

WORKING PAPER

SustAgeable WP No. 3/2024

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Abstract

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The blurred line between social insurance and social assistance — analysis of risk-based benefits in six countries

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Social insurance and social assistance reflect fundamental principles of social policies. Social insurance benefits cover employed individuals against a social risk event such as unemployment or disability in exchange of paid contributions. Social assistance benefits, in turn, are designed typically to secure the minimum standard of living, regardless of past contribution.

In this article we ask if the dualism is feasible to depict contemporary social benefits that cover traditional social risks: unemployment, childbirth, sickness, disability, and old age. A policy analysis of six European countries with extensive social security systems – Denmark, Estonia, Finland, Netherlands, Sweden, and United Kingdom – demonstrates that while traditional insurance benefits and assistance benefits still make up the majority of risk-based benefits, also different kinds of deviations from the pure forms are observed. Some countries provide hybrid benefits where past contribution affects benefit rate, but non-contributory minimum is guaranteed for all facing the risk. Some countries provide income-tested contributory benefits which is against the traditional insurance logic. Moreover, universal flat-rate benefits are found especially covering the risk of old age.

KEYWORDS: social insurance, social assistance, country comparisons, benefit coverage, social risks

1. Introduction

In his book *Poverty and Social Security*, Atkinson (1989) maintained that social security in developed countries typically combines three elements: the most traditional element is the income-tested assistance designed to relieve poverty. The second mechanism, social insurance, emerged from the industrial revolution in the 19th century to replace lost earnings when workers faced seemingly random but shared risks such as work accidents, sickness, or unemployment. The third category, so called basic incomes such as child benefits, cover predefined groups of citizens irrespective of one's income or labour market status.

Atkinson's typology is not the only version of the story. Similar categorizations with some variations have been used in other theoretical underpinnings (e.g. Walker, 2005), comparative policy research (e.g. Ozkan, 2014), international statistics (OECD, 2013) or legal frameworks (ILO, 2017). The OECD framework for statistics (OECD, 2013), for instance, also employs three categories but in addition to insurance and assistance benefits, the third category encompasses social transfers in kind and Atkinson's basic incomes are interpreted as belonging to government-funded social assistance benefits.

What is common to all categorizations is that the two main categories, social assistance and social insurance, are typically always present. They are also continuously used in contemporary social policy literature because they reflect the fundamental principles of social policies: poverty reduction and insurance principle. The idea of modern social assistance benefits relies on the idea that everyone should have a right to participate in society which social assistance aims to guarantee (e.g. Kuivalainen, 2004). The philosophy of social insurance in turn relies on seemingly random social risks and shared responsibility to cover the costs (e.g. Rejda, 2015). The dualism is a theoretical structure and its fit to the legislation of actual benefit schemes has not been much reviewed. Also, the terms are used quite vaguely, and clear-cut definitions are not typically given.

The aim of this article is to first review the use of the terms in literature, and then by using above mentioned Atkinson's (1989) categorization to analyse how fitting it is to depict the social benefits that cover social risks in contemporary welfare states. We base our empirical analysis on the policies of six European countries characterized with extensive but diverging social security systems: Denmark, Estonia, Finland, Netherlands, Sweden, and United Kingdom. We concentrate on the features of risk-based benefits as they entail knowingly fluctuations between insurance and assistance (see e.g. Immervoll, 2009). We cover five traditional social risks: unemployment,

childbirth, sickness, disability, and old age. Based on the review, we present a summarizing categorization of the deviant benefits based on their eligibility criteria. We retrieve our policy data from three different sources to acquire reliable analysis: the MISSOC database (update 1.7.2023), the country reports of the OECD Tax-Benefit calculator (OECD, 2023) and the websites of national executive institutions.

The motivation of the research is twofold. First, it tests the empirical fit of a central theoretical typology (Atkinson, 1989). Second, and on a more practical level, it provides comparative knowledge how extensively different social risks are covered. The availability of non-contributory risk-based benefits besides traditional insurance benefits, for example, is a sign of broader safety net. Prior international reviews of insurance and assistance benefits have concentrated on a single risk, usually unemployment (e.g. Esser et al., 2013; Ozkan, 2014). To the best of our knowledge, a broader comparison covering multiple risks are non-existent. Therefore, such comparison would provide more comprehensive view of the social security system for future policy comparisons.

