Study on the performance and adequacy of pension decumulation practices in four EU countries

AUTHORS

This report has been prepared by EY supported by the FSUG for the attention of the European Commission (Directorate-General for Financial Stability, Financial Services and Capital Markets Union).

EY editorial team : Franck Chevalier, Erika Beng, Luc Veyssiere, François Fromaget, Melissa Caisson, Ahmed Chaouachi.

DISCLAIMER

ACKNOWLEDGEMENTS

We wish to thank all stakeholders who accepted to participate to interviews. The study was also supported by Cannon & Tonks who provided data and advice to feed the analyses conducted in this report.

DOI: 10.2874/391191
ISBN: 978-92-79-55321-9

ABSTRACT

This document describes decumulation practices in four European countries (United Kingdom, Netherlands, Germany and Poland). The most common consumer choices are then identified and their adequacy is assessed.

In order to understand the consumers' perspective, factors affecting their choices have been analysed (information, financial advice, market structure and regulation).

Finally, this document provides an overview of current national debates in the four countries of the study.

ABOUT THE FSUG

In its White Paper on Financial Services Policy 2005-2010, the Commission stated that it attaches great importance to ensuring proportionate user representation in the policy making. In the Communication for the European Council – Driving European Recovery, the Commission put the interests of European investors, consumers and SMEs at the centre of the financial market reform.

As a measure to achieve these targets, the Commission set up a Financial Services User Group (FSUG). The group's task is to:

- advise the Commission in the preparation of legislation or policy initiatives which affect the users of financial services
- provide insight, opinion and advice concerning the practical implementation of such policies
- proactively seek to identify key financial services issues which affect users of financial services
- liaise with and provide information to financial services user representatives and representative bodies at the European Union and national level.

FSUG has 20 members, who are individuals appointed to represent the interests of consumers, retail investors or micro-enterprises, and individual experts with expertise in financial services from the perspective of the financial services user.

FSUG meets 8 times a year in Brussels and its Chair is elected from amongst the group members. The Commission (jointly DG Financial Stability, Financial Services and Capital Markets Union and DG Health and Consumers) provide secretarial services for the group.

Table of Contents

List of figures

List of tables

Glossary

Annuity rate	The present value of a series of payments of unit value per period payable to an individual that is calculated based on factors such as the mortality of the annuitant and the possible investment returns. [OECD 2005]
Defined benefit (DB) schemes	Occupational plans other than defined contributions plans. DB plans generally can be classified into one of three main types, "traditional", "mixed" and "hybrid" plans. [OECD 2005]
Defined contribution (DC) schemes	Occupational pension plans under which the plan sponsor pays fixed contributions and has no legal or constructive obligation to pay further contributions to an ongoing plan in the event of unfavourable plan experience. [OECD 2005]
Discount rate	A multiplicative factor used by pension providers/insurers to determine the present value of a future cash flow. [European Parliament]
Financial advice	Advice given by a financial expert to help consumers make the right decisions (best decumulation products to take, amount of cash to withdraw in the case of drawdown products, etc.) taking into account their personal situation.
Guidance	Generic information service offered to consumers to help them understand their options at retirement.
Insurance company	Company selling insurance policies to the consumers directly or through an employee benefit plan. It may specialize in a particular type of insurance e.g. life insurance.
Money's worth ratio (MWR)	Expected discounted present value of all future payments from the annuity contract, divided by the premium payment. [Von Gaudecker, HM and C Weber 2004]
Open Market Option (OMO)	Right given to consumers in the UK allowing them to purchase an annuity from another company that is not their pension provider. [House of Commons 2015]
Pay-As-You-Go (PAYG)	Public pensions financing method where current workers' contributions are used to pay benefits paid to retirees.
Pension fund	The pool of assets forming an independent legal entity that are bought with the contributions to a pension plan for the exclusive purpose of financing pension plan benefits paid to contributors. The plan/fund members have a legal or beneficial right or some other contractual claim against the assets of the pension fund. Pension funds take the form of either a special purpose entity with legal personality (such as a trust, foundation, or corporate entity) or a legally separated fund without legal personality managed by a dedicated provider (pension fund management company) or other financial institution on behalf of the plan/fund members. [OECD 2005]
Pension pot	Amount that a person has saved during his/her working life (through a DC scheme for example) and that will serve as a basis for investing in a decumulation product.
Pension products	All types of products designed to provide retirement income.

Pension scheme	A legally binding contract having an explicit retirement objective (or – in order to satisfy tax-related conditions or contract provisions – the benefits cannot be paid at all or without a significant penalty unless the beneficiary is older than a legally defined retirement age). This contract may be part of a broader employment contract, it may be set forth in the plan rules or documents, or it may be required by law. In addition to having an explicit retirement objective, pension plans may offer additional benefits, such as disability, sickness, and survivors' benefits. [OECD 2005]
Replacement rate	The ratio of an individual's (or a given population's) (average) pension in a given time period and the (average) income in a given time period. [OECD 2005]

1 Introduction

1.1 General issues[1]

The general issues of the study are explained in the tender specifications as follows:

Pension decumulation is 'the process of converting pension savings into a retirement income. The decisions an individual makes during the decumulation process are crucial'[2].

While extensive research has already been devoted to pension accumulation practices and products, less is known about what happens to people later in life, during which they are confronted with the need to decumulate their resources in an orderly manner in retirement[3].

Pension decumulation products offered to retiring workers who receive a pot of money when they go on pension are increasingly diverse and complex. The most common are annuities, i.e. equal monthly or annual payments made by an insurance company or pension fund to an individual who invests his savings in an annuity contract. They can also include non-annuity products to turn one's assets into a retirement income or equivalent benefit in kind (for ex. private long-term care insurance, investment in adapted housing/room in a care home for older dependent persons, home equity release products, etc.), i.e. what consumers received after all taxes, charges and administrative costs had been deducted.

Many decumulation products available in the current market tend to be targeted towards more wealthy consumers, leaving the needs of many un-serviced by the financial sector.

Specific risks highlighted include firms developing products not in the long-term interests of consumers and which are difficult to compare due to hidden costs and fees. Through the design and pricing of these products, firms face potential conflicts between servicing consumer needs in a fair and transparent way, and creating sufficient margin to make the long-term costs on these products viable[4].

The EIOPA's Fact Finding Report on Decumulation Phase Practices[5](Oct. 2014) gives a good overview of current rules, practices, approaches and options available to members at the decumulation phase of both Defined Contributions (DC) and Defined Benefits schemes (DB) provided by Institutions for Occupational Retirement Provision (IORPs) in various Member States. It also includes some information on decumulation practices in non-IORPs schemes in some Member States. The purpose of the study is to analyse aspects of decumulation not covered by the EIOPA factual report and to look at decumulation from the point of view of the customer.

EIOPA's report focuses on information and products available as well as rules and practices in place at the decumulation phase based on the interviews of national competent authorities of 30 countries. It notably excludes any (economic) analysis of the products or the use made thereof by consumers which are central for DG FISMA.

[1] Tender specifications, "Study on the performance and adequacy of pension decumulation practices in seven EU countries" - N° FISMA/2015/076/D
[2] Nigel Cayless, The decumulation process – dealing with uncertainty November 2012 / PensionsInsight
[3] Olivia S. Mitchell, Developments in Decumulation: The Role of Annuity Products in Financing Retirement, 2011, The Pensions Institute, ISSN 1367-580X
[4] Allan Caddle, PensionAge, FCA warns of decumulation product risks following pensions shake-up, UK, 2014
[5] https://eiopa.europa.eu/Publications/Reports/EIOPA-BoS-14-193_EIOPA_s_Fact_Finding_Report_on_Decumulation_Phase_Practices.pdf October 2014

1.2 Objectives of the study

In its specifications, the Directorate General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA) stated that the objective of the study is: *to look at pension decumulation from the perspective of the customer through a qualitative assessment of which decumulation options result in the most adequate and safest old-age income as well as to identify existing shortfalls and analyse what their causes are.*

More specifically the two main objectives of the study are:

- *To compare the evolution of annuities and non-annuity products markets' performance over the last 10 years from the perspective of consumers (or at least for the period for which comparable data is available in last 10 years); including comparison of the evolution of "highly regulated" and "low regulated" annuity markets as well as mandatory and voluntary annuitisation.*
- *Indicate and analyse the main issues debated at national level which might impact pension decumulation practices in the future.*

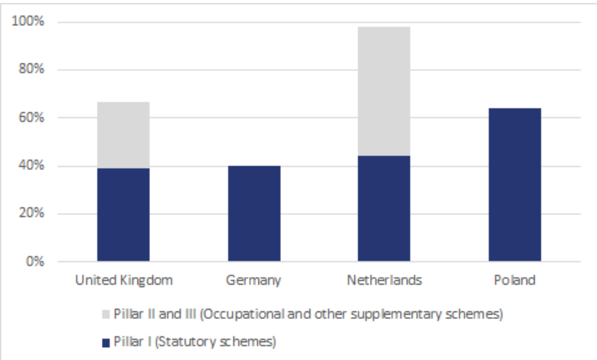
1.3 Scope

The study covers decumulation practices in four countries: the United Kingdom, the Netherlands, Poland and Germany.

It addresses consumer choices at decumulation. The analysis of accumulation practices is outside the scope of the study.

In the case of Defined Benefits (DB) schemes, the employer promises a specific level of benefit and the consumer cannot make a choice on how to decumulate his pension pot as it may be the case for Defined Contributions (DC) schemes. Therefore the decumulation products considered in this study are those offered through Pillar II and Pillar III DC schemes. The following figure represents the Gross Theoretical Replacement Rates for each country of the study:

Figure 1: Gross Theoretical Replacement Rates in 2013 by country

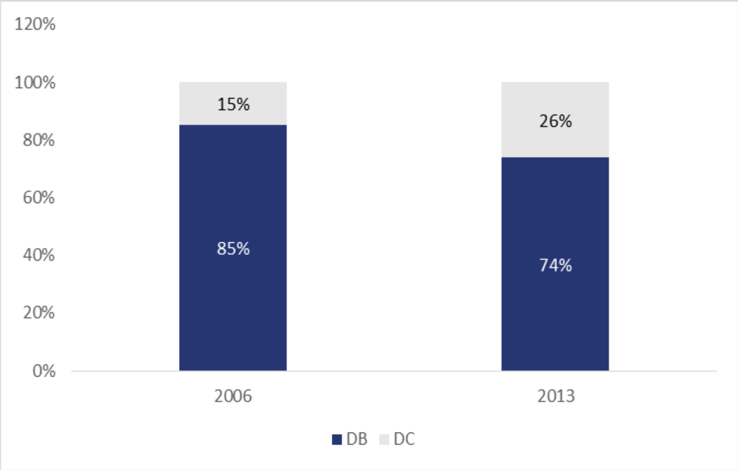


Source: SPC and DG EMPL, *The 2015 Pension Adequacy Report: current and future income adequacy in old age in the EU, Volume I,* 2015

Notes: The Gross Theoretical Replacement Rate has been calculated for an average earner (average earnings are based on historical data) retiring at the Statutory Pension Age of each country and assuming a career length of 40 years. It does not take into account income taxes and employee contributions paid by the worker or the retiree.

The previous figure shows that statutory DB schemes provide the main source of income at retirement even if the importance of occupational pension schemes increases[6]. There is also a general shift from DB to DC schemes in Europe as illustrated in the following figure.

Figure 2: DB/DC asset split (EU)



Source: EIOPA, December 2014, *Financial Stability Report*; CEIOPS, May 2008, *Financial Stability Report*.

The following categories of decumulation products are especially examined[7]:

- **Annuities:** Guaranteed fixed or variable benefit payments at regular intervals (monthly or annually) until the death of the annuitant or the end of a specified period of time. The most common annuity products are the following:
    - Lifetime annuity: an annuity that ceases upon the death of the annuitant. Therefore, this product insures against longevity risk.
    - Time-limited annuity: an annuity that ceases after a specified period of time, irrespective of the life of the annuitant.
    - Guaranteed annuity: an annuity that ceases upon the death of the annuitant or upon the expiration of a specified period of time, whichever occurs last.
    - Deferred annuity: an annuity which commences only at the end of a specified period of time after the annuity purchase premium has been paid.

  Annuity products are also subject to a wide diversity of features such as index linked payments for annuities (as opposed to level annuities with constant payments). These annuities are called escalating annuities (indexation based on inflation or a fixed rate) or investment-linked annuities (income is linked to the value of investments such as stocks or funds). Another feature would be reversion i.e. annuities that are payable as long as the annuitant lives and thereafter for the lifetime of the named survivor if still living. These annuities are called joint life annuities. In the UK, consumers with health conditions have access to a specific type of annuities called enhanced annuities.

- **Drawdown products:** For this category of decumulation products, the retiree is able to choose the amount to withdraw each year from the retirement capital (which can continue to be invested). Upon the death of the retiree, remaining amounts are paid to beneficiaries.

- **Lump sums:** A single payment at retirement which enables the beneficiary to use the money at his own will. The money can be deposited in a bank savings account or used to buy a property or repay debt.

[6] SPC and DG EMPL (2015)
[7] EIOPA (2014b)

- **Hybrid products:** Hybrid products have both a drawdown component and an annuity component[8]. For example, variable annuities and guaranteed drawdowns belong to this family of products. As opposed to drawdown products, guaranteed drawdowns include annuity features such as offering guarantees on income and/or capital (e.g. minimum guaranteed income for life). The advantages of guaranteed drawdowns compared to a standard drawdown imply higher fees. As opposed to lifetime annuities, variable annuities include drawdown features such as enabling the consumer to benefit from market performance (minimum income guaranteed for life which can increase with positive performance of the market) or the ability to recover the potential remaining capital upon the death of the beneficiary. These advantages also come with higher fees.

1.4 Approach

To examine consumer choices for the decumulation phase, the study compiles:

- Data gathered from previous studies on customer's decumulation practices. More than 40 documents were reviewed covering a wide range of sources of publications such as academics, national (governmental) organisations, consumer associations, and international institutions. The list of documents reviewed is presented in Appendix 4.
- The analysis of economic indicators, especially the Money's Worth Ratio (MWR) was used to assess the economic value of different kinds of products. It compares the expected income stream during decumulation to the accumulated pot. The MWR is generally between 0 and 1 and measures the economic value of annuity products: an MWR equal to 1 means that the consumer is expected to receive all the money invested in the decumulation product.
- Interviews with more than 20 stakeholders including academic experts, consumer organisations, decumulation product providers and national public institutions. At least 5 interviews were performed in each of the four countries studied. Among these 5 interviews, a representative of a consumer organisation was interviewed to the extent possible. The aim of these interviews was to obtain a deeper understanding of trends in the market, consumer perceptions and the state of play of the national debate in the countries considered in this study. The list of interviewees is presented in Appendix 5.

1.4.1 Data sources

Mortality tables

The mortality assumption is based on mortality tables available on the website mortality.org as recommended by the FSUG. This website allows comparison between countries and is consistent over time. The tables provided are based on observed mortality.

Life expectancies at age 65 according to the different mortality tables used are presented below:

[8] Blake (2016)

Country	2004	2009	2014*
UK	16.18	17.43	18.37
Germany	15.98	17.05	17.56
Netherlands	15.80	17.25	17.87
Poland	13.89	14.67	15.76

Notes:

- When tables for 2014 were not available on mortality.org, the most recent table available was used.
- For the Netherlands, as annuity rates were collected for 2012, the 2012 mortality table was used.

Data concerns

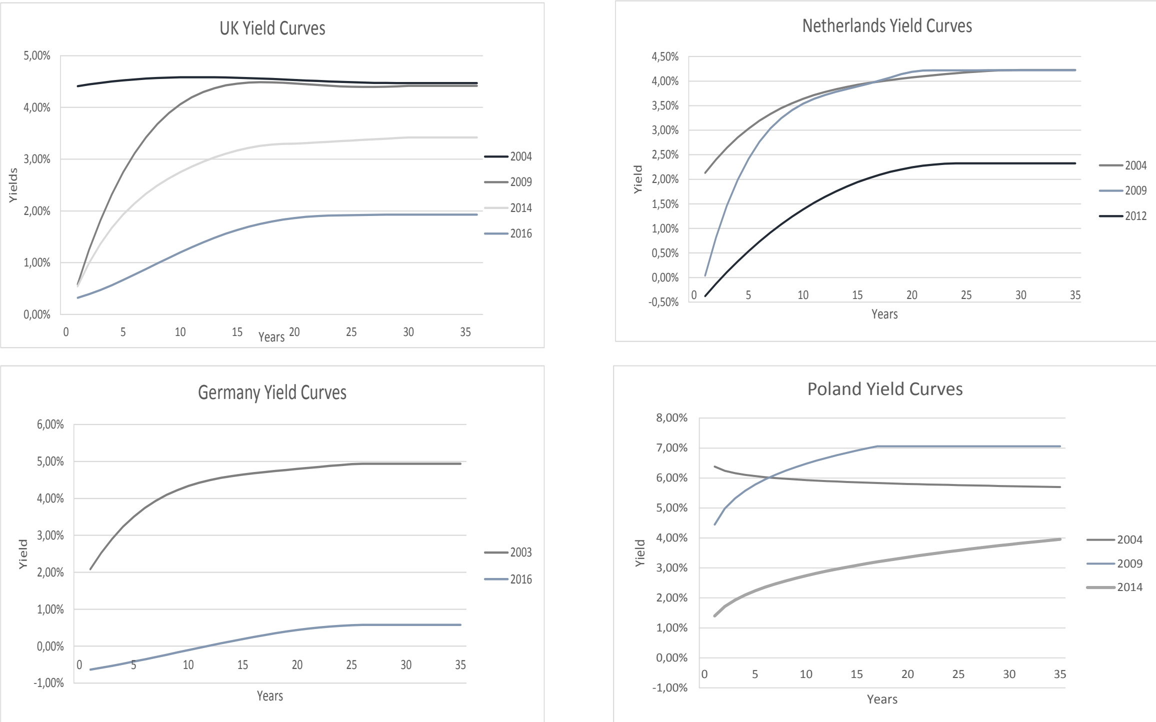
▪ These mortality tables do not take into account the future increase of life expectancy over time. As a result, the MWR can be very low, and more significantly understated for countries where life expectancy is rising faster.

▪ These mortality tables differ from the ones used by insurers which are not publicly available for the countries under consideration. Without this information, we were only able to assess partially the financial attractiveness of each decumulation product.

Discount rates

The interest rate references used are the risk-free government bond yields. The main reason for using such references is that annuity payments are meant to be secure (chances of default are minimal in the countries of the study). The curves plotted for the different years and countries studied are presented in the figure below.

Figure 3: Interest rates' curves in the selected countries



Source: Reuters

Annuity rates

The annuity rates dataset was extracted from various sources such as comparison websites and previous studies.

Comparison websites provide annuity rates depending on the gender (male), on the average pot size or on the retirement age. However, these data are only provided for the most recent year. Comparison websites do not provide historical data on annuity rates.

Historical data on annuity rates were obtained from previous studies. Thus, historical annuity rates were obtained for specific parameters such as the size of the pension pot.

The sources of information and the corresponding annuity rates are presented in the table below. The first column *Analysis* corresponds to the analysis that is provided later in the study using the associated data.

<u>UK</u>

Analysis	Year	Type of product	Pot size*	Quote	Source	Annuity rate
Evolution over time	2014	Lifetime annuity	£10k	Mean	Moneyfacts	5,06%
	2009	Lifetime annuity	£10k	Mean	Moneyfacts	6,02%
	2004	Lifetime annuity	£10k	Mean	Moneyfacts	6,57%

Analysis	Year	Type of product	Pot size*	Quote	Source	Annuity rate
Benefit of shopping around	2016	Lifetime annuity	£50k	Best	Money Advice Service	5,49%
	2016	Lifetime annuity	£50k	Worst	Money Advice Service	4,82%
Impact of pension pot size	2016	Lifetime annuity	£50k	Mean	Money Advice Service	5,20%
	2016	Lifetime annuity	£25k	Mean	Money Advice Service	5,16%
	2016	Lifetime annuity	£10k	Mean	Money Advice Service	4,94%
Product comparison	2016	Lifetime annuity	£50k	Mean	Money Advice Service	5,20%
	2016	Guaranteed annuity	£50k	Mean	Money Advice Service	5,00%
	2016	Escalating annuity*	£50k	Mean	Money Advice Service	3,61%
	2016	Drawdown Self-annuitise	£50k	Mean	Money Advice Service	5,20%

Notes:

- The average pension pot is estimated at £50k. However, for years before 2016, £10k was the pension pot retained (as it is the only publicly available data from Moneyfacts). It should be noted that annuity rates from Moneyfacts were also used by Cannon & Tonks[9] and the FCA[10] in their studies.
- An MWR analysis was conducted for the escalating annuity product in an attempt to understand why it is not one of the most common products in the UK, despite the fact that it covers the inflation risk.

