

**ANNEX - List of pension schemes used for the theoretical replacement rates**

Member State	Pension schemes (Country specific)	Covered by TRR	Funding source	Scheme-specific assumptions								
				Contribution rates			Valorisation of pensionable earnings		Indexation of pensions in payment			
				2022	2062		Assumptions used for TRR projections	Legislated/ ad-hoc	Assumptions used for TRR projections	Leg./ ad-hoc	Assumptions used for TRR projections	Leg./ ad-hoc
					Assumptions used for TRR projections	Legislated/ ad-hoc						
BE	<b>Public pensions</b>	Yes – employees, private sector	Mixed	16.36 <sup>1</sup>	16.36	Leg.	Cf. WGA		CPI+.5% (+1% for minimum pensions)			
	<b>Occupational pensions</b>	Yes	Contributions	4.25	4.25	Ad-hoc	Cf. contributions and assumed return-on-investment		Constant prices			
	<b>Private pensions</b>	No										
BG	<b>Public pensions:</b> Earnings-related PAYG, DB, administrated by National Social Security Institute	Yes	Mixed	19.8% for persons born before 1960 (EE – 8.78%; ER – 11.02%); 14.8% for persons born after 1959 (EE – 6.58%; ER – 8.22%)	19.8% for persons born before 1960 (EE – 8.78%; ER – 11.02%); 14.8% for persons born after 1959 (EE – 6.58%; ER – 8.22%)	Leg.	No valorisation of pensionable earnings. Instead, in the pension formula an individual coefficient is applied which is the ratio of an individual's average insurable income and the national average insurable income	Leg.	50% CPI + 50% wages	Leg.		
	Earnings-related, funded tier of statutory scheme, DC – Universal Pension Funds (UPF)	Yes	Contributions	5% for persons born after 1959 (EE – 2.2%; ER – 2.8%)	5% for persons born after 1959 (EE – 2.2%; ER – 2.8%)	Leg.						

<sup>1</sup> Indicative; this is the sum of the former rates of social contributions for the branch pensions for the employee (7.5%) and employers (8.86%), now supplanted by “global financing of social security”.



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					Assumptions used for TRR projections	Legislated/ad-hoc						
	<b>Private pensions</b>	Yes	Contributions	4% employees	4% employees	Leg.	Market rate of return	Ad-hoc	Market rate of return	Leg.		
EE	<b>Public pensions:</b> state pension (1st pillar)	Yes	Contributions, state budget			Leg.	20% CPI + 80% social tax revenues growth	Leg.	20% CPI + 80% social tax revenues growth	Leg.		
	Mandatory supplementary pension (2nd pillar)	Yes	Contributions	The employee pays 2% from the gross wage and the employer another 4% (as part of the 20% pension insurance contribution)	The employee pays 2% from the gross wage and the employer another 4% (as part of the 20% pension insurance contribution)	Leg.	Market rate of return	Ad-hoc	Market rate of return	Ad-hoc		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b> - voluntary funded pension (3rd pillar)	No	Defined contributions	The sums of the contributions made to the supplementary funded pension can be determined by the person and the amount of the contributions can be changed at any time								
IE	<b>Public pensions</b>	Yes	Contributions and taxes	Total: 14.05% Employee: 4% Employer: 10.05%	Total: 14.05% Employee: 4% Employer: 10.05%	Leg.	Wage growth	Ad-hoc	Wages	Ad-hoc		
	<b>Occupational pensions</b>	Yes	Contributions (and State)	Total: 10% Employee: 5% Employer: 5%	Total: 14% Employee: 6% Employer: 6% State: 2%	Leg.	Market rate of return	Ad-hoc	Prices	Ad-hoc		

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					Assumptions used for TRR projections	Legislated/ad-hoc						
			from 2024)		(Auto-enrolment scheme rates are phased in from 2024-2033)							
	<b>Private pensions</b>	No										
<b>EL</b>	<b>Public Main Pensions (DB)</b>	Yes	Contributions <sup>2</sup>	20% (13.33% employer & 6.67% employee)	20% (13.33% employer & 6.67% employee)	Leg.	Up to 2024 by CPI, from 2025 onwards by wages.	Leg.	min (50% GDP growth +50% CPI, CPI); CPI is applied for the TRR calculation	Leg.		
	<b>Public Auxiliary Pensions (Pro rata DB &amp; NDC for entrants up to 2021, DC for entrants from 2022 onwards)</b>	Yes	Contributions <sup>3</sup>	Up to 5/2016:6% (3.0% employer & 3.0% employee) 6/2016- 5/2019: 7% (3.5% employer & 3.5% employee), 6/2019-5/2022 6.5% (3.25% employer & 3.25%).	From 1/6/2022 onwards 6% (3.0% employer & 3.0% employee)	Leg.	DB component: up to 2024 by CPI, from 2025 onwards by wages. NDC component: based on contributions paid, adjusted with GDP growth. DC: rate of return	Leg. <sup>4</sup>	CPI	Leg. <sup>5</sup>		
	<b>Occupational Pensions</b>	No										
	<b>Private Pensions</b>	No										
<b>ES</b>	<b>Public pensions (General Regime)</b>	Yes	Contributions	Not relevant, since it is DB. To obtain net TRR, an employee	It incorporates the legislative changes approved to date and have	Leg.	CPI indexation up to two years before retirement. Indexed	Leg.	CPI indexation for earnings. Indexed	Ad-hoc <sup>7</sup>		

