers believed unsustainable. As such, policy reforms in the 1990s increased the cost to employers of worker sickness absence and tightened eligibility criteria for sickness and disability benefits.[2]

Facing increasing fiscal pressures and a renewal of disability benefit recipiency rate growth at the end of the 1990s, the Swedish government proposed much more sweeping reforms to the sickness and disability system in 2000. Despite considerable opposition from various advocacy groups, significant reforms were put into place over the remainder of the decade. The driving principle was that work support, rather than cash assistance in lieu of work, should be the primary goal of disability policy. This general principle translated into a number of specific reforms. In 2003, the government merged the sickness benefits and disability systems and began a series of changes to standardize and enforce the administration of these now joint systems. By centralizing the screening process and developing standardized protocols for granting cash benefits, policymakers were better able to regulate the gatekeepers and enforce the strategy of promoting participation in work before offering cash benefits.

[2] The Swedish government made numerous changes to sickness benefit replacement rates, the number of days the employer paid for employee sickness absence, and the number of days the worker had to wait before receiving sickness benefits (Andren, 2003). In addition, policymakers removed most of the special allowances for disability insurance afforded to unemployed and older workers (Jönsson et al., 2011).

As part of the merger of the sickness and disability programs, vocational and rehabilitation experts were required to be actively involved at the sickness benefit stage, which policymakers intended would stem the flow of new applicants to the long-term disability program. To aid in this process, sickness benefits were capped at one year, and beneficiaries were evaluated for work ability at 180 days of absence. In addition, employers were required to work with disability administrators to create rehabilitation plans. And gatekeepers were given the power to demand that employers provide certification of the steps taken to accommodate the worker. Following these reforms, the disability recipiency rate began to fall rapidly.

In 2008, the Swedish government undertook an additional series of reforms to its sickness and long-term disability programs (see Hartman (2011) and OECD (2009)). These reforms were meant to further curb growth in the rolls and more actively return newly impaired workers back to the labor market. New rules strengthened the work incentives for individuals with disabilities. The principal reform was the establishment of a new timeline for the provision of rehabilitation services under the sickness absence program. Checkpoints were closely aligned with assessment of work capacity and a reduction of the cash value of sickness benefits for those who did not return to work. In addition to adding more checkpoints, the reforms also front-loaded the evaluations to 3-, 6-, and 12-month increments. In essence, the earlier checkpoints moved existing rehabilitation, counseling and assessment interventions much closer to the onset of impairment, when return to work was more likely.

These reforms increased return to work of new sickness program entrants and reduced time on the program. In contrast, few of those already on the sickness program when the new reforms were initiated ever returned to work. When their sickness benefits ended some beneficiaries moved onto other social assistance programs (Hartman, 2011). These findings suggest that early

intervention matters. Waiting even one year following the onset of impairment significantly reduces the chance of rehabilitation and return to work. However, further reforms in 2013 made it easier for existing beneficiaries to return to work without fear of losing their right to return to benefits. Nevertheless, the reductions in new beneficiaries were sufficient to see the disability recipiency rate continue to fall in the latter part of the decade and into the 2010s, including during the recession of 2008-2009. Similar to the Netherlands, the recipiency rate is now back to where it was in 1980.

1.3 Great Britain[3]

Böheim and Leoni (2016) identify Great Britain as the second most extensive reformer within the OECD over the period 1990 to 2007 in terms of the integration aspects of its disability benefits. Further major reforms have also been introduced more recently.

In 1971, Great Britain provided universal needs-based cash transfers via its Supplementary Benefit program and somewhat higher cash transfers via its Unemployment Benefit program for those expected to work. The main social insurance program for working age people with disabilities between 1971 and 1995 was Invalidity Benefit (IVB). All those of working age who were deemed unable to work in their usual occupation on grounds of ill health or disability (determined largely by the claimant's family doctor) and who had a record of sufficient social insurance contributions (paid during employment) were eligible, initially for Sickness Benefit (the first 28 weeks) and subsequently for IVB. Both Sickness Benefit and IVB recipients were counted

[3] Our discussion focusses on Great Britain rather than the UK (thereby excluding Northern Ireland) because the underlying data refer to Great Britain. Nevertheless, with the exception of a handful of recent welfare reforms whose introduction has been delayed in Northern Ireland, Great Britain and Northern Ireland share a common welfare system. In terms of population, the UK is dominated by Great Britain. Our conclusions are therefore likely to carry over to the UK as a whole.

in the IVB register. Individuals with an insufficient record of social insurance payments were eligible for "credits only" payments (the IVB system would pay their social insurance contributions) generally alongside means-tested Supplementary Benefit payments. This group was also counted in the IVB register.

IVB paid a slightly higher flat rate to beneficiaries, which was more generous than unemployment benefits for longer-duration claimants. Some (generally older recipients with a sufficiently long work history) also received a small earnings-related premium known as the Additional Pension. Even for those receiving the Additional Pension, replacement rates were still considerably less generous than those in the Swedish and Dutch disability systems. This regime was in place throughout the period of slow but steady growth in disability benefit recipiency rates over the 1970s and early 1980s (see Figure 2, Panel C).

The 1980s brought a number of major changes that decreased IVB recipiency rates. During the early-mid-1980s one particular change that held back growth was the introduction of Statutory Sick Pay (SSP) in 1983, which—like in the Netherlands—made employers responsible for paying sickness benefits, in this case for the first eight weeks of a claim. The maximum duration was extended to 28 weeks – the full duration of sickness benefits – in 1986. Employees receiving SSP were not counted by the IVB register, so even if this reform did not impact behavior—which seems unlikely given the change to employer incentives—it did remove many short-duration claims from the roll (Anyadike-Danes and McVicar, 2008).

Labor market factors, including deep recessions in the early 1980s and early 1990s and rapid structural change away from mining and heavy industry throughout the 1980s and into the 1990s, acted in the opposite direction. Indeed, the rapid growth in disability recipiency rates during the second half of the 1980s and the first half the 1990s has been widely interpreted as a form of

hidden unemployment (Beatty et al., 2000). Further, a large share of IVB claims over this period were related to hard-to-measure mental illness or muscular-skeletal conditions, despite no explicit change in the medical screening regime for IVB over this period (McVicar, 2008; Banks et al., 2015).

The Restart reforms of 1987-1988 intensified both financial and "hassle-avoidance" incentives to shift to IVB from unemployment benefits. Restart imposed compulsory work-focused interviews for long-term unemployment benefits claimants, reduced the generosity of unemployment benefit payments, and introduced a requirement to show evidence of job search activity at fortnightly signing interviews. Huddleston (2000) suggests "there is clear evidence of a 'structural break' around 1987" in moves from unemployment to IVB (for which no such reforms had been introduced), coinciding with the in-step increase in disability recipiency rates.

Another factor likely contributing to growth in the IVB rolls occurred in 1988 when the Income Support (IS) program replaced Supplementary Benefits as the primary means-tested social assistance payment for those out of work with insufficient work history to qualify for IVB or other insurance-based benefits. Although there were various elements to this reform, the most relevant change was that those claiming IS on grounds of disability could now receive a higher level of payment (the Disability Premium) than those claiming IS on other grounds.

Because yearly increases in IVB fixed rates (since the 1980s), unemployment, and social assistance payment benefits are tied to inflation, they have generally declined relative to real wages, hence lowering their real replacement rate even at the bottom of the wage distribution. But for those IVB beneficiaries who were also eligible for the Additional Pension, this was less the case since their benefit levels were tied to real wages. This was especially true in the recessionary years of the early 1990s when increases in Additional Pension benefits temporarily made IVB

more than twice as generous as unemployment benefits for many older recipients (Huddleston, 2000).

The period of rapid growth in disability recipiency rates came to an abrupt end in 1995, with a set of major reforms that ended the IVB program and replaced it with the Incapacity Benefit (IB) program for all new beneficiaries. Like other European countries, this reform attempted to slow inflows into the disability insurance system—which had been particularly high during the years of rapid growth leading up to 1995 (Anyadike-Danes and McVicar, 2008). Means-tested beneficiaries of the IS program with disabilities continued to receive a Disability Premium and be counted as part of the IB program. But IB was both less generous than IVB (the earnings-related Additional Pension was scrapped for new claimants and payments were made taxable) and, most importantly, the medical eligibility system was tightened. Medical screening was now carried out by government doctors rather than family doctors. This type of standardization is similar to that adopted by Sweden in 2006.

The work capacity bar was also set higher with the move to assessments of claimants' capacity to carry out *any* work rather than work in their usual occupation. In addition, IB's status as an insurance payment was blurred in 1999 with the introduction of limited means-testing for new claimants with significant (private) pension income, even those who had made sufficient contributions to be otherwise fully covered for IB benefits. There were also further reforms tightening the conditions for unemployment benefit receipt and reducing its generosity over this period, most notably the replacement of the old regime of unemployment benefits with Jobseekers' Allowance in 1996. This tightening of unemployment benefits might in part explain why disability recipiency rolls began to rise again in the late 1990s and early 2000s.

