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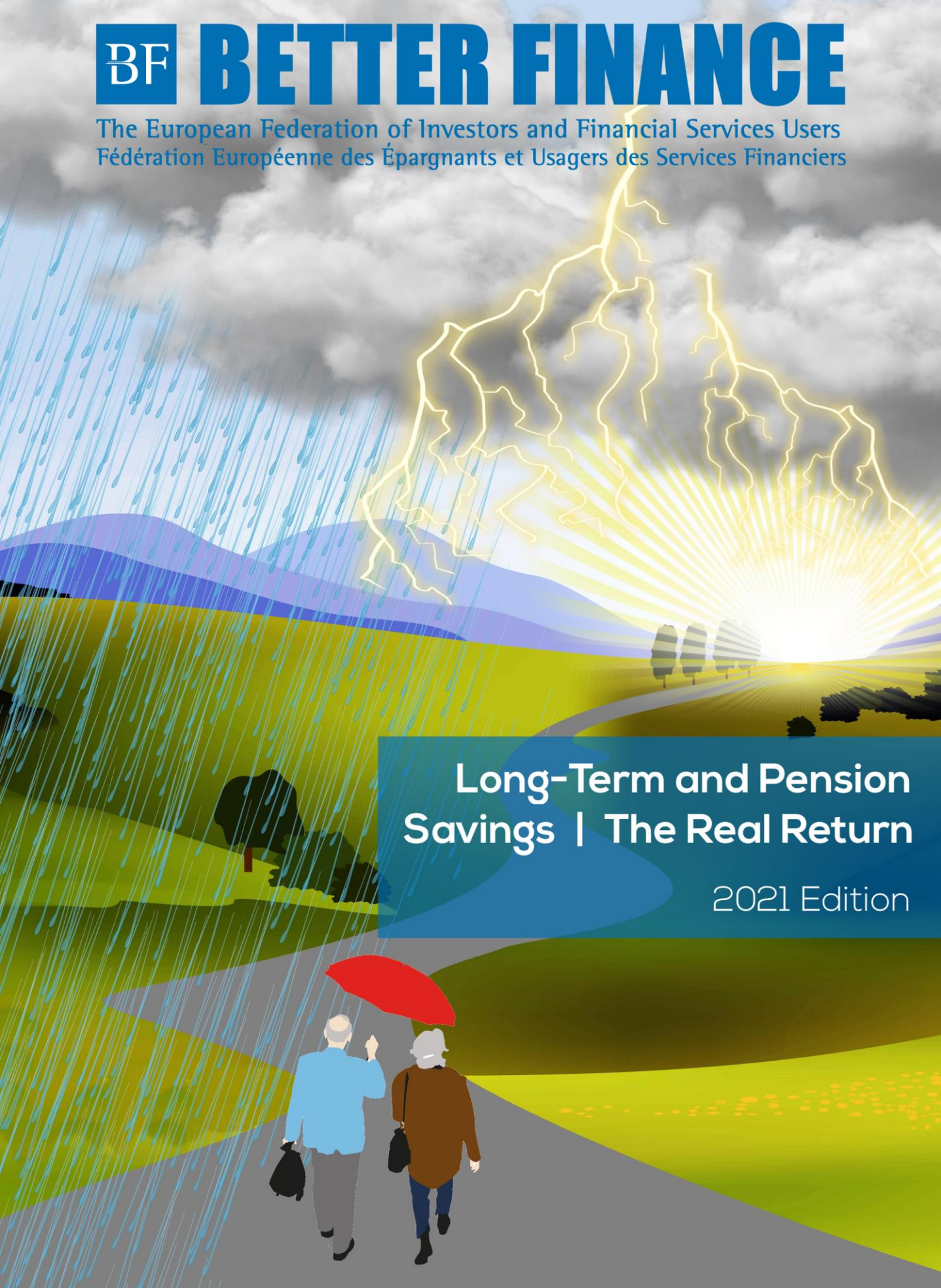

Long-Term and Pension Savings | The Real Return

2021 Edition

Pension Savings: The Real Return

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A Research Report by BETTER FINANCE

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Acronyms

AIF	Alternative Investment Fund
AMC	Annual Management Charges
AuM	Assets under Management
BE	Belgium
BG	Bulgaria
Bln	Billion
BPETR	'Barclay's Pan-European High Yield Total Return' Index
CAC 40	'Cotation Assistée en Continu 40' Index
CMU	Capital Markets Union
DAX 30	'Deutsche Aktieindex 30' Index
DB	Defined Benefit plan
DC	Defined Contribution plan
DE	Germany
DG	Directorate General of the Commission of the European Union
DK	Denmark
DWP	United Kingdom's Governmental Agency Department for Work and Pensions
EBA	European Banking Authority
EE	Estonia
EEE	Exempt-Exempt-Exempt Regime
EET	Exempt-Exempt-Tax Regime
ETF	Exchange-Traded Fund
EIOPA	European Insurance and Occupational Pensions Authority
ES	Spain
ESAs	European Supervisory Authorities
ESMA	European Securities and Markets Authority
EU	European Union
EURIBOR	Euro InterBank Offered Rate
EX	Executive Summary
FR	France
FSMA	Financial Services and Market Authority (Belgium)
FSUG	Financial Services Users Group - European Commission's Expert Group
FTSE 100	The Financial Times Stock Exchange 100 Index
FW	Foreword
GDP	Gross Domestic Product
HICP	Harmonised Indices of Consumer Prices

IBEX 35	Índice Bursátil Español 35 Index
IKZE	'Indywidualne konto zabezpieczenia emerytalnego' – Polish specific Individual pension savings account
IRA	United States specific Individual Retirement Account
IT	Italy
JPM	J&P Morgan Indices
KIID	Key Investor Information Document
LV	Latvia
NAV	Net Asset Value
Mln	Million
MSCI	Morgan Stanley Capital International Indices
NL	Netherlands
OECD	The Organisation for Economic Co-Operation and Development
OFT	United Kingdom's Office for Fair Trading
PAYG	Pay-As-You-Go Principle
PIP	Italian specific 'Individual Investment Plan'
PL	Poland
PRIIP(s)	Packaged Retail and Insurance-Based Investment Products
RO	Romania
S&P	Standard & Poor Indexes
SE	Sweden
SK	Slovakia
SME	Small and Medium-sized Enterprise
SPIVA Scorecard	Standard & Poor Dow Jones' Indices Research Report on Active Management performances
TEE	Tax-Exempt-Exempt Regime
TCR/TER	Total Cost Ratio/ Total Expense Ratio
UCITS	Undertakings for the Collective Investment of Transferable Securities
UK	United Kingdom

Glossary of terms

Accrued benefits* – is the amount of accumulated pension benefits of a pension plan member on the basis of years of service.

Accumulated assets* – is the total value of assets accumulated in a pension fund.

Active member* – is a pension plan member who is making contributions (and/or on behalf of whom contributions are being made) and is accumulating assets.

AIF(s) – or Alternative Investment Funds are a form of collective investment funds under E.U. law that do not require authorization as a UCITS fund.[1]

Annuity* – is a form of financial contract mostly sold by life insurance companies that guarantees a fixed or variable payment of income benefit (monthly, quarterly, half-yearly, or yearly) for the life of a person(s) (the annuitant) or for a specified period of time. It is different than a life insurance contract which provides income to the beneficiary after the death of the insured. An annuity may be bought through instalments or as a single lump sum. Benefits may start immediately or at a pre-defined time in the future or at a specific age.

Annuity rate* – is 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.

Asset allocation* – is the act of investing the pension fund's assets following its investment strategy.

Asset management* – is the act of investing the pension fund's assets following its investment strategy.

Asset manager* – is(are) the individual(s) or entity(ies) endowed with the responsibility to physically invest the pension fund assets. Asset managers may also set out the investment strategy for a pension fund.

Average earnings scheme* – is a scheme where the pension benefits earned for a year depend on how much the member's earnings were for the given year.

Basic state pension* – is a non-earning related pension paid by the State to individuals with a minimum number of service years.

Basis points (bps) – represent the 100th division of 1%.

Benchmark (financial) – is a referential index for a type of security. Its aim is to show, customized for a level and geographic or sectorial focus, the general price or performance of the market for a financial instrument.

[1] See Article 4(1) of Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010, OJ L 174, 1.7.2011, p. 1–73.

Beneficiary* – is an individual who is entitled to a benefit (including the plan member and dependants).

Benefit* – is a payment made to a pension fund member (or dependants) after retirement.

Bonds – are instruments that recognize a debt. Although they deliver the same utility as bank loans, i.e., enabling the temporary transfer of capital from one person to another, with or without a price (interest) attached, bonds can also be issued by non-financial institutions (States, companies) and by financial non-banking institutions (asset management companies). In essence, bonds are considered more stable (the risk of default is lower) and in theory deliver a lower, but fixed, rate of profit. Nevertheless, Table EX2 of the Executive Summary shows that the aggregated European Bond Index highly overperformed the equity one.

Closed pension funds* – are the funds that support only pension plans that are limited to certain employees. (e.g., those of an employer or group of employers).

Collective investment schemes – are financial products characterised by the pooling of funds (money or asset contributions) of investors and investing the total into different assets (securities) and managed by a common asset manager. Under E.U. law collective investment schemes are regulated under 6 different legal forms: UCITS (see below), the most common for individual investors; AIFs (see above), European Venture Capital funds (EuVECA), European Long-Term Investment Funds (ELTIFs), European Social Entrepreneurship Funds (ESEF) or Money Market Funds.[2]

Contribution* – is a payment made to a pension plan by a plan sponsor or a plan member.

Contribution base* – is the reference salary used to calculate the contribution.

Contribution rate* – is the amount (typically expressed as a percentage of the contribution base) that is needed to be paid into the pension fund.

Contributory pension scheme* – is a pension scheme where both the employer and the members have to pay into the scheme.

Custodian* – is the entity responsible, as a minimum, for holding the pension fund assets and for ensuring their safekeeping.

Deferred member* – is a pension plan member that no longer contributes to or accrues benefits from the plan but has not yet begun to receive retirement benefits from that plan.

Deferred pension* – is a pension arrangement in which a portion of an employee's income is paid out at a date after which that income is actually earned.

Defined benefit (DB) occupational pension plans* – are occupational plans other than defined contributions plans. DB plans generally can be classified into one of three main types, "traditional", "mixed" and "hybrid" plans. These are schemes where "the pension payment is defined as a percentage of income and employment career. The employee receives a thus pre-defined pension

[2] See European Commission, 'Investment Funds' (28 August 2019) https://ec.europa.eu/info/business-economy-euro/growth-and-investment/investment-funds_en.

and does not bear the risk of longevity and the risk of investment. Defined Benefits schemes may be part of an individual employment contract or collective agreement. Pension contributions are usually paid by the employee and the employer".[3]

"Traditional" DB plan* – is a DB plan where benefits are linked through a formula to the members' wages or salaries, length of employment, or other factors.

"Hybrid" DB plan* – is a DB plan where benefits depend on a rate of return credited to contributions, where this rate of return is either specified in the plan rules, independently of the actual return on any supporting assets (e.g. fixed, indexed to a market benchmark, tied to salary or profit growth, etc.), or is calculated with reference to the actual return of any supporting assets and a minimum return guarantee specified in the plan rules.

"Mixed" DB plan* – is a DB plans that has two separate DB and DC components, but which are treated as part of the same plan.

Defined contribution (DC) occupational pension plans* – are 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. These are schemes where "the pension payment depends on the level of defined pension contributions, the career and the returns on investments. The employee has to bear the risk of longevity and the risk of investment. Pension contributions can be paid by the employee and/or the employer and/or the state".[4]

Dependency ratio* – are 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.

Early retirement* – is a situation when an individual decides to retire earlier later and draw the pension benefits earlier than their normal retirement age.

Economic dependency ratio* – is the division between the number of inactive (dependent) population and the number of active (independent or contributing) population. It ranges from 0% to 100% and it indicates how much of the inactive population's (dependent) consumption is financed from the active population's (independent) contributions.[5] In general, the inactive (dependent) population is represented by children, retired persons and persons living on social benefits.

[3] Werner Eichhorst, Maarten Gerard, Michael J. Kendzia, Christine Mayrhruber, Connie Nielsen, Gerhard Runstler, Thomas Url, 'Pension Systems in the EU: Contingent Liabilities and Assets in the Public and Private Sector' EP Directorate General for Internal Policies IP/A/ECON/ST/2010-26.

[4] Ibid.

[5] For more detail on the concept, see Elke Loichinger, Bernhard Hammer, Alexia Prskawetz, Michael Freiberger, Joze Sambt, 'Economic Dependency Ratios: Present Situation and Future Scenarios' MS13 Policy Paper on Implications of Population Ageing for Transfer Systems, Working Paper no. 74, 18th December 2014, 3.

EET system* – is a form of taxation of pension plans, whereby contributions are exempt, investment income and capital gains of the pension fund are also exempt, and benefits are taxed from personal income taxation.

Equity (or stocks/shares) – are titles of participation to a publicly listed company's economic activity. With regards to other categorizations, an equity is also a security, a financial asset or, under E.U. law, a transferable security.[6]

ETE system* – is a form of taxation whereby contributions are exempt, investment income and capital gains of the pension fund are taxed, and benefits are also exempt from personal income taxation.

ETF(s) – or Exchange-Traded Funds are investment funds that are sold and bought on the market as an individual security (such as shares, bonds). ETFs are structured financial products, containing a basket of underlying assets, and are increasingly more used due to the very low management fees that they entail.

Fund member* – is an individual who is either an active (working or contributing, and hence actively accumulating assets) or passive (retired, and hence receiving benefits), or deferred (holding deferred benefits) participant in a pension plan.

Funded pension plans* – are occupational or personal pension plans that accumulate dedicated assets to cover the plan's liabilities.

Funding ratio (funding level) * – is the relative value of a scheme's assets and liabilities, usually expressed as a percentage figure.

Gross rate of return* – is the rate of return of an asset or portfolio over a specified time period, prior to discounting any fees of commissions.

Gross/net replacement rate – is the ratio between the pre-retirement gross or net income and the amount of pension received by a person after retirement. The calculation methodology may differ from source to source as the average working life monthly gross or net income can used to calculate it (divided by the amount of pension) or the past 5 year's average gross income etc. (see below **OECD net replacement rate**).

Group pension funds* – are multi-employer pension funds that pool the assets of pension plans established for related employers.

Hedging and hedge funds – while hedging is a complex financial technique (most often using derivatives) to protect or reduce exposure to risky financial positions or to financial risks (for instance, currency hedging means reducing exposure to the volatility of a certain currency), a hedge fund is an investment pool that uses complex and varying investment techniques to generate profit.

Indexation* – is the method with which pension benefits are adjusted to take into account changes in the cost of living (e.g., prices and/or earnings).

[6] Article 4(44) of Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU, OJ L 173, p. 349–496 (MiFID II).

Individual pension plans* – is a pension fund that comprises the assets of a single member and his/her beneficiaries, usually in the form of an individual account.

Industry pension funds* – are funds that pool the assets of pension plans established for unrelated employers who are involved in the same trade or businesses.

Mandatory contribution* – is the level of contribution the member (or an entity on behalf of the member) is required to pay according to scheme rules.

Mandatory occupational plans* – Participation in these plans is mandatory for employers. Employers are obliged by law to participate in a pension plan. Employers must set up (and make contributions to) occupational pension plans which employees will normally be required to join. Where employers are obliged to offer an occupational pension plan, but the employees' membership is on a voluntary basis, these plans are also considered mandatory.

Mandatory personal pension plans* - are personal plans that individuals must join, or which are eligible to receive mandatory pension contributions. Individuals may be required to make pension contributions to a pension plan of their choice normally within a certain range of choices or to a specific pension plan.

Mathematical provisions (insurances) – or *mathematical reserves* or *reserves*, are the value of liquid assets set aside by an insurance company that would be needed to cover all current liabilities (payment obligations), determined using actuarial principles.

Minimum pension* – is the minimum level of pension benefits the plan pays out in all circumstances.

Mixed indexation* – is the method with which pension benefits are adjusted taking into account changes in both wages and prices.

Money market instruments – are short-term financial products or positions (contracts) that are characterized by the very high liquidity rate, such as deposits, short-term loans, repo-agreements and so on.

MTF – multilateral trading facility, is the term used by the revised Markets in Financial Instruments Directive (MiFID II) to designate securities exchanges that are not a regulated market (such as the London Stock Exchange, for example).

Multi-employer pension funds* – are funds that pool the assets of pension plans established by various plan sponsors. There are three types of multi-employer pension funds:

a) for related employers i.e., companies that are financially connected or owned by a single holding group (group pension funds);

b) for unrelated employers who are involved in the same trade or business (industry pension funds);

c) for unrelated employers that may be in different trades or businesses (collective pension funds).

Money-Weighted Returns (MWR) - also referred to as the internal rate of return, is a measurement of performance that takes into account cash flows (contributions) when calculating returns.

NAV – Net Asset Value, or the amount to which the market capitalisation of a financial product (for this report, pension funds' or insurance funds' holdings) or a share/unit of it arises at a given point. In general, the Net Asset Value is calculated per unit or share of a collective investment scheme using the daily closing market prices for each type of security in the portfolio.

Net rate of return* – is the rate of return of an asset or portfolio over a specified time period, after discounting any fees of commissions.

Normal retirement age* – is the age from which the individual is eligible for pension benefits.

Non-contributory pension scheme* – is a pension scheme where the members do not have to pay into scheme.

Occupational pension plans* – access to such plans is linked to an employment or professional relationship between the plan member and the entity that establishes the plan (the plan sponsor). Occupational plans may be established by employers or groups of thereof (e.g., industry associations) and labour or professional associations, jointly or separately. The plan may be administrated directly by the plan sponsor or by an independent entity (a pension fund or a financial institution acting as pension provider). In the latter case, the plan sponsor may still have oversight responsibilities over the operation of the plan.

Eurostat aggregate replacement rate for pensions refers to median individual pension income of population aged 65-74 relative to median individual earnings from work of population aged 50-59, excluding other social benefits.

Old-age dependency ratio - defined as the ratio between the total number of elderly persons when they are generally economically inactive (aged 65 and above) and the number of persons of working age.[7] It is a sub-indicator of the economic dependency ratio and focuses on a country's public (state) pension system's reliance on the economically active population's pensions (or social security) contributions. It is a useful indicator to show whether a public (Pillar I) pension scheme is under pressure (when the ratio is high, or the number of retirees and the number of workers tend to be proportionate) or relaxed (when the ratio is low, or the number of retirees and the number of workers tend to be disproportionate). For example, a low old-age dependency ratio is 20%, meaning that 5 working people contribute for one retiree's pension.

Open pension funds* – are funds that support at least one plan with no restriction on membership.

Pension assets* – are all forms of investment with a value associated to a pension plan.

Pension fund administrator* – is(are) the individual(s) ultimately responsible for the operation and oversight of the pension fud.

Pension fund governance* – is the operation and oversight of a pension fund. The governing body is responsible for administration, but may employ other specialists, such as actuaries, custodians,

[7] See Eurostat definition: http://ec.europa.eu/eurostat/web/products-datasets/product?code=tsdde511.

consultants, asset managers and advisers to carry out specific operational tasks or to advise the plan administration or governing body.

Pension fund managing company* – is a type of administrator in the form of a company whose exclusive activity is the administration of pension funds.

Pension funds* – 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. 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.

Pension insurance contracts* – are insurance contracts that specify pension plans contributions to an insurance undertaking in exchange for which the pension plan benefits will be paid when the members reach a specified retirement age or on earlier exit of members from the plan. Most countries limit the integration of pension plans only into pension funds, as the financial vehicle of the pension plan. Other countries also consider the pension insurance contract as the financial vehicle for pension plans.

Pension plan* – is 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.

Pension plan sponsor* – is an institution (e.g., company, industry/employment association) that designs, negotiates, and normally helps to administer an occupational pension plan for its employees or members.

Pension regulator* – is a governmental authority with competence over the regulation of pension systems.

Pension supervisor* – is a governmental authority with competence over the supervision of pension systems.

Personal pension plans* - Access to these plans does not have to be linked to an employment relationship. The plans are established and administered directly by a pension fund or a financial institution acting as pension provider without any intervention of employers. Individuals independently purchase and select material aspects of the arrangements. The employer may nonetheless make contributions to personal pension plans. Some personal plans may have restricted membership.

Private pension funds* – is a pension fund that is regulated under private sector law.

Private pension plans* – is a pension plan administered by an institution other than general government. Private pension plans may be administered directly by a private sector employer acting as the plan sponsor, a private pension fund or a private sector provider. Private pension plans may complement or substitute for public pension plans. In some countries, these may include plans for public sector workers.

Public pension plans* – are pensions funds that are regulated under public sector law.

Public pension plans* – are the social security and similar statutory programmes administered by the general government (that is central, state, and local governments, as well as other public sector bodies such as social security institutions). Public pension plans have been traditionally PAYG financed, but some OECD countries have partial funding of public pension liabilities or have replaced these plans by private pension plans.

Rate of return* – is the income earned by holding an asset over a specified period.

REIT(s) or Real Estate Investment Trust(s) is the most common acronym and terminology used to designate special purpose investment vehicles (in short, companies) set up to invest and commercialise immovable goods (real estate) or derived assets. Although the term comes from the U.S. legislation, in the E.U. there are many forms of REITs, depending on the country since the REIT regime is not harmonised at E.U. level.

Replacement ratio* – is 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.

Service period* – is the length of time an individual has earned rights to a pension benefit.

Single employer pension funds* – are funds that pool the assets of pension plans established by a single sponsor.

Summary Risk Reward Indicator - a measurement developed by the European Securities and Markets Authority (former CESR) to be included in the Key Investor Information Document (KIID) for UCITS (undertakings for collective investment in transferable securities) to reflect the risk profile of a certain fund.

Supervisory board* – is(are) the individual(s) responsible for monitoring the governing body of a pension entity.

System dependency ratio* – typically defined as the ratio of those receiving pension benefits to those accruing pension rights.

TEE system* – is a form of taxation of pension plans whereby contributions are taxed, investment income and capital gains of the pension fund are exempt, and benefits are also exempt from personal income taxation.

Time-Weighted Returns (TWR) - is the standard method of calculating returns (and performance) of an investment and simply represents the growth/decrease in value without incorporating the distorting effects of cash inflows and outflows (for pensions, that means contributions and

Trust* – is a legal scheme, whereby named people (termed trustees) hold property on behalf of other people (termed beneficiaries).

Trustee* – is a legal scheme, whereby named people (termed trustees) hold property on behalf of other people (termed beneficiaries).

UCITS – or Undertakings for Collective Investment in Transferable Securities, is the legal form under E.U. law for mutual investment funds that are open to pool and invest funds from any individual or institutional investor, and are subject to specific authorisation criteria, investment limits and rules. The advantage of UCITS is the general principle of home-state authorisation and mutual recognition that applies to this kind of financial products, meaning that a UCITS fund established and authorised in one E.U. Member State can be freely distributed in any other Member State without any further formalities (also called *E.U. fund passporting*).

Unfunded pension plans* – are plans that are financed directly from contributions from the plan sponsor or provider and/or the plan participant. Unfunded pension plans are said to be paid on a current disbursement method (also known as the pay as you go, PAYG, method). Unfunded plans may still have associated reserves to cover immediate expenses or smooth contributions within given time periods. Most OECD countries do not allow unfunded private pension plans.

Unprotected pension plan* – is a plan (personal pension plan or occupational defined contribution pension plan) where the pension plan/fund itself or the pension provider does not offer any investment return or benefit guarantees or promises covering the whole plan/fund.