Netherlands

Analysis	Year	Type of product	Pension pot	Quote	Source	Annuity rate
Evolution over time	2012	Lifetime annuity	€50k	Mean	Cannon & Tonks	6.26%
	2009	Lifetime annuity	€50k	Mean	Cannon & Tonks	7.89%
	2004	Lifetime annuity	€50k	Mean	Cannon & Tonks	8.40%
Benefit of shopping around	2016	Lifetime annuity	€50k	Best	Consumentenbond	4.73%
	2016	Lifetime annuity	€50k	Worst	Consumentenbond	4.02%
Impact of pension pot size	2016	Lifetime annuity	€50k	Mean	Consumentenbond	4.33%
	2016	Lifetime annuity	€125k	Mean	Consumentenbond	4.40%

[9] Cannon and Tonks, 2013
[10] FCA (2014d)

Germany

Analysis	Year	Type of product*	Pension pot	Quote	Source	Annuity rate
Evolution over time	2016	Guaranteed participating annuity	€100k	Mean	Check Sofortrente	5,64%
	2003	Guaranteed participating annuity	€100k	Mean	Morgen & Morgen	7,29%
Impact of pension pot size	2016	Guaranteed annuity	€100k	Mean	Check Sofortrente	5,64%
	2016	Guaranteed annuity	€20k	Mean	Check Sofortrente	5,37%

Note: Annuity rates' data for lifetime and deferred annuities with participation are not available through comparison websites. Therefore, these two annuity products were excluded from the study.

Poland

No information on annuity rates were identified (see 2.2.5).

Data concerns

Annuity rates are very sensitive to the source from which they have been collected. This is due to the fact that they are influenced by many factors such as the size of the pension pot. Thus, analyses realized with different sources of information are hardly comparable.

1.4.2 Assumptions for drawdown products

For the computation of MWRs for drawdown products, additional assumptions needed to be made:

- Unlike annuities, income streams with drawdown products are not specified and depend on consumers' choices. Therefore, to estimate money's worth ratios for drawdown products, one needs to consider different ways in which consumers could decumulate their income. The following possible **drawdown strategies**, as studied by the FCA[11], were considered for the product comparison analysis in the UK:
    - Amortise to 85 years old: take a constant nominal income each year until 85 years old, at which point funds are exhausted.
    - Self-annuitise: take the same income as the average annuity quote for a lifetime annuity.
    - Life expectancy: annual drawdown depending on life expectancy each year (e.g. consume 1/20th of the pot if life expectancy is equal to 20 years).

  The evolution over time analysis was conducted based on the same drawdown strategy for 2004, 2009 and 2014, for instance the "Amortise to 85" strategy in the UK and Germany. In Poland, an "Amortise to 75" strategy was retained given that interviewees mentioned that withdrawals are programmed at the time of retirement for a period that generally does not exceed 10 years.

[11] FCA (2014d)

- Different scenarios were considered for the **annual investment return**, depending on the asset portfolio. It is assumed that the main purpose of a pension decumulation product is to provide adequate long-term income rather than to increase wealth, while retirees are not in principle willing to bear a substantial amount of risk. Indeed, retirees who may be comfortable with higher levels of investment risk are generally higher net worth individuals, while this study focuses on the value for money for a consumer with an average or small pension pot. Hence, the three following scenarios were considered:
  - Riskless bonds (e.g. government bonds): the investment return is the risk-free rate.
  - An asset portfolio comprising 10% of equity investments and 90% of riskless bonds: the investment return is the weighted average return of the risk free rate and the main equity index in each country (FTSE 100 in the UK, DAX in Germany and WIG in Poland).
  - An asset portfolio comprising 30% of equity investments and 70% of riskless bonds: the investment return is the weighted average return of the risk free rate and the main equity index in each country.
- **Annual fees** depend on asset classes in which the pension pot is invested during the accumulation phase and are generally in the 1% to 3% range[11] (the riskier the assets, the higher the fees). Hence, fee levels of 1%, 2% and 3% were applied for the three asset portfolios respectively.

  The central scenario (10% equity, 90% riskless bonds and 2% fees) was used for the comparative analyses conducted in the core of the report (evolution in time and product comparisons) and sensitivities to annual investment returns and fees are presented in Appendix 2.

Data concerns

Results on drawdown products are specific to the assumed decumulation scenarios.

1.4.3 Formulas used

To compute the MWR for an annuity, all payments are multiplied by the probability of reaching the periods of payments, discounted, summed up and divided by the initial premium paid:

$$MWR = \frac{1}{Premium} \cdot \sum_{t=1}^{T} \frac{p_t^{65} . A_t}{(1+i_t)^t}$$

Where,

i_t is the interest rate as of the period t

p_t^{65} is the survival probability from the age of 65 up to the period t

A_t is the pay-out of the period t

T is the last period corresponding to the end of the mortality table

For an annuity, if there were no costs at all, the MWR would be unity. In practice, the MWR is lower than unity after allowing for fees collected by the provider. First and foremost, the MWR is thus a measure of the price of an annuity. Compared to the annuity rate, i.e., AR = 1/Premium * p_1 * A_1, it is comparable over time because it is net of the change in interest rates and of the secular improvement in life expectancy. The choice of life tables is crucial, though, because of adverse selection (Amy Finkelstein and James Poterba, "Adverse Selection in Insurance Markets: Policyholder

Evidence from the U.K. Annuity Market", Journal of Political Economy, 2004, vol. 112, no. 1). Put differently, the MWR may be very different from the perspective of an annuity provider's typical customer and a typical member of the population because the former has chosen to buy an annuity due to her expectation of living fairly long, which turns out to be true, on average.

For a drawdown product, two cash flows need to be considered for each year:

- The annual drawdown depending on the drawdown strategy considered. This cash flow is multiplied by the probability of surviving up to the period t.
- The reversion cash flow in the case where the consumer passes away during period t. This cash flow is equal to the pension pot size at the end of period t and is paid to beneficiaries. It is multiplied by the probability of surviving until the period t-1 and the probability of passing away during the period t.

These cash flows are then summed up, discounted and divided by the initial premium paid:

$$MWR = \frac{1}{Premium} \cdot \sum_{t=1}^{T} \frac{p_t^{65} \cdot A_t + p_{t-1}^{65} \cdot q_t \cdot R_t}{(1+i_t)^t}$$

Where,

i_t is the interest rate as of the period t

p_t^{65} is the survival probability from the age of 65 up to the period t

q_t is the probability of passing away during the period t

A_t is the annual drawdown of the period t (dependent on the drawdown strategy considered)

R_t is the reversion cash flow in the case where the retiree passes away during period t. This cash flow is equal to the pension pot size at the end of period t and is paid to beneficiaries.

T is the last period corresponding to the end of the mortality table

1.5 Limitations

It is important to note the following limitations:

- We relied entirely on information found in the documents consulted. We have not attempted to verify information apart from cross-checking when relevant.
- The indicators considered in the study are very sensitive to assumptions made (discount rates, mortality tables, drawdown scenarios, etc.) and to the data collected which may not be comparable between the different countries, periods of time and products considered in the study (e.g. market competition indicators, historical annuity rates, etc.). Thus, we tried to the extent possible to use homogeneous data and assumptions and to put our results in perspective with previous studies. Nevertheless, the quantitative results of the current study should be approached with caution.
- The findings of interviews are only indicative and cannot be considered as representative. Although the people surveyed are experts provided by the FSUG, the number of interviewees (5 per country) is too low to be conclusive.
- The analysis is based on the information received, and the limitations of the data and opinions obtained must be borne in mind when interpreting our findings. Had more information been available to us, further analysis could have been performed and reported.

1.6 Structure of the report

This report is organised in three parts:

- The first part provides an overview of decumulation products' practices in the four countries. It presents the different decumulation products available to consumers in the market and looks at consumer choices.
- The second part focuses on obstacles which may limit consumer choices such as the lack of information, the effectiveness of financial advice and the regulatory framework.
- The last part presents the current national debates around decumulation practices in the four countries studied.

2 Overview of customer decumulation practices

2.1 Product analysis

2.1.1 Impact of regulation on consumers' options

While in the UK consumers have access to a full range of decumulation products, in the other countries studied, existing regulation limits consumer choices at decumulation.

In Germany and Poland, decumulation products are accessible through specific pension schemes (see Glossary) in which consumers have previously accumulated their pension savings. Therefore, consumer choices at retirement are linked to the pension schemes in which they have chosen to accumulate their pot. Thus, in these countries, options available at decumulation depend on the choice made at accumulation.

Lastly, in the Netherlands, consumer choices are limited by pension and tax legislation. As a result, only annuity products are available to consumers.

Description of pension schemes in Poland and Germany

In Germany, consumers can accumulate their pension savings in:

- "Riester pensions": introduced in 2002, Riester pension schemes allow consumers to convert up to 30% of their accumulated pension pot into a lump sum, the remainder can be used to purchase a drawdown product or an annuity[15].
- "Rürup pensions": introduced in 2005, Rürup pension schemes are accessible by anyone although they were originally intended for the self-employed[12]. The accumulated pension pot can only be converted into an annuity[13].
- Pension insurance contracts under which annuities, drawdown products and lump sums are possible.

In Poland, decumulation products cover only a small part of the population and are available through three pension schemes which only offer lump sum and drawdown options at retirement[14]:

- Employee pension programmes (PPE): only 2.4%[15] of the working population was covered in 2014.
- Individual retirement accounts (IKE): 5.1%[15] of the working population was covered in 2014.
- Individual retirement savings accounts (IKZE): 3.3%[15] of the working population was covered in 2014.

[12] OECD (2008)
[13] www.howtogermany.com
[14] EIOPA (2014c)
[15] Better Finance (2015)

2.1.2 Fees

Few data is available on fees applicable to pension decumulation products. According to interviewees, fees and costs of annuity products are opaque and difficult for consumers to understand. Lump sums are subject to limited fees while drawdown products which combine many charges (administrative and management charges, charges for changes to the terms of the contract) are perceived as expensive by consumers.

The main fees that new retirees need to consider for annuity and income drawdown products are the following:

- For annuity products, the implicit charges are included in the annuity rates offered. They represent the insurance guarantees that are automatically included in the annuity and the selling and administrative expenses of the contract. In the UK, these fees typically represent 5% to 15%[16] of the pension pot.
- For drawdown products, AMCs (Annual Management Charges) of investment funds are usually more explicit and are the main form of charges for this category. The impact of a 0.5% AMC is the equivalent of a 5%[16] reduction in the initial value of the pension pot in the UK. Other fees may be charged to cover administration costs, the distribution of products (including advice and guidance), making changes to withdrawal amounts, or opening/closing the scheme. Other annual product administration costs of typically 0.5% would also reduce the initial value of the pension pot by 5%, for a total charge of 10% which is comparable to embedded charges on annuities.

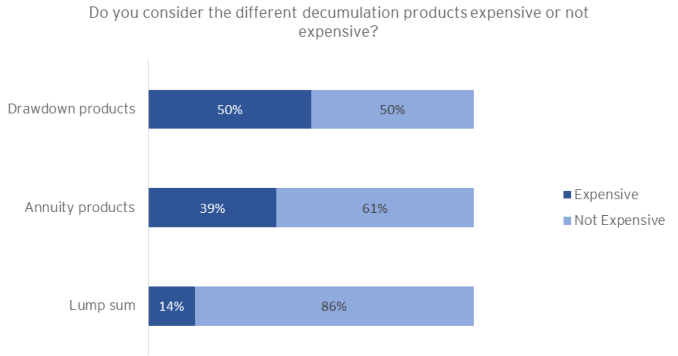
The literature does not address the fees which apply in the case of a lump sum.

No public research is available for the comparison of fees applicable in the event of an online purchase as opposed to other distribution channels.

Interviewees' responses on fees applying to decumulation products

Fees and costs of annuity products are opaque and difficult for consumers to understand. Lump sums are subject to limited fees while drawdown products, which combine many charges (administrative and management charges, charges on changes of the terms of the contract) are perceived as expensive by consumers.

Statistics on respondents' answers to the questionnaire are presented in the figure below:



[16] Oxera (2014)

2.1.3 Taxation

Taxes on pension benefits during the decumulation phase depend on taxes on contributions paid during the accumulation phase. Indeed, pension benefits can be either[17]:

- **Subject to income tax when contributions paid during the accumulation phase are tax-deductible** (investment income during both the accumulation and the decumulation phases is tax-exempt). This is the case in the Netherlands, where a 30% rate applies for pension benefits, in the UK where income tax (calculated with current tax rates and bands) applies for 75% of lump sum payments, drawdowns and annuity payments (the remaining 25% is tax free), in Germany for Riester pension schemes[18] and in Poland for IKZE pension schemes[17].
- **Tax-exempt when contributions paid during the accumulation phase are subject to income tax** (investment income during both the accumulation and the decumulation phases is tax-exempt)**.** This is the case in Poland for PPE and IKE pension schemes[19] and in Germany for pension insurance products.
- **Partially taxed when contributions are also partially taxed.** This is the case in Germany for Rürup pension schemes which are transitioning towards the full taxation of pension benefits.

In the UK, the accumulation phase tax incentives contribute to the development of the pension decumulation market. In the Netherlands, the mandatory nature of Pillar II DB schemes explains the small size of the private pensions' market despite the tax incentives. In Germany, it should be noted that despite the tax incentives for Rürup and Riester pension schemes, pension insurance schemes are the most highly developed, with 23.1m contracts in 2013[17] compared to 16.3m Riester contracts in 2014[17] and 1.6m Rürup contracts in 2012[17]. Possible explanations include less favourable media coverage of Rürup and Riester schemes[17]. In Poland, the lack of tax incentives during the accumulation phase explains the small size of the market.

Hence, assessing the economic value of pension decumulation products by taking into account the taxation of decumulation products but not the taxation of contributions paid during the accumulation phase would bias the tax burden.

2.1.4 Products' comparison

Risk coverage

Decumulation products can provide coverage against different risks as well as different guarantees:

- **Longevity risk** corresponds to the risk of having a lower income or not having any income in the event of a longer than expected lifetime.
- **Capital protection** corresponds to a protection against losses on the pension pot (e.g. in the case of an early death or poor investment performance).
- **Inflation risk** corresponds to the risk that the level of income does not adjust to the changes in prices.

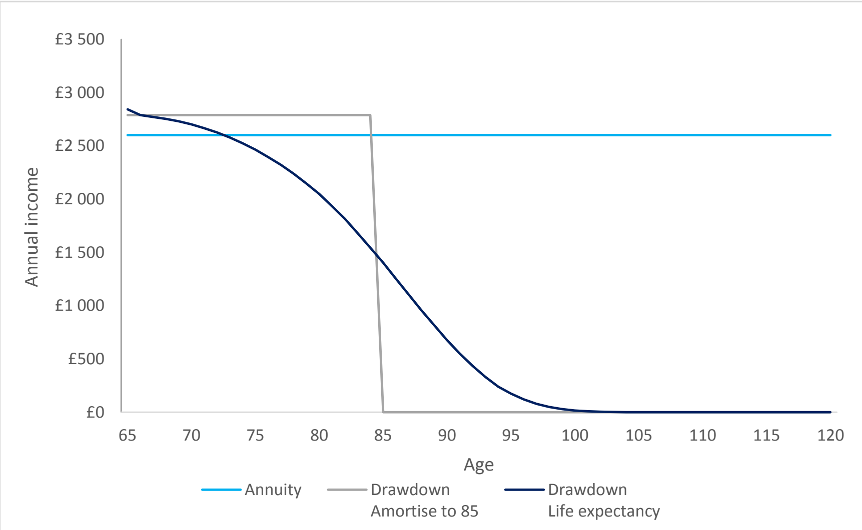
For example, longevity risk can be covered using decumulation products which provide a level of income until the death of the beneficiary: this includes all annuity products

[17] Better Finance (2015)
[18] Antolin, Payet and Yermo (2012)
[19] Holzmann (2009)

which are not limited to a certain period of time. Capital protection is offered by products which provide for a return of unpaid income in the event of the death of the beneficiary; this is a case for joint life annuities or drawdown products. Inflation risk is covered by decumulation products where the level of income may increase over time, either because it is a feature of the product (escalating annuities) or because the retirement capital is still invested during decumulation (drawdown products).

The MWRs calculated for drawdown products depend on the scenario considered. Each scenario provides a different level of income over time compared to annuities, which allow the option to cover more or less longevity, risk for example. The figure below illustrates the cash flows of the "Amortise to 85" drawdown strategy, the "Life expectancy" drawdown strategy and a level annuity for the same pension pot (£50k):

Figure 4: Income profiles: drawdowns vs. annuities



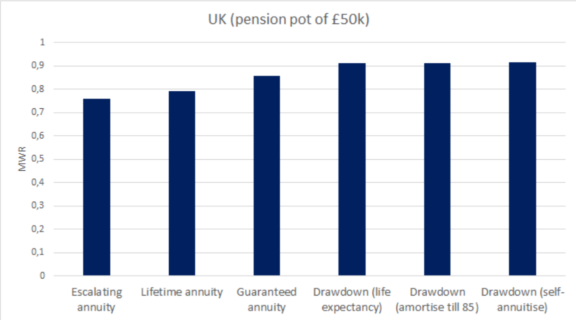
Source: EY Analysis

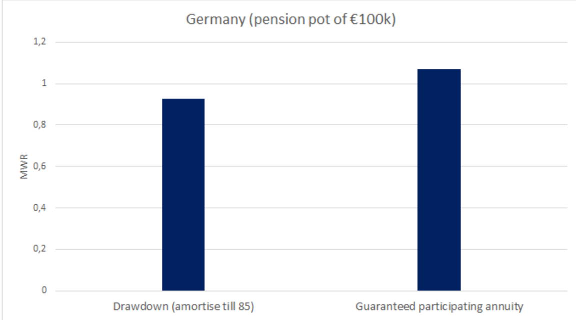
As can be seen from the figure above, an annuity guarantees an income until the death of the consumer, which is not the case for drawdown products: in the case of an "Amortise to 85" drawdown strategy, the beneficiary would have exhausted his pot when he reached the age of 85; in the case of a "Life expectancy" drawdown strategy, the beneficiary still has an income even if he lives longer, but this income is very low compared to an annuity. Therefore, the "Life expectancy" drawdown product partly covers the longevity risk.

Revenue streams

The figures below present MWR results, without tax, for annuity and drawdown products in the UK and Germany.

Figure 5: MWR by type of product





Source: EY analysis

Results in this section (2.1.4) were obtained based on data presented in section 1.4.1 for the four countries of the study under the "Product comparison" analysis. Specific assumptions were used for drawdowns as presented in section 1.4.2. Different formulas were used for annuity and drawdown products as explained in section 1.4.3.

<ins>Caveat about the MWR of drawdown:</ins>

In the above comparison, drawdown has a higher MWR than annuitisation. This may lead to the assumption that drawdown is a better deal for the consumer. However drawdown is a different product from annuities as it does not cover the risk of longevity while annuities do. Depending on the how drawdown is invested, the money may not run out, but this is not the same as covering the longevity risk. Moreover, it is important to recognise that, given the exposure to market risks, there will be additional advice costs involved in managing drawdown portfolios over the lifetime of retirement. There will be also investment costs. This, by definition, would have the effect of reducing the net return available from drawdown schemes.

<ins>The MWR of the lump sum:</ins>

For a lump sum, low fees are charged by providers, if any. Therefore, the MWR would be equal or very close to unity and consumers could perceive the lump sum to be the decumulation product offering the best value for money. However, the lump sum does not cover the longevity risk, as it is the case with an annuity, and it does not offer the possibility of benefiting from investment profits, as it is the case with a drawdown product.