<sup>2</sup> National pension is financed by state budget.

<sup>3</sup> State covers the depreciation of NDC's system resources from insurance contributions, due to the introduction of the DC system from 2022 onwards.

<sup>4</sup> Similar to legislated.

<sup>5</sup> Similar to legislated.

<sup>7</sup> According to the law 23/2013, the indexation system changed in January 2014. Previously the CPI indexation was used; now a new Pensions Adjustment Index (IRP) is applied, which is calculated according to different factors: number of contributory pensions, the variation of the average pension amount and the balance between revenues and expenses of the social security system. The index value will be in a range with a minimum of 0.25% and a maximum of the CPI +0.50%. This new IRP has been applicable since 2014.

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					Assumptions used for TRR projections	Legislated/ad-hoc						
				contribution of 6.35% is considered	an impact on the calculation of pension rates			according to ISG assumptions		according to ISG AWG assumptions <sup>6</sup>		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
FR	<b>Public pensions:</b>	Yes	Taxes / Contributions	Employers: 8.55% up to the SCC, plus 1.90% on the full wage; Employees: 6.90% up to the SSC, plus 0.40% on the full wage	2017 data. Constant contribution rate	Ad-hoc	Prices	Leg.	Prices	Leg.		
	<b>Private sector pensions scheme (CNAV)</b>											
	<b>Occupational pensions<sup>8</sup>:</b>											
	<b>Private pensions</b>	No										
HR	<b>Public pensions</b>	Yes	Contributions and general budget	Employer: none; Employee: 20% – if not participating in the 2nd pillar; 15% – if participating in the 2nd pillar	Employer: none; Employee: 20% – if not participating in the 2nd pillar; 15% – if participating in the 2nd pillar	Leg.	30% CPI and 70% wage growth	Leg.	30% CPI and 70% wage growth	Leg.		
	<b>Occupational pensions</b>	No										

<sup>6</sup> 2019: 1.44735842; 2020: 1.22556637; 2021: 2.30097427; 2022: 4.28025933; 2023: 4.44196486; 2024: 2.93745015; 2025: 2.62496676; 2026: 2.31248338; from 2027 onwards: 2.

<sup>8</sup> Complementary pension scheme (in 2019 the 2 schemes have been merged into one called Agirc-Arrco).

<sup>9</sup> The social contributions base is now divided into 2 installments according to salaries: - Up to 1 SCC (3 428€ per month : 4,72% for the employers and 3,15% for the employees - From 1 to 8 SCC (3 248€ to 27 424€ per month : 12,95 % for the employers and 8,64% for the employees.

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					Assumptions used for TRR projections	Legislated/ad-hoc						
	<b>Private pensions</b> (Mandatory fully funded DC scheme)	Yes	Contributions	Employees: 5%	Employees: 5%	Leg.	Market rate of return	Leg.	100% CPI	Leg.		
IT	<b>Public pensions:</b> - DB (old scheme)	Yes	Contributions	33% in total Employers: 23.81%; Employees: 9.19%	33% in total Employers: 23.81%; Employees: 9.19%	Leg.	2% of lifetime average earnings	Leg.	Inflation	Leg.		
	- NDC (new scheme)						Average annual nominal GDP growth rate in current prices from the last 5 years					
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
CY	<b>Public pensions:</b> Social Insurance Scheme	Yes	Contributions	16.6 <sup>10</sup>	20.6	Leg.	Wage index	Leg.	Wage indexation for basic part and CPI indexation for supplementary part	Leg.		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
LV	<b>Public pensions:</b> NDC	Yes	Contributions	14%	14%	Leg.	Contribution wage sum index	Leg.	CPI + 50%-80% contribution wage sum growth, subject to ceiling <sup>11</sup>	Leg.		

<sup>10</sup> The contribution percentage is equally distributed to employer and employee. In addition to the contribution rate of 16.6% for 2019 and 20.6% for 2059, there is a general government contribution of 4.9% and 6.1% for 2019 and 2059, respectively.

