

THE PRICE OF PRECARIOUS EMPLOYMENT

Zero-hour contracts in
the Danish labor market



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THE PRICE OF PRECARIOUS EMPLOYMENT

ZERO-HOUR CONTRACTS IN THE DANISH LABOR MARKET

More than one in ten workers in the Danish labor market are employed on zero-hour contracts, i.e. they are not guaranteed a specific number of working hours. Their rights in connection with illness, maternity leave or unemployment are inferior to those of regular employees. They were hit harder by the corona crisis, as many had their hours reduced or were laid off without pay. The proliferation of atypical employment can be costly for society, as atypical employees are less likely to join a pension saving scheme.

SUMMARY

- 10.5% of all employees in the Danish labor market are employed on zero-hour contracts. Excluding students, pensioners and others who do not have work as their primary occupation, the proportion is 5.4%.
- Employees on zero-hour contracts have inferior rights compared to regular employees. Far fewer are entitled to sick pay, maternity pay or unemployment insurance benefits.
- Employees on zero-hour contracts were hit much harder by the corona crisis than regular employees. 31% had their work hours reduced or were sent home without pay, compared to only 3% of regular employees.
- Atypical employment such as zero-hour contracts has implications for society as well as for the individual. The cost to society can reach several billion kroner every year:
 - Without pension rights, many atypical employees will start saving for retirement later than regular employees. This increases public expenditure on state pension because it is higher for pensioners with small pension savings.
 - If 10% of employed people wait 10 years before they start contributing to their pension, it will cost the state approximately DKK 1.3 billion extra per year. If 10% of employees do not pay into a pension at all, the additional costs will amount to DKK 7.5 billion.

INTRODUCTION

The labor market is changing in many parts of the world. Fewer and fewer workers have permanent full-time jobs with fixed working hours. Instead, many are employed in temporary, part-time and temp-to-hire positions, are pseudo-self-employed or hired as freelancers. Different terms – ‘the gig economy’, ‘precarious jobs’, ‘non-standard employment’, ‘atypical employment’ – have been used to describe this development and the new types of jobs.

While some new job types may offer more flexibility for the individual, they are associated with greater job insecurity and poorer working conditions. This is especially true for so-called ‘zero-hour contracts’, which are contracts without a guaranteed number of working hours. Zero-hour workers do not know whether they have shifts or hours next month, how big their next paycheck will be, and they may lose their entire income overnight.

Zero-hour contracts have been on the rise in several European countries in recent years.¹ In the UK, for example, the prevalence of this type of job has grown rapidly.²

Denmark is often highlighted as a country with a well-regulated labor market with decent pay and working conditions. Denmark is renowned for its high level of unionization and its labor market model where wages and working conditions are largely regulated through collective agreements between the social partners (the so-called ‘Danish model’). More than 80% of Danish employees are covered by a collective agreement.³

Therefore, it might seem obvious to think that zero-hour contracts are less common in Denmark, or that zero-hour workers in Denmark will be protected from the negative consequences that zero-hour contracts often have in other countries.

Both assumptions are wrong. We show in this analysis that zero-hour contracts are quite widespread in Denmark, and that this form of employment has major consequences for both the individual and society.

The analysis consists of four parts:

1. We describe how many people are employed on zero-hour contracts in Denmark and how this group can be characterized.
2. We uncover the rights of zero-hour workers compared to regular employees, including how many are entitled to sick pay, maternity leave pay and unemployment benefits.
3. We describe how the corona crisis affected zero-hour workers in Denmark. We map their conditions during an economic crisis when their rights are put to the test.
4. We show that the prevalence of atypical employment without regular employee rights has consequences for the individual as well as for society. Specifically, we show that the state may face a large extra bill if fewer employees are covered by an occupational pension scheme.

¹ Eurofound (2015). [New forms of employment](#). Publications Office of the European Union.

² Office for National Statistics (2021). *Labour Force Survey*, [EMP17](#); Eurofound (2018). [Non-standard forms of employment: Recent trends and future prospects](#), s. 11-12.

³ Dansk Arbejdsgiverforening (2020). [I Danmark er de fleste dækket af en overenskomst](#)

The first three parts of the analysis are based on a representative questionnaire survey (N = 1,519) among the adult population in Denmark. Since we know that young people in particular have atypical forms of employment, the sample contains an over-sampling of 18-29-year-olds. The fourth part is based on model simulation. Data and methodology are described in more detail at the end of the paper.

THE EXTENT OF ZERO-HOUR CONTRACTS IN DENMARK

WHAT IS A ZERO-HOUR CONTRACT?

A worker on a zero-hour contract is not guaranteed a specific number of hours of paid work. In our survey, respondents are on a zero-hour contract if they state that their contract⁴ guarantees neither a specific number of hours nor a fixed salary⁵. The category includes employees, temporary workers and freelancers who are not self-employed if they meet the criteria, while self-employed and apprentices are not included.

The study shows that 10.5% of all employees in Denmark are employed on zero-hour contracts (see figure 1), corresponding to almost 290,000 individuals.⁶ Note that this includes both full-time and part-time employees, and for many it is a part-time job in addition to their primary employment as, for example, student or pensioner.

If we only consider those individuals with work as their primary occupation, 5.4% are employed on a zero-hour contract. This excludes, e.g., students, pensioners and homemakers, even though they may have paid work as a secondary occupation. This proportion is smaller than for the total employed group, as zero-hour contracts are more common among those who have a job as a secondary occupation.

This distinction between 'primarily employed' and 'all employed' will be used throughout much of the

analysis. Both figures are relevant, but for the individual, there can be a significant difference between having a zero-hour contract in their primary employment or in their secondary employment.

The uncertainty and inferior rights that often come with zero-hour contracts are particularly problematic for those who have the job as their primary employment and source of income.

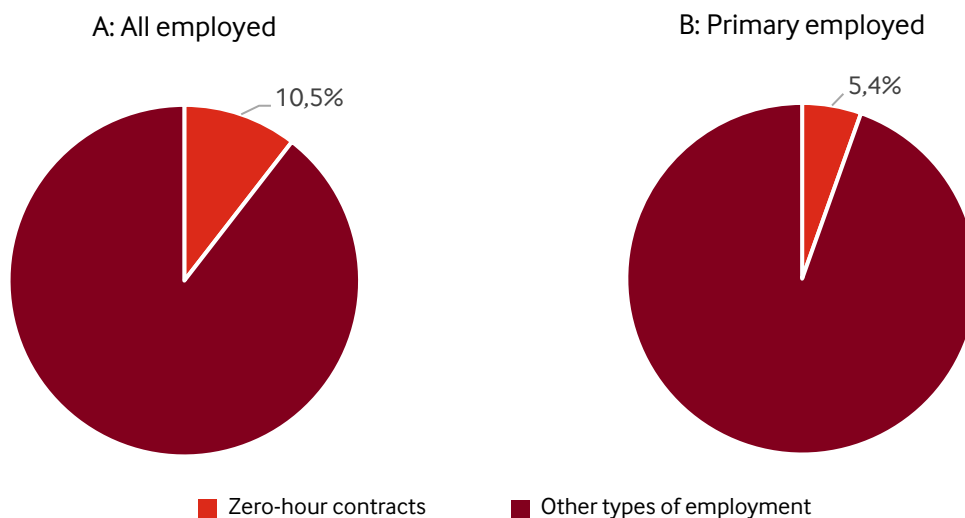
However, being employed on a zero-hour contract is not unproblematic, even if you have another primary occupation and source of income. For example, many Danish students depend on working while studying, as the state education grant typically far from covers their total expenses. Nevertheless, having another primary source of income does reduce uncertainty for the individual. In addition, some students or retirees may also prefer to work on a casual basis without fixed working hours.