Next, we briefly review the history of the social insurance and assistance benefits and look how the concepts have been defined in previous empirical and theoretical analyses. Thereafter we present our method and data, i.e., principles of categorization and sources of policy information. Then we move to the analysis which is outlined by the five social risks. After the analysis we summarize the results and, lastly, we discuss and conclude on the implication of the results.

2. The development and use of benefit categories

The first institutionalized assistance schemes were weak and typically in-kind which allowed no autonomy of consumption. Gradually as social security systems were expanded to insurance schemes, the poor relief systems were transformed to modern social assistance systems that guaranteed, not only the subsistence minimum, but also means to participate in society. (Kuivalainen, 2004.)

The first comprehensive social insurance system was built by German counsellor Otto von Bismarck, insuring workers against serious accidents (e.g. Sigerist, 1943). The central premise of insurance was the randomness of social risks that resulted from working together intensively. Insurance clarified the responsibilities for reimbursements that were unclear and often disputed. Bismarck created a movement that was spread rapidly to other countries. (Sigerist, 1943.) As insurance programs developed, also assistance schemes grew gradually more extensive. Risk-based

assistance schemes emerged in addition to general assistance schemes, which blurred the line between assistance and insurance. (Kuivalainen, 2004.)

It should be noted that the term ‘social assistance’ can nowadays be used to refer narrowly to the last-resort general assistance schemes or more broadly to all income-tested schemes (Kuivalainen, 2004). Here we focus on categorizations that aim to encompass all social benefits, and therefore ‘social assistance’ is used in a broader meaning (see Gough et al., 1997). These all-encompassing categorizations are employed for many purposes: theoretical underpinnings of policies, comparative policy research as well as in comparative statistics and legal frameworks. Next, we will review some examples from these four types, starting from the theoretical underpinning by Atkinson (1989).

Atkinson (1989) points out three basic financing and allocation mechanisms for incomes and services to individuals: social assistance, social insurance, and basic incomes (see also Walker, 2005). In Atkinson’s characterization the definitive feature of social assistance is that it is tested against current income. The purpose of social insurance benefits in turn is replace lost earnings thus requiring past connection to working life, i.e. a contribution. The third category, basic incomes, encompasses benefits whose entitlement criteria and rates are independent of income or employment status but the benefit could be differentiated according to a small number of distinctions such as age or disability (not to be confused with universal basic income usually paid to all citizens). The benefit would be paid at the same rate to those out of work as those in work.

The terminologies related to insurance and assistance benefits have been employed, somewhat varyingly, also in comparative research on unemployment benefits. In the review of European unemployment benefits by Esser et al. (2013), unemployment insurance programs are called first-tier schemes, and unemployment assistance is therefore deemed ‘second tier’, i.e. for individuals without access to first-tier program. The definition is therefore based on hierarchy, rather than contributory requirement or income-test. This definition may be ambiguous if a country has for example more than two unemployment benefit schemes. The policy comparison by Ozkan (2014) follows Atkinson’s (1989) descriptions and asserts means-testing as a definitive feature of unemployment assistance. Unemployment insurance in turn is implicitly defined as being available only for those with work history as its goal is to compensate for lost wages.

In his review of the minimum income benefits, Immervoll (2009) distinguishes unemployment insurance and unemployment assistance benefits, but difference between the two is not fully clear. In the review, eligibility to unemployment insurance requires previous contributions, i.e. insurance

premiums or employment history. However, the same is said to be often the case with unemployment assistance benefits as well but unemployment assistance is paid as a secondary measure if the conditions for the insurance benefit are not met (e.g. if the maximum duration has been met or the working condition is not met). However, in some countries, unemployment assistance may be the primary benefit. In Immervoll's (2009) analysis, almost all OECD countries incorporate unemployment insurance benefits and about a half of the OECD countries also have unemployment assistance benefits, but they are usually associated with some kind of work condition. In the review, only Finland, Sweden, and United Kingdom (before Universal Credit) had unemployment assistance benefits, which do not have a working condition.

The concepts of social assistance and insurance are also used and defined in comparative statistics. OECD framework for household statistics (OECD, 2013) distinguishes social assistance and social insurance primarily by their funding mechanisms: social assistance benefits are always funded by government and, unlike in social insurance schemes, no direct contributions are paid to the assistance scheme. Moreover, according to the framework, social assistance and insurance benefits are always paid in cash, which separates them from the third category, transfers in-kind.

