



**Eurostat**  
**Unit C3 - Statistics for administrative purposes**

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## **Meeting of the Working Group**

### **on Article 83 of the Staff Regulations**

**Luxembourg, 27 June 2017, 9:30 a.m., Bech Building, Room Ampère**

## **Pension Scheme of European Officials (PSEO)**

### **Actuarial assumptions used in the**

### **2017 assessment**

*Documents will be made available via CIRCABC*

### **Item 5.1 of the agenda**

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## **1. Introduction**

This document provides an overview of the actuarial assumptions and methodological choices related to the 2017 actuarial assessment of the PSEO. It thus constitutes a complementary information source with regard to document Doc. 20170627 Art83\_06.

Indications about the updating of some actuarial assumptions are given in articles 9 to 12 in Annex XII of Staff Regulations (SR): this is for instance the case of the Life Tables or the General Salary Growth.

On the other hand rules are not clearly fixed for other assumptions like the Individual Salary Progression (ISP), the invalidity table, the age difference by gender, the marital status, the probability to be married at retirement: those assumptions are updated according to the best actuarial practices.

## 2. Summary of main variables

Table I (main parameters from the SR) and Table II (actuarial assumptions) present a not exhaustive overview of the main variables used in the 2017 assessment of the PSEO. The Staff Regulations and its annexes provide further detailed information.

**Table I Parameters used in the 2017 PSEO assessment**

Parameter	Value
Legal source	Staff Regulations in force from 01.01.2014
Reference date for the population (Annex XII Article 1)	31.12.2016
Maximum retirement age (Staff Regulations Article 52)	65 (automatically officials in service before 01.01.2014), 66 (automatically new officials) or 67 (at the staff' request) or until 70 (exceptionally)
Normal retirement age (Staff Regulations Article 52 and Annex XIII Article 22)	60 to 66 depending on years' service, age and entry date in service
Minimum retirement age (Staff Regulations Article 52(b), Annex VIII Article 9 and Annex XIII Article 23)	55 to 58 (officials in service before 01.01.2014), 58 (new officials)
Category and grade for the minimum subsistence figure (Annex VIII Article 6)	first step of grade 1
Maximum retirement pension (Staff Regulations Article 77)	70% of the basic salary at the retirement date
Annual accrual rate (Article 77 of the Staff Regulations and Article 21 of Annex XIII)	1.8% (officials in service from 1.01.2014) 1.9% (officials in service from 1.05.2004), or 2% (officials in service before 01.05.2004), of BS
Bonus for officials in service after the normal retirement age (Annex VIII Article 5 and Annex XIII Article 22)	1.5% (new officials) or 2.5% of the BS, or 5% of the amount of the pension rights acquired at 60, depending on the entry date in service, the years of service at 1st May 2004 and the age on 1st May 2004 of the official
Penalty for early retirement (Annex VIII, Article 9 and Annex XIII, Article 22, point 3)	3.5% (new officials) or 1.75% (former officials) of the pension, for every year before the normal retirement age
Minimum retirement pension (Staff Regulations Article 77)	4% of the minimum subsistence figure per year of service
Invalidity allowance (Staff Regulations Article 78)	70% of the basic salary
Minimum invalidity allowance (Staff Regulations Article 78)	100% of the minimum subsistence figure
Reversion pension (Staff Regulations Article 79 and Annex VIII Article 18)	60% of the retirement pension
Minimum reversionary pension (Staff Regulations Article 79 and Annex VIII Article 18)	35% of the last basic salary
Survivor's pension (Staff Regulations Article 79 and Annex VIII Article 17)	60% of the retirement pension that would have been payable to the official
Minimum survivor's pension (Staff Regulations Article 79)	35% of the last basic salary or minimum subsistence figure

The parameters above constitute a synthesis of the pension benefits defined in the Staff Regulations.

In addition to those parameters, a set of assumptions are used on actuarial calculations. These assumptions need to be updated to take account of the demographic and economic evolution: the SR defines the frequency and modalities of update for some of them (life table, assumed retirement age).

Table II summarises the assumptions used in the present pension assessment.