⁴ To the question 'Are you guaranteed a minimum number of hours in your contract that you are paid for each week or each month?', the respondent answered 'No, I am not guaranteed a minimum number of hours in my contract' or 'I don't have a contract'.

⁵ To the question 'Do you receive a fixed salary or are you paid by the hour or by task in your current job?', the respondent answered 'I am paid per hour worked', 'I am paid per task performed or based on my results (piecework, commission, performance pay or similar)' or 'Don't know'.

⁶ In the first quarter of 2021, there were 2,744,000 people in employment in Denmark, according to Statistics Denmark (AKU100K).

Figure 1. Prevalence of zero-hour contracts among employed persons, %



Note: The figure shows the prevalence of zero-hour contracts, measured as the share of people who do not have a contract or whose contract guarantees neither a fixed number of working hours nor a fixed salary. Figure A shows the extent for all employed people, while figure B only shows the extent for those with work as primary occupation.

Source: Own calculations based on survey data from MEGAFON.

This estimate of the extent of zero-hour contracts in Denmark may be conservative because resourceful individuals more often participate in survey. This means that relatively fewer people with different types of precarious employment are likely to be in our sample than in the general population. As a precaution, we have chosen not to weight our data by education in this part of the analysis.⁷

The fact that the survey was conducted in June 2021 in the context of the corona crisis may have

affected the number of zero-hour contracts. As a robustness check, we also asked respondents about their employment situation in February 2020, i.e. before the corona crisis broke out in Denmark. At that time, the proportion with zero-hour contracts was 11.0% among all employed people and 4.9% among individuals with work as primary occupation. The minor differences between the two calculation points indicate that the extent of zero-hour contracts in Denmark has not been significantly affected by the corona crisis.

⁷ If we weighted by education, the estimated share with zero-hour contracts would be significantly higher, and the values in figure 1 would be 13.2% and 6.9% respectively.

WHAT IS THE PREVALENCE OF ZERO-HOUR CONTRACTS COMPARED TO OTHER COUNTRIES?

The estimated prevalence of zero-hour contracts in Denmark is relatively high in relation to comparable countries. In the UK, previous estimates show that around 3% of those with work as primary occupation are employed on a zero-hour contract.⁸ In Finland, around 5% of those in primary employment are on zero-hour contracts⁹. The Finnish and British surveys use roughly the same definition and delimitation as we do here, which makes the results roughly comparable¹⁰. Thus, the extent of zero-hour contracts in Denmark appears to be at least at the same level as in Finland and perhaps higher than in the UK.

SECTORS AND INDUSTRIES

Zero-hour contracts are more prevalent in the private sector than in the public sector. Among all employees in the private sector, 13.8% are employed on a zero-hour contract, compared to 4.0% of all employees in the public sector. Likewise, among those with work as their primary occupation, far more people have zero-hour contracts in the private sector (7.4%) than in the public sector (2.1%).

The prevalence of zero-hour contracts also varies greatly between industries. They are by far most common in the hospitality industry, where almost 2 out of 3 (64%) respondents in employment were employed on zero-hour contracts. This is in line with an estimate in an earlier study that one in two people in the sector are employed on zero-hour contracts.¹¹

In the culture and leisure sector, e.g. amusement parks, theaters and churches, approximately one

in five (19%) of all employees are on zero-hour contracts.

It should be noted that the underlying data is rather sparse when we calculate the extent of zero-hour contracts within the individual industries, and therefore the statistical uncertainty is greater. The percentages should therefore be seen as approximations.

AGE AND EDUCATION OF ZERO-HOURS WORKERS

The share of people employed on zero-hour contracts varies significantly depending on age group. As shown in figure 2, zero-hour contracts are most common in the age groups 18-29 and 70+, especially when we look across all employees: 27% of 18-29-year-olds and 34% of 70+-year-olds work on zero-hour contracts. This indicates that zero-hour contracts are primarily widespread

⁸ The share with zero-hour contract is 3.2% in the latest survey round (April-June 2022), cf. Office for National Statistics (2022). Labour Force Survey, [EMP17](#).

⁹ A. Pärnänen & H. Sutela (2019). Around 100,000 employees work on zero-hour contracts. Press release, June 3. Helsinki: Statistics Finland.

¹⁰ Like our survey, the data is based on a questionnaire to a representative sample of the population, and the definition of zero-hour contracts is largely the same. See Office for National Statistics (2018). Contracts that do not guarantee a minimum number of hours: April 2018; Statistics Finland (2019). Around 100,000 employees work on zero-hour contracts.

¹¹ E. S. Bach, T. Saari, S. Ojala, P. Pyöriä, P. Jonker-Hoffrén, T. P. Larsen & A. Ilsøe (2021). The hotel and restaurant sector in Denmark and Finland. In A. Ilsøe & T. P. Larsen (eds.), *Non-standard work in the Nordics: Troubled waters under the still surface*. Copenhagen: Nordic Council of Ministers.

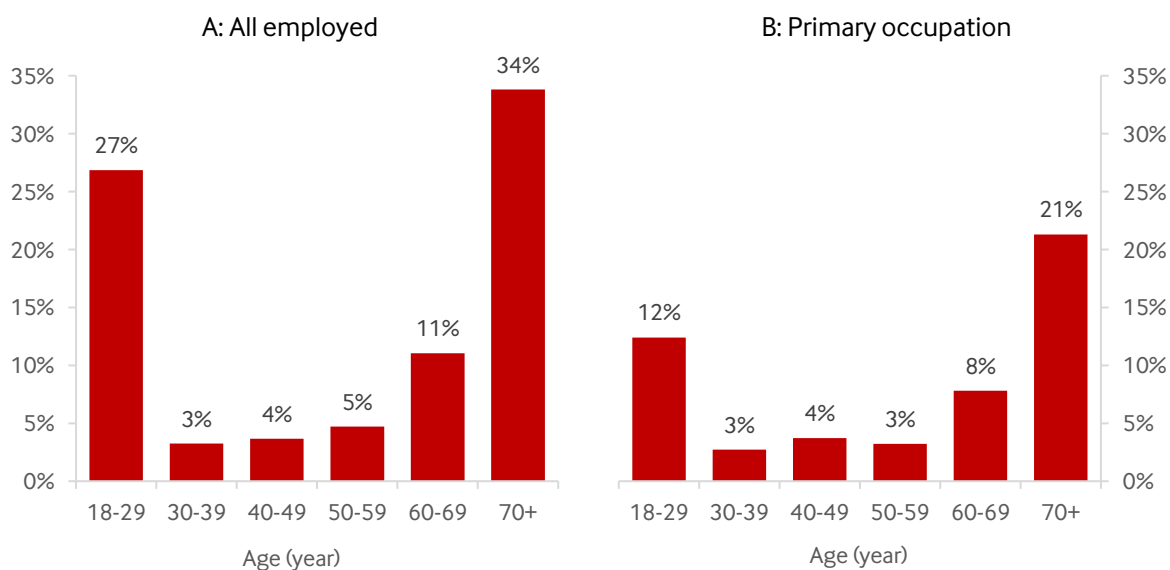
among the youngest and oldest in the Danish labor market.