<ins>The impact of taxation on the MWR:</ins>

Furthermore, high taxation may apply to a lump sum (e.g. in the UK, income tax is levied on most sources of income, including decumulation products) which can significantly decrease its value for money. For instance, in the UK, for an average pension pot of £50k and an average annual income of £17k, it is estimated that the current taxation in force would decrease the MWR from 1 to 0.85 for a lump sum, from 0.86 to 0.73 for a drawdown product (with an "Amortise to 85" drawdown strategy) and from 0.79 to 0.67 for a lifetime annuity. Hence, the lump sum would still offer a better economic value than other products although to a lesser extent than when taxation is not taken into account.

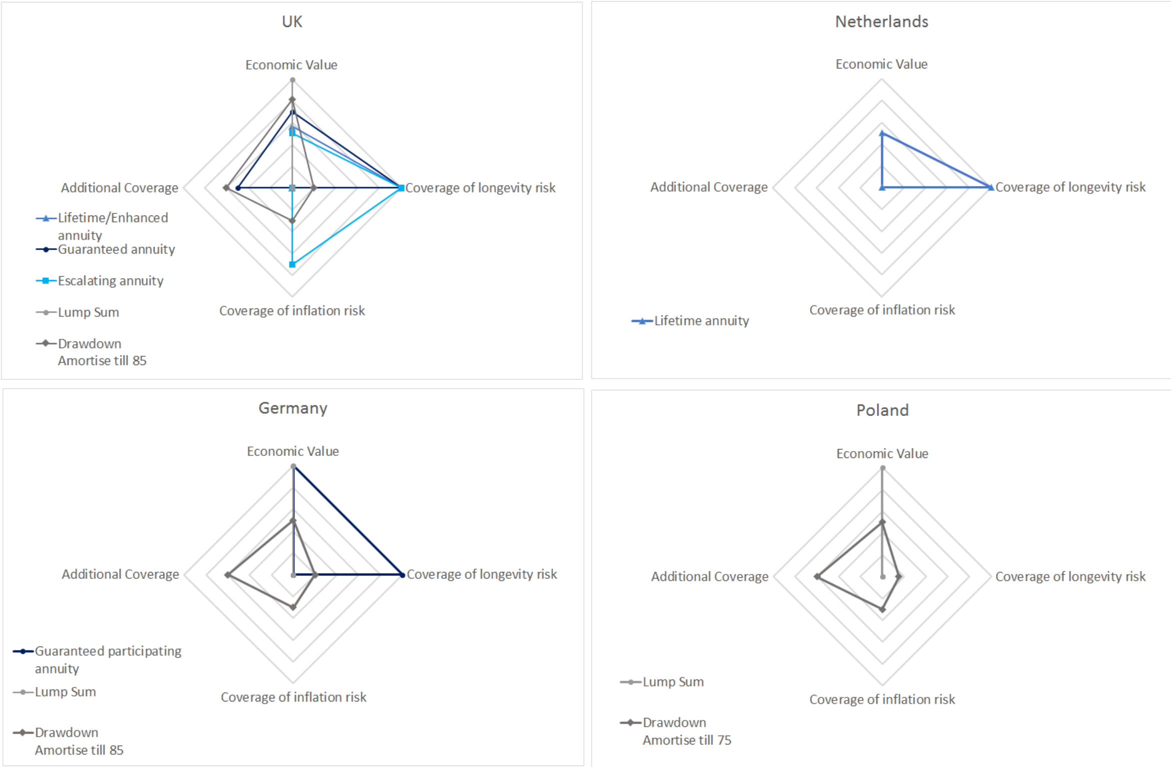
These results show that:

- In the UK:
    - Buying a 15-year guaranteed annuity enables a new retiree to obtain a better value for money, i.e. an MWR higher up to 8% even if the annuity rate is 0.20% lower (from 5.20% to 5.00%). This higher MWR for guaranteed annuities can be explained by the fact that the longevity risk is less costly for guaranteed annuities because their annuity rates are lower. Indeed, although all payments are certain during the guarantee period, annuity payments after the guarantee period are lower and the impact of the annuitant living an extra year is smaller than for a lifetime annuity. Therefore, insurers may need to hold lower levels of capital against their longevity risk.
    - Buying an annuity with revenue that increases by 3% every year reduces the value for money for a new retiree by approximately 4%. This can be explained by the fact that higher than expected longevity has a greater financial impact on an escalating lifetime annuity than on a lifetime annuity since surviving for an additional time period will result in a larger payment being made to the annuitant under an escalating annuity. Therefore, insurers may need to hold higher levels of capital against their longevity risk.
    - The different drawdown strategies have a very small impact on the MWR. Indeed, regardless of the chosen drawdown strategy, the full pension pot (adjusted taking into account returns and fees) will be paid to the retiree, or to the retiree's beneficiaries, if the former dies, which is not the case for a single lifetime annuity.
    - MWRs obtained for drawdown products are significantly higher than those obtained for annuities. This can be explained by the fact that **for drawdown products, the MWR is mechanically very close to one. Indeed, it is only driven by differences in assumptions made for interest rates (discount rates and returns) and fees and it does not take into account the insurance value provided by annuities.** Calculating MWRs for drawdown products and annuities that factor in the insurance value of the longevity risk can only be done in a framework which assigns utility to different states of the universe. While doing so is beyond the scope of this report, it is noteworthy that Mitchell et al. (AER 1999) finds in a very simple framework (setting aside health expenses, bequest motives, and joint decisions of married persons) that even if the MWR is as low as 0.75, individuals would value the insurance aspect so much that they would annuitise (almost) all of their wealth.
- In Germany:
    - MWRs obtained for guaranteed participating annuities are better than those obtained for drawdown products. A possible explanation is that the variable part of participating annuities is linked to insurers' asset portfolios which offer a better return than the risk-free bonds considered for drawdown products in this study.

Summary of findings

The economic value and risk coverage of the different products available in each country are described in Figure 6.

Figure 6: Diagrams showing the economic value and risk coverage of decumulation products



Source: EY analysis

Notes:

- Additional coverage includes for example a guaranteed period for payments with the guaranteed annuity and the transfer of the remaining capital to beneficiaries upon the death of the retiree for the drawdown.
- Drawdown features depend on the way the retiree decides to use the product (e.g. some strategies provide better coverage of the longevity risk, see Figure 4 above).
- Enhanced annuities present the same economic value and risk coverage features for a consumer with life limiting conditions than a lifetime annuity does for a consumer without any life limiting conditions.

The most advantageous products for consumers should be the ones covering the largest area in the diagram above, as they will provide a high economic value and good coverage of different risks.

Figure 6 reveals that:

- In the UK, escalating annuities offer the best coverage of risks (longevity and inflation risks) but do not offer good value for money. The product diversity is the highest in the UK. Products available to consumers offer good coverage of longevity risk as well as a good value for money.
- In Germany, guaranteed participating annuities offer good value for money and coverage of the longevity risk. On the other hand, drawdown products offer the option for customers to transfer their capital to beneficiaries after death. The mix of products available do not cover for inflation risk
- In the Netherlands, only lifetime annuity products are presented. These products neither allow transfer of capital to beneficiaries after death nor cover the inflation risk.
- In Poland, longevity risk is not addressed by the mix of decumulation products available to consumers.

2.2 Consumer choice

2.2.1 Most common decumulation products

Table 1 lists the most common annuity and non-annuity products in each market. This list was established by compiling data from the desk research and findings from interviews.

Table 1: Most common decumulation products

Country	Most common annuity products	Most common non-annuity products
UK	Lifetime annuity Guaranteed annuity Enhanced annuity	Lump sum Drawdown product
Germany	Guaranteed annuity with participation Lifetime annuity with participation Deferred annuity with participation	Lump sum Drawdown product
Netherlands	Lifetime annuity	NA
Poland	NA	Lump sum Drawdown product

Source: EY analysis based on interviews and desk research

The previous table shows that when the annuitisation of the pension pot is possible (almost all countries offer annuities except Poland), the lifetime annuity is one of the most common annuity products. The most common non-annuity products are lump sums and drawdown products which are the only non-annuity products identified. Some details on the consumption of each of these products in the different countries are given hereafter.

With the lump sum option, consumers withdraw the totality of their pension pot at one go and there is limited data on how they use it. There is a wide variety of products in which retirees can invest:

- Repayment of mortgages and other debts
- Buy-to-let property investments
- Interest bearing savings accounts
- Deferred long-term care purchased at retirement or immediate long-term care purchased when needed

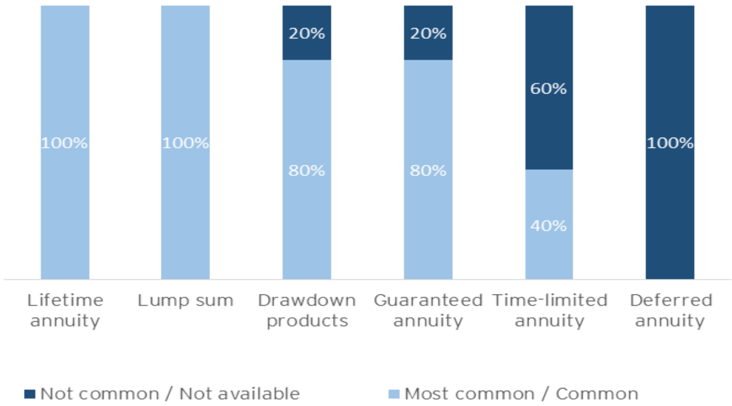
Consumers should be aware of investment fraud when they reinvest their pension pot. Indeed, the FCA reports that more than 25% of over 55s are victims of investment fraud and are scammed via unauthorized firms selling unregulated products[20]. These unauthorized firms take advantage of retirees looking for products with high returns in the context of low interest rates[20].

2.2.2 Most common decumulation products in the UK

In the UK, the pension freedom reforms have encouraged consumers to choose alternatives to annuity products.

Current state of play

As illustrated in the figure below, lifetime annuities and lump sums seem to be the most common products according to respondents:



Available statistical data echo the above figure. For the most recent period (July to December 2015), statistics show that two of the most common annuity products are the guaranteed annuity and the enhanced annuity, while escalating annuities are not that popular:

[20] FCA (2016)

Table 2: Type of annuity options sold since July 2015 in the UK

Annuity product feature/type	Number	% of annuities sold
Number of annuities sold when provider specified the types of annuity sold	43 112	
Guaranteed annuities	26 794	62%
Enhanced annuities	13 371	31%
Escalating annuities	4 608	11%

Source: FCA interview

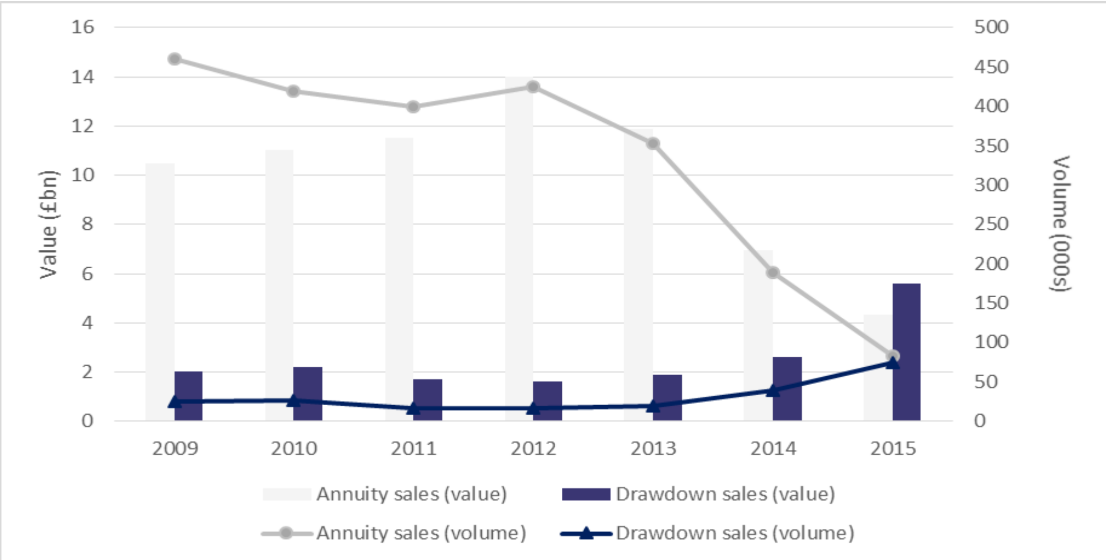
Notes:

- In this data collection, enhanced annuities are defined as only those underwritten on impaired life or lifestyle factors (e.g. smoking) and not annuities solely underwritten on other factors (e.g. occupation or postcode details).
- These product features are not mutually exclusive (e.g. an annuity could be both guaranteed and escalating).

Evolution over time

The evolution of consumer choices between annuities and drawdown products is illustrated in the figure below from 2009 to 2015 :

Figure 7: Sales and volumes of annuities and drawdown products in the UK (2009-2015)



Source: FCA, *Retirement income market study: Interim Report*, 2014

Note: The amount of sales in £bn for Q1 2015 has been estimated based on Q2, Q3 and Q4 2015 data.

The figure shows that volumes and values of sales significantly increased for drawdown products and decreased for annuities in 2014 and 2015. This can be explained by the introduction of two pension reforms in 2014 and 2015. For instance, before the 2014 reform, retirees could take 25% of their pension tax-free as a lump-sum but, before being able to access a drawdown product, they were required to fulfil a minimum annual income requirement of £20,000 with annuity products. The 2014 reform decreased the minimum annual income requirement to £12,000. The 2015 reform (referred to as Pension freedoms) introduced more flexibility by removing the minimum income requirement. Retirees can now use their pension pot as they wish starting from the age of 55.

Also, the take-up of the lump sum option has increased with 213,000 payments made in the nine months following the introduction of pension freedom reforms (as compared to 61,700 annuities and 63,600 drawdown products purchased)[21]. Furthermore, it should be noted that, compared to consumers with an average pension pot, demand from consumers with smaller pension pots is lower for annuities and drawdowns and higher for lump sums[22].

The impact of the pension freedom reforms on the take-up of annuities and drawdown products can be assessed more precisely by comparing sales volumes for Q2 2015 and Q2 2014.

Table 3: Sales volumes for annuities and drawdown products (Q2 2015 vs. Q2 2014) in the UK

Product	Volumes of sales in Q2 2014	Volumes of sales in Q2 2015
Annuities	46,700	18,200
Drawdown products	9,500	18,800

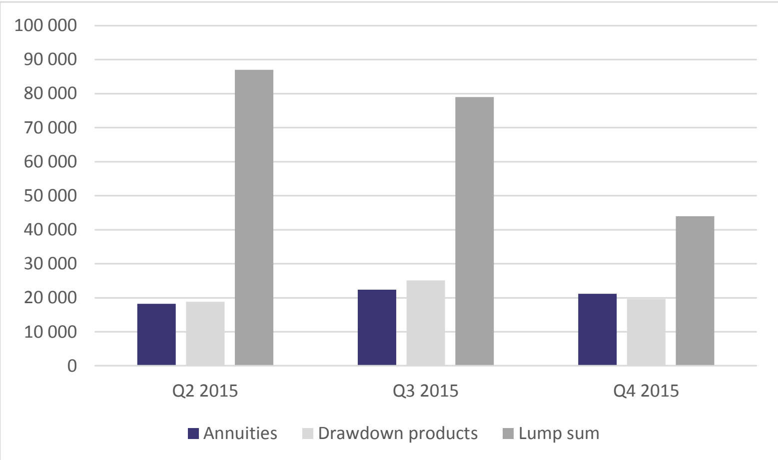
Source: ABI, *UK Insurance Key Facts 2015*, 2015

The demand for annuities decreased dramatically, with the number of annuities purchased declining by 61% as compared to Q2 2014 while the demand for drawdown products increased dramatically with the number of drawdown products almost doubling as compared to Q2 2014. Following the reform, a large number of lump sum payments was also observed[23].

Nevertheless, the British public seems to be taking a balanced approach following the reform since:

- The number of lump sum payments decreased over the nine months following the reform (as it can be seen in the figure below), together with the total amount withdrawn (£1.3bn and £1.2bn in Q2 and Q3 2015 versus £660m in Q4 2015[23]).
- Annuity sales started to recover in Q4 2015 with more annuities than drawdown products purchased.

Figure 8: Annuities, drawdown products and lump sums purchases in the nine months following the reform in the UK



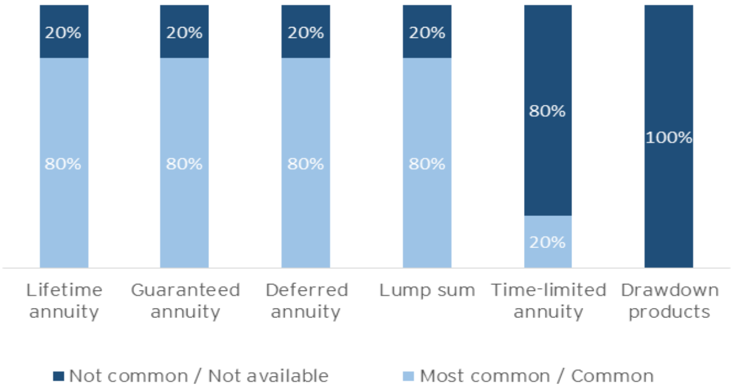
[21] ABI (2016a)
[22] FCA (2015c)
[23] ABI website

Source: ABI Pension freedoms statistics – one year on factsheet (2016), EY analysis

2.2.3 Most common decumulation products in Germany

Interviews with stakeholders in Germany showed that the most common decumulation option for pension insurance contracts is the lump sum (about 90%) and the most common annuity product for all pension schemes is the guaranteed annuity with participation.

Overall, regardless of the pension schemes described above (see 2.1.1), respondents' answers on the most common decumulation products in Germany are the following:

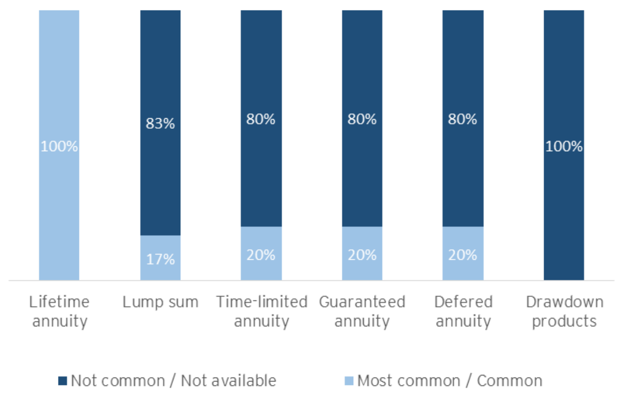


No data are available on the most common decumulation products in Germany in the documents analysed. Consumers have access to lifetime annuities, participating annuities with a nominal guarantee and a variable part depending on the surplus of the company, lump sums and drawdown products through the different pension schemes (Riester, Rürup and pension insurance contracts). Nevertheless, for the Riester scheme, the lump sum option is limited to 30% of the pension pot at the time of retirement[24].

2.2.4 Most common decumulation products in the Netherlands

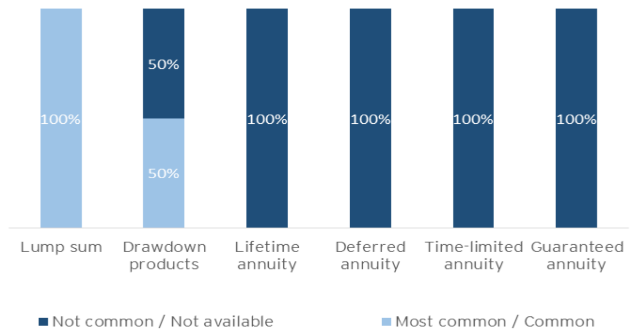
To no surprise, the most common decumulation products are lifetime annuities as they are mandatory in the Netherlands. The statistics below also confirm that, in some cases, lump sums can be used to decumulate very small pension pots (i.e. providing an annuity income of less than 417€ per year in 2009[25]). No other forms of pay-out such as income drawdowns are allowed[26].

