

THE FINNISH PENSION SYSTEM FROM A COMPARATIVE NORDIC PERSPECTIVE¹

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The Nordic welfare states have managed to reform their pension systems in a way that supports both high employment rates and low old-age poverty. This ability to innovate and acquire acceptance for the new rules are the key elements behind the success of these systems. The role of social partners has been decisive in previous reforms, but the needs to increase employment rates and improve overall fiscal sustainability have introduced additional constraints for the reforms and have increased the influence of politicians. From the very beginning, the Finnish first-pillar earnings-related pension scheme has had several outstanding features, such as partial prefunding of the contributions, no ceilings for the pension accruals and preserving accruals when changing jobs. In recent years, the scheme has been at the front line of introducing links between pensions and retirement ages and life expectancy. However, the recent issue of the surprisingly low fertility has not yet been addressed.

Keywords: population ageing, pension reforms, financial sustainability, adequacy.

The Nordic welfare model is characterised by a limited market regulation combined with an extensive tax-financed social security system. The small open economies are exposed to large business cycles, but the jobs involved are not protected by the government. Instead, individuals are covered with universal benefits. This model has succeeded in yielding relatively high average economic growth and low income inequality. Interestingly, there are stark differences between the details of the social security system of different Nordic

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countries, especially with regard to old-age income security. Many of these differences date back to 1960's, which illustrates the strong path-dependency in pension reform processes.

This review focuses on the current properties and future challenges of the Finnish pension system², but it also compares the development and performance of the system to its other Nordic counterparts. In addition to presenting the general features of the Finnish system, this review also discusses the system's resiliency against demographic and economic shocks.

The current Finnish public pension system consists of a first-pillar statutory earnings-related pension, a zero-pillar national pension that is means-tested on the earnings-related pension, and a guarantee pension that provides a minimum income if the sum of earnings-related pension and national pension is insufficient. In addition to providing old-age lifetime pensions, the system covers risks related to disability of the insured, and family earners' death.

In addition to the nearly annual minor adjustments, there have been major pension reforms in each decade throughout the history of the system. More generally, instead of rigidly following the original defined benefit principle, the earnings-related pension system has exhibited a capacity to reform when required based on sustainability concerns. On the other hand, unease over poverty has led to reforms, wherein basic social security rules have been changed. However, the latter has been an outcome of political processes and not an agreement between social partners.

The major pension reforms that have occurred during the last 20 years have re-shaped the pension landscapes of all the Nordic countries³. The common features shared by these reforms have been stricter rules for early retirements, adoption of flexible retirement ages, establishment of a closer link between earned wages and accrued pensions and introduction of links between pensions and/or retirement ages and life expectancy. In terms of financial sustainability, the most radical reform was implemented in Sweden, where a notional defined contribution (NDC) principle was adopted in the first-pillar earnings-related pension scheme.

2. This review does not cover the third-pillar voluntary pensions. In Finland, the number of new individual pension contracts is negligible due to the tightened regulations and tax rules.

3. This review does not cover the pension system of Iceland. See the work of, for example, Ólafsson (2018) for information about the pension reform process that is employed there.

The recent demographic trends witnessed in the Nordic countries have not been favourable for the pension systems. Life expectancy at age 65 has increased significantly over the last 30 years, and Finland has caught up with the high numbers of Sweden and Norway in this regard. Moreover, fertility rates have been falling throughout the 2010s, which will curtail labour supply in the years to come. The decline in the number of births has occurred in all the Nordic countries; but it has been especially acute in Finland, where the total fertility rate fell from 1.87 in 2010 to 1.35 in 2019.

The finances of the pension schemes have also not received much support from the economic trends. The low productivity growth rate has restricted the increase in hourly wages and, thereby, the build-up of contribution bases. The falling interest rates of government bonds have weakened the risk-return trade-off of the pension funds and increased the riskiness and illiquidity of the portfolios. The main positive factor has been the substantial increase in the employment rates of the elderly workers owing to the improved educational structure, better health and social security reforms. From the perspective of the welfare of the pensioners, another favourable phenomenon has been the decline and stabilisation of inflation.

The sustainability of the Finnish private sector pension scheme markedly improved after the major reforms that were implemented in 2005 and 2017. However, the long-term projections show that there is still a risk of continuously increasing the pension contribution rate after mid-century is over if fertility remains low. This risk has been downplayed in public discussions, which often refer to the large historical variation in birth rates but forgets that this variation has taken place about more than a century-long falling trend.

1. The development of modern pension schemes in the Nordic countries

1.1. From scattered retirement plans to universal schemes

The first Finnish pensions were paid to civil servants during 19th century, and the first small-scale pension fund was established by pharmacists in 1864. However, it was only The Great Depression of the 1930s that fully revealed the underdevelopment of the Finnish social security. The first law on National Pensions was voted in 1937 and

came to effect in 1939, which was the year when the war against the Soviet Union broke out. This scheme was founded on principles of defined contributions and the full funding of individual accounts. It was the idea of the right-wing parties to start a savings-based system, and the agrarians wanted it to be universal. The left-wing parties were compensated by tax-financed pension supplements for those pensioners with extremely low incomes (Kangas, 2009). Furthermore, disability pensions were also introduced during this period. The national pension system was mandatory for people between the ages of 18 and 55. The first pensions were paid in 1949, but their purchasing power was small because of the low contribution rate and high inflation.

