Labor market effects of a public sector pension reform. First evidence from near real-time administrative data.*

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Abstract

This first report on the labor-supply effects of Norway's January 2025 public-sector pension reform is based on a pre-analysis plan filed on 11 May 2025. The reform abolished the earnings test that previously reduced the contractual early-retirement benefit (AFP) for workers who continued to earn labor income after age 62. This increased the returns to continued employment and was expected to raise labor supply. Using near-real-time individual-level payroll data from the microdata.no platform, we estimate the reform's effects on weekly work hours and monthly earnings. Our empirical strategy compares weekly hours and real monthly earnings of the first reform cohort (born 1963) with those of the immediately adjacent pre-reform cohort (born 1962), aligning individuals on event time – the month they turn 62. The research design is motivated by minor differences in pre-entitlement labor supply of these cohorts and zero placebo effects when we estimate the empirical model on adjacent pre-reform cohort pairs. We find that the reform lead to a statistically significant increase in weekly hours of 1.75 and a 3 183 NOK increase in monthly wage income in the first month of eligibility for the contractual early-retirement benefit.

1 Introduction

In January 2025, Norway implemented a pension reform for employees in the public sector born 1963 or later. The pension entitlement we study, the contractual early retirement benefit (AFP), and the right to claim this benefit after 62 years of age, did not change,

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but the reform decoupled labor supply and pension uptake. Public sector employees born 1962 or earlier are still under the legacy rules, which include a proportional reduction of the contractual early-retirement benefit (AFP) for any continued labor earnings after 62 until age 67. In contrast, public sector employees born 1963 or later can choose when to start receiving an actuarial neutral pension after they turn 62, independently of whether they continue to work or not. In other words, employees born in 1963 onward keep their AFP as a life-long top-up independent of any continued labor earnings. This is expected to have a positive effect on the labor supply of eligible employees.

Our empirical analysis draws on individual-level data from employer-employee data in Norway (A-meldingen), but without direct access to micro data. We will use an infrastructure provided by Statistics Norway called microdata.no. On this platform, researchers, students, and public sector analysts can construct customized privacy-preserving statistics from the underlying administrative data sources.

We focus on public sector employees turning 62 years, and plan to compare labor market outcomes of pre- and post-reform cohorts. The microdata.no platform publishes labor market outcomes every month with a delay of two to three months. Since the first post-reform entitlement is one month after turning 62, the outcomes for the first post-reform birth cohort in February 2025 will become public at microdata.no by mid-May 2025.

The analysis in this report follows a detailed pre-analysis plan.[1]

2 Pension entitlements of public sector employees before and after the reform

Although the pension system for private sector workers was fully reformed toward actuarial neutrality in 2011, public sector workers have maintained an incentive to retire early due to income testing of early retirement benefits. However, from January 2025, a new and (almost) actuarially neutral early retirement system has also been implemented in the public sector (AID, 2025). The main principles regarding the new system were agreed between the major public sector unions and the government in 2018, but the actual design of the new system was not decided until December 2024. The reform implies that employees born in 1962 or earlier remain in the 'old system'. They can retire at age 62 with a so-called AFP-pension, but the benefit level is then reduced proportionally to any continued labor earnings until age 67. Employees born in 1963 or later are transferred to the new system, where AFP

[1]The pre-plan (i)defines the populations of public sector employees to be used in the study and the two main outcomes (hours and total wage income), (ii) specifies the empirical model to estimate the average treatment effect on the treated (ATT) effects of the reform and includes (iii) placebo tests of the model based on differences in outcomes across pre-reform birth cohorts. The pre-analysis plan is publicly available at https://doi.org/10.17605/OSF.IO/YX7UF.

offers a life-long top-up pension independently of any continued labor earnings. Hence, the economic reward for continued employment after the age of 62 is much larger for those born in 1963 than for those born in 1962. Employees in occupations subjected to a lower standard retirement age than 67 ("særaldersgrense") may still receive a pension component that is income tested against earnings after that age, but the details regarding this pension are still not finally decided.

Data provided by the Norwegian Public Service Pension Fund (SPK) suggest that the first cohort that can be observed in the new system tends to postpone retirement compared to the last comparable cohort observed in the old system. Whereas 8 % of the January-1962 cohort retired at the first possible opportunity, this applied to only 3% of the (first post-reform) January-1963 cohort (SPK, 2025). For the municipal sector, to our knowledge, no data available so far have shed light on any labor supply responses caused by the reform.

