LIS
Working Paper Series

No. 627

Pension Institutions and Income Inequality across European Societies: Denmark, Germany, Sweden, and the United Kingdom

Jörg Neugschwender

January 2015

Luxembourg Income Study (LIS), asbl

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Jörg Neugschwender (LIS)

neugschwender@lisdatacenter.org

Abstract

This paper analyses major pension system regulation in four European countries: Denmark, Germany, Sweden, and the United Kingdom. It is focused on the government's and social partner's efforts to provide old-age security benefits, and how these regulatory approaches have shaped the current structure of the public-private mix of pension protection systems. The different regulatory approaches may, in the end, have quite diverse implications on income inequality among the elderly.

A historical institutional overview is provided for each of the four countries. The study also used multiple years of cross-sectional data (around 2000 – wave V and mid of 2000s – wave VI) from the Luxembourg Income Study Database to show current outcomes of the different combinations of the public-private mixes. The results showed a strong trend from earlier to later years towards a higher relevance of private pensions in the public-private mix. The Swedish and German systems relied more on employment-related public systems fare better in terms of living standards than the Danish and British systems that combined public minimum pension schemes for a long time only with mostly voluntary occupational systems. Private pensions strongly affected the income position of high-income pensioners. However, also the structure of public pension benefits had a poverty decreasing effect for low-income groups.

Keywords: social policy, income distribution, inequality, retirement, elderly, redistribution, poverty

Introduction[1]

Social security of the elderly is a major concern of the welfare state. In post-industrialist societies, a major juncture of pension system design took place in the 1950s (Ebbinghaus and Gronwald 2011; Hinrichs 2000). These reforms affect income inequalities in various ways. Particularly earnings-related systems developed over a long time period to provide full benefits; workers who started their employment career in the 1950s have retired by majority only in the 1990s. Thus, the oldest retirees in the current societies have not been fully affected by pension reform outcomes. On the other hand, the retired population is only affected by reforms that have a direct effect on pension income levels, such as adjustments to consumer prices or minimum income regulation.

Analyses of reform processes in each nation state help clarify which interactions exist between specific systems of public and private actors and how they have developed over time (see, for example, edited volumes by Arza and Kohli 2008; Ebbinghaus 2011b; Immergut et al. 2007). However, important questions have remained insufficiently answered. These questions include: Do nation-specific paths provide adequacy of benefits for current pensioners? Does the shift towards a stronger role of private pension systems exacerbate inequalities?

Previous research has standardised concepts to analyse pension systems. This study will apply the common conventions and use the pillars and tiers approach (Goodin and Rein 2001; OECD 2007; World Bank 1994) to describe income sources. Pillars describe the provider of the system besides the state (first pillar) also social partners (second pillar) and market-based financial institutes (third pillar) provide old-age security. Income tiers clarify specific functions of pension income. Minimum protection is referred to as a first tier of pension benefits (poverty prevention function). Second tier benefits aim at maintaining the living standard in relation to previous earnings (status maintenance function). Third tier benefits can be best described as an individual topping up of already high second tier benefits.

The division of power between the government, social partners, and firms can be decisive for income inequalities among the elderly. Specific regulations of second pillar systems structure the public-private mix of provision. In turn these varying approaches to pension regulation affect the financial well-being of the aged, as different types of pension schemes induce manifold redistributive effects. Particularly private pension income is less studied and its effect on income inequalities among the elderly is less clear.

In this paper I will analyse inequalities in pension income and its ongoing transformation among the elderly, taking into account its institutional reform path. I will analyse the interplay of public pensions and private pension components in four advanced European welfare states: Denmark, Germany, Sweden, and the United Kingdom. These nation states show a broad variation in their complementary design of public and private pension regulation and welfare state ideology.

The Danish and the British systems are proponents of the Beveridge path of pension provision, primarily preventing poverty within the public system. In both countries, supplementary provision had been designed in a liberal fashion primarily based on voluntarism. Only in the 1990s collective agreements became the regular Danish way of mandatory inclusion to private schemes. The strong, but decentralized social partners neglected to take action on a industry-wide level, as they were

[1] The author is very grateful for valuable proofreading and comments by Bernhard Ebbinghaus, Janet Gornick, and Laurie Maldonado. This work has been drafted already in 2012.

expecting the government to take action in a universal approach (Green-Pedersen 2007). This delineates the Danish path essentially from the Swedish one.

The Swedish actors pursued a mixed strategy based on tripartism. Besides minimum pensions, the Swedish state also regulates contributions to earnings-related public systems. In addition, occupational pensions have become an important component of the savings structure since the 1960s and 70s, where various universal industry-wide collective agreements were decided.

In Germany, the public social insurance system was broadly extended in the late 50s, securing also the living standard up to a certain income ceiling. Occupational systems were only marginally important for income security, concentrated on specific occupational groups.

The structure of this article is the following. First, an introductory section describes the main principles and distinctions in pension systems. Secondly, and based on this framework, I will analyse nation-specific profiles of public-private regulation. This will include an empirical evaluation of private pension recipient rates and private pension income shares using the Luxembourg Income Study Database. In doing so, it will include evaluations by income deciles that describe inequalities of income. I will use relative income levels, which measure overall adequacy of pension income in relation to society's income standards. In addition to inequality profiles, I will use common inequality indicators like poverty rates and Gini coefficients. The section covers the development that has occurred between 2000 and mid 2000s.

1. Types of pension systems and welfare state provision

Pension policy is a main part of social security. Due to aging societies, welfare state provision for social security has increased in importance over the last decades. Additionally, there are current risks such as unemployment spells and low-wage employment that increase the need for extended labour market policies and family-related benefits (Bonoli 2006; Taylor-Gooby 2004). These risks will be transferred to the elderly as well, when more and more persons with problematic work careers retire.

Until now, public pensions have remained the major source of income for low-to-middle income pensioners across nearly all advanced societies. Typologies of pension systems divide public old-age security efforts broadly in two main types: minimum-pension schemes (Beveridge type) and social-insurance (Bismarckian type) schemes (Ebbinghaus and Gronwald 2011).

In general, minimum pension schemes redistribute income across the elderly in a *vertical* way. This means their main goal is to prevent poverty among the elderly. Thus, minimum protection schemes focus on specific risk groups among the elderly, providing benefits mostly independent of previous earnings. Minimum pension schemes can be further subcategorized. Whereas basic minimum pensions are universally paid, targeted minimum pensions are tested against income. Thus entitlements to income-tested benefits decline with receipt of other pension income.

Social insurance schemes mostly redistribute financial resources over time, reflecting a deferred use of financial resources. We may refer to *horizontal* redistribution (Esping-Andersen and Myles 2009; Palme 2006). These systems tend to reproduce income inequalities of the labour market through equivalence of contributions and benefits. Frequently contribution payments and benefits involve an income ceiling, so that high-income earners need additional benefits from complementary systems to secure their living standard.