Disability recipiency rates only began to fall again in the mid-2000s, coincident with a new set of work-first reforms, called "Pathways to Work," aimed at slowing the inflow of disability beneficiaries and boosting outflows for those having recently joined the roll. This program was piloted in 2003 and rolled-out nationally beginning in 2005. It made movement onto the IB program (including receipt of social assistance on disability grounds) conditional on attendance at work-focused interviews, with the aim of steering at least some recipients into employment support services and ultimately back into the labor market. It also introduced a 'back to work' bonus payment and provided additional in-work condition-management health support for those returning to employment from IB. Finally, medical assessments (now relabeled "Personal Capability Assessments") were brought forward, taking place three months into the IB claim rather than six months into the claim. Early evaluation evidence from the pilots suggested that Pathways to Work made a significant contribution to falling (local) disability rolls at the time, although the extent to which this was reflected at the national level has subsequently been questioned (Adam et al., 2010; National Audit Office, 2010).

Disability recipiency rates have continued to decline since then, although they are yet to fall below the level of the early-1990s—even through the Great Recession. In part, this is likely to reflect the inflow-constraining effects of the earlier reforms to disability benefits described above. But there have also been further reforms to disability benefits over the last eight years, which are likely to have further restrained growth despite the difficult macroeconomic conditions.

In 2008, the new Employment and Support Allowance (ESA) program replaced IB as well as IS on grounds of disability for new applicants. This new program of insurance-based benefit for those with sufficient work history and means-tested social assistance benefit for those without sufficient work history included a new tougher Work Capability Assessment, with fewer

exemptions, in place of the existing system of Personal Capability Assessments (see Sissons, 2009). The requirement to attend work-focused interviews introduced under Pathways to Work was, for all but the most severely disabled, extended into a requirement to engage in work-related activity that was linked explicitly to payments, with around one quarter of the existing benefit payment made conditional upon compliance. The higher rate of payment for longer-duration claims was also removed. Sissons (2009) interprets the lack of growth in disability recipiency rates over the period 2008-2009 as evidence that they have ceased to play a role as a major destination for the hidden unemployed.

In a break with the tradition of reforms largely targeted on inflows to disability rolls, and echoing similar efforts at activation of existing recipients in Sweden, rolling out from 2011 onwards, existing IB recipients have also been reassessed under the new ESA eligibility criteria. Many have been judged ineligible as a result of medical re-screening under the stricter Work Capability Assessment, although some have since successfully appealed these decisions. Banks et al. (2015) provides descriptive evidence that suggests the introduction of ESA and the initial period of its roll-out to existing claimants most likely led to a fall in disability recipiency rates, albeit one that has been partly masked by demographic changes (specifically, the aging of the baby boomers). (Increases in the state pension age for women which began to roll out in 2010 have also kept disability recipiency rates higher than they would otherwise have been over the last few years.) They also argue, however, that there appears to have been little significant shift into employment or, in partial contrast with Sweden, on to alternative (unemployment) benefits, which begs the question of what has happened to those previously but no longer receiving disability benefits.

1.4 Germany[4]

German employees are eligible for both short- and long-term statutory sickness insurance benefits.[5] These benefits are time limited. Employers are required to provide short-term sickness benefits of 100 percent of the wage for up to six weeks (Ziebarth and Karlsson, 2010, 2014). Workers with longer spells are reevaluated for access to long-term sickness benefits. Long-term sick leave benefits are funded by the health insurance benefit package. Statutory Health Insurance, which covers 90% of the population, replaces 70 percent of net wages and can be paid for up to 78 weeks. See Ziebarth (2009, 2013) for additional details.

In Germany, the statutory Old-Age Pension Scheme (OAP) and the Work Disability Pension (WDP) for both partially and totally disabled workers are actually integrated in the pension insurance pillar of the social insurance system. Both programs pay benefits to workers who have paid contributions into the systems during their work life. Employers and employees are each subject to a payroll tax—9.35 percent—of the monthly gross wage up to the social contribution ceiling. In 2014, total WDP benefits amounted to about €11 billion, or 4.2 percent of total spending in the pension system.[6]

As shown in Figure 1, in the early 1970s, Germany had the highest recipiency rate of any of the OECD countries in our comparison. One reason for this high rate was a change in WDP rules in 1969 that allowed partially disabled workers to receive full WDP benefits, if they were unable to find a job (Burkhauser and Hirvonen, 1989). Further expansions in 1972 extended

[4] A more detailed version of this section can be found in Burkhauser et al. (2015).

[5] Germany also has a separate Statutory Accident Insurance (SAI) program covering temporary and permanent work absences in case of work accidents or diseases.

[6] The figure of €11 billion is based on an indirect calculation multiplying the 78,689 partial WDP beneficiaries with their annual average cash benefit of €5,844 and adding the 1,224,177 full WDP beneficiaries and their average annual benefit received of €8,604 (DRV, 2014a, b, c, BMAS, 2014).

coverage to housewives and the self-employed and allowed disabled workers to transition to the retirement program at age 62 without an actuarial reduction in benefits. As seen in Panel D of Figure 2, in the aftermath of the reforms, disability benefit recipiency rose significantly, peaking at 5.8 percent in 1984.

This rapid growth in the recipiency rate led to a substantial tightening of WDP eligibility criteria. WDP reforms in the early 1980s limited coverage to workers who had paid payroll taxes in at least three of the past five years and had accumulated at least five years of market work experience. Because many housewives did not meet these eligibility work criteria, the reforms greatly curtailed their WDP coverage. Consequently, a large fraction of the decline in recipiency rates during this period was a result of the reduction in access for women working outside the paid labor market.[7] These reforms turned growth in disability recipiency negative, more than offsetting the increases experienced in previous decades.

Germany undertook additional policy reforms in the 1990s and 2000s. In 1996, actuarial reductions and caps on the earnings of WDP beneficiaries were introduced. Börsch-Supan and Jürges (2012) argue that these caps served to reduce the inflow of males onto the WDP. The data show that the number of new male beneficiaries fell from about 150,000 per year prior to the reforms to just 75,000 per year after the reform. Panel D of Figure 2 shows that this large reduction in the inflow of new male beneficiaries onto the program put steady downward pressure on the disability recipiency rate over the rest of the decade.[8]

In 2001, another round of structural WDP reforms became effective. Most important among the reforms was a change in the eligibility standard from being unable to work in the

[7] See RKI (2006) and Börsch-Supan and Jürges (2012) for a more detailed discussion.

[8] Note that the figures reflect the stock of all beneficiaries. As such, even large declines in the flow of new beneficiaries affect the overall disability recipiency rate only gradually.

occupation in which one was trained—effectively in the last job or a comparable job in terms of the skills it required, the wages it paid, and its prestige—to being unable to work in *any* job. As a result, total inflows (men and women combined) onto the WDP program decreased further, falling from 200,000 in 2001 to 160,000 in 2005. This slow but steady decline in new beneficiaries put additional downward pressure on the overall disability recipiency rate (Krause et al. 2013, DRV 2014b).

WDP reforms in 2004 continued to focus on reducing the inflow of new recipients onto the program. However, the attention of these reductions shifted away from tightening WDP eligibility requirements and towards promoting worker accommodation on the job. Specifically, the reforms made it a legal obligation of employers to provide workplace reintegration in the event of a work-limiting impairment. Indeed, the law mandates that when impaired workers have exhausted their short-term sickness benefits of six weeks and are being considered for long-term sickness benefits, employers must act to coordinate a plan that includes input from the sick-listed employee, WDP experts, the work council, and the workplace physician. The plan is meant to ensure that the worker's temporary disability can be overcome and to prevent future reductions in work capacity.

Generally, the experience of Germany over the past four decades highlights the role that policy decisions play in the dynamics of disability recipiency rates. Pre-1970 policies meant that German disability recipiency rates were higher in 1970 than in the other country observed in this study. The expansion of coverage and generosity resulted in another round of rapid increases in recipiency rates in the late 1970s and early 1980s. Subsequent reforms limited access, made benefits less attractive, and mandated that employers implement a workplace reintegration management. These reforms significantly altered the trajectory of the WDP program.

The movement of the German public disability support system towards a limited access cash transfer program led to growth in a supplementary market for Private Occupational Disability Insurance (PODI). PODI provides benefits to workers who have a reduced work capacity in their current (or a comparable) occupation—a less stringent level of work incapacity than the statutory WDP now provides. Today, 61 percent of employed men and 42 percent of employed women have private occupational disability insurance (Statistika, 2014). PODI plans are experience rated and individually underwritten. Premiums depend on age, medical diagnoses, and occupation. As a result, premiums can be unaffordable for high risk occupations and applicants may be denied coverage. Private disability insurance follows private insurance law and is based on a private contract between the insurer and the insured, which specifies the conditions for the insured risk individually. Importantly, since WDP is not means-tested, private PODI benefits can be received *in addition* to WDP benefits which prevents a crowd-out of private policies.