[24] Better finance (2015)
[25] Cannon, Stevens and Tonks (2013)
[26] Brown and Jeffrey (2011)



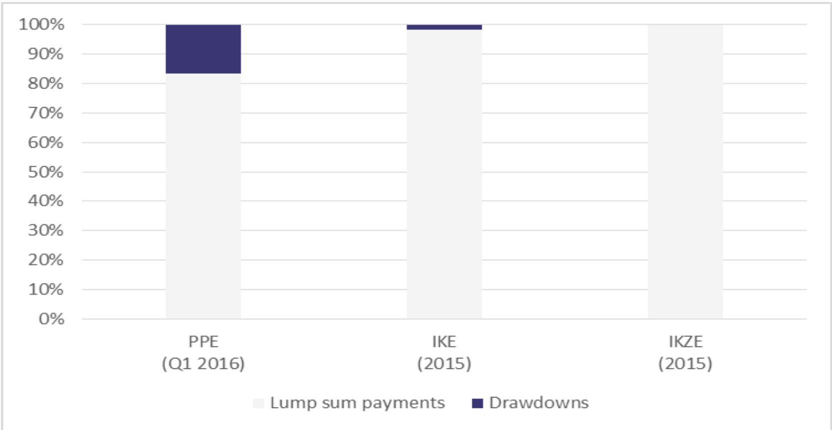
2.2.5 Most common decumulation products in Poland

According to interviewees in Poland, there are only a few thousands of annuity contracts within insurance companies in Poland. This product is considered as not available by most respondents as illustrated below:



This is in line with the documentation reviewed as the lump sum is the most popular option offered by both occupational pension schemes (employee pension plans (PPE)) and individual schemes (individual retirement accounts (IKE) and individual pension protection accounts (IKZE)). This is illustrated in Figure 9. Note that pay-out in the form of an annuity is not possible for PPE, IKE and IKZE[27].

Figure 9: Decumulation options by type of pension scheme in Poland



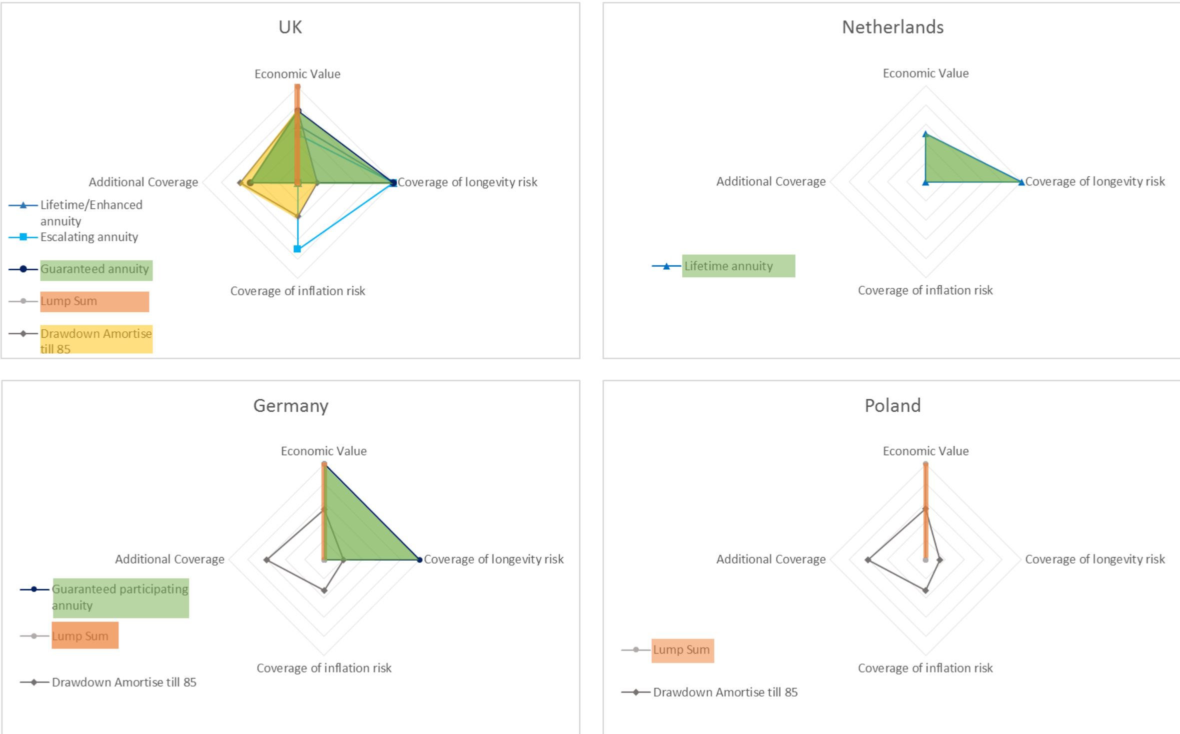
Source: Komisja Nadzory Finansowego (KNF) website

[27] EIOPA (2014c)

2.2.6 Adequacy of consumer choices

Compared to Figure 6 presented in 2.1.4, Figure 10 below highlights, for the most chosen products, the overall level of interest represented by the area of the shape resulting from the different parameters (economic value and risk coverage).

Figure 10: Diagrams showing the economic value and risk coverage of the most chosen decumulation products



Source: EY Analysis

Consumers' decisions may be dictated by personal preferences regarding:

- The pricing of the product (the MWR measuring the financial attractiveness of the product).
- Bequest motives[28]: traditional annuity products do not offer the possibility to leave an inheritance to close relatives.
- Loss aversion[28]: some people are reluctant to buy an annuity because they do not want to leave money behind them in the case of an early death. In many countries, there is a strong demand for an annuity with a guaranteed payment period.
- Inertia and default option[28]: the complexity of existing products and complicated documentation may be daunting, encouraging the consumer to stick to the default option rather than looking for alternatives.

[28] Oxera (2014)

- Pessimistic beliefs about longevity: individuals who underestimate their survival probability will not necessarily see any advantage in annuity products that would guarantee them a lifetime income. A study based on Dutch data revealed that individuals make their choice consistently with their subjective survival probability (SSP) and those expecting to live longer will prefer annuities[29].
- Short-sightedness[28]: some individuals would prefer fixed-term annuities to level annuities because they are not prepared to receive lower pay-outs at the beginning even if they are protected against the inflation risk.

In the UK the analysis of Figure 10 reveals that:

- Consumers favour guaranteed annuities and drawdown products. These products are more attractive in terms of value for money and allow transfer of some part of their capital to beneficiaries after their death. These attributes of decumulation products seem to be preferred on average by UK customers.
- Consumers are reluctant to buy escalating annuities despite the fact that they offer a full coverage against risks (investment, longevity and inflation). This may be explained, at least in part, by the low value for money of these products as measured by the MWR[30].

In Germany the analysis of Figure 10 reveals that consumers prefer guaranteed annuities over drawdown products. In Germany, customer choices are limited as only two products are available. The fact that drawdown products are not considered could be explained either by the fact that the bequest motive is not a strong driver of consumers' decisions regarding decumulation products and/or that drawdown products offered are not attractive neither in terms of economic value nor in terms of risk coverage.

In the Netherlands, the only decumulation option available to consumers (i.e. the lifetime annuity) offers a good value for money and covers longevity risk (see Figure 10).

In Poland, high consumer demand for the lump sum product is in line with its high MWR compared to drawdown products (see Figure 10) and can be explained by the fact that consumers generally do not have access to annuity products that would have enabled them to cover risks (e.g. longevity and inflation risks).

2.3 Factors affecting decumulation products' economic value

2.3.1 Evolution over time

Results in this section (2.3.1) were obtained based on data presented in section 1.4.1 for the four countries of the study under the "Evolution over time" analysis category. Specific assumptions were used for drawdowns as presented in section 1.4.2. Different formulas were used for annuity and drawdown products as explained in section 1.4.3.

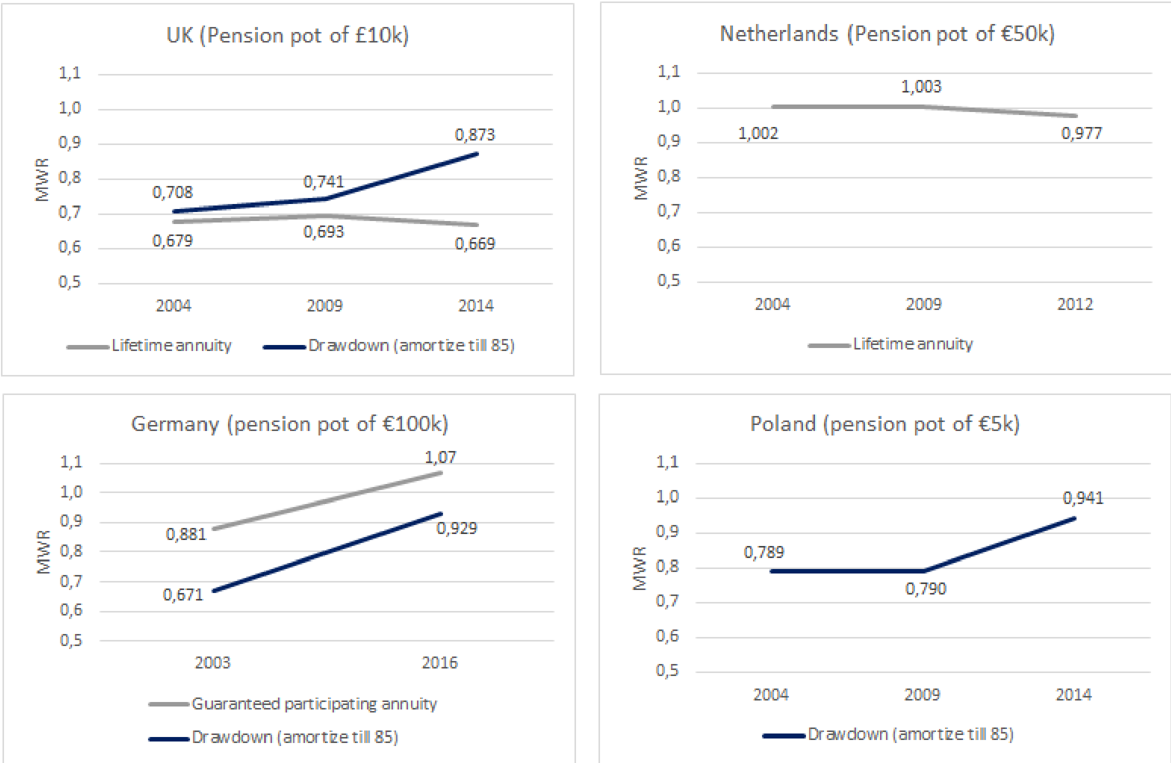
For annuities, Figure 11 shows that the **MWR remains stable over time for all the countries in our scope except for Germany where a significant increase in the MWR can be observed between 2003 and 2016**. In addition, annuity products appear to be more attractive in Germany and in the Netherlands than in the UK.

For drawdown products, Figure 11 shows that, **in the UK and in Poland, the MWR remained stable from 2004 to 2009 and significantly increased from 2009 to**

[29] Teppa, Federica (2011)
[30] FCA (2014d)

2014. In Germany, a significant increase of the MWR can be observed from 2003 to 2016.

Figure 11: Evolution of the MWR in time



Source: EY analysis

For annuity products:

- **In the UK, the MWR is stable between 2004 and 2014**. The study published by Edmund Cannon and Ian Tonks in 2013 ("Cohort mortality risk or adverse selection in the UK annuity market?") indicates comparable evolutions between 2004 and 2014. Indeed, the MWR remains stable at 0.85 both in 2004 and 2014. The MWR results presented in their study are higher than the results of this study particularly due to the fact that the mortality tables they used take into account projected increases in life expectancy. In the UK, the differential is more significant because the pension pot considered is larger (£30k versus £10k in our study). The evolution of MWRs for drawdown products is comparable to annuities although their level is consistently higher. This difference is expected since, in the case of drawdowns, consumers bear the longevity risk and should thus be compensated for it.
- **In the Netherlands, MWRs are also stable and high** (around 1) suggesting that these products are attractive for consumers. The study published by Edmund Cannon, and Ian Tonks in 2013 ("Price efficiency in the Dutch Annuity Market") shows a comparable trend with an MWR of 0.97 in 2004 and 0.95 in 2012. **These results tend to confirm that competition is beneficial to consumers in the Netherlands.** Furthermore, it can be noted that MWRs in the Netherlands for lifetime annuities are high compared to MWRs observed in the UK which is due to higher annuity rates offered in the Netherlands despite the lower levels of interest rates.
- In Germany, results show an **improvement of the MWR that can be explained by the fact that the significant decrease in interest rates in recent years has not yet been fully reflected in annuity rates offered on the market.** The study

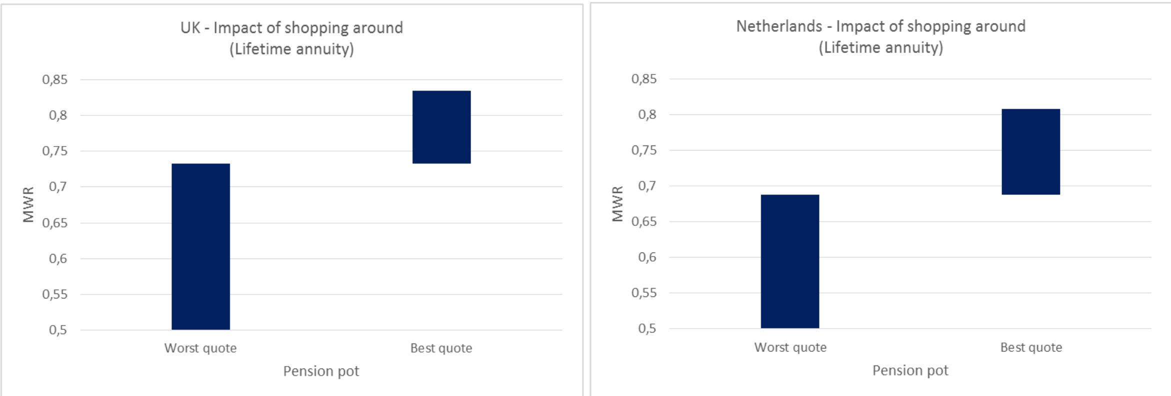
published in 2004 by HM Von Gaudecker and C Weber ("Surprises in a growing market niche: An evaluation of the German private life annuities market") indicates a comparable result for the MWR in 2003 for a participating annuity with a 10-year guaranteed period (an MWR of 0.902 in the HM Von Gaudecker and C Weber study, versus 0.881 in this study).

For **drawdown products**, MWRs are only based on the scenarios and assumptions defined above (see 1.4.2 and 2.1.4). Therefore, they do not reflect factors linked to the supply or demand of the products. MWR variations are solely driven by the trend in the discount rate and the mortality assumptions (the only assumptions updated over time). Since 2004, the evolution of these two assumptions (decrease of mortality and decrease of discount rates) had two opposite effects on MWRs. Indeed, the decrease in discount rates increased MWRs as it increases the present value of future cash flows and lower mortality rates decreased MWRs as they decrease the probability by which reversion cash flows are weighted. Depending on the magnitude of decrease of these two assumptions, we observe that:

- In the UK and Poland, results show a **stability in the MWR from 2004 to 2009 followed by an increase from 2009 to 2014.**
- In Germany, results show an **increase of MWRs from 2003 to 2016.**

2.3.2 Benefit of shopping around

Figure 12: Benefits of shopping around (UK and Netherlands)



Source: EY analysis

Results in this section (2.3.2) were obtained based on data presented in section 1.4.1 under the "Benefit of shopping around" analysis category. The formula used for annuities is explained in section 1.4.3.

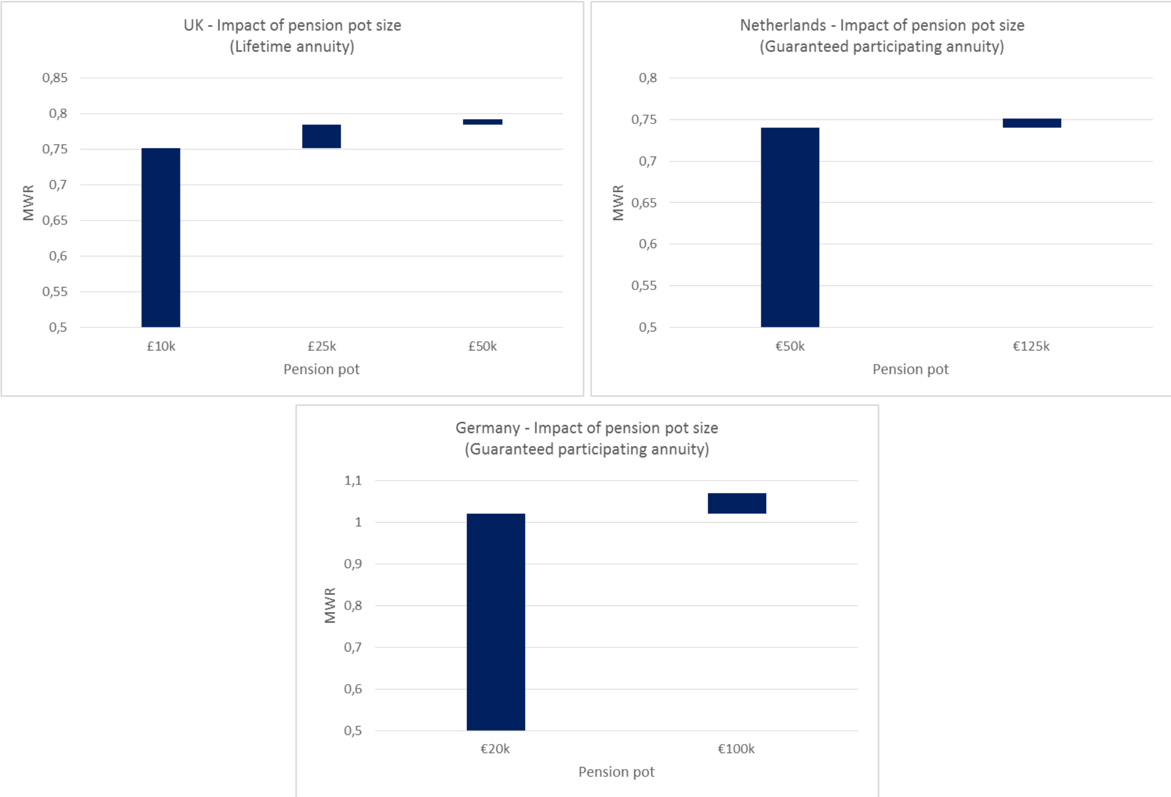
A new retiree may obtain better value for money by purchasing a lifetime annuity from a provider other than his or her existing pension provider, i.e. an MWR up to 14% higher in the UK (an MWR of 0.835 according to the best annuity rate quote and 0.733 according to the worst annuity rate quote) and up to 17% higher in the Netherlands (an MWR of 0.808 according to the best annuity rate quote and 0.688 according to the worst annuity rate quote).

In the UK, most consumers do not switch providers at retirement (see 3.1.2). Even though

Figure 12 above shows that switching providers is beneficial for consumers, Figure 18 shows that the main reason why consumers do not change providers is actually the fact that they can obtain a better value for money when purchasing a decumulation product with their existing provider.

2.3.3 Impact of pension pot size

Figure 13: Impact of pension pot size on MWR



Source: EY analysis

Results in this section (2.3.3) were obtained based on data presented in section 1.4.1 under the "Impact of pension pot size" analysis category. The formula used for annuities is explained in section 1.4.3.

Results show that an average pension pot enables a new retiree to obtain better value for money than a small pension pot. For example, in the UK, a pension pot of £50k may give an MWR around 5% higher than that obtained with a pension pot of £10k. In Germany, a pension pot of €100k may give an MWR around 5% higher than the one obtained with a pension pot of €20k. In the Netherlands, a pension pot of €125k may give an MWR around 2% higher than that obtained with a pension pot of €50k. Indeed, **fixed administrative costs apply regardless of the pension pot size.**

Hence, when possible, it is advantageous for new retirees with multiple pension pots to merge their pots and buy an annuity from a single provider rather than buying several annuities from different providers. Nevertheless, if any of the new retiree's schemes offers loyalty bonuses or a guaranteed annuity rate that is higher than annuity rates in the market at the time of retirement, the new retiree can lose out by combining his/her pension pots.

For drawdown products, no data are available on the comparison of fees applied for small pension pots versus average pension pots (note that the assumption used was a 2% fee, regardless of the pension pot size). Hence, no analysis was conducted on the impact of the pension pot size on the value for money of drawdown products.