Analogous to social-insurance systems, such occupational and personal pension plans are frequently strongly linked to the earnings position. Furthermore, such second pillar systems tend to have no

contribution and income ceilings. Historically occupation-based systems have been offered selectively as fringe benefits for leading positions or high qualified employees only, binding them to the company by guaranteeing specific defined benefits. Occupational systems reached a higher importance, particularly so in countries where public protection was rather scarce. Especially in Scandinavian countries, minimum pension systems are complemented by rather universal occupational schemes that are an outcome of social partner's motifs better securing their clienteles (Ebbinghaus 2011a).

Previous research on the social partner's activity in occupational pensions stated some general patterns of the social partner's regulatory approach. First of all unions tend to prefer public earnings-related systems. They may find it hard to agree on universal occupational plans with employer associations (Øverbye 1996). Therefore, it is more promising for them to reach influence directly through political agreements with political parties (Anderson and Meyer 2003).

Ebbinghaus (2010) classified three major tendencies of bargaining activity across advanced welfare states: Liberal countries deregulated their labour markets; and the influence of unions is mainly based on voluntarism. In Nordic countries, unions have always played a strong role for the extension of welfare benefits. Tripartite solutions are also an important way of regulation. Continental European countries are located somewhere in between. Their political power is also important, but it is mainly oriented to defend social rights.

2. Pension expenditure as a percentage of GDP

Social expenditure of all social welfare areas combined together, expressed by total expenditure in relation to GDP, increased over time (see Figure 1a). The most generous welfare state among the four countries under study was still Sweden, followed by Denmark, Germany, and the United Kingdom, reflecting the typological order of social-democratic, conservative, and liberal welfare states (Esping-Andersen 1990).

Various differences in long-term trends took place in the countries. Around the 80s, pension expenditures reached already a high importance of around 11 per cent of GDP in Germany. This number was only slightly higher in the mid 2000s, reflecting the consolidation of pension system expenditures. In contrast, the Swedish system was less developed in the 1980s (9 per cent), but exceeded the expenditures in the German system at the most recent point in time (11.6 per cent). Pension systems were less developed in the United Kingdom, and particularly scarce in Denmark.

Figure 1b indicates that pension benefits rested primarily on public actors. Private actor's influence still played a low to moderate role but increased in importance over time. Private systems remained of marginal importance in Germany, only contributing less than 10 per cent to total pension expenditures. Its importance was a little bit stronger in both Nordic countries, where around 15 to 20 per cent was organized on a private basis. The difference between Germany and the Scandinavian pattern increased over time. It cannot yet be determined whether these private sources either complemented or substituted public pensions. Private arrangements were most relevant in the United Kingdom. The private share increased strongly from 1980 (ca. 30 per cent) to 2000 (ca. 50 per cent). Recently this balance shifted back to a stronger public share. This recent trend can be linked to stronger public efforts to secure minimum benefits for low-income earners (see section 4).

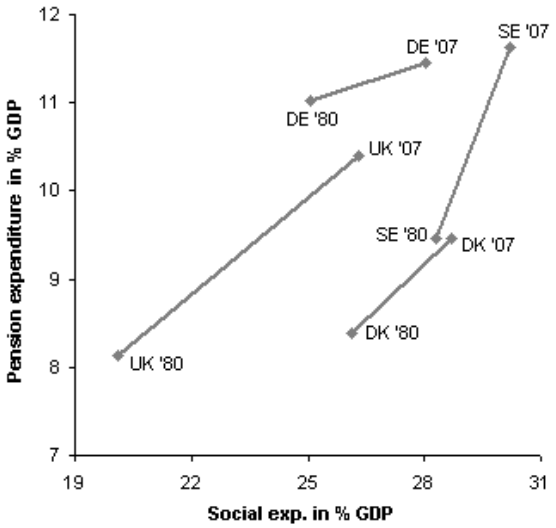

Fig. 1a: Total social/total pension expenditure
Source: OECD Stats

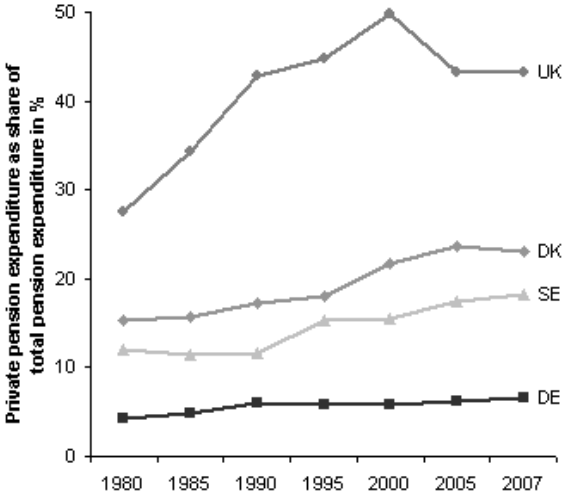

Fig. 1b: Private pension expenditure
Source: OECD Stats

3. Cross-national variation of pension regimes

The following section provides an overview of the nation-specific pension regulation. This focuses on the major policies which were implemented to provide social security to the elderly, and which mostly affected the current pension income of the currently retired population.

Germany is frequently referred to the ideal-typical case of a social insurance system. First of all, German Reich's chancellor Bismarck introduced this system in 1889. In the beginning, rather selective public first pillar schemes for high-qualified employees were step-by-step extended to a broader group of employees. Major extensions of the public system (GRV) took place in 1957. A general replacement rate of 70 per cent of previous earnings was envisaged (Schmähl 1997). The GRV system is based on the principle of equivalence, where benefits should closely match paid contributions. Occupational pensions diminished in importance during the maturation of the public pension system, but never eroded completely due to two peculiarities (Schmähl 1994; Schmähl 1997): First, self-employed persons were not compulsorily included. Second, contributions involved an upper limit, so that high-income earners needed to provide outside the state system if they expected to maintain a high replacement of their earnings. Various reform initiatives in the 2000s will lead to a slow decrease in public pension income levels, while on the other hand; occupational and personal pension provision has been favoured by the state. State allowances or favourable tax deductions make private pensions more attractive for all income groups (Ebbinghaus et al. 2011; Hinrichs 2005; Schmähl 2004). Researchers in the field are concerned that old-age poverty will rise, as the restructuring of the system kept private pensions on a voluntary basis. Therefore, temporarily employed or low-qualified persons could stay uncovered by private pension savings (Hauser 2008; Hinrichs 2008; Neugschwender 2008). Since the German system provides only minimum benefits in the form of extended social assistance claims for the elderly, this scenario is non-negligible under current regulation.