The reform that took place in the private sector in 2011 implied a similar improvement in work incentives as what we now see in the public sector; hence the results of this previous reform may shed some light on what kind of labor supply responses we can expect from the new reform. According to the findings reported by Hernæs et al. (2016) and Andersen et al. (2021), the reform in the private sector led to a 30-40 % (not percentage point) increase in labor supply during the potential early retirement period (aged 62-66). However, given that full retirement at age 62 has been considerably less common in the public sector, we do not expect responses of this magnitude, at least not as an immediate effect. It is also worth noting that the regulations regarding the new public pension system were not finally decided until December 2024 (and some details are actually still not formally aproved by the parliament); hence, it is probable that some workers have had too little time to properly plan for retirement already at the first opportunity.

3 Data

3.1 Samples: Employees in the public and private sector

In Norway, pension entitlements are fixed by collective agreements in combination with government regulations. In short, the pension system differs between private and public sector employees defined by the sector affiliation of the employer.

Public sector employees are defined using the sector code (REGSYSFRTKSEKTOR2014) of their employer. The state sector includes Government business operations (1110), State-owned limited liability companies (1120), Government/State administration (6100) and the municipal sector includes Municipal enterprises with unlimited liability (1510), Municipally-owned limited liability companies (1520), or Municipal administration (6500).

Employees who enter our sample work at least 7 hours per week, which corresponds to 20% of a full-time contract. They must be eligible for retirement and pension uptake and therefore had an annual earnings above one basis amount (G, 122 225 NOK in 2024), for at least seven of the previously nine years).

3.2 Main outcomes: Weekly hours and monthly wage income

Our analysis uses monthly observations from the employer-employee register used by the tax authorities and the welfare administration.

- Weekly working hours include overtime and are the total of all job spells during the month.
- Total monthly wage compensation includes contracted monthly salary, fixed and irregular allowances, bonuses, overtime pay, severance pay, and other cash benefits.

All data will be taken directly from the microdata.no platform without cleaning or winzorizing on our side. See SSB (2024) for an introduction to the platoform and for SSB (2025) documentation.

Note that we ignore pension benefit claims and only look at the labor supply response among public sector employees.

3.3 Attrition

Even with full population administrative data, there will be missing observations. Sample members die or move abroad. In principle, even these events can be affected by the reform and we will keep our samples fixed throughout the study. That is, missing observations in the employer-employee data will be coded as zero even if the individual is not registered as a Norwegian resident in the population register.

4 Pre-reform labor supply across cohorts

Our strategy is to compare the outcomes of the pre- and post-reform cohorts at the same age. We align individuals on "event time," with event time zero defined as the month in which a person turns 62.

Because the two cohorts reach 62 years of age at different times, their monthly nominal earnings must be deflated to a common unit. To do this, we construct an index for nominal wage growth based on public sector employees aged 59-60. Let $W(t)$ denote the average total earnings in month t for public sector employees aged 59-60 who work at least 20% full-time hours. We construct the wage-deflator index $I_t = \frac{W_t}{W(Jan20204)}$. We then divide the observed total wages by $I(t)$ and thus measure the wages in January 2024 kroner.

We deliberately avoid using private sector workers as a control group. Although their pension rules were unchanged, private sector workers are differentially exposed to business cycles, tariff shocks, etc. and may therefore not provide a good model for the counterfactual outcomes of the public sector.

4.1 Pre-reform cohorts before and after turning 62

When employees are entitled to draw on pension rights, some use the opportunity to reduce labor supply. In Figure 1 we illustrate the behavior of the average public sector employee around their 62th birthday, by the numbers for employees in two adjacent birth cohorts (January 1962 and 1961). Since we use the 1962 as the control cohort in our main analyses, it is natural to focus on the most recent pre-reform cohorts. On average, they worked about 34 hours per week for the twelve months prior. In their first entitlement month, it drop to about 31 (or 8.8%). The average monthly wages dropped from about 56,000 to 51,000 (or 8.8%).

After the initial drop in labor supply in the first month, we see a steady decline in hours and wages over time. One year later, the drop is about 20% for both hours and wages. This gives more scope for a stronger effect of the reform as public sector employees age.

Figure 1 also includes the pre-entitlement outcomes for the very first reform-cohort, i.e. those born in January 1963. Both hours and wages are somewhat higher than for the two older cohorts, but the differences are fairly stable. We expected that the drop in labor supply in s=1 will be lower for 1963 than for the 1962 and 1963 cohorts. This difference is what we mean be the reform effect. From the line for the 1963 cohort, we see clear effects of the reform. The drop in hours and wages are much smaller for the 1963 cohort, compared to those born one or two years earlier.

