Partial Disability Programs

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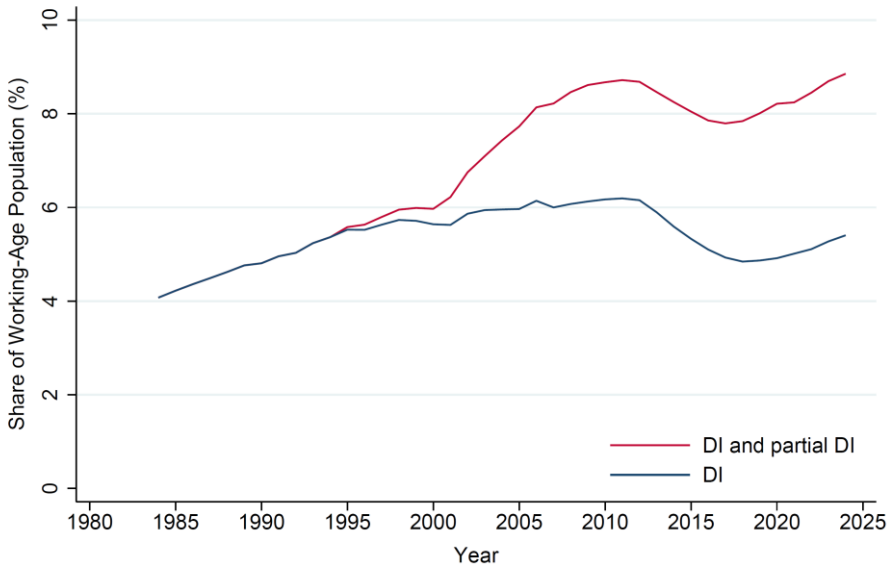
Motivation and policy relevance

Most developed countries have experienced sustained increases in the share of working age individuals on disability insurance (McVicar et al., 2023). This rise both puts pressure on public finances and hints at structural problems if the modern labor market excludes certain types of individuals due to, for example, a combination of increasing skill dispersion and high (effective) wage rates.

Denmark experienced a similar rise in disability recipients until the mid-1990s, where the level of full-time disability recipients (førtidspension) reached around 6% of the working age population, cf. Figure 1. However, this apparent plateau hides that Denmark since then introduced and expanded a partial disability program (fleksjob), which today covers an additional 2% of the working age population.

Figure 1:
Share of working age population on full and partial disability insurance in Denmark



Notes: Own calculations based on data from Statistics Denmark (www.statistikbanken.dk)

Project Description

In this project we ask how the design of partial disability affects inflow and labor supply among individuals with reduced work capacity, and ultimately how we should design disability benefits to balance the insurance value that these schemes provide to individuals against the moral hazard costs that arises if generous disability benefits attract individuals who otherwise would have been able to find ordinary employment.

The Danish partial disability scheme (flex job) presents several institutional features that allow us to address these questions. Both concerning the screening into the scheme and the incentives to work while on the scheme.

Prior to the 2013 flex job reform, individuals on flex job typically worked 15-20 hours/week, while receiving pay from the firm corresponding to a 37-hour work week. The firm then received a subsidy of 50% or 67% of the wage bill. Hence, under this scheme individuals had very little (or no) incentive to increase their hours worked, but a large incentive to increase their hourly wage rate. However, as firms footed 33%-55% of the wage bill individuals needed a sufficiently high work capacity for a flex job to be economically viable for the firm.

The 2013 reform redirected the flex job scheme towards individuals with lower work capacity. Under the new scheme firms would only pay individuals for their effective work hours (taking into account reduced work efficiency), while the municipality tops up the wage with a subsidy paid directly to individuals. The subsidy is based on the aim of bringing the individual up to a full-time equivalent wage. However, in contrast to the pre-2013 scheme, the subsidy is capped at a maximum of 19,952 DKK (2024 level). Moreover, the maximum subsidy is reduced with earned income at a rate of 30% -- increasing to 55% for incomes above 16,323 DKK (2024 level). The cap and phase-out of the subsidy create a complicated set of incentives, where individuals with certain combinations of effective work hours and wage rates continue to have very little incentive to increase their hours worked but increase their wage up to the cap where incentives discontinuously change.