Legal framework of International Labour Organization (ILO) takes a different stance than OECD, having perhaps a more global perspective. ILO (2017) defines social assistance program as a “scheme that provides benefits to vulnerable groups of the population, especially households living in poverty”, while noting that most, but not all, social assistance schemes are means-tested. ILO definition for a social insurance scheme points to a “contributory social protection scheme that guarantees protection through an insurance mechanism”. Here insurance mechanism consists of three principles: (1) the prior payment of contributions; (2) risk-sharing or “pooling”; and (3) the notion of a guarantee. Here, the definition for social assistance resembles that of Atkinson's (1989), but the definition of social insurance is somewhat narrower than Atkinson's (1989) requiring paid contributions that is used to fund the insurance benefit and not generally a past employment.

All in all, the terms social insurance and social assistance are used rather varyingly in different sources. OECD (2013) and ILO (2017) stress the role of funding but in slightly different manners. OECD (2013) stresses the government funding of social assistance while both mention contributions as a funding base for insurance. Atkinson (1989) and comparative policy research in turn do not mention funding mechanisms as a definitive feature but bring forth other aspects such income-test and contribution. As our article has a socio-political perspective, we base our following

analysis on the Atkinson's (1989) characterization which relies on income-test of social assistance benefits and contribution-requirement of social insurance benefits.

3. Method and data

Using the characterization by Atkinson (1989), we aim to classify the risk-based benefits of six countries into the two categories to see how well the characterization depicts the current social security systems. The third category, basic incomes, is also considered. However, as we focus our analysis on risk-based benefits, basic incomes will likely play a minor role.

We carry out an analysis of benefits covering five classic risks: unemployment, childbirth, sickness, disability, and old age. On the basis of two criteria, we aim to classify them in either social insurance or assistance category. If prior contribution is required for eligibility but benefit rate is not income-tested, benefit is classified as social insurance. If no prior contribution is required but benefit is income-tested, it is categorized as social assistance. The deduction is based on merely existence of a feature, not its harshness, but we also describe roughly some relevant features specifically, such as what kind of income is taken into account or the design of benefit level, whether earnings-related or flat-rate. Earnings-relatedness means that benefit rate is determined by prior earnings.

Special attention is paid on anomalies, i.e. benefits where contribution requirement and income-testing are either absent or present simultaneously. Their relation to other risk-based benefits is highlighted. At the end of the analysis, we present a summarizing categorization of the anomaly benefits based on their eligibility criteria.

We do not analyse risk-based benefits that are ear-marked to cover certain expenditure items such as housing or medical costs. For example, all the reviewed countries except Netherlands provide separate housing allowance targeted to old age individuals. Finland and Sweden also provide separate housing allowances for recipients of disability benefits. These housing allowances are income-tested, and therefore categorized as social assistance in Atkinson's (1989) typology.

The categorization requires clear-cut definitions for contribution and income-test. Following Atkinson (1989) we define income-test as a process where recipient's (or their household members') current income is considered in determining the benefit level. According to this definition, income-testing can vary much in intensity by withdrawal rates as well as which income types considered and whether incomes of other household members are considered. For example, a

loose income-testing can be found in minimum pensions where the benefit is tested only for recipient's other pension income, and a more rigid one is found typically in the general assistance schemes where nearly all income of household members is considered. It should be noted that there are also features that resemble income-testing but are not interpreted as such. One is the withdrawal of unemployment or disability benefits due to earnings from part-time work. We interpret this merely as a gradient of the risk rather than income-testing.

In line with Atkinson (1989), we refer to contribution requirement generally as a situation where benefit eligibility criteria entail a certain level of past or current employment status or paid monetary contributions. Other behavioural requirements such as requirement to participate in activation measures are not regarded as contribution requirement from the insurance perspective.

Also, a central concept in our analysis is the 'benefit'. What makes a benefit a distinct benefit, and not just a feature of a broader benefit, can sometimes be mainly an issue of legal importance and have little practical implications. For example, sometimes the minimum level of a social insurance may be implemented through a separate benefit, and sometimes it is included in the same benefit itself. Also, general assistance benefits may have some risk-based variations in the benefit rules which are excluded from this analysis.¹ For the benefit distinctions, we follow the interpretation of international databases as well as the web pages of national institutions.