The lower MWRs of annuities for smaller pots tend to justify the fact that consumers with smaller pension pots have a greater tendency than consumers with average pension pots to prefer lump sums to annuity products (see 2.2.2).

3 Factors affecting consumer choice

As seen in the previous section, consumer choices are affected by their preferences (see 2.2.6). This section will focus on other factors affecting consumer choices such as the availability and complexity of information, the availability and quality of financial advice, market structure and regulations which may represent an obstacle for consumers.

The main obstacles according to interviewees are the complexity of information combined with the lack of financial literacy of consumers. Interviewees also identified other obstacles such as:

- the complexity of the pension landscape due to the variety of products and their long term nature
- the ability of consumers to understand their personal circumstances
- their lack of engagement with long term savings and the lack of trust in financial institutions in Poland
- the current uncertain economic climate
- the lack of diversity in the type of product providers

3.1 Information

The table below presents stakeholders' opinions on the obstacles related to information that may affect consumer choices.

Table 4: Main obstacles related to information

Obstacles	UK	Germany	Netherlands	Poland
Unavailability of information	🟢	🟢	🟢	🟢
Complexity of information	🔴	🔴	🔴	🔴
Lack of financial literacy	🔴	🔴	🔴	🔴
Ineffectiveness of online comparison tools	🟢	🟡	🟢	NA

Source: Stakeholders' responses to the online questionnaire and EY analysis

Note: percentage of respondents answering "Yes": green (less than 50%), yellow (between 50% and 75%) and red (more than 75%).

As seen in Table 4, the lack of information does not seem to prevent consumers making an appropriate choice. Thanks to disclosure requirements, publicly available information and online comparison tools, a great deal of information is available to consumers. However, even if information is available, the complexity of the information and the lack of financial literacy make consumer choices difficult. In addition, the comparison tools available are not always efficient (see 3.1.1).

3.1.1 Availability

Disclosure requirements

Disclosure requirements for the decumulation phase differ between countries, but some common information is disclosed in most countries. This includes annual statements and descriptions of the type of benefits and the pay-out possibilities[31].

In the Netherlands, pension funds must provide information on the old age pension, in addition to information about indexation and a yearly overview of the pensions paid[31].

In the UK, trustees are required to send members a wake-up pack at least six months before they reach their intended retirement date. The compulsory information that must be disclosed is:

- The option for members to select an annuity and the annuity provider
- Explanation of the existing annuities, such as annuities with or without guarantee, level annuities, single/joint life annuities (description of their features, rate of payment)
- Recommendation for taking advice on the most suitable annuities for customers' needs[32]

In Germany, discussions are underway on disclosing the reduction in yield for annuity products (lowering of annuity rates due to the effect of charges).

Publicly available information

In addition to disclosure requirements, consumers also have access to various sources of information on the decumulation phase.

In the Netherlands, there are many organisations that provide information on decumulation options on their websites[33] (e.g. www.pensioenkijker.nl).

In the United Kingdom, there are also many tools that allow consumers to choose the best annuity rates on the market. For example, the government provides a financial education website which allows comparison of the annuity rates offered by active providers on the market (www.moneyadviceservice.org.uk). In addition to comparison tools, everyone with a DC pension is entitled to access free, impartial guidance when they retire using the Pension Wise service (www.pensionwise.gov.uk) set up by the government in April 2015 (see 3.2 for further details).

There are also several comparison websites which help consumers to obtain the best rates offered on the market. The level of information, guidance and flexibility varies from one tool to another and registration may also be required for some of these tools. The following table summarizes the main characteristics of some of these websites.

[31] EIOPA (2014b)
[32] ABI (2012)
[33] EIOPA (2014b)

Table 5: Online comparison tools

Country	Comparison tool	Contents
United Kingdom	www.moneyadviceservice.org.uk (impartial)	▪ Approximately 8 quotes ▪ Quotes depend on several characteristics: retirement age, size of pension pot, marital status, amount that the consumer wants to take tax-free ▪ Guidance is provided to consumers to help them choose the appropriate options: explanation of the difference between single and joint annuity, information on annuities with a guarantee period, the advantages of an escalating annuity, etc.
	www.onlineannuityplanner.com (commercial)	▪ Up to 9 quotes (some quotes are available only for enhanced annuities) ▪ Before comparing quotes, consumers are informed about the costs, annuity options and the importance of shopping around and are reminded that no financial advice is provided ▪ Registration is required to access quotes
The Netherlands	www.consumentenbond.nl (impartial)	▪ Approximately 11 quotes (monthly payments by insurers before and after tax are given) ▪ Option to choose the applicable tax rate, limited options on pension pot size, the duration of benefits paid (lifelong or 10 years), age at retirement (60 or 65).
	https://www.123lijfrente.nl/ (commercial)	▪ 5 quotes for a €100 000 pot ▪ The website is registered with the Authority for the Financial Markets (AFM), the Chamber of Commerce and the Financial Services Complaints Institute (KiFiD) ▪ A rating of the different providers is given ▪ Option of a detailed comparison of selected products: solvency rating of the provider, scoring on the quality of the product (based on its flexibility, costs, etc.), details on the costs that apply (initial cost, continuous cost, etc.)
Germany	www.check-sofortrente.de (commercial)	▪ Up to 12 quotes depending on the contract specifications ▪ Information on the guaranteed amount, current amount including participation this year and projections for ten to fifteen years, a rating of the insurance company
	www.check24.de (commercial)	▪ Commercial website ▪ Registration is required to access the quotes. ▪ The main purpose of the tool is to sell rather than to help consumers to make an informed choice

Source: EY analysis
Note: Commercial refers to websites where revenue is generated from providers or customers

Interviewees' responses on comparison tools

There are good comparison tools for annuities in the UK. However, there is no tool for drawdown products. Consumers cannot compare different types of decumulation products (i.e. annuity and non-annuity products). Existing websites are very educational but not used enough by consumers.

In the Netherlands where there is no alternative to annuities, online tools allow the comparison of annuity products offered by the same type of providers (insurers, banks and pension funds). There is no online tool for comparing annuities offered by different types of providers.

In Germany, comparison tools do not cover all annuity products and do not give advice. The information provided by comparison tools could be biased when the tool is owned by providers.

In Poland, there are no online comparison tools, just websites with general information.

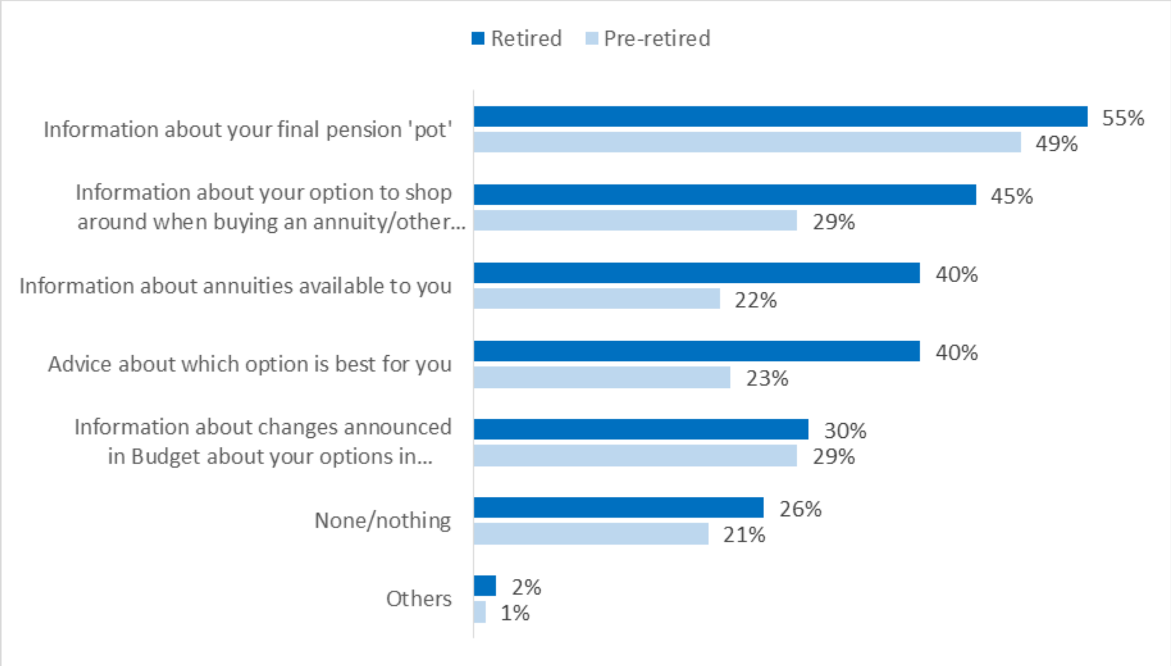
3.1.2 Complexity of information and lack of financial literacy

Even if information is available, consumers might not be able to understand it and annuities are not simple from the perspective of consumers. Indeed, studies reveal that there is a lack of financial literacy which could prevent consumers from making a sensible choice[34].

In the United Kingdom, according to a study conducted by the FCA, consumers' wake-up packs are too complex and dissuade them from looking closely at the different options they can access[35]. Figure 14 presents the information that a sample of consumers recall having received from their personal pension provider. This figure tends to confirm that consumers are not well informed about their alternative options before retirement (fewer than 25% of pre-retired consumers say that they received information from their main pension provider about the different annuities that are available to them).

[34] Brown, Jeffrey R. (2009)
[35] FCA(2014c)

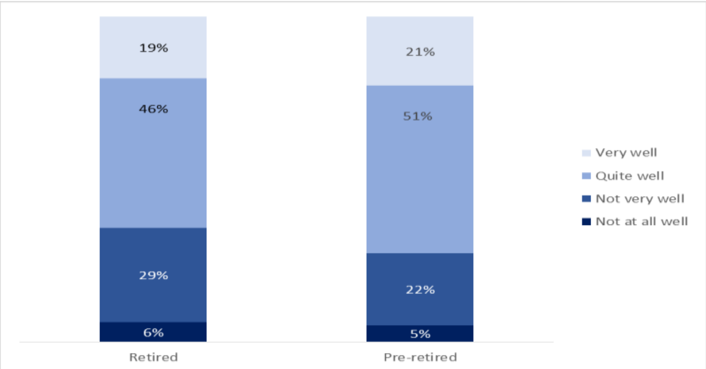
Figure 14: Perception of information received from the main pension provider (UK)



Source: FCA (2014), *At-Retirement Consumer Research: Exploring changes in the retirement landscape*.

The issue of understanding information is linked to consumer financial literacy levels. The FCA's consumer research[36] reveals that pensions were found daunting and complex by consumers. For individuals surveyed pension matters are difficult to understand and confusing, and for most DC consumers annuitisation is a very complex process. They find it difficult to assess risk and uncertainty in financial products[37]. The FCA surveyed two groups of consumers (those approaching retirement and those recently retired) in order to understand the decision making process for DC pensions at retirement. Those who had already heard of annuities were asked how well they understand how annuities work (see Figure 15).

Figure 15: Level of understanding of annuities (UK)



Source: FCA, *At-Retirement Consumer Research: Exploring changes in the retirement landscape,* December 2014.

[36] Oxera (2014)
[37] House of Commons (2015)

The figure above shows that a majority of consumers claim to have a good level of understanding of annuities (65% in the retired group and 72% in the pre-retired group). However when they are asked more specific questions on annuities, only a few of them are able to answer correctly (see Figure 16). For example, only 28% of the pre-retired are aware that there are annuities that allow income to increase (e.g. escalating annuities).

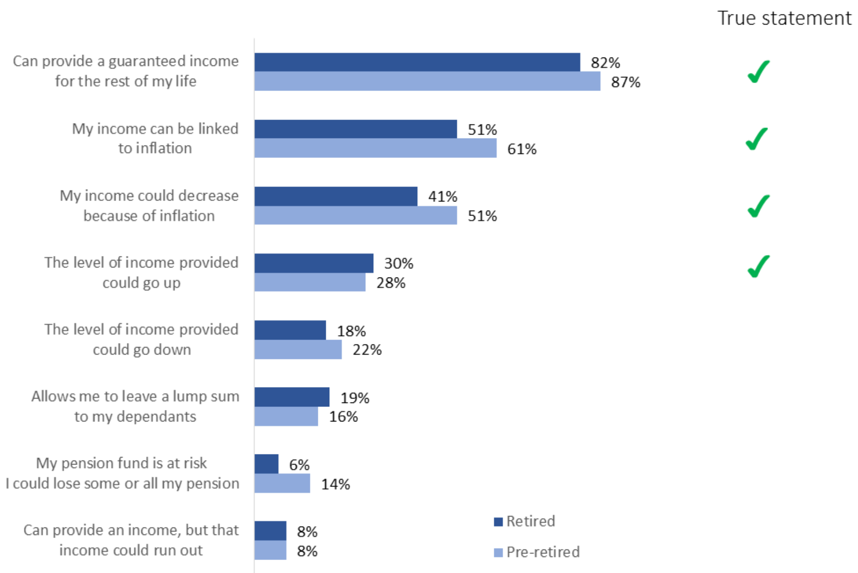


Figure 16: Detailed knowledge about annuities

Source: FCA, *At-Retirement Consumer Research: Exploring changes in the retirement landscape,* December 2014.

Many studies have focused on consumers' lack of financial literacy and reveal that it may be one of the main obstacles that prevent consumers from making informed choices. Alessie et al. measured the level of financial literacy of individuals on their ability to answer three questions on interest rate, inflation and risk diversification. Their study reveals the positive impact of financial literacy on retirement planning in the Netherlands[38]. Another study by the OECD focused on the poor level of financial literacy of individuals and shows that the willingness to annuitize will depend on the type of education received[39].

Furthermore, the increasing complexity of products (see below) makes it harder for consumers to grasp the advantages and disadvantages of the different decumulation products in order to make an informed choice.

[38] Alessie, Rob, Maarten Van Rooij and Annamaria Lusardi (2011)
[39] Brown, Jeffrey R. (2009)

Interviewees' responses on changes in the complexity of decumulation products

In the United Kingdom, the complexity of products increased with the introduction of new products such as enhanced annuities. Further, the introduction of more flexibility (the April 2015 reform) makes the choice more difficult for consumers.

In the Netherlands, legislation recently allowed variable annuities. Indeed, with the "Pensioenknip", consumers have the option of buying a temporary annuity with the obligation to buy a lifelong annuity after a certain period. The advantage of such products is the possibility of obtaining better annuity rates at a later time, for example if interest rates increase. However, based on interviews, this product appears to be complex, making it difficult for pensioners to understand.

In Germany, complexity increased with the introduction of unit-linked and hybrid products.

In Poland, complexity slightly increased with the beginning of the spread of annuities in the commercial sector.

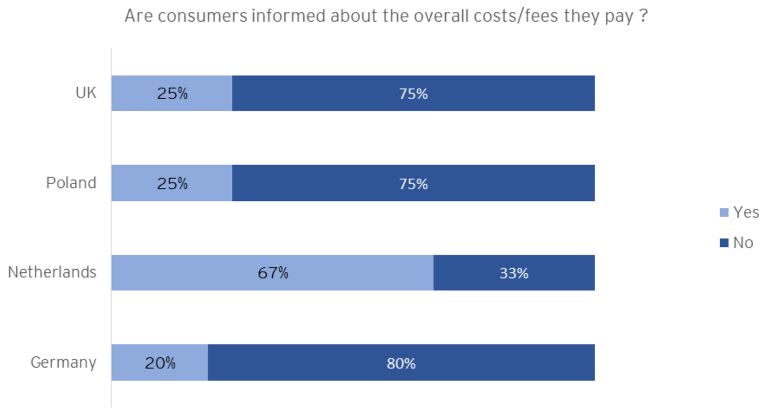
Transparency of costs and fees

Interviewees' responses on the transparency of costs and fees

According to decumulation experts in each country, costs are integrated into the price of annuities, while for drawdown products there are several costs such as fund management charges, investment charges and transaction costs. Consumers are informed about the overall costs and fees (for example, in Germany, it is a requirement of the German Insurance Contract Law) but they may not understand all the implications.

In the United Kingdom, according to the Conduct of Business Sourcebook[40] (COBS), a firm must prepare a key features document and a key features illustration in a durable medium (COBS 13). The information must be fair, clear and not misleading. A key features illustration must include appropriate charges information.

In the Netherlands, pension providers are required by law to inform consumers about the overall costs. However, costs for individual products are hidden in the brochures and consumers do not read them carefully. Statistics on respondents' answers to the questionnaire are presented in the figure below:



[40] The COBS is one of the sourcebooks including in the FCA Handbook and deals with rules on conduct of business for investment firms. In particular, the COBS apply to firm in the long-term insurance business in relation to life policies.

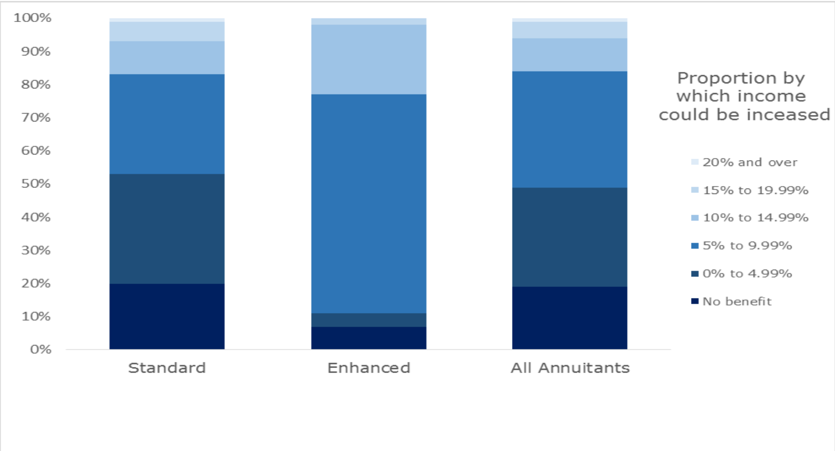
Switching during the decumulation phase

Another item of information of which consumers should be aware is their alternative options at retirement. In particular, information on whether or not they have the option of switching providers should be clearly disclosed.

In the United Kingdom, consumers have the possibility of switching providers under the Open Market Option (OMO) which gives them the opportunity to choose a provider other than the one with which they saved. The OMO has been in place since 1978 and firms have been required to inform consumers of it since 2002[41]. However, once consumers have chosen an annuity and entered the decumulation phase, they no longer have the option to switch around. There is discussion on establishing a secondary annuity market in the UK that would allow people already receiving an income from an annuity to sell that income to a third party[41].

In the UK, despite the OMO, most recent figures show that only 41.5%[42] of consumers switched providers when buying an annuity and only 53%[42] switched providers when buying a drawdown product. Around half of savers[42] who chose to stay with their existing provider benefited a guaranteed annuity rate which can be higher than current market rates. Those who did not benefit from a guaranteed rate can achieve an income increase by switching providers as illustrated in Figure 17 (about 50% of those buying standard annuities could increase their retirement income by more than 5%).

Figure 17: Proportion by which income could be increased by switching (UK)

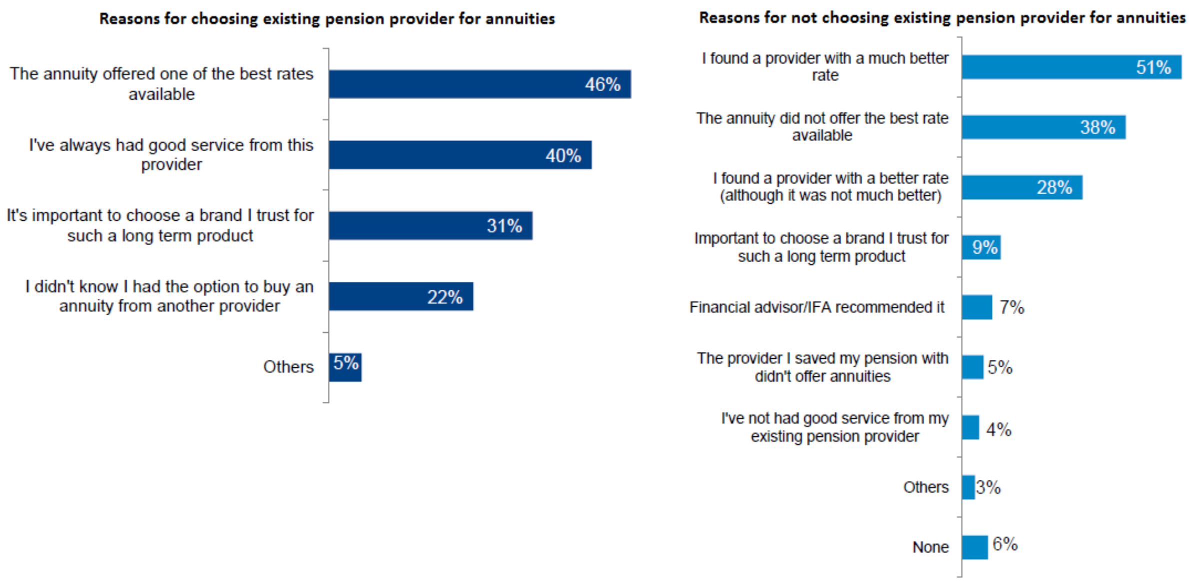


Source: FCA, February 2014, *Thematic Review of Annuities*

Figure 18 shows the main reasons why consumers stick with their existing pension provider (or don't). It should be noted that 22% of them are not aware that they have the option of buying an annuity from another provider.