A similar picture emerges if we disregard students, etc. and focus on those with work as primary occupation: Just over one in nine (12%) 18-29-year-olds and around one in five (21%) 70+-year-olds are employed on a zero-hour contract. Please note that these are not necessarily full-time jobs even if they are the primary occupation. For example, none of the 70+-year-olds in the survey work more than 25 hours a week.

If we look at the level of education, it is typically less educated who are employed on zero-hour contracts: 18% among unskilled workers with work as primary occupation compared to only 4% of primarily employed with an education higher than primary or secondary school.

Across age groups, unskilled workers are far more likely than educated workers to be employed on zero-hour contracts, but the education effect is highest among the youngest: As many as 31% of young unskilled workers with work as primary occupation are employed on zero-hour contract

Figure 2. Prevalence of zero-hour contracts by age, %



Note: The figure shows the prevalence of zero-hour contracts by age group. Figure A shows distributions for all employed, while figure B only shows distributions for those with work as primary occupation. The age groups 18-29 and 70+ are significantly different from the other age groups in both figures ($p < 0.01$).

Source: Own calculations based on survey data from MEGAFON.

ZERO-HOUR WORKERS' RIGHTS

Overall, zero-hour workers are in a precarious situation because they have no guaranteed working hours and therefore no guaranteed income. The fact that they have fewer rights adds to their hardship. The rights of so-called atypical workers, including part-time and temporary workers, have previously been studied in Denmark,¹² but there is no systematic overview of the rights of zero-hour workers. This section covers their rights in three areas: 1) the right to pay during illness, 2) the right to pay during maternity leave and 3) the right to unemployment insurance benefits.

In the analyses that follow zero-hour workers are compared to regular employees, defined as permanent full-time or voluntary part-time employees.¹³ This part of the analysis focuses only on people with work as primary occupation. This does not include students, pensioners or others with other main income.

FEWER ZERO-HOUR WORKERS ARE ENTITLED TO SICK PAY

Most employees occasionally experience illness that prevents them from working, and it makes a significant difference whether they are entitled to pay when they are sick. Sick pay is important for the average Danish employee, who has about 9 days of sick leave per year according to Statistics Denmark,¹⁴ but it is especially true for those who

are affected by long-term illness that prevents them from working for longer periods.

The study shows that zero-hour workers in Denmark have significantly fewer rights than regular employees during periods of sickness. Respondents in the survey were asked whether they are entitled to either full pay or sick pay if they fall ill on a workday. Respondents who answered 'don't know' are excluded.

93% of regular employees state that they are entitled to full pay during illness, compared to only 26% of zero-hour workers (see figure 3). One explanation for this very large and statistically significant difference ($p < 0.001$) is that more ordinary employees are employed as salaried employees (approx. 65% of Danish employees) and have a statutory right to full pay during illness.^{15,16} Another explanation is that more ordinary employees are employed under collective agreements, which in most cases guarantee the right to sick pay.

The results are in line with a previous Danish study of atypical employees' rights from 2017,¹⁷ which showed that a smaller proportion of atypical workers (83%) were entitled to sick pay compared to 'normal employees' (95%). The 'atypical workers' included only temporary and part-time workers, not zero-hour workers. Our analysis suggests that zero-hour workers are even worse off in terms of sick pay rights.

¹² Scheuer (2017). [Atypisk beskæftigelse i Danmark](#), p. 48.

¹³ Full-time is defined as more than 30 hours per week; voluntary part-time is defined as employment of up to 30 hours per week for employees do not want to work more hours than they do.

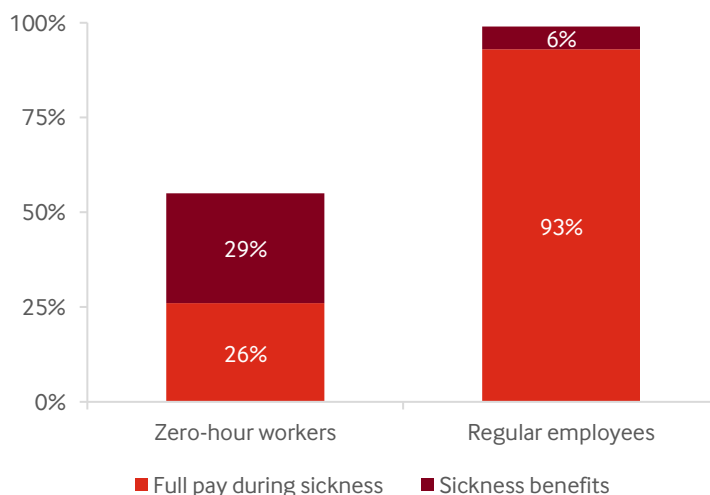
¹⁴ See Statistics Denmark (FRA020).

¹⁵ See [Funktionærlovens](#) § 5.

¹⁶ The Danish Ministry of Employment (2015). [Det danske arbejdsmarked](#), p. 23.

¹⁷ Scheuer (2017). [Atypisk beskæftigelse i Danmark](#), p. 50.

Figure 3. Proportion entitled to full pay or sickness benefits during illness (%)



Note: The figure shows the proportion who answered 'I have the right to take time off and receive full pay during illness' and 'I have the right to take time off and receive sickness benefits during illness' to the question: 'If you are sick on a work day, do you have the right to take time off with full pay or sick pay?' 'Don't know' answers are not included. There is a significant difference ($p < 0.001$) between zero-hour workers and regular employees in both the proportion entitled to full pay and the proportion entitled to pay or sick pay.

Source: Own calculations based on survey data from MEGAFON.

A UK study from 2017 similarly showed that a massive proportion of workers on zero-hour contracts are excluded from sick pay.¹⁸ Our study confirms that this is also the reality in Denmark where the right to sick pay usually is considered an almost universal right.

Some of those who are not entitled to full pay during illness are entitled to the less generous sickness benefits from either the employer or the municipality. In Denmark, you have a statutory right to sickness benefit if you meet an employment requirement, which consists of having worked a certain number of hours within a period leading up to the first day of illness.¹⁹

We assume that the respondents answered the question correctly, even though the Danish rules for entitlement to sickness benefit are relatively complicated. It is likely that after a certain period

in a job, most people have been sick and therefore know whether they receive a salary or sickness benefit. However, we cannot ignore that the real world may not always correspond to the legislation, and that some people who are entitled to sickness benefits are not aware of their right and do not receive them when they fall ill.

6% of ordinary employees stated that they are entitled to sickness benefits (cf. figure 3), and with 93% entitled to salary during illness, practically all regular employees are entitled to either salary or sickness benefits if they fall ill. In comparison, 29% of zero-hour workers stated that they would be entitled to sickness benefits. With 26% entitled to sick pay this means that 55% of zero-hour workers have access to either salary or sickness benefits.