Voluntary contribution – is an extra contribution paid in addition to the mandatory contribution a member can pay to the pension fund in order to increase the future pension benefits.

Voluntary occupational pension plans - The establishment of these plans is voluntary for employers (including those in which there is automatic enrolment as part of an employment contract or where the law requires employees to join plans set up on a voluntary basis by their employers). In some countries, employers can on a voluntary basis establish occupational plans that provide benefits that replace at least partly those of the social security system. These plans are classified as voluntary, even though employers must continue sponsoring these plans in order to be exempted (at least partly) from social security contributions.

Voluntary personal pension plans* – Participation in these plans is voluntary for individuals. By law individuals are not obliged to participate in a pension plan. They are not required to make pension contributions to a pension plan. Voluntary personal plans include those plans that individuals must join if they choose to replace part of their social security benefits with those from personal pension plans.

Wage indexation* – is the method with which pension benefits are adjusted taking into account changes in wages.

Waiting period* – is the length of time an individual must be employed by a particular employer before joining the employer's pension scheme.

Winding-up* – is the termination of a pension scheme by either providing (deferred) annuities for all members or by moving all its assets and liabilities into another scheme.

World Bank multi-pillar model – is the recommended design, developed by the World Bank in 1994, for States that had pension systems inadequately equipped to (currently and forthcoming) sustain a post-retirement income stream for future pensioners and alleviate the old-age poverty risk. Simpler, it is a set of guidelines for States to either enact, reform or gather legislation regulating the state pension and other forms of retirement provisions in a form that would allow an increased workers' participation, enhance efficiency for pension savings products and a better allocation of resources under the principle of solidarity between generations.

The standard design of a robust pension system would rely on five pillars:

a) the non-contributory scheme (pillar 0), through which persons who do not have an income or do not earn enough would have insured a minimum pension when reaching the standard retirement age;

b) the public mandatory, Pay-As-You-Go (PAYG) scheme (**Pillar I**), gathering and redistributing pension contributions from the working population to the retirees, while accumulating pension rights (entitlements) for the future retirees;

c) the mandatory funded and (recommended) privately managed scheme (**Pillar II**), where workers' contributions are directed to their own accumulation accounts in privately managed investment products;

d) the voluntary privately managed retirement products (**Pillar III**), composed of pension savings products to which subscription is universal, contributions and investments are deregulated and tax-incentivised;

e) the non-financial alternative aid scheme (pillar IV), through which the state can offer different forms of retirement support – such as housing or family support. Albeit the abovementioned, the report focuses on the "*main pillars*", i.e., Pillar I, II and III, since they are the most significant (and present everywhere) in the countries that have adopted the multi-pillar model.

Definitions with "*" are taken from OECD's Pensions Glossary - http://www.oecd.org/daf/fin/private-pensions/38356329.pdf.

Contributors

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Pension Savings: The Real Return

2021 Edition

Executive Summary

With the two of three worst financial meltdowns of the past hundred years occurring in the past 12 years, can our societies rely on financial markets to deliver decent retirement outcomes for millions around the world?"[8]

Despite improvements, real returns of pension savings still struggle to deliver value for money

How much did pension savers earn on average?

The main question this report seeks to answer is: How much was the pension saver left with, on average, after charges and inflation were deducted from his benefits at the end of different periods, compared to the amounts he saved? The aggregate summary return tables show – for occupational/collective ("Pillar II") and voluntary/individual ("Pillar III") pension products - the annual average rate of return on investments in each country based on 5 periods: 1, 3, 7, 10 years and since the start of the available reporting period (differs case by case). These standardised periods eliminate inception and market timing biases, allowing to "purely" compare performances between different pension schemes.

[8] Amin Rajan (Crate Research), 'Coronavirus Crisis Inflicts a Double Blow to Pensions' (FT.com, 15 April 2020) available at: https://www.ft.com/content/bd878891-4f20-46c3-ab23-939162a85d9c.

Aggregate summary return table	Pillar II								
	1 year		3 years		7 years		10 years		max. available *
	2020	2019	2018-2020	2017-2019	2014-2020	2013-2019	2011-2020	2010-2019	
Austria	1.41%*	8,01%	1,23%	1,78%	2,35%	2,53%	1,79%	2,01%	1,48%
Belgium	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Bulgaria	1,41%	2,71%	-1,06%	-0,24%	2,06%	2,59%	1,96%	1,74%	-1,35%
Croatia	-0,29%	8,06%	2,81%	4,68%	4,99%	5,77%	4,10%	4,91%	3,28%
Denmark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Estonia	4,64%	7,97%	2,10%	0,57%	2,13%	1,65%	1,31%	1,24%	0,67%
France	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Germany	n.a.	3,02%	n.a.	1,77%	n.a.	2,54%	n.a.	2,40%	2,28%
Italy	3,30%	7,30%	1,85%	1,76%	2,81%	3,33%	2,66%	2,57%	0,84%
Latvia	1,94%	8,43%	1,12%	0,77%	1,54%	1,62%	1,45%	1,83%	-0,07%
Lithuania	5,19%	14,92%	4,72%	3,04%	4,07%	4,15%	3,52%	3,65%	1,72%
Netherlan	6,23%	13,00%	5,01%	4,26%	5,79%	5,10%	5,26%	5,42%	2,89%
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania	2,59%	5,05%	1,81%	0,61%	2,68%	3,64%	2,95%	3,33%	2,41%
Slovakia	0,45%	5,37%	0,70%	-0,27%	1,50%	1,57%	0,79%	0,74%	-0,03%
Spain	2,10%	7,89%	1,74%	2,14%	2,80%	4,28%	2,94%	2,60%	0,79%
Sweden	6,45%	24,08%	8,23%	9,03%	n.a.	n.a.	n.a.	n.a.	8,32%
UK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: BETTER FINANCE own composition; see methodological explanation box below

Voluntary pension products vary in market share based on the jurisdiction: in some cases, insurance-based products are more prevalent, whereas in some countries pension funds are preferred. The table below shows the average real net returns for supplementary pensions by standardised holding periods.

- *Data for 2020 is estimated. So are the previous 2019 figures, which are now consolidated.*
- *Returns for Bulgaria are time-weighted, and the dataflow is updated compared to the last edition.*
- *In Germany AOPP is used as a proxy for pillar II returns.*
- *For Romania, returns are calculated in EUR and differ from previous editions. See Romanian country case explanations.*
- *For Spain, pillar II returns have been recalculated based on the weighted average between employer-sponsored and associate plans.*

Aggregate summary return table	Pillar III								
	1 year		3 years		7 years		10 years		whole reporting period*
	2020	2019	2018-2020	2017-2019	2014-2020	2013-2019	2011-2020	2010-2019	
Austria	1.82%*	1,2%	1,34%	1,01%	1,70%	1,73%	1,50%	1,51%	2,05%
Belgium	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Bulgaria	1,91%	3%	-0,92%	0,08%	2,57%	3,28%	2,65%	2,48%	0,17%
Croatia	-1,41%	8,57%	2,13%	3,58%	4,57%	5,07%	3,75%	4,58%	3,59%
Denmark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Estonia	4,51%	13,84%	2,37%	1,64%	3,19%	3,03%	2,04%	2,45%	1,54%
France*	1,30%	2,83%	0,44%	0,46%	1,23%	3,55%	1,23%	2,81%	1,36%
Germany*	2,68%	0,67%	1,30%	0,68%	1,62%	1,53%	1,64%	1,58%	1,51%
Italy	0,03%	6,40%	1,18%	1,22%	2,58%	2,84%	2,49%	1,99%	1,85%
Latvia	2,14%	8,66%	0,82%	0,59%	1,75%	1,94%	1,58%	n.a.	1,58%
Lithuania	4,83%	8,72%	2,29%	1,22%	2,85%	2,93%	1,98%	2,48%	1,05%
Netherlan	1,83%	0,40%	1,39%	1,40%	1,14%	0,97%	0,27%	-0,08%	0,13%
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania	0,99%	3,99%	0,35%	-0,41%	1,53%	2,69%	1,91%	2,06%	-0,85%
Slovakia	1,30%	5,68%	0,00%	0,22%	1,00%	0,98%	0,44%	0,37%	0,60%
Spain	0,80%	8,11%	0,86%	1,24%	1,83%	3,25%	2,00%	2,15%	0,32%
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
UK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

*Source: BETTER FINANCE own composition; *whole reporting period differs between countries; for DE, pillar III can be proxied through both Riester and Rurup pensions, the authors chose Riester for the purposes of this graph (Acquisition charges are included and spread over 5 years); for BG, VPF is proxied for pillar III returns and the returns are time-weighted; for FR, pillar III comprises life insurance, corporate savings plans, public employee pension schemes: for AT, the returns for 2020 are estimated, so were the 2019 figures which are now consolidated;*

Unfortunately, due to unavailability of data breakdowns, for some country cases (UK, Netherlands, Belgium, Denmark, Poland, Sweden) we were not able to calculate the annual real average returns by Pillar. Nevertheless, the results by retirement provision vehicle are available in Graphs 18 and Table 20 in the *General Report*.

Note: For a few pension systems analysed in the report, the data available on retirement provision vehicles clearly distinguishes between Pillar II and Pillar III (such as Romania or Slovakia). In other countries, where pension savings products may be used for both Pillars, the categorisation is more difficult since return data is not separated as such. However, for reasons of simplicity and comparability, the authors of the report have put in all the necessary efforts to correctly assign each product according to the pillar it is, or should be, used for.

Taxation

What happens to investment returns after charges and inflation are deducted?

Charges, investment strategies and inflation influence earnings, but the actual sum the pension saver will be able to withdraw and spend at retirement will depend on the *taxation regime*. In other words, when and how much do savers lose of their pensions due to taxes?

The actual taxation rates (in %) are highlighted in Table GR10 and in the *Taxes* sub-section of each individual country case. However, the purpose of the "pillar"-system is to stimulate pension savings by giving tax incentives (exemptions, lower taxes, deductibility, subsidises etc).

The table below shows whether the three pension saving steps (contribution – *what you pay for your pension*; returns – *what your investments earn*; and pay-outs – *what you will withdraw*) are **exempt (E)** or **taxed (T)** in each country under review.

Taxation of pension savings						
	Contributions		Returns		Pay-outs	
	Pillar II	Pillar III	Pillar II	Pillar III	Pillar II	Pillar III
Austria	E	E	E	E	T	T
Belgium	E	E	E	E	T	T
Bulgaria	E	E	E	E	E	E
Croatia	E	E	E	E	T	T
Denmark*	T	T	T	T	T	T
Estonia	E	E	E	E	T	T
France	E	E/T	T	T	T	T
Germany	T	T	E	T	T	T
Italy	E	E	T	T	T	T
Latvia	E	E	E	E	T	T
Lithuania	E	E	E	E	E	E
Netherlands	E	E	E	E	T	T
Poland	T	E/T	E	E	E	E/T
Romania	E	E	E	E	T	T
Slovakia*	E/T	E	E	E	E	T
Spain*	E	E	E	E	T	T
Sweden	E	E	T	T	T	T
UK	E	E	E	E	T	T

**There are rules and exceptions based on the type of pension vehicle. For details, see the relevant country case; Source: BETTER FINANCE own composition*

Pension plan types: defined contribution on top

Who bears the risk of adequate pensions at retirement?

Originally, the level of pension (*benefit*) would be pre-defined by the provider of the pension plan, usually based on a formula that used some standard variables for each saver (income/salary,

inflation, etc). As such, the pension plan provider bears the risk of obtaining the necessary resources (money) to pay out this ***defined benefit*** pension to the saver at retirement age.

Nowadays, most private pension plans (Pillar II and III) use a ***defined contribution*** rule. This means that the saver only knows how much he can pay for his future pension, but the actual amount and income level at retirement will depend on external factors and will be subject to capital market fluctuations, just as any other investment. In other words, the risk of obtaining an adequate pension at retirement depends on the investment decisions made by the saver, where the provider is only obliged to pay-out the ***real net returns***, before tax, earned during the investment period.

Pension scheme type (*who bears the risk?*)				
	Provider (defined benefit)		Saver (defined contribution)	
	Pillar II	Pillar III	Pillar II	Pillar III
Austria	X		X	X
Belgium	X	X	X	X
Bulgaria			X	X
Croatia	X			X
Denmark	X	X	X	X
Estonia			X	X
France	X		X	X
Germany	X		X	X
Italy			X	X
Latvia			X	X
Lithuania			X	X
Netherlands	X		X	X
Poland			X	X
Romania			X	X
Slovakia			X	X
Spain	X		X	X
Sweden	X		X	X
UK	X		X	X

Source: BETTER FINANCE own composition

For more details on how this information unfolds, what factors influence pension savings and how governments tax pension earnings, read the following chapter or the individual country case corresponding to your domicile.

EU Policy Updates

The High-Level Forum on the Future of the Capital Markets Union[9] made three important recommendations[10] for the European Commission to pursue in the area of pensions, to which BETTER FINANCE contributed and fully supported:

- establishing ***national pension dashboards***, which are systems of indicators for EU Member States "*to monitor the state of play in Member States and, where applicable, the progress achieved by Member States with regard to pension sustainability and pension adequacy*";
- establishing ***individual pension tracking systems***, which would be platforms where EU citizens can see all their pensions data (State pension and private pension vehicles) with the purpose of providing "*an overview and an estimate of the future retirement income from different sources*";
- supporting EU Member States in establishing ***auto-enrolment in occupational pension schemes***, which would mean that workers would by default contribute to a pension plan, with the possibility to opt-out (stop contributions) at no cost.

The European Commission (EC) and European Insurance and Occupational Pensions Authority (EIOPA) followed-up on these proposals and have started work towards their implementation. The EC formally initiated the process by mandating EIOPA to gather evidence, data, and technical recommendations on the first two actions while also commissioning a study from a consortium of consultants on best practices in auto-enrolment systems. Consequently, EIOPA published two public consultations requesting:

- technical advice on the development of pension dashboards and the collection of pensions data, which is meant to gather input from stakeholders on where and how to aggregate the necessary information – and what indicators to use – to set up and update the pension dashboards;
- technical advice on pension tracking services, which is meant to collect views from stakeholders on what types of investment products will be aggregated in the tracking service, what and how the estimations of the retirement pot will be made, etc.

BETTER FINANCE, together with the experts that collaborate with the writing of this report, will leverage the long-term experience accumulated through the efforts of publishing this report since 2013 and will provide EIOPA with technical advice on both topics.

[9] A group of experts from EU public authorities, industry, and consumer associations established by the European Commission between November 2019 and May 2020 to brainstorm and make recommendations to improve the regulation and supervision of EU capital markets and create better conditions to invest for EU citizens; see https://ec.europa.eu/info/publications/cmu-high-level-forum_en.

[10] See the Final Report here: https://ec.europa.eu/info/sites/default/files/business_economy_euro/growth_and_investment/documents/200610-cmu-high-level-forum-final-report_en.pdf, Recommendation 11, page 85.

Pension Savings: The Real Return

2021 Edition

Value for Money for Long-term and Pension Savings

For too many editions in a row (since 2013), BETTER FINANCE's annual report on the real returns of long-term and pension savings finds, in many EU jurisdictions, poorly performing retirement saving vehicles (whether pension funds, products, or life-insurances used for pension provision) once fees and inflation are deducted. With a few notable exceptions, such as occupational pension funds in the Netherlands or the AP7 Safa fund in Sweden, the majority of products barely cover for inflation and only a handful come close to a simple, broad capital markets benchmark (50% equity and 50% bonds). Unfortunately, there is also a share – quite high – of products that deliver negative returns, which means that, in hindsight, keeping savings "under the mattress" would have been a more profitable solution.

Considering the impact on economic output generated by the global health pandemic, the strains on public pension systems, the current low interest rate environment, and the shift from defined-benefit to defined-contribution pensions, addressing the pensions time-bomb is long overdue.[11]

While there is no silver bullet to rectify poor pension returns, BETTER FINANCE formulates a set of proposals to define *value for money* for retirement provision investments.

BETTER FINANCE already initiated the debate on *value for money* for retail investment products in November 2019, when it released the joint BETTER FINANCE-CFA Institute report on *Sustainable Value for Money*.[12] The report, gathering the views of investment professionals and retail investors, found, among others, that the duty of care (*to act in the best interests of clients*) should be mandatory for finance professionals and that consumers should be presented with simple and standardised information on cost and past performance.

Moreover, an earlier (2016) report by the CFA Institute found that retail investors have high expectations for finance professionals to generate similar or better returns than those of the benchmark, and that the charges and fees paid must reflect the value of the relationship, but with a level of satisfaction much lower in both regards.[13]

In 2021, the European Insurance and Occupational Pensions Authority (EIOPA) launched a public consultation aimed at gathering stakeholders' views on the proposed framework to assess value for

[11] See BETTER FINANCE's Press Release of 29 November 2017 "*BETTER FINANCE Applauds EU Proposal for a Pan-European Personal Pension (PEPP) to Defuse the Ticking Pensions Time Bomb*", available at: https://betterfinance.eu/wp-content/uploads/publications/PR-_PEPP_INITIATIVE_19072017_01.pdf.

[12] BETTER FINANCE-CFA Institute Report, *Sustainable Value for Money* (2019), p. 6, available at: https://betterfinance.eu/wp-content/uploads/BETTER-FINANCE-CFA-Institute-Report-on-SUSTAINABLE-VALUE-FOR-MONEY-201119_correct.pdf.

[13] CFA Institute, *From Trust to Loyalty: A Global Survey of What Investors Want,* (2016), p. 14. , available at: https://www.cfainstitute.org/-/media/documents/survey/from-trust-to-loyalty.ashx.

money for unit-linked insurance-based investment products.[14] According to EIOPA, value for money would mean that "*the costs and charges are proportionate to the benefits (i.e., investment performance, guarantees, coverage and services) to the identified target market and reasonable taking into account the expenses born by providers and in comparison to other comparable retail solutions on the market*".[15] EIOPA's definition sets a very important milestone as it builds the concept of value for money (VfM) around cost and performance but, very important, not in a vacuum: what retail investors pay for their investments must be comparably better compensated through returns and other product features than other options on the market. On this occasion, BETTER FINANCE put forward several proposals to improve on EIOPA's definition, namely:

- while comparability with "*other solutions on the market*" is a step in the right direction, in many cases the entire peer-group of a product may be poorly performing – as is already the case – which may still leave investors with undesirable outcomes; thus, BETTER FINANCE proposed to replace "*other solutions on the market*" with the market index benchmark, i.e., the underlying investments;
- a product's purpose (objective and investment policy) must be aligned with the concept of value for money;
- the products' costs must be reviewed regularly.

At the same time, inspiration can also be drawn from the practice of the UK Financial Conduct Authority (FCA), which spearheaded (and continues to) retail investor protection in Europe. To begin with, the UK was the first country in Europe to ban commissions, kickbacks, retrocessions (collectively, "inducements") for retail investment services and products. Besides creating a conflict of interests, inducements also increase the cost of investing, which further erodes net returns.[16]

Second, the UK FCA issued a handbook (guidance) for fund managers on how to evaluate and report to clients the value their investment services deliver for the money they are paid. The guidance highlights that fund managers should assess the value of services in light of costs (in general and comparing classes of units), comparable market rates, the quality of the service (also in comparison

[14] The framework takes the form of a supervisory convergence mechanism under the tools of EIOPA and it would be ultimately addressed to national insurance supervisors when evaluation the provision of insurance-based investment products to retail investors.

[15] See the EIOPA Consultation Paper on Addresing Value for Money risk in the European unit-linked market, available at: https://www.eiopa.europa.eu/document-library/consultation/consultation-framework-address-value-money-risk-european-unit-linked_en.

[16] See the BETTER FINANCE Report on the Correlation between Cost and Performance in eu Equity Retail Funds, where we analysed active funds' ability to outperform the market and the impact of fees on mutual fund performance, finding that "*the more you pay, the less you get*" - https://betterfinance.eu/wp-content/uploads/BETTER1.pdf. See also the ESMA Annual Statistical Report Cost and Performance (latest the 2021 edition), highlighting that passive equity funds and UCITS ETFs (which are much cheaper) overperform the more expensive actively managed ones – https://www.esma.europa.eu/sites/default/files/library/esma_50-165-1710_asr_performance_and_costs_of_eu_retail_investment_products.pdf; see also the ESMA Annual Statistical Report on Cost and Performance of 2020, highlighting that more expensive, actively managed funds impact returns and underperform not only their passive and index-tracking peers, but also the benchmark - to passive and ETFs UCITS, ultimately impacting performance" - https://www.esma.europa.eu/sites/default/files/library/esma50-165-1106-asr-performance_and_costs.pdf.

with other services), and performance. The performance must be "*considered over an appropriate timescale having regard to the scheme's investment objectives, policy and strategy*".[17]

Recently, the FCA furthered their efforts in driving value for money in retail investment products by issuing a policy statement on *assessing value for money in workplace pension schemes and pathway investments*.[18] The FCA highlights that managers[19] of occupational pension funds must take into account three key elements in assessing whether they deliver value for money or not:

- costs and charges,
- investment performance, and
- the quality of services,

in comparison "*with other similar propositions on the market*".

At the same time, one must also factor in *pension adequacy* when analysing the returns of retirement provision vehicles. Although there is no unified understanding of pension adequacy, a few sources can give an adequate starting point.

The European Commission builds the concept of pension adequacy (from public pensions) on three pillars: eliminating the risk of poverty in old age, smooth transition from work income to retirement income and the length of retirement.[20] By smooth transition, the European Commission refers to a pensions' ability to replace the working-life income in such a way as to limit the financial impact brought about by this transition. In simpler words, an adequate pension must ensure, at the very least, that pensioners are not in a far worse position than when they were earning work income.

The European Commission also correctly noted that adequacy is achieved if individuals "*can spend a reasonable share of their lives in retirement*".[21]

Other authors define pension adequacy as allowing individuals "*to maintain, to a reasonable degree, their standard of living after retirement*".[22] A World Bank report on adequate pension systems focused, besides the smooth transition between work-life and retirement and poverty in old age, also on smoothing consumption. In short, smoothing consumption over the lifetime of

[17] See the Collective Investment Schemes sourcebook (COLL) rules that require fund managers to carry out a Value Assessment (AoV) at least annually, to report publicly on the conclusions of the AoV, and to appoint independent directors on AFM Boards - https://www.handbook.fca.org.uk/handbook/COLL.pdf.

[18] UK Financial Conduct Authority, *Assessing Value for Money in Workplace Pension Schemes and Pathway Investments: Requirements for IGCs and GAAs* (October 2021) Policy Statement PS21/12, available at: https://www.fca.org.uk/publication/policy/ps21-12.pdf.

[19] Independent Governance Committee (IGC) or Governance Advisory Arrangement (GAA).

[20] European Commission Pension Adequacy Report 2021 (Vol. I), p. 22.

[21] Ibid.

[22] Margherita Borella, Elsa Fornero, *Adequacy of Pension Systems in Europe: An Analysis Based on Comprehensive Replacement Rates* (April 2009), ENEPRI Research Report no. 68, AMI WP 9, available at: https://www.ceps.eu/download/publication/?id=6260&pdf=1837.pdf.

workers means that achieving an adequate level of pensions should not necessitate exaggerated savings during working life.[23]

Therefore, it can be argued that pension adequacy:

- should not be achieved by "saving more and more";
- should not be achieved by extending the work life (starting work earlier and retiring later);
- is achieved if the working income is replaced by a pension that is sufficient to ensure a smooth transition, or maintain the same lifestyle, from work-life to retirement.