Figure 18: Reasons for choosing (or not choosing) the existing pension provider for an annuity (UK)

[41] House of Commons (2015)
[42] ABI (2016c)



Source: FCA, *At-Retirement Consumer Research: Exploring changes in the retirement landscape*, December 2014.

Interviewees' responses on the possibility of switching in the UK and the Netherlands
In the UK, switching during the decumulation phase is possible for income drawdowns and lump sums since consumers can reinvest the capital withdrawn in other products. In the Netherlands, annuities are not transferable once they are in payment. Consumers have the option of shopping around before the decumulation phase but not towards a pension fund if they are not a participant in that fund.

3.2 Financial advice

Given the complexity of the pension products studied (see 1.4) and the difficult economic setting, the global picture of pension has become increasingly complex. The increasing complexity has urged the need for individual counseling concerning product pensions[43]. Our study shows that two types of advice can be available to the general public in the different countries involved: independent advisors on the one hand and general guidance on the other hand.

We have conducted a number of interviews especially on the following topics:

- Availability of advice
- Accessibility of advice
- Quality of advice (independence…)
- Regulation of advice

Besides, we have also presented our research on the continuity of advice.

The table below presents interviewees' opinions on the obstacles related to financial advice that may affect consumer choices; these interviews confirm our findings (see below). Namely, financial advice is available in most countries. However, it is deemed

[43] Pensions Institute (2010)

too costly and biased. In addition, according to stakeholders interviewed, financial advice is not adapted to its audience.

Table 6: Main obstacles related to financial advice

Obstacles	UK	Germany	Netherlands	Poland
Unavailability of advice	🔴	🟢	🟢	🟢
Accessibility of advice (cost)	🔴	🔴	🔴	🟢
Poor quality of advice	🟢	🟡	🟡	🔴

Source: Interviewees' answers to the online questionnaire and EY analysis

Note: percentage of respondents answering "Yes": green (less than 50%), yellow (between 50% and 75%) and red (more than 75%).

3.2.1 Availability of advice

Financial advice and guidance can come from a variety of sources[44]:

- Pension fund administrators: often sell pension decumulation products. Otherwise, they generally provide some form of guidance to members about options.
- Providers of decumulation products: life insurers, banks and asset managers can directly market their products to consumers.
- Brokers and agents: generally related to providers, brokers and agents do not have fiduciary responsibility to serve clients' interests.
- Independent financial advisers: typically have a fiduciary responsibility to serve their clients' interests.
- Government: for example, electronic platforms that provide comparison of annuity products or guidance.
- Consumer associations: represent only the interests of consumers reaching retirement.

The main financial advisers in each country are described in the table below.

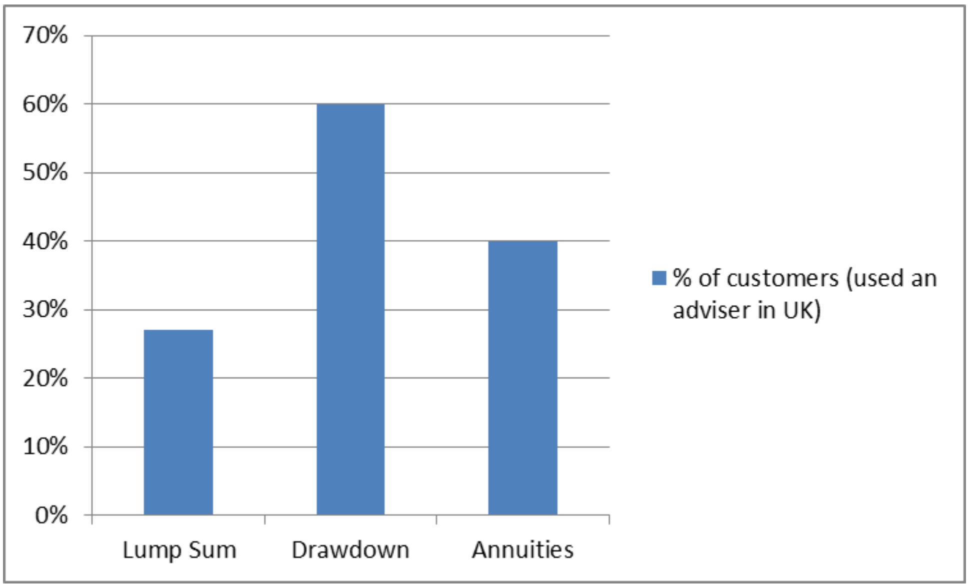
Country	Major financial advice and guidance
United Kingdom	▪ Financial advice is provided by pension administrators (who are often the providers of products) and other providers of decumulation products and their agents. ▪ Recently, guidance has also been provided by the government with the creation of the Pension Wise service (starting in April 2015) which offers free and impartial guidance on DC pensions.
The Netherlands	▪ The predominant financial advisors are pension administrators (which are the main providers of options for deferred pensions) and government/consumer associations.
Germany	▪ Financial advice is provided by pension administrators, independent financial advisers and consumer associations like the *Bund der Versicherten.*

[44] Oxera (2014)

Country	Major financial advice and guidance
Poland	▪ No information was found. According to stakeholders interviewed, there is no demand for this type of service.

In the UK, financial advice is commonly used. According to the 2013 TPR scheme Governance survey, 52% of schemes appoint an annuity broker or financial adviser. In the United Kingdom, the FCA (Financial Conduct Authority) says that 58%[45] of customers going into drawdown used a financial adviser.

Figure 19: Percentage of customers using an adviser



Source: FCA (2015), Retirement Income Market Data

However, some customers may not have the means to benefit from financial advice. In this respect, guidance can be of some help for people unable to pay for financial advice. For example, this type of advice was introduced in the UK in April 2015. As stated in a document recently published by the House of Commons[46], "Guidance will differ from advice in a number of important ways. In particular, it will be free to the consumer and will aim to inform them about options available. It will not make specific product or provider recommendations, which should be handled by an authorised financial adviser".

In a nutshell, on the basis of our sources and the interviews conducted, it appears that financial advice is available to various degrees in all the countries studied except in Poland, where no financial advice is available on a large scale as the market for financial advice is too small.

Regulation of advice

The disclosure requirements (see 3.1.1) and government guidance (see 3.2.1) discussed previously ensure that new retirees have the information needed to make well-informed decisions. However, new retirees are not necessarily capable of assessing value for money and protecting themselves against fraud. Given the

[45] FCA (2015c)
[46] House of Common (2016b)

generally limited understanding of and interest in pension matters, the question becomes whether any amount of information -- however well-presented -- will be sufficient for consumers to make informed decisions. Therefore, the regulation of financial advice is crucial to protect consumers. This regulation is the responsibility of different national authorities:

- In Germany, the Federal Financial Supervisory Authority (BaFin) supervises banks and financial services providers and is responsible for the protection of consumers as a whole in the field of financial services[47].
- In the UK, the Financial Conduct Authority (FCA) is the conduct and prudential regulator for financial services firms and financial markets[48]. The FCA website gives advice to consumers on how to find a financial adviser. In particular consumers should check on the Financial Services Register (https://register.fca.org.uk/) whether the financial adviser is regulated and approved by the FCA and the Prudential Regulation Authority (PRA). Financial advisers authorized by the PRA and the FCA are covered by the Financial Ombudsman Service of the Financial Services Compensation Schemes , which is a body that helps to resolve disputes.
- In the Netherlands, the Authority for the Financial Markets (AFM) is responsible for supervising the operation of the financial markets. The AFM website helps consumers to identify qualified advisors, who must be licensed by the AFM[49].
- In Poland, the authority which oversees financial markets is the Polish Financial Supervision Authority (KNF)[50]. Consumers have access to registered investment firms agents through the KNG website.

Regulation of financial advice is continuously evolving and adapting to the different markets. One example is the UK, where the FCA has introduced a number of regulatory initiatives relating to concerns raised by the new pension flexibilities (see 2.2.2)

- For example, the FCA announced a new layer of consumer protection called 'additional protection'. Providers will be required to ask consumers about their circumstances (health, lifestyle choices, marital status, etc.) and their comprehension of issues such as tax, impact on means-tested state benefits and pension scams before giving them personalised risk warnings.
- A second example would be the new rules regarding the way pension advice is charged to consumers. Indeed, new retirees will now pay a fee for advice rather than commissions. This way, they know exactly what they are paying for and the advice they receive is not influenced by how much the adviser could earn from the investment. Also, the adviser now must give the consumer information on fees before the consumer commits to taking the advice. A similar scheme exists in the Netherlands. In 2014, the law imposed an hourly rate, which has proven to be beneficial for consumers (see interviews).

In the FCA survey of firms providing financial advice, most firms rated regulatory factors as the most important barrier to offering mass market advice. These factors include the taxation of firms, the cost of compliance with FCA rules, reporting requirements and costs of potential liability or redress.

Our interviews have pointed that advice given by providers (banks, insurers) is often biased since it only concerns products offered by the providers themselves. Indeed, the question of the bias of financial advisors is highly relevant for pension fund

[47] www.bafin.de
[48] www.fca.org.uk
[49] www.afm.nl
[50] www.knf.gov.pl

administrators, providers of decumulation products and their brokers and agents who could be incentivized to sell particular products which may not be in the consumer's best interest. These categories of financial advisers tend to service the "mass market" by offering off-the-shelf products. The role of independent financial advisers which consists in providing bespoke financial advice, is generally limited to higher-net-worth individuals (typically with a pension pot of more than £200k in the UK). This is due to the perceived cost of obtaining such a service.

Accessibility of advice

Access to financial advice appears to be limited. This can mainly be explained be the following:

- The lack of access to advice for new retirees with small pension pots

In the UK, the survey of 575 financial advisers published by Schroders Adviser in December 2015 showed that 87% of respondents offer different levels of service based on the size of the client's assets, that 61% of those clients being formally asked to leave have under £50k and that most advisers have no place for smaller clients, usually with pots under £150k.

- The high perceived cost of advice

Interviews have shown retirees with small pots may not be able to benefit from individual counselling as the financial cost can be prohibitive.

Interviewees' responses on the cost of financial advice

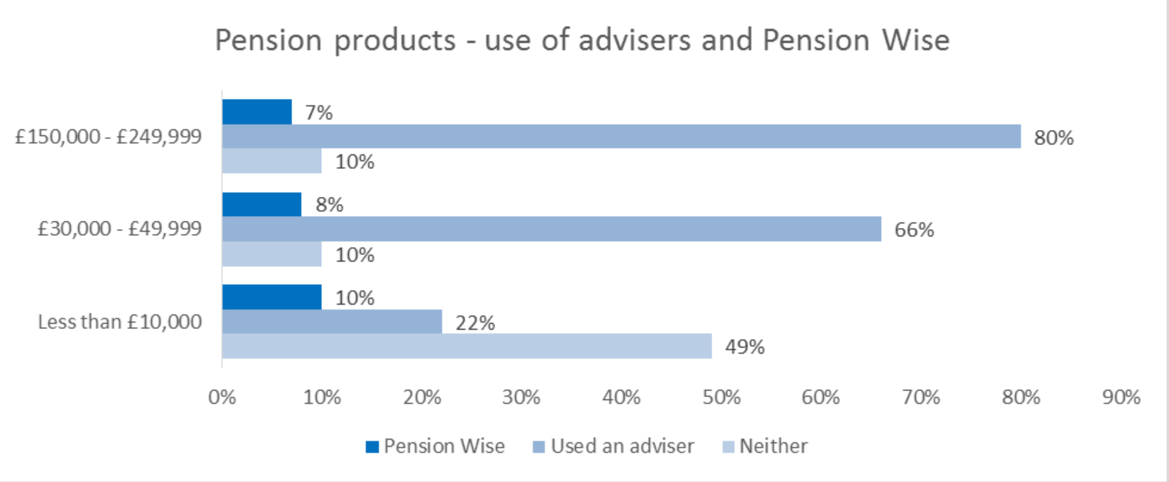
Financial advice is available in the UK, Germany and the Netherlands. However access to financial advice is difficult due to its cost and financial advice is generally only bought by people with high incomes. For example, in the UK, the average cost of regulated advice is about £1 800.
In the Netherlands, the cost would be on an hourly basis about €60 to €150 per hour for minor advice and from €300 to €500 for more extensive advice.

Fees for financial advice and guidance may be priced as one-off charges or as annual charges. Estimates for the UK suggest average figures of about £1,800[51] for advice on an annuity, and about £2,600 up front for investment advice or 1% per year for ongoing investment advice for an income drawdown.

The study on the percentage of customers using an adviser (see figure below) clearly shows pensioners with a pension pot lower than £10k rarely (only in 22% of cases) consult an advisor. The proportion taking advice drastically increases as the pension pot reaches £30k (people consult in 66% of cases and up to 80% of cases for large pots i.e. over £150k). This gap emphasizes the need to offer guidance for smaller pots in need of consultation.

[51] Gallagher (2014)

Figure 21: Percentage of customers using an adviser



Source: FCA (2015), Retirement Income Market Data

There is also an issue about the disclosure of charges that advisers apply. In the UK, a study by "Which?" found that more than half of the advisers surveyed did not reveal their charges until they had met with customers to see what they wanted.

It should be noted that disclosure of information on costs of financial advice may have a larger negative impact on take-up of financial advice for annuities than for income drawdown products. Financial advice fees for an income drawdown are generally presented annually, while the financial advice fee for an annuity is generally a single up-front amount and therefore a large amount that may deter potential buyers of financial advice for annuities.

- A low demand for financial advice

In the UK, the results of a survey by comparison website www.money.uk showed that the majority of the 669 over-55s with a pension pot who were surveyed neither wanted advice nor were willing to pay for it. The reasons respondents gave for not taking financial advice were: they do not feel they need it (59%), they think advice is a waste of money (28%), they could not afford it (27%), and they want their money quickly without any hassle (15%).

Another research commissioned by the FCA suggests that customers are put off seeking financial advice because they are unable to trust the advice they receive or judge its quality.

3.2.2 Continuity of advice

According to interviewees, there is no difference in financial advice before retirement between annuity and non-annuity products. For annuity products, once the decumulation phase has started there is no possibility of switching to another product or provider. Therefore there is no financial advice anymore in the decumulation phase. For non-annuity products, e.g. drawdown there is on-going advice during the decumulation phase.

Indeed, the continuity of advice is especially relevant for drawdown products as continual service is needed throughout the retirement period. As confirmed, drawdown products payout being on an individual basis, personal and individual counseling is required. However, annuities are served on a regulatory basis which diminishes potential miscounseling.

Besides, continuity of advice must be taken into account when regarding longevity risk which might impact payment of pension annuities. According to Financial Conduct Authority, a number of strategies in the UK are available among which the payment of a variable annuity taking into account the residual life expectancy (e.g. consume 1/20th of the pension pot if life expectancy from the *retirement date* is 20 years the first year, 1/19.5 th of the pension pot if the life expectancy from *retirement date* is 19.5 years, the second year etc.).

3.3 Market structure

The level of competition is assessed on the basis of different indicators:

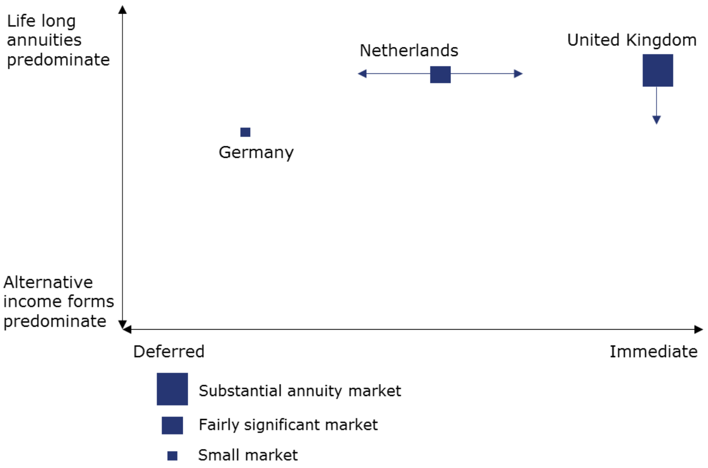
- The four-firm Concentration Ratio (CR4) measuring the market share of the four largest firms in the market.
- The Herfindahl-Hirschman Index (HHI) measuring the level of concentration in a market taking into account the relative size of the firms.
- The proportion of time that a firm offers one of the five highest annuity rates in the market (the shorter the timeframe, the more firms are competing to offer the best annuity rates to consumers).

In countries where data have been gathered on the market structure, the level of competition appears to be beneficial to consumers. In the UK, the market structure indicates a moderate level of competition and there is evidence of competition in annuity rates.

In countries where no data have been collected, stakeholder interviews tend to suggest that the markets are not mature enough to be competitive.

The following figure represents the maturity of annuity markets in the UK, the Netherlands and Germany. In Poland annuity products have been introduced after 2009[52], the market is still at an early stage of development and limited number of data is available.

Figure 20: Maturity of annuity markets



Source: Rusconi, R. (2008), National Annuity Markets: Features and Implications

Note: The size of the market is necessarily subjective, but is intended to give an indication relative to the size of the economy. Arrows around position show recent or expected changes or give a sense of the diversity in the marketplace.

52 Rusconi, R. (2008)

According to the figure above, Germany appears to be less mature and no data were found to assess the market structure.

In Poland and Germany, no data was found to assess competition in the annuity market.

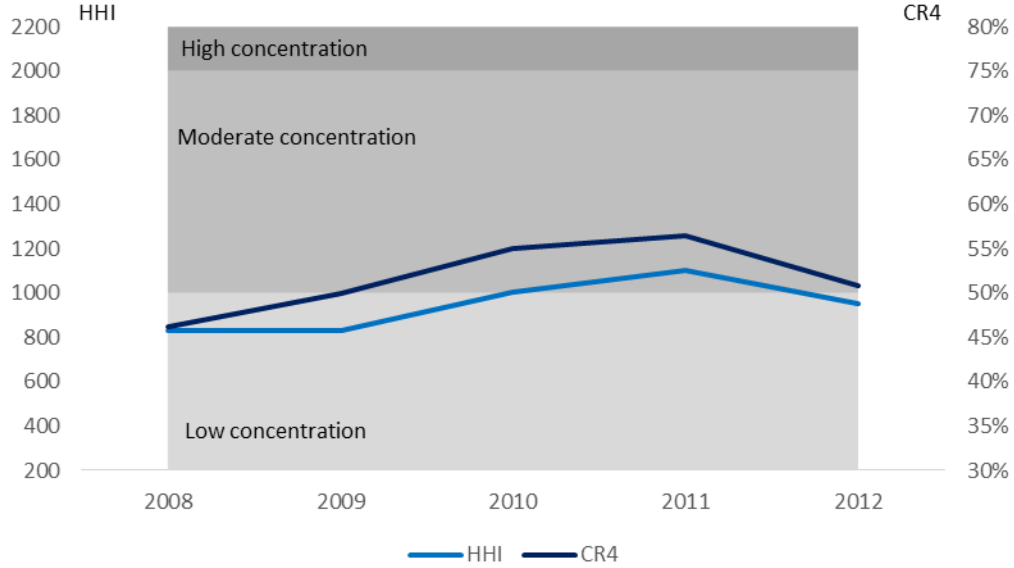
In Germany the market is relatively small due to the important role of social security in the retirement benefits[53].