<sup>11</sup> Ceiling on the indexed part of pension is set to 50%-80% (depending on the length of insurance record) of previous year's average national contribution wage. No ceiling is applied to persons with the highest disability category, politically repressed persons and for liquidators of the Chernobyl nuclear disaster.

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				2022	2062		Assumptions used for TRR projections	Leg./ad-hoc	Assumptions used for TRR projections	Leg./ad-hoc	Assumptions used for TRR projections	Leg./ad-hoc
					Assumptions used for TRR projections	Legislated/ad-hoc						
	Mandatory DC funded scheme	Yes	Contributions	6%	6%	Leg.	Market rate of return	Leg.	See note <sup>12</sup>	Leg.		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
LT	<b>Public pensions</b> (Social insurance pensions)	Yes	Contributions	Employers – 0% Employees – 8.72%	Employers – 0% Employees – 8.72%	Leg.	Wage growth	Leg.	Wage sum growth (7-year average)	Leg.		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b> (Quasi-mandatory private scheme)	Yes	Contributions	Employees – 3%; State – 1.5% of country's average wage	Employees – 3%; State – 1.5% of country's average wage	Leg.	Market rate of return	Ad-hoc	Not indexed	Ad-hoc		
LU	<b>Public pensions:</b> General and public pension scheme	Yes	Taxes and contributions	24% (including tax-funding of 1/3 of contributions)	24%	Leg.	100% prices and 100% wages	Leg.	100% prices and 100% wages	Leg / Ad-Hoc.		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
HU	<b>Public pensions:</b> PAYG DB (mandatory social	Yes	Contributions	Employers: 12.99%; Employees: 10% (the contribution	Employers: 11.59% Employees: 10%	Leg.	Valorisation set in legislation every March, based on net average monthly salary	Leg.	Indexation is set in legislation <sup>13</sup>	Leg.		

<sup>12</sup> In case the pension capital of the Mandatory DC funded scheme is added to the pension capital of the NDC scheme and thus one pension is granted, this pension shall be indexed in the general order: CPI + 50%-80% contribution wage sum growth, subject to ceiling.

<sup>13</sup> From 2012, pensions have been adjusted annually to projected consumer prices.

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					Assumptions used for TRR projections	Legislated/ad-hoc						
	insurance pension scheme)			rate of employers doesn't affect TRR)	(the contribution rate of employers doesn't affect TRR)							
	DC private pension system <sup>14</sup>	No										
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
<b>MT</b>	<b>Public pensions:</b> Two-thirds pension scheme	Yes	Contributions	Employee – 10%; Employer – 10%; state – 10%, subject to ceiling	Same as in year 2016	Leg.	Inflation	Leg.	70% wage growth and 30% inflation	Leg.		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
<b>NL</b>	<b>Public pensions</b>	Yes	Taxes and contributions	Below SPA 17,9% of taxable income, with a cap of € 6158/year					Inflation	Ad-hoc		
	<b>Occupational pensions</b>	Yes	more <sup>15</sup>	Employee 7.5%, employer 10%					Inflation	Ad-hoc		
	<b>Private pensions</b>	<b>Collective</b> – yes	Tax exemption and contributions	Unknown						Inflation	Ad-hoc	
		<b>Private pensions</b>										

<sup>14</sup> From October 2010, mandatory payment of the employees' contributions into the pension funds ceased, the whole contribution flows to the Pension Insurance Fund.

<sup>15</sup> Tax exemption, contributions and returns on investment



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					Assumptions used for TRR projections	Legislated/ad-hoc						
		<b>individual</b> -no										
AT	<b>Public pensions</b>	Yes	Contributions	22.8% (Employer – 12.55%; Employee – 10.25%)	22.8% (Employer – 12.55%; Employee – 10.25%)	Leg.	1.30% (assumption in line with the Ageing Report, EPC)		2.00%	Leg.		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
PL	<b>Public pensions</b>	Yes	Contributions to old-age pension insurance	19.52% - financed in equal parts (9.76%) by employee and employer	19.52% - financed in equal parts (9.76%) by employee and employer	Leg.	Mixed	Leg.	CPI + by at least 20% real wage growth in the previous year	Leg.		
	National Scheme:			-	-		-					
	ZUS			19.52%	12.22%		Annual nominal gross written premiums growth					
	Sub-account			-	7.30%		Average annual GDP growth rate in current prices from the last 5 years					
					-							
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
PT	<b>Public pensions</b>	Yes	Contributions	34.75% (23.75% employers; 11% employees)	34.75% (23.75% employers; 11% employees)	Leg.	Reference earnings are projected according to labour productivity growth and adjusted according to the CPI	Leg.	According to the pension value regarding IAS, CPI and GDP growth	Leg.		