Private Work Disability Insurance (PWDI) also exists in Germany. It provides benefits in case of general work disability and is similar to WDP in terms of disability eligibility criteria. While, in principal, these benefits could also be received while receiving WDP benefits, there is a much smaller private market for this type of insurance.

Figure 3 plots the total number of *new* private disability insurance policies (PODI and PWDI) in Germany from 1976 to 2013 (Association of German Insurers, 2015). The graph shows the dramatic increase in new policies between 1997 and 2001, the years of the two latest WDP reforms. While 44,000 new contracts were signed in 1997, this number quadrupled to 184,000 in 2000, and then again more than doubled to 473,000 in 2001. Since 2001, the numbers have

stabilized at this high level. It is plausible to conclude that this uptick in private market coverage has been the result of a decline in the coverage and generosity of the public WDP program.[9]

1.5 Australia

Australia's disability income support program—the Disability Support Pension (DSP)—is a universal 'flat rate' benefit available to all people aged 16 and over who meet specified incapacity criteria, regardless of employment history. There is no requirement to have been employed or in any way "paid for coverage", and benefits payable do not depend on workers' past earnings. It is most similar to a means-tested guaranteed minimum income program whose benefits are greater than those provided by other Australian welfare or unemployment benefit programs. Hence, DSP is closer in concept to a disability-based welfare program than a traditional social insurance program. But for purposes of this analysis we considered beneficiaries of this program as receiving public disability benefits.

While benefits are substantially less generous than those of Germany, the Netherlands, and Sweden, the DSP program is nonetheless susceptible to the same risks to growth, since it is based on the malleable concept of disability and pays benefits higher than those of other welfare benefits. Indeed, one of the features of the DSP benefit level over the 1970 to 2013 period is its growth relative to other benefits, particularly since the mid-1990s. Most welfare benefits have been indexed to inflation, whereas the DSP has been indexed to a measure of average wages, which has grown substantially in real terms since the mid-1990s. In 1996, the DSP benefit was only 8 percent higher than the unemployment benefit, but by 2016 was 50 percent higher.

[9] Our confidence in this conclusion is strengthened by private conversations with officials of the German Association of Insurers (GDV). More specifically, they confirmed that no industry-specific supply-side factors have been driving this trend.

Unsurprisingly, given its indexation to wages over much of the 1970 to 2013 period, there has been little or no trend increase in the level of the DSP benefit relative to average weekly earnings. This would suggest that increases in the replacement rate are not an important explanation for DSP growth. Moreover, over the first decade of the 2000s the income 'disregard'—the maximum market income a recipient may receive before the benefit begins reducing—increased more slowly than average earnings, corresponding to a "tightening" of eligibility criteria for DSP and coinciding with a flattening out of the cumulative DSP recipiency rates over the period (McVicar and Wilkins 2013).

The DSP has, however, become more generous relative to earnings at the lower end of the earnings distribution, at least over the period from 1993 to 2013, and this may be a more relevant comparison for low-skilled workers with disabilities. For example, over this period, adult full-time weekly earnings at the 10th percentile increased by a factor of 2.1, whereas the maximum DSP payment has increased by a factor of approximately 2.5 (ABS 1994; 2015). Similarly, the level of DSP payments has increased substantially relative to the level of the Australian minimum wage over the period from 2000 to 2013, and particularly from 2008 onwards (McVicar and Wilkins 2013).

Nonetheless, it is likely that the major changes in DSP recipiency rates shown in Figure 2, Panel E, are driven by changes in macroeconomic conditions and disability eligibility criteria rather than the relative generosity of benefits. This view is supported by work by Cai and Gregory (2004), who suggest that the small drop in DSP recipiency rate between 1980 and 1982 was the result of a tightening of eligibility rules by the administrative authority, which began placing greater emphasis on medical factors and less weight on socio-economic factors, but that this change in approach was largely reversed in 1983, when the Labor Government came to power.

The most important increase in the DSP recipiency rate occurred in the 1990s (Figure 2, Panel E). Australia experienced its last official and most serious recession in the early 1990s. In 1991, in the midst of this recession, there was a major change in the DSP eligibility criteria. To be eligible for DSP prior to the 1991 reform, a worker had to be incapable of working at more than 15 percent capacity. In 1991, this was replaced with a requirement that the claimant be incapable of working 30 or more hours per week. If a 40-hour work week is considered normal, this effectively replaced an 85 percent impairment standard with a 25 percent impairment standard, changing DSP from a long-term total disability program to a long-term partial disability program with no reduction in benefits. Hence, it required DSP gatekeepers to decide if an unemployed worker with a partial (as low as 25 percent) disability was unemployed because of his or her disability or because of economic conditions in the midst of a period of slow economic growth and high unemployment rates.

It is not surprising that DSP recipiency rates increased substantially over this period. While DSP benefits were then not significantly greater than first tier social minimum benefits, DSP provided a more permanent income floor with no work requirement.[10] As Cai et al. (2007) show, few entrants to DSP leave the program to return to work, so that the increase in inflows of beneficiaries during the recession led to increases in disability recipiency rates that lasted over many additional years.

As the Australian economy recovered and then expanded in the 1990s, growth in DSP recipiency rates slowed, although there was no decline in the rate of receipt until the 2005 to 2007

[10]There is no tier two unemployment insurance benefit program in Australia. Rather, unemployed workers are covered by a tier one universal minimum benefit called the Newstart Allowance. Benefit levels are needs-based and do not require past work experience. However, recipients are expected to return to work.

period, when economic growth was exceptionally strong on the back of the mining boom (Figure 2, Panel E). Australia has not experienced a recession since 1991, but did experience small rises in unemployment in each of the two worldwide recessions that have occurred since 1991. The rate of growth in DSP recipiency rates increased temporarily in the wake of the 2001 worldwide recession; while, following the onset of the Global Financial Crisis in 2008, there was first a levelling off in DSP receipt between 2007 and 2009 (thus arresting the decline between 2005 and 2007), followed by a sharp rise in DSP receipt between 2009 and 2011. The DSP recipiency rate fell over the next two years, but in 2013 was still above its 2005 level.

Cai and Gregory (2004) and McVicar and Wilkins (2013) also argue that reforms to non-DSP welfare payments over the 1990s and 2000s had unintended consequences for DSP receipt. Certain types of payments, such as for temporary sickness, were discontinued in the 1990s and–more importantly–over the 1990s and 2000s welfare benefits for the unemployed and for lone parents became increasingly conditional on verifiable job search and participation in active labor market programs, reducing the relative attractiveness of these benefits. Consistent with these changes, and also with the increased relative generosity of DSP, McVicar and Wilkins (2013) show that over the period from 1993 to 2011, receipt of non-DSP welfare benefits by people with disability declined appreciably, but that this was largely offset by the increase in DSP receipt. Thus, welfare reforms that made the benefits for unemployment and lone parents less generous were to some extent thwarted by the shift of significant numbers of beneficiaries from these non-DSP welfare programs to the DSP.

The increased incentives for unemployed low-skilled applicants to apply for disability benefits puts additional pressure on DSP gatekeepers to only admit those who are unemployed because their impairment reaches the DSP standard. But because the relationship between

impairment and disability is mutable, this is hard to do. Thus, in economic downturns, the increased pool of potentially eligible unemployed workers is likely to result in program growth.

Australian governments have been acutely aware of these pressures, and have therefore implemented a string of welfare reforms since 1999 that have consistently moved to tighten eligibility requirements for DSP. Initially, these reforms primarily targeted new claimants, with most existing recipients grandfathered under existing rules. However, more recently, reforms targeting existing recipients have begun to be introduced.

The two most significant reforms affecting new claimants were in July 2006 and September 2011. The 2006 reform restricted DSP eligibility to claimants with a work capacity of less than 15 hours per week, rather than 30 hours per week, effectively tightening program eligibility rules from a 25 percent to a 62.5 percent impairment standard. The 2011 reform involved implementation of a new DSP assessment procedure which, among other things, effectively introduced a two-year waiting period prior to DSP eligibility.

In July 2014, requirements to participate in education, training or work experience programs were introduced for DSP recipients aged under 35 assessed as capable of working at least eight hours per week. The July 2014 changes also included reassessment, under the new assessment criteria introduced in September 2011, of DSP eligibility for all recipients aged under 35 who were granted the benefit after 2007 (and before September 2011). This reform is likely to have minimal impacts on aggregate DSP receipt, since only 16 percent of DSP recipients are aged under 35.