For Poland, according to stakeholders interviewed, no significant features of competition in the market can be observed due to the low maturity and small size of the market. Indeed, the PPE, IKE and IKZE pension schemes were only recently introduced (in 1999, 2004 and 2012[54] respectively).

3.3.1 Moderate level of competition in the UK

In the UK, as illustrated in Figure 21 the level of concentration remains stable (around 1000 HHI points). The current market is moderately concentrated, with the six biggest providers sharing 60% of the market[55]. This level of competition appears to have remained stable over time, although it has been improving slightly recently.

Figure 21: CR4 and HHI analysis in the UK (2008-2012)



Source: FCA, *Retirement Income market study: Interim Report,* 2014

Note: The indicators presented do not make a distinction between the open market and the internally vesting market.

The annuity market in the UK is one of the most developed and diversified due to the shift of occupational pension schemes from DB to DC and to former tax incentives imposing the annuitisation of most of the accumulated savings[53].

[53] Rusconi, R. (2008)
[54] Szczepański, Marek (2012)
[55] FCA (2014b)

3.3.2 Evidence of price competition in the Netherlands

Cannon, Stevens and Tonks (2013) measured competition in the Dutch market by looking at how often each provider offered one of the five highest annuity rates in the market: based on monthly observations from November 2001 to November 2012, the ratio of the number of observations for which the provider offered one of the five highest annuity rates in the market to the total number of observations was calculated for each provider. This ratio provides the proportion of time a provider offers the best price. Table 7 below presents results for the five providers with the highest proportions of time.

They show that the **relative prices of different companies change frequently, which may reflect the fact that firms attempt to improve their position in the annuity market.**

Table 7: Proportion of time that a firm offers one of the five highest annuity rates on the market

	Provider 1	Provider 2	Provider 3	Provider 4	Provider 5
Proportion of time that a firm's annuity rates are in the top 5	60%	49%	38%	30%	30%

Source: Cannon, Stevens and Tonks, *Price efficiency in the Dutch Annuity Market,* 2013

This table indicates price competition in the market as prices appear to change frequently in favour of the best offers.

As illustrated by Figure 20, the annuity market in the Netherlands is not that developed which is due to the importance of benefits provided by social security and occupational arrangements[53].

3.4 Trends in regulation

There are currently several discussions or regulations at the European level that may affect the decumulation market.

3.4.1 European Court of Justice ruling on the Test Achats case

The European Court of Justice, ruling on Case C-236/09 (Test Achats), put an end to the exception clause included in Article 5.2 of the Gender Equality Directive 2004/113/EC[56], with effect from 21 December 2012. In February 2014 EIOPA issued a report on the implementation of the ECJ ruling on the Test Achats case, which gathers feedback from Member States on how the ruling has been transposed into their national legislation. In May 2015, the European Commission adopted the implementation report of Directive 2004/113 which includes a specific section on the implementation of the Test Achats judgement in the different Member States and its economic impact on consumers/insurance companies. This section will focus on the impact of this ruling on annuities from the perspective of consumers.

In the UK, the FCA conducted an analysis of the value for money of annuities and computed MWR before and after the ECJ ruling for a level annuity without guarantee. MWR for men decreased after the Directive while MWR for women increased. The

[56] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:373:0037:0043:en:PDF

Directive had a positive impact on the average MWR for a £50k pot and a negative impact for small pots. However, the implementation of the Directive may not be the only reason for the change in MWR. Several other factors could have had on impact on the MWR, such as the Retail Distribution Review (RDR) or the increased the take-up of enhanced annuities[57]. The following tables show MWR before and after the ECJ decision:

Table 8: Average MWR before and after the ECJ for a level, no guarantee annuity (65 yo, average quote, £50k pot, UK)

Gender	Average pre-ECJ decision (2006-2012)	Average post-ECJ decision (2013-2014)	Change
Male	94.0%	91.4%	(2.6%)
Female	91.9%	95.7%	3.8%
Average male-female	92.9%	93.6%	0.7%

Source: FCA, *The value for money of annuities and other retirement income strategies in the UK*, December 2014

Table 9: Average MWR before and after the ECJ for a level, no guarantee annuity (65 yo, average quote, £10k pot, UK)

Gender	Average pre-ECJ decision (2006-2012)	Average post-ECJ decision (2013-2014)	Evolution
Male	87.7%	82.3%	(5.4%)
Female	86.7%	87.4%	0.7%
Average male-female	87.2%	84.8%%	-2.4%

Source: FCA, *The value for money of annuities and other retirement income strategies in the UK*, December 2014

In Germany, the Gender Directive affected Riester pension schemes, whose tariffs were gender-based before the ECJ ruling. A price differentiation between men and women was no longer possible for all contracts concluded after 2005, thus men had to pay higher premiums. For women there was no change or a slight decrease in price[58]. Von Gaudecker, HM and C Weber (2006) analyzed the impact of unisex pricing on MWR and showed a decrease in MWR for men and no difference for women when a unisex tariff is used[59].

Jaspersen et al (2015) studied the effect of the Gender Directive on insurance demand and showed that individuals do not react as they should (i.e. consumers should buy more guarantees when it gets cheaper for them and less if it becomes more expensive)[60]. However results show an overall decrease in the demand. A possible explanation for such behaviour given by authors is the negative perception of unisex tariffs that consumers may have due to media highlighting only the detrimental effects of such regulation.

[57] FCA (2014d)
[58] Kornelia Hagen and Axel Kleinlein (2012)
[59] Von Gaudecker, HM and C Weber (2006)
[60] Jaspersen, Johannes, Andreas Richter, and Sebastian Soika (2015)

3.4.2 Cross-border issues

As described in 2.2.5, taxation systems vary between countries, so certain double taxation issues may arise for consumers who accumulated amounts in one country and decumulate in another country. Tax treaties play an important role in solving issues resulting from situations where cross-border pension contributions or benefits are paid[61]. Article 18 of the OECD Model Tax Convention[62] states that "pensions and other similar remuneration paid to a resident of a Contracting State in consideration of past employment shall be taxable only in that State"[63].

[61] OECD (2003)
[62] The OECD Model Tax Convention is an accord between OECD member states that is used as a guideline for establishing tax agreements.
[63] https://www.oecd.org/ctp/treaties/2014-model-tax-convention-articles.pdf

4 Looking forward

4.1 Current debates at EU level

4.1.1 Consumer information

Regulation No 1286/2014 of the European Parliament and of the Council concerns key information documents for packaged retail and insurance-based investment products (PRIIPS). The purpose of the regulation is to help consumers better understand and compare key features of insurance-based investment products. For the FCA, annuities whose amounts to be paid depend on reference values (such as indices) or on the performance of one or more assets that are not directly purchased by the annuitants (e.g. variable annuities) are to be considered as PRIIPS[64]. The regulation requires drawing up a key information document including several items of information such as:

- What is the product?
- What are the risks and what will consumers get in return?
- What are the costs?[64]

4.1.2 Design of new decumulation products

Discussions are taking place at the European level on the protection of customers' interests throughout the lifecycle of an insurance product. The EIOPA recently published a consultation paper on Product Oversight and Governance (POG) arrangements by insurance undertakings and insurance distributors. POG requirements are laid down by the Insurance Distribution Directive (IDD) which has to be transposed by EU Member States into their national law by February 2018. The POG address several issues such as the design of products having features aligned with the interest, objectives and characteristics of the target market. To assess whether a product is aligned with customers' interests, the insurance undertakings will have to consider the level of information available and the degree of financial capability and literacy of customers. They may conduct surveys to find out whether targeted customers understand the product features[65].

4.1.3 Standardized personal pension products

There are discussions in progress on the harmonization of personal pension products within EU countries. The EIOPA has published two consultation papers:

- A consultation on a Pan-European Personal Pension product (PEPP)
- A consultation on the development on an EU Single Market for personal pension products (PPP)

[64] FCA (2015a)
[65] EIOPA (2016b)

The overall objective of the PEPP is to encourage EU citizens to save for an adequate retirement income by creating a simple, transparent, cost-effective and trustworthy product. The PEPP is to be distinguished from occupational pension schemes and is complementary to Pillar I and Pillar II pension systems in Member States[66]. Due to the variety of decumulation practices in Member States, the EIOPA did not set up a specific form of decumulation for the PEPP. Taking into account the different answers received to the public consultation, the EIOPA took several decisions regarding the design of the PEPP, including:

- A default investment option should be included with a limited number of alternative investment options. In addition, the investment options proposed in the PEPP must provide good quality and value for money to consumers;
- Switching providers should come at a cost that is fair and transparent (i.e. costs should reflect the true costs of the switching process);
- Biometric cover and guarantees are to be optional elements of a PEPP[66].

4.2 (Potential) national reforms affecting the decumulation market

In addition to discussions taking place at the European level, each country in the scope of our study is considering reforms that may affect the decumulation market in the future.

4.2.1 National debates in the UK

Recent reforms

Several reforms (previously mentioned in part 2.2.2) have affected the decumulation market in the last few years, offering greater flexibility to consumers regarding their decumulation options. Before the April 2015 reform most people purchased an annuity due to requirements in tax legislation. Alternatives to annuities were:

- Lump sums for consumers with small pension pots (£2 000)
- Income drawdowns under which the amount that consumers could take was capped (except for those who had another source of pension income that guaranteed them a minimum income amount of £20 000)

An initial reform occurred in 2014, increasing the size of the pot that could be taken as a lump sum to £10 000 and reducing the guaranteed amount needed to access drawdown to £12 000.

From April 2015, consumers have more flexibility in their choice at retirement and they can:

- Buy an annuity without the restriction that previously applied to annuities. Before the reform, payout in the form of a lifetime annuity was only possible if the DC scheme met certain conditions. Following the reform, "[…]the annuity must still be payable for life by an insurance company but the annuity can decrease and it can continue to be paid after the member's death if the member dies before the end of a guarantee period of any length specified in the annuity contract. In addition a member is no longer subject to the unauthorised payments charges if they have not had an opportunity to select the insurance company paying the lifetime annuity"[67].

[66] EIOPA (2016a)
[67] Taxation of Pensions Act 2014 (§106), www.legislation.gov.uk

- Take a scheme pension
- Choose a flexi-access drawdown arrangement
- Choose the Uncrystallised Funds Pension Lump Sum option (UFPLS) which is a series of lump sums where 25% of each withdrawal is tax-free[68].

This reform is expected to encourage innovation and competition in the retirement market. According to the "Freedom and choice in pensions" report from the HMT[69], the "government expects this to stimulate innovation and new competition in the retirement income market, with providers creating new products to satisfy individual consumer needs and meet new social challenges such as funding care later in life […]. It will also expand the market to allow further development of existing products, such as deferred annuities."

New products and options

The FCA expects product innovation to be oriented towards:

- Development of value protection, income shapes and guarantee options for lifetime annuities;
- Managed drawdowns: these products will manage some of the investment risk on behalf of consumers;
- Capital and income guarantee products with the development of variable annuity style products;
- Cash-based products;
- Uncrystallised Fund Pension Lump Sum (UFPLS): those products are expected to be sold without advice and to be used by consumers with smaller pots;
- Blended solutions consisting in combining all the options described above. These products are expected to be sold by financial advisers, given their complexity[70].

The lifetime ISA (Individual Savings Account) will launch in April 2017. The state adds a 25% bonus on top of what the consumer saves (with a limit of £4k savings per year, i.e. a £1k top-up per year). The money can be used tax free either to purchase a first home or as a pension income after the age of 60. Withdrawal before the age of 60 will be possible, but consumers will have to pay a 5% charge and will lose the government bonus[71].

Stakeholders also mentioned possible developments in the default option that will apply when the consumer does not make a choice (currently money stays in the pension fund).

Creation of a pension dashboard

Other reforms concerning information are also under consideration, such as the creation of a pension dashboard which will allow consumers to have a snapshot of all their retirement income from state, occupational and personal pensions[72].

[68] House of Commons (2016a)
[69] HM Treasury (2014)
[70] FCA (2015b)
[71] HM Treasury (2016)
[72] ABI (2016b)

Secondary annuity market

Consumers who have already bought an annuity currently do not have the option to exit from that arrangement. There are discussions underway on the implementation in April 2017 of a secondary annuity market that would allow consumers already receiving an income from an annuity to sell that income to a third party.

4.2.1 National debates in the Netherlands

In the context of low investment returns, Dutch pension funds started to operate as DC schemes by setting up catch-up contributions and by reducing benefits indexation[73]. Indeed, Dutch pension funds are required to have a minimum coverage ratio (ratio between its assets and its pension liabilities) of 105% under the revised Financial Assessment Framework (nFTK). When this ratio is not met, pension funds must submit a recovery plan.

In the Netherlands, possible reforms will focus on individualization in the design of Dutch pension schemes. A proposal for mandatory individual DC pension contracts was sent to Parliament in July 2015[73]. These pension contracts, called personal pensions with risk sharing (PPR), are characterized by:

- A mandatory annuitization of accrued personal assets which would prevent consumers from opting out of pooling longevity risk
- The subscription of a complementary insurance policy possibly covering macro-longevity and investment risks, to an extent still to be determined[73].

Recent legislation introduced variable annuities for DC plans. These new annuities will allow consumers to have higher retirement incomes than with a traditional annuity, but consumers will also run the risk of receiving lower incomes. Due to the complexity of these products, new communication requirements are to be introduced. These requirements concern the expected annuity level at retirement and projection of annuity levels 10 years beyond retirement in three different scenarios[74]. Consumers having accrued benefits in a DC plan will have the option to choose their provider (i.e. insurers, pension funds and premium pension institutions (PPI)).

4.2.1 National debates in Germany

In Germany, there is a debate on the creation of “17b” sector-wide DC pension plans (also known as the social partner model). Liabilities would no longer be the employer’s responsibility anymore, but instead the responsibility of the sector-wide pension vehicle[75]. Recently, Germany’s largest trade union, IG Metall, expressed its support for government proposals for industry-wide pension plans[76].

Another discussion concerns the introduction of automatic enrolment to improve pension coverage and make voluntary private pension plans more attractive. According to a survey conducted by Metallrente among young adults, 65% of surveyed people approved this automatic enrollment[77].

[73] IMF(2016)
[74] Willis Towers Watson (2016)
[75] IPE (2015)
[76] IPE (2016b)
[77] IPE (2016a)

4.2.2 National debates in Poland

In Poland, the Capital Development Program will aim to build a voluntary funded pension system in Poland and develop long-term savings products under the Responsible Development Plan[78]. Some of the goals of this program are:

- The introduction of a public system of voluntary saving for retirement in the corporate sector (Employees Capital Plans (PPK))
- The simplification of IKE and IKZE and the introduction of Individual Capital Plans (IPK) for micro-enterprises
- Ensuring the safety and effectiveness of pension schemes by putting PPK under the management of the Polish Development Fund
- The centralization of information on capital retirement programs[78].

The PPK and IPK are to be offered to 7.3 million employees via automatic enrolment. Withdrawals from these plans will be possible in a three-month period following enrolment. The purpose of the program is to increase the number of participants in Pillar III by 5.5 million[78]. Those two plans are to be introduced in January 2018. Initially the program will apply to large companies (over 250 employees), then to medium-sized companies (between 50 and 249 employees) and finally, at the beginning of 2019, the program will be extended to microfirms[79].

The nationalisation of OFE is not under consideration, and three-quarters of Poland's OFE assets are expected to be transferred to IKE in January 2018. The remaining are to be transferred to the demographic reserve fund (FRD)[79].

[78] Ministry of Economic Development (2016)
[79] 'Poland's Capital Building Plan & pension system reform plans', http://biznespolska.pl/

Appendix 1: Countries profile

Country	Pillar I	Pillar II	Pillar III
Germany	▪ **Mandatory Pay As You Go system** ▪ **Earnings-related: pension computed by reference to emoluments** ▪ **Ensures a final earnings replacement rate of c. 40%** ▪ **Funded by employees, employers and government subsidies; contribution rate of 18.7% split equally between employee and employer up to the earnings cap of €72,600 p.a. (2015)** ▪ **Minimum retirement age to rise from 65 in 2015 to 67 in 2029**	▪ **Employers may offer a supplementary voluntary pension plan for employees** ▪ **Ensures a final earnings replacement rate of c. 15%** ▪ **5 corporate pension vehicles (2011):** **• Direct commitment via book reserves (52% of total)** **• Support funds with no investment restrictions (7% of total)** **• Direct insurance: insurance-based vehicle with strict investment rules (11% of total)** **• "Pensionskasse": insurance-based vehicule with no under-funding allowed (24%) of total)** **• Pension funds with a 10% under-funding allowed (5% of total)** ▪ **Plans are predominantly DB, but some are hybrid; there are no pure DC plans** ▪ **Employees typically have 2 decumulation options: a lifetime annuity or a lump sum payment**	▪ **"Riester plans": comprise annuities, lump sums (endowment insurance) or income drawdowns (investment fund or bank savings' plans)** ▪ **"Rürup plans": lifetime annuity with a partial taxation of benefit payments (in line with a partial taxation of contributions during the accumulation phase).**
The Netherlands	▪ **Mandatory Pay As You Go system** ▪ **Flat rate linked to minimum wage (non earnings-related)** ▪ **Ensures a final earnings replacement rate of c. 30%** ▪ **Funded by employees only; contribution rate of 17.9% (2015)** ▪ **Minimum retirement age to rise from 65 +3 months in 2015 to 66 in 2018 and 67 in 2021**	▪ **Quasi mandatory — most employees covered by industry-wide pension funds pursuant to collective agreements** ▪ **Ensures a final earnings replacement rate of c. 45%** ▪ **Employer-specific plans are either a company pension fund, insurance scheme or IORP (DC plans only)** ▪ **Nearly 90% of occupational plans are DB, but DC and hybrid plans are increasing** ▪ **Contribution levels for employers and employees determined by collective bargaining; employers' share generally represents**	▪ **Annuities or endowment insurance** ▪ **Pension savings products via banks** ▪ **Tax incentives (limited for endowment)**

Country	Pillar I	Pillar II	Pillar III
		60% of contributions ▪ **Tax incentives** ▪ **Net pension insurance**	
Poland	▪ Social Insurance Institution (ZUS), PAYG ▪ **Mandatory, earnings-related**, **notional defined-contribution, pensions from conversion notional capital accumulation into annuities**	▪ **Private, earnings-related** ▪ **Single-purpose open pension-funds (OFE)** ▪ **DC**, p**ensions from conversion capital accumulation into annuities**	▪ **Private, voluntary**, **DC** ▪ **Financed with voluntary contributions** ▪ **Pensions from capital accumulation**
United Kingdom	***In transition, major reforms from April 2016*** ▪ **Basic State Pension (BSP) — flat rate, PAYG, funded by National Insurance contributions** ▪ **"Triple-lock guarantee" determines increases: highest of CPI inflation, earnings and 2.5%** ▪ **BSP + Second State Pension (S2P) moving to a single-tier flat rate from April 2016** ▪ **Pension Credit — supplement to BSP for low-income pensioners, means-tested; income-related benefit comprising two parts: guarantee credit and savings credit** ▪ **Eligibility at age 65 for men; rising from 60 to 65 for women over 2010–2018; must meet requirements for number of years' contributions for BSP (currently 30)**	***In transition, major reforms over 2013-2018*** ▪ **Workplace pensions** ▪ **Employers must provide scheme, which must meet certain minimum standards** ▪ **Auto-enrollment, but employee can opt out** ▪ **Funded through employee and employer contributions, and government tax relief** ▪ **Unfunded schemes — unapproved and financed from corporate funds, primarily** ▪ **for executives** ▪ **Existing workplace pensions is a mix of trust-based (DB, DC, Hybrid) and group contract-(DC) based schemes** ▪ **Many DB schemes closed to new members. Open plans mainly DC**	▪ **Personal pension plans — 'contract-based DC plans'** ▪ **Stakeholder pensions — DC, low cost; aimed at self-employed and low-income employees** ▪ **Self-invested personal pensions (SIPPs) — typically for DC pensioners who have not bought an annuity; wide asset choice** ▪ **Additional voluntary contributions (AVCs) — member can increase benefits from their workplace pension by contributing more** ▪ **Individual Savings Accounts (ISA) — can be accessed before retirement, members can receive government tax relief, less tax relief than on SIPPs**

Appendix 2: Sensitivity analysis to assumptions specific to drawdown products

The tables below presents a sensitivity analysis of the MWR and the drawdown period (period after which assets exhaust) to fees and investment returns.