**Table II Actuarial assumptions used in the 2017 PSEO assessment**

<b>Economic assumptions</b>	<b>Value</b>	<b>Adjustment frequency</b>	<b>Observation years</b>
Salary Grid	In force from 01.07.2016	1y	1y
Duration	21y	1y	1y
Nominal Discount Rate (NDR)	4.8%	1y	22y
Inflation Rate (IR)	1.7%	1y	22y
Real Discount Rate (RDR)	3.1%	1y	22y
General Salary Growth (GSG)	0.0%	1y	22y
General Pension Revaluation (GPR) (equal to GSG)	0.0%	1y	22y
Individual Salary Progression (ISP)	2014 ISP Table	5y	5y
Loading Coefficient for orphan's and divorced spouse's pension	13%	5y	5y
Correction Coefficients (art. 3.5 of Annex XI & art. 20 of Annex XIII)	0.0%	1y	1y
<b>Demographic assumptions</b>	<b>Value</b>	<b>Adjustment frequency</b>	<b>Observation years</b>
Life Table (healthy people)	ICSLT2013	5y	5y
Life Table (disabled people)	ICSLT2013 + 3 years	5y	5y
Invalidity Table	2014 EU Invalidity Table	5y	5y
Current Marital Status	Marital Status at evaluation date	1y	1y
Probability of being married at retirement age, for men	81%	5y	5y
Probability of being married at retirement age, for women	49%	5y	5y
Average age difference between an official and his/her partner	2 years	5y	5y
Assumed Retirement Age	63, 64 or 65 (depending on the date of entry into service, pensionable years, age)	5y	5y
Turnover	2014 T1 and T2 tables	5y	5y

On occasion of the meeting held on 27 June 2014, Art. 83 WG members agreed on the frequency of update of those assumptions, which is five years in most of the cases. For those assumptions requiring a yearly update, calculations made confirmed same values as in the 2015 assessment

Table III compares the assumptions used in the present and in the previous pension assessment.

**Table III Comparison of actuarial assumptions used for the PSEO assessments at 31.12.2015 and 31.12.2016**

PSEO Assessment		
Item	31.12.2016	31.12.2015
<b>Economic assumptions</b>		
Salary grid	In force from 01.07.2016	In force from 01.07.2015
Duration (in years)	21	21
Nominal Discount Rate (NDR)	4.8%	4.8%
Inflation Rate (IR)	1.7%	1.9%
Real discount rate (RDR)	3.1%	2.9%
General salary growth (GSG)	0.0%	-0.1%
General pension revaluation (GPR) (equal to GSG)	0.0%	-0.1%
Individual salary progression (ISP)	2014 ISP Table	2014 ISP Table
Coefficient for orphan's and divorced spouse's pension	13%	13%
Correction coefficients (art.3.5 of Annex Xi & art.20 of Annex XIII)	0.0%	0.0%
<b>Demographic assumptions</b>		
Mortality table (healthy people)	ICSLT2013	ICSLT2013
Mortality table (Invalids)	ICSLT2013 + 3 years	ICSLT2013 + 3 years
Invalidity table	2014 EU Invalidity Table	2014 EU Invalidity Table
Current marital status	Marital status at evaluation date	Marital status at evaluation date
Probability of men being married at retirement age	81%	81%
Probability of women being married at retirement age	49%	49%
Average age difference between an official and his / her partner	2 years	2 years
Assumed Retirement Age	63, 64 or 65 (depending on the date of entry into service, pensionable years, age)	63, 64 or 65 (depending on the date of entry into service, pensionable years, age)
Turnover	2014 T1 and T2 tables	2014 T1 and T2 tables

### 3. Impact of changes to inputs used in the calculation of the contribution rate

Changes to the pension contribution rate result from the combined effect of changes in the population structure and in actuarial assumptions.

The separate impact of those changes on the officials' contribution rate is not easy to determine due to their interdependency; however the analysis of the actuarial assumptions allows a better understanding of contribution rate sensitivity to the various actuarial assumptions.

The official's pension contribution rate calculated this year (9.8%) is equal to the previous one. The cumulated impact of variations at reference population and assumptions, was null as presented in Table IV.

Further details about assumptions used are given in the next paragraphs.

**Table IV Explanation of the yearly change in the calculated pension contribution rates at 31.12.2015 and 31.12.2016**

Items	Change breakdown
<b>2016 assessment</b>	<b>9.8</b>
New Populaion	0.2
Real Discount Rate	-0.5
General Salary Growth	0.3
<b>2017 assessment</b>	<b>9.8</b>

#### 4. General Salary Growth (GSG)

Annex XII of the Staff Regulations gives specific rules to calculate the General Salary Growth (GSG).