The 2006 reform may have had some role in mitigating the rise in the relative generosity of DSP program benefits, but it seems more likely that the strong economic growth prevailing at the time was responsible for arresting DSP growth in the 2000s. This is because the turn-around

in DSP receipt pre-dates the reform by several years and, moreover, DSP receipt again grew strongly between 2009 and 2011. While the 2011 reforms may be responsible for the decline in DSP receipt between 2011 and 2013, when economic growth remained weak, it is possible this is simply a temporary effect of the introduction of the effective two-year waiting period. It is therefore likely that Australia remains vulnerable to increases in disability recipiency rates in the future if economic conditions continue to remain weak.

2. Discussion and Conclusion

Over the four decades of our study, all five of the countries examined have experienced increases in their disability recipiency rates, followed by plateauing, and eventually declines. This pattern reflects a commonality in the evolution of their disability benefit policies—periods of expanding eligibility or benefits were followed by rising recipiency rates. These rising rates, in turn, triggered policy reforms which tightened eligibility standards again, slowing down the growth of receipt and, in four of the five countries, also reducing the level of receipt. Although focusing on a narrower time span from 1990 to 2007, Böheim and Leoni (2016) suggest that this trend towards tighter eligibility criteria is common to many other OECD countries.

Naturally, policy reforms tend not to impact on disability recipiency rates rapidly, uniformly or in isolation of the broader social policy and economic context (and vice versa). Changes in disability recipiency rates often considerably lag behind policy changes. Most policy reforms target inflows onto disability benefit programs and, given that benefit spells are typically of long duration, changes in inflows take time to work through into material changes in stocks. Inflows are also sensitive to economic conditions. In contrast, disability outflows are relatively insensitive to economic conditions.

The net result is that the effects of policy changes of the "loosening" variety were mostly felt when economic conditions deteriorated and unemployment rose. In contrast, the effects of policy changes of the "tightening" variety tended to appear only gradually over time, as accumulated effects of reduced inflows slowly translated into reductions in the rate of growth of benefit receipt. Nevertheless, the effects of "tightening" policies in reducing benefit receipt are intuitively greatest in recessions when—absent the tightening—inflows would otherwise be much higher. Indeed, one interpretation of the policy tightening is that recessions have been rendered less important determinants of benefit receipt. In particular, the late-2000s economic downturn did not produce a sharp rise in recipiency rates in any of the five countries examined here.

Despite the common pattern described in this chapter, we found substantial differences in the initial levels of disability benefit receipt across our five countries at the beginning of the 1970s, and in the dynamics over the four subsequent decades. This variation reflects differences in the timing and nature of both "loosening" and "tightening" policies, together with differences in the timing and severity of economic downturns and other contextual factors.

At one end of the spectrum is Germany, which tightened its policies much sooner than any of the other countries. The Netherlands and Sweden both sustained growth and high levels of disability benefit receipt for much longer than the other countries before introducing policies that were effective in reducing inflows. Great Britain experienced relatively late growth and was relatively quick to introduce policies that arrested this growth. At the other end of the spectrum, Australia experienced most of its program growth in the 1990s and has yet to experience a significant decrease in disability benefit receipt.

Finally, despite the extensive reforms discussed in this chapter, all countries (other than Germany) now have substantially higher disability recipiency rates than at the beginning of the

1970s. To the degree that the secular growth in rates has been policy driven, this means that workers with disabilities were not employed who might in fact have been employed in the absence of these policies. That is, in addition to concerns about the fiscal sustainability, disability programs themselves can contribute to lower labor force participation and lower employment rates among people with disability (Parsons, 1980; Autor and Duggan, 2003; Staubli, 2011; Maestas et al., 2013; Burkhauser et al., 2014, Kostøl and Mogstad, 2014; Moore, 2015; Mullen and Staubli, 2016).

Of course, for individuals with work limitations for whom even part-time work may simply not be possible, disability systems must provide effective support. But the recent experience of the countries reviewed here suggests that it is possible to change the culture and social expectations of and for individuals with work limitations, and hence for disability recipiency rates to go down as well as up.

References

Adam, S., Bozio, A. and Emmerson, C. 2010, Reforming disability insurance in the UK: Evaluation of the pathways to work programme, London: Institute for Fiscal Studies.

Andren, D. 2003, Sickness-related absenteeism and economic incentives in Sweden: A history of reforms. https://www.cesifogroup.de/pls/guestci/download/CESifo%20DICE%20Report%202003/CESifo%20DICE%20Report%203/2003/dicereport3-03-reform-models-3.pdf, last accessed October 18, 2013.

Anyadike-Danes, M. and McVicar, D. 2008, Has the boom in incapacity benefit claimant numbers passed its peak?' *Fiscal Studies* 29, 4, 415-434.

Association of German Insurers (DGV) 2015, *Statistical Yearbooks of German Insurance*, http://www.en.gdv.de/2014/11/property-casualty-insurance-with-record-claims-expenditure/, last accessed on May 13, 2015, and additional data and information upon request.

Australian Bureau of Statistics 1994, Distribution and composition of employee earnings and hours, Australia 1993, Cat. no. 6306.0, ABS, Canberra.

Australian Bureau of Statistics 2015, Employee earnings and hours, Australia, May 2014, Cat. no. 6306.0, ABS, Canberra.

Autor, D. H., & Duggan, M. G. 2006, The growth in the Social Security disability rolls: A fiscal crisis unfolding. *Journal of Economic Perspectives*, 20, 71–96.

Autor, D. H. and Duggan, M. G. 2003, The rise in disability recipiency and the decline in unemployment, *The Quarterly Journal of Economics*, vol.118, no. 1, pp. 157–205.

Banks, J., Blundell, R. and Emmerson, C. 2015, Disability benefit receipt and reform: reconciling trends in the United Kingdom. *Journal of Economic Perspectives* 29, 2, 173–190.

Beatty, C., Fothergill, S. and Macmillan, R. 2000, A theory of employment, unemployment and sickness. *Regional Studies* 34: 617-30.

Böheim, R. and Leoni. T. 2016, Disability policies: reform strategies in comparative perspective. NBER Working Paper No. 22206.

Börsch-Supan, A. and Jürges, H. 2012, Disability, pension reform, and early retirement in Germany," NBER Chapters, in: Wise, D. A. *Social Security Programs and Retirement around the World: Historical Trends in Mortality and Health, Employment, and Disability Insurance Participation*, pp. 277-300.

Bundesministerium für Arbeit und Soziales (BMAS) 2014, *Rentenversicherungsbericht 2014*, www.bmas.de, last accessed on January 11, 2015.

Burkhauser, R. V. and Hirvonen, P. 1989. United States disability policy in a time of economic crisis: A comparison with Sweden and the Federal Republic of Germany, *The Milbank Quarterly*, 67(2): 166-194.

Burkhauser, R. V., Daly, M., McVicar, D. and Wilkins, R. 2014, Disability benefit growth and disability reform in the US: lessons from other OECD nations', *IZA Journal of Labor Policy*, 3:4, http://www.izajolp.com/content/3/1/4

Burkhauser, R. V., Daly, M., Ziebarth, N.R. 2015, Protecting working-age people with disabilities: Experiences of four industrialized nations. IZA Discussion Paper No. 9186.

Cai, L. and Gregory, R. 2004, Inflows, outflows and the growth of the Disability Support Pension (DSP) program, *Australian Social Policy*, 2002–03, pp. 121–43.

Cai, L., Vu, H. and Wilkins, R. 2007, Disability support pension recipients: Who gets off (and stays off) payments? *Australian Economic Review*, 40(1): 37-61.

Deutsche Rentenversicherung (DRV) 2014a, *Rentenversicherung in Zahlen 2014*, http://www.deutsche-rentenversicherung.de/cae/servlet/contentblob/238692/publicationFile/61815/01_rv_in_zahlen_2013.pdf, last accessed on January 11, 2015.

Deutsche Rentenversicherung (DRV) 2014b, *Erwerbsminderungsrente: Das Netz für alle Fälle,* 9th edition, http://www.deutsche-rentenversicherung.de/Allgemein/de/Inhalt/5_Services/03_broschueren_und_mehr/01_broschueren/01_national/erwerbsminderungsrente_das_netz_fuer_alle_faelle.html, , last accessed on January 11, 2015.

Deutsche Rentenversicherung (DRV) 2014c, *Statistik der Deutschen Rentenversicherung*, Rentenbestand am 31.12.2013, Band 197 http://www.deutsche-rentenversicherung.de/ last accessed on January 11, 2015.

Krause, P., Ehrlich, U. and Möhring, K. 2013. Erwerbsminderungsrentner: sinkende Leistungen und wachsende Einkommensunterschiede im Alter, *DIW Wochenbericht*, 80(24): 3-9.