The Swedish combination of public minimum benefits and public earnings-related pensions (ATP) appears to be most similar to the German system in this cross-country comparison. But still, essential differences exist. First of all, the Swedish system is characterized as an encompassing system based on universal inclusion (Korpi and Palme 1998). However, the former system is going through a major

transformation since the reformation during the 1990s (Kangas et al. 2010; Wadensjö and Lindquist 2011): Initially, the Swedish system implemented generous first tier universal basic pension and now it has been replaced by an income-tested guaranteed minimum pension on a lower level. Therefore, the new system might reduce benefits particularly to those with low inclusion to the labour market. In favour of occupational pensions, the guaranteed pension is not tested against earnings and occupational pension income. Also the former earnings-related component of the public system (ATP) was replaced by a new system. ATP faced several problems since its introduction in 1960. It was not financially sustainable, and the defined benefits were expected to turn into a flat-rate pension for the majority of male providers (Green-Pedersen and Lindbom 2006). Thus the earnings-related ATP is currently being transformed to a notional defined contribution system that is based on a pay-as-you-go basis. The system is topped up by a funded *premium pension* (Engström and Westerberg 2003; Palmer 2008). However, in contrast to Germany and also in the United Kingdom and for a long time in Denmark, occupational pensions were early on set up to complement public pensions. At the same time when ATP was implemented, social partners negotiated collective agreements, first for white-collar workers and the public sector (1960), and then later for blue-collar workers in the private sector (1973) (Wadensjö and Lindquist 2011). Given the limited public scheme benefits, they should be particularly relevant for high income groups (Green-Pedersen and Lindbom 2006). Although occupational pension schemes covered the whole workforce on a mandatory basis for a long period, the role of private pensions for the income package was still minor in the mid 90s (Behrendt 2000). The major reason is the low level for mandatory contributions of approximately two per cent of earnings (Palmer 2008).

Danish and Swedish pension policies were rather similar before the critical juncture around 1950. In the following years, the social actor's regulatory approach developed in rather different paths (Ebbinghaus and Gronwald 2011; Green-Pedersen and Lindbom 2006; Kangas et al. 2010). In Sweden, social partners and the state introduced an earnings-related component of the first pillar (ATP) and collective agreements made occupational pensions quasi-mandatory for the public and private sector since the 1960-70s. On the contrary, the Danish government primarily increased the minimum pension level, and introduced an employment-related second tier system based on working hours (ATP). Thereafter, since 1964, the public minimum pension involves two parts: a basic amount (people's pension) and an income-tested amount that is pension payments twice the basic amount. The ATP complements only marginally contribute to the income package of the elderly (Andersen 2011; Green-Pedersen 2007). The rather generous minimum pension regulation secured income replacement for low-income earners quite well, but left a high gap for middle-to-high income groups (Kangas et al. 2010). Private pensions, on the other hand, were kept mostly unregulated until the 90s. Take-up-rates of voluntary private pension plans remained fairly low with exceptions of public and white-collar employees (von Nordheim Nielsen 1996). Social partners aimed at better protection. In contrast to other Nordic countries tripartite negotiations fizzled out, as both the state and social partners demanded the opposite actor to take action (Green-Pedersen 2007). However, scarce benefits for better paid blue-collar workers in the metal industry became a major concern of the respective unions (Green-Pedersen and Lindbom 2006). As a result, in the late 80s and early 90s policies shifted extensively towards self-administered social partner agreements. More and more sector-based binding regulations were decided, following the initiatives in the public and metal sector. Current coverage among the Danish workforce is now equally high as in Sweden, exceeding 90 per cent (OECD 2009). The future public-private mix will clearly shift towards a stronger role of private elements. As a consequence of compulsory enrolment to private plans, the public income-tested minimum pension will decline in importance in the future. Kangas et. al (2010) argue that

these developments lead to an essential convergence of Nordic pension regimes again, where earnings-related private second tier pensions will maintain a part of previous earnings. As these pensions are more strongly linked to earnings, inequalities may shift towards previous labour market inequalities and rebalance the public-private mix.

Building on the liberal tradition, the British system seems to pay less attention to state regulation in general. In comparison to Continental European and Nordic countries, the British state left social welfare issues more to the private area (Esping-Andersen 1990). Indeed, first tier basic pensions introduced in 1948, concentrated mostly on vertical redistribution. Since reformation in 1975, public benefits were backed up with contributions to the State Earnings Related Pensions Scheme (SERPS). Through the SERPS, public and occupational pension components were directly linked together and should provide the second tier. The regulation allowed a 'contracting-out' of the SERPS if a person already had favourable occupational pensions, and since 1986 also personal pensions allowed a 'contracting out'. This solution was also backed up by stately tax deductions. This meant that persons who were obligated to contribution payments had either to contribute to the SERPS or private systems. This at the same time could be described as the crux of the system – the public systems leave low-income earners and workers with interrupted careers inadequately protected. Persons below the lower earnings limit were excluded from the SERPS, and the same group frequently had also no private pensions (Schulze and Moran 2007). British private pension protection remained mainly dependent on individual employer-employee negotiations. Consequently, not all employers offered occupational systems for their employees. Moreover, due to taking back a part of the initial extension through the 1986 reforms, both public schemes together could provide only meagre pension income benefits (Schulze and Moran 2007; Taylor-Gooby 2005). Since 2003, a Guaranteed Minimum Pension provides another social first tier benefit for those poorly protected by other pension income (Blake 2003; Taylor-Gooby 2005). Similarly, targeted at the poorest income groups, over the next 50 years, SERPS will gradually be modified to the State Second Pension (S2P), transforming the second tier public component to a second flat-rate (Bridgen and Meyer 2011; Disney and Emmerson 2005). Effects yielded by this reform are still marginally observable in the income mix of current retirees.

4. Labour market attachment and pension system inclusion

The institutionalist perspective revealed various properties of these countries' old-age security systems. Besides these differences in pension institutions and governance, there are also labour market and gender role differences when comparing the financial situation of the elderly in a cross-national perspective.

The 'male-breadwinner model' describes gender differences in labour market participation (Esping-Andersen 2002; Lewis 1992; Lewis 2001; Taylor-Gooby 2001). This traditional model assumes a male as the permanent full-time earner in a typical household situation, whereas the female spouse is mainly engaged in the household responsibilities such as caring for the children, elderly, and disabled household members. The male-breadwinner model assumes that the head of the household's social security is sufficient enough for the entire family. Thus, the system is designed to provide more security to the household head and less security to the spouses. During retirement female spouses may receive minimum pension benefits and profit from intra-household redistribution or take on the pension of a deceased partner.

In Germany and in the United Kingdom, women were largely excluded in the labour market over the last decades. Thus they may be more dependent on derived benefits or redistribution within the

family. In Germany the GRV system also redistributes derived benefits to risk groups, whereas redistribution is rather less present in the British system. Thus it is likely that many women end up with rather low basic pension benefits complemented by rather low SERPS respective private pension benefits. It is more difficult to expect clear patterns for individual pension benefits in Germany due to the various redistribution mechanisms in the public system. However, in terms of own individual benefits, spouses may not be eligible to personal social assistance benefits since these are calculated on the household's income.

Women in the United Kingdom and the two Nordic countries receive personal basic pension benefits. Additional income from second-tier systems can lift old-age income above minimum benefits. However as female earnings were rather low for the current group of female retirees, a high share may end up with income close to the minimum amount. As the Nordic countries also provide less survivor pensions, elderly single households are at high risk of poverty because they lack the essential share of benefits from their deceased spouses.

Occupational systems have developed in quite different directions. Thus inclusion to second pillar systems might vary strongly in relation to sector of employment and occupational status. In general, the Nordic countries and Germany are undergoing a transformation towards a stronger role of occupational and private pension plans. In the United Kingdom occupational pensions have always been an important component of old-age provision. Most recent reforms mainly aimed to strengthen vertical public redistribution to the poor.