Article 11 of Annex XII specifies that:

*1. The annual change in the salary scales of officials to be taken into consideration for the actuarial calculations shall be based on the specific indicators<sup>1</sup> referred to in Article 1(4) of Annex XI.*

*2. The effective annual rate to be taken into consideration for the actuarial calculations shall be the average of the net specific indicators for the European Union for the 30 years preceding the current year.*

Annex XII, article 11a of the Staff Regulations specifies that:

*Until 2020, for the application of Articles 4(6), 10(2) and 11(2) of this Annex, the moving average shall be calculated on the basis of the following time scale:*

*In 2014 – 16 years*

*In 2015 – 18 years*

*In 2016 – 20 years*

***In 2017 – 22 years***

*In 2018 – 24 years*

*In 2019 – 26 years*

<sup>1</sup> The Specific Indicator (SI) measures the changes in the purchasing power of salaries of national civil servants in central government. It is implemented according to Annex XI of the Staff Regulations.

*In 2020 – 28 years*

Thus an average of the net Specific Indicators from 1995 until 2016 (22 years) has been used in the PSEO assessment at 31.12.2016.

The 2011, 2012, 2013 and 2014 calculated SI, respectively -1.8%, -1.1%, -1.4 and +1.3%, have not been applied as the salaries of EU officials have not been adjusted in 2011, 2013 and 2014, while 2012 salaries were adjusted by a 0.8% increase only, in accordance with Regulation (EU) N° 423/2014 of the European Parliament and of the Council of 16 April 2014.

The consequent salary adjustment not in line with the SI calculated by Eurostat, involves that the implicit applied SI of -3.5%, -1.9%, -1.5% and -0.9%, respectively for 2011, 2012, 2013 and 2014, have to be used for the GSG calculation (please refer to Table V).

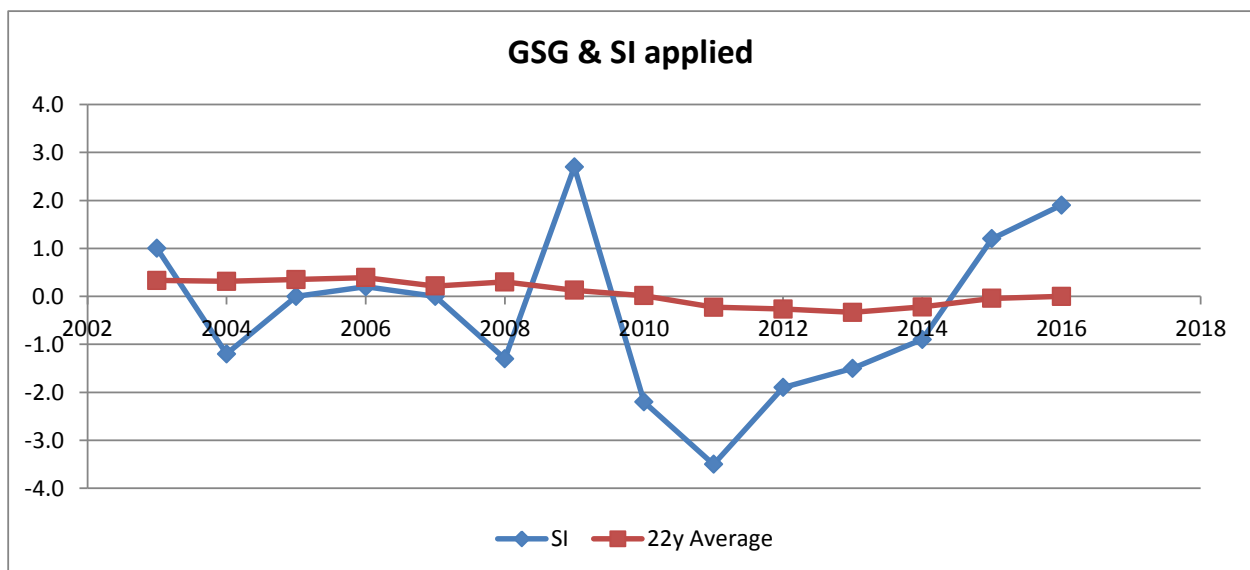
**Table V. Net Specific Indicators**

Year	SI (applied)
1995	0.2
1996	-0.2
1997	0.7
1998	0.4
1999	1.6
2000	-0.2
2001	0.6
2002	1.7
2003	1.0
2004	-1.2
2005	0.0
2006	0.2
2007	0.0
2008	-1.3
2009	2.7
2010	-2.2
2011	-3.5
2012	-1.9
2013	-1.5
2014	-0.9
2015	1.2
2016	1.9
<b>Average 22 years</b>	<b>0.0</b>

The GSG has changed compared to the one used for the previous exercise (0.0% against -0.1%): this involved an estimated impact of +0.3% on the contribution rate.

Graph I shows that the yearly SI is quite volatile while the GSG (22 years moving average of SI) is very stable close to 0%.