The data for the analysis is derived for six Northern European countries, namely Denmark, Estonia, Finland, Netherlands, Sweden, and United Kingdom. Besides geographical location the selection of countries is based on the fact the countries have developed social security systems which diverge from each other's. Denmark and Finland represent the social democratic welfare state model, while Netherlands stands for the conservative model. United Kingdom has a liberal welfare state tradition. Estonia belongs to countries breaking away from the Soviet model in the early 1990s.

The data on benefit systems is collected mainly from three different sources: MISSOC database, the country reports of the OECD Tax-Benefit calculator (OECD, 2023) and the websites of national

¹ Examples of these kind of risk-based variations are disability increase in the *Universal Credit* of UK or increase for pregnant mothers or young people with mental illness in Danish *Kontanthjælp*. In addition, Danish guaranteed minimum income benefit deviates slightly from the generality as the eligibility requirements entail also "a realized social risk", that is, an income shock like unemployment, sickness, or divorce.

executive institutions.² Here we focus on most up-to-date information which is the legislation of, 2023: The latest information from MISSOC has been updated on 1 July 2023 and the country reports of the Tax-Benefit calculator concern information from 2023. In addition, information has been complemented for Finland, Sweden and Denmark from the website of the Nordic cooperation organization (norden.org), and for the parental allowances from the international review of leave policies (Blum et al., 2023). Different sources complement each other, for example, when the information is lacking from one source. Most of the policy data referred here has previously been collected in more detail to a report (Iivonen et al., 2022).

4. Analysis of benefit categories in six countries

4.1 Unemployment benefits

All examined countries incorporate at least one unemployment benefit that require prior contribution either by paid premiums or work history (Table 1). In Denmark, Estonia, Finland, Netherlands and Sweden the unemployment insurance benefit rate is related to prior earnings, but United Kingdom has a flat-rate insurance benefit in the spirit of Beveridge (see e.g. Cremer and Pestieau, 2003).

Finland and Sweden also incorporate a secondary contributory and non-means-tested benefit that is paid if the eligibility conditions for the primary insurance are not met. These flat-rate unemployment insurance benefits (*Peruspäiväraha* and *Grundersättning*) are available to those that do not meet the requirement for fund membership of few months prior to unemployment.

Two of the six countries provide an unemployment benefit that do not fit clearly to the division between insurance or assistance category as defined by Atkinson (1989). Estonian *Töötutoetus* incorporates a requirement for prior work history like a typical insurance benefit but at the same time it is income-tested to other income like an assistance benefit. However, the contribution criterion of the benefit is rather loose: also studies and military service are counted and if you have

² Local institutions serving as information sources are Kansaneläkelaitos (kela.fi) in Finland, Försäkringskassan (forsakringskassan.se), Arbetsförmedlingen (arbetsformedlingen.se), Socialstyrelsen (socialstyrelsen.se) and Pensionsmyndigheten (pensionsmyndigheten.se) in Sweden, Udbetaling Danmark (borger.dk) in Denmark, Eesti Töötukassa (tootukassa.ee) and Sotsiaalkindlustusamet (sotsiaalkindlustusamet.ee) in Estonia and Uitvoeringsinstituut Werknemersverzekering (uwv.nl), joint website of the ministries (rijksoverheid.nl) and Sociale Verzekeringsbank (svb.nl) in the Netherlands. The information for UK is from the government website (gov.uk).

been hospitalized or caring for a child younger than eight years prior the unemployment, you can be exempted from the contribution criterion. The role of the benefit is to complement the primary insurance benefit when the maximum duration of the primary insurance benefit is exhausted and when the contribution requirement is not met.

Also, Swedish unemployment benefits *Aktivitesstöd*, *Utvecklingsersättning* and *Etableringsersättning* miss the classification by Atkinson (1989). They do not require past contribution, yet they are not income-tested. They are something that could be classified as activation benefits: they are paid only when individual is participating in an activation measure or an integration program. *Aktivitesstöd* is a general activation benefit available to all unemployed participants. It can be paid either earnings-related or flat-rate, depending on the prior contribution and fund membership. *Etableringsersättning* is a flat-rate integration benefit for refugees and *Utvecklingsersättning* is a benefit for the young unemployed.

Finland is the only one of the examined countries providing a non-contributory income-tested unemployment benefit, *Työmarkkinatuki*. The income-test is rather weak compared for example to general assistance schemes: only recipient's other incomes such as capital incomes, and if living with parents, parents' incomes are considered.