Although pension adequacy is mostly aimed at statutory (public) pension systems, we believe that the growing importance of private pension savings in pension provision requires the application of the same "adequacy" standards.

Drawing inspiration from the above practices, but also from the knowledge and empirical findings of 9 editions of this report, BETTER FINANCE formulates the following definition for *Value for Money* in long-term and pension saving products.

Value for Money through design, objective, and governance

A long-term and pension savings product delivers value for money for individual, non-professional savers when:

- The investment objective is clearly defined by the provider in the key disclosures;
- Simple and clear full cost and performance disclosure is made publicly available and is comparable to those of other investment products with similar goals;
- the costs borne by savers are commensurate with the investment objective (e.g., if "active" level fees are charged, then the product must overperform the relevant investment universe over the recommended holding period) and commensurate with other comparable retail solutions on the market (e.g., sometimes index products on offer are ten times more expensive than the equivalent ETF solution);
- there are at least two independent members in the governing body of the product representing investors (can be the fund itself if it has legal personality or the product manufacturer) like in the UK (asset manager level) and in the US (fund level);
- the product's cost and performance must be evaluated, periodically, against the investment objectives of the provider (for example for an active fund charging active level fees, it will be its benchmark or the performance of its investment universe);

[23] Robert Holzman, Richard Hinz, *Old Age Income in the 21st Century* (2005) World Bank, available at: https://openknowledge.worldbank.org/bitstream/handle/10986/7336/32672.pdf?sequence=1&isAllowed=y.

The services provided in relation to the distribution and management of a product that delivers Value for Money should encompass the following:

- the management or governing body should report annually and in a simple and concise manner on how the product delivered Value for Money for its beneficiaries;

SUPERVISION

- supervisory authorities should conduct annual assessments of Value for Money reporting;
- EU supervisory authorities (EIOPA) should use their product intervention powers which should also cover value for money issues.

Pension Savings: The Real Return

2021 Edition

General Report

I. INTRODUCTION

In June 2013, BETTER FINANCE published a research report entitled "Private Pensions: The Real Return"[24] which evaluated the return of private pension products after charges, after inflation ("real" returns) and – where possible – after taxation, in Denmark, France and Spain.

In September 2014, BETTER FINANCE published the second edition of the "Pension Savings: The Real Return"[25] report, which included data updates for the three initial countries covered and new in-depth evaluations of pension savings for five new countries: Belgium, Germany, Italy, Poland and the United Kingdom.

The following editions added 10 more countries to the report and updated the figures for those already included. This year's edition (the ninth in a row) expands the geographic scope once again to include Croatia.

The actual performance of this market is unknown to clients and to public supervisors

This report was built to respond to one of the big problems for the pensions market in the EU: lack of data on real net performances. Since a comprehensive approach to provide this indispensable information to savers is not yet provided by public authorities or other independent bodies, this report aims to improve transparency and comparability on the real returns of long-term and pension savings in Europe. This is in line with the European Commission's current "Action" to improve the transparency of performance and fees in this area (as part of its Capital Markets Union - CMU - Action Plan) and it corresponds with the current tasks the ESAs are undertaking in the area of personal pension products with respect to past performance and cost comparison.

Indeed, apart from the OECD's (the Organisation for Economic Co-operation and Development) report on pensions and EIOPA's (European Insurance and Occupational Pension´s Authority) reports on cost and performance, which covers a part of the private pensions market, the contributors to this research report could not find any other more complete or more recent published

[24] Link for the print version available here: http://www.betterfinance.eu/fileadmin/user_upload/documents/Research_Reports/en/Pension_Study_EN_website.pdf.
[25] Link for the print version available here: http://www.oee.fr/files/betterfinance_pensions_report_2014.pdf.

comprehensive series of net real pension savings returns for such a wide coverage of EU countries and the UK.

The data reported by the OECD[26] are unfortunately quite incomplete:

- At the time of writing, the most recent OECD publication on ***pension funds***' returns, "Pension Funds in Figures 2021", provides only 1-year preliminary data (for 2020) on the real returns of ***pension funds*** in selected OECD and non-OECD countries;[27]
- The OECD "Pension Markets in Focus 2020" covers 15-year returns maximum (until 2019) only for ***pension funds***;[28]
- Although the OECD reports 5-year returns for 23 EU countries, it drops to 16 for 10-year horizons and to 11 for 15-year horizons, ending in 2019;
- A part of occupational pension products, and most - if not all - individual pension products are missing as well, as OECD performance data include only "pension funds" stricto sensu, and exclude all "*pension insurance contracts and funds managed as part of financial institutions (often banks or investment companies), such as the Individual Retirement Accounts (IRAs) in the United States*";
- It is questionable that the OECD was able to capture all expenses borne by pension savers - entry fees for example - because the OECD relies mostly on reporting by national authorities and, typically, this is not something covered by them;
- Finally, OECD figures are all before taxes, except for Italy.

EIOPA's Annual Report on Cost and Performance of 2021 covers only 57% of the unit-linked insurances market and 62% of the profit-participation one, and the personal pensions (insurance-based) part covers only a few (210) products from 14 jurisdictions in the EU. Moreover, and unfortunately, the cost data in EIOPA's report is the Reduction-in-Yield from the PRIIPs KID and only covers the previous 5 years.

In comparison, the present report documents a principal component of, and reason for, the generalised level of distrust of EU citizens in capital markets, namely the frequent poor performance of private pension products, once inflation, charges and (when possible) taxes are deducted from nominal returns, when compared to the relevant capital market benchmarks.

Totalling 17 EU Member States under review (Austria, Belgium, Bulgaria, Croatia, Denmark, Estonia, France, Germany, Italy, Latvia, Lithuania, Poland, Romania, Slovakia, Spain Sweden and The Netherlands), the BETTER FINANCE research now covers 87% of the EU27 population.[29] It also

[26] Namely the OECD "Pension Markets in Focus 2017" (1, 5 and 10 year data), and the subsequent editions (2018, 2019, 2020), available at: https://www.oecd.org/pensions/private-pensions/pensionmarketsinfocus.htm.
[27] https://www.oecd.org/daf/fin/private-pensions/Pension-Funds-in-Figures-2021.pdf.
[28] https://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2020.pdf.
[29] As of January 1st, 2020 – Eurostat, [demo_gind]' http://appsso.eurostat.ec.europa.eu/nui/show.do.

extends the period of time covered in order to now measure performance over the 21-year period ranging from 2000 to 2020, in as far as data was available.

It is the ambition and challenge of this research initiated by BETTER FINANCE and its partners to collect, analyse and report on the actual past performance of ***all*** long-term and pension savings products.

The net real return[30] of pension saving products should be:

- the long-term return (at least covering two full economic and stock market cycles, since even long-term returns are very sensitive to entry and exit dates);
- net of all fees, commissions and charges borne directly or indirectly by the customer;
- net of inflation (since for long-term products only the real return matters; that is the right approach taken by OECD as mentioned above);
- when possible, net of taxes borne by the customer (in the USA it has been mandatory for decades to disclose the past performance of mutual funds after tax in the summary of the prospectus).

We have chosen a period starting from 31 December 1999 because pension savings returns should be measured over a long-term horizon, and because it includes two market upturns (2003-2006 and 2009-2019) and two downturns (post dot com bubble of 2001-2003 and the 2008 financial crisis).

Information on the returns of long term and pension savings is deteriorating

This report shows that it is not an impossible, albeit a very challenging, task for an independent expert centre such as BETTER FINANCE to collect the data necessary for this report since quite a lot of data are simply not available at an aggregate and country level, especially for earlier years. The complexity of the taxation of pension savings in EU countries makes it also extremely difficult to compute after tax returns.

Once more, for 2020 (2021 edition), we find that **the availability and quality of information** on long-term and pension savings returns is actually not improving but on the contrary **deteriorating**:

- ***Insufficient information***: for example the Belgian insurance trade organisation Assuralia no longer reports on the returns of insurance-regulated « Branch 21 » occupational and personal pension products since 2014, and the national supervisor FSMA does not do it either; in Bulgaria, the **necessary data** for Professional Pension Funds (pillar II and III) is no

[30] A limitation of the present report is that it does not take into account real estate as an asset for retirement. The proportion of households owning their residences varies greatly from one country to another. For example, it is especially low in Germany, where a majority of households rent their residences and where home loan and savings contracts have consequently been introduced as the most recent state-subsidised pension savings scheme. For the time being, returns on pension savings are all the more important since a majority of retirees cannot rely on their residential property to ensure a decent minimum standard of life. However, residential property is not necessarily the best asset for retirement: indeed, it is an illiquid asset, and it often does not fit the needs of the elderly in the absence of a broad use of reverse mortgages. The house might become too large or unsuitable in case of dependency. In that case, financial assets might be preferable, on the condition that they provide a good performance.

longer available since 2018; in the UK, the survey conducted by the Department for Statistics has been discontinued and information on the British pension funds stopped at 2017;

- ***Late information***: at the time of printing, still a lot of 2020 return data have not been released by the national trade organisations or other providers. OECD has published preliminary data for December 2020, but on a limited number of jurisdictions and only for pension funds; however, considering that, in many countries, pension funds are not the most popular vehicle, this constitutes a large information gap.
- ***Unchecked information***: the principal source remains the national trade organisations, their methodology is most often not disclosed, return data do not seem to be checked or audited by any independent party, and sometimes they are only based on sample surveys covering just a portion of the products.

The European Supervisory Authorities (ESAs) have a legal duty to collect, analyse and report data on "consumer trends" in their respective fields (Article 9(1) of the European Regulations establishing the three ESAs).

Moreover, savvy retail savers and EU public authorities must rely on private databases (and divergent methodologies) to learn about some of the costs and performances of "retail" saving products. This is because the PRIIPs Key Information Document (KID) eliminated pre-contractual disclosure of past performance and actual costs for UCITS and requires return and cost estimations instead for all "retail" investment products, including pension products. This severe setback in transparency and comparability is completely inconsistent with the CMU initiative. Four high-level initiatives have struggled to repair this situation, without success: the NextCMU Report, the High-Level Forum Final Report, the ECON CMU Report and the ESAs' draft RTS on PRIIPs Level 2. BETTER FINANCE continues to deplore the content of the PRIIPs KID.

How to achieve pension adequacy?

Public pension authorities typically stress two requisites for pension savings to achieve "pension adequacy":

a) the need to start saving as early as possible;
b) the need to save a significant portion of one's income before retirement activity income: "*to support a reasonable level of income in retirement, 10% - 15% of an average annual salary needs to be saved*".[31]

BETTER FINANCE continues to disagree: saving earlier and more is not enough. A third and even more important factor is the need to deliver positive and decent long-term ***real net*** return (i.e., net of inflation and fees).

[31] World Economic Forum White Paper: 'We'll live to 100 – How can we afford it?' May 2017

A simple example will illustrate why saving "*more and for longer periods*" is not sufficient, and too often even detrimental.

Assuming no inflation, saving 10% of activity income for 30 years (as recommended by Public Authorities, 25-year life expectancy at retirement, gross of fees and taxes) the table below shows that **unless long-term net returns are significantly positive** (in the upper single digits), **saving early and significantly will not provide a decent pension.**

Annual net return	Replacement income
negative 1%	10%
Zero	12%
2%	17%
8%	49%

To achieve *pension adequacy*, retirement benefits altogether (State and private pensions) should amount to at least 70%-80% of late working life gross salary.

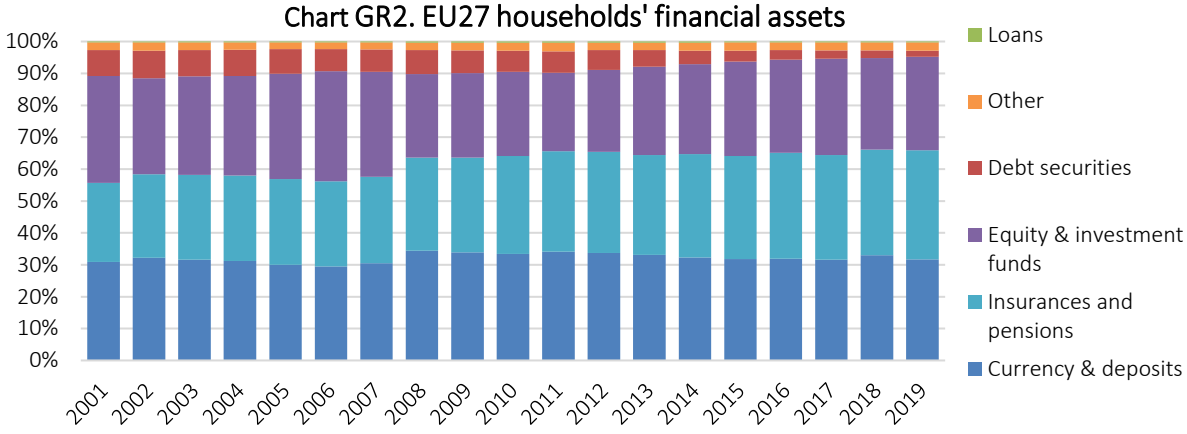
Nevertheless, this is harder and harder to achieve due to ageing populations, higher pension contributions, longer life expectancy, higher discounting rates etc.

There has been a shift from the full reliance on the public scheme of redistribution (tax-funded defined-benefit) to a more capital markets reliant system, where the main pension income stream should come from private pension products. Pension performances are subject to inflation and to tax, which eat into the retirement pot.

Most pension products recently improved but underperformed

Our findings clearly confirm that capital market performances have unfortunately very little to do with the performances of the actual savings products distributed to EU citizens. This is particularly true for long-term and pension savings. The main reason is the fact that most EU citizens do not invest the majority of their savings directly into capital market products (such as equities and bonds), but into "packaged products" (such as investment funds, life insurance contracts and pension products).

Chart GR2. EU27 households' financial assets



Source: BETTER FINANCE based on Eurostat data; 2020 data not yet available

Our research findings show that most long-term and pension savings products did not, on average, return anything close to those of capital markets, and in too many cases even destroying the real value for European pension savers (i.e., provided a negative return after inflation).

Performance: capital markets are not a proxy for retail investments

One could then argue that insurance and pension products have similar returns to a mixed portfolio of equities and bonds, since those are indeed the main underlying investment components of insurance and pension "packaged" products. However, this is not true since the share of packaged products and debt instruments are dominant in most pension portfolios. Realities such as fees and commissions, portfolio turnover rates, manager's risks, etc., invalidate this approach.

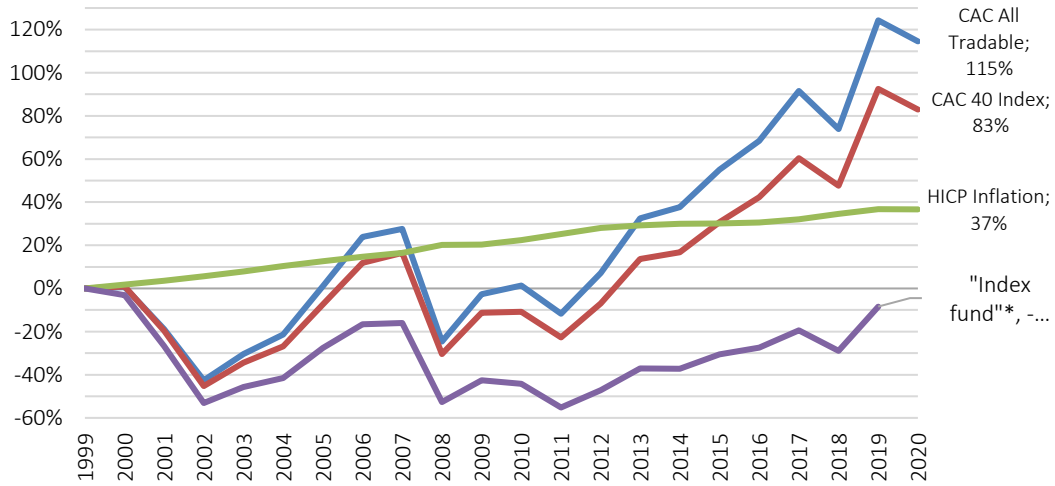
Table GR4 and Graph GR5 below show two striking – but unfortunately not uncommon – real examples of this largely ignored reality: capital market performance is not a valid proxy for retail investment performance and the main reasons for this are the fees and commissions charged directly or indirectly to retail customers. The European Commission itself publicly stressed this fact (see footnote 2 above).

Table GR4. Real case of a Belgian life insurance (branch 23)	
Capital markets vs. Belgian individual pension insurance 2000-2020 performance	
Capital markets (benchmark index*) performance	
Nominal performance	275%
Real performance (before tax)	186%
Pension insurance performance (same benchmark)	
Nominal performance	82%
Real performance (before tax)	23%

*Source: BETTER FINANCE own computations based on Morningstar public website; *Benchmark is composed of 50% bonds (LP06TREU) and 50% Barclay's Pan-European Aggregate Bond Index + 50% FTSE WORLD TGR*

The real case of Graph GR5 illustrates a unit-linked life insurance product (Pillar III), in Belgium. The pension product's nominal return amounted to less than a third of its corresponding capital market benchmark's return.

Graph GR5. Real case of French retail equity fund



*Source: BETTER FINANCE research, fund manager; * 2000-2003 simulated*

The real case above illustrates an investment fund domiciled in France, a so-called retail CAC 40 "index" fund[32]. The fund actually underperformed the relevant equity index by 101.4 p.p. after 20 years of existence (loss of -8.4% instead of a +83% profit), with the performance gap fully attributable to fees. The fund has also massively destroyed the real value of its clients' savings, as inflation has been almost twice as high as its nominal performance. It is quite surprising that with such a huge return gap vis-à-vis its benchmark, this fund is still allowed to portray itself as an "index-tracking" one, and that no warning is to be found on the Key Information Document (KIID) of the fund. Unfortunately, the index fund has been sold to another manager and the 2020 performance is no longer relevant.

European Pension returns outlook

The overall mid-term outlook for the adequacy of European pension savings in 2021 is worrying when one analyses it for each of these main return drivers:

a) It is unlikely that the European bond markets will come any closer to the extraordinary returns of the last 20 years (as we are already seeing stagnation or even signs of a downward trend), due to the continuous fall of interest rates, currently at rock-bottom levels; moreover, the global health crisis has already destroyed the record 2019 capital market returns;

[32] Wrapped in an insurance contract as suggested by the distributor.

b) The negative impact of this foreseeable trend in bond returns on pensions' returns will be reinforced by a higher proportion of bonds being taken up in pension products' portfolios in recent years; this is all the more relevant in light of the monetary policy response to the health-generated recession.
c) The transparency of cost disclosures is not improving.
d) While it seemed unlikely that inflation – just like interest rates – would turn into deflation, and the consequences of the "non-conventional" monetary policies of central banks on possible market "bubbles" are still unchartered, currently inflation (with its known devastating impact on the purchasing power of pension income) is surging, hitting record high after record high.
e) Taxes on long-term and pension savings do not show any significant downward trend either.

The pan-European Personal Pension (PEPP) product

In an attempt to revitalise voluntary pension savings, the EU engaged in a project to create an EU quality label for personal retirement products, mainly to enable cross-border workers to save simply and efficiently for retirement. Named the pan-European Personal Pension product (PEPP), it is designed as a voluntary/personal pension product (pillar III), and should be:

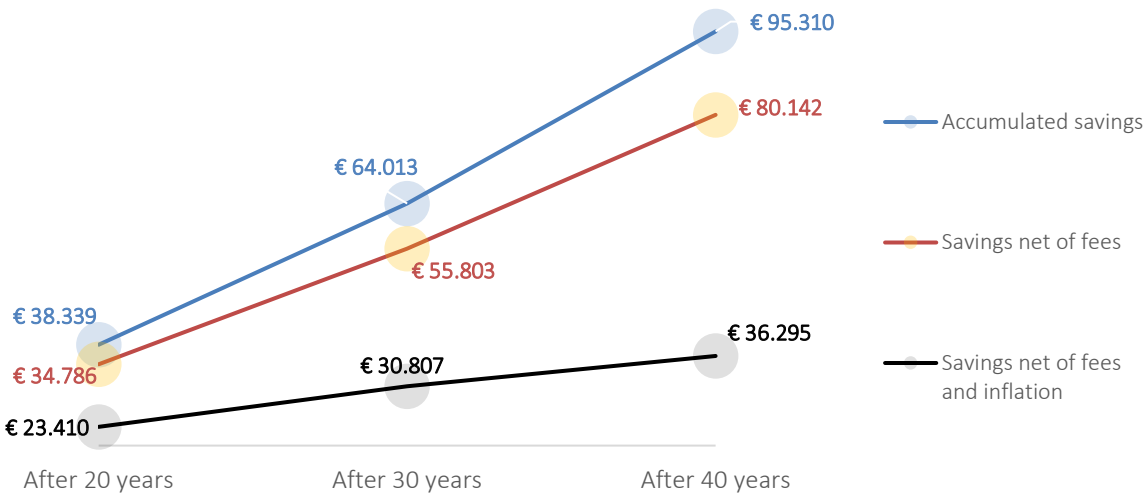
- portable, allowing the PEPP saver to move across Europe and either continue contributing to his PEPP or switch to a new national sub-account without fees;
- simple, transparent and cost-efficient, embedding proper long-term risk-mitigation techniques; and
- benefiting of tax-incentives in a harmonised manner.

The last two objectives have not been attained – yet. First, taxation is still the sovereign competence of EU Member States and found strong opposition from national Governments, although the Commission and European Parliament have asked or recommended it.[33]

Second, EIOPA allowed insurance-based investment products (IBIPs) manufacturers to charge the cost of guarantees separately from the "all inclusive" 1% cap for the basic PEPP.[34] What is more, is that the capital protection is a "scam" enshrined by EU law. The fact that EU savers would be informed that their capital (meaning accumulated contributions) would be protected, but only after the deduction of fees and without taking into account inflation, is highly misleading.[35]

[33] Most recently, the European Parliament's Economic and Monetary Affairs' (ECON) own initiative report on the Further Development of the Capital Markets Union (CMU) does contain a resolution to incentivise and harmonise PEPP tax treatments across the EU; however, at the time of writing, the resolution was not yet final.
[34] See EIOPA Final Regulatory Technical Standards (RTS) supplementing Regulation (EU) 2019/1238 on the PEPP: https://www.eiopa.europa.eu/sites/default/files/publications/eiopa-20-500_pepp_draft_rtss.pdf.
[35] See BETTER FINANCE YouTube Video on the "PEPP Capital Protection SCAM".

Graph GR7. Nominal, net and real capital protection



Source: BETTER FINANCE PEPP Level 2 position paper

Pension products have the longest investment horizon, usually until retirement age, which should imply 35 to 40 years of investments. The cumulative effect of inflation, assuming a modest inflation rate, over 40 years would decrease the value of savings by 56%.

*What is a "**nominal rate**" of return?*

A *nominal* value and rate represent the actual amount of money (or mathematical result) of an investment. *Nominal returns* or profits in *nominal terms* designate the current entitlement from an investment at a certain point in time.

E.g.: A €100 investment that increase by a quarter will have a nominal value of €125 (nominal profit of €25) or a nominal rate of return of 25%.

In finance, rates are mostly expressed in *nominal* and, usually, *gross* terms. This shows the pure profit generated by an investment before fees, commissions, taxes are deducted and before inflation is adjusted for.

Nominal returns can be recalculated into ***real returns*** (see right-hand side) by ***adjusting for inflation***.