**Graph I. Yearly SI and GSG (22 years moving average of applied SI)**

**ACTION:** A 0.0% GSG (based on 22 applied implicit SI) will be used for the PSEO assessment at 31.12.2016.

## 5. Discount rate

Annex XII, article 10 of the Staff Regulations specifies that:

*1. The interest rates to be taken into consideration for the actuarial calculations shall be based on the observed average annual interest rates on the long-term public debt of Member States as published by the Commission. An appropriate consumer price index shall be used to calculate the corresponding interest rate net of inflation as needed for the actuarial calculations.*

*2. The effective annual rate to be taken into consideration for the actuarial calculations shall be the average of the real average interest rates for the 30 years preceding the current year.*

However article 11a in Annex XII of the Staff Regulations (above mentioned) applies also to the interest rates calculation, prescribing the use of a 22 years moving average for the 2017 computation.

Thus an average of real discount rates (RDR) from 1995 until 2016 (22 years) is used in the PSEO assessment at 31.12.2016 in accordance with the legal provisions stated above.

**Nominal discount rate (NDR): 4.8%.** This figure is the 1995 to 2016 average of nominal rates for euro area zero-coupon (government bonds) with a maturity of 21 years, 21 years being the duration of the scheme.

**Inflation rate (IR): 1.7%.** This is the 1995 to 2016 average of the EU HICP consumer price index.

**Real discount rate (RDR): 3.1%.** It is the 1995 to 2016 average of the real discount rates.

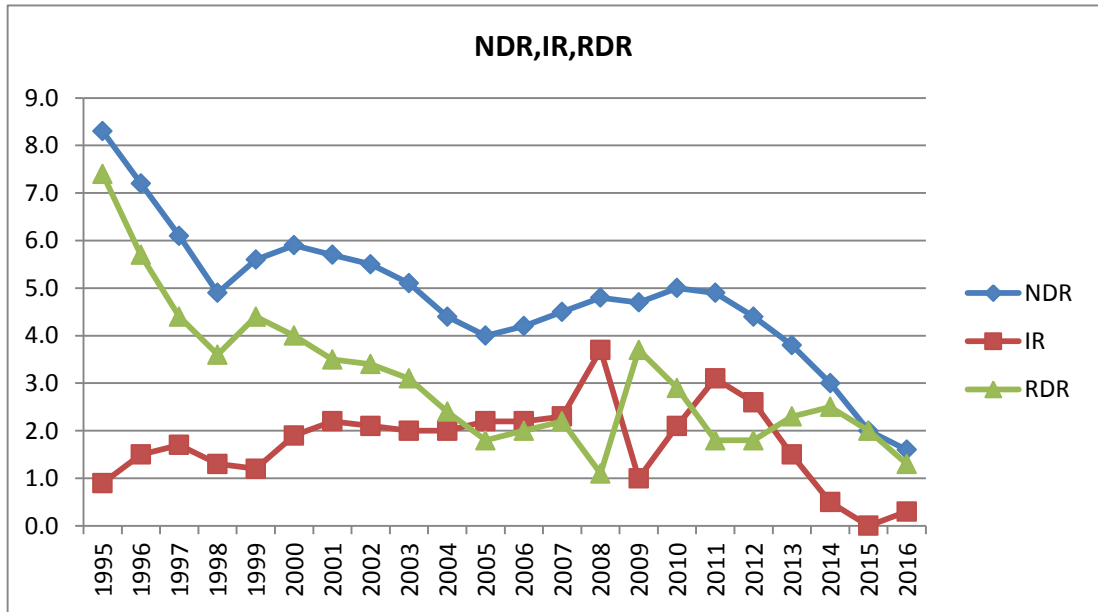
**Table VI. Real discount rate (RDR)**

Year	Nominal Discount Rate (NDR)	Inflation Rate (IR)	Real Discount Rate (RDR)
1995	8.3	0.9	7.4
1996	7.2	1.5	5.7
1997	6.1	1.7	4.4
1998	4.9	1.3	3.6
1999	5.6	1.2	4.4
2000	5.9	1.9	4.0
2001	5.7	2.2	3.5
2002	5.5	2.1	3.4
2003	5.1	2.0	3.1
2004	4.4	2.0	2.4
2005	4.0	2.2	1.8
2006	4.2	2.2	2.0
2007	4.5	2.3	2.2
2008	4.8	3.7	1.1
2009	4.7	1.0	3.7
2010	5.0	2.1	2.9
2011	4.9	3.1	1.8
2012	4.4	2.6	1.8
2013	3.8	1.5	2.3
2014	3.0	0.5	2.5
2015	2.0	0.0	2.0
2016	1.6	0.3	1.3
<b>Average 22 years</b>	<b>4.8</b>	<b>1.7</b>	<b>3.1</b>

The RDR 3.1% used in this assessment is different from the one used in the previous assessment (2.9%). The observed impact on the contribution rate was a 0.5% decrease.