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	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
<b>RO</b>	<b>Public pensions</b>	Yes	Contributions	<p>Employees: 25% (including 3.75% for Pillar 2)  Exemption: between January 2019 and December 2028: 21.25% for construction sector employees (no contribution to Pillar 2).  Employer: the contribution rate varies with the working conditions:  Normal 0%  Difficult 4%  Special 8%</p>	<p>Employees: 25% (including 3.75% 2022-2023, 4.75% 2024-2028 for Pillar 2)  Exemption: between January 2019 and December 2028: 21.25% for construction sector employees (no contribution to Pillar 2).  Employer: the contribution rate varies with the working conditions:  Normal 0%  Difficult 4%  Special 8%</p>	Leg. (Law 263/2010)				see <sup>16</sup>		

<sup>16</sup> a) Starting on 1/1/2012, the pension point value will be annually indexed at 100% of inflation rate plus 50% of real increase of the average gross wage of the previous year. If one of these is negative, only the positive value will be considered. b) Starting in 2021, the pension point value will be annually indexed with 100% inflation rate plus 45% of the real increase of the average gross wage of the previous year. The percentage attached to the real increase in the average gross wage will be gradually reduced by 5% each year; starting in 2030, the pension point value will be indexed annually by 100% inflation rate.

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	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
SI	<b>Public pensions</b>	Yes	Contributions	8.85% employer; 15.50% employee	8.85% employer; 15.50% employee	Leg.	Wage indexation <sup>17</sup>	Leg.	60% wages and 40% consumer price index	Leg.		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
SK	<b>Public pensions</b> (Mandatory PAYG, earnings-related scheme)	Yes	Mixed (contributions + state budget)	28.75%	28.75%	Leg.	Wage growth (95%)	Leg.	Generally consumer price index see note <sup>18</sup>	Leg.		
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b> (Mandatory fully funded, DC scheme)	Yes	Part of total PAYG contribution rate	Not applicable	5.5% from 2022 to 2024; 5.75% in 2025 and 2026 and 6% since 2027	Leg.	Market rate of return	Ad-hoc	Constant prices	Ad-hoc		
FI	<b>Public pensions:</b> Earnings-related pension	Yes	Contributions	Average contribution 24.85%. Employee's share 7.15% aged under	Average contribution 24.85%. Employee's share 7.15% aged under 53 and over 62 and 8.65% aged 53-62.	Leg.	Wage coefficient (20% price, 80% wage)	Leg.	Earnings-related pension index (80% price, 20% wage)	Leg.		

<sup>17</sup> Noteworthy changes in the TRR (2013 vs 2010) due to pension reform ZPIZ-2 and austerity measures: Valorisation of the past earnings is linked to the growth in average wages (100%), and in 2013 the rule of indexation changed from 100% wage indexation to the indexation 60% of growth in wages and 40% of growth in CPI. Austerity measures: indexation of pensions was frozen until the end of 2015.

<sup>18</sup> From 2022 and thereafter 100% CPI for households of pensioners. Extra indexation of pension benefits was established with effect on 1 July 2023 (if the cumulative monthly index of consumer price for pensioners' household reaches 5% from the previous indexation).

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					Assumptions used for TRR projections	Legislated/ ad-hoc						
				53 and over 62 and 8.65% aged 53-62								
	National pension	Yes	State finances national pension scheme			Leg.				Price index	Leg.	
	<b>Occupational pensions</b>	No										
	<b>Private pensions</b>	No										
SE	<b>Public pensions</b>	Yes	Contri- butions + taxes (guaran- tee pension)	7% employer; 10.21% employee	7% employer; 10.21% employee	Leg.	Wage growth; Market rate of return	Leg.	Wage growth – 1.6 p.p.; Market rate of return	Leg.		
	<b>Occupational pensions</b>	Yes	Contri- butions	n.a. (DB system)	4.5 % on incomes up to 42 625 SEK/month (~ EUR 4 200) 30 % on incomes above 42 625 SEK/month	Ad-hoc	Market rate of return	Ad- hoc	Market rate of return	Ad- hoc		
	<b>Private pensions</b>	No										
NO	<b>Public pensions</b>	Yes	Contri- butions + taxes <sup>19</sup>	Employers’ contribution 14.1%, Employees contribution 8.0% (both for the national insurance	Assumption that annual pension earnings are 18.1% of income up to a ceiling (not directly linked to contributions as partly tax- financed; contribution rates	Leg.	Wage growth	Leg.	A mix of 50 % wage growth and 50 % price growth (CPI)	Leg.		

<sup>19</sup> No direct link between contributions and pension accruals.