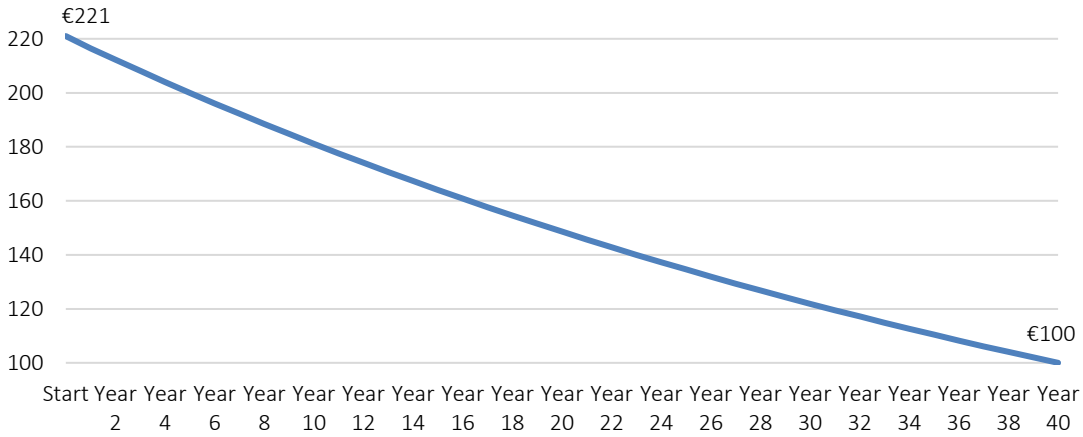
*What is a "**real rate**" of return?*

The ***real*** rate is a nominal rate adjusted by ***inflation***. The real return is a "down to earth" indicator because it factors in the practicality (*reality*) of actually using the money:

- If inflation has been positive, then the *real value* of money will be smaller than the *nominal value*.
- If inflation has been negative, then the *real value* of money will be higher than the *nominal one*.

This is because inflation (or deflation) shows how many goods or services one can buy with the same amount of money at different points in time. Economists call it the *purchasing power* and it calculates whether the same €10 bill earned in 2010 (for instance) can be exchanged for less, the same, or more of the same goods in 2020 (for instance).

Graph GR8. Real value of savings



Source: BETTER FINANCE PEPP Level 2 position paper

BETTER FINANCE highlights and warns about the "money illusion" and how detrimental it is to consider pension savings in nominal terms rather than in **real** terms, i.e., adjusting for inflation.

II. COUNTRY PROFILES

This second part onward analyses each country profile available in this study. Tables GR9 (A and B) include some key indicators of the pension systems in the countries under review in this research report. These indicators, explained below, are representative of the sustainability of a pension system, or otherwise the pressure on State (public) pensions. Our aim is to highlight the importance of additional private pension savings for pension adequacy.

What is old-age dependency ratio?

It is defined as the ratio between the total number of elderly persons when they are generally economically inactive (aged 65 and above) and the number of persons of working age:
• when the ratio is low (e.g., Slovakia with 25% or 1 pensioner to 4 workers), it means that the pressure on the state pension is low;
• when the ratio is high (e.g., Italy with 37% or 1 pensioner to less than 3 workers), it means that the burden on PAYG schemes is high, and it can be alleviated through private pension sources.

What is population ageing trend?

An ageing population means that the number of retirees increases relative to the number of workers. This indicator refers to public (PAYG) pensions.

The effect is that the same pension contributions need to pay for a higher number of pensioners, which can make it difficult for the state pension to ensure an adequate level of retirement income stream.

What is the projected old-age dependency ratio?

It shows how the number of pensioners to working people will evolve in time.

If the old-age dependency ratio is now, on average, 1-to-3, by 2050 this level will be for most countries in this Report above 50%. In other words, every state pension will depend on the level of contributions of almost two working-age individuals.

What is the net equity of households?

It represents the value of technical (mathematical) provisions insurance and pension fund providers hold to pay future pension liabilities (entitlements of savers). This indicator is expressed both in nominal terms (in € billion) and as a percentage of the GDP for 2019. Therefore:

• a high value-to-GDP rate of *net equity of households* reflects well established privately funded systems, indicating a lower dependency on state pensions;

• a low value-to-GDP shows either that the private system is relatively new (as in Romania or Bulgaria) or that households do not contribute too much to pension funds and life insurances, relying more on state pensions.

What is the aggregate replacement ratio for pensions?

It represents the ratio between to median individual pension income of population aged 65-74 relative to median individual earnings from work of population aged 50-59, excluding other social benefits.

Note: In the previous editions of this report, the indicator used was *net pension replacement rate* – aggregated by the OECD – which was discontinued in 2019. Thus, the research team replaced it with the *aggregate replacement ratio for pensions* computed by Eurostat.

Table GR9(A). EUROPEAN UNION (EU27) at the end of 2019, except otherwise provided			
Net equity of households in pension funds reserves (in € bln)	4,232	Net equity of households in pension funds reserves as % of GDP	30.30%
Net equity of households in life insurance reserves (in € bln)	5,226	Net equity of households in life insurance reserves as % of GDP	37.40%
Active population (mil.), 2020	214.4	Old-Age dependency ratio, old (% of working population)	32.40%
Population ageing trend (2020-2050)	61%	Projected old-age dependency ratio by 2050	52%
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			57%

Source: for both parts, BETTER FINANCE own composition based on OECD, WorldBank, Eurostat data

Table GR9(B). Country Profiles (end 2019, except otherwise provided)			
Austria			
Net equity of households in pension funds reserves (in € bln)	60	Net equity of households in pension funds reserves as % of GDP	15.10 %
Net equity of households in life insurance reserves (in € bln)	83	Net equity of households in life insurance reserves as % of GDP	20.90 %
Active population (mil.), 2020	4.6	Old-Age dependency ratio, old (% of working population), 2020	28.93 %
Population ageing trend (2020-2050)	63%	Projected old-age dependency ratio by 2050	47.20 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2020			61%
Belgium			
Net equity of households in pension funds reserves (in € bn), 2020	120	Net equity of households in pension funds reserves as % of GDP, 2020	27%

Net equity of households in life insurance reserves (in € bn), 2020	204	Net equity of households in life insurance reserves as % of GDP, 2020	45.20 %
Active population (mil.) 2020	5.1	Old-Age dependency ratio, old (% of working population), 2020	30.22 %
Population ageing trend (2020-2050)	48%	Projected old-age dependency ratio by 2050	44.80 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2020			46%
Bulgaria			
Net equity of households in pension funds reserves (in € bn)	8	Net equity of households in pension funds reserves as % of GDP	13.20 %
Net equity of households in life insurance reserves (in € bn)	1	Net equity of households in life insurance reserves as % of GDP	1.30 %
Active population (mil.), 2020	3.2	Old-Age dependency ratio, old (% of working population), 2020	33.62 %
Population ageing trend (2020-2050)	64%	Projected old-age dependency ratio by 2050	55.00 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2020			34%
Croatia			
Net equity of households in pension funds reserves (in € bn)	15	Net equity of households in pension funds reserves as % of GDP	27.70 %
Net equity of households in life insurance reserves (in € bn)	3	Net equity of households in life insurance reserves as % of GDP	4.70 %
Active population (mil.), 2020	1.8	Old-Age dependency ratio, old (% of working population), 2020	33.10 %
Population ageing trend (2020-2050)	59%	Projected old-age dependency ratio by 2050	52.50 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2020			39%
Denmark			
Net equity of households in pension funds reserves (in € bn)	212	Net equity of households in pension funds reserves as % of GDP	68.00 %
Net equity of households in life insurance reserves (in € bn)	293	Net equity of households in life insurance reserves as % of GDP	93.90 %
Active population (mil.), 2020	3.0	Old-Age dependency ratio, old (% of working population), 2020	31.73 %
Population ageing trend (2020-2050)	37%	Projected old-age dependency ratio by 2050	43.40 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			45%
Estonia			
Net equity of households in pension funds reserves (in € bn)	5	Net equity of households in pension funds reserves as % of GDP	16.80 %

Net equity of households in life insurance reserves (in € bn)	1	Net equity of households in life insurance reserves as % of GDP	2%
Active population (mil.), 2020	0.7	Old-Age dependency ratio, old (% of working population), 2020	32.27 %
Population ageing trend (2020-2050)	52%	Projected old-age dependency ratio by 2050	49.10 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2020			43%
France			
Net equity of households in pension funds reserves (in € bn)	0	Net equity of households in pension funds reserves as % of GDP	0%
Net equity of households in life insurance reserves (in € bn)	2,084	Net equity of households in life insurance reserves as % of GDP	85.90 %
Active population (mil.), 2020	30.0	Age dependency ratio, old (% of working-age population),2020	33.69 %
Population ageing trend (2020-2050)	46%	Projected old-age dependency ratio by 2050	49%
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			65%
Germany			
Net equity of households in pension funds reserves (in € bn)	911	Net equity of households in pension funds reserves as % of GDP	26%
Net equity of households in life insurance reserves (in € bn)	1,069	Net equity of households in life insurance reserves as % of GDP	31.00 %
Active population (mil.), 2020	43.4	Old-Age dependency ratio, old (% of working population), 2020	33.70 %
Population ageing trend (2020-2050)	43%	Projected old-age dependency ratio by 2050	48.30 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			44%
Italy			
Net equity of households in pension funds reserves (in € bn)	238	Net equity of households in pension funds reserves as % of GDP	13.30 %
Net equity of households in life insurance reserves (in € bn)	808	Net equity of households in life insurance reserves as % of GDP	45%
Active population (mil.), 2020	25.1	Old-Age dependency ratio, old (% of working population), 2020	36.57 %
Population ageing trend (2020-2050)	68.15 %	Projected old-age dependency ratio by 2050	62%
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			73%
Latvia			
Net equity of households in pension funds reserves (in € bn)	5	Net equity of households in pension funds reserves as % of GDP	16.00 %

Net equity of households in life insurance reserves (in € bn)	1	Net equity of households in life insurance reserves as % of GDP	2.40 %
Active population (mil.), 2020	0.98	Old-Age dependency ratio, old (% of working population), 2020	32.90 %
Population ageing trend (2020-2050)	72%	Projected old-age dependency ratio by 2050	56.70 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			38%
Lithuania			
Net equity of households in pension funds reserves (in € bn)	4	Net equity of households in pension funds reserves as % of GDP	8.30 %
Net equity of households in life insurance reserves (in € bn)	1	Net equity of households in life insurance reserves as % of GDP	2%
Active population (mil.), 2020	1.5	Old-Age dependency ratio, old (% of working population), 2020	32.26 %
Population ageing trend (2020-2050)	75%	Projected old-age dependency ratio by 2050	56.50 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			43%
Netherlands			
Net equity of households in pension funds reserves (in € bn)	1,725	Net equity of households in pension funds reserves as % of GDP*	212.90%
Net equity of households in life insurance reserves (in € bn)	170	Net equity of households in life insurance reserves as % of GDP*	21.00 %
Active population (mil.), 2020	9.4	Old-Age dependency ratio, old (% of working population), 2020	31%
Population ageing trend (2020-2050)	44%	Projected old-age dependency ratio by 2050	45%
Aggregate replacement ratio for pensions (excl. social benefits), total, 2020			51%
Poland			
Net equity of households in pension funds reserves (in € bn), 2020	40	Net equity of households in pension funds reserves as % of GDP, 2020	7.80 %
Net equity of households in life insurance reserves (in € bn), 2020	15	Net equity of households in life insurance reserves as % of GDP, 2020	3.00 %
Active population (mil.), 2020	18.2	Old-Age dependency ratio, old (% of working population), 2020	28.37 %
Population ageing trend (2020-2050)	84%	Projected old-age dependency ratio by 2050	52.20 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			60%
Romania			
Net equity of households in pension funds reserves (in € bn), 2020	16	Net equity of households in pension funds reserves as % of GDP, 2020	7.40 %

Net equity of households in life insurance reserves (in € bn), 2020	2	Net equity of households in life insurance reserves as % of GDP, 2020	0.90 %
Active population (mil.), 2020	9.0	Old-Age dependency ratio, old (% of working population), 2020	29.47 %
Population ageing trend (2020-2050)	85%	Projected old-age dependency ratio by 2050	54.50 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2020			41%
Slovakia			
Net equity of households in pension funds reserves (in € bn), 2020	13	Net equity of households in pension funds reserves as % of GDP, 2020	14%
Net equity of households in life insurance reserves (in € bn), 2020	5	Net equity of households in life insurance reserves as % of, 2020	5%
Active population (mil.), 2020	2.7	Old-Age dependency ratio, old (% of working population), 2020	24.65 %
Population ageing trend (2020-2050)	109%	Projected old-age dependency ratio by 2050	51.40 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			53%
Spain			
Net equity of households in pension funds reserves (in € bn), 2020	176	Net equity of households in pension funds reserves as % of GDP, 2020	16%
Net equity of households in life insurance reserves (in € bn), 2020	200	Net equity of households in life insurance reserves as % of GDP, 2020	18%
Active population (mil.), 2020	22.8	Old-Age dependency ratio, old (% of working population), 2020	30.44 %
Population ageing trend (2020-2050)	95%	Projected old-age dependency ratio by 2050	59.50 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2019			70%
Sweden			
Net equity of households in pension funds reserves (in € bn), 2020	531	Net equity of households in pension funds reserves as % of GDP, 2020	107.10%
Net equity of households in life insurance reserves (in € bn), 2020	116	Net equity of households in life insurance reserves as % of GDP, 2020	24%
Active population (mil.), 2020	5.5	Old-Age dependency ratio, old (% of working population), 2020	32.76 %
Population ageing trend (2020-2050)	19.04 %	Projected old-age dependency ratio by 2050	39.00 %
Aggregate replacement ratio for pensions (excl. social benefits), total, 2020			55%

United Kingdom			
Net equity of households in pension funds reserves (in € bn)	3,571	Net equity of households in pension funds reserves as % of GDP*	137.20%
Net equity of households in life insurance reserves (in € bn)	830	Net equity of households in life insurance reserves as % of GDP*	31.90%
Active population (mil.), 2020	34.7	Old-Age dependency ratio, old (% of working population), 2020	29.30%
Population ageing trend (2020-2050)	-	Projected old-age dependency ratio by 2050	-
Aggregate replacement ratio for pensions (excl. social benefits), total, 2018			55%

Source: Eurostat; OECD; World Bank; own composition

Table GR10. Funding level of private pension systems

	Pension Funds' assets (2020)		All retirement vehicles' assets (2020)	
	% of GDP	in € mil	% of GDP	in € mil
Austria	7%	24,969	n.a	
Belgium	9%	41,959	37%	169,071
Bulgaria	15%	8,900	15%	8,900
Croatia	35%	16,959	35%	16,959
Denmark	58%	182,588	239%	436,290
Estonia	20%	5,302	20%	5,302
France	3%	58,500	11%	254,241
Germany	8%	269,582	n.a.	
Italy	10%	161,658	13%	209,158
Latvia	2%	610	19%	5,707
Lithuania	10%	4,663	10%	4,663
Netherlands	210%	1,679,386	n.a.	
Poland	6%	32,420	6%	32,420
Romania	7%	16,041	7%	16,041
Slovak Republic	14%	13,195	14%	13,195
Spain	10%	117,359	14%	161,373
Sweden	4%	19,719	95%	468,546
United Kingdom	119%	2,641,370	n.a.	

Source: OECD, 2021

In some countries the level of accumulated assets in pension funds is almost the same as that of the total value of pension vehicles (such as in Italy, Bulgaria or Romania), in others we see that the total amount of funded retirement products is up to four times higher than the amount for pension funds (Denmark – 219% of GDP).

III. RETURN ATTRIBUTION

Pension returns drivers

This report seeks to explain the (often poor) performance of pension vehicles, especially when compared to capital market returns. The underperformance (compared to a benchmark) of most pension vehicles can be explained by several return *drivers*:

- **inflation**, which over a full contribution period (40 years) at a modest rate can erode even more than 50% of nominal returns,
- pension portfolios' **asset allocation** and **performance**,
- the **asset managers' skills** in terms of picking securities and market timing,
- the **investment charges** deducted by asset managers and other financial intermediaries, to a great extent from net real returns of private pensions,
- ultimately by the **tax** burden.

These return drivers are analysed separately in the following sections.

Inflation

As explained in the previous section, inflation is a measurement for the *purchasing power of money* over time: positive inflation rate means that the ***real value*** of our money decreases over time; negative inflation rate means that the ***real value*** of our money increases.

For several of the countries analysed in this research report, inflation rates were significant and consequently had a severe impact on returns in real terms over the periods in review. One has to keep in mind that even for those countries with moderate inflation, the compound effect over long periods, as applicable to the case of retirement savings, can lead to considerable losses in purchasing power.

Table GR11(A). Inflation in Eurozone Member States (in %)

Year	AUSTRIA	BELGIUM	ESTONIA	FRANCE	GERMANY	ITALY	LATVIA	LITHUANIA	NETHERLANDS	SLOVAKIA	SPAIN
2000	1.8%	3.0%	5.0%	1.8%	2.2%	2.7%	1.7%	1.7%	2.9%	8.4%	4.0%
2001	1.8%	1.9%	4.2%	1.5%	1.4%	2.3%	3.2%	2.0%	5.1%	6.7%	2.5%
2002	1.7%	1.3%	2.7%	2.2%	1.1%	3.0%	1.5%	-0.9%	3.2%	3.2%	4.0%
2003	1.3%	1.6%	1.2%	2.4%	1.1%	2.5%	3.6%	-1.3%	1.6%	9.4%	2.7%
2004	2.5%	2.0%	4.8%	2.2%	2.3%	2.3%	7.3%	2.8%	1.3%	5.9%	3.3%
2005	1.5%	2.8%	3.7%	1.8%	2.1%	2.0%	7.1%	3.0%	2.0%	3.8%	3.7%
2006	1.6%	2.1%	5.1%	1.7%	1.4%	2.1%	6.7%	4.6%	1.7%	3.7%	2.7%
2007	3.5%	3.1%	9.7%	2.8%	3.1%	2.8%	14.0%	8.2%	1.6%	2.5%	4.3%
2008	1.5%	2.7%	7.5%	1.2%	1.1%	2.4%	10.4%	8.5%	1.7%	3.5%	1.4%
2009	1.1%	0.3%	-1.9%	1.0%	0.9%	1.1%	-1.4%	1.2%	0.7%	0.0%	0.9%
2010	2.2%	3.4%	5.4%	2.0%	1.8%	2.1%	2.4%	3.6%	1.8%	1.3%	2.9%
2011	3.4%	3.2%	4.1%	2.7%	2.2%	3.7%	3.9%	3.5%	2.5%	4.6%	2.3%
2012	2.9%	2.1%	3.6%	1.5%	2.1%	2.6%	1.6%	2.9%	3.4%	3.4%	3.0%
2013	2.0%	1.2%	2.0%	0.8%	1.2%	0.6%	-0.4%	0.5%	1.4%	0.4%	0.3%
2014	0.8%	-0.4%	0.1%	0.1%	0.1%	0.0%	0.3%	-0.1%	-0.1%	-0.1%	-1.1%
2015	1.1%	1.5%	-0.2%	0.3%	0.2%	0.1%	0.4%	-0.2%	0.5%	-0.5%	-0.1%
2016	1.6%	2.2%	2.4%	0.8%	1.6%	0.5%	2.1%	2.0%	0.7%	0.2%	1.4%
2017	2.3%	2.1%	3.8%	1.2%	1.5%	1.0%	2.2%	3.8%	1.2%	2.0%	1.2%
2018	1.7%	2.2%	3.3%	1.9%	1.7%	1.2%	2.5%	1.8%	1.8%	1.9%	1.2%
2019	1.8%	0.9%	1.8%	1.6%	1.5%	0.5%	2.1%	2.7%	2.8%	3.2%	0.8%
2020	1.0%	0.4%	-0.9%	0.03%	-0.7%	-0.3%	-0.5%	-0.1%	0.9%	1.8%	-0.6%
AVG	1.9%	1.9%	3.2%	1.5%	1.4%	1.7%	3.3%	2.4%	1.8%	3.1%	1.9%

Source: BETTER FINANCE own composition based on Eurostat data

Table GR11(B). Inflation in non-Eurozone Member States (in %)							
Year	BULGARIA	CROATIA	DENMARK	POLAND	ROMANIA	SWEDEN	UK
2000	11.3%	5.9%	2.4%	8.4%	40.7%	1.3%	0.8%
2001	4.8%	2.4%	2.0%	3.5%	30.3%	3.2%	1.1%
2002	3.8%	2.8%	2.6%	0.8%	17.8%	1.7%	1.6%
2003	5.6%	2.2%	1.2%	1.7%	14.2%	1.8%	1.3%
2004	4.0%	2.0%	1.0%	4.3%	9.3%	0.9%	1.6%
2005	7.4%	4.0%	2.3%	0.8%	8.7%	1.2%	1.9%
2006	6.1%	2.1%	1.6%	1.4%	4.9%	1.5%	3.0%
2007	11.6%	5.4%	2.4%	4.3%	6.7%	2.5%	2.1%
2008	7.2%	2.8%	2.5%	3.3%	6.4%	2.1%	3.0%
2009	1.6%	1.8%	1.1%	3.9%	4.7%	2.8%	2.9%
2010	4.4%	1.7%	2.8%	2.9%	7.9%	2.1%	3.6%
2011	2.0%	2.1%	2.4%	4.6%	3.2%	0.4%	4.3%
2012	2.8%	4.4%	1.9%	2.1%	4.6%	1.0%	2.6%
2013	-0.9%	0.5%	0.5%	0.6%	1.3%	0.4%	2.0%
2014	-2.0%	-0.1%	0.1%	-0.7%	1.0%	0.3%	0.5%
2015	-0.9%	-0.3%	0.3%	-0.4%	-0.7%	0.7%	0.2%
2016	-0.5%	0.7%	0.3%	0.9%	-0.1%	1.7%	1.6%
2017	1.8%	1.3%	0.8%	1.7%	2.6%	1.7%	2.9%
2018	2.3%	1.0%	0.7%	0.9%	3.0%	2.2%	2.1%
2019	3.1%	1.3%	0.8%	3.0%	4.0%	1.7%	1.3%
2020	0.02%	-0.3%	0.4%	3.4%	1.8%	0.6%	-
AVG	3.5%	2.1%	1.4%	2.4%	7.8%	1.5%	-

Source: BETTER FINANCE own composition based on Eurostat data

Table GR11(C). EU27 inflation					
2000	2001	2002	2003	2004	2005
4.0%	3.0%	2.5%	2.2%	2.6%	2.4%
2006	2007	2008	2009	2010	2011
2.1%	3.4%	2.0%	1.3%	2.5%	2.8%
2012	2013	2014	2015	2016	2017
2.3%	0.8%	-0.2%	0.2%	1.1%	1.4%
2018	2019	2020	AVG		
1.6%	1.6%	0.2%	1.9%		

Source: Eurostat HICP monthly index (2015=100, prc_hicp_aind), annual averages (AAVG) are calculated by BETTER FINANCE.

Why is inflation calculated per country/region?

Inflation is a relative term and depends on the "area" where one lives.

e.g.: €10 earned in 2010 will be worth more in 2020 in Germany than in Austria.

In 2020, we can observe deflation (negative inflation) in several countries, which means that the purchasing power of the currency increased over the course of the year. This is the case for Estonia, Germany, Italy, Latvia, Lithuania, Spain, and Croatia. With a few exceptions, the other countries in scope have recorded very low inflation rates. This can be attributed to decreasing prices of consumer goods and services, but also to lower economic output and pressure on the labour market. From a central bank's point of view, deflation can be alarming as it reveals an undesired state of the economy. At the same time, deflation slightly increases real returns. In real terms, a 5% nominal return in 2020 actually means 5.53% given a deflation of -0.5%.