Denmark, the Netherlands, and United Kingdom do not incorporate any unemployment benefit without a requirement for past contribution. In these countries, the social protection of long-term unemployed for example, is organized mainly through the general assistance scheme. In Denmark, however, recent graduates and conscripts without prior employment are also eligible to the unemployment benefit with certain terms. It should be noted that Netherlands provides a separate contributory supplement (*Toeslagenwet*) to top up the lowest benefits to reach the so-called social minimum. The supplement is available for all risk-based insurance benefits but as it is a contributory supplement to contributory benefits, it does not affect the categorization.

Table 1. Unemployment benefits. The benefits that do not fit the classification are shown in red.

	Name of the scheme in local language	Prior contribution required (=insurance)	Income-tested (=assistance)
Denmark	Arbejdsløshedsdagpenge	X	-
Estonia	Töötuskindlustushüvitis	X	-
	Töötutoetus	X	X
Finland	Ansiopäiväraha	X	-
	Peruspäiväraha	X	-
	Työmarkkinatuki	-	X
Netherlands	Werkloosheidswet	X	-
Sweden	Arbetslöshetsersättning	X	-
	Grundersättning	X	-
	Aktivitetsstöd	-	-
	Utvecklingsersättning	-	-
	Etableringsersättning	-	-
United Kingdom	New Style Jobseeker's Allowance	X	-

4.2 Parental benefits

Parents' loss of earnings right after childbirth is compensated with parental benefits. Denmark, United Kingdom and Netherlands incorporate only parental benefits with a contribution requirement or requirement for employment contract. United Kingdom provides two levels of insurance benefits: the higher *Statutory Maternity and Paternity Pay* benefits incorporate a tougher contributory criterion than the lower *Maternity Allowance* which is provided for those employee mothers who do not meet the contribution criteria of *Statutory Maternity Pay*. The contribution criterion for maternity allowance is looser as it covers all mothers who are employed or who have recently stopped working. In the Netherlands, the two benefits are separate insurance benefits for mothers and their partners. In these countries, parents with insufficient work history rely on other types of benefits like child benefits and general assistance benefits.

Only in Estonia, Finland and Sweden, past contribution or employment is not required for eligibility but nevertheless reflected in the benefit rate being related to one's prior income. If one's prior income falls below the minimum threshold, minimum-level benefit is paid. These benefits are not income-tested and thus contradicting the classic division of social insurance and assistance by Atkinson (1989).

Table 2. Parental benefits. The benefits that do not fit the classification are shown in red.

	Name of the scheme in local language	Prior contribution required (=insurance)	Income-tested (=assistance)
Denmark	Barseldagpenge	X	-
Estonia	Vanemahüvitis	-	-
Finland	Vanhempainpäiväraha	-	-
Netherlands	Zwangerschaps- en bevallingsverlofuitkering	X	-
	Aanvullend geboorteverlof uitkering	X	-
Sweden	Föräldrapenning	-	-
United Kingdom	Statutory Maternity and Paternity Pay	X	-
	Maternity Allowance	X	-

4.3 Sickness and disability benefits

All examined countries provide sickness benefits for employees with a temporary loss of working capacity (Table 3). As they are meant to cover temporary social risk, the duration of benefits is limited. Of the reviewed countries, only Finland provides non-contributory sickness allowances that cover non-working population groups, such as students or unemployed individuals. Similar to the Finnish parental benefits, Finnish sickness allowance is a non-contributory non-income-tested benefit of which level depends on prior earnings.

Table 3. Benefits for temporary sickness. The benefits that do not fit the classification are shown in red.

	Name of the scheme in local language	Prior contribution required (=insurance)	Income-tested (=assistance)
Denmark	Sygedagpenge	X	-
Estonia	Haigushüvitis	X	-
Finland	Sairauspäiväraha	-	-
Netherlands	Ziektewet	X	-
Sweden	Sjukpenning	X	-
United Kingdom	New Style Employment and Support Allowance	X	-

In other countries, individuals without past contribution with a temporary loss of working capacity rely largely on minimum income schemes but are typically exempted from work or training

commitments. Minimum income benefit may be topped up with sickness-related supplements such as disability supplement in Universal Credit.

For the benefits covering for permanent disability, the characterization by Atkinson (1989) fits poorly. Only Finland, United Kingdom and Netherlands provide disability benefits that fit the insurance category: they require past contribution but are not income-tested. In addition, Denmark, Estonia and Finland provide benefits that fit the assistance category: they do not require past contribution but are income-tested with varying extents.