In Denmark, more and more groups will retire with additional occupational benefits from the collectively agreed systems from the 1990s. In contrast income-tested benefits of the targeted scheme will decrease in importance. Although employees contributed various years to collective systems, a certain group of the elderly is no longer affected by this regulation. Age cohorts born 1930 or earlier either have already retired before the regulation became effective, or have retired shortly after its implementation. The working hours based system ATP is less important for the income mix and not directly linked to the earnings-level.

In Sweden and Germany public systems have been cut, so that future retirees are in need to mix their provision more than before. In Sweden, complementary schemes in the occupational sphere have been already highly regulated since the 1960s. The current retirees are broadly covered by additional income from these schemes. However, contributions were fixed on a rather low level around two per cent of earnings, limiting a broad importance of occupational pensions.

In Germany, only some occupational groups were protected by mandated systems. Social partners did not focus to strengthen occupational pension for all employees, as the earnings-related GRV system provided reasonably high replacement rates. This protection made additional income sources mostly obsolete. However, as a result of the major cuts during the 1990s reforms, the replacement rate will decrease in future. Therefore, German future retirees are neither universally protected by minimum pension entitlements nor by highly regulated complementary pensions besides the earnings-related public pension. In this scheme, retirees are subject to market forces and thereby must seek resources outside the statutory system to have secure retirement income. As not all individuals will contract additional private pension plans, the decreased generosity of GRV benefits may lead to inadequate saving profiles.

The British case seems to be even more selective. Poverty and inequality has ever been high due to poor benefits for low-income groups and selective benefits for high-income groups. Several groups stayed excluded from additional voluntary private systems, and only circa half of the working-age

population contributed to such schemes. Furthermore, the public systems envisaged no meaningful replacement rate like in Germany. Instead, British government directly linked public and private second tier benefits to each other. Persons had to stay either in SERPS or could 'contract out' if they already had 'approved personal plans' in the private area. Thus persons accumulated years contracted out of SERPS, years in the SERPS, and years excluded from the SERPS. Many British retirees may have neglected the importance to save adequately for their retirement phase. Previous analyses seem to confirm that strong inequalities were determining the savings profiles, and strong inequalities consequently shape the British elderly population (Disney and Whitehouse 2001; Ebbinghaus and Neugschwender 2011; Ginn and Arber 1999).

5. Public-private mix of old-age income

The following descriptive statistics show inequalities and current trends among the elderly in nation-specific perspective. Socio-demographic and socio-economic distinctions are accounted for to evaluate and interpret these inequalities. All analyses are based on the Luxembourg Income Study Database (LIS). The data provider LIS prepared income data from national income surveys to gain cross-national comparability.

In this study the elderly are defined as the population aged 65 or above. However, all statistics are based on the respective household's net income position.[2] It is assumed that all income is redistributed equally to all household members, a standard technique applied in income inequality and poverty research (Jenkins and Van Kerm 2009; Salverda et al. 2009).

Appendix 1 shows the income mix of pensioners by income deciles. The lowest income decile (1st) describes the situation of the elderly's poorest 10 per cent. Income is subdivided in 'public pensions', 'private pensions', 'earnings', and 'other income'.[3] The results demonstrate that in all countries public income is by far the most important income source; circa 80 per cent of income is provided by the state, in Denmark even more than 90 per cent. Also in the income deciles 2nd to 6th public transfers remain the major income source over market related income. However, all four figures indicate that market related income from earnings or private pensions tend to raise the income position of these households, so that they are likely to end up in the upper half of the population. In the highest income deciles these two income sources together become most important for the income position, replacing public transfers' importance.

In line with the mixed British savings structure, occupational and personal pensions are particularly important in the United Kingdom. Private pensions contribute on average circa 40 per cent to the income mix, followed by almost 30 per cent in Denmark, 20 per cent in Sweden, and only 8 per cent in Germany (see Appendix 2). Importance of private pensions increased in all countries. Recipient rates are highest in Sweden due to the long tradition of mandated occupational pensions. Between the two points in time coverage still increased from 85 to 90 per cent (see Appendix 2). Similar increases in private pension recipient patterns are also visible in the other countries. Whereas around 2005 three out of four elderly in the United Kingdom received benefits from private pensions in the household, only around half of the Danish and one quarter of German household's are

[2] All evaluated LIS datasets involve gross and net (disposable) household income. Disposable income is derived by subtraction of payroll and income taxes from gross income (earnings + factor income + market income); for further reference see also the LIS webpage: http://www.lisdatacenter.org.
This means that specific income sources were only available in gross amounts. Therefore, in order to evaluate living standards based on actual disposable income, by breaking it down to income sources, a simple netting down procedure has been applied, taking into account the tax rate by income decile.

[3] The category other income involves, e. g. health insurance.

covered. This signifies again that various older birth cohorts have no longer been affected by the more recent reformations.

Figure 2 evaluates private pension recipient rate and income share patterns by gender. All figures exemplify the increasing importance of private pensions in the public-private mix. Between the two points in time coverage and income share increase in general. Gender differences are diminishing in Germany and Sweden, are rather stable in the United Kingdom, and are slightly increasing in Denmark. However, Danish discrepancy was already on a very low level in 2000. Furthermore, Danish coverage is strongly on the rise due to the broad introduction of collective schemes in the 1990s. Indicated by the data, male pensioners may have benefited more from this institutional change, as the inequalities between genders slightly increased again. British inequalities remain fairly pronounced and stable over time; the distance between women and men's coverage slightly decreased. In Germany women increasingly receive additional benefits due to two trends. First, younger birth cohorts were personally better protected, as reflected by increasing coverage among single households and the elderly aged 75 and above; these groups by majority replicate living conditions of single female households at the same time. Second, as men's recipient rate also increased, female retirees benefit indirectly through intra-household redistribution of private pension income. Nevertheless, recipient rate discrepancy with regard to age and household size is still the largest in Germany (see Appendix 2), indicating a strong increase in recipient rates among younger birth cohorts. Gender inequalities are also markedly pronounced in Sweden. However, Swedish women seem to catch up with men's coverage. On the other hand private pensions' income share of female retirees remains far below those of male elderly.