Aiming to maintain inflation rates below, but close to, 2%, the European Central Bank undertook considerable monetary policy efforts to bring the rates back to the desired levels.

Table GR12. Public sector deficit and debt (in %)

	Public Sector Deficit as a % of GDP						Public Debt as a % of GDP					
	2015	2016	2017	2018	2019	2020	2015	2016	2017	2018	2019	2020
EU	-1.9	-1.4	-0.8	-0.4	-0.5	-6.9	84.8	84.0	81.5	79.5	77.5	90.7
Austria	-1.0	-1.5	-0.8	0.2	0.6	-8.9	84.9	82.8	78.5	74	70.5	83.9
Belgium	-2.4	-2.4	-0.7	-0.8	-1.9	-9.4	105.2	105.0	102.0	99.8	98.1	114.1
Bulgaria	-1.7	0.2	1.2	2.0	2.1	-3.4	26.0	29.3	25.3	22.3	20.2	25
Croatia	-3.5	-0.9	0.8	0.2	0.3	-7.4	84.3	80.8	77.6	74.3	72.8	88.7
Denmark	-1.2	0.1	1.8	0.7	3.8	-1.1	39.8	37.2	35.9	34	33.3	42.2
Estonia	0.1	-0.4	-0.7	-0.6	0.1	-4.9	10.0	9.9	9.1	8.2	8.4	18.2
France	-3.6	-3.6	-3.0	-2.3	-3.1	-9.2	95.6	98.0	98.3	98	97.6	115.7
Germany	1.0	1.2	1.4	1.8	1.5	-4.2	72.3	69.3	65.1	61.8	59.7	69.8
Italy	-2.6	-2.4	-2.4	-2.2	-1.6	-9.5	135.3	134.8	134.1	134.4	134.6	155.8
Latvia	-1.4	0.2	-0.8	-0.8	-0.6	-4.5	37.1	40.4	39.0	37.1	37	43.5
Lithuania	-0.3	0.2	0.5	0.6	0.5	-7.4	42.5	39.7	39.1	33.7	35.9	47.3
Netherlands	-2.1	0.0	1.3	1.4	1.8	-4.3	64.7	61.9	56.9	52.4	48.7	54.5
Poland	-2.6	-2.4	-1.5	-0.2	-0.7	-7	51.3	54.2	50.6	48.8	45.6	57.5
Romania	-0.6	-2.6	-2.6	-2.9	-4.4	-9.2	37.8	37.3	35.1	34.7	35.3	47.3
Slovakia	-2.7	-2.6	-1.0	-1.0	-1.3	-6.2	51.9	52.4	51.5	49.6	48.2	60.6
Spain	-5.2	-4.3	-3.0	-2.5	-2.9	-11	99.3	99.2	98.6	97.4	95.5	120
Sweden	0.0	1.0	1.4	0.8	0.6	-3.1	43.7	42.3	40.7	38.9	35	39.9
UK	-4.6	-3.3	-2.5	-2.2	-2.1	-	86.9	86.8	86.2	85.7	85.4	-

Source: Eurostat: (1) Public Sector Deficit as a % of GDP; (2) Public Debt as a % GDP

In 2020, public spending on healthcare and economic support (due to the COVID-lockdowns) have put strains on state coffers. All countries analysed have recorded deficits, ranging from 1.1% of GDP (Denmark) to 11% of GDP (Spain). As such, public debt has increased everywhere: at EU27 level,

public debt increased by 13.2 p.p., and in the countries analysed the public debt increase ranges between 4.8 p.p. (Bulgaria) to 24.5 p.p. (Spain).

We recall the two criteria concerning public deficit and debt deriving from the Maastricht Treaty, i.e., EU countries should not exceed:

- *"-3% ratio of the planned or actual government deficit to gross domestic product at market prices"*;[36]
- *"60% for the ratio of government debt to gross domestic product at market prices"*.[37]

In this light, more than half of the countries analysed are still under the 60% threshold and 16 out of the 17 have exceeded the 3% deficit threshold. Data for the UK is no longer available from Eurostat, so it was excluded from the analysis.

Asset Allocation

There are striking differences between the asset allocation of pension funds across countries and products.

Equities dominate only in Poland and Lithuania, being the only two jurisdictions where pension funds are more than 50% invested in shares. Bonds are the main portfolio component in 8 out of 10 countries, and at least 40% in another 6 countries. In the UK, Germany, Spain and Slovakia at least a third of the capital is invested in collective investment scheme units or other instruments; cash and deposits are marginally used, mostly for short-term liquidity purposes.

The average portfolio composition remained almost constant, with a slight shift from liquidity and bonds to collective investment schemes (11% in 2015 to 15% in 2020) across the jurisdictions analysed in this report.

The decrease in government bond interest rates since 1999 have had a positive impact on outstanding assets, especially in countries where this asset class dominates, but it reduces the capacity to provide a good remuneration on new investment flows. The downside, starting in 2019, is that yields for sovereign bonds have started to turn negative.

In this edition we also continue to observe striking differences between pension funds' asset allocations across European countries as shown by the following table:[38]

[36] Article 1 of the Protocol No. 12 on the excessive deficit procedure of the Treaty on European Union, OJ C 115, 9.5.2008, p. 279–280.
[37] Ibid.
[38] We could not find any available data for France.

Table GR13(A). Pension funds' asset allocation, [2020, in % of total assets]					
Country	Year	Cash and deposits	Bills and bonds	Equities	Other
Austria	2005	3%	53%	37%	4%
	2016	9%	46%	33%	12%
	2017	7%	44%	35%	13%
	2018	8%	45%	33%	14%
	2019	7%	43%	34%	16%
	2020	2%	32%	29%	37%
Belgium	2005	2%	6%	9%	78%
	2010	7%	43%	38%	13%
	2015	4%	44%	42%	10%
	2016	*N/A*	*N/A*	*N/A*	*N/A*
	2017	5%	45%	43%	7%
	2018	6%	47%	41%	5%
	2019	2%	40%	42%	15%
	2020	3%	46%	38%	13%
Bulgaria	2015	12%	65%	19%	4%
	2016	16%	63%	17%	4%
	2017	6%	61%	17%	16%
	2018	9%	57%	17%	17%
	2019	8%	66%	12%	14%
	2020	8%	61%	12%	19%
Croatia	2015	3%	73%	24%	0%
	2016	5%	72%	22%	1%
	2017	4%	73%	22%	0%
	2018	6%	72%	21%	1%
	2019	2%	72%	25%	1%
	2020	4%	69%	26%	1%
Denmark	2005	1%	50%	26%	21%
	2010	3%	42%	5%	50%
	2015	0%	63%	18%	19%
	2016	0%	62%	17%	21%
	2017	1%	59%	19%	21%
	2018	0%	59%	21%	19%
	2019	0%	59%	21%	19%
	2020	0%	52%	21%	27%
Estonia	2010	9%	17%	4%	69%
	2015	20%	48%	31%	0%
	2016	23%	43%	34%	0%
	2017	4%	59%	36%	0%
	2018	3%	62%	34%	1%
	2019	4%	56%	40%	0%
	2020	3%	48%	49%	0%
France	2020	2%	68%	12%	18%

Germany	2005	3%	31%	35%	2%
	2010	2%	46%	5%	46%
	2015	4%	54%	5%	38%
	2016	4%	51%	6%	39%
	2017	4%	50%	6%	40%
	2018	4%	49%	5%	41%
	2019	4%	47%	6%	43%
	2020	3%	46%	7%	44%
Italy	2005	5%	37%	10%	17%
	2010	6%	47%	11%	36%
	2015	4%	50%	20%	27%
	2016	4%	49%	20%	26%
	2017	6%	45%	21%	28%
	2018	6%	45%	19%	30%
	2019	6%	45%	21%	28%
	2020	6%	44%	23%	28%
Latvia	2015	19%	46%	35%	1%
	2016	12%	61%	23%	4%
	2017	10%	57%	29%	4%
	2018	6%	42%	51%	1%
	2019	8%	59%	31%	2%
	2020	10%	56%	31%	3%
Lithuania	2015	9%	51%	38%	2%
	2016	9%	46%	41%	1%
	2017	5%	46%	46%	2%
	2018	7%	47%	44%	2%
	2019	2%	20%	75%	3%
	2020	2%	21%	74%	3%
NL*	2005	2%	41%	46%	4%
	2010	4%	56%	20%	20%
	2015	3%	46%	38%	13%
	2016	2%	45%	39%	14%
	2017	3%	48%	46%	2%
	2018	3%	51%	44%	2%
	2019	3%	50%	46%	0%
	2020	3%	52%	45%	0%
Poland	2005	4%	63%	32%	0%
	2010	3%	59%	36%	1%
	2015	7%	10%	82%	0%
	2016	7%	9%	83%	1%
	2017	6%	9%	85%	0%
	2018	6%	9%	85%	0%
	2019	7%	10%	82%	0%
	2020	4%	11%	85%	0%

Romania	2010	7%	80%	12%	0%
	2015	5%	73%	22%	0%
	2016	7%	71%	22%	0%
	2017	9%	68%	23%	0%
	2018	8%	72%	20%	0%
	2019	4%	71%	25%	0%
	2020	1%	74%	25%	0%
Slovakia	2005	78%	11%	7%	4%
	2010	27%	71%	1%	0%
	2015	17%	78%	2%	2%
	2016	12%	80%	3%	5%
	2017	12%	58%	2%	28%
	2018	11%	58%	2%	28%
	2019	11%	57%	3%	30%
	2020	5%	59%	3%	33%
Spain	2005	5%	58%	19%	18%
	2010	19%	58%	12%	11%
	2015	17%	62%	11%	9%
	2016	15%	64%	14%	7%
	2017	11%	47%	13%	28%
	2018	10%	48%	13%	29%
	2019	8%	44%	14%	33%
	2020	9%	44%	14%	34%
Sweden	2005	1%	58%	34%	7%
	2010	N/A	N/A	N/A	N/A
	2015	2%	67%	18%	13%
	2016	N/A	N/A	N/A	N/A
	2017	N/A	N/A	N/A	N/A
	2018	N/A	N/A	N/A	N/A
	2019	2%	45%	24%	29%
	2020	2%	42%	26%	30%
UK	2005	3%	19%	39%	27%
	2010	N/A	N/A	N/A	N/A
	2015	2%	34%	20%	43%
	2016	4%	43%	22%	31%
	2017	2%	28%	13%	57%
	2018	2%	30%	9%	59%
	2019	2%	30%	9%	59%
	2020	2%	45%	26%	27%
AVG 2020		**4%**	**48%**	**30%**	**18%**

Sources: OECD Pension Funds in Figures Preliminary Data 2021;

The asset allocation data in this table include both direct investments in cash and deposits, bills and bonds (both sovereign and corporate), equities and indirect investments through collective investment schemes (investment funds such as UCITS[39] or AIF[40]) and other assets, such as loans, land and buildings, real estate investment trusts (REITS), hedge funds, derivatives, commodities and precious metals, insurance contracts, money market instruments, private equity funds and other structured (unallocated) products. Data for the asset allocation in collective investment schemes is not available for all jurisdictions and all years.

On average in 2020 as well, most pension funds employed a conservative/defensive investment strategy, investing more than half (51%) of the capital in debt securities (bills and bonds). Equities are the second largest position with an average of 28%.

However, there are significant deviations from the average:

- In countries such as Germany, Spain or Slovakia, the equity allocation is of small significance (7%, 14%, and 3%);
- In countries such as Poland and Lithuania, most assets are invested in equity (74% and 85%).

Table GR13(B). Evolution of average asset allocation in pension funds				
	Cash & Deposits	Bills & bonds	Equity	Other (incl. CIS)
2015	8%	54%	27%	11%
2016	9%	54%	26%	11%
2017	6%	50%	29%	15%
2018	6%	50%	29%	16%
2019	5%	48%	30%	17%
2020	4%	48%	30%	18%
2015-2020	6%	51%	28%	15%

Source: own computations based on Table GR13(A).

So far, we were not able to obtain information on ESG-factored investments to correspond to the current reporting standards.

Asset performance

Concerning the recent ***positive capital markets returns (1999 – 2020)***, equity markets managed to rebound well above the February 2020 level by the time of writing this report. Since the beginning of the 21st century, capital market returns have been positive (moderately for equities while strongly for bonds):

[39] "UCITS" stands for Undertakings for Collective Investment in Transferable Securities, which is the most common legal form mutual funds in the EU take, in particular because of the *passporting rights*.
[40] "AIFs" stand for Alternative Investment Funds, which are all the non-UCITS funds.

- Over the last 20 years, on a nominal basis (before taking inflation into account), world stock markets have grown in value (in €) by 151%,[41] where the US stock market has grown by 176%[42] and the European ones by 74% in the last 21 years;[43]
- On a real basis (net of inflation), European stock markets (MSCI Europe NR) returned to positive cumulated performances by 2013, and once again reached significant levels by 2017 (+32%) and reached +17.4% in 2019.

Equity markets

Equity returns are more volatile in the short-term and hence need to be observed with a long-term perspective in mind. The real return calculations in this report date back to 31/12/1999 at the earliest, so we take a look at how equity markets performed over that same period. Overall, the 21st century began with one of the most severe bear markets in history and faced, in conjunction with the downward cycle of 2007-2008, two longer-lasting upward cycles from 2003-2006 and 2009-2019. Data in the table below is calculated based on gross performances (***nominal return***), then adjusted by inflation (***real return***).

Table GR14. Historical Returns on Equity Markets, yearly average

Country	Period	Nominal Return	Real return
Austria	(2000-2020)	3.2%	1.25%
Belgium	(2000-2020)	0.44%	-1.60%
Bulgaria	(2006-2020)	-9.10%	-3.61%
Croatia	(2003-2020)	5.24%	2.75%
Denmark	(2000-2020)	10.78%	9.20%
Estonia	(2000-2020)	11.95%	7.90%
Europe (EU27)	(2000-2020)	0.25%	-1.74%
France	(2000-2020)	-0.30%	-1.85%
Germany	(2000-2020)	3.29%	1.84%
Italy	(2000-2020)	-3.05%	-4.89%
Latvia	(2001-2020)	10.45%	6.12%
Lithuania	(2001-2020)	12.0%	8.6%
Netherlands	(2000-2020)	-0.34%	-2.4%
Poland	(2000-2020)	5.16%	2.5%
Romania	(2000-2020)	10.58%	1.06%
Slovakia	(2000-2020)	7.40%	4.42%
Spain	(2000-2020)	-0.91%	-2.96%
Sweden	(2000-2020)	1.43%	-0.20%

Sources: MSCI, Yahoo! Finance; Investing.com; NASDAQ Baltic; Bucharest Stock Exchange; GPW

Since not all equity indexes have the same coverage or data availability, it is difficult to perfectly compare the performances of the national equity markets. Most of the equity indices recorded negative nominal returns in 2020, ranging between -14.67% to -3.19%; the rest delivered positive

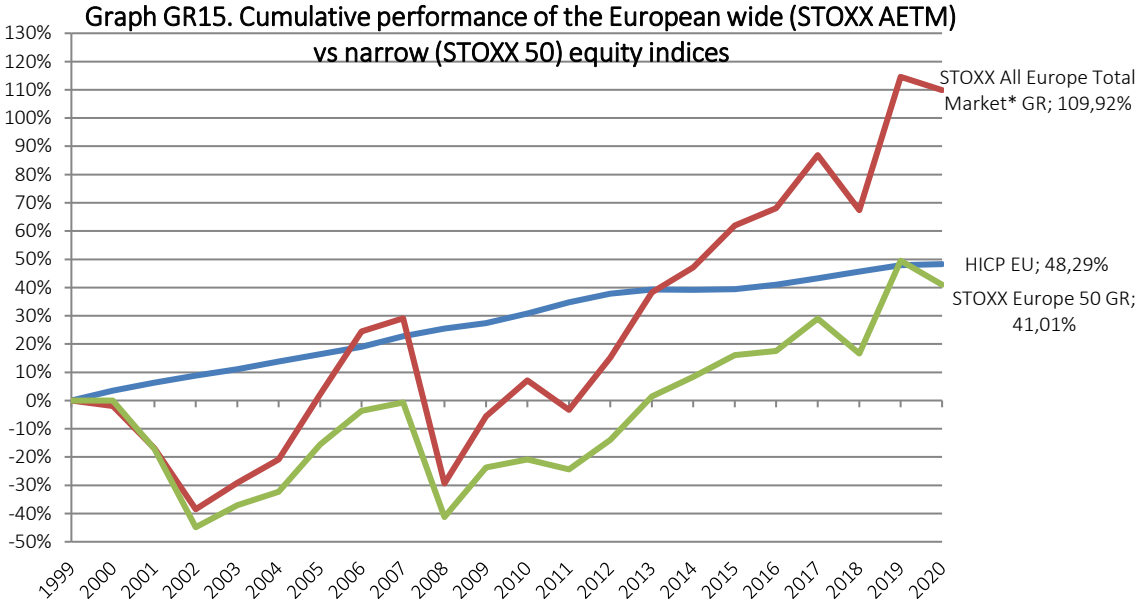
[41] As measured by the MSCI All Country World Index (ACWI) Net Returns denominated in €.
[42] As measured by the MSCI USA Net Returns Index, calculated in €.
[43] As measured by the MSCI Europe Net Returns Index, denominated in €.

nominal returns ranging between 0.03% and 32.44%. In real net terms, due to predominant deflation, 2020 returns improved slightly. On average, the real returns for the equity markets listed in Table GR14 above are 2.34 p.p. lower than the nominal returns over their respective time periods.

When looking at the cumulated results at European level, as well as in the individual countries where we developed this analysis (see French, German and Spanish country cases), broad stock market indices performed much better than the better known and much narrower large cap or "blue chip" indices (Stoxx Europe 50, DAX 30, IBEX 35, CAC 40).

The following graph shows a comparison of the broad STOXX All Europe Total Market index which includes 1,793 European stocks (as of 2 September 2020)[44] and the much narrower Stoxx Europe 50.

Graph GR15. Cumulative performance of the European wide (STOXX AETM) vs narrow (STOXX 50) equity indices



Source: BETTER FINANCE; Eurostat; STOXX

At European level, the difference at the end of our 21-year period is an astonishing 69% in favour of the broader stock market index in nominal terms. And whereas the performance of the narrow index (29% nominal) was heavily outmatched by inflation (39%) over the last 18 years, the broader European stock market recorded a positive real performance with a cumulated gain of 34%.

[44] https://www.stoxx.com/index-details?symbol=TE1P. There was no data available for year of 2000. The performance of the narrower MSCI Europe TR (Net) index (435 components as of 02 September 2020) for that year was taken as a proxy instead.

Government bond markets

As already mentioned above, it is important to note that a decrease in interest rates translates into an increase in the mark-to-market value of bonds which had a positive impact on outstanding debt assets of pension funds. On the other hand, the capacity to provide good remuneration through new bond issuances is hereby reduced.

The following table indicates the returns of thirteen major European bond markets for the period 2000-2019.

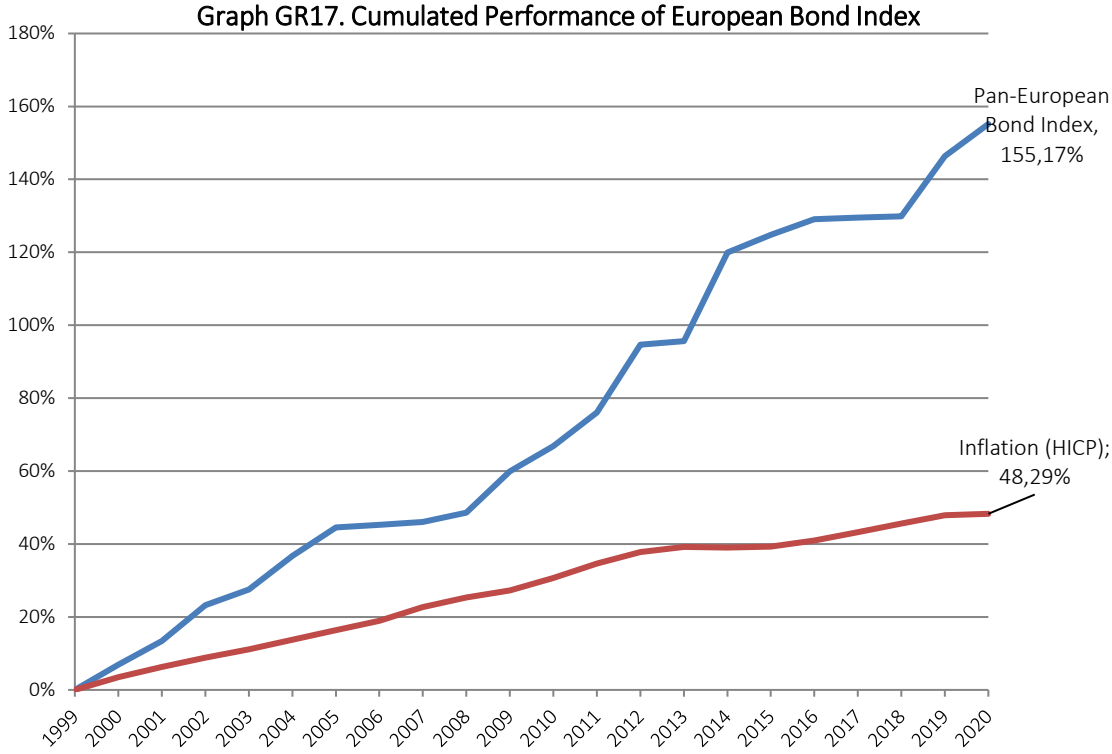
Table GR16. Historical Returns on Bond Markets, yearly average			
Country	Year	Nominal Return	Real Return
Belgium	(2008-2019)	5.15%	3.35%
Croatia	(2009-2019)	6.03%	4.76%
Denmark	(2008-2019)	4.70%	3.54%
Germany	(2008-2019)	4.15%	2.82%
Spain	(2008-2019)	5.47%	4.24%
France	(2008-2019)	4.70%	3.43%
Italy	(2008-2019)	5.33%	3.99%
Lithuania	(2008-2019)	-	-
Netherlands	(2008-2019)	4.47%	2.92%
Romania	(2008-2019)	-	-
Slovakia	(2008-2019)	-	-
Sweden	(2008-2019)	2.98%	1.54%
UK	(2008-2019)	4.52%	2.23%
EMU	(2008-2019)	4.65%	3.31%

Sources: Morningstar Direct, Eurostat HICP annual average

The European government bond markets all showed steady nominal average returns over the past 10 years, ranging between 6.03% (Croatia) and 2.98% (Sweden). Real average returns ranged even closer together, with the highest in Croatia at 4.76% and Sweden and UK at the lower margin.

The following graph shows the long-term cumulated returns of European bonds as a whole - that is both government and corporate bonds - as measured by the Barclays Pan-European TR index:

Graph GR17. Cumulated Performance of European Bond Index



Source: Eurostat; Bloomberg website; own computations

Over the last 20 years, European bonds as a whole enjoyed a very positive nominal return which was significantly higher than the return of European equities. It is difficult to foresee a continuation of this past trend given the negative interest rates reached today. However, in 2019 this index grew from 129.86% to 146% in nominal terms. Overall, the real cumulative growth of the broad bond index was of 166.2%.

What are "***equities***"?

Equities, also referred to as *shares* or *stocks*, represent a certificate of ownership over a certain part of a company or undertaking.

Equity gives the *shareholder* the right to benefit of profits (through dividends) and the obligation to support loses, proportionally to his "ownership share" over the company. At the same time, it allows the *shareholder* to take part in the decision-making process of the company.