Denmark, Netherlands, and Sweden provide benefits that do not fit clearly neither of the categories. Danish *Seniorpension* can be seen as contributory as it is paid to those with long work history, but at the same time the benefit is income-tested against recipients' and spouse's income. Dutch *Wajong* is a non-contributory and non-income-tested flat-rate benefit targeted to individuals diagnosed with disabilities before they reached the age of 18 or during their studies. Swedish *Aktivitetsersättning* is a disability benefit for individuals younger than 30 and *Sjukersättning* a disability benefit for individuals older than 30. Similarly to the Swedish parental benefits, they are non-contributory non-income-tested benefits but their level depends on prior income but there is a non-contributory minimum level (*Garantiersättning*).

Table 4. Benefits for permanent disability. The benefits that do not fit the classification are shown in red.

	Name of the scheme in local language	Prior contribution required (=insurance)	Income-tested (=assistance)
Denmark	Førtidspension	-	X
	Seniorpension	X	X
Estonia	Töövõmetoetus	-	X
Finland	Työeläke	X	-
	Kansaneläke	-	X
	Takuueläke	-	X
Netherlands	WGA, IVA	X	-
	Wajong	-	-
Sweden	Sjukersättning	-	-
	Aktivitetsersättning	-	-
United Kingdom	New Style Employment and Support Allowance	X	-

4.4 Old age benefits

All examined countries provide social insurance benefit for old age. In addition, many countries provide income-tested non-contributory minimum pensions (so called social pensions). Also, a third type of pension benefit exists: basic incomes that are non-income-tested and non-contributory and thus deviating from the insurance-assistance dichotomy. Danish *Folkepension*, British *State Pension* and Dutch *Algemene Ouderdomswet* can be classified into the basic income category even though Danish and Dutch pensions have income-tested supplements. UK's *State Pension* has seemingly contributory features as credits need to be accrued in order to achieve eligibility. However, credits can be accumulated also when unemployed and receiving last-resort Universal Credit, for example. Therefore, the credit-based eligibility counts as a kind of residence time test, and not as a contributory requirement defined here.

The level of income-testing varies a lot between benefits and countries. Finland and Sweden even provide two different income-tested benefits for pensioners, other one with a harsher income-testing and therefore more 'last-resort' than the other. Moreover, British *Pension Credit* and Swedish *Äldreförsörjningstöd* resemble even general assistance benefits with a household-level income-testing and asset test, but the initial levels are more generous than in the general assistance scheme.

Table 5. Old-age benefits. The benefits that do not fit the classification are shown in red.

	Name of the scheme in local language	Prior contribution required (=insurance)	Income-tested (=assistance)
Denmark	Arbejdsmarkedets tillægspension (ATP)	X	-
	Folkepension	-	-
Estonia	Vanaduspension	X	-
	Rahvapension	-	X
Finland	Työeläke	X	-
	Kansaneläke	-	X
	Takuueläke	-	X
Netherlands	Aanvullend pensioen	X	-
	Algemene Ouderdomswet	-	-
Sweden	Inkomstpension	X	-
	Garantipension	-	X
	Äldreförsörjningstöd	-	X
United Kingdom	Workplace pensions	X	-
	State Pension	-	-
	Pension Credit	-	X

4.5 Summary

In the above, we went through contribution requirements and income-testing features of risk-based benefits for five risks and six countries, a total of 30 risk cases. Based on the review we saw that in some cases, risks are covered with multiple benefits so that insurance and assistance principles are present simultaneously. As shown in the summarizing Table 6, the most common allocation mechanism to cover social risks is still a pure-form social insurance benefit as defined by Atkinson (1989), available in 77 percent of all cases. An income-tested social assistance benefit was available in 23 percent of all cases, especially for social risks of disability and old age.

In 40 percent of risk cases, a benefit was available that could not unambiguously be classified to as insurance or assistance benefit meaning that it was not exclusively income-tested or contributory. Next, we present an indicative typology of these intermediate forms, shown also in Table 6.

Insurance benefit with a non-contributory minimum level (17 %): In this category, the benefit rate is related to prior earnings but those with low or no earnings receive the minimum level benefit in any case. The benefit type can also be seen as a hybrid of insurance and an assistance benefit. For old age benefits, for example, the assistance and insurance benefits are typically separate but creating practically a similar structure when the assistance benefit is income-tested only against the insurance benefit income. This is somewhat typical design for parental benefits (Estonia, Finland, Sweden) but were also observed in sickness benefits (Finland).