Hartman, L. 2011, Swedish policies for the disabled: What do we know about the effects? Mimeo, prepared for the "Labour Activation in a Time of High Unemployment" November 13-15, 2011, hosted jointly by the University of Maryland and the OECD. http://umdcipe.org/conferences/LaborActivationParis/Papers/Laura%20Heartmans%20draft%20paper_11_1108.pdf, last accessed October 18, 2012.

Huddleston, T. 2000, Explaining the growth in the number of people claiming Incapacity Benefits. Department for Work and Pensions, London.

Jönsson, L., Palme, M., & Svensson, I. 2011, Disability insurance, population health and employment in Sweden, NBER Working Paper No. w17054.

Koning, P. and Lindeboom, M. 2015, The rise and fall of Disability Insurance enrollment in the Netherlands. *Journal of Economic Perspectives*, 29(2): 151-172.

Kostøl, A. R. and Mogstad, M. 2014. "How Financial Incentives Induce Disability Insurance Recipients to Return to Work," *American Economic Review,* 104(2): 624-655.

Larsson, L. 2006, Sick of being unemployed? Interactions between unemployment and sickness insurance in Sweden, Scandinavian Journal of Economics, 108(1):97-113.

Maestas, N., Mullen, K. J. and Strand, A. 2013, Does disability insurance receipt discourage work? Using examiner assignment to estimate causal effects of SSDI receipt, *American Economics Review*, 103(5): 1797-1829.

McVicar, D., & Wilkins, R. 2013, Explaining the growth in the number of recipients of the Disability Support Pension in Australia. *Australian Economic Review*, *46*(3), 345-356.

McVicar, D. 2008, Why have UK disability benefit rolls grown so much? *Journal of Economic Surveys*, 22, 114-139.

Moore, T. J., 2015. "The Employment Effects of Terminating Disability Benefits," *Journal of Public Economics*, 124(C): 30-43.

Mullen, K. and Staubli, S. 2016. "Disability Benefit Generosity and Labor Force Withdrawal," NBER Working Paper 22419.

National Audit Office 2010, *Support to incapacity benefits claimants through Pathways to Work*, London: National Audit Office.

Organization for Economic Co-operation and Development 2009, Sickness, disability and work: keeping on track in the economic downturn—Background Paper, OECD, Paris, www.oecd.org/dataoecd/42/15/42699911.pdf, last accessed on October 13, 2013.

Parsons, D.O. 1980, The decline in male labor force participation. *Journal of Political Economy* 88, 1, 117–34.

Prinz, Christopher and William Tompson. 2009, Sickness and disability benefit programmes: What is Driving Policy Convergence, *International Social Security Review*, Special Issue: Policy learning and social protection 62 (October/December): 41–61.

Rebick, M. 1994, Social security and older workers' labor market responsiveness: The United States, Japan and Sweden, in: R. Blank, ed., *Social Protection versus Economic Flexibility: Is There a Trade-Off?* (University of Chicago Press, Chicago).

Robert Koch Institut (RKI) 2006, *Gesundheitsbedingte Frühberentung*, Gesundheitsberichterstattung des Bundes, Heft 30, Statistisches Bundesamt. http://www.rki.de/DE/Content/Gesundheitsmonitoring/Gesundheitsberichterstattung/Themenhefte/fruehberentung_inhalt.html, last accessed January 11, 2015.

Sissons, P. 2009, Welfare reform and recession: past labour market responses to job losses and the potential impact of Employment Support Allowance. *People, Place & Poverty*, 3(3), 171-82

Statistika, 2014, *Anteil der Berufstaetigen in Deutschland, die eine Berufsunfaehigkeitsversicherung abgeschlossen haben*. http://de.statista.com/statistik/daten/studie/237869/umfrage/umfrage-zum-abschluss-einer-berufsunfaehigkeitsversicherung-nach-geschlecht/, last accessed on January 15, 2015.

Staubli, S. 2011. "The Impact of Stricter Criteria for Disability Insurance on Labor Force Participation," *Journal of Public Economics,* 95(9–10): 1223-1235.

Van Sonsbeek, J. M. and R. Gradus 2011, Estimating the effects of recent disability reforms in the Netherlands, Tinbergen Institute Discussion Papers 11-121/3, Tinbergen Institute.

World Health Organization 2001, *International Classification of Disability, Health and Functioning*, Geneva, Switzerland.

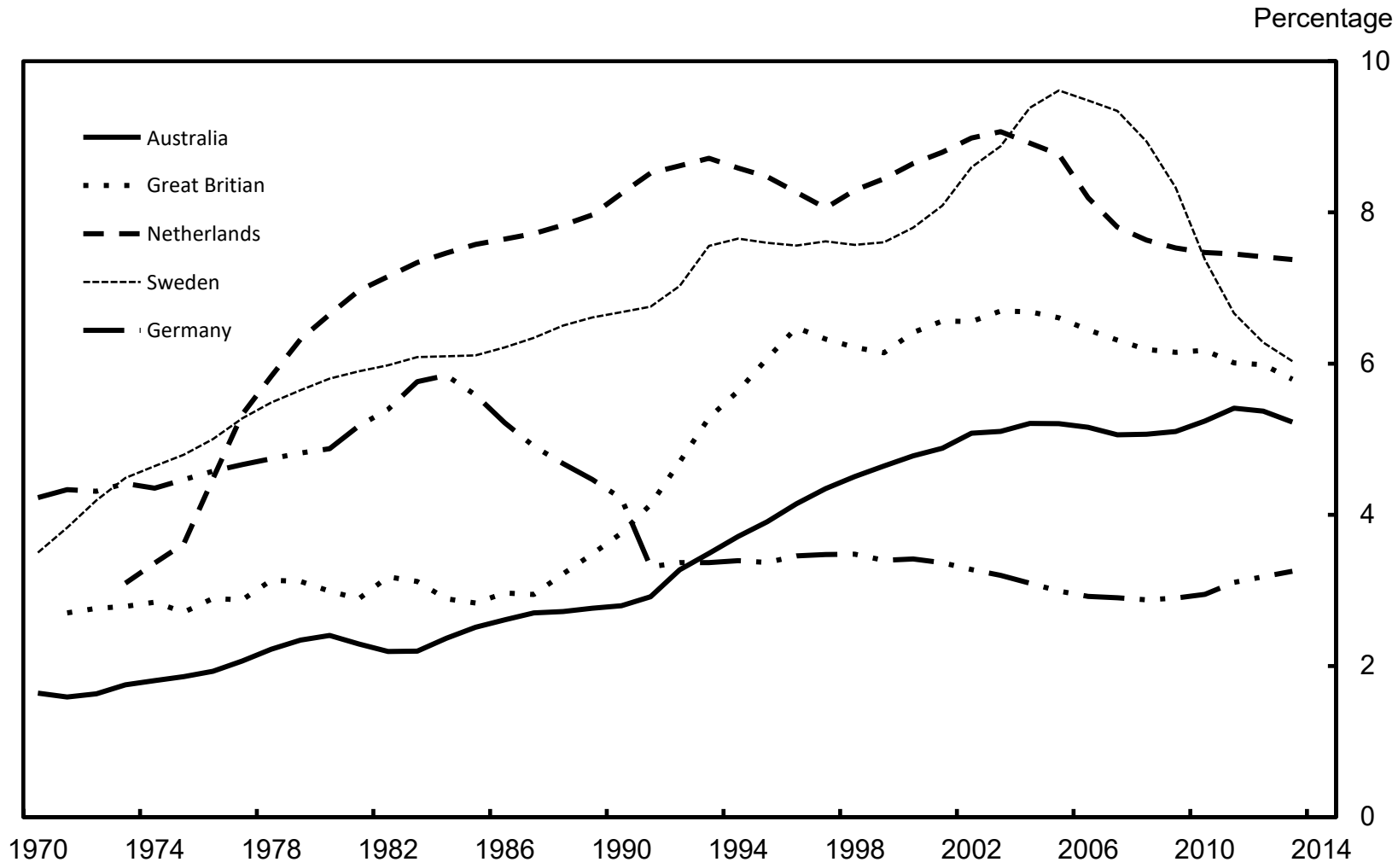
Ziebarth, N. R. 2009, Langzeitkranke verlieren durch Kürzung des Krankengeldes fünf Milliarden Euro, *DIW Wochenbericht*, German Institute for Economic Research, 76(20): 326-332.

Ziebarth, N. R. and Karlsson, M. 2010, A natural experiment on sick pay cuts, sickness absence, and labor costs, *Journal of Public Economics,* 94(11-12): 1108-1122.

Ziebarth, N. R. 2013, Long-term absenteeism and moral hazard—Evidence from a natural experiment, *Labour Economics,* 42: 277-292.