The Finnish version of individual accounts was not the first of its kind in the Nordics. Sweden had already adopted a similar individual accounts system, along with means-tested supplements, in 1914. In contrast, the first Danish and Norwegian pension schemes were tax-financed and means-tested (Kongshøj, 2014).

The new Finnish pension system was managed by the rather independent National Pension Institute. The conservative party and employers feared that the left-wing politicians could gain more power in society by buying private companies with the money of the pension fund. The state needed loans during wartime, but major investments were subsequently allocated to infrastructure (Kangas, 2009).

The next major step was taken in 1957 when pre-funding of the pensions was abandoned and the assets in the individual accounts were used to finance new flat-rate pensions. Finland was an agrarian society at the time, and the introduction of the rather generous, but income-tested pensions were considered especially beneficial for farmers. The white- and blue-collar workers were unsatisfied with the 'socialisation' of the accounts and the abolishment of the earnings-related principle and started to demand a new scheme for themselves (Niemelä, 2011). Only a fifth of the private sector employees were insured by occupational schemes at the time (Kangas, 2009). The transition to universal flat-rate basic pensions also occurred in the other three Nordic countries after WWII.

The Finnish social partners agreed on a new defined-benefit pension scheme for private sector employees in 1959, and it was accepted in the parliament with the support of the social democrats and conservatives. This method designing the pension reforms and agreeing on

them first between labour market organisations became a norm that eventually extended to many other reforms of the earnings-related social security as well.

The employers' organisation required that the new scheme must be run by private pension companies and that the employer have right to borrow part of the fund accumulated from pension contributions. The main interest of the labour unions was in an employer-financed mandatory pension scheme that preserves the consumption level during the retirement years and includes a vesting principle (Niemelä, 2011). This principle ensures that the accrued pension entitlements will not be forfeited if a job is lost or the employer changes. The new private sector schemes (TEL for regular work and LEL for temporary work) were put into effect in 1962.

According to the new rules, the old-age pension benefits were to be accrued from the wages earned during the ages between 23 and 64. The accrual rate was one percent of the wages until the replacement rate of 40 percent was reached, but there were no quantitative ceilings for the accruals. This turned out to be an important feature, since it reduced the need for occupational supplementary pensions, which remain underdeveloped in Finland. The pensionable wage was determined as per a final salary principle. Initially, the wages of two last years of each employment contract were considered for the calculation of pensions (except in LEL, for which the yearly earnings were considered). The final salary principle benefitted the well-educated, who had rising lifetime wage profiles. The accrued pension entitlements and the pensions in payment were fully indexed to the wages. The implementation of the scheme was retrospective in the sense that the earnings from the time before the pension law came into effect were rewarded at a lower accrual rate.

The coverage of separate retirement plans was already high in the public sector before the 1960s. The large number of municipal schemes were combined in a reform that was implemented in 1964. Many of the key elements were similar to those of the private sector schemes; but the yearly accrual rate and the maximum replacement rate were higher, while the retirement age was lower. A corresponding pension law for state employees came into effect in 1967. The introduction of pension schemes for entrepreneurs and farmers in 1970 completed the high overall coverage of the mandatory earnings-related pensions.

The timing of the introduction of earning-related first-pillar pensions in Finland was rather similar to that of other Nordics. Sweden reformed its first pension pillar in 1960 to consist of a generous basic scheme (national pension) and a supplementary earnings-related scheme ATP (*allmän tilläggspension*). The latter had a benefit ceiling, which was compensated later by introducing collective occupational second pillar schemes. The creation of the system was highly politicised, and the control over the ATP system became a political issue as well (Kangas *et al.*, 2010). The ATP scheme followed the defined benefit principle. The income considered were wages, self-employment income and social insurance benefits. The size of the benefit was calculated from 15 best years' wages and the full benefit was reached in 30 years' service. The scheme was financed by employers' contributions, which were initially paid only on wages until the pension ceiling was reached. The contribution rate was set originally higher than needed for the pensions, aiming to build up a buffer fund for business cycles (Hagen 2013). The accumulated assets were divided between four independently operating AP funds.

In the same year, the labour market parties in Norway agreed on a PAYG-financed DB scheme. However, it was legislated only in 1967 as a part of the National Insurance Scheme. The new Norwegian public pension system provided benefits in the form of universal basic pension, pension supplement (which was tested against income pension) and income pension based on a points system. In this system, there were both a minimum and a relatively low maximum amount of wages that earned pension points, which greatly restricted the accruals. The full old-age pension was accrued with a work history of 40 years. On the other hand, only the points from the 20 highest income years were considered for defining the amount of the pension. The statutory retirement age – followed in occupational schemes as well – was 67 years.