Basic incomes (13 %): Basic incomes was the third category coined by Atkinson (1989) in addition to social insurance and assistance. By Atkinson's definition, the eligibility criteria and benefit rates of basic incomes are unrelated to one's labour market status. This restricted the prevalence of the class among risk-based benefits because social risks are usually related to one's labour market status. However, we categorize some old-age pension, namely British *State Pension*, Danish *Folkepension* and Dutch *Algemene Ouderdomswet* to this category because they are related to age rather than labour market status directly and they are paid to nearly all individuals in the age category (e.g. Iivonen et al. 2022). Eligibility for *State Pension* requires credits, but they can be accrued also on benefits such as Universal Credit. Danish and Dutch benefits incorporate a universal basic part although some supplements are means-tested. Also, Dutch non-means-tested and non-contributory disability benefit *Wajong* for young disabled individuals is classified to this category.

Table 6. The prevalence of different allocation mechanisms of risk-based benefits by social risk and country (X= a benefit with such allocation mechanism is available).

		Social insurance (contributory non-income- tested)	Social assistance (non-contributory income-tested)	Insurance with a non- contributory minimum	Basic incomes	Contributory and means- tested	Activation benefits
Unemployment	Denmark	X					
	Estonia	X				X	
	Finland	X	X				
	Netherlands	X					
	Sweden	X					X
	United Kingdom	X					
Childbirth	Denmark	X					
	Estonia			X			
	Finland			X			
	Netherlands	X					
	Sweden			X			
	United Kingdom	X					
Sickness	Denmark	X					
	Estonia	X					
	Finland			X			
	Netherlands	X					
	Sweden	X					
	United Kingdom	X					
Disability	Denmark		X			X	
	Estonia		X				
	Finland	X	X				
	Netherlands	X			X		
	Sweden			X			
	United Kingdom	X					
Old age	Denmark	X			X		
	Estonia	X	X				
	Finland	X	X				
	Netherlands	X			X		
	Sweden	X	X				
	United Kingdom	X			X		
Total, n		23	7	5	4	2	1
All risk cases		30	30	30	30	30	30
Prevalence, %		77 %	23 %	17 %	13 %	7 %	3 %

Income-tested contributory benefit (7 %): applying income-testing to a contributory benefit is contrary to the insurance logic (e.g. Rejda, 2015). However, this kind of structure was found in Estonian secondary unemployment benefit *Töötutoetus* and Danish disability benefit *Seniorpension*. The Estonian benefit incorporates a requirement for work history, albeit a loose one, as one can be exempted if having cared for a child or being hospitalized before unemployment. Similarly, Danish disability benefit requires a long working history but at the same time is income-tested, albeit rather weakly with a substantial earning disregard and low withdrawal rate (30 %) to other income. It is the primary benefit for early retirement for disability reasons. It is a flat-rate benefit which level is relatively high, and income-test makes the targeting more efficient.

Activation benefits (3 %): Sweden incorporated three unemployment benefits which are paid only when participating employment measures. They are non-contributory and non-income-tested benefits. They complement the primary insurance benefit, for example, if eligibility criteria of the primary insurance are not met or maximum duration has been exhausted.

5. Discussion and conclusions

In this study, we charted how purely the insurance and assistance principles are reflected in risk-based benefits of six countries. The motivation was to test Atkinson's theoretical underpinning empirically and at the same time, to compare the coverage of risk-based security internationally. Insurance principle, as defined by Atkinson (1989), is still dominant means to cover the risks, but especially for long-term risks, disability and old age, income-tested assistance benefits are often available. The main result is that the anomalies that cannot clearly be classified exclusively as insurance or assistance benefit, are relatively common and observed in every country for some risk. In these benefits contribution requirements and income-testing were either absent or present simultaneously. The non-fitting benefits exhibited a large variety, and four different types were found: 1) Insurance benefits with non-contributory minimums, 2) Income-tested and contributory benefits, 3) Basic incomes and 4) Activation benefits.