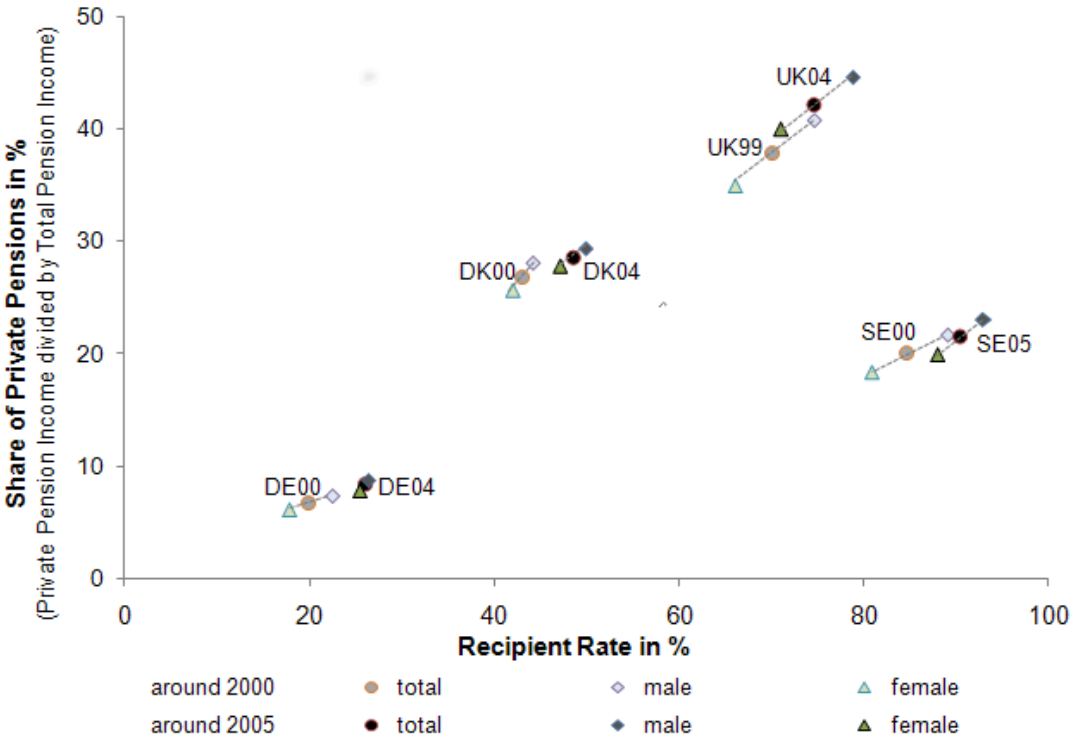

Figure 2: Private pension recipient rate and income share by gender
Source: own calculations based on LIS data

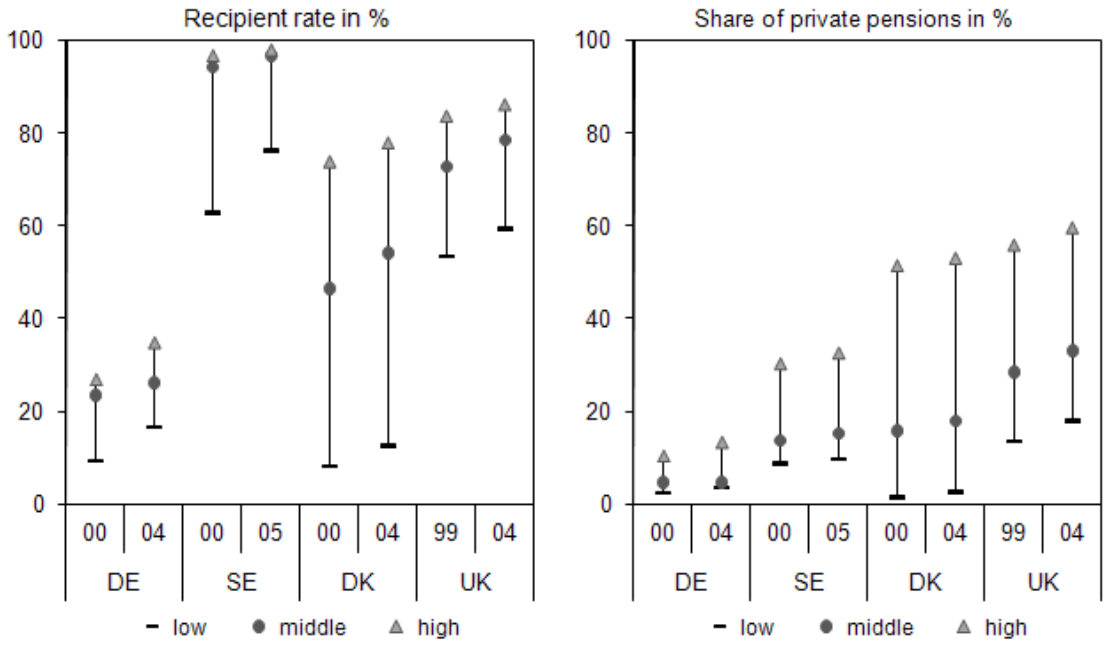

Figure 3: Private pension recipient rate and income share by income group
Source: own calculations based on LIS data

A distinction in low, medium and high-income groups reveals strong variation across the nation state's income mixes (Figure 3). Whereas the Swedish recipient rate of private pensions is by far the highest in all three groups, their importance is rather low for the income mix in general. This relates to the social insurance system structure of public pensions, which led to a high relevance of public pension provision. In addition, only low mandatory contributions to occupational systems were set up in the collective schemes, keeping the accumulated benefits rather low for the majority of providers. Low-income pensioners particularly showed an increase in recipient rate, which also reflects an increasingly strong importance for the income mix; however, still on a low level of approximately 10 per cent. Since coverage is rather selective in Germany, relevance of private pensions is rather negligible as an income source for all income groups' pension income mix. Neither recipient rate nor relevance for the income mix does strongly diverge across income groups. However the low relevance should not obscure that private pensions strongly increased for the low and high-income group between 2000 and 2005. Furthermore, private pensions are contributing round about 22 per cent for beneficiaries of supplementary private pensions (Ebbinghaus and Neugschwender 2011: 415). Pension income in the United Kingdom is more mixed and selective across income groups. On the one hand, low and middle-income groups also receive an essential share of pensions from private sources, as many have partially contracted out of SERPS. On the other hand, coverage remains selective even for high-income groups. Nonetheless, private pensions contribute more than 60 per cent to pension income. Private pensions in Denmark are very unequally spread, coverage and income share increase strongly with income. This can be linked back to voluntarism of private pension regulation and other institutional features. Since public minimum pensions are cut, when there is other pension income, public pension benefits decrease strongly in importance for high-income pensioners. Therefore we can identify a clear substitution of income-tested public pensions in favour of higher income for private pension recipients. Universal basic pensions and the working hour based system ATP maintain a minimum relevance among high-income groups. However, importance of private pensions is almost as high as in the United Kingdom, where coverage is still slightly higher. The case of Danish private pensions shows that supplementary plans have mainly worked very selectively as fringe benefits.

6. *Adequacy of income and inequality trends*

Figure 4 depicts achieved income level by each income decile in relation to national median disposable income across the entire society. The respective points are connected to a line. In addition, disposable income is subdivided in three income sources: public pensions, private pensions and other income such as work and capital income. Increasing or decreasing distance between the x-axis, public, private, and disposable income show the importance of each income source for the respective income level (see also Appendix 1). To illustrate these findings, a British elderly who receives an income of the twentieth percentile (P20) receives an income that is approximately equal to 55 per cent of the national median earning of the entire British society. The major income source for such a pensioner is, on average, public pensions in about 40 per cent of national median earnings. On top, similar persons also receive 5 per cent of median earnings from private pensions and other income. According to the conventional definition of poverty (disposable income is lower than 60 per cent of median earnings) those elderly, in the more than the 20 per cent, are at risk for poverty.