In Denmark, the labour unions favoured national pensions, which explains why the fully funded first-pillar scheme adopted in 1964 remained marginal. This feature also characterises the current Danish system, wherein the basic pension is rather generous, but the earnings-related component consists mainly of occupational fully funded pensions (Kongshøj, 2014).

1.2. Expansion of the benefits

The next two decades were periods of expansion for the pension schemes and of introduction of new types of early retirement plans, especially in the Nordic countries other than Sweden.

The Finnish reform of 1975 only changed the parameters of the TEL scheme but in a way that had substantial long-term consequences. The accrual rate of the pensions was raised from 1 percent to 1.5 percent, which increased the replacement rate earned in 40 years from 40 percent to 60 percent of an individual's wages. On the other hand, the indexation of both the accrued entitlements and the pensions in payment were weakened in 1977 due to the shift from a full wage index to an index that was based on the average of the changes that occurred in consumer prices and wages. In 1986, more flexibility was added to the system with regard to retirement by introducing actuarially fair early old-age pensions and additional disability pensions with less stringent eligibility rules. The new types of pensions became surprisingly popular. Simultaneously, the extended unemployment benefits and unemployment pension allowed professionals to exit the labour force earliest at the age of 53. These early retirement plans lowered the employment rates in the age group of 60–64 to under 20 percent even though the statutory retirement age was 65 years in the private sector.

In Denmark, there was a discussion at the end of the 1970s on resolving the problem of the growing unemployment in a socially acceptable manner. On the other hand, there was social demand for introducing an early retirement scheme (Farbøl *et al.*, 2018). These problems were addressed by establishing a voluntary early retirement scheme called '*efterløn*' in 1978. It allowed individuals to end their professional careers at the age of 60 and soon became extremely popular. Even after tightening the rules, about a third of the employees used this scheme to exit the labour force in the early 2010s (Andersen *et al.*, 2014).

In Norway, the social partners and the government agreed on the early retirement scheme AFP, which was aimed at employees that served under stressful working conditions. The eligibility age for AFP was initially 66, one year lesser than the statutory retirement age. However, the eligibility was gradually extended to other groups, and the retirement age was lowered to 62 by 1998 (Kudrna, 2017). The AFP pension benefits that were not claimed were lost. Further, access

to disability pensions was relatively easy. At the age of 66, about 40 percent of men had permanently retired because of disability (Brinch, 2017). The use of these early retirement plans did not affect the size of the income pension. Consequently, the effective retirement age reduced to 60 years (Fredriksen *et al.*, 2019).

1.3. Evolution of the current pension system in Finland

The substantial recession that occurred in the beginning of the 1990s initiated a period of social security retrenchments in Finland, which also affected the pension system. A part of the employers' contributions for the earning-related scheme was transferred to employees, and it was decided that the future increases in contributions would be paid on a 50/50 basis. The incidence of the employers' contribution rates had mainly been based on wages because they were agreed upon by the labour market parties; but this reform further intensified the responsibilities of the labour unions (Valkonen, 2020). The higher accrual rate and lower retirement age of the public sector pension schemes were abolished in the new employment contracts. The index adjustment rules were changed so that the accrued pensions were tied to changes in wages and consumer prices with a ratio of 50:50 during working years and a ratio of 20:80 during the retirement years. The basic pensions became fully means-tested on earnings-related pensions.

The declined employment rates and continuously increasing longevity still created an outlook of significantly increasing contribution rates in the TEL scheme. One of the responses was to allow riskier investment policies for the pension companies. Historical investments in the loans of the customer companies were largely replaced at the beginning of the 1990s with domestic government bonds. Nevertheless, there was a need to diversify portfolios and ensure a higher average yield. To this end, the reform of 1997 amended the solvency rules of the TEL pension companies. This reform was resolved once again by the social partners who still control the management of the pension companies.

The next exercise of the power of the labour unions and the employers' organisation was brought about by the extensive reform of the earnings-related pension scheme in 2005. The partners agreed on the key elements of the private sector reform in 2001 and completed the proposal in 2002. Almost all the elements were adopted by the public sector pension schemes as well, which illustrates the unbalanced power structure that existed at the time.

The objectives of the reform were to combine the various first-pillar private sector pension schemes, increase the actual retirement age by two to three years and adjust the pensions to increased longevity. To this end, the early retirement routes were closed almost completely, apart from the disability pensions and the extension of the unemployment benefits for elderly workers. Other key features of the reform were the removal of the upper limit of 60 percent set previously for the replacement rate and the permitting of simultaneous working and drawing pensions. The determination of the pensionable wages was expanded to the wages of the entire working career. The accrual of the pensions was set to start from the age of 18 and from smaller sums (a minimum of 61.37 euros monthly in 2021). The weight of wages was raised to 80 percent in the indexation of the accrued pension rights. These elements improved the transparency of the scheme and tightened the link between wages and earned pensions, thereby reducing the labour supply disincentives that were generated by the contribution payments. In contrast, the introduction of pension accruals from unemployment benefits, family allowances, certain other income transfers and studies leading to qualification weakened the working incentives and expanded the pension scheme's role to include intentional redistribution.