¹⁸ Collinson, Alex (2017). [Great Jobs with Guaranteed Hours](#). TUC, p. 5.

¹⁹ The work requirement in relation to the employer is having worked at least 74 hours in the last eight weeks. The employment requirement in relation to the municipality can be fulfilled in several ways, but a key requirement is at least 240 hours of work within the last six months and at least 40 hours per month for at least five of those months. See chapters 10 and 11 of the Sickness Benefits Act.

In other words, almost half (45%) of zero-hour workers would be left without income if they fall ill, while this situation is virtually non-existent among regular wage earners. This is a striking and statistically highly significant difference ($p < 0.001$).

One reason so many people on zero-hour contracts are ineligible for sickness benefits is that it may be difficult for them to meet the employment requirements for sickness benefits due to their shorter and more unstable working hours. In addition, since employers are only obliged to pay sickness benefits for days when the employee has scheduled workdays or shifts,²⁰ it can limit access to sickness benefits for zero-hour workers if their shifts are not scheduled far in advance.

FEWER ZERO-HOUR WORKERS ARE ENTITLED TO PAY DURING MATERNITY LEAVE

The right to pay or benefits during maternity and parental leave is also important for many employees. The vast majority of Danes have at least one child in their lifetime²¹ and will need to take maternity or parental leave one or more times during their working life.

The analysis shows that zero-hour workers are at a disadvantage in this area as well compared to ordinary employees (see figure 4). The respondents were asked whether they would be entitled to paid or unpaid maternity or parental leave.

Many Danes are entitled to either full or partial pay during their leave through their collective agreement or employment contract. 82% of regular employees state that they are entitled to salary during maternity leave compared to only 45% of zero-hour workers.²² This is a significant and statistically robust difference ($p < 0.001$).

One reason for the difference is that far more regular employees than zero-hour workers are employed as salaried employees. If you are a female salaried employee, you have a statutory right to at least half of your salary during the first 14 weeks of maternity leave²³. Another reason for the difference is that more ordinary employees are employed under collective agreements or employment contracts that guarantee pay during maternity leave.

The aforementioned study from the UK showed that also in the UK labor market, zero-hour workers are far less likely than others to be entitled to pay during maternity leave.²⁴

²⁰ See [Ankestyrelsens principmeddelelse 18-20 om sygedagpenge](#) (KEN 9414, 02/07/2020), p. 1.

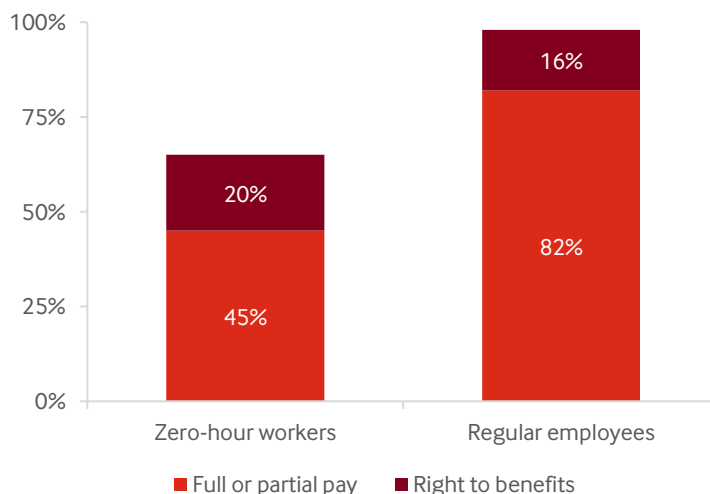
²¹ According to Statistics Denmark's figures from 2020, around 88% of Danish women have had at least one child before age 50 compared to around 80% of Danish men, see [Befolkningens udvikling 2019](#), p. 27.

²² Of these, 18% indicated that they are entitled to full pay; 27% that they are entitled to partial pay.

²³ See [Funktionærloven](#), § 7.

²⁴ Collinson, Alex. (2017). [Great Jobs with Guaranteed Hours](#). TUC, p. 5.

Figure 4. Share of employees entitled to pay or benefits during maternity or parental leave (%)



Note: The figure shows the proportion who answered 'I would have the right to take leave with full pay' or 'I would have the right to take leave with partial pay' and 'I would have the right to take leave with parental benefit' to the question: 'If you wanted to take maternity leave or parental leave, would you be entitled to take leave either without pay, with partial pay, with full pay or with maternity/parental leave benefits?'. 'Don't know' answers are not included. There is a significant difference ($p < 0.001$) between zero-hour workers and regular employees in both the proportion entitled to pay and the proportion entitled to pay or benefits. Source: Own calculations based on survey data from MEGAFON.

Many people who are not entitled to salary during parental leave can receive parental benefit during their leave. In Denmark, both fathers and mothers are entitled to parental leave benefits if they have worked a certain number of hours in the period leading up to the leave or are entitled to unemployment benefits from an unemployment insurance fund.²⁵

This means that approximately one third (35%) of zero-hour workers will be without income if they go on maternity or parental leave, compared to only 2% of regular employees. The difference in rights is striking and statistically significant ($p < 0.001$).

16% of regular employees state that they are entitled to parental leave benefits. This means that 98% of them are entitled to either salary or maternity benefits. 20% of zero-hour indicate that they are entitled to parental leave benefits, which means that 65% are entitled to either salary or parental leave benefits.

The reason so many zero-hour workers are not entitled to maternity benefits may partly be that it is more difficult to meet the employment requirement in the law due to their shorter and more unstable working hours, and partly that fewer zero-hour workers are entitled to unemployment benefits in an unemployment insurance fund.

²⁵ There are different ways to qualify for maternity benefits. For example, you automatically qualify if you are unemployed and entitled to unemployment benefits from the unemployment insurance fund. You also qualify for parental benefits if you have worked at least 160 hours in the last four months, including at least 40 hours in three of those months. See [Barselsloven](#) § 27.

FEWER ZERO-HOUR WORKERS ARE ENTITLED TO UNEMPLOYMENT BENEFITS

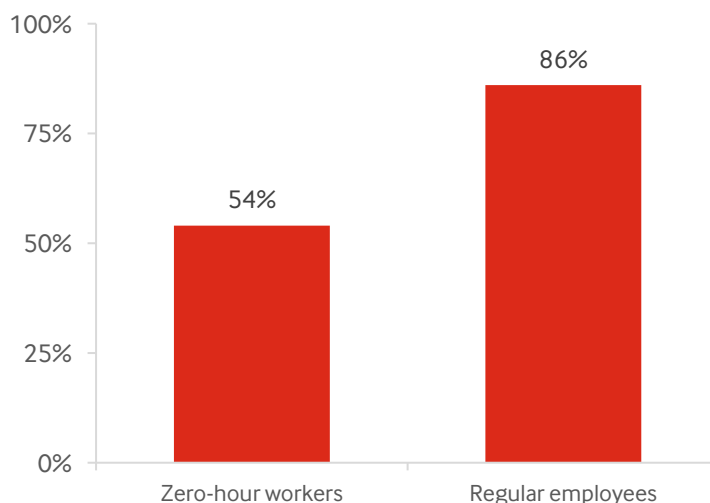
The right to receive unemployment benefits during unemployment is also a crucial right, as everyone is at risk of losing their job. In Denmark, the right to unemployment benefits is not guaranteed

Respondents were asked if they would be entitled to unemployment benefits if they lost their job. Here, too, it seems that zero-hour workers are worse off than regular employees (see figure 5).

by law, employment contracts or collective agreements but are paid through a state-subsidized insurance scheme.²⁶ To qualify for unemployment benefits, you have to have been a member of an unemployment insurance fund for at least one year and otherwise meet the conditions for eligibility, including having had employment and an income of a certain size for 12 months within the last three years.²⁷

86% of regular employees state that they would be entitled to unemployment benefits compared to only 54% of zero-hour workers.