The 2013 reform, therefore, both changes the work incentives for certain types of individuals within the scheme enabling a Difference-in-Difference style estimation of the effects on labor supply and introduced a kink in the effective budget, which theoretically should create bunching in the joint distribution of effective work hours and wage rates. Moreover, the reform made flex jobs for individuals with lower work capacity (down to a few hours) economically viable for firms, which enables us to study substitution between different transfer programs and in particular disability benefits. At the same time, the 2013 reform of flex jobs coincided with other large reforms (the introduction of ressourceforløb and changes to disability benefits), which we need to take into account in the empirical analysis.

Our project contributes to the empirical literature studying the effects of disability benefits reforms on the take-up of disability benefits (Gruber, 2000; Deshpande & Li, 2019), and the literature studying the labor supply effects of disability programs (Chen and van der Klaauw, 2008; Von Wachter et al., 2011; Maestas et al., 2013; French and Song, 2014; Kostøl & Mogstad, 2014; Moore, 2015; Deshpande, 2016). While this existing literature either estimates the labor supply effect of qualifying for full-time disability benefits or the labor supply effects of financial incentives of DI recipients to work, our project breaks new ground by studying the labor supply effects of a partial disability programs.

As a theoretical contribution, our project aims to bring together the literature on optimal disability benefits (Diamond & Sheshinski, 1995; Haller, Staubli, Zweimüller, 2024) and the literature on optimal taxation (Mirrlees, 1971; Akerlof, 1978; Saez, 2001; Saez 2002). The literature on optimal disability

benefits studies the trade-offs between providing insurance against adverse events that reduce individuals' work capacity (or increase their disutility of work) against the moral hazard that such insurance schemes might create. Typical features in this literature are that individuals choose whether to apply for disability benefits, in which case the government assesses the individuals' work capacity and decide whether to award disability benefits, after which individuals decide whether to work or not (extensive margin). This literature studies the optimal benefit levels and eligibility criteria for disability programs.

In contrast, the literature on optimal taxation focuses on individuals' labor supply along the intensive margin (or the intensive and extensive margin combined), which the government affects through a flexible tax and transfer scheme, combining for example transfers, phase-out of transfers, in-work benefits and progressive taxes. The government uses these tools to redistribute between individuals with different earnings abilities, regardless of whether the differences reflect differences in innate ability or adverse events to individuals work capacity.

The flex job scheme combines elements of both literatures, as individuals apply for a flex job and the government estimates the applicant's work capacity. However, instead of only adjusting the level of benefits and eligibility criteria, the government can use a flexible tax and transfer scheme to encourage labor supply of individuals on flex job. Potentially, there is a trade-off between the resources put into assessing individuals' work capacity and using work subsidies to make individuals reveal their work capacity. Our project aims to explore these trade-offs theoretically and to use the empirical evidence to inform concrete policy making.

Expected Output

With this project we expect to produce at least one academic paper. The rising share of the working age population on disability benefits is a worldwide phenomenon, and hence studies that address this trend empirically and in terms of policy design are relevant to a broad international audience. For that reason, we expect to be able to publish the paper in a top field journal or better. At the same time, our results should be directly relevant for the Danish policy debate.

The project also has longer term perspective with follow-up papers, for example studying flex jobs from the perspective of firms and the broader labor market.

Time Plan

We have already done some preliminary work on the empirical study of the 2013 reform, including mapping the changes in work incentives for individuals in flex jobs. Once funding is secured, we will set up a complete data project and start the formal data analysis.

Importantly, we aim to use data from work injuries (Arbejdsmarkedets Erhvervssikring, AES) in addition to the standard data provided by Statistics Denmark. The benefit of the AES data is that it identifies (potentially) exogenous adverse shocks to individuals' work capacity, and that it provides an independent measure of the size of the reduction in individuals' work capacity. Both of which will help us to study the sorting into flex jobs and other transfers programs before and after the 2013 reform.

We expect to have the first results ready in the middle of 2026, and – after having presented results at conferences and invited seminars – a research paper ready for submission to an academic journal by the middle of 2027. We also expect to be able to present our results at the EPRN conference in 2026. However, the addition of the AES data adds some risk to the time plan.

Budget

We apply for funding to buy data from Statistics Denmark, and the cost associated with adding the AES data to the project (see under time plan). We will work with the data on the research servers hosted by the department of Economics at Statistics Denmark.

We also apply for funding for 3 months of teaching buyout for Jakob Søgaard and for a research assistant. The research assistant will work on cleaning the data and preliminary empirical analyses.

Finally, we apply for funds for shorter research stays, where Jakob Søgaard and Andreas Haller can work jointly on the project in the same physical locate.

The budget is attached.

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