Flexible old-age retirement between the ages of 62 and 68 was introduced. However, retirement before the age of 63 negatively affected old-age pensions unless the person was long-term unemployed. The yearly pension accrual rate for continued work was raised to 4.5 percent of the wages for ages 63–67 but only if the pension was not claimed at the same time. The accrued pension capital was divided according to the expected remaining lifespan of the birth cohort at age 62. The idea was that individuals would postpone retirement to top up their pensions, which have been reduced by the life expectancy adjustment.

The removal of the early retirement routes significantly raised the employment rates for professionals under the age of 63. However, the flexibility in retirement age for old-age pensions was used so that a majority of individuals retired at the age of 63. A closer look at the new rules illustrates the reason for this: the higher accrual rate required the postponement of pension withdrawals, and this was rewarded in an actuarially fair manner. No additional incentives were created for retiring later than this. The unexpected retirement profile created an

outlook of continuously falling replacement rates, which was caused by the life expectancy adjustment of pensions.

The next major pension reform was implemented in 2017. It was motivated by the disappointment associated with the development of the actual retirement age and the need to strengthen the financial sustainability of both the pension system and the overall public finances. This time the Ministry of Finance took part in the preparation phase. The key elements of the reform were to gradually increase the lowest eligibility age for old-age pensions so that it reaches 65 years by 2027 and to link this age to life expectancy in 2030. The idea was to keep the ratio of retirements years and employment years fixed. In practice, each additional year in terms of life expectancy is expected to increase the retirement age by eight months. The link between life expectancy and pensions was at the same time somewhat weakened. The higher accrual rate for those who work but do not claim their pension after the lowest eligibility age was replaced by increasing the accrued pension capital by 0.4 percent for each month that an individual defers the withdrawal of her pension. The eligibility age for basic pensions is to be linked to life expectancy in 2030.

Further, two new early retirement benefits were introduced. The partial early old-age pension provides an actuarially fair way to claim a part of the accrued pension in advance. Withdrawal does not require to reduce working. This replaced the earlier part-time pension, which was initially extremely generous but required the person to work less. The new years-of-service pension was targeted at workers with a long career in stressful work environments and weakened working abilities. These new pension types were required by the labour unions to compensate for accepting the higher retirement age. The partial pension turned out to be rather popular. In contrast, since the eligibility for the years-of-service pension is uncertain, and the benefits are smaller than those for the ordinary disability scheme, the interest of claiming these pensions is expected to remain low even when the retirement age for old-age pensions increases.

The reform was estimated to postpone the increase in the private sector pension contribution rate until the middle of the 21st century and to reduce the fiscal sustainability gap (S2) by one percentage point. However, the fertility projection used turned out to be optimistic shortly after, which has created the need to further improve the sustainability of the system.

Some of the future objectives include completely unifying the municipal and private sector schemes and transferring the municipal employees to a new pension company, which would compete for customer employers under the same conditions as those applicable to the current private pension companies.

1.4. The other Nordic pension reforms

The unsustainability of the Swedish ATP scheme, with its high accrual rate, had already become obvious at the end of the 1970s. Moreover, the high wage growth threatened to weaken the consumption-smoothing role the scheme was to fulfil because increasing share of the wages exceeded the benefit ceiling (Kangas *et al.*, 2010). However, it was not until 1991 that a working group for a pension reform was established by the government, and it was in 1994 that the first parts of the reform were decided in the Parliament. The pension law entered into force 1999 and first new pensions were paid in 2001, but it was also possible to draw the pensions that were accrued under the old ATP scheme during the transition phase.

The key principles of the new earnings-related system were the consideration of all lifetime earnings in the calculation of pensions, adoption of the defined contribution principle, division of the scheme to a collective pay-as-you-go financed component (income pension) and an individual fully funded component (premium pension), flexible retirement between the ages of 61 and 67, life expectancy adjustment of pensions (by changing the value of the annuity) and a balancing rule that reduces pensions if the financial sustainability of the income pension scheme is challenged. The idea of creating automatic rules was to increase transparency and separate the scheme from political considerations. The disability pensions and survivors' pensions were separated from the scheme and transferred to the state budget (Regeringskansliet, 2009).

There were certain obvious similarities in the latter Finnish reform implemented in 2005 for earnings-related pensions. A common feature also was the transition to full income testing in the basic tax-financed old-age pensions, which already took place in Finland in 1996. The idea of adopting a flexible retirement age and life expectancy adjustments for the pensions in both countries was that people would compensate the reduction in pensions by working for a longer period of time. However, this did not occur (Aspegren *et al.*, 2019).