Figure 5. Proportion entitled to unemployment benefits if they became unemployed tomorrow (%)



Note: The figure shows the proportion who answered 'Yes' to the question: 'Would you be entitled to unemployment benefits if you lost your job tomorrow?' However, respondents who stated that they are not members of an unemployment insurance fund are defined as not entitled to unemployment benefits, even if they answered 'Yes' or 'Don't know'. Other 'Don't know' responses are not included. The difference between zero-hour workers and regular employees is highly significant ($p < 0.001$).

Source: Own calculations based on survey data from MEGAFON.

The primary explanation for this difference is that many people on zero-hour contracts are not members of an unemployment insurance fund. Among regular employees in the survey, 88% are members of an unemployment insurance fund

compared to only 59% of zero-hour workers. In addition, it is typically more difficult for zero-hour workers to meet the income and employment requirements and qualify for unemployment benefits, even if they are members of an

²⁶ If you are not eligible for unemployment benefits, you can receive a lower social benefit, social assistance. You are not eligible for this benefit if you have assets or a partner with a high income.

²⁷ The conditions for unemployment benefit are stated in section 53 of '[Lov om arbejdsløshedsforsikring](#)'. In 2021, the yearly income requirement was at least DKK 243,996 (full-time insured) or DKK 162,660 (part-time insured). Other requirements implies that it takes at least 12 months to qualify for unemployment benefit.

unemployment insurance fund, cf. above. The stern earning requirements may also explain why relatively many zero-hour workers have chosen not to join an unemployment insurance fund.

The review of the rights of zero-hour workers shows that they are typically much worse off than regular employees if they fall ill, go on maternity leave, or lose their job.

CONSEQUENCES OF THE CORONA CRISIS

On March 11, 2020, a comprehensive lockdown of Danish society was implemented due to the world-wide COVID-19 pandemic. Institutions, schools, education, etc. were temporarily closed. Public employees were sent home unless they performed 'critical functions', and private companies were encouraged to ensure that employees work from home as much as possible. In addition, a number of other restrictions were introduced.

The Corona crisis soon turned into an economic crisis with a drastic downturn in the Danish economy and a sharp rise in unemployment. GDP fell by over 6% in Q2 2020,²⁸ and unemployment rose by over 50,000 people in just a few months.²⁹

Employees on zero-hour contracts are particularly vulnerable when an economic crisis hits. For one thing, they are typically in a vulnerable position if they lose their job, as many are not entitled to unemployment benefits, as described above. However, even if they do not lose their job as such, they may lose all or part of their income for a period: They may be sent home without pay, or their hours may be reduced at the discretion of the employer.

It has never been systematically examined whether Danes with zero-hour contracts or other atypical employment were hit harder by the corona crisis than other groups in the labor market. A study across the Nordic countries examined whether a crisis affect the number of temporary and part-time workers,³⁰ but the impact on zero-hour workers has not been studied previously.

This part of the analysis reveals whether zero-hour workers 1) had their hours reduced, 2) were laid off without pay, and/or 3) were terminated during the

corona crisis to a greater extent than regular wage earners.

MORE ZERO-HOUR WORKERS HAD THEIR HOURS REDUCED

Zero-hour workers are in a vulnerable position when a crisis hits, and the employer suddenly needs less labor. In a crisis, it can be difficult for an employer to reduce payroll costs on short notice, as standard employment contracts typically have notice periods and guarantee the employee a fixed number of hours or a certain salary for a fixed period. For zero-hours workers, the situation is completely different, as their hours can be reduced overnight, and they face a high risk of losing their income in a crisis.

This study shows that this was very much what happened during the corona crisis in Denmark. Many zero-hour workers experienced a reduction in hours during the crisis.

The survey respondents were asked whether they had experienced a reduction in working hours since the lockdown of Denmark on March 11, 2020. As many as 23% of those employed on a zero-hour contract before the crisis stated that their hours had been reduced (see figure 6) compared to only 2% of regular employees. The risk of being downsized was thus about 10 times higher for zero-hour workers, and the difference is statistically highly significant ($p < 0.001$).

²⁸ Denmark's GDP fell by 6.4% in Q2 2020 (real growth, seasonally adjusted) according to [Statistics Denmark \(NKN1\)](#)

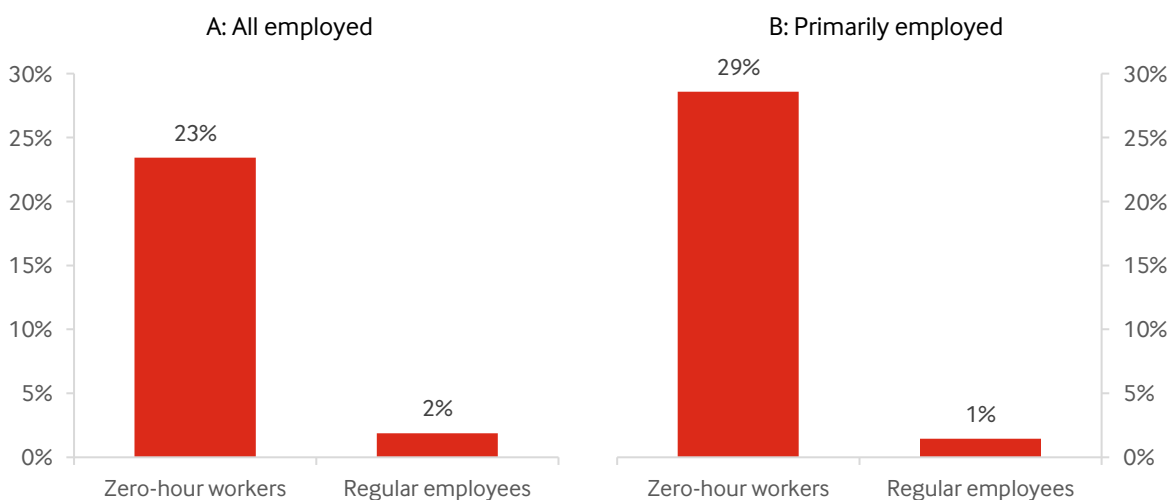
²⁹ The number of unemployed increased by approximately 54,000 full-time equivalents from February 2020 to May 2020 (gross unemployed, seasonally adjusted) according to [Statistics Denmark \(AUS07\)](#).

³⁰ See Ilsøe og Larsen (2021). [Non-standard work in the Nordics](#), p. 196 and Larsen et al. (2020). [Atypisk beskæftigede i atypiske tider](#), p. 39.