The value of a share is primarily determined by its growth potential, coupled with the amount and frequency of *dividend* payments: see here the BETTER FINANCE video about *Investing in Shares*.[45]

If the company is going well, the ***share price goes up***.

What are "***bonds***"?

Bonds, commonly referred to as *debt* or *fixed income securities*, represent a very liquid, easily fungible, and transferable **loan**.

The borrower issues the *bond*, which has a *principal* amount (sum to be repaid), a maturity (repayment date) and *coupon* (interest rate).

Bonds are used because they facilitate a very fast financing channel for borrowers (instead of making a loan contract with each lender) and a less risky source of investment return for lenders.

The price of a bond is primarily determined by the *credit rating* of the issuer, the *principal amount* and the *maturity*.

If the issuer is doing good, then the ***bond price goes down***.

Graph GR15 shows that this period has indeed been particularly favourable to bonds as an asset class as illustrated by the considerable outperformance of European inflation over time.

Portfolio Manager / Advisor Competence

The initial BETTER FINANCE study highlighted that, in almost all categories of investment funds, a majority of funds under-performed their benchmarks. Investment funds play an important role in today's asset allocation of pension vehicles, thus it is interesting to compare investment fund performances to benchmarks.

The Standard & Poor's annual "SPIVA" report measures the proportion of active funds that have beaten their benchmark. The results from the latest SPIVA Europe Scorecard for year-end 2016 are shown in the following table:

[45] Link also here: https://www.youtube.com/watch?v=bhYW-YnbEmc.

Table GR18. Percentage of European Equity Funds Beating their Benchmarks					
Fund Category	Comparison Index	1-year (2020)	3-year (2018-2020)	5-year (2016-2020)	10-year (2011-2020)
Funds denominated in Euro (€)					
Europe Equity	S&P Europe 350	63	30	25	14
Eurozone Equity	S&P Eurozone BMI	42	21	13	8
France Equity	S&P France BMI	66	9	14	8
Germany Equity	S&P Germany BMI	54	35	26	20
Italy Equity	S&P Italy BMI	45	12	18	20
Spain Equity	S&P Spain BMI	38	22	26	17
Netherlands Equity	S&P Netherlands BMI	17	0	0	0
Funds denominated in local currencies					
U.K. Equity	S&P United Kingdom BMI	80	66	44	35
Denmark Equity	S&P Denmark BMI	32	11	47	15
Poland Equity	S&P Poland BMI	94	68	39	37
Sweden Equity	S&P Sweden BMI	52	35	31	19

Source: BETTER FINANCE own computation based on S&P SPIVA Scorecard Year-End 2020 (*https://www.spglobal.com/spdji/en/documents/spiva/spiva-europe-year-end-2020.pdf*); *Outperformance is based on equal-weighted fund counts. Index performance based on total return.*

The latest findings for 2020 once again reveal that the large majority of funds do not outperform their respective benchmarks over the past 10 years. For funds investing in European equities, only 14% were able to outperform their benchmark, the S&P Europe 350. The worst results on a country basis were recorded for funds investing in the Netherlands equity where already since 2016 funds haven't overperformed the Dutch broad market index (S&P Netherlands BMI), as well Eurozone and France where only 9% and 10% of the equity funds delivered a cumulative profit over the past 10 years above that of their benchmark.

For retirement savings products, consistent positive long-term returns are of particular importance. However definitive conclusions cannot be drawn from these calculations because they relate to a period that is too short, including no more than two cyclical periods: equity markets fell sharply in 2008 and 2009, then they recovered progressively until the end of 2019, with short sub-periods of decline in most countries, as was the case again in 2020. Prior research found that investment funds tend to outperform their benchmarks in a bearish market while they underperform in a bullish market.[46]

For a longer time-horizon and especially in the case of retirement savings, a study[47] provides relevant results for UK personal pension funds operated by 35 providers over a 30-year period (1980-2009). Big personal pension fund providers performed better than their prospectus benchmarks, but underperformed treasury bills over the period of a fund's lifespan. Similarly, specialisation of portfolio managers in the investment universe is shown to deliver superior average

[46] IODS (2014): Study on the Performance and Efficiency of the EU Asset Management Industry, a study for the European Commission (Internal Market and Services DG) and the Financial Services User Group (FSUG), August 2014

[47] Anastasia Petraki and Anna Zalewska (April 2014), "With whom and in what is it better to save? Personal pensions in the UK", working paper of the Centre for Market and Public Organisation, University of Bristol.

annual returns but does not show superior long-term performances. More generally, they found that short-term performances based on arithmetic annual averages are not relevant indicators of the long-term performance calculated as geometric compounded returns similar to the methodology used in the present study. The authors also showed that younger funds perform better than older ones, which are under lower competitive pressure given the cost of leaving a fund to join a better performing one.

A research report published by BETTER FINANCE in 2019 analysed the drivers of over- or underperformance of the comparison or benchmark index of EU Equity Retail Investment funds domiciled in France, Belgium and Luxemburg. While only 2 funds out of 2,086 managed to consistently deliver overperformance over 10 years between 2008-2017, the rest that managed to beat their respective markets seem to have done so by coincidence or luck. [48]

In attempting to give an explanation for the latter, the analysis deployed showed that fees are the most negative factor for fund (over)performance or – in other words – "*the more you pay, the less you get*".[49] More information on fees and charges is given in the following section.

IV. INVESTMENT CHARGES

Fees and commissions substantially reduce the performances of pension products, especially for personal "packaged" pension products, and for unit-linked life-insurance. Charges are often complex, opaque, and far from being harmonised between different pension providers and products. Some countries have started to impose overall caps on fees for some pension products (UK, Romania, Latvia).

Findings of the initial study by BETTER FINANCE on the opacity and weight of charges did not change dramatically over the successive research reports. Generally speaking, charges are heavier on personal pension products than on occupational pension funds, as employers are in better position to negotiate with competing providers than individuals are.

To tackle this complexity, some pension providers - for example, some auto-enrolment schemes in the United Kingdom – set up fixed costs per member, but this penalises low paid workers.

Following the OFT study, the Department for Work and Pensions issued a regulation which took effect on 6 April 2015[50]. The default schemes used by employers to meet their automatic enrolment duties are subject to a 0.75% cap on AMCs. The cap applies to most charges, excluding transaction costs. Moreover, an audit was conducted on schemes being "at risk of being poor value for money". It found that about one third of surveyed schemes had AMCs superior to 1% and that a significant

[48] BETTER FINANCE, *Study on the Correlation between Cost and Performance of EU Equity Retail Funds* (June 2019) https://betterfinance.eu/wp-content/uploads/BETTER1.pdf.
[49] Press Release, "New research by BETTER FINANCE on the Correlation between Costs and Performance of EU Retail Equity Funds without a doubt establishes a negative correlation between returns and fees" https://betterfinance.eu/publication/the-more-you-pay-the-less-you-are-likely-to-get/.
[50] https://www.legislation.gov.uk/ukpga/2015/8/contents/enacted

number of savers would have to pay exit fees superior to 10% in case they wanted to switch to a better performing fund. Moreover, starting from October 2017, existing early exit charges in occupational pension schemes cannot exceed 1% of the member's benefits and no new early exit charges can be imposed on members who joined that scheme after 10 October 2017.

V. Taxation

Finally, taxes also reduce the performance of investments. The general model applied to pension products is deferred taxation, with contributions being deducted from taxable income and pension pay-outs being taxed then. The accumulated capital can be withdrawn at least partially at retirement as a lump-sum, which is often not taxable. Our calculations of net returns are based on the most favourable case, i.e., assuming that the saver withdraws the maximum lump-sum possible.

One of the key elements of a pension system, as designed by the World Bank's conceptual framework of 1994,[51] is to incentivise savings and private investments by giving fiscal advantages, either as deferred taxation, exemptions, or tax reductions.

Pension taxation concerns three stages: contributions, investment returns and payments (benefit drawdowns).

The general model applied to pension products is usually deferred taxation: contributions are deducted from the taxable income and pensions (pay-outs) are taxed within the framework of income tax or, usually, at a more favourable rate. Some countries are currently in the middle of a transitional phase comprising proportionate deferred taxation which will lead to entire deferred taxation in the future.

The so-called EET regime, "*a form of taxation of pension plans, whereby contributions are exempt, investment income and capital gains of the pension fund are also exempt, and benefits are taxed from personal income taxation*"[52], is predominant in the countries covered by this research report. There are only a few exceptions, like in Poland, where the reverse rule is applied: contributions are paid from the taxable income while pensions are tax-free (the only exception from the TEE regime are IKZEs – individual pension savings accounts). Pensions in Denmark are taxed at all three stages with contributions to occupational pensions being partially deductible as the only exception. Furthermore, in Bulgaria and for the funded pensions in Slovakia, one can even observe EEE regimes with no pension taxation at all within defined tax exemption limits. In other countries, such as France or Poland, specific conditions apply in order to be tax-exempt or not.

[51] World Bank, 'Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth' (1994) 10, http://documents.worldbank.org/curated/en/973571468174557899/pdf/multi-page.pdf.
[52] OECD definition: https://stats.oecd.org/glossary/detail.asp?ID=5225

Usually, the accumulated capital can be withdrawn by the saver as a lump sum at retirement age, at least partially. Our calculations of returns net of taxation (where available) are based on the most favourable taxation case and assume that the saver withdraws the maximum lump sum possible.

Savings products used as retirement provision, but which are not strictly pension products, might benefit from a favourable tax treatment. This is the case of life insurance in France but successive increases of the rate of "social contributions" on the nominal income tend to diminish the returns of the investment.

An overview of the main taxation rules applied on a country basis can be found in the following table:

Table GR19. Overview of Main Taxation Rules Applied in the Country Reports

Austria	● **EET regime** – generally, only payments are taxed; o direct commitments, occupational pension funds and group insurance have tax-exempt contributions, tax-exempt capital accumulation, and (income) taxed benefits; o life insurance contributions are subject to insurance tax (4%), investment returns are exempt, and payments are taxed ("TET" regime); o premium subsidised products carry a premium based on the contribution, the capital accumulation phase is tax-exempt, and benefits are also tax free if they are converted into an annuity ("TEE" regime).
Belgium	● **EET regime** - only withdrawals/payments are taxed; o Contributions are tax deductible up to prescribed limits; o Employees pay generally 2% solidarity tax and 3.55% INAMI tax on benefits; o Pillar II: Taxation in pay-out phase depending on origin of contribution, local taxes to be added; o Pillar III: Taxation in pay-out phase at the age of 60, local taxes to be added.
Bulgaria	● **EEE regime**; o Annual contributions of up to 10% of annual taxable income is tax free;
Croatia	● **EET regime** Contributions and investment income are tax-exempt, whereas benefits are taxed. The tax allowance for pensioners is 1.7 times higher than for employees, meaning that pensions are only modestly taxed.
Denmark	● **TTT regime** (combination of ETT and TTE); o Annuities, periodic instalments, and lump-sum pensions under the form of *kapitalpension* are income tax deferred and follow an ETT regime; o Lump-sum pensions under the form of *alderopsparing* are taxed TTE;
Estonia	● **EET regime for taxation**: o Contributions paid towards the pension schemes are tax-exempt. o Returns achieved by respective pension funds are tax-exempt. o Benefits paid out during the retirement are subject to the income tax taxation.

France	● **ETT regime**; o PERP, Prefon, Corem, CRH contributions are income tax deductible; o Contributions to some DC pension plans (PERCO and PERP) are income tax deductible but no deductibility from social levies. No tax deductibility for life insurance contracts; o taxation of employers' contributions to corporate savings plans (PEE and PERCO) and defined contribution plans ("Article 83") increased from 8% to 20%. o the minimum tax rate on life insurance income is now 23% o pay-outs are taxed in the retirement phase (sometimes with tax reductions).
Germany	● **EET regime**, taxation divides retirement savings into three groups: o Statutory pension insurance and the Rürup pension: deferred taxation; contributions up to a deduction cap are exempted from taxation and generally subject to tax in its entirety during the pay-out phase. o Standard pension insurance or life insurance products: contributions to the products come from taxed income; benefits are taxed at the personal income tax rate on the corresponding earnings in the retirement phase o Occupational pensions and the Riester pension: deferred taxation; contributions up to a deduction cap are exempted from taxation and generally subject to tax in its entirety during the pay-out phase.
Italy	● **ETT regime**, contributions are tax deductible up to prescribed limits; o Accruals are taxed at 20% (12.5% on income derived from public bonds) in the capital accumulation phase; o Taxation in the pay-out phase varies from 9-15%.
Latvia	● **EET regime;** o Pillar II – Contributions are personal income tax deductible item and therefore the contributions are not subject to additional personal taxation; Income or profits of the fund are not subject to Latvian corporate income tax at the fund level; a general principle for all investment and savings-based schemes to levy the income taxation on the final beneficiary. o Pillar III – Voluntary private pensions are generally taxed as Pillar II, however there are deduction limits in the contribution phase: payments (contributions) made to funds shall be deducted from the sum amount of annual taxable income, provided that such payments do not exceed 10 % of the person's annual taxable income.
Lithuania	● **EEE regime**; o Employee contributions are tax-deductible even if they are higher than required; for pillar III, there is a tax-refund policy during the contribution phase, which means that the contributions of up to 25% of gross earnings, the income tax (15%) is returned;
Poland	● **TEE regime** for Employees Pension Programs (PPE) and Individual Retirement Accounts (IKE); **EET** for Individual Retirement Savings Accounts (IKZE); o benefits are taxed with a reduced flat-rate income tax (10%)

Romania	● **EET regime** applies for both mandatory and voluntary pensions; o for funded pensions (Pillar II), pension benefits paid out during retirement will be subject to a personal income tax (10% tax rate) above a certain level (€460 in 2018); the social security contributions have been removed as of 2018 and are supported completely from the consolidated state budget. o for voluntary private pensions (Pillar III), contributions are tax deductible up to a deduction limit, investment income is tax exempted, and benefits are subject to the personal income tax.
Slovakia	● Funded pensions are usually not taxed (EEE regime); ● Supplementary pensions follow the EET regime with several exceptions and specifications.
Spain	● EET regime, contributions are tax deductible up to prescribed limits; ● No taxation in the capital accumulation phase; ● Pay-outs are taxed differently depending on whether they take the form of an annuity or the form of a lump sum payment.
Sweden	● **EET regime** for public pensions; **ETT regime** for private pensions; o Employers can partially deduct contributions to the second pillar; returns are subject to an annual standard rate tax based on the value of the account and the government-borrowing rate o Investment return is subject to tax rate on standard earnings at 15%; o in Pillar III, until 2016 there was a tax deduction of SEK 1,800 per year available; returns are subject to an annual standard rate tax based on the value of the account and the government-borrowing rate
Netherlands	● EET regime; ● Contributions paid into pension funds are tax deductible; ● Taxation is applied in the pay-out phase at the personal income tax rate.
UK	● EET regime; ● Allowances and tax relief on contributions with test against lifetime allowance ● Pay-outs are taxed as income, there are three marginal rates in the UK at the moment.

Source: BETTER FINANCE own composition

VI. RETURNS OVERVIEW

The BETTER FINANCE report now reaches 21 years (or maximum available) of performance disclosure for some retirement provision products. Unfortunately, in the long run, real returns were on average quite low and below those of capital markets (equities and bonds). In the context of negative interest rates and decreasing yields on capital markets, the pensions outlook looks grim.

One has to keep in mind that the diversity of the European pension landscape and the lack of available data complicate the drawing of straightforward conclusions. Although the aim of

comparability would be to present all results in a harmonised manner (either Pillar II vs Pillar III or on product categories - investment funds vs insurance products), complete data for all is not reported, neither the maximum periods available, nor are the concepts (Pillars, occupational vs supplementary plans) so common in all EU Member States. Therefore, for ease of reference, the names of the pension vehicles have been used in Graphs 18 (A, B and C) and Table 19 as presented in each individual country case.

Out of the 15 pension vehicles on which we report performances over at least 18 years (Graph 18(A)):

- only one so far remains on the negative side (-0.66%, French unit-linked life insurances);
- the majority (8) reported less than 1.5% real net return per year, equalling less than 35% pre-tax profits over the past 20 years.

Considering that an EU capital markets-representative benchmark (50% European Equities – 50% European bonds) recorded 72% real profits before taxes (2.69% p.a.), the 2020 data update shows few product categories overperforming this broad market benchmark.

On shorter reporting time frames (Graphs 18(B) and (C)) performances were much higher, but this may be due to the fact that some products did not pass through the same crises as the long-term ones (Graph 18(A)) did.

In general, we could observe significant performance differences in each country case, either between pillars or between types of pension vehicles:

- in Romania, Pillar II mandatory pension funds massively overperformed Pillar III pensions;
- in Austria, pension insurances overperformed pension funds by almost 17 percentage points;
- in Italy, both PIP-products have turned positive: PIP with profits had positive returns over the past 13 years (1.36%) unit-linked PIP recorded an average gain of 2.23%; and
- in France, where capital guaranteed insurance products gained 1.6% p.a. and unit-linked insurance lost -0.7% p.a.

These poor or even negative real returns have led public authorities in some Member States to take measures in order to ensure transparency and cap the fees charged by certain pension providers (in countries such as the UK, Romania and Latvia). The issue is crucial, especially in countries like the United Kingdom where the standard of living of retirees is heavily dependent on pre-funded pension schemes. The following tables detail the long-term real returns of the main long-term and pension saving product categories in the 17 European countries analysed. The categorisation in Graphs GR18(A), (B), (C) AND (D) is by the starting reporting year available in this report.

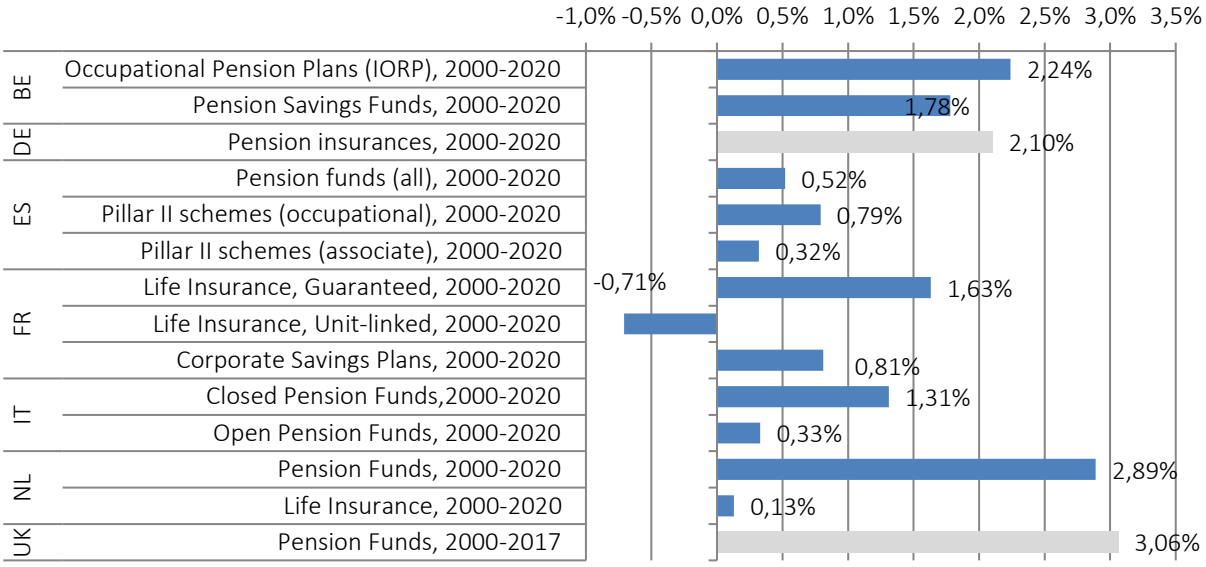
In Italy, an ambitious reform was implemented (as of 2011) by Minister Elsa Fornero under the Monti government in order to secure the public PAYG system, despite very unfavourable demographic trends. As such, the poor returns of the personal pension plans will have a limited

impact on the replacement rates of retirees' income, the downside being the heavier reliance on the public pension scheme.

By contrast, pensions in the UK are more heavily dependent on pre-funded schemes. As such, the total value of pension assets as % of the 2018 GDP reached 105%, which is modest compared to the Netherlands or Denmark, but four times higher than the average (pension fund assets 25% of GDP) in the 17 countries in scope of this Report. The Government has implemented "auto-enrolment" to extend the benefits of pension funds to most employees. There, the excessive charges borne by pension fund members have led public authorities to take measures in order to improve transparency and to limit the fees charged by pension providers.

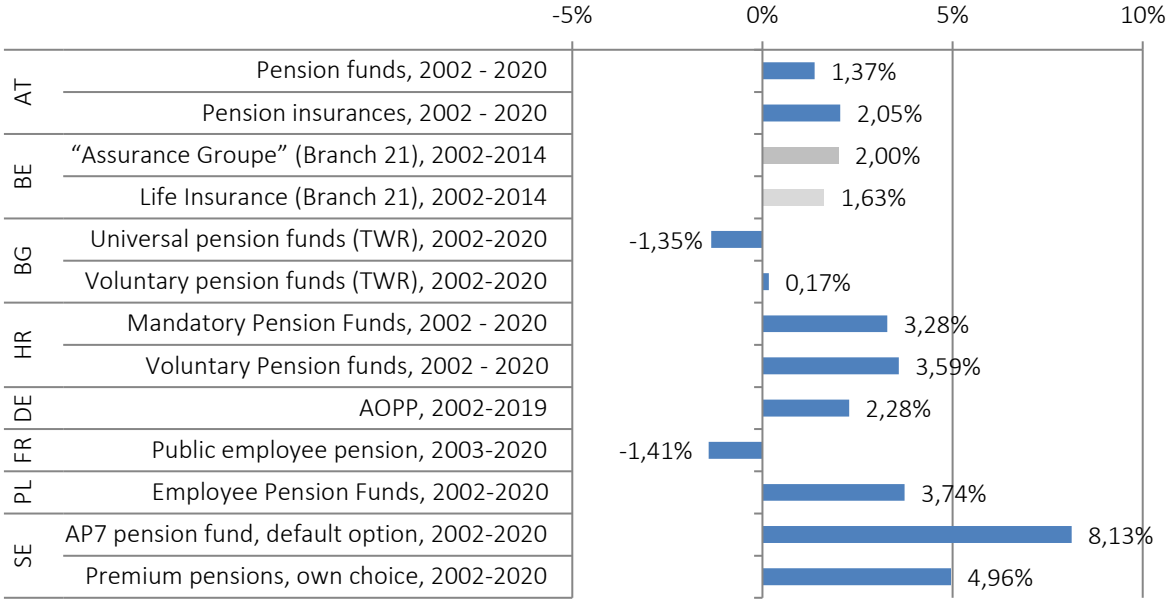
Note: In Bulgaria, data on professional pension funds (occupational and voluntary) was no longer available for the 2018 update. The data reported in these graphs and tables is time-weighted returns.