This observation, together with the projections of continuously increasing longevity, motivated the government to nominate an expert group in 2012 to solve the problem. This group continued the chosen course of action of not involving the social partners in the preparation of pension reforms. It suggested that the earliest pensionable ages for income pensions be increased by one year and be linked to life expectancy. The eligibility age of the basic pension (*garantipension*) was to be set to follow the increases in the retirement age of the income pension (SOU, 2013). Nevertheless, in 2019, the Swedish parliament agreed that the minimum pensionable age should be increased gradually by two years before it is linked to life expectancy in 2026. The eligibility age for the guarantee pension will first be increased from 65 to 66 years before it is linked to life expectancy.

In Denmark, the issues related to the earnings-related pension system were not politicised but remained largely in the hands of the social partners during the 1980s and 1990s. The generous basic pension scheme and the unwillingness of the employers to accept the development of public earnings-related pensions promoted the popularity of occupational pensions. In 1989, the municipal sector reached a consensus on the comprehensive occupational pension scheme (Kongshøj, 2014). The breakthrough in the development of the occupational pensions for the private sector was the 1991 agreement between the union of metal workers (DM) and the employers' organisation, replicated later by other unions. The social partners took control of the pension funds (Kangas *et al.*, 2010). The schemes were institutionalised as a part of the collective labour market agreements, which enhanced their coverage and made them semi-mandatory. The schemes were fully funded and primarily adhered to the defined contribution principle. They also adopted tasks of social security by providing disability and survivors' benefits. The adjustment for increased longevity in the FF DC schemes was implemented automatically when the parameters of the annuitisation of the pension capital were defined.

The retirement age for the public pensions was 65, but the voluntary early retirement scheme *efterløn* allowed professionals to end their careers at the age of 60. The government implemented a reform in 2007 that first gradually increased the eligibility ages for the basic pensions, ATP pensions and the *efterløn* by two years. Thereafter, the lowest eligibility age for *efterløn* will be indexed to life expectancy in 2027, and the same will be implemented for the statutory retirement

age for public pensions in 2030 (Andersen *et al.*, 2014). The link is very strict: the increase in the life expectancy of the cohort will have a one-to-one effect on the eligibility ages. On the other hand, the changes must be approved by the government. The occupational schemes are also affected, as these pensions can be drawn without a tax penalty only five years before the statutory pension age. The reform was prepared without the participation of the social partners, which indicated their weakened power over the development of social security.

The low actual retirement age and increased longevity motivated the Norwegian government to appoint a pension committee in 2001. The system was considerably reformed in 2011 to resemble the corresponding Swedish system. The new basic pensions were means-tested, indexed to wages and adjusted for life expectancy. The reform also introduced flexible retirement between the ages of 62 and 75 for the private sector AFP and income pension schemes. The accrued pension capital was to be adjusted actuarially according to the retirement age and life expectancy at the time of retirement. The pensions were accrued as if a contribution rate of 18.1 percent was paid to a defined contribution scheme. However, there is ceiling for accruals (corresponding to about 114 percent of the average wages in 2018). The accruals were indexed to wages. Working while drawing pensions was permitted. As the generous early retirement rules of the public sector schemes were not changed, there was a period when moving from public to private sector would have substantially weakened the retirement conditions. This deficiency was corrected in 2020.

The financing of the pension system has not been separated from the financing of the aggregate National Insurance Scheme, wherein the employees' contribution rate was 8.2 percent in 2018 and the employers' contribution rate varied from 0 to 14.1 percent. Therefore, there is no link between the paid contributions and the benefits of the public pension schemes that is typical to the defined contribution schemes. The employers are also obliged to pay a contribution of 2 percent for occupational FF schemes.

2. Performance of the Finnish pension system in comparison to other Nordics

2.1. The pros and cons of the Finnish pension system

The superiority of a pension system is not easy to evaluate, as there are many possible criteria that can be used, and it is not easy to judge the significance that should be assigned to the chosen ones. Moreover, the recent realised performance depends on, apart from the rules of the scheme, the underlying demographic and economic trends and, in the case of funded schemes, the size of the previously saved funds as well.

Perhaps the most important criteria are the financial and social sustainability of the pension system. Without these, it is likely that the rules of the scheme will be changed. Financial sustainability is often measured by the pressure to increase the contribution rates in the future. Social sustainability is often measured by the adequacy of the pensions, which refers to both the avoidance of old-age poverty and the consumption-smoothing between the working years and retirement years. As the durations of the pension schemes are considerably long, it is obvious that a sustainable system must be able to achieve its goals in various kinds of future scenarios. Therefore, it is common to evaluate the performance of the pension rules using sensitivity analyses, where key demographic, economic and disability trends vary. A more sophisticated method is to generate stochastic projections for the key trends, use the realisations of the projections as inputs in the pension models and draw conclusions regarding sustainability by analysing the distributions of the target variables.