The picture is similar when we focus on those who had work as their primary occupation, as 29% of zero-hour workers had their hours reduced

compared to 1% of regular employees. Again, the difference is highly significant and statistically robust ($p < 0.001$).

Figure 6. Proportion whose hours were reduced during the corona crisis



Note: The figure shows the proportion who answered 'My hours were reduced / I was given fewer hours' to the question: 'Have you experienced any of the following consequences of the corona crisis since the lockdown of Denmark on March 11, 2020?' among all employed people (A) and among those who have worked as their primary occupation (B). The differences are significant in both A and B ($p < 0.001$).

Source: Own calculations based on survey data from MEGAFON.

MORE ZERO-HOUR WORKERS WERE SENT HOME WITHOUT PAY

The shutdown of Denmark in March 2020 meant that a number of Danes were sent home for a shorter or longer period without being able to work from home. The vast majority were paid during lockdown, partly because the Danish Parliament adopted a wage compensation scheme to support Danish companies and to avoid a surge in unemployment. Therefore, many were sent home with pay. However, some were sent home without

pay and temporarily laid off during the crisis, and the study shows that this was especially true for zero-hour workers.

13% of regular employees in the survey state that they were sent home with pay during the corona crisis (see figure 7). This is roughly in line with the share of all Danish employees who were sent home with pay via the wage compensation scheme according to official records.³¹ Among zero-hour workers, only 5%, a significantly smaller proportion, of respondents were sent home with pay ($p = 0.02$).

³¹ According to the Danish Business Authority, as of May 10, 2021, 330,539 unique persons were sent home with pay via the wage compensation scheme since the start of the corona crisis in March 2020. See [Erhvervsstyrelsens Statistik for kompensation-sordninger](#) - accessed May 15th, 2021). This corresponds to about 12% of all wage earners in Denmark (2,827,202 in May 2021, all ages, cf. [Statistics Denmark, LBESK01](#)).

Among those with work as primary occupation, 2% zero-hour contracts were sent home with pay (2%) compared to 12% regular employees. This difference is distinct and statistically significant ($p = 0.04$).

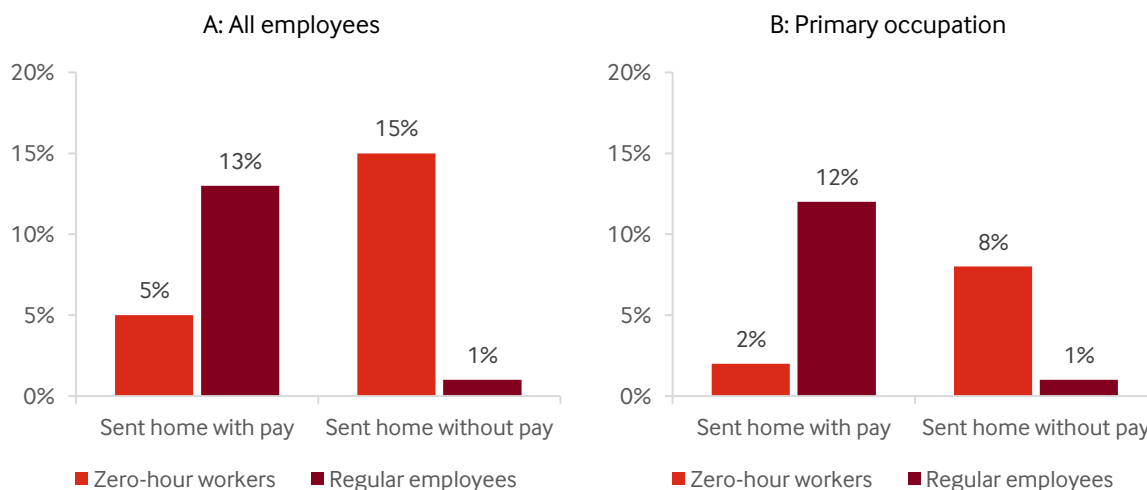
A far more serious consequence of the corona crisis is, of course, the unpaid layoffs. Only 1% of regular employees experienced unpaid layoffs compared to 15% of zero-hour workers. Again, a very large and statistically significant difference between zero-hour workers and regular employees ($p < 0.001$).

The picture is the same for employees with work as primary occupation, as 8% of zero-hour workers were sent home without pay compared to 1% of regular employees. Again, the difference is significant and statistically robust ($p < 0.001$).

The large difference should be seen in light of the fact that, as mentioned, zero-hour workers are not guaranteed a salary for a fixed number of hours, which means that the employer can simply send them home without pay. Many employers have taken advantage of this option. Although employees with zero-hour contracts could also be included in the wage compensation scheme, it was, all other things being equal, cheaper for employers to send zero-hour workers home without pay, as the compensation did not cover the entire salary.³²

Many zero-hour workers are in a very difficult situation if they are sent home without pay because many are not entitled to unemployment benefits, as described above.

Figure 7. Share sent home with and without pay during the corona crisis



Notes: The figure shows the proportion who answered 'I have been sent home with pay (not including homework)' and 'I have been sent home without pay' to the question: 'Have you experienced any of the following consequences of the corona crisis since the lockdown of Denmark on March 11, 2020?' among all employed people (A) and among those with work as primary occupation (B). The difference between zero-hour workers and ordinary wage earners is significant for being sent home with pay ($p = 0.02$ and $p = 0.04$ in A and B, respectively) and being sent home without pay ($p < 0.001$ in both A and B).

Source: Own calculations based on survey data from MEGAFON.

³² The wage compensation corresponds to 75% (salaried employees) or 90% (non-salaried employees) of the salary, up to a maximum of DKK 30,000 per month per full-time employee. See Styrelsen for Arbejdsmarked og rekruttering (2020). [Opslag: Pulje til midlertidig lønkomensation som følge af COVID-19.](#)

Overall, the corona crisis had major consequences for many zero-hour workers, and they were hit much harder financially than regular employees. Almost one in three (31%) zero-hour workers had their hours reduced or were sent home without pay, compared to only 3% of regular employees. In other words, zero-hour workers faced a much higher risk of being affected by one of these two negative consequences ($p < 0.001$).

Among those with work as primary occupation, 34% of zero-hours workers and 2% of regular employees experienced either a reduction in hours or were laid off without pay – again, a huge and highly significant difference ($p < 0.001$).

ZERO-HOUR WORKERS WERE NOT FIRED MORE OFTEN THAN REGULAR EMPLOYEES

Another serious consequence of the corona crisis was the fact that many Danes were fired and lost their jobs. According to figures from the Danish Agency for Labor Market and Recruitment, more than three times as many people were fired in major dismissal rounds in 2020 compared to 2019.³³

However, the survey does not show clear signs that zero-hour workers were particularly hard hit by permanent layoffs. 9% of all zero-hour workers state that they were fired during the corona crisis compared to around 5% of regular employees. This difference is relatively small and not statistically significant ($p = 0.08$). Among those with work as primary occupation, about as many zero-hour workers (6%) as regular employees (5%) were laid off.

The relatively small differences should be seen in light of the fact that employers do not need to dismiss workers with zero-hour contracts when their labor is not needed. Rather, employers can simply reduce their working hours of zero-hour workers or send them home without pay. As described, this is exactly what happened during the corona crisis.