The graphs indicate the standard income of the elderly at the P20 value in relation to median earnings of the total society. These figures indicate that it is similarly low in Denmark and the United Kingdom (.55), it is a bit higher in Sweden (.62), and it is highest in Germany (.66). However the slopes of the curves for the lowest income groups (1st and 2nd income deciles) show a broad variation. Both Nordic countries have a rather flat shape, reflecting the beneficial situation of lowest income groups that are almost equally well protected through minimum benefits, with exception of some migrants that face some cuts due to missing years of residence. On average, the 1st income deciles in Sweden and Denmark receive an income just below the 50 per cent of median earnings line. Likewise income poverty is around 7 per cent in Sweden and 9 per cent in Denmark. German income standard is a little bit lower for the poorest retirees. As discussed before, pensioners do not receive minimum pensions and may also not claim social assistance, leading to the situation that the income poor have a very low income. The poverty gap is higher for Germany than in the Nordic countries. The picture is similar for the United Kingdom. Here elderly in the first and second decile are protected on a lower level. This relates to cuts in the basic pension due to missing years of employment and meagre second tier benefits; poverty is clearly the highest in the UK in this comparison.

Median pensioner's income level reveals a different pattern in terms of generosity. In Denmark median pensioners receive only slightly more income than the low-income group. As shown before in Figure 3, only a small share of persons receives additional private pension income. However public benefits maintain only a low-income level of only 69 per cent of median earnings. This indicates a strong private pension provision gap in Denmark in the past (Neugschwender 2011). The mixed income package in the United Kingdom relates to 78 per cent. Slightly higher is this indicator for Sweden (.81), where earnings-related pensions increasingly maintain the previous income standard. The 'ideal-typical' case of social insurance in Germany provides the highest income standard (.91). However, in contrast to Sweden, also other income sources besides pensions provide benefits to German pensioners. On average the Swedish pension system is still the most generous for those elderly in the lowest income distribution.

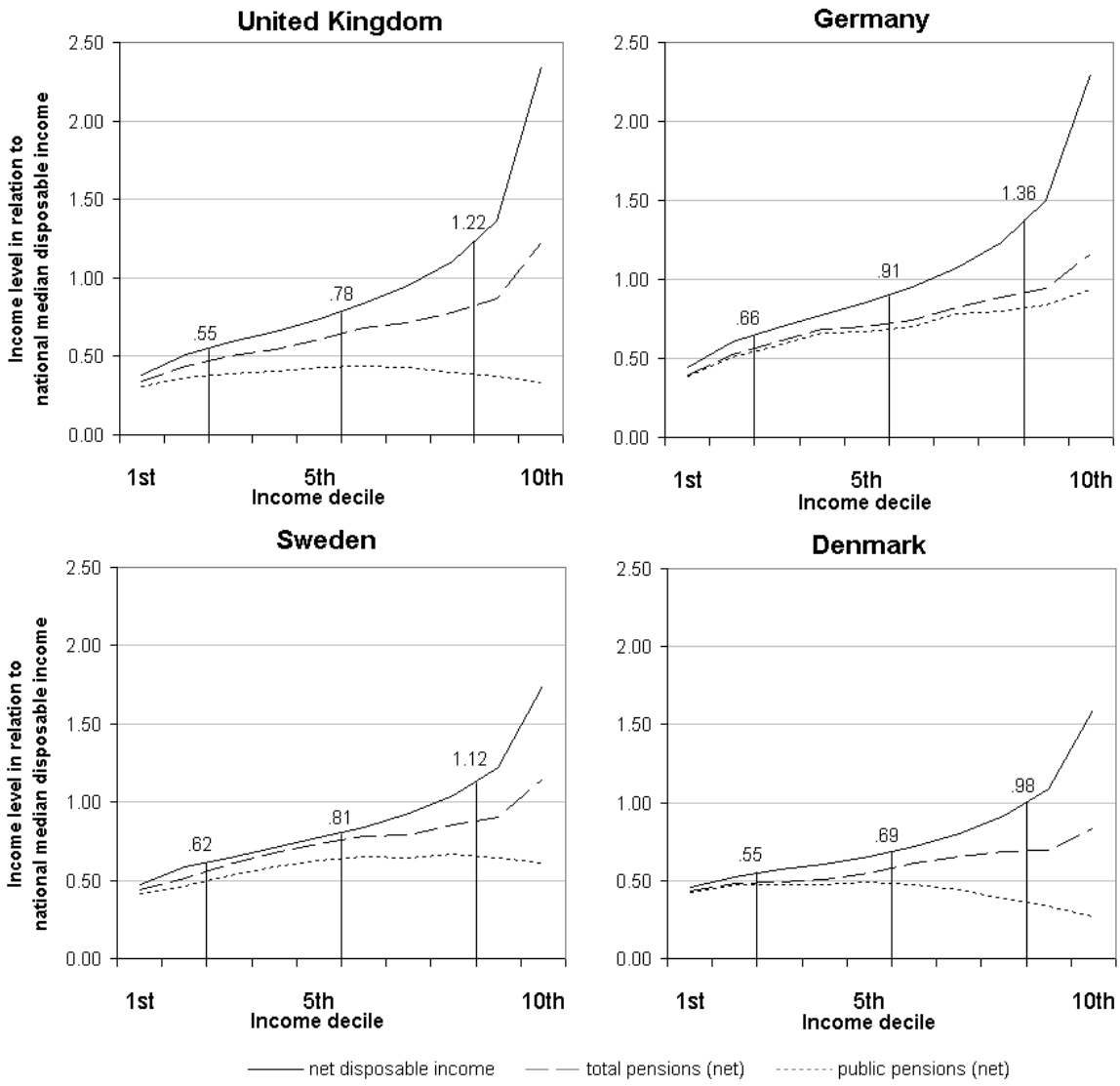

Figure 3: Income inequality profiles by income deciles
Source: own calculations based on LIS data

The German elderly are best off at the P80 value, followed by the British, Swedish and lastly Danish retirees. Above this income level income curves drift apart for all income sources. With regard to pension income the German public system provides by far the highest benefits. However, these are only topped up slightly by selective private pensions to a level of ca. 85 per cent of median earnings. Swedish private pensions lift up moderate public pension incomes to a similar high level of 80-85 per cent. Since the old public system involved a rather low income ceiling, middle to high-income groups (5th to 7th decile) stay partly less covered. Very beneficial private systems exist only for the highest income groups. In the United Kingdom and Denmark, public pensions diminish in terms of benefits and relevance for the income mix. Due to their basic pension tradition, concentrating on vertical redistribution to the poor, status maintenance is only reached by additional private income sources. Both income mixes are characterised by a history of primarily voluntary provision. The mixture of 'contracted-out' and SERPS provision leads to a rather low income standard for the majority of British elderly, only securing a small proportion in the highest income decile well. Particularly scarce is the situation in Denmark, where even the P80 income group is less protected than society's median earner (.98). However, there needs to be one point highlighted. Wage dispersion is much higher in Germany and the United Kingdom than in the Nordic countries. Thus income standards of the elderly

do not necessarily reflect a low replacement; these indicators are more related to the wage dispersion, particularly at the upper end.