In Finland, the Finnish Centre for Pensions has a detailed pension model that is regularly used to project the direction of future development of the pension system that is the most likely along with several alternatives. According to the most recent projections, the pressure to increase the private sector pension contributions has been postponed until about 2050 (despite the increasing age ratio). Thereafter, the contribution rate is expected to increase by five percentage points. The ratio of average pensions to average earnings is expected to decline by about 10 percentage points in 65 years (Tikanmäki *et al.*, 2019) due to the relation between pensions and life expectancy. On the other hand, the cuts in the future pensions, the agreed increases in the statutory retirement age and the introduction of the connection between life expectancy and retirement age has substantially improved the pros-

pects of the financial sustainability of the pension scheme. An analysis using the realisations of a stochastic mortality projection as inputs in a numerical overlapping generations model demonstrates that these rules effectively isolate the financial sustainability of the pension system and even that of the overall Finnish public finances from variations in longevity (Lassila and Valkonen, 2018).

To conclude, the recent gloomy projections of a permanently low future fertility rate (1.35) challenge both the financial and social sustainability of the Finnish private pensions system in the long run. Without the 2017 pension reform, which is expected to significantly increase the duration of the careers of individuals, the outcome would be even worse. The expenditures of the state pension scheme are currently extremely high with regard to the corresponding wage bill but are expected to reduce markedly, which should provide some relief to the sustainability problem in the future.

Another criterion, which is closely related to financial sustainability, is intergenerational fairness. Again, the measurement of this aspect is demanding. The possible parameters are a ratio of discounted lifetime contributions and discounted benefits or the implicit yield of the pension contributions. This measurement requires, however, information regarding the historically paid contributions and accrued rights of each generation and is subject to future demographic and economic uncertainty, especially in the case of pay-as-you-go-financed defined benefit schemes. Simple calculations for Finland (Lassila and Valkonen, 2003) illustrate the expected outcome that the introduction of a pay-as-you-go scheme provided a pension gift to generations of that time, and, for ageing populations, the discounted sum of contributions will be increasingly higher than the discounted sum of benefits. These types of measures are better than considering just the development of the contribution rate, since they consider, for instance, longer lifetimes and higher retirement ages. On the other hand, they are sensitive to, for example, the choice of the discount rate.

The uncertain future brings into discussion the intergenerational risk-sharing properties of the pension system. In a FF DC scheme, the realisation of demographic and economic risks is not shared between generations. In the case of pay-as-you-go-financed pensions, the risks are basically borne by the generation that pays the contributions. The Finnish earnings-related pension scheme represents a mixture of these: the risks related to longevity are borne by the generation that is

affected, but other risks, including the yield of the pension funds, are borne by the working-age generations. In practice, the realisation of a major risk often triggers a pension reform in which the pressure to increase the contribution rates are weakened by adjusting future benefits. Compared to a scheme in which adjustments take place automatically, this course of action is problematic: the discretionary planning and implementation of pension reforms often takes a considerably long time, and the outcome is uncertain.

Third commonly used criterion is the poverty rate of the retired. It is influenced by the total effects of the tax and transfer system and the working career of the retired more than the effects of the earnings-related pension scheme. In the case of Finland, the poverty rate of the retired is low. As of 2019, it is 15.1 percent if the 60 percent criterion of poverty is used, and 5.3 percent if the 50 percent criterion is used⁴. Further, it is found to be at the same level as that of the total population (the corresponding numbers are 12.3 percent and 5.2 percent), which is an interesting result considering that there is no pension ceiling in the mandatory earnings-related pillar. The key factors that explain this are the means-tested basic pensions and housing allowances and progressive taxation. The basic pensions are indexed to inflation, but discretionary increases in the pensions have markedly improved their purchasing power.

There has recently been much debate on the distributional effects of increasing retirement ages for earnings-related pension schemes. The key issue is that well-educated people, who have high lifetime earnings, can work longer and live longer. An increase in the retirement age, and, thereby, the link between longevity and retirement age as well, can be considered as unfair (see, for example, Hougaard Jensen *et al.* (2020B)). This discussion does not consider the fact that there is a considerable amount of variation among individual lifetimes and that the pension scheme is planned to insure against living longer than expected. Moreover, a large share of the individuals with low education has weak attachment with the labour markets and is therefore unlikely to be employed at the lowest eligibility age. For such people, the key consideration is how the disability and unemployment benefits respond to the increasing eligibility age for old-age pensions. As an

4. OECD states that a household is poor if its disposable income is lower than 60 percent of the median of the disposable incomes of all households. The criterion that is used by Eurostat is 50 percent of the median.

example, the simulations for Finland indicate that the distributional effects of introducing a link between life expectancy and retirement age are not problematic (Lassila *et al.*, 2014).

Fourth, the economic efficiency of the pension scheme illustrates the incentives to work and save. A FF DC scheme with individual accounts distorts, in principle, the labour supply decisions the least. Nevertheless, it is still not completely neutral. A mandatory scheme with a fixed contribution rate and restricted use of the accrued pensions during the saving period limits the choices of the insured and may lead to excess saving in the economy at least if the pension capital cannot be used as collateral for loans. At the other extreme, means-tested basic pensions, pension ceilings and non-actuarial early retirement schemes weaken the link between contributions and benefits at the individual level. Moreover, in a typical pay-as-you-go-financed defined benefit scheme, the link between contributions and benefits is vulnerable to aggregate demographic and economic risks.