United Kingdom
The sensitivity analysis is presented for the "Amortise to 85" drawdown strategy.

MWR

Portfolio/Fees	1%	2%	3%
100% riskless bonds	0.959	0.884	0,822
10% equity 90% riskless bonds	0.993	**0.912**	0,845
30% equity 70% riskless bonds	1.072	0.975	0.897

Drawdown period (in years)

Portfolio/Fees	1%	2%	3%
100% riskless bonds	22	19	18
10% equity 90% riskless bonds	23	20	18
30% equity 70% riskless bonds	26	22	20

Germany
The sensitivity analysis is presented for the "Amortise to 85" drawdown strategy.

MWR

Portfolio/Fees	1%	2%	3%
100% riskless bonds	0.951	0.878	0.816
10% equity 90% riskless bonds	1.013	0.929	0.859
30% equity 70% riskless bonds	1.171	1.055	0.963

Drawdown period (in years)

Portfolio/Fees	1%	2%	3%
100% riskless bonds	19	17	16
10% equity 90% riskless bonds	20	18	17
30% equity 70% riskless bonds	24	21	19

Poland

The sensitivity analysis is presented for the "Amortise to 75" drawdown strategy.

MWR

Portfolio/Fees	1%	2%	3%
100% riskless bonds	1.016	0.965	0.919
10% equity 90% riskless bonds	0.989	0.941	0.898
30% equity 70% riskless bonds	0.941	0.898	0.859

Drawdown period (in years)

Portfolio/Fees	1%	2%	3%
100% riskless bonds	11	11	10
10% equity 90% riskless bonds	11	10	10
30% equity 70% riskless bonds	10	10	9

Appendix 3: Quantitative analysis results

Evolution in time

Country	Year	Type of product	Pension pot	Annuity rate	MWR
UK	2014	Lifetime annuity	£10k	5,06%	0,669
	2009	Lifetime annuity	£10k	6,02%	0,693
	2004	Lifetime annuity	£10k	6,57%	0,679
	2014	Drawdown Amortise till 85	£10k	NA	0,865
	2009	Drawdown Amortise till 85	£10k	NA	0,825
	2004	Drawdown Amortise till 85	£10k	NA	0,904
Netherlands	2012	Lifetime annuity	€50k	6,26%	0,977
	2009	Lifetime annuity	€50k	7,89%	1,003
	2004	Lifetime annuity	€50k	8,40%	1,002
Germany	2016	Guaranteed participating annuity	€100k	5,64%	1,070
	2003	Guaranteed participating annuity	€100k	7,29%	0,881
	2016	Drawdown Amortise till 85	€100k	NA	0,908
	2003	Drawdown Amortise till 85	€100k	NA	0,842
Poland	2014	Drawdown Amortise till 75	€5k	NA	0,929
	2009	Drawdown Amortise till 75	€5k	NA	0,911
	2004	Drawdown Amortise till 75	€5k	NA	0,950

Benefits of shopping around

Country	Year	Type of product	Pension pot	Quote	Annuity rate	MWR
UK	2016	Lifetime annuity	£50k	Best	5.49%	0.835
	2016	Lifetime annuity	£50k	Worst	4.82%	0.733
Netherlands	2016	Lifetime annuity	€50k	Best	4.73%	0,808
	2016	Lifetime annuity	€50k	Worst	4.02%	0,688

Pension pot size

Country	Year	Type of product	Pension pot	Annuity rate	MWR
UK	2016	Lifetime annuity	£50k	5.20%	0.792
	2016	Lifetime annuity	£25k	5.16%	0.784
	2016	Lifetime annuity	£10k	4.94%	0.751
Germany	2016	Guaranteed participating annuity	€100k	5.64%	1.070
	2016	Guaranteed participating annuity	€20k	5.37%	1.020
Netherlands	2016	Lifetime annuity	€50k	4.33%	0,740
	2016	Lifetime annuity	€125k	4.40%	0,751

Products comparison

Country	Year	Type of product	Pension pot	Annuity rate	MWR
UK	2016	Lifetime annuity	£50k	5.20%	0.792
	2016	Guaranteed annuity	£50k	5.00%	0.857
	2016	Escalating annuity	£50k	3.61%	0.760
	2016	Drawdown Amortise till 85	£50k	NA	0.876
	2016	Drawdown Self-annuitise	£50k	5.20%	0.880
	2016	Drawdown Life expectancy	£50k	NA	0.872
Germany	2016	Guaranteed participating annuity	€100k	5.64%	1.070
	2016	Drawdown Amortise till 85	€100k	NA	0.908

Appendix 4: List of references

ABI, 'Code of Conduct on Retirement Choices', 2012

ABI, 'UK Insurance Key Facts', 2015

ABI (2016a), Pension freedoms statistics – one year factsheet, 2016

ABI (2016b), ABI sets out to take forward Pensions Dashboard project, News releases, 2016

ABI (2016c), ABI publishes full year of pension freedom data, News releases, 2016

Alessie, Rob, Maarten Van Rooij and Annamaria Lusardi , 'Financial literacy and retirement preparation in the Netherlands', 2011, Journal of Pension Economics and Finance, 10, pp. 527-545.

Antolin, P., S. Payet and J. Yermo, 'Coverage of Private Pension Systems: Evidence and Policy Options', OECD Working Papers on Finance, Insurance and Private Pensions, No. 20, OECD Publishing, 2012, http://dx.doi.org/10.1787/5k94d6gh2w6c-en

Better Finance, 'Pension Savings: The Real Return', 2015

Blake, 'We Need a National Narrative: Building a Consensus around Retirement Income', The Independent Review of Retirement Income, 2015

Brown, Jeffrey R. and Theo Nijman; 'Opportunities for Improving Pension Wealth Decumulation in the Netherlands' Netspar DP 01/2011-008, 2011

Brown, Jeffrey R., 'Financial Education and Annuities', OECD Journal: General Papers, Vol. 2008/3, 2009, http://dx.doi.org/10.1787/gen_papers-v2008-art20-en

Cannon, Edmund and Ian Tonks, 'Cohort mortality risk or adverse selection in the UK annuity market?', DP 04/2013-017, 2013

Cannon , Edmund and Ian Tonks, 'Compulsory and Voluntary Annuity Markets in the United Kingdom', Pension Research Council Working Paper PRC WP 2010-22, The Wharton School, University of Pennsylvania, 2010

Cannon, Edmund, Ralph Stevens and Ian Tonks, 'Price efficiency in the Dutch Annuity Market'. Netspar DP 04/2013-016, 2013

EIOPA (2014a), 'Financial Stability Report; CEIOPS, May 2008, Financial Stability Report', December 2014

EIOPA (2014b), 'EIOPA's Fact Finding Report on Decumulation Phase Practices', 2014

EIOPA (2014c), *Database of pension plans and products in the EEA*, https://eiopa.europa.eu/regulation-supervision/pensions/database-of-pension-plans-and-products-in-the-eea, 2014

EIOPA (2016a), 'Final Report on Public Consultation No. CP-15/006 on the creation of a standardised Pan-European Personal Pension product (PEPP)', 2016

EIOPA (2016b), 'Final Report on Public Consultation on Preparatory Guidelines on product oversight and governance arrangements by insurance undertakings and insurance distributors', 2016

European Commission, 'Annual growth survey 2012', 2012

European Parliament, 'Changes to Accounting and Solvency Rules: The (possible) Impact on Insurance and Pensions', 2016

EY, 'The $500 trillion prize, A customer-centric vision for the global pension and retirement market', 2015

FCA (2014a), 'At-Retirement Consumer Research: Exploring changes in the retirement landscape', 2014

FCA (2014b), 'Retirement income market study: Interim Report', 2014

FCA (2014c), 'Thematic Review of Annuities', 2014

FCA (2014d), 'The value for money of annuities and other retirement income strategies in the UK', Occasional Paper No. 5, 2014

FCA (2015a), 'PRIIPs disclosure: Key Information Documents', https://www.the-fca.org.uk/firms/priips-disclosure-key-information-documents, 2015

FCA (2015b), 'Retirement income market study: Final report – confirmed findings and remedies', 2015

FCA (2015c), 'Retirement Income Market Data (April - June 2015 and July - Sep 2015)', 2015

FCA, 'Over 55s at heightened risk of fraud, says FCA', http://scamsmart.fca.org.uk/page/over-55s-at-heightened-risk-of-fraud-says-fca, 2016

Financial Services Consumer Panel, 'Annuities: Time for Regulatory Reform', 2013, https://www.yumpu.com/en/document/view/22036593/annuities-time-for-regulatory-reform-financial-services-consumer-

Gallagher, Emily, 'Trends in the Expenses and Fees of Mutual Funds, 2013.' ICI Research Perspective 20, no. 2 (May), 2014

Glasgow, 'Choice and flexibility: optimising decisions at retirement', Institute and faculty of actuaries, Pensions Conference, 2015

HM Treasury, 'Freedom and choice in pensions', March 2014

HM Treasury, Budget 2016: The Lifetime ISA explained in a one-page fact sheet, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508117/Lifetime_ISA_explained.pdf, 2016

Holzmann, Robert, and Ufuk Guven,'Adequacy of Retirement Income after Pension Reforms in Central, Eastern, and Southern Europe: Eight Country Studies', The World Bank, Washington, D.C., 2009

House of Commons, 'Pensions: annuities'. Briefing Paper Number SN06552, 2015

House of Commons (2016a), 'Pension flexibilities'. Briefing paper Number SN06891, 2016

House of Commons (2016b), 'Pension Wise: The guidance guarantee'. Briefing paper Number SN07042, 2016

IFM, 'Kingdom of the Netherlands – Netherlands', IMF Country Report No. 16/46, 2016

Inkmann, Joachim, Lopes and Michaelides, 'How Deep is the Annuity Market Participation Puzzle?', 2007

IPE, 'Sector fund proposals: A new tune for German pensions?', http://www.ipe.com/pensions/pensions-in/germany/sector-fund-proposals-a-new-tune-for-german-pensions/10007276.fullarticle, April 2015

IPE (2016a), 'Research institute questions German second-pillar pension reform', http://www.ipe.com/countries/germany/research-institute-questions-german-second-pillar-pension-reform/10012927.fullarticle, April 2016

IPE (2016b), 'Powerful German union backs plans to boost second-pillar pensions', http://www.ipe.com/countries/germany/powerful-german-union-backs-plans-to-boost-second-pillar-pensions/10014417.article, July 2016

Jaspersen, Johannes, Andreas Richter, and Sebastian Soika, 'On the Demand Effects of Rate Regulation – Evidence from a Natural Experiment', Munich Risk and Insurance Center Working Paper 24, 2015

Kornelia Hagen and Axel Kleinlein, 'Ten years of the Riester Pension Scheme: No Reason to Celebrate', DIW Economic Bulletin 2.2012, 2012

Ministry of Economic Development, 'The Capital Development Program', https://www.mr.gov.pl/media/22059/TheCapitalDevelopmentProgram_pressrelease.pdf, Press release, July 2016

OECD, 'Tax treaty issues arising from cross-border pensions', Public discussion draft, 2003

OECD, Pensions glossary, https://www.oecd.org/finance/private-pensions/2496718.pdf, 2005

OECD*, Private Pensions Outlook 2008*, 2008

OECD, 'Annual DC Pension Statements and the Communications Challenge', Working Papers on insurance and private pensions, 2012

OECD, 'Pensions at a Glance 2013', 2013

Oxera, 'Study on the position of savers in the private pension products', 2013

Oxera, 'The retirement income market', 2014

Pang G. and M. Warshwsky, 'Optimizing the Equity-Bond-Annuity Portfolio in Retirement: The Impact of Uncertain Health Expenses', 2010

Pensions Institute Report,' Ending Compulsory Annuitization: What are the consequences?', Pensions Institute Report,2010

Rusconi, R. (2008), "National Annuity Markets: Features and Implications", OECD Working Papers on Insurance and Private Pensions, No. 24, OECD publishing

SPC and DG EMPL, 'The 2015 Pension Adequacy Report: current and future income adequacy in old age in the EU', Volume I, 2015

Szczepański, Marek,'The Design of Supplementary Pension Schemes in Poland and Longevity Risk: Current Situation and Proposed Changes', The Pensions Institute, Cass Business School, City University London, Discussion Paper PI-1202, 2012

Teppa, Federica, 'Can the Longevity Risk Alleviate the Annuitization Puzzle? Empirical Evidence from Dutch Data' Netspar DP 09/2011-075, 2011

Van Ooijen, Raun, Rob Alessie, and Adriaan Kalwij, 'Saving Behavior and Portfolio Choice After Retirement', De Economist 163: pp 353-404, 2015

Von Gaudecker, HM and C Weber, 'Mandatory Unisex Policies and Annuity Pricing: Quasi-Experimental Evidence from Germany', Mannheim Institute for the Economics of Aging, MEA Discussion Paper 108-2006, 2006

Von Gaudecker, HM and C Weber, 'Surprises in a growing market niche: An evaluation of the German private life annuities market', The Geneva Papers on Risk and Insurance-Issues and Practice 29 (3), 394-416, 2004

Willis Towers Watson, Netherlands: Legislation to introduce variable annuities for DC plans passed, Global news briefs, https://www.towerswatson.com/en/Insights/Newsletters/Global/global-news-briefs/2016/06/netherlands-variable-annuities-for-dc-plans-introduced, 2016

Appendix 5: List of stakeholders interviewed

Country	Stakeholder	Stakeholder category	Organization / Position / Status
The Netherlands	Mark Heemskerk	Academic expert	▪ **Graduated from Vrije Universiteit Amsterdam** ▪ **Former researcher in employment and pension law at Vrije Universiteit Amsterdam** ▪ **Professor in pension law at Radboud University Nijmegen and Pension Lawyer**
	Wim Koeleman	Other (consultant)	▪ **Graduated from Utrecht University and Rotterdam School of Management** ▪ **Former head of pensions (Royal Dutch Airlines)** ▪ **Former secretary for pension policy and finance policy of pensions** ▪ **Partner at PwC**
	Roel Beetsma	Academic expert	▪ **Graduated from Tilburg University (PhD in Economics)** ▪ **Around 70 publications in international journal** ▪ **Former Professor of Macro Economics** ▪ **Professor of Pension Economics**
	Ward Romp	Academic expert	▪ **Graduated from University of Groningen (MSc, Economics)** ▪ **Professor in Macroeconomis at University of Amsterdam** ▪ **Macroeconomist, specialised in the macroeconomics of pensions and ageing**
	Jos Berkemeijer	Consumer organization	▪ **Graduated from University of Amsterdam in Actuarial sciences** ▪ **Experienced actuary, CEO, Supervisory Board Member in the Financial, Health, Insurance and Pension area** ▪ **Managing partner at FinTech50 company Symetrics**
Germany	Oskar Goecke	Academic expert	▪ **Graduated from University of Bonn (PhD in mathematics and economics)** ▪ **Professor at Cologne University of Applied Sciences "Prize of the Future DIA 2002" of the German Institute for Retirement** ▪ **Gauss Prize for his work "savings schemes with pension Return smoothing mechanism" (2014)**
	Ralf Korn	Academic expert	▪ **Graduated in mathematics and business administration from Mainz (PhD)** ▪ **Former professor in several Universities in mathematics and financial mathematics** ▪ **Has published more than 60 papers in refereed journals and 5 books** ▪ **Professor in mathematics at University of Kaiserslautern**

Country	Stakeholder	Stakeholder category	Organization / Position / Status
	Reiner Will	National public institution	▪ **Managing partner and co founder of Assekurata, insurance rating agency** ▪ **Researcher at the Institute of Insurance Science at the University of Cologne.** ▪ **Lecturer and author about different issues of insurance industry**
	Axel Kleinlein	Consumer organization	▪ **Graduated from University of Cologne and Free University Berlin in mathematics and philosophy** ▪ **Led many studies on the insurance market at Stiftung Warentest and Assekurata** ▪ **Managing Director of Bund der Versicherten ("Confederation of insured")**
UK	Chris Curry	National public institution	▪ **Graduated from Queen Mary University of London** ▪ **Former economist (Association of British Insurers)** ▪ **Director of the Pensions Policy Institute**
	Philip Worsfold	National public institution	▪ **Graduated from University of Sussex (M.A. in Human Geography)** ▪ **Team leader for 10 years at the Department for Communities and Local Government** ▪ **Policy Leader (the Pensions Regulator)**
	Maggie Craig and Philip Diamond	National public institution	**Maggie Craig** ▪ **Graduated from MA, Glasgow University (English language and literature)** ▪ **Former Director of Financial Conduct Regulation** ▪ **Special adviser at The Financial Conduct Authority (Pension policy department)** **Philip Diamond** ▪ **Graduated in international relations and affairs from the University of Auvergne** ▪ **Served on numerous global standard setting bodies and European supervisor authorities including EIOPA, EBA and ESMA** ▪ **Policy adviser at The Financial Conduct Authority (Pension policy department)**
	Yvonne Braun and Rob Yuille	Decumulation products' provider	**Yvonne Braun** ▪ **Director of long term savings and retirement (Association of British Insurers)** ▪ **Former capital markets lawyer, at US law firm Cleary Gottlieb Steen & Hamilton and at Goldman Sachs** ▪ **Author of the ABI's Retirement 2050 blueprint and is committed to developing the role of the longterm savings and protection industry** **Rob Yuille** ▪ **Graduated from Cardiff University**

Country	Stakeholder	Stakeholder category	Organization / Position / Status
			▪ **MSc Econ, European Policy Process** ▪ **10 years' experience in policy development, public affairs, stakeholder management and research, in financial services, regulation and money advice** ▪ **Manager in Retirement Pension at the Association of British Insurers**
	Melinda Riley	Consumer organization	▪ **Graduated from the University of Sheffield** ▪ **Head of policy and technical (Pensions Advisory Service)** ▪ **She leads policy development and implementation on automatic enrolment information and on broader pensions information policy**
	Ian Tonks	Academic expert	▪ **Graduated from Leicester Polytechnic (BA) and University of Warwick (MA and PhD) in Economics** ▪ **Professor in finance for 20 years in several Universities (Bristol, Exeter and today Bath)**
Poland	Wojciech Otto	Academic expert	▪ **Graduated from Warsaw University (Statistics and Econometrics)** ▪ **Professor, researcher, author and lecturer at Warsaw University**
	Marek Szczepanski	Academic expert	▪ **Graduated from sociology at the University of Silesia (PhD)** ▪ **Lecturer at several universities** ▪ **Cofounder of the Higher School of Management and Social Sciences in Tychy** ▪ **Former member of the presidium of the Committee of Sociology of the Polish Academy of Sciences and chairman of the scientific council of the Institute of Silesia in Opole**
	Joanna Rutecka and Agnieszka Chlon-Dominczak	Academic expert	**Joanna Rutecka** ▪ **Graduated from Warsaw School of Economics (PhD in Economics)** ▪ **Former Undersecretary of State and leader of Economic analyses departments** ▪ **Lecturer at Warsaw School of Economics** **Agnieszka ChlonDominczak** ▪ **Graduated from Warsaw School of Economics (PhD in Economics)** ▪ **Former researcher at the Institute for Market Economics** ▪ **Former Head of Economic Analyses Department at the Ministry of Labour and Social policy** ▪ **Lecturer at Warsaw School of Economics**

Country	Stakeholder	Stakeholder category	Organization / Position / Status
	Dariusz Stańko	Academic expert	▪ **Graduated from the Warsaw School of Economics (PhD degrees in Economics) and from the Osaka University, and also from the Warsaw School of Economics (MA diploma in Finance and Banking).** ▪ **Former Director of the Department of Economic Analyses and Forecasting at the Ministry of Labour and Social Policy in Poland** ▪ **Professor at the Warsaw School of Economics**
	Przemyslaw Ajdys	Other (consultant)	▪ **Graduated from Warsaw School of Economics (Finance and Banking) and University of Warsaw (Actuarial mathematics)** ▪ **More than 1(years of experience as an actuarial and financial adviser** ▪ **Manager at Ernst & Young (European Actuarial Services)**

EV-02-16-129-EN-N

DOI : 10.2874/391191
ISBN : 978-92-79-55321-9