Table 1: Income inequality trends for the elderly

	Denmark		Germany		Sweden		United Kingdom		DK	DE	SE	UK
	2000	2004	2000	2004	2000	2005	1999	2004	trend between the two points in time in %			
Poverty in % (65+)												
< 40%	0.9	1.2	3.2	2.1	2.0	1.3	6.5	5.0	33%	-35%	-34%	-24%
< 50%	13.3	9.4	8.0	7.0	6.9	5.6	15.4	14.2	-29%	-12%	-18%	-8%
< 60%	38.1	33.0	14.8	13.6	18.7	17.3	29.4	25.7	-13%	-8%	-7%	-13%
Poverty gap at 60 % (65+)												
	14.4	13.8	22.4	20.1	16.1	14.1	21.7	21.5	-4%	-10%	-12%	-1%
Gini coefficient												
	0.214	0.213	0.258	0.266	0.218	0.211	0.288	0.294	0%	3%	-3%	2%
Disposable income level in relation to society's median income (65+)												
all	0.78	0.80	1.04	1.07	0.90	0.91	0.92	0.96	3%	3%	1%	4%
low income	0.51	0.52	0.59	0.60	0.57	0.58	0.49	0.51	3%	2%	2%	3%
medium income	0.67	0.69	0.91	0.91	0.80	0.81	0.77	0.79	3%	0%	1%	3%
high income	1.16	1.20	1.61	1.67	1.32	1.33	1.49	1.56	3%	4%	1%	5%
Net pension income level in relation to society's median income (65+)												
all	0.57	0.59	0.76	0.75	0.74	0.74	0.64	0.67	3%	-2%	0%	6%
low income	0.46	0.47	0.53	0.53	0.50	0.53	0.43	0.44	2%	0%	5%	2%
medium income	0.56	0.58	0.77	0.74	0.74	0.74	0.61	0.64	4%	-4%	1%	5%
high income	0.70	0.73	0.99	0.98	0.97	0.95	0.87	0.93	3%	0%	-3%	7%
Net public pension income level in relation to society's median income (65+)												
all	0.42	0.42	0.71	0.69	0.59	0.58	0.39	0.39	1%	-3%	-2%	-2%
low income	0.45	0.46	0.52	0.51	0.46	0.48	0.37	0.36	1%	-1%	4%	-3%
medium income	0.47	0.47	0.73	0.70	0.64	0.63	0.43	0.43	1%	-4%	-1%	-1%
high income	0.34	0.34	0.88	0.85	0.68	0.64	0.38	0.37	0%	-4%	-6%	-2%
Net private pension income level in relation to society's median income (65+)												
all	0.15	0.17	0.05	0.06	0.15	0.16	0.24	0.28	10%	22%	8%	18%

Source: own calculations based on LIS data

Table 1 evaluates inequality indicators and measures income standards in relation to society's median income. A special focus is placed on the relative income standards of each pension income source and total disposable household income. The relative trends are shown as percentage change over the total period. Thus an increase by approximately 4 per cent in British disposable income documents an average increase from 92 to 96 per cent of national median earnings. Correspondingly, the decrease from 71 to 69 per cent in the case of German public pension income relates to a decrease of 3 per cent.

This income indicator shows a consistent picture across all four countries. There exist two main trends. On one hand, income standards of the elderly increased relatively measured on society's total median disposable income. On the other hand, public pension income slightly decreased, with exception of Denmark. But also in Denmark it is mostly other income sources than public pension income that account for the increased income standard among the elderly.

British elderly show the strongest increase in disposable income (4 per cent). Particularly private pension income strongly increased (22 per cent) which consequently affected the income standard. Private pensions have become more important also for low to middle-income groups. This is caused by two opposing effects. In principle, the reformation of public pensions aimed at topping up the poorest pension income groups, thus raising the public pension income and share. This effect

however is outreached by a stronger role of private pension income and higher security among the younger cohorts. As a result public pensions even declined in relevance. Still poverty could be decreased.

The ongoing transformations of Swedish and German public systems reveal comparatively strong effects. Cuts in generosity affect middle and high-income groups in Germany and high-income groups in Sweden. In contrast to the United Kingdom, private pension development could only partially make up for relatively lower income. In Germany increased spread of private pensions benefitted particularly high pension income receipt, whereas middle-income groups devalued relatively. Hence, we can observe an increased gap between middle and high-income pensioners, which in turn is characterized by a boost in the Gini coefficient. The other way around is the situation in Sweden; here all income groups profited from still maturing private pension benefits. However, high-income groups stayed less secured with pension income due the stronger decrease in public pension standards. This trend is also documented in a declined Gini coefficient for the elderly.

Also Danish income standards have increased in relation to the reference year 2000, mainly generated by increases in pension income. Whereas public pension amounts for all income groups have closely developed in line with median earnings, private pension amounts increased strongly in importance. Particularly the middle-income group benefitted from the private pension development. This increases inequality between low and middle-income groups, but also decreases income inequality between middle and high-income group, as additional occupational benefits no longer act as only selective fringe benefits. As a consequence the Gini coefficient remains nearly unchanged, as these two effects cancel each other out.

7. Advanced societies and pension income inequality

Pension systems in advanced societies have developed quite differently since their first implementation. Reformations of these systems take a long period of time to show full impact on the insured and their financial outcome during retirement. This article pursued a twofold strategy. First the analysis of reform processes made clear in how far inequalities could originate from country-specific institutional arrangements. Essentially earnings-related occupational systems may favour specific occupational groups one-sidedly. However, collective agreements can also favour a broadly universal solution like in the Nordic countries. Second, empirical analyses evaluated current inequalities among retirees in a cross-national perspective and demonstrated adequacy levels and ongoing transformations of the public-private mix.

The analyses showed that private pensions strongly affected income inequality of pension income in all countries under study, increasing primarily the income position of high-income pensioners. In addition, the structure of public pension benefits had a more general impact on inequality and adequacy of pensions, particularly for low-income groups.

Poverty statistics demonstrated that all nation-states leave specific groups of retirees insufficiently covered. Minimum-pension schemes in Sweden and Denmark provided rather generous provision for the income poorest groups. In contrast, British minimum security was fixed on a much lower income standard, which led to the highest poverty risk. Germany's mixture of social assistance and GRV benefits generated a high inequality among the low-income groups.

However the German benefits from the public pension system provided the highest benefit level for medium to high-income earners. The development between the two cross-sections showed that medium-income earners lost a part of their beneficial security. Cuts in the public system are not yet balanced out by an increase in private pensions. Since this provision is rather selective inequalities

could increase further. In the other counties substitution of public income sources by private components seems to be linked to selective security patterns.

Especially Danish old-age income was characterized by strong selectivity of private pension benefits. The reformed provision scenario needs additional time to mature further. Current developments support that the provision gap of the middle-income group could be already closed partly.