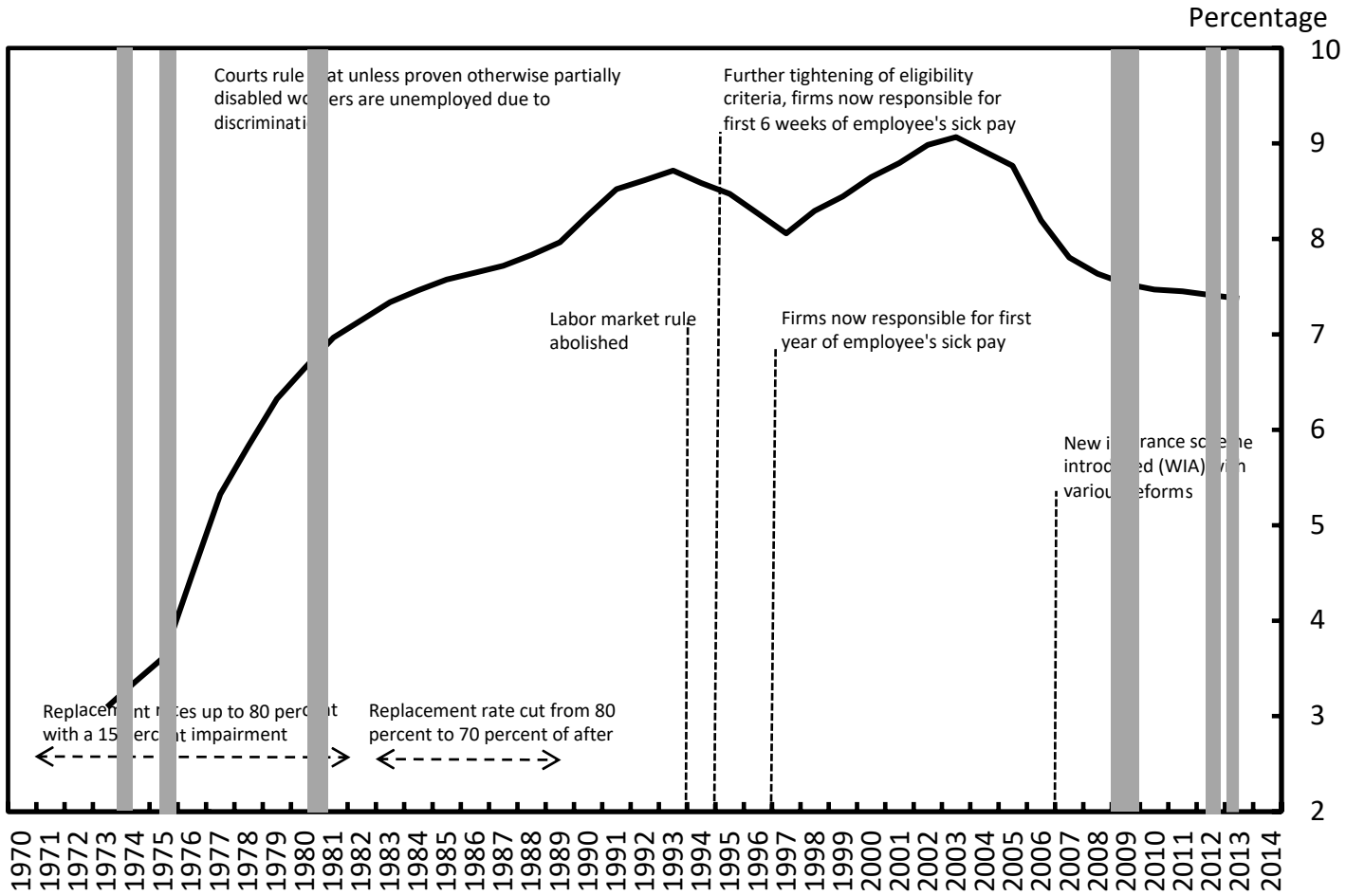
Ziebarth, N. R. and Karlsson, M. 2014, The effects of expanding the generosity of the statutory sickness absence insurance, *Journal of Applied Econometrics,* 29(2): 208-230.

Figure 1: Disability Receipiency Rates Across Countries



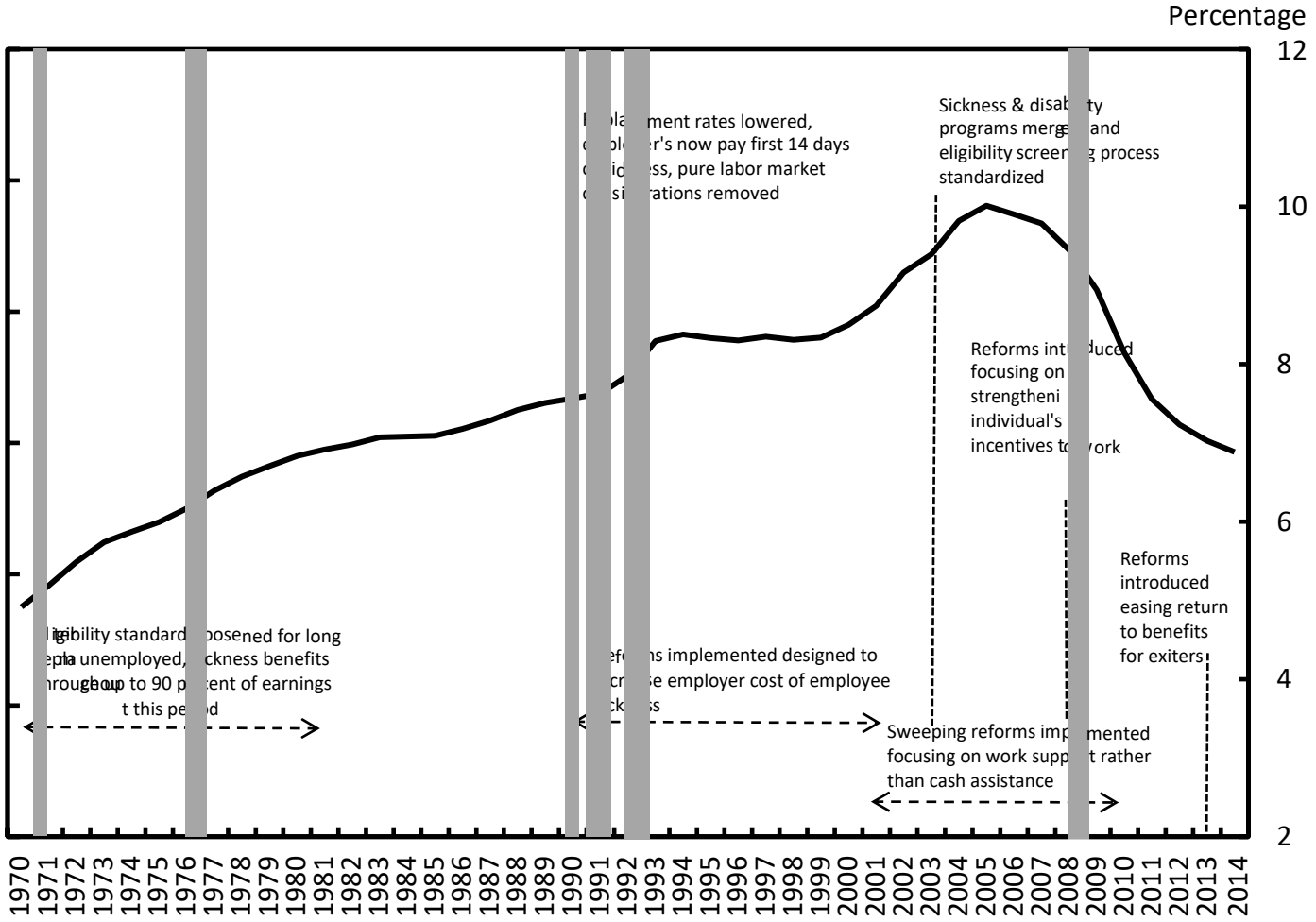
Sources: Australia—Government Department of Social Services, Australian Bureau of Statisics; Germany—Deutsche Rentenversicherung, Statistisches Bundesamt; Great Britain—Department of Work and Pensions, Office for National Statistics; Netherlands—Statistics Netherlands, Institute of Employee Benefit Schemes; Sweden—Statisitics Sweden, Swedish Social Insurance Agency yearbooks.