Despite the variety in exact structures, almost all of these anomalies seem to aim for the same goal: to complement the exclusive insurance-type benefit with a more extensive lower-level benefit. Interestingly, there was great variation of non-contributory coverage by social risk. For old age, all countries provided a non-contributory safety net. For disability, all countries except United Kingdom provided a separate non-contributory benefit. For childbirth, half of the reviewed countries provided non-contributory risk-based benefits. For unemployment, only Finland and

Sweden provided non-contributory benefits. For temporary sickness, Finland was the only one to have a non-contributory risk-based benefit. This variation in coverage seems to be correlated with the expected duration of the risk: Unending risks like old age and permanent disability are better protected whereas more short-term risks such as unemployment or temporary sickness have less coverage. This likely reflects the policy aim to incentivize capable individuals back to employment (see e.g. Marinescu and Skandalis, 2021).

Naturally, the countries that lack non-contributory benefits for certain social risks, do not leave citizens without support, but they are covered to some extent with a general assistance scheme. Moreover, even if a country provides a non-contributory risk-based benefit, the benefit level may be so low that they are often topped up with a general assistance benefit (e.g. Tervola et al., 2023 for Finland and Sweden). The typical difference between risk-based and general assistance is, however, that general scheme is more rigidly means-tested by having an asset test and a higher withdrawal rate to income and a broader income concept, including all household members' income. Therefore, the risk-based assistance benefits can cover higher income households than the general assistance scheme. Also, general assistance may involve stricter activation measures and perhaps a stronger stigma and larger non-take-up than a risk-based benefit (e.g. Natili, 2020).

The selected countries demonstrate rather different strategies to provide safety nets for social risks of the working age population. United Kingdom and Netherlands and for the most part Denmark demonstrate a quite clear combination of classic insurance benefits complemented with a general assistance scheme. Especially Finland, and partly Sweden and Estonia, in turn present a three-level structure where insurance benefits are often complemented also with non-contributory risk-based benefits, and lastly with a general assistance scheme. Here the country divisions do not fit the traditional welfare state regimes by Esping-Andersen (1990).

The analysis above is based on the concept of 'benefit' which is a legal term. It may be misleading to overemphasize the difference between an insurance benefit with non-contributory minimum and a benefit system where the minimum level is implemented with a separate benefit (income-tested or a basic income). Theoretically identical social transfer system may be achieved by various system architecture. Swedish parental benefit, for example, is earnings-related but incorporating a guaranteed minimum level for all eligible parents. On the other hand, Swedish old-age pension security is implemented through a separate insurance benefit (*Inkomstpension*) and an assistance benefit (*Garantipension*), resulting in a similar structure with two benefits. The benefit structure may have some implications from the view of the applicant. A single benefit may seem simpler

system for the applicant and incorporate less bureaucracy and information deficits and therefore also reduce non-take-up rates (see Janssens and Van Mechelen, 2022). A hybrid or a basic income benefit is also likely to involve less stigma than a separate income-tested assistance benefit.

This research was first to review the prevalence of insurance and assistance principles empirically for multiple risks and countries simultaneously. The analysis opens up multiple potential ways to deepen the findings in future research. Atkinson's characterization relied on contribution requirement and income test but other sources (e.g. OECD, 2013; ILO, 2017) put more emphasis on the funding mechanism in defining social insurance and assistance. Future research should delve more into how different funding mechanisms correlate with the division observed in this article. At least in some cases, the hybrid structure of a benefit can result also in complex hybrid funding. For example, the funding of Finnish "hybrid" parental and sickness benefits is divided between state and contribution fund so that the state is predominantly responsible for the funding of the minimum-level benefit and contributions are used to fund especially the earnings-related benefit (Finnish Health Insurance Act, Chapter 18, 13§).

Moreover, in this analysis benefits were categorized by their general principles, i.e. merely existence of some benefit feature. The comparison could be elaborated to include the intensity of these features in quantitative analysis. The risk-based coverage could, at least in theory, be analysed by policy swapping, i.e. simulating the effect of different national policy features with fixed microdata (e.g. Popova, 2016; Tervola et al., 2023). However, simulating the contribution requirement, for example, requires detailed comparative microdata of past employment spells which may be hard to find. As detailed administrative data sets are hopefully becoming more available to researchers in future, also this kind of data-intensive comparative policy research of benefit coverage may become possible.

Although many deviations from pure theoretical forms were found, it does not reduce the need for simplistic theoretical structures. The theoretical structures, as defined for instance by Atkinson (1989), still dominate empirically, and hybrid forms cannot be interpreted to have overthrown them in any way. However, it is important to acknowledge the extent of different kind of hybrid schemes which blur the traditional divisions and hamper some comparisons.

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