In the case of Finland, the link between contributions and benefits have been strengthened because the earnings-related pensions are more firmly linked to lifetime earnings. Further, this has also occurred because the costs for increasing longevity are financed mainly by the cohort itself owing to the life expectancy adjustments of the pensions and retirement age. Regardless, the realisation of the aggregate fertility risk seems to increase the contribution rates without producing any improvements in terms of benefits. In addition, the labour supply incentives for those with low lifetime earnings are permanently weak due to the same reasons that the poverty rate is low. A third, more easily solvable problem is that the upper age limit of the flexible retirement age seems to restrict the length of working careers rather significantly, and this effect is likely to become amplified in the future.

The issues that are closely related to efficiency are those related to transparency, information and trust. Here, again, a simple rules-based pension scheme is superior as the rules are not prone to political pressures. This type of scheme is easy to communicate and justify. Therefore, the link between earnings and accrued pensions also becomes easy to explain. In Finland, the earnings-related pension scheme has become simpler, more understandable and financially more stable after the most recent reforms.

Trust is related to the stability of the system and the overall confidence in the actors' motives and morals. The trust in the pension

system is measured yearly by the Finnish Centre of Pensions, and the results from year 2020 indicate that 74 percent of Finns and almost 90 percent of the citizens aged over 65 have faith in the system. Another questionnaire shows that Finns are worried about the adequacy of the pensions of the low-income retirees and the uncertainty related to political decision-making (Palomäki *et al.*, 2021).

The economic efficiency of the pension scheme is also related to overall public finances, as low distortions in labour supply and savings have positive effects on the growth rate of the economy, the employment rate and the tax revenues. Correspondingly, a high employment rate reduces the need for tax-financed income transfers. The 2017 reform, which increased the retirement ages, strongly supports the public finances in Finland.

Another link between the public finances and the pension system is the taxation of pensions. The key issues related to this are the deductibility of the pension contributions, taxation of the returns of the pension funds and taxation of pensions. Finland follows the EET principle, which dictates that contributions are deductible, there are no taxes on the pension fund yields and the pension benefits are taxed with progressive income taxes. The outcome is that the state somewhat supports the pension scheme, as the losses incurred due to tax deductions are likely to be higher than the tax revenues generated from pensions due to the progressive taxation of wages and pensions.

2.2. The other Nordic pensions systems in comparison

This comparison focuses on the key dynamic properties of the pension systems. A more detailed and conventional comparison can be found in the study conducted by Mercer (2020), where all the Nordic systems were found to have high rankings (Denmark 2nd, Finland 5th, Sweden 6th and Norway 8th). Further, the OECD regularly compares the pension systems but does not rank them (OECD, 2019).

Financial sustainability was ensured in the Swedish first-pillar pensions by the transition to defined contribution schemes in the earnings-related public pensions. At the same time, the system is transparent and simple. In contrast, its economic efficiency is not at corresponding level because of the rather low pension ceiling (111 percent of the average wages in 2018). The contributions that exceed the pension ceiling are transferred to the state budget and, therefore, represent a tax on labour. The support provided to the sustainability of

the overall public finances is also weakened by the low statutory retirement age and the possibility of retiring even at the age of 55 using the pensions accrued in the occupational schemes (OECD, 2020). Moreover, the employees' pension contributions can be deducted fully from the paid income taxes (Regeringskansliet, 2018), which means that taxpayers almost totally finance the employees' contributions.

Regarding the adequacy of pensions, the poverty rate of pensioners is rather high in the Nordic standards (the poverty rate of the population aged over 65 was 11.3 percent with the 50 percent criteria in 2017) and markedly higher for women and the oldest individuals (OECD, 2019). The non-funded component of the scheme is balanced using indexation that automatically lowers the value of the accrued pension capital and paid pensions if sustainability is endangered. Thus, it shares the realised risks among the currently living working-aged and retired generations.

Table. The current pension schemes in the Nordic countries: a summary

Country	Tax-financed zero-pillar	First-pillar	Second pillar
Finland	Means-tested basic and guarantee pensions	Large partially funded DB	Marginal
Sweden	Means-tested guarantee pensions	NDC with buffer funds	FF DC individual accounts + semi-mandatory occupational FF DB/DC
Denmark	Generous means-tested basic pensions	Small statutory FF DC	Large semi-mandatory occupational FF DC
Norway	Generous means-tested guarantee pensions	NDC (for accruals)	Mandatory occupational FF/PAYG DC/DB

Note: DB = Defined Benefit; DC = Defined Contribution; NDC = Notional Defined Contribution; FF = Fully Funded; PAYG = Pay-As-You-Go.

The Danish pension system also fares well in the sustainability comparisons. The retirement ages for the basic pensions and statutory occupational pensions are linked by one-to-one ratio with the life expectancy of the cohort in the future. This leads to the number of pension years remaining fixed while the pension expenditure/GDP is likely to decline. The dominating part of the pensions comes from the FF quasi-mandatory occupational scheme in which pensions are determined following the DC principle. Therefore, the aggregate mortality and rate-of-return risks are borne by the pension capital. These occupational pensions support the public finances because of the yield of the

considerably large pension funds as well as the pensions paid are taxed (ETT regime).