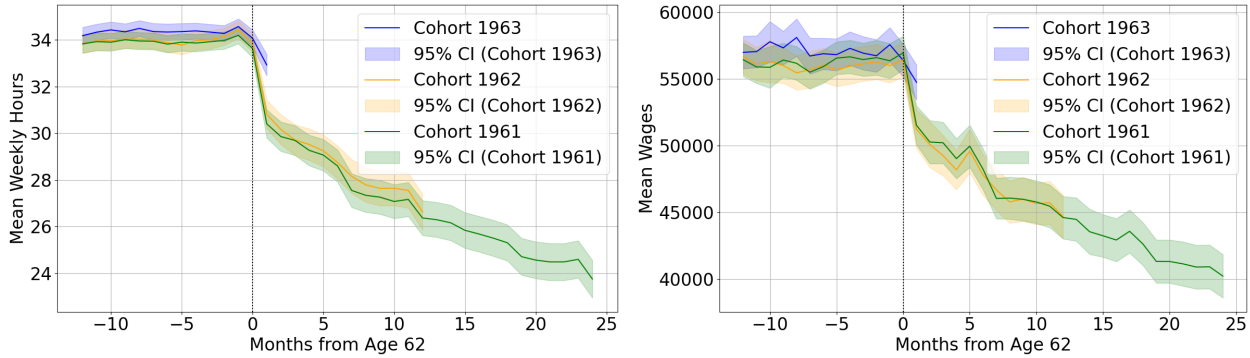
4.2 Post-reform cohort before and after turning 62

Figure 2 reports the difference between the post-reform and pre-reform cohorts up until they turn 62 and for the first month after. Both hours and wages suggest that the post-reform cohort work slightly more, but this differential is stable and is accounted for by

Figure 1: **Pre- and post-reform cohorts. Weekly hours and Monthly wages.**

(a) Weekly hours

(b) Monthly wages



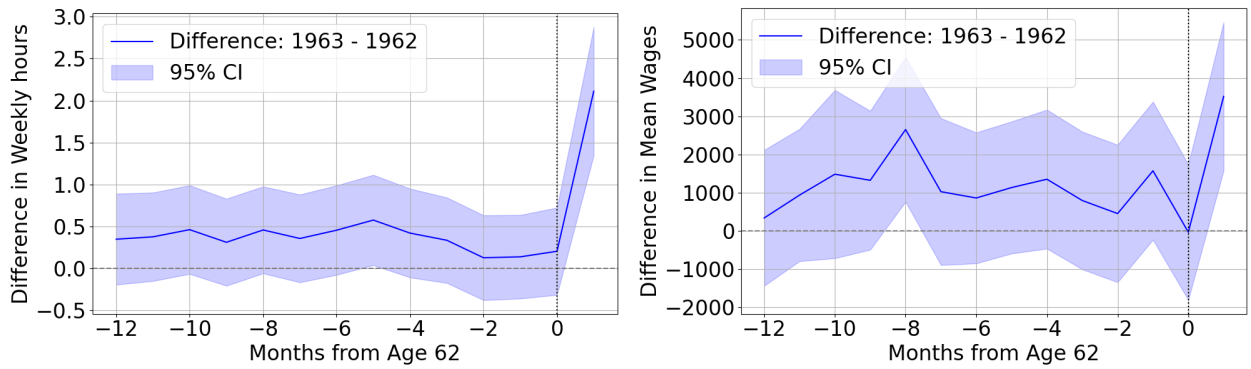
Notes: Means for public sector employees born January 1963 (reform cohort) and January 1962 and 1961 (pre-reform cohorts) as well as post-reform before age 62. Shaded area illustrates the 95% confidence interval. Source: microdata.no.

our empirical specification. In Figure 2, there is no indication that anticipation effects are important. There is a clear spike upwards when the 1963 cohort becomes eligible.

Figure 2: **Reform cohort vs adjacent pre-cohort. Before and just after turning 62. Differences in hours and wages.**

(a) Weekly hours

(b) Monthly wages



Notes: Public sector employee cohorts born January in 1963 (post-reform) and 1962 (pre-reform). Differential is mean difference by event month. Shaded area illustrates the 95% confidence interval. Source: microdata.no.