Graph GR19(A). ANNUALISED REAL RETURNS OF PENSION SAVINGS - AFTER CHARGES & INFLATION - BEFORE TAX - FROM 2000/01



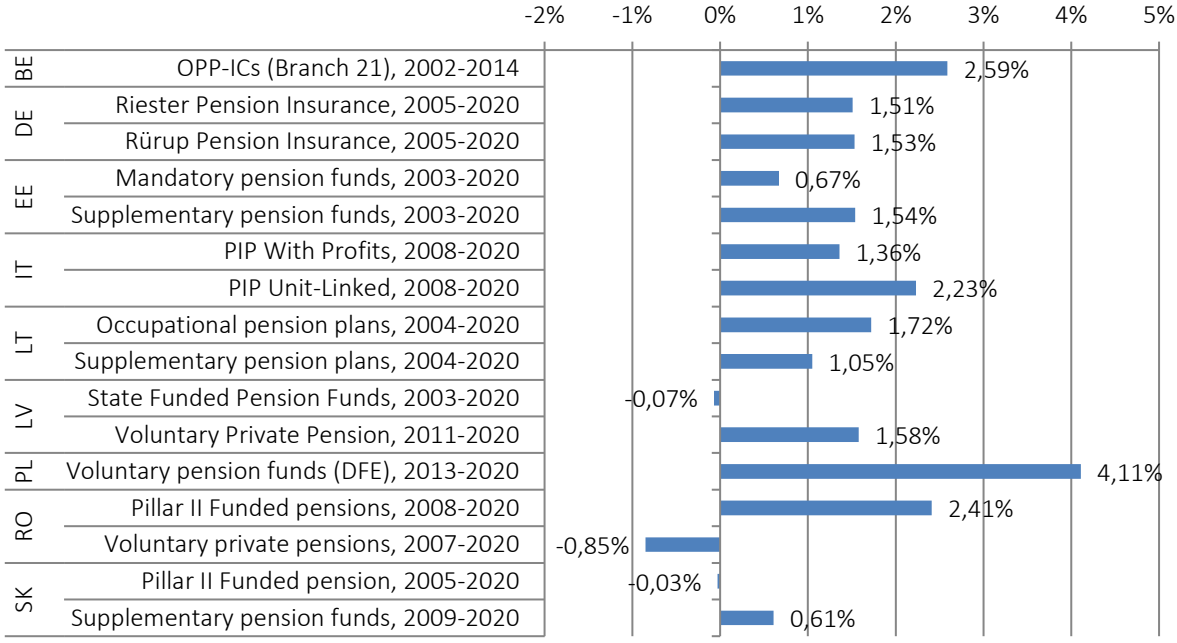
*Source: BETTER FINANCE Research (Table 20); * Net of taxes, charges and inflation*

Graph GR19(B). ANNUALISED REAL RETURNS OF PENSION SAVINGS - AFTER CHARGES & INFLATION - BEFORE TAX - FROM 2002



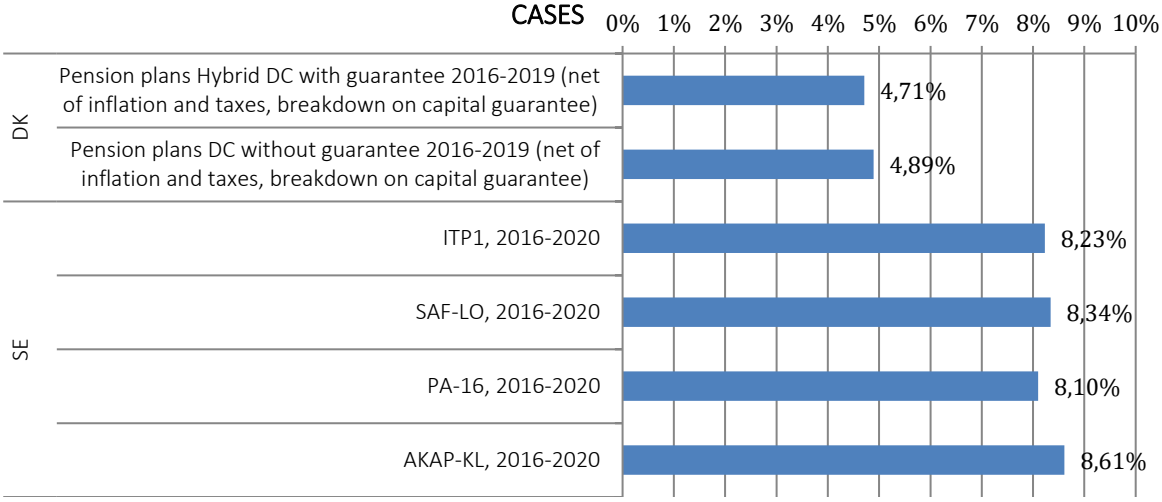
*Source: BETTER FINANCE Research (Table 20); * Gross of fees*

Graph GR19(C). ANNUALISED REAL RETURNS OF PENSION SAVINGS - AFTER CHARGES & INFLATION - BEFORE TAX - LATER STARTING DATES



Source: BETTER FINANCE Research, Table 20

Graph GR19(D). ANNUALISED REAL RETURNS OF PENSION SAVINGS - SPECIFIC CASES



Source: Graph 20

The following table groups the pension vehicles available and reported on by country, and presents the average returns on the entire available reporting period.

Table GR20. Yearly Real Returns of Private Pension Products	
Austria	Pension funds, 2002- 2020: +1.37% Life-insurances, 2002-2020: +2.05%
Belgium	Pension Funds (IORP [1]), 2000-2020: +2.24% "Assurance Groupe" (Branch 21), 2002-2014: + 2.00% Pension Savings Funds, 2000-2020: +1.78% Life Insurance, Guaranteed, 2002-2014: +1.63% OPP-ICs (Branch 21), 2002-2014: + 2.59%
Bulgaria	Universal Pension Funds (TWR), 2002-2020: -1.35% Voluntary Pension Funds (TWR), 2004-2020: 0.17%
Croatia	Mandatory Pension Funds, 2002–2020: +3.28% Voluntary Pension funds, 2002-2020: +3.59%
Denmark (after tax)	Pension plans Hybrid DC with guarantee 2016-2019: +4.71% Pension plans DC without guarantee 2016-2019: +4.89%
Estonia	Mandatory Pension Funds, 2003-2020: 0.67% Supplementary Pension Funds, 2003-2020: +1.54%
France	Life Insurance, Capital guaranteed, 2000-2020: 1.6% Life Insurance, Unit-linked, 2000-2020: -0.71% Corporate savings plans, 2000-2020: +0.81%

Germany	A.O.P.P.[1], 2002-2019: +2.28% Riester Pension Insurance, 2005-2020: +1.51% Rürup Pension Insurance, 2005-2020: +1.53% Pension Insurances, 2000-2020: +2.10%
Italy	Closed Pension Funds, 2000-2020: +1.31% Open Pension Funds, 2000-2020: +0.33% PIP with Profits, 2008-2020: +1.36% PIP Unit-Linked, 2008-2020: +2.23%
Latvia	State Funded Pension Funds, 2003-2020: -0.07% Voluntary Private Pension, 2011-2020: +1.58%
Lithuania	Occupational pensions 2004-2020: +1.72% Supplementary pensions 2004-2020: +1.05%
Poland	Employee Pension Funds, 2002-2020: +3.74% Voluntary Pension Funds, 2013-2020: +4.11%
Romania	Pillar II Funded Pensions, 2008-2020: +2.41% Voluntary Pension Funds, 2007-2020: -0.85%
Slovakia	Pillar II Pension Funds, 2005-2020: -0.03% Supplementary Pension Funds, 2008-2020: +0.60%
Spain	Pension Funds (all), 2000-2020: +0.52% Individual plans (agg.), 2000-2020: +0.32% Pillar II schemes (occupational), 2000-2020: +0.89% Pillar II schemes (associate). 2000-2020: +1.07%
Sweden	AP7 fund, default option: 2000-2020: +6.95% Premium pension, other funds: 2000-2020: +4.18% ITP1, 2016-2020: +8.23% SAF-LO, 2016-2020: +8.34% PA-16, 2016-2020: +8.10% AKAP-KL, 2016-2020: +8.61%
The Netherlands	Pension Funds, 2000 - 2020: +2.89% Life Insurance, 2000 - 2020: +0.13%
UK	Pension Funds, 2000-2017: +3.06%

**After tax*

Source: Own Research, Better Finance Research

Occupational pension funds as per the definition and scope of the EU "Institutions for Occupational Retirement Provision Directive" (IORP); [1] A.O.P.P. stands for Autonomous Occupational Pension Funds.

[1] The returns on private pension products in Denmark cannot be calculated on average since the Danish Supervisory Authority started to report the returns for two categories: hybrid defined-contribution (DC) with guarantee and defined-contribution (DC) with no guarantee. Therefore, averages as of 2016 cannot be calculated.

Pension Savings: The Real Return

2021 Edition

Country Case: Austria

Summarisch

Rund 90% des durchschnittlichen Alterseinkommens in Österreich stammen aus dem öffentlichen Pensionssystem. Damit ist die Altersvorsorge sehr stark auf die erste Säule konzentriert. Die betriebliche Altersvorsorge wird in erster Linie von Pensionskassen und Versicherungsunternehmen getragen. Direktzusagen sind ein alternatives Instrument deren Nutzung seit Jahren stagniert. Die Möglichkeit für beitragsorientierte Pensionspläne in Pensionskassen und über Versicherungen hat die Verbreitung der betrieblichen Altersversorgung in Österreich gestärkt. Während betriebliche Formen der Altersvorsorge im Laufe der Zeit beliebter wurden, dämpften niedrige Zinssätze und die hohe Liquiditätspräferenz die Nachfrage nach individuellen Lebensversicherungsverträgen. In den Jahren 2002 bis 2020 war die Performance der Pensionskassen real und nach Abzug der Verwaltungskosten positiv. Die annualisierte Durchschnittsrendite lag bei 1,4% vor Steuern. Die Lebensversicherungsbranche verfolgt eine deutlich konservativere Anlagepolitik und erzielte eine durchschnittliche reale Nettorendite vor Steuern von 2,1% pro Jahr.

Summary

With around 90% of the average retirement income received from public pension entitlements, the Austrian pension system is very reliant on the first pillar. Occupational pensions are primarily offered through pension funds and insurance companies. Direct commitments are an alternative vehicle, but their usage stagnates. The option for defined contribution (DC) plans with favourable tax treatment offered either by pension funds or insurance companies boosted the prevalence of occupational pensions in Austria. While occupational pensions have become more popular over time, low interest rates and a high liquidity preference dampened demand for individual life insurance contracts. Over the years 2002 through 2020, the performance of pension funds in real net terms has been positive, with an annualised average return of 1.4% before tax. The life insurance industry followed a distinctly more conservative investment policy and achieved an average annual net real return before tax of 2.1%.

Introduction

The Austrian pension system consists of three pillars:

- Pillar I: Mandatory Public Pension Insurance
- Pillar II: Voluntary Occupational Pensions
- Pillar III: Voluntary Individual Pensions

The mandatory public pension insurance covers most of private sector employees (Pillar I). Civil servants have their own pension system which will gradually converge towards the public pension insurance system. The self-employed belong to various separate mandatory systems. The public pension system works as a PAYG scheme (Pay-As-You-Go) and was founded in 1945. The system covers 4.1 million people or 97% of the gainfully employed (2020). In 2020, all employees – except civil servants – were subject to a contribution payment of 22.8% of their income before taxes, with contributions shared between the employer (12.55%) and the employee (10.25%). Civil servants pay a contribution of 12.55% of their gross wage and the self-employed pay 18.5% of their profit before taxes into the pension system. The Austrian pension system will be fully harmonized across all insured persons by 2050. The public pension system has an income ceiling (maximum contribution basis) up to which contributions apply, income above this level is exempted from contributions but the ceiling also limits the pension benefit level. In 2020 the ceiling was between 5,370 € and 6,265 €, depending on the employment status. About 8% of the gainfully employed achieve an income above these ceilings. The theoretical gross pension replacement rate at the median income level for persons entering the labour market at age 22 corresponds to 76.5% of the average lifetime income while the net pension replacement rate is at 89.9% (OECD, 2019). Both theoretical replacement rates will be reached after 43 years of uninterrupted employment with earnings always at the average income level. Effective replacement rates are likely to be lower because careers are not continuous and life-time income profiles are not flat. Due to pension reforms gradually taking effect, the effective replacement rates are expected to fall for future pensioners. Nevertheless, high replacement rates for many of the gainfully employed limit the demand for occupational as well as private pension plans.

Accompanying a series of public pension reforms between 2003 and 2006 which implemented reductions in the expected benefit level, the Austrian government introduced the premium subsidised pension plan to make private old-age provision more attractive. This scheme became very popular until 2012 with 1.64 million contracts signed but it lost attraction after the government halved the premium subsidy in 2012 (to 4.25% of the premium paid) and after investment yields collapsed during the financial crisis in 2007. By 2020, only 1.1 million contracts were still active.

Introductory Table – Austrian Pension System overview

Pillar I	Pillar II	Pillar III
Mandatory Public Pension Insurance	Voluntary Occupational Pensions	Voluntary Personal Pensions
Practically all gainfully employed persons are subject to pension contributions of 22.8% of income before taxes	Employers can establish an occupational pension system of their preference	Supplement particularly for high earners
Means tested minimum pension	Direct commitments, pension funds, occupational life insurance. About 50% of employees are entitled	Life insurance with a coverage of about 50% of private households. The state-aided old-age insurance features 1.29 mil. contracts
Pension level depends on lifetime income (various kinds of supplementary insurance months are accounted, cf. motherhood, unemployment, military service		
Mandatory	Voluntary	Voluntary
PAYG	DB or DC	DC
Quick facts		
Statutory retirement age is 60 (women) and 65 (men)		
The average effective age of retirement was 59,5 for women and 61.6 for men (2020, including invalidity pensions and early retirement schemes but excluding rehabilitation benefits)		
At 89.9% the theoretical net replacement rate in 2018 was considerably higher than the OECD average (8.6%).		
The mandatory public pension system covers 4.07 mil. insured persons and pays pensions to 2.44 mil. Beneficiaries	The voluntary occupational pension system covers 1.7 mil. entitled persons and pays pensions to 0.25 mil. beneficiaries[1]	Voluntary personal pension plans cover 3.14 mil. entitled persons and pays pensions to 0.32 mil. beneficiaries
The average pensioneer receives 88% of his retirement income from public pensions	The average pensioneer receives 5% of his retirement income from an occupational pension	The average pensioneer receives 7% of his retirement income from a personal pension
S: BETTER FINANCE own composition.		

The annualised nominal, net and real net rates of returns for the Austrian retirement provision vehicles are summarised in the table below based on different holding periods: 1 year, 3 years, 7 years, 10 years and since inception (2002).

Summary Table Austria. Annualised Performance for Various Holding Periods (in %)

	Holding period	Nominal return before charges, inflation, and tax	Nominal return after charges, before inflation and tax	Real return after charges and inflation before tax
Pension funds	In years	In %		
	1	2.55	2.31	1.31
	3	2.80	2.61	1.11
	5	3.73	3.55	1.87
	7	4.10	3.94	2.47
	10	3.90	3.71	1.84
	Since 2002	3.49	3.25	1.37
Pension insurance				
	1	3.20	2.82	1.82
	3	3.21	2.84	1.34
	5	3.37	3.00	1.32
	7	3.53	3.17	1.70
	10	3.71	3.36	1.50
	Since 2002	4.29	3.93	2.05
S: Compare Tables AT4 and AT5. Annualised performance corresponds to geometric mean over the holding period.				

Occupational and voluntary personal pension vehicles

Private pensions are divided into voluntary occupational and voluntary personal pensions. About 6.5% of today's retirees receive regular benefits from an occupational or personal pension. This figure is made up by 4% of retirees receiving benefits from an occupational pension and 2.5% of retirees receiving annuities from a personal pension plan (Pekanov – Url, 2017). Given today's numbers of active plan members these shares can be expected to increase substantially over time.

Occupational pension vehicles (Pillar II)

At the beginning of 2003, the system of severance payments has been replaced by mandatory contributions towards occupational severance and retirement funds (Betriebliche Vorsorgekassen). While the old severance payment regulations continue to apply to existing employment relations, employment contracts established after the end of 2002 feature mandatory contributions of 1.53% of gross wages to these funds. The main characteristics of severance payments have been transferred to the new system, i.e., in case of dismissal the fund will pay out the accumulated amount. Beneficiaries, however, may voluntarily opt to use this instrument as a tax-preferred vehicle for old-age provision. Less than one percent of the beneficiaries use this option. We therefore do not count occupational severance and retirement funds as pension vehicles in the following.

Voluntary Occupational Pensions (Pillar III)

Occupational pension plans are typically provided on a voluntary basis by firms, only a few collective bargaining agreements include an obligation for member firms of the respective sector. Employers can also choose the coverage and the vehicle of their pension plan. There are three types of occupational retirement schemes:

- direct commitments funded by book reserves,
- pension funds and
- several types of life insurance schemes.

Each of these schemes has advantages and drawbacks. While direct commitments create a stronger link between employees and the firm, the future pension payments are subject to bankruptcy risk and, during the accumulation phase, the firm must either manage the assets backing the book reserves or seek some sort of reinsurance. External vehicles like pension funds or life insurance contracts imply less bonding because the vesting period is much shorter, but they also outsource the effort of investment choice and annuity payments to a financial intermediary. The design of a voluntary pension plan is at the full discretion of the employer, but usually an arrangement with the firm's workers council is necessary.

Over the last decades many firms switched from direct commitment schemes to pension funds. On the one hand, this was a strategy to reduce the cost of existing defined benefit pension schemes by switching to defined contribution plans, and on the other hand, these efforts shortened balanced sheets and cleaned them from items unknown to international investors.

Direct commitments ("Direktzusage")

Direct commitments are pension promises by the employer to the employee that are administrated within a firm. These types of arrangements dominated until the 1980s, when several large bankruptcies or near bankruptcies revealed their fragility. The main two characteristics of this arrangement are direct administration of the pension obligation within the firm and a defined benefit type of the pension plan: the pension level is related to the wage level of employees. The plan administration comprises the computation of individual pension obligations and the respective book reserves, their coverage by invested assets, as well as the annuity payment. Nevertheless, many activities can be outsourced to actuaries, investment funds, and insurance companies. Pension claims based on direct commitments are not subject to any reinsurance requirement, but the reserve funds dedicated to back book reserves are protected from creditors. Besides outsourcing, the Insolvenz-Entgelt-Fonds provides a further safeguard for entitled employees and pensioners to bankruptcy risk. This fund is a public fund covering wage entitlements by employees in case of bankruptcy. Currently, the Insolvenz-Entgelt-Fonds covers a maximum of 2 years of benefit payments or accrued entitlements (Insolvenz-Entgeltsicherungsgesetz § 3d). Due to their

voluntary character and a lack of supervision the incidence of direct commitments is hardly documented.

Pensions funds ("Pensionskassen")

Pension funds are specialised financial intermediaries providing only services related to occupational pensions, i.e., they collect contributions, manage individual accounts, invest the accumulated capital, and they pay out an annuity to beneficiaries. Pension funds were introduced in 1990 with the Occupational Pension Law and the Pension Fund Law (Betriebspensions- und Pensionskassengesetz) which established a general legal basis for occupational pension schemes including pension funds. These laws facilitated the outsourcing of asset management and accounts administration from direct commitment systems into pension funds. This made individual pension entitlements transferable between companies, it made possible additional contributions by employees, but it also enabled firms to switch from defined benefit to defined contribution pension plans. By now, most pension plans are of the defined contribution type and beneficiaries are directly exposed to investment risk as well as to changes in mortality risk. For example, plan members whose entitlement was converted from a direct commitment into an entitlement vis-a-vis a pension fund still suffer from investment losses shortly after transferring the assets into pension funds around the year 2000 because the imputed interest rates used at that time were overly optimistic (Url, 2003B).

Pension funds may be either multi-employer pension funds, i. e. they are open to other firms, or alternatively, they may be firm specific pension funds (single-employer pension funds) administrating the pension plan for a single firm or a holding group. Over the last couple of years, many firm specific pension funds have been merged into multi-employer pension funds building independent risk and investment pools like UCITS. Pension funds are subject to supervision by the Austrian Financial Market Authority, and they feature investment advisory boards, where representatives of workers and employers can advance their opinion on the investment strategy. Nevertheless, the results from asset-liability management strategies dominate the portfolio choice of pension funds.

Pension funds offer primarily annuities because lump-sum payments are restricted to accounts with very small, accumulated assets. Pension funds have to offer accounts with guaranteed long-term yields on investment linked to the market yield of Austrian government bonds, although this option lost attractiveness due to the high costs of guarantees and a substantial weakening of the guaranteed type. The guarantee is backed by the own capital of the pension fund and by a minimum return reserve fund financed by contributions from beneficiaries (Mindestertragsrücklage). In case of bankruptcy of the pension fund, all entitlements are protected by separate ownership of the assets associated to each account (Deckungsstock).

Direct insurance

Firms can alternatively sign a contract with a life insurance company. This contract is either subject to the regulation covering occupational pensions (Betriebliche Kollektivversicherung) or it is designed as a life insurance policy and is subject to the regulation for life insurance products. Insurance companies also underwrite risks embedded in direct commitments. Direct insurance of occupational pension plans implies that the sponsoring firm will pay contributions into a life insurance contract with employees as beneficiaries. In this case, the firm outsources the management of personal accounts and assets, as well as the annuity payments to an insurance company.

The number of working and retired persons holding a life insurance policy is almost double the number of members in occupational pension plans. Despite high public pension levels and the voluntary character of occupational pensions, their use is comparatively widespread in Austria. There are two reasons for this: (1) the public sector offers an occupational pension scheme, and (2) occupational life insurance policies benefit from a tax loophole. Contributions up to € 300 annually (§ 3/1/15 EStG) are tax exempt and as a result almost 645,000 contracts have been signed until 2020. Given the small pension wealth accumulated in these accounts one cannot expect reasonable annuity payments resulting from this vehicle.

The Betriebliche Kollektivversicherung, on the other hand, provides occupational pensions with a favourable tax treatment up to 10% of individual gross wages. It is regulated according to the Occupational Pension Law, but this vehicle allows for more substantial long-term guarantees usually offered by classic life insurance contracts. Insurers also freeze mortality tables at the date of joining the pension plan.

Table AT1. Entitlements to active occupational pensions (in million persons)

	Direct commitments	Pension funds	Life insurance	Total
2001	-	0.32	0.12	-
2002	0.13	0.34	0.12	0.59
2003	-	0.37	0.22	-
2004	0.14	0.4	0.29	0.82
2005	-	0.43	-0.5	-
2006	-	0.48	0.33	-
2007	0.13	0.49	0.38	1.00
2008	-	0.51	0.4	-
2009	-	0.74	0.41	-
2010	0.14	0.76	0.44	1.34
2011	-	0.79	0.5	-
2012	-	0.82	0.55	-
2013	-	0.84	0.62	-
2014	-	0.86	0.71	-
2015	0.14	0.88	0.78	1.80
2016	-	0.90	0.74	-
2017	-	0.92	0.75	-
2018	-	0.95	0.76	-
2019	-	0.98	0.78	-
2020	-	1.00	0.78	-

S: Fachverband der Pensionskassen, Austrian Insurance Association, Url (2003A), Url (2009), Url (2012), Pekanov - Url (2017). - Includes working and retired beneficiaries.