The current adequacy of the pensions is also in excellent condition (the poverty rate of the population over 65 years was 3.0 percent with the 50 percent criteria in 2016), which can be largely explained by the generous basic pensions. Further, the occupational pensions have relatively high replacement rates (OECD, 2019). The key challenge is to extend the working lives at the same pace as that of life expectancy. Failure in this regard may generate political pressure to ease the one-to-one link between the two. Another problem is that the public pensions are means-tested against the occupational pensions, which generates extremely low returns for the pension contributions for low-income earners (Hansen *et al.*, 2015).

The evaluation of the sustainability of the Norwegian pension system is complicated for several reasons. There are many types of pensions, the expenditures of the first-pillar pensions are not fully financed by the social security contributions and the role of the pension funds is unclear. Overall, there is no consensus regarding how the expected increase in future pension expenditure —2.5 percent of the GDP by 2060, according to OECD (2019)— will be financed. The replacement rates are relatively low, but the poverty rate of the population aged over 65 years was only 4.3 percent with the 50 percent criteria in 2017 (OECD, 2019). This is mainly because of the generous means-tested basic pension. The minimum pension is about 50 percent of the average net wage and untaxed (Pedersen, 2017). The further development of the future adequacy is uncertain because of the life expectancy adjustment of pensions. If the Norwegians behave like the employees in Finland and Sweden, they do not use the flexibility associated with the retirement age to extend the duration of their careers and compensate for the loss in pensions.

3. Discussion

The current Nordic pension system fares well as compared to its international counterparts despite the marked differences in certain key attributes. Financial sustainability is ensured in Sweden by means of a transition to defined contribution schemes in the earnings-related pensions. In Denmark, the FF occupational pensions follow the same principle. The Finnish defined benefit pensions are partially prefunded,

but there is a long-term risk of the contributions increasing if fertility remains low. In Norway, the sustainability problems remain unresolved. A common feature for all these systems is that the increasing longevity is addressed by adjusting the pensions and/or retirement ages as per life expectancy. This enhances the sustainability of the pension schemes and supports the finances of the general government as well by increasing employment rates and tax revenues. Only in Norway, where the reforms seem to follow the Swedish structure with a considerable lag, the negative effects of the low age limit for the flexible retirement age on the labour supply and adequacy of pensions has not become an issue yet. Another common feature shared by the Nordics is the suspension of the generous early retirement plans.

Denmark and Norway have succeeded in reducing the poverty rates of pensioners to significantly low values using generous universal basic pensions and their means-tested supplements. In addition, the Finnish pension scheme leads to relatively low old-age poverty rates. However, in Sweden, comparable low poverty rate has not been reached partly because there have not been similar discretionary increases in the consumer price-indexed basic pensions as has been implemented in Finland.

The links between the earnings and accrued pension entitlements have been tightened in all the countries. This has both improved the incentives to work and reduced the arbitrary redistribution that was concomitant with the old rules. However, in Sweden and Norway, there is a relatively low ceiling for the accrual of benefits, which restores the negative labour supply incentives. The ceiling has promoted the development of occupational pensions to supplement the pension accruals.

A key issue in our uncertain world is regarding the manner in which the pension schemes share different demographic and economic risks among the currently living and future generations. The risks related to changes in working life, such as the generalisation of irregular or part-time work, are not a problem for earnings-related pension schemes. A somewhat more complicated issue is freelance work, where the necessity of paying the contributions is unclear. A failure to pay contributions would increase the expenditures of the tax-financed basic pensions.

As noted earlier, in the case of longevity risk, the risk-sharing between generations has been reduced by the establishment of links to life expectancy. In contrast, the risk associated with the low fertility rate

is more complicated to deal with. A reduced birth rate provides an economic dividend to the economy during the first twenty years. However, thereafter, it leads to a reduction in the labour force and the growth rate of the economy almost for fifty years. Only the FF defined benefit pension schemes are immune to this development. Non-funded defined contribution schemes, as the one in Sweden, reduce the pensions when the contribution base declines. Further, pay-as-you-go-financed defined benefit pension schemes increase contribution rates or introduce pension reforms. There are no automatic mechanisms in both systems that can utilise the information about the size of the cohort before it enters the labour force. If the fall in fertility is permanent, the intergenerational allocation of risks will lead to the future generations being worse off. The only ways to allocate the risk fairly is to link either the benefits or prefunding to the fertility rate.

One of the key redeeming features of the Nordic societies has been their capacity to reform the social security rules when necessary. In the case of the pension schemes, the social partners have had an important responsibility of increasing the acceptance of the necessary reforms (Hougaard Jensen *et al.*, 2020B). However, the increased importance of the employment rates with regard to the overall fiscal sustainability has promoted the role of the experts from the relevant ministries and the politicians in the recent reforms. Another trend that has reduced the influence of both social partners and politicians is the introduction of automatic rules that adjust the schemes as per economic and demographic trends.

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