5 The empirical model

Labor supply decisions can be influenced by lifecycle factors, birth cohort, and time-varying contextual variables. Empirical studies face a fundamental challenge that its impossible to

vary birth cohort, calender time, and age at the same time. Example given cohort: One month head, all get one month older.

Our main model compares outcomes for pre- and post-reform emloyees in the same age month. The control group was born in the same month in the year before the reform. The first post-reform cohort (born Jan. 1963) turned 62 in January 2025 and the control cohort is born one year earlier. Thus, the two cohorts face different labor market conditions and nominal wage levels while keeping event time (age) constant. This motivates the nominal wage adjustment using the index explained in section 4.

The effect of the pension reform on the post-turning-62 outcome is estimated using the following empirical model. Let the event-month index $s = 0$ denote the calendar month in which an individual turns 62; $s = -1$ is the month immediately before, and $s = 1$ the month immediately after. Define

$$\bar{w}_{i,-} \;=\; \frac{1}{12} \sum_{s=-12}^{-1} w_{is},$$

$\bar{w}_{i,-}$ measures average monthly earnings (or weekly hours) in the 12 months up to before the month that an individual turns 62 years old. For a person who turns 62 years old in January, $\bar{w}_{i,-}$ thus denotes the average over January-December the year before.

Using only two observations per individual, $\bar{w}_{i,-}$ (pre) and $w_{i,1}$ (post), we estimate the reform effect β by the specification:

$$w_{is} \;=\; \alpha_i \;+\; \beta\,(\text{Reform}_i \times \text{Post}_s) \;+\; \gamma\,\text{Post}_s \;+\; u_{is}, \tag{1}$$

where α_i denotes individual fixed effects, $\text{Reform}_i = 1$ for the 1963 cohort (exposed to the 2025 reform) and 0 for the 1962 cohort, $\text{Post}_s = 1$ for $s = 1$ and 0 for $s \leq 0$. The coefficient β is the causal impact of the pension reform one month after eligibility, measured in real kroner 2024. As the monthly outcomes after reform become available, we expand the dummy variable *Post* to a vector of indicator variables that cover the available s months and β to a coefficient vector as explained in Section 7.

6 Results

To investigate our empirical strategy, we performed placebo tests of Equation 1 using four sets of pre-reform cohorts. We focus on the outcomes for the first month after turning 62 (s=1). In Table 1 we report the eight placebo estimates in columns (2) to (5) that we expected to be small and insignificant, since the pension system was unchanged during these years.

We first note that the coefficient on the Post-dummy is negative, reflecting a (modest) drop in wages and hours after turning 62. The first column reports an estimate of the post-effect for the 1961 and 1962 cohorts of -4 734 NOK, or 8.4%. This is very close to the 8 % of the January-1962 cohort retired at the first possible opportunity reported by the Norwegian Public Service Pension Fund (SPK, 2025). For hours, the reduction in the first month of pension eligibility is about 3 hours, or close to 10%.

With a close-to-zero effects estimate and a confidence interval of +/- 2 000 NOK as a conservative estimate, the placebo analysis strongly supports our empirical strategy. The confidence interval for hours is even tighter if we scale it relative to the effect of eligibility. For wage income, the standard error is about a fifth of the post-estimate. The standard error for hours is just one tenth of the drop in hours turning 62.

The main results are reported in column (1) and show sizable and significant effects on both hours and wages. Weekly hours are estimated to be 1.75 hours higher and monthly wage income to be 3 138 kroner higher due to the reform. This corresponds to increases of 5.6% and 6.0%, respectively.

Table 1: First month reform effects on hours and wages. Placebos earlier cohorts

Control cohorts	1962	1961	1960	1959	1958
Reform and placebo cohorts	*1963*	1962	1961	1960	1959
Control cohorts	(1)	(2)	(3)	(4	(5)
A. Weekly hours					
Post	-3.15	-3.49	-3.22	-3.33	-3.16
	(0.219)	(0.258)	(0.260)	(0.251)	(0.244)
Post*Reform	**1.75**	0.333	-0.272	0.113	-0.168
	(0.303)	(0.369)	(0.366)	(0.360)	(0.351)
Constant	34.2	34.0	33.8	33.6	33.4
	(0.107)	(0.130)	(0.129)	(0.127)	(0.124)
B. Monthly wages (NOK)					
Post	-5 187	-4 734	-4 867	-4 787	-5 170
	(541)	(490)	(683)	(675)	(451)
Post*Reform	**3 138**	-453	133	-79	382
	(746)	(700)	(959)	(969)	(649)
Constant	57 218	56 575	56 548	56 075	55 740
		(724)	(338)	(342)	(229)
Mean pre-reform cohort		56 374	53 308	52 914	52 906
Std dev pre-reform cohort		24 954	27 219	26 677	27 310
Observations		6 210	6 238	6 310	6 715

7 Timeline for further publication in 2025

Since populations in the pre- and post-cohorts, as well as results, are described in detail in this plan, the estimate of the effect of the reform given by Equation 1 will be produced without delay, subject to the publication schedule for microdata.no.