The Swedish system is much more advanced in terms of private pension benefits. Recipient rates were close to being universal; however these schemes by majority only slightly increased the income level. The replacement of the old system led to further decreases in the income level of the high-income retirees. In the future, the earnings-related pensions will ensure the public pension income component, but also generate some inequalities through selective private systems.

British retirees find themselves in the most advanced public-private mix, but also in a very diversified and problematic savings system. Individuals were mostly free to decide on their provision above a certain minimum provision. The regulatory approach of basic pensions, the SERPS and partially contracted out private pensions could not effectively reduce poverty. Income standards of the elderly for the high-income group seemed relatively high, however taking into account the much higher inequality of labour markets high-income earners received comparatively low pensions. However, the public-private mix was still growing, so that in the future a further rebalancing could be expected. It is likely that inequality remains high due to voluntary provision, securing only a selective group of providers well.

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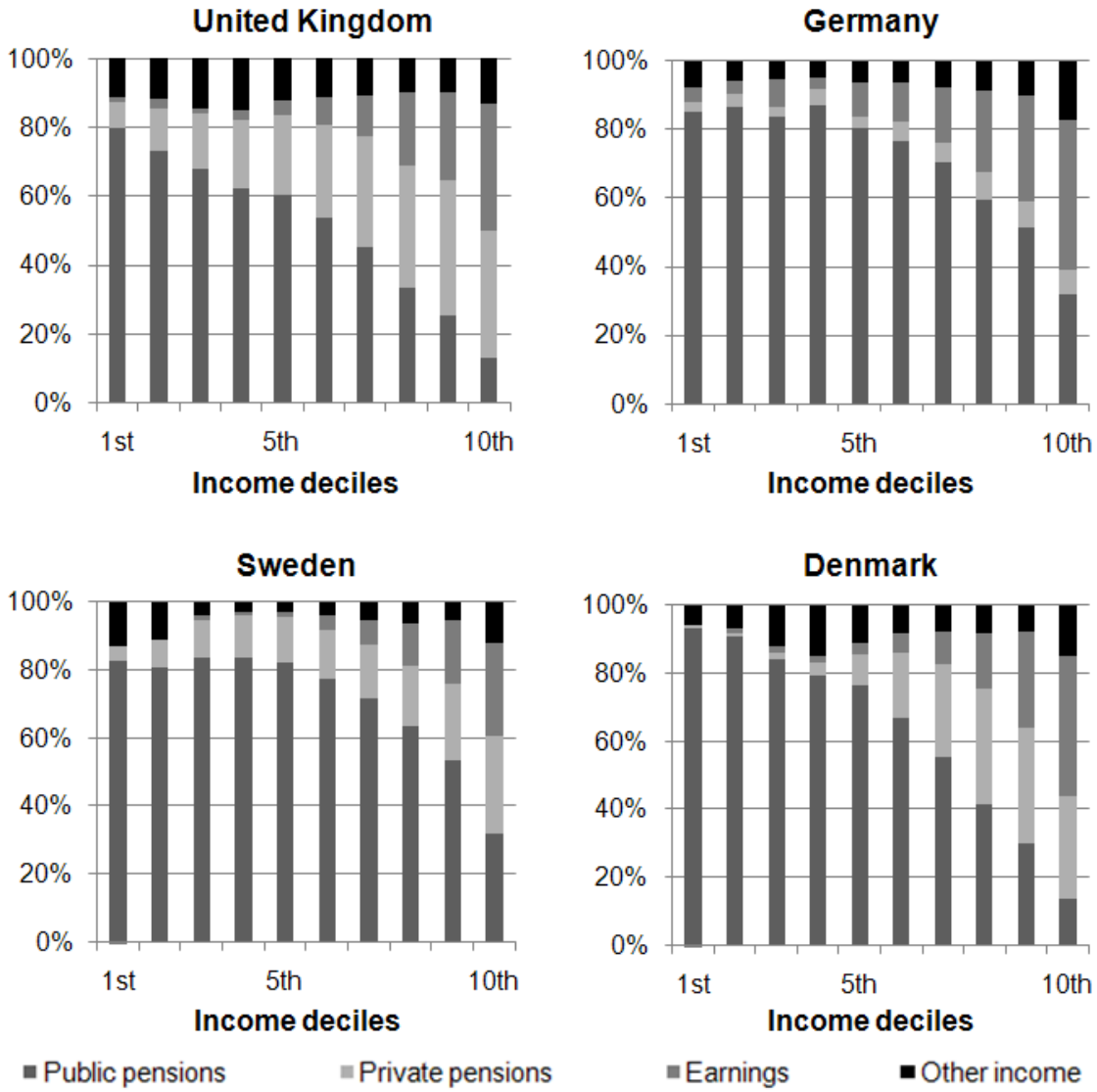
Appendix 1: Income mix of the elderly (65+)



Source: own calculations based on LIS data

Appendix 2: Private pension recipient rate and income share by socio-demographic and socio-economic characteristics

a) Recipient rates of private pensions

			sex		age		household-size		income group		
		all	male	female	65-74	75+	1	2	low	middle	high
Denmark	around '00	0.43	0.44	0.42	0.46	0.39	0.33	0.48	0.08	0.46	0.74
	around '05	0.49	0.50	0.47	0.51	0.44	0.36	0.55	0.13	0.54	0.78
Germany	around '00	0.20	0.23	0.18	0.22	0.17	0.15	0.23	0.09	0.24	0.27
	around '05	0.26	0.26	0.25	0.29	0.22	0.19	0.30	0.17	0.26	0.35
Sweden	around '00	0.85	0.89	0.81	0.90	0.79	0.71	0.91	0.63	0.94	0.97
	around '05	0.90	0.93	0.88	0.95	0.85	0.80	0.95	0.76	0.97	0.98
United	around '00	0.70	0.75	0.66	0.73	0.66	0.57	0.77	0.53	0.73	0.84
Kingdom	around '05	0.75	0.79	0.71	0.77	0.72	0.61	0.81	0.59	0.78	0.86

Source: own calculations based on LIS data

b) Share of private pension income in the public-private mix

			sex		age		household-size		income group		
		all	male	female	65-74	75+	1	2	low	middle	high
Denmark	around '00	26.8	28.0	25.7	28.3	24.7	22.1	29.4	1.4	15.7	51.4
	around '05	28.6	29.4	27.8	29.4	27.4	23.9	30.8	2.5	17.9	53.0
Germany	around '00	6.7	7.3	6.2	7.3	5.7	5.1	7.5	2.3	4.6	10.5
	around '05	8.3	8.8	7.9	9.1	6.9	5.9	9.1	3.5	4.7	13.4
Sweden	around '00	20.0	21.6	18.4	23.3	15.6	15.5	21.5	8.6	13.7	30.4
	around '05	21.5	23.0	20.0	25.2	16.7	18.3	22.4	9.7	15.2	32.6
United	around '00	37.9	40.7	35.0	40.8	32.9	31.2	41.1	13.5	28.5	55.9
Kingdom	around '05	42.3	44.6	40.0	44.8	38.7	33.9	45.6	18.0	33.1	59.6

Note: share calculated on net income level

Source: own calculations based on LIS data