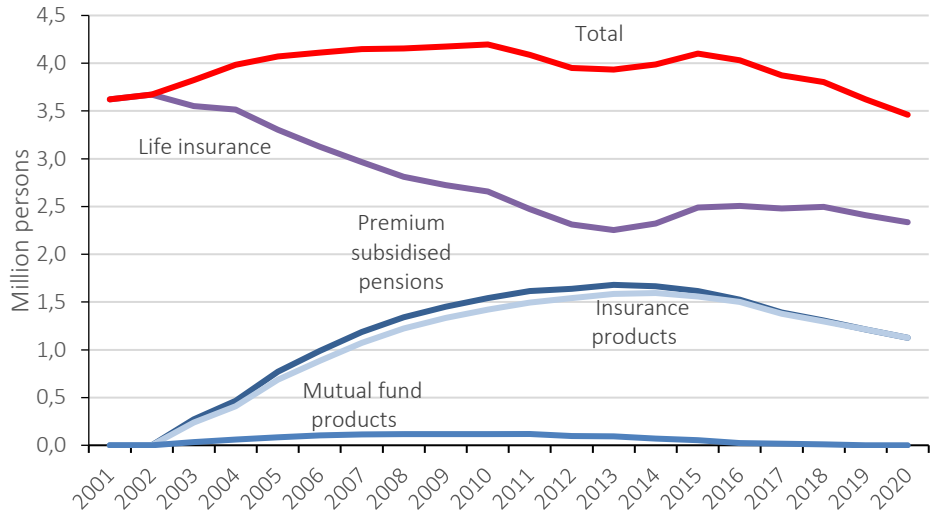
Life insurance and pension insurance contracts

Life insurance policies are signed by private persons who pay contributions over an agreed period into their own pension account. The insurance company administrates the account and manages the accumulated assets. At the end of the contribution period, either a lump-sum amount is paid out to the insured person or alternatively the insurer converts the accumulated capital into an annuity.

There are two types of insurance contracts available which can be distinguished according to who is the bearer of investment risks. Insured persons with a unit-linked policy assume the investment risk and must choose their investment portfolio. Classic life insurance products, on the other hand, offer a minimum return guarantee but investment decisions are delegated to the insurance company. The maximum possible guaranteed rate of return is regulated by the Austrian supervisory authority; currently this rate is fixed at 0.5% per annum (since 1.1.2017; BGBl. II Nr. 266/2016). Investment returns in excess of the guaranteed level are distributed across the insured as variable profit participation.

The major public pension reforms between 2003 and 2006 left many private employees, employers, and civil servants with a lower expected public pension payment. As a compensation the Austrian government introduced the premium subsidised pension plan (Prämienbegünstigte Zukunftsvorsorge). Originally the premium was fixed at 9.5% of the annual contribution, but in 2012, fiscal consolidation measures resulted in a halving of the subsidy rate; it is currently fixed at 4.25%. Additionally, the yield on investment is fully tax exempt. Premium subsidised pension plans have a minimum contract length of 10 years. About one third of the contracts feature a length of more than 30 years and two thirds of the contracts have a minimum duration of 20 years. The portfolio choice for the assets of subsidised pension plans is restricted by law. A minimum share of the assets must be held in equities noted on underdeveloped stock exchanges. This measure was targeted to foster the Vienna stock exchange, but it resulted in highly concentrated investment risk. The strict regulation of investments has been weakened over the past years allowing for example life cycle portfolios with a reduction in the equity exposure when the retirement of entitled persons comes closer.

Chart AT1. Entitlements to active personal pensions



S: Austrian Insurance Association (AIA), WIFO. - Includes contributing and retired policy holders. The AIA adjusted its definitions of insurance products from 2020 onwards. This required a new approach to estimate the number of entitlements to active personal pension plans. Consequently, the numbers deviate from previous publications.

The halving of the subsidy premium and considerably negative returns on stock exchanges during the year 2008 reduced the interest in this new pension saving vehicle. The number of contracts is falling and contracts with the shortest possible duration of ten years have been mostly terminated with a lump-sum payment. This triggers an exit from the annuity phase with a mandatory repayment of the subsidy.

Charges

Information on all types of charges for occupational and private pension products are hard to obtain. Within direct commitment systems, pensions are of the defined benefit type and firms cover all expenses. The remaining vehicles for occupational pensions are subject to some degree of competition between financial intermediaries, although most pension funds are owned by alliances of banks and insurance companies. Because occupational pension plans are always group products, i. e. the individual entitled person has only limited or even no choice during the savings and annuity phases, these products have a cost advantage over individual pension plans. Large firms also receive quantity discounts or customised tariffs with lower administrative charges. In Table AT2 administrative charges and investment expenses for pension funds are expressed as a percentage of the funds' total invested assets. There are no data published on acquisition costs. For the year 2019, a substantial reduction in charges has been recorded by the OECD.

Table AT2. Operating expenses as % of total assets for pension funds

	Administrative charges	Investment expenses
2003	0.23	0.18
2004	0.23	0.12
2005	0.38	0.14
2006	0.39	0.15
2007	0.26	0.16
2008	0.32	0.16
2009	0.35	0.17
2010	0.28	0.17
2011	-	-
2012	-	-
2013	0.30	0.16
2014	0.00	0.17
2015	0.18	0.18
2016	0.19	0.18
2017	0.19	0.18
2018	0.20	0.19
2019	0.11	0.12

S: OECD Pension indicators.

Table AT3. Life Insurance expense ratios

	Acquisition charges	Adminstrative charges
	In % of total premiums	In % of mean capital investments
2005	11.28	0.43
2006	11.49	0.38
2007	11.10	0.38
2008	10.66	0.38
2009	9.97	0.37
2010	10.75	0.36
2011	11.01	0.39
2012	11.68	0.33
2013	11.37	0.32
2014	10.67	0.33
2015	10.80	0.33
2016	11.49	0.35
2017	10.44	0.36
2018	10.27	0.37
2019	10.57	0.37
2020	10.85	0.38

S: Financial Market Authority, Austrian Insurance Association.

The costs of acquisition and administration for life insurance products are published by the Financial Market Authority. Acquisition costs amount to roughly one tenth of total premium income. Since 1 January 2007 the Insurance Contract Law includes a provision that acquisition fees have to be distributed over at least the first five years of the contract length. Before 2017 it was possible to charge the full acquisition fee in the first year, making the cancellation of a life insurance contract extremely costly. Administration costs are presented as a ratio to the mean of the invested assets.

Since 1 January 2017, every consumer receives a short product information (Key Information Document) before signing an insurance contract. These information sheets are standardised and contain details of individual charges and investment fees allowing a better comparison of offers.

Taxation

The taxation of old-age provision varies over different vehicles and depends mainly on the history associated to the vehicle. For example, the taxation of occupational pensions is very much oriented towards the treatment of direct commitments, which were the first vehicle used for occupational pensions. Direct commitments work like a deferred compensation and therefore they are only taxed in the year of the payment. This corresponds to a system with tax-exempt contributions, tax-

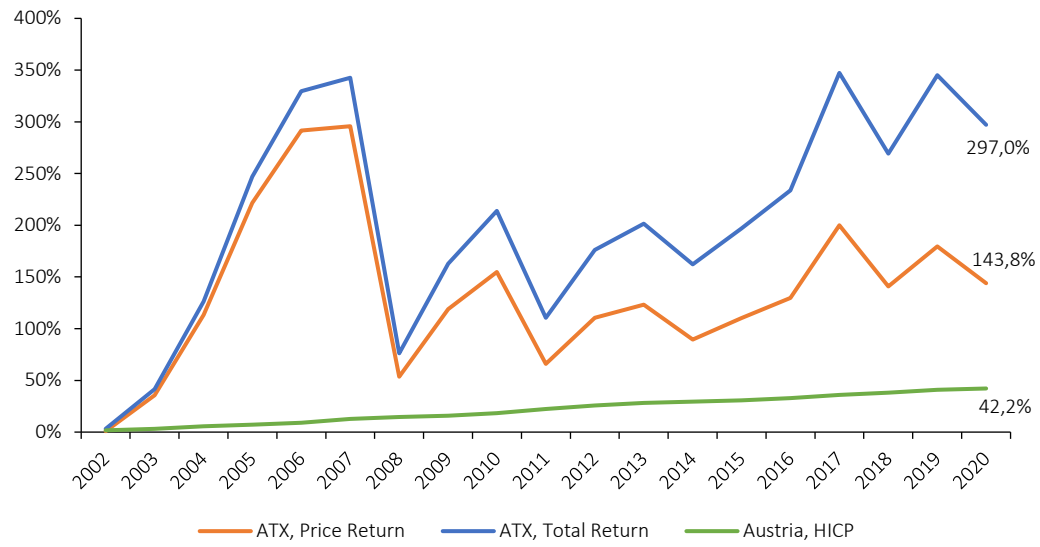
exempt capital accumulation, and (income) taxed benefits (EET system). This philosophy carries over to contributions paid by the employer into a pension fund or a group insurance product following the pension fund regulation (Betriebliche Kollektivversicherung). Contributions to pension funds and group insurance products (Betriebliche Kollektivversicherung) are subject to a reduced insurance tax of 2.5%. Contributions by employees are fully taxed but the resulting annuity is subject to reduced income taxation.

Contributions to classic life insurance products are not tax deductible and are subject to an insurance tax of 4%. During the capital accumulation phase all investment returns are tax exempt, and the taxation of benefits depends on the pay-out mode. Lump-sum payments are tax-free while annuities are subject to (reduced) income taxation. Additionally, premium subsidised products carry a premium based on the contribution, the capital accumulation phase is tax-exempt, and benefits are also tax free if they are converted into an annuity. Pekanov – Url (2017) provide a survey of the tax treatment of all vehicles for old-age provision using the present value approach as suggested by the OECD (2015, 2016). This approach compares the tax treatment of each vehicle to the tax treatment of a standard savings account. Expressed as a ratio to the present value of contributions, the tax advantage of employer payments into pension funds amount to 20%, i. e. the value of the tax subsidy corresponds to one fifth of life-time contributions. The lowest tax advantage results for life insurance products with an annuity payment. In this case, the tax subsidy makes up for 7% of life-time contributions. The maximum tax preference is associated with occupational life insurance policies subject to § 3/1/15 EStG. In this case, the subsidy amounts to 60% of life-time contributions, however, payments into this vehicle are restricted to a negligible € 300 per year.

Austrian Capital market returns

The performance of the Vienna stock exchange is shown in Chart AT2, where we distinguish between the price development of shares and the total return to equity investments in Austria including reinvested dividend payments. It is not surprising to observe that both indices have a positive long-term real return and are well above the cumulated inflation rate in 2020. Because the Austrian equity market is small, financial intermediaries spread their equity investment throughout Europe and the rest of the world. Therefore, equity returns of the Vienna stock exchange provide no guidance for the investment performance of Austrian pension products, except premium subsidised pension plans carrying an obligation to invest in under-developed equity markets.

Chart AT2. Cumulated Austrian Equity Market Performance, 2002-2020



S: Macrobond, Statistik Austria. Year-end values.

Pension Returns

Due to the defined benefit character of pensions derived from direct commitments and because accumulated assets for direct commitments have the narrow purpose of protecting individual pension claims in case of a firm bankruptcy, we do not compute pension returns for this vehicle. Furthermore, the asset class in which firms can invest are restricted to government bonds issued by OECD member countries.

The way of taxing contributions, investment returns, and pension payments varies according to the vehicle chosen, the party paying the contribution, i. e. employers or employees, and the personal income tax break of the retiree (cf. chapter on taxation). For this reason, we cannot compute a general after-tax return for Austria. Instead, we present the:

- nominal returns before charges, inflation, and tax,
- nominal returns after charges but before inflation and tax
- real returns after charges and inflation but before tax

for the two most important vehicles, i. e. pension funds and classic life insurance policies. The returns on classic life insurance policies are also representative for occupational pension plans using life insurance products under the occupational pension law (Betriebliche Kollektivversicherung).

Pension funds

Table AT4 shows the returns on assets held by pension funds. In the case of a defined benefit pension plan, investment returns are important for the sponsoring firm because if the return falls short of the imputed interest rate used for the computation of the expected pension level, the firm will have to provide additional contributions covering the shortfall. On the other hand, if a defined contribution pension plan has been established, the beneficiaries bear the risk of a shortfall in the realised return on investment, and consequently the realised pension level falls below its expected value.

Information on the performance of pension funds is published continuously by an independent third party, the Oesterreichische Kontrollbank[53], following a standardised procedure. The returns are available for all pension funds and separately for multi- and single-employer pension funds. The long-term performance of firm specific pension funds is about 0.5 percentage points higher as compared to multi-employer pension funds. The difference results probably from a less risk-oriented investment style followed by multi-employer pension funds, due to the wider usage of return guarantees in multi-employer pension funds. Nominal investment returns after charges but before inflation and taxes result from the subtraction of administrative charges of pension funds as presented in the chapter on charges. Real returns are computed by subtracting the HICP-inflation rate for Austria.

The Financial Market Authority publishes the asset allocation of pension funds as of year-end (FMA, 2021). The portfolio in 2020 was dominated by debt securities (37.2%) and equity investments (36.4%). The good performance of equity markets in the second half of 2020 let to continued low funds held in bank balances (7.9%). Real estate investments accounted for 5.5% of assets while the remainder was mixed throughout smaller asset categories (Chart AT3, upper panel). Given the strong exposure to equity, we find several years with negative returns, i. e. investment losses. Specifically, during the years after the bursting of the dotcom bubble (2000), the international financial market crisis (2007), and the public debt crisis in the euro area (2011), but also in 2018, when both bond and equity markets turned downwards. Nevertheless, pension funds achieved between 2002 and 2020 an annual average net real yield on investment of 1.4%. This corresponds to an average excess return over Austrian government bonds of 1.5%.

[53] https://www.oekb.at/kapitalmarkt-services/unser-datenangebot/veranlagungsentwicklung-der-pensionskassen.html.

Table AT4. Pension funds' average annual rate of investment returns (in %)

	Nominal return before charges, inflation, and tax	Nominal return after charges, before inflation and tax	Real return after charges and inflation before tax
2002	-6.31	-6.56	-8.26
2003	7.60	7.37	6.07
2004	7.34	7.11	4.61
2005	11.37	10.99	9.39
2006	5.55	5.16	3.56
2007	1.95	1.69	-1.81
2008	-12.93	-13.25	-14.75
2009	9.00	8.65	7.60
2010	6.45	6.17	3.97
2011	-2.96	-3.19	-6.59
2012	8.40	8.17	5.27
2013	5.14	4.84	2.84
2014	7.82	7.82	7.02
2015	2.32	2.14	1.04
2016	4.18	3.99	2.39
2017	6.13	5.94	3.64
2018	-5.14	-5.34	-7.04
2019	11.66	11.56	9.76
2020	2.55	2.31	1.31
Annual	3.49	3.25	1.37

S: Fachverband Pensionskassen, OECD Pension indicators, Statistik Austria. - Charges estimated by mean value for the years 2002, 2011, 2012, and 2020, cf. Table AT2. Annual average corresponds to geometric mean.

Life insurance contracts

The return on investment in the classic life insurance industry is regularly computed by the Austrian Institute of Economic Research (WIFO). This computation excludes unit-linked contracts because the investment risk is borne by the insured and returns are usually retained within mutual funds and reinvested. The calculation of investment returns is based on investment revenues of the insurance industry and the related stock of invested assets in classic life insurance as provided by the Financial Market Authority. The method uses the mean amount of invested capital over the year as the basis for the computation and is documented in Url (1996). The charges used to correct the yield for administrative expenses are based on Table AT3. Real returns result from subtracting the HICP-inflation rate for Austria from the nominal return.

Obviously, nominal gross returns in the insurance industry are less volatile than in the pension fund industry (Table AT5). The main reason for this divergence is the more conservative asset allocation of insurance companies, i.e., they invest more heavily in bonds (46%) and their collective investments of 19% of the portfolio are also concentrated in bonds-oriented investment funds, creating a high exposure to fixed interest securities (FMA, 2021). Another important asset class in the insurance industry are shareholdings in related undertakings (19%), which are usually not listed at a stock exchange. Property investments sum up to 8% of the assets, while equity holdings form

just 1% of the portfolio (Chart AT3, lower panel). This gives insurance companies small exposure to volatile asset categories and consequently their investment performance is steadier. The resulting average net real rate of return of 2.1% was thus mainly due to the avoidance of losses after the year 2000. The insurance industry achieved an average excess return over Austrian government bonds (benchmark) of 2.3% over this period, and their investment return was above the one delivered by pension funds.

The particular way of distributing investment returns in classic insurance policies makes their performance even more steady. Insurance companies separate their investment income into two parts. The first part serves to cover underwritten minimum return guarantees and it is immediately booked towards the individual account. Any excess return will be distributed over a couple of years through the build-up and reduction of profit reserves. By transferring accumulated profit reserves smoothly into individual accounts, insurance companies make the individual accrual of investments returns less dependent on current capital market developments although asset values are marked to market.

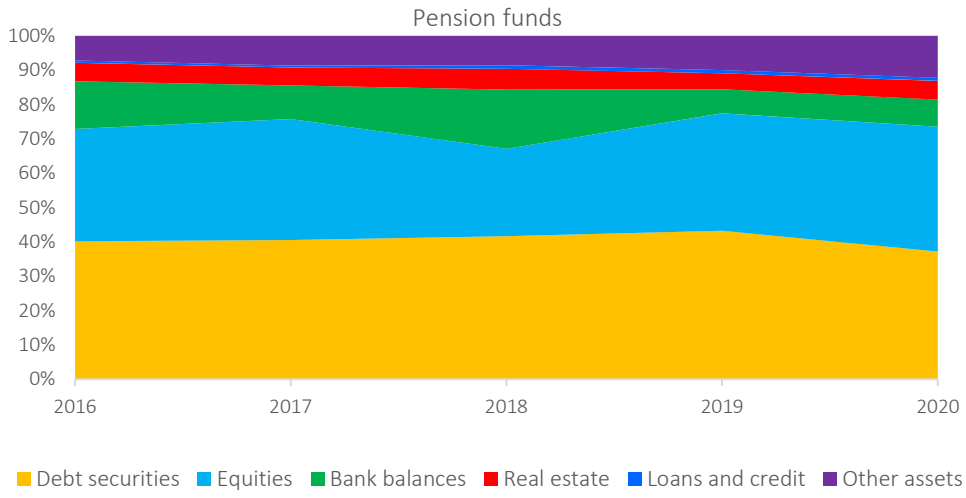
Yields on fixed interest securities from highly rated debtors are low or even negative since a couple of years. This environment forces insurance companies to replace maturing securities featuring high yields with new lower yielding securities. In a few years, insurance companies will have completely replaced their stock of high-yield-high-grade securities and accordingly their average yields will continue to be low.

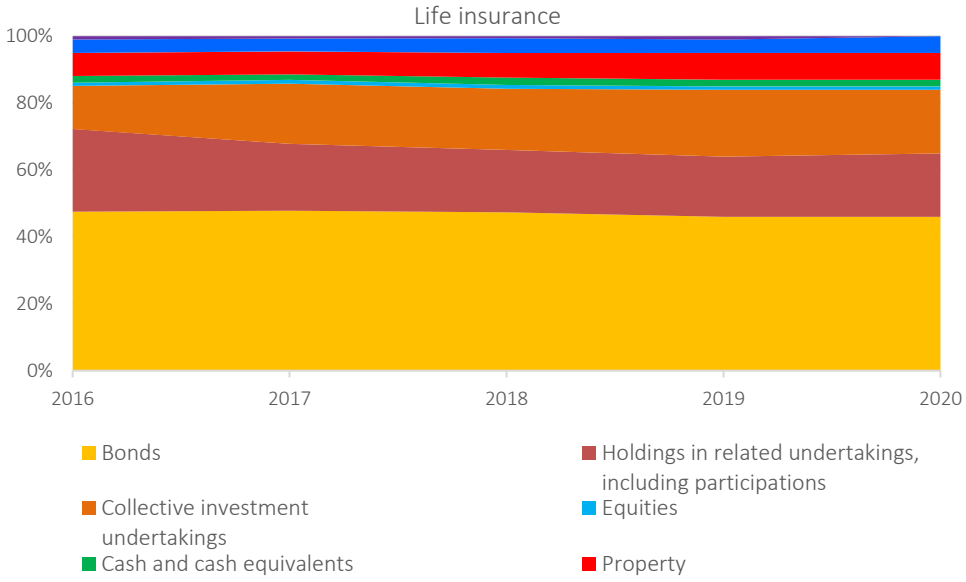
Table AT5. Pension insurances' average annual rate of investment returns (in %)

	Nominal return	Nominal return after	Real return after
2002	3.96	3.60	1.90
2003	5.60	5.24	3.94
2004	5.93	5.57	3.07
2005	6.32	5.88	4.28
2006	5.86	5.48	3.88
2007	5.18	4.80	1.30
2008	3.35	2.97	1.47
2009	3.80	3.43	2.37
2010	4.47	4.11	1.91
2011	3.70	3.31	-0.09
2012	4.42	4.09	1.19
2013	4.31	3.99	1.99
2014	3.90	3.58	2.78
2015	3.94	3.61	2.51
2016	3.73	3.38	1.78
2017	3.49	3.14	0.84
2018	3.10	2.73	1.03
2019	3.34	2.97	1.17
2020	3.20	2.82	1.82
Annual average	4.29	3.93	2.05

S: Financial Market Authority, Statistik Austria. – Annual average corresponds to geometric mean.

Chart AT3. Asset allocation of pension funds and life insurance 2016 to 2020





S: Financial Market Authority, Statistik Austria.

Conclusions

The performance of pension funds in real terms has been positive over the whole period from 2002-2020, with an annualised average real return of 1.4% after service charges and before taxation. Especially the difficult years after 2000, in 2008, 2011, and recently 2018 dampened the investment performance considerably. The consequences are either additional payments by sponsoring firms (defined benefit plans) or reduced expected and realised pension levels (defined contribution plans). A mediocre investment performance will be more intensively felt in risk and investment pools with a high imputed interest rate used for the computation of the expected pension level. For example, plan members whose entitlement was transferred from a direct commitment to a pension fund around the year 2000 still suffer from investment losses after the dotcom bubble because overly optimistic imputed interest rates had been used at that time.

The average real rate of return on investments by insurance companies benefits from a conservative asset allocation with strong government bonds holdings. This allowed insurers to avoid large losses in years with a financial market crisis and reach an average real rate of return of 2.1% annually after service charges and before taxation. Declining nominal interest rates and higher inflation increased the pressure on net real rates of return after 2015. Insurance companies benefit from the long duration of their investment portfolio, i. e. they still own bonds featuring high interest coupons, but these bonds will expire during the next few years creating a potential for low yield reinvestments. Consequently, demand for classic life insurance by individual households is shrinking and even premium subsidised pension insurance is in low demand now because subsidies were halved in 2012 and investment losses, due to the concentrated investment in small and under-developed markets, affected this vehicle disproportionally.

The opportunity to offer defined contribution plans has certainly boosted the spread of occupational pensions in Austria. Within pension funds around three quarters of the entitlements are defined contributions plans, while occupational pensions based on insurance contracts are all of the defined contribution type.

The COVID-19 crisis left a significant mark on Austria's economy. First estimates for the year 2020 show a decline in real output by 6.3% (YoY) and unemployment numbers reaching record levels of 410.000 persons, up 110.000 persons over the previous year's average. Although redundancies were concentrated in sectors with traditionally low prevalence of occupational pension plans (like accommodation, transport, and entertainment) contributions to occupational pensions throughout all vehicles took the expected hit in 2020 and declined by 23% (YoY); job displacements and the widespread use of short-time work lowered the wage bill. Given the strong recovery starting in May 2021, the wage bill will surpass its 2019 level by the end of 2021. Nevertheless, given high uncertainty about the infectiousness of Corona virus mutations. the setup of occupational pension plans by firms not yet offering them is unlikely in 2021. As of mid-2021, the build-up of pension

funds will benefit from sharply increased equity valuations throughout Europe and the USA, partly compensating for the bleak prospects for yields on fixed income securities.

Note: The addition of the Austrian Country Case was possible also thanks to our partners from Pekabe (the Austrian Association for the Protection of Pension Fund Investors), who reviewed the Country Case and co-funded it with BETTER FINANCE.

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