Figure 2. Disability Recipiency Rates by Country A: The Netherlands



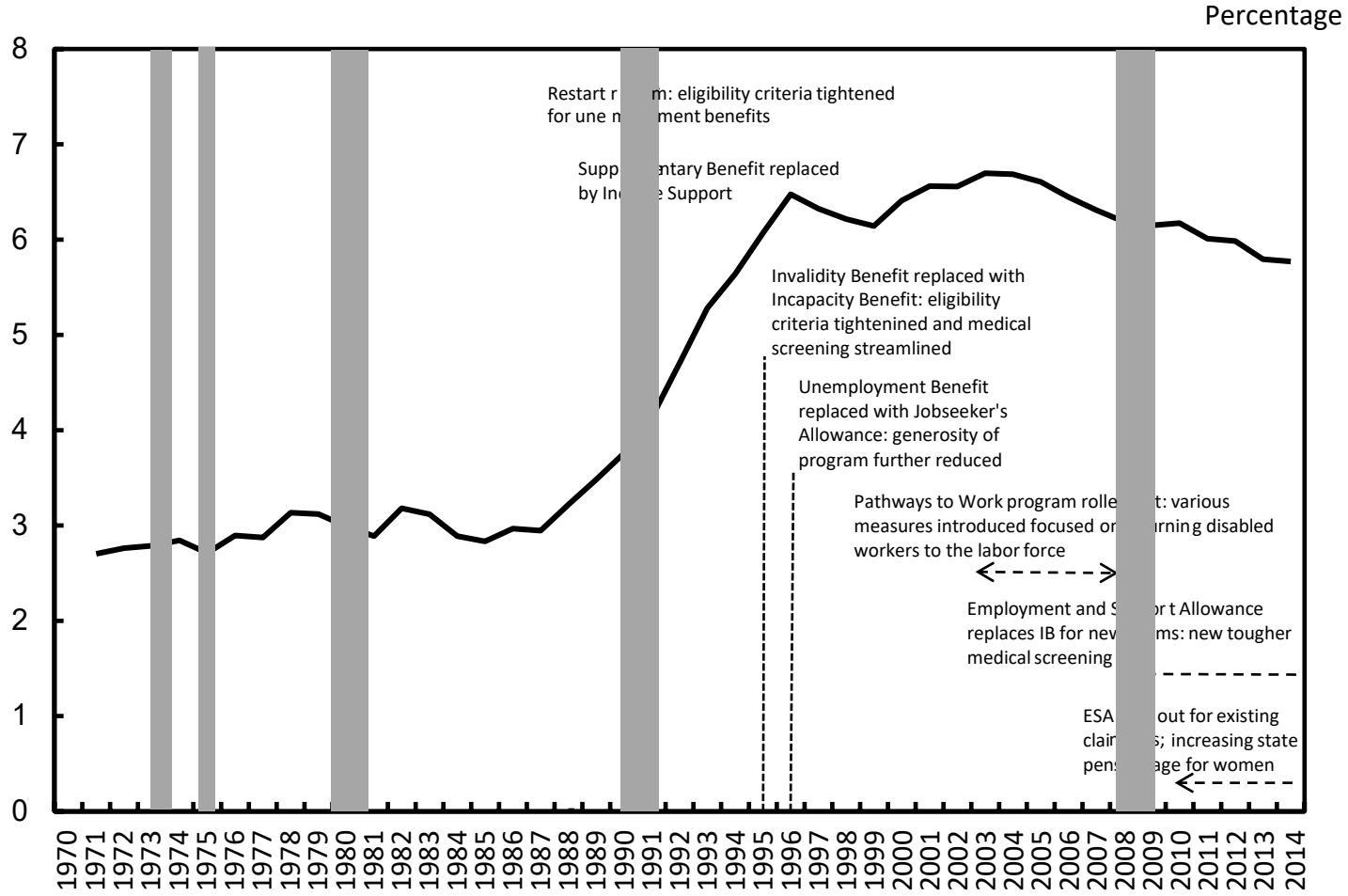
Source: Statistics Netherlands, Institute of Employee Benefit Schemes.

B: Sweden



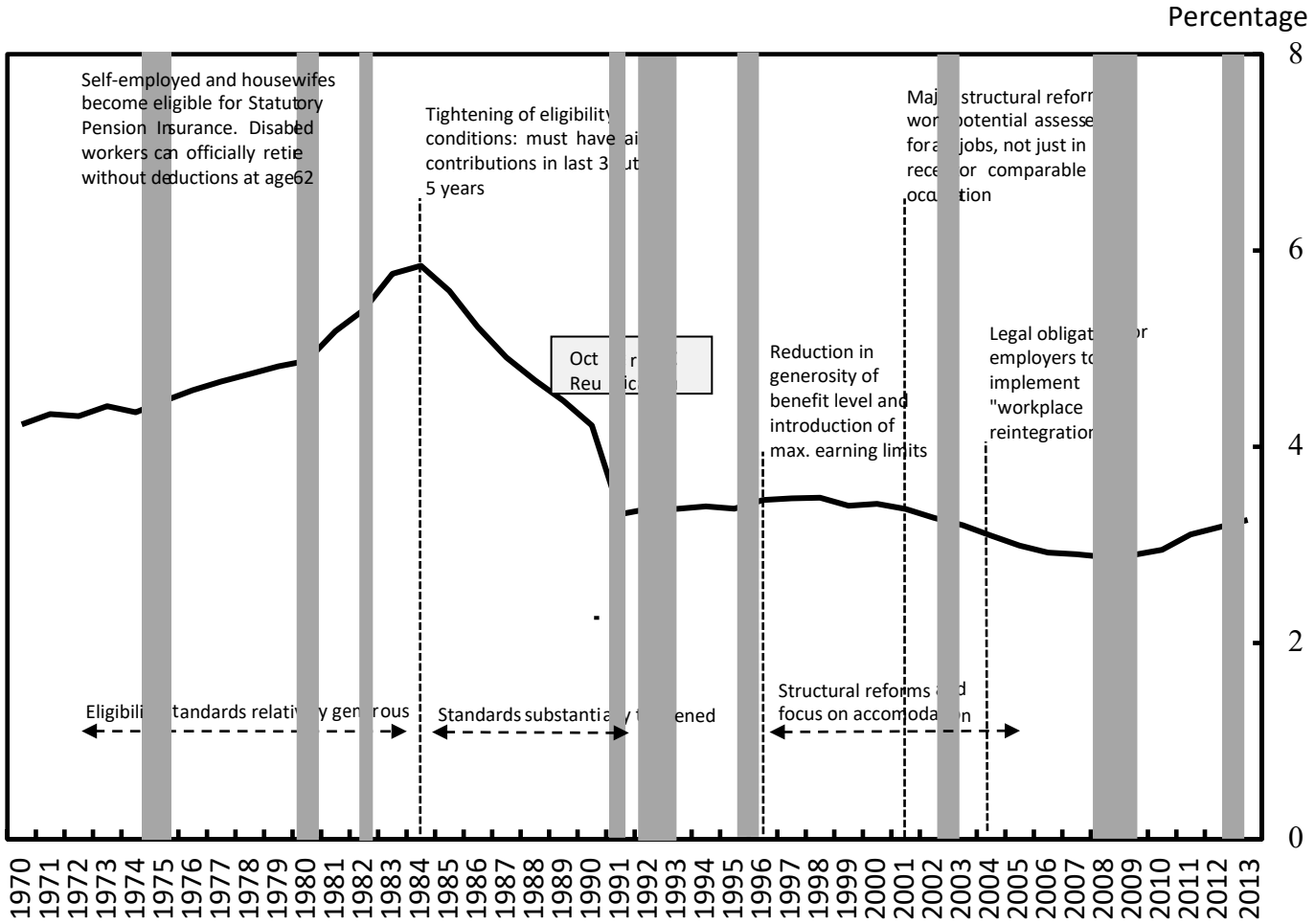
Source: Statistics Sweden and Swedish Social Insurance Agency yearbooks, provided by Lisa Laun