- May 11 : This pre-analysis plan
- May 13 or 14 : Labour supply month 1, $s = 1$, January 2025 cohort
- Medio June: Labour supply month 2 (1) for January (February) 2025 cohort,
- Etc.
- Medio August: Above, plus heterogenous effects by sector and sex
- Etc.

The results will be published monthly on our website frisch.no.

8 Conclusion

We report the immediate effects on labor supply effects of the Norwegian public sector pension reform, building on a detailed pre-analysis plan[2]. The first post-reform data became available on May 2025 and enables us to study the effects on hours and total wages the first month the employee can draw on her pension rights.

We find that the post-reform cohort born in January 1963 and those born twelve months earlier had a markedly different development after turning 62 years old. We esimate that the reform lead to increased weekly hours of around 1.75 hours and increased monthly income of 3 138 kroner.

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A Appendix

A.1 Variable definitions in microdata.no

- Employer sector: REGSYSFRTKSEKTOR2014
- Total wages: ARBLONNLONNKONTANTINNRAPP
- Hours: ARBLONNARBARBEIDSTID

A.2 Wage index

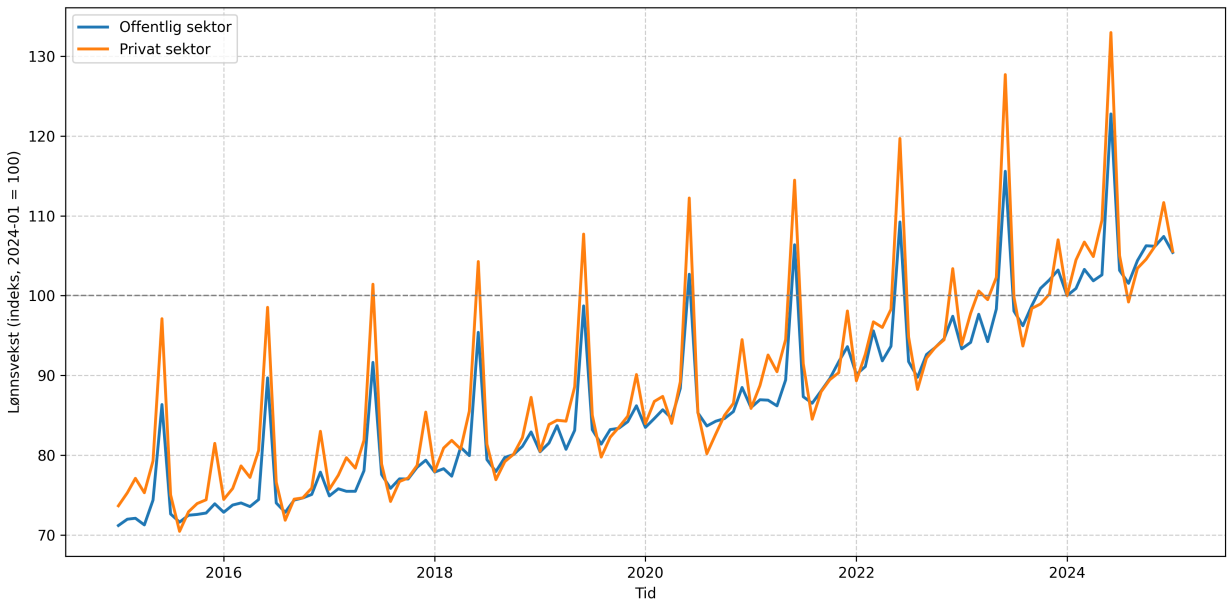

Figure 3: Wage index for the public and private sectors

A.3 Publicly available cell data access

Will become available at frisch.uio.no.

A.4 Code for placebo tests

See the pre-analysis plan for code that reproduces the the placebo test in Table 1.