³³ In 2019, 6,053 persons affected by layoffs of a major magnitude (notices of dismissal) compared to 21,814 in 2020 (jobindsats.dk).

ATYPICAL EMPLOYMENT LEADS TO HIGHER PUBLIC PENSION COSTS

As described in this report, being employed on non-standard terms such as zero-hour contracts can have serious consequences for the individual. But non-standard employment may also have negative consequences for society, especially the state's pension costs which increase when pension savings are low.

People in atypical employment typically save less for their pension than regular employees,³⁴ because many are not covered by collectively agreed occupational pension schemes, which are crucial for pension savings in Denmark. In addition to zero-hour workers, other atypical employees and many self-employed do not save enough for pensions. Overall, precarious jobs make up a significant part of the Danish labor market.³⁵

This is one reason why many Danes, for example 12% of employed 25-34-year-olds,³⁶ do not pay into a pension at all. Others, including many self-employed, have only very small private pension savings. This is a challenge because the size of public pensions depends on the size of private pensions paid out and thus how much a person

has saved.³⁷ So, lower savings mean higher public spending.

Pensioners in Denmark receive a basic publicly paid benefit of DKK 6,447 or roughly €860 per month. On top of that public pensions include an income-dependent supplement of up to DKK 7,472 per month (€ 1,000) for a single person and DKK 3,800 (€ 500) if you have a partner.³⁸ However, the higher the income from private pensions, the lower the supplement.

This is how the adjustment works: If you have DKK 1,000 more per month in payments from, for example, occupational pension the public pension supplement will be reduced with DKK 309 if you are single and DKK 320 if you have a partner.³⁹

The fact that 12% of young Danes today do not save for retirement does not necessarily mean that they will not save at all during their working life. Later in life, some will become part of an occupational pension scheme in their job or make private savings for retirement. However, postponing saving for retirement until later in life means lower income in retirement, which in turn increases the state's expenditure on the pension supplements.⁴⁰

³⁴ Cevea (2021). [0-timers-ansatte har markant dårligere rettigheder end almindelige lønmodtagere](#); Fagbladet 3F (2021). [Nyt udspil fra regeringen: Atypisk ansatte skal have ordentlige vilkår på jobbet](#).

³⁵ Solo self-employed make up 4%, and temporary workers 10% of 18-64 year olds. Source: Ilsøe & T. P. Larsen, eds. (2021), [Non-standard work in the Nordics: Troubled waters under the still surface](#), pp. 19-20.

³⁶ Calculated for 2020 as follows: 100 pct. deducted (share of employed who pay into an occupational pension scheme and/or a private individual pension). Source: Statistics Denmark, RAS301 and PENINDB1.

³⁷ The following incomes are offset against the state pension: payments from individual and collective pension schemes, payments from the Labour Market Supplementary Pension (ATP), capital returns and earned income. From 2024, the adjustment of earned income will cease.

³⁸ A pensioner with very little pension income may receive an elderly check, housing allowance, heating allowance, etc. Although these allowances are higher for people with small pensions, we disregard them in this analysis as they are not relevant for the scenarios we calculate below.

³⁹ If you have an income of less than DKK 89,700 per year as a single person or less than DKK 179,700 with a partner, you will receive the full supplement. However, with an income above DKK 379,900 for singles and DKK 464,700 for cohabitants, the pension supplement will no longer apply.

⁴⁰ Commission on Retirement and Attrition (May 2022). [Fremtidssikring af et stærkt pensionssystem](#)

In this analysis, we examine what it costs society in terms of increased public expenditure on the income-dependent part of the publicly paid pension supplement if 10% of employed people start making pension contributions 10 years later, 20 years later or never start. By implication, the calculation also shows how much the public sector could save if 10% more of the employed pay into an occupational pension and/or other pension schemes.

We have developed a model to calculate the financial consequences of delayed pension contributions for the public purse. The calculation model is based on the same premises used by the Ministry of Finance, ATP and the Commission on Retirement and Attrition. Our model is not as complex as theirs but includes all essential elements (see Appendix).

Calculations show that billions can be saved by reducing the extent of atypical employment and increasing regular employment that includes mandatory pension schemes.

PUBLIC COSTS OF NOT SAVING FOR RETIREMENT OR SAVING LATE

If a person saves less for their pension, they will receive more in pension supplements, which results in correspondingly higher costs for the public purse. But how much higher are public expenditures if a person is not covered by a pension scheme for part of or their entire working life?

The calculations are based on a person who, during his or her working life, earns the income of an average skilled worker in Denmark and

contributes 12% of his or her salary to a pension, which is the norm for employment under collective agreements in the private sector. The person saves from the age of 25 until retirement at the age of 74, which is the expected retirement age for people who were 25 years old in 2022, if the indexation of retirement age according to life expectancy is maintained.⁴¹ This is our benchmark scenario.

We calculate the consequences of poor pension conditions by setting alternative starting points for the first pension contribution, which we then compare with our benchmark. We set up three scenarios:

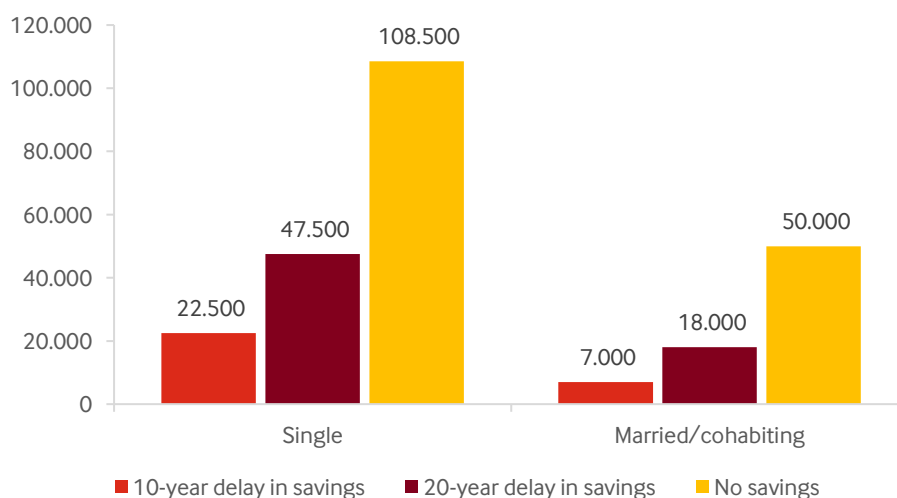
- Scenario 1: Pension contributions postponed until the person is 35 years (10 years delay)
- Scenario 2: Pension contributions postponed until the person is 45 years (20 years delay)
- Scenario 3: No pension contributions made during working life.

If a single person does not have pension savings their first 10 years on the labor market, the annual pension supplement is on average DKK 22,500 per year higher than if they save throughout their working life. If a single person starts saving for a pension after 20 years on the labor market, the pension supplement is on average DKK 47,500 higher per year. If a person never saves for a pension at all during their lifetime, the state's extra annual expenditure on pension supplements is on average DKK 108,500 higher than with full savings (see figure 8).⁴²

⁴¹ The Danish Agency of Labour Market and Recruitment (2023). [Folkepensjonsalderen nu og fremover](https://www.folkepensjonsalderen.nu/og-fremover/).