C: Great Britain



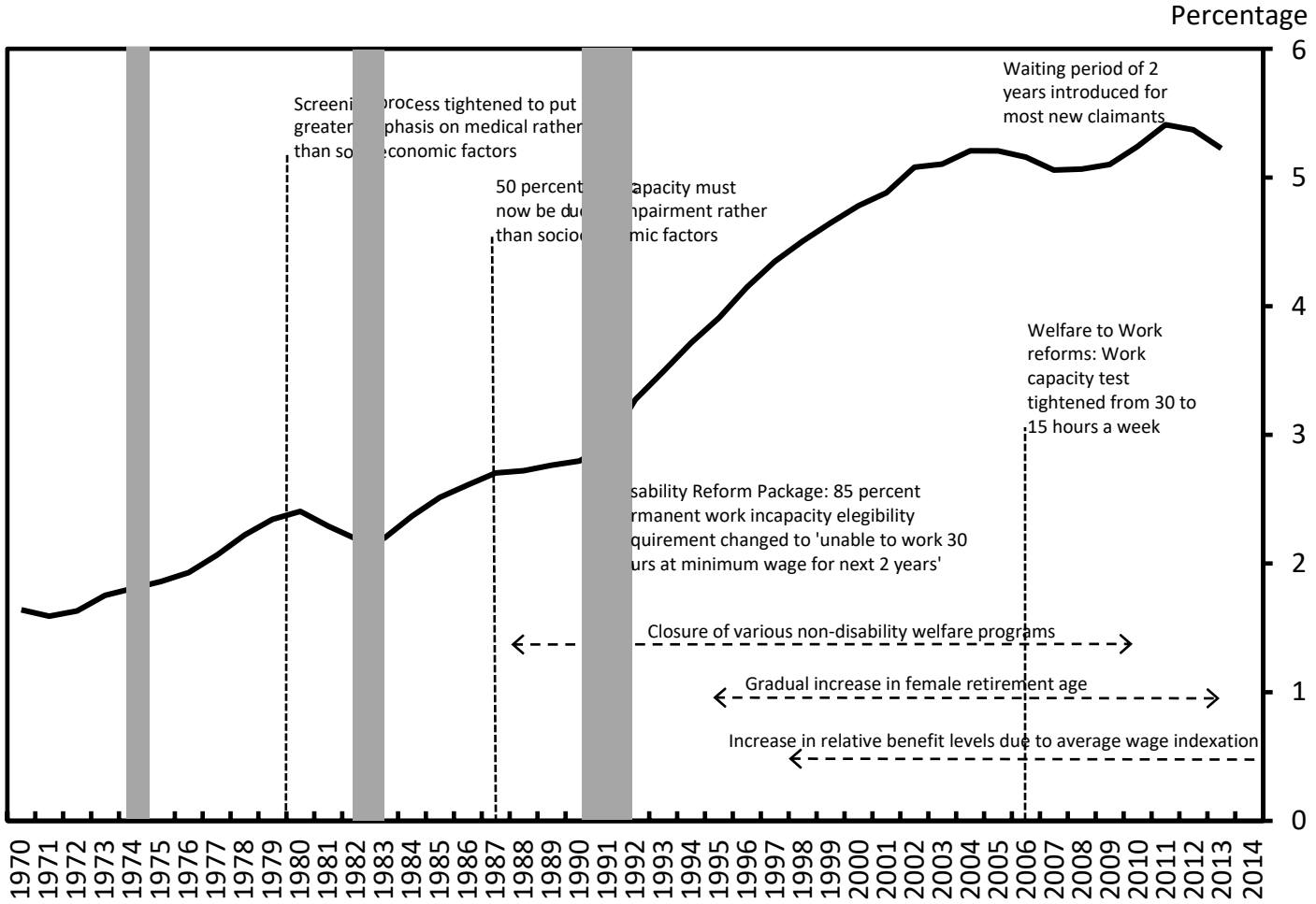
Source: British Social Security Statistics, Department of Work and Pensions, and Office for National Statistics

D: Germany



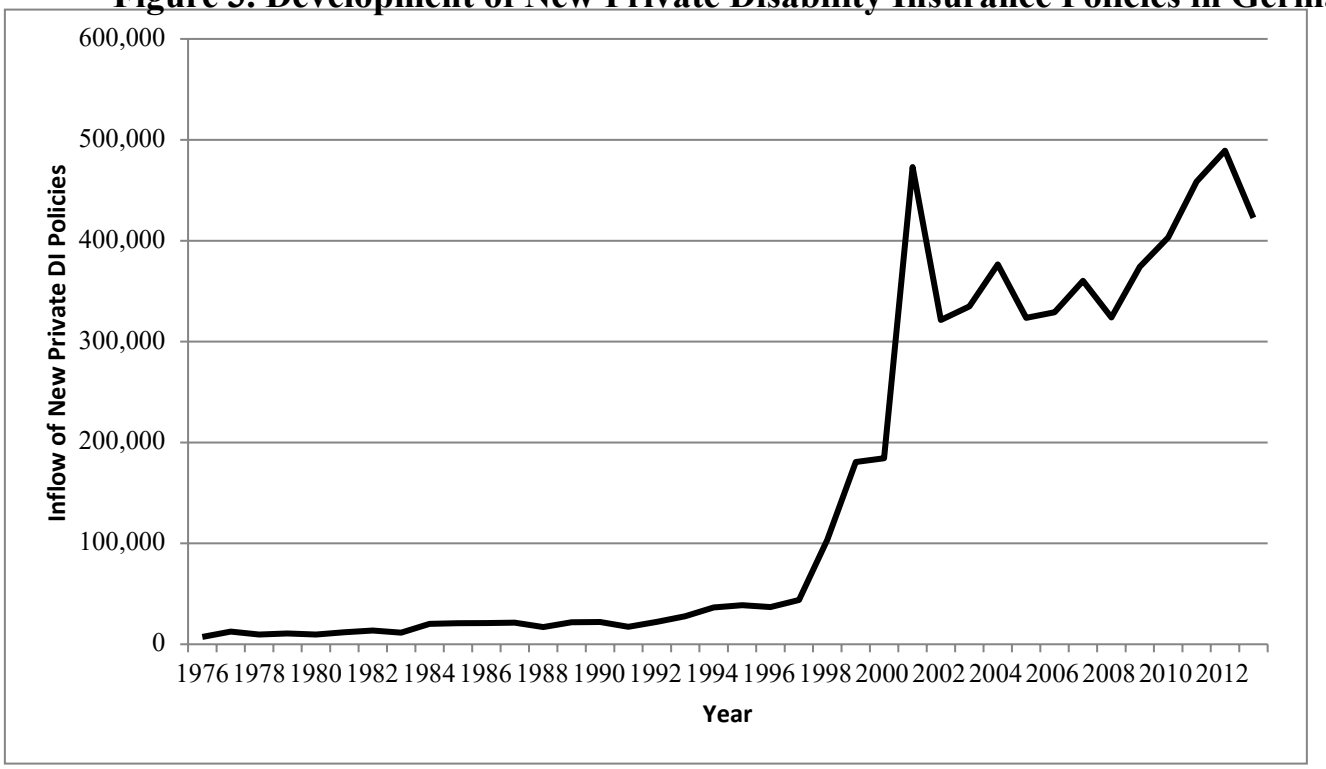
Source: Deutsche Rentenversicherung (2014), Statistisches Bundesamt (2014)

E: Australia



Source: Department of Social Services and Australian Bureau of Statistics

Figure 3. Development of New Private Disability Insurance Policies in Germany



Source: Association of German Insurers (DGV)

Table 1: Disability Recipiency Rates for Five OECD Countries

	Australia	Great Britain	Netherlands	Sweden	Germany
Initial year					
Year	1970	1971	1973	1970	1970
DSP recipiency rate	1.6	2.7	3.1	3.5	4.2
Peak year					
Year	2011	2003	2003	2005	1984
DSP recipiency rate	5.4	6.7	9.1	9.6	5.8
Final year					
Year	2013	2014	2013	2014	2013
DSP recipiency rate	5.2	5.8	7.4	5.9	3.3

Sources: Australia—Department of Social Services, Australian Bureau of Statistics; Germany—Deutsche Rentenversicherung, Statistisches Bundesamt; Great Britain—Department of Work and Pensions, Office for National Statistics; Netherlands—Statistics Netherlands, Institute of Employee Benefit Schemes; Sweden—Statistics Sweden, Swedish Social Insurance Agency yearbooks.

Appendix A: Data Description and Sources

Summary of DI Data Availability Across Countries

	Australia	Great Britain	Netherlands	Sweden	Germany
Initial Year	1970	1971	1973	1970	1970
Final Year	2013	2014	2013	2014	2013
Missing Years	(-)	(-)	(-)	1984	gaps until '00
Age Range of Working Population	16-64	16-64	15-65	16-64	16-64

Data Sources

Australia

Historical population estimates are from *the Australian Bureau of Statistics www.abs.gov.au*
DSP caseload data is from Australian Government Department of Social Services Statistical Papers 1-12: https://www.dss.gov.au

Great Britain

Historical population estimates are mid-year population estimates from the Office for National Statistics http://www.ons.gov.GB
Disability benefit caseload data (combining IVB, IB and ESA caseloads) are from Social Security Statistics, and from 1999 onwards, from the Department of Work and Pensions, http://dwp.gov.uk.

Netherlands

Historical population data are from Statistics Netherlands. http://www.cbs.nl/en-GB/menu/home/default.htm
Disability insurance caseloads data are from the Institute of Employee Benefit Schemes, courtesy of Jan Maarten van Sonsbeek.

Sweden

Historical population estimates are from Statistics Sweden. http://scb.se
Disability Insurance prevalence data are from the Social Insurance Agency yearbooks, courtesy of Lisa Laun and Marten Palme.

Germany

Deutsche Rentenversicherung (2014) on absolute numbers of WDP beneficiaries. Statistik der Deutschen Rentenversicherung (2014): "Rentenversicherung in Zeitreihen 2014", http://forschung.deutsche-rentenversicherung.de, and upon request.
Statistisches Bundesamt (2014) on population between 15 and 65, unemployment rates, and people out of the labor force. https://www-genesis.destatis.de,