⁴² These calculations are based on a person who is single throughout retirement.

Figure 8. Average annual additional expenditure on pension supplements for deferred or no pension contributions, amounts in 2022 DKK



Note: The figure indicates how much higher the annual public expenditure on pension supplements will be on average for the expected 17 years of retirement in the three scenarios compared to the benchmark scenario. The amounts are rounded to the nearest DKK 500. All amounts in 2022-prices

Source: Own calculations

In other words, there is a considerable additional public expenditure on pensions if more Danes postpone saving for retirement or do not save at all.

The extra expenditure on pension supplements is somewhat lower if the pensioner has a partner (see figure 8). This is because the supplement is lower when you live with a partner, and because we assume that the partner's income remains unchanged across the different scenarios.⁴³

TOTAL ADDITIONAL COSTS DUE TO LACK OF PENSION SCHEMES

So far, we have calculated the extra public expenditures for one person who postpone pension savings or make to savings at all. Here we examine how much it costs taxpayers in increased expenditures to the pension supplement if 5,800 people

in each cohort delay pension savings 10 or 20 years, or if they make no pension savings throughout their working life. This figure corresponds to 10% of the employed between the ages of 25 and 64.⁴⁴ We assume that 17 cohorts will be receiving public pensions at the same time. Since the first cohort in the model can retire in 2071 – i.e., the 25-year-old in 2022 who retires at 74 – the full effect in terms of total additional costs will be seen from 2087 onwards.⁴⁵

The additional expenditure on pension supplements as a result of 10 years of delayed pension payments will be DKK 1.3 billion in 2087 (present prices⁹). With 20 years of deferred contributions, the additional costs will be DKK 3.0 billion. And if

⁴³ The numbers are based on calculations for a person who has a partner throughout their retirement.

⁴⁴ In 2020, there are 2,326,757 employed people aged 25-64, which corresponds to an average of 58,169 employed people at each age level. 10% correspond to 5,800 employed people. Source: Statistics Denmark, RAS201.

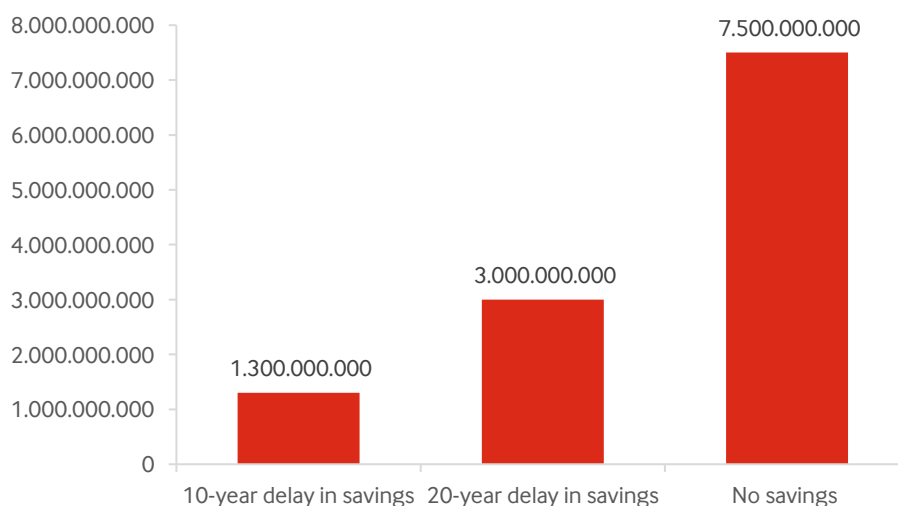
⁴⁵ In the calculation, we take into account that more people become single as they get older.

the pensioner has no pension savings at all, the additional costs will be DKK 7.5 billion.⁴⁶

As the figures show, it is not only the individual worker who bears the costs of being employed on a zero-hour contract. Lack of pension savings will also be extremely costly for society.

If the number of precarious workers increases and pension savings are postponed or completely eliminated, it will cost billions for the state and Danish taxpayers.

Figure 9. Increased state expenditure on pension supplements in 2087, DKK in 2022 prices



Source: Own calculations.

⁴⁶ Our calculations show that the cost of the pension supplement for the 5,800 people in 2087 will be around DKK 3.7 billion if they have been paying into a pension scheme from the age of 25. The extra costs are therefore in addition to this amount.

METHOD

The survey for this study was conducted as a combined internet and telephone survey between 8 June and 17 June 2021. The internet interviews were conducted among members of the MEG-AFON panel, and the telephone interviews were conducted among Danes randomly selected from all landline and mobile numbers in Denmark. A total of 1,519 usable interviews were conducted, including 1,291 internet interviews and 228 telephone interviews. The response rate for the internet and telephone interviews was 48 and 38% respectively.

The target group for the survey is defined as people aged 18 years or older. Since we know that in particular young people have atypical forms of employment, the survey contains an over-sampling of 18-29-year-olds. We take into account the overrepresentation of young people in the analyses and other biases in the sample by weighting the responses according to the respondents' age, gender, education and area of residence. However, as previously described, the responses are not weighted by education in the first part of the analysis in order not to overestimate the extent of zero-hour contracts.

CONCEPTS

All employed persons are calculated as the number of persons who reported that they were employed in the last month, including employees, self-employed, temporary workers, freelancers, fee earners and apprentices. People who did not have work as their primary occupation (e.g. students) but had some form of paid work in the past month are considered employed.

Primary employment consists of people whose primary occupation in the last month was work. Therefore, it does not include the unemployed, students, homemakers, people on sick leave, pensioners or people on maternity or parental leave, even if they may have had some form of paid work in the last month.

Regular employees are defined as permanent employees with full-time (> 30 hours per week) or voluntary part-time (\leq 30 hours per week and no desire to work more hours).

In the final part of the report, we examine the additional public expenditures to pensions in situations where pension savings are delayed because people have a precarious job that does not include a pension scheme.

Economic forecasts are inherently uncertain. To ensure the results are as robust as possible, we use the same premises as ATP, the Commission on Retirement and Attrition and the Ministry of Finance. These are included in the calculation models, which are set up with input from DaneAge, AkademikerPension and ATP, among others. However, Cevea is responsible for the calculations.

The premises are presented in the appendix. For sensitivity calculations with alternative premises, see "Beskæftigede uden pensionsordninger koster statskassen milliarder" ([Cevea, 2023](#)).

APPENDIX

Premises in the calculation model for pension payments

Parameter	Premise
Retirement age for person born in 1997 with current indexation	74
Age at entry into the labor market	25
Remaining life expectancy at retirement	17 years
Inflation rate	2,0 %
Real increase in wages p.a.	1,0 %
Annual nominal return on occupational pension schemes after pension returns tax	3,8 % (corresponding to 4,5% before pension returns tax)
Monthly pension contribution for 25-year-old skilled worker in 2022 (total contribution: 12%)	3.500 DKK
Costs of managing pension savings, share of pension contribution	2,0 %
Annuity share of occupational pension	100 %
Number of people affected	5.800

Sources: See *Beskæftigede uden pensionsordninger koster statskassen milliarder*, ([Cevea, 2023](#)).



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