Graph II presents the evolution of the NDR, IR and RDR along the 22 years serving as basis for the computation of the moving average.

**Graph II. NDR, IR and RDR rates from 1995 to 2016**



**ACTION:** A moving average of 22 yearly interest rates will be used for the computation of the RDR in accordance with Article 11a of the SR. A **3.1%** RDR will be used in the PSEO assessment at 31.12.2016.

## 6. Individual salary progression (ISP)

The Individual Salary Progression (ISP) refers to the salary increase due to the career advancement of EU officials (seniority steps and promotions).

Officials, Temporary Agents and Contract Agents who have been at one step in their grade for two years automatically advance to the next step in accordance with Article 44 of the SR. No step advancement is envisaged for Parliamentary Assistants.

Promotions shall be by decision of the appointing authority in accordance with Article 45 of the SR. Multiplication rates for guiding average career equivalence are given in Annex I.B of the SR. Promotions observed in the period 2010 to 2013 have been used for this actuarial assessment.

Taking account step advancements and promotions above, rates of individual salary increase (ISP) have been calculated by function groups, grade and number of years remaining till the assumed retirement age.

The next table summarises ISP average by function groups:

**Table VII. Average ISP rates by function groups**

Average ISP rate by group	31.12.2015
AD - Administrators	1.4%
AST - Assistants	1.4%
SC - Secretary / Clerks	1.4%
GFI - Contract agents. Function group I	1.0%
GFII - Contract agents. Function group II	1.0%
GFIII - Contract agents. Function group III	1.0%
GFVI - Contract agents. Function group IV	0.8%
PA - Parliamentary assistants	0.9%

According to the decision taken at the Art83 Working Group at its 27<sup>th</sup> June 2014 meeting, the ISP assumption is to be updated on the occasion of the five-yearly assessment.

Having the same ISP rates been used also for the previous year assessment, no impact on the pension contribution rate was observed.

<b>ACTION:</b> The 2014 ISP rates will be used in the PSEO assessment at 31.12.2016.
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## 7. Turnover

### Turnover definition

Turnover takes account of the fact that active PSEO members (Officials, Temporary Agents, Contract Agents and Parliamentary Assistants) might terminate their activity one day for one reason or another, and thus leave the PSEO pension scheme.

For more accurate computations, we distinguish two types of turnover:

- Turnover due to end of contract validity (T1).
- Turnover due to voluntary and unexpected losses (T2). (This mainly concerns resignation before the end of a contract, dismissal for incompetence and disappearance.)

### **Contract types**

According to the Staff Regulations and Conditions of employment of other servants of the European Communities, active staff is recruited to work in the institution for a definite or indefinite period of time. Some fixed-period contracts can be renewed once or more times for a fixed or even for an indefinite period.

To compute turnover due to end of contract validity (T1), the active PSEO population has been classified according to the contract types shown in Table VIII:

**Table VIII. Contract types**

<b>Contract Type</b>	<b>Explanation</b>
<b>AI1</b>	Indefinite contractual link applicable to permanent officials
<b>BF1</b>	Fixed period contract according to Article 8 of "Conditions of employment of other servants", applicable to Temporary Staff who were engaged to fill a post according to Article 2 (a). One-time renewable contract for a maximum initial period of 4 years, renewable once for an additional period of 2 years. Any further renewal should be for an indefinite period
<b>BF2</b>	Fixed period contract according to Article 8 of "Conditions of employment of other servants", applicable to Temporary Staff who were engaged to fill a post according to Article 2 (b). Maximum initial period will not exceed 4 years. Fixed contract for a maximum period of 4 years, renewable once for an additional period of 2 years
<b>BF3</b>	Fixed period contract according to Article 8 of "Conditions of employment of other servants", applicable to Temporary Staff who were engaged to fill a post according to Article 2 (d). Maximum initial period will not exceed 4 years. Fixed contract for a maximum period of 4 years, renewable once for an additional period of 2 years
<b>BF4</b>	Temporary Agent engaged to fill a post in accordance with Article 2 (e) of the CEOS. May be engaged for a maximum period of 4 years. Contracts may be renewed for another period of maximum 4 years.
<b>BF5</b>	Temporary Agent engaged to fill a post in accordance to Article 2 (f) of CEOS. Fixed period contract in accordance to Article 8 §1. Maximum contract duration is not defined. Contract may be renewed not more than once for a fixed period
<b>BI1</b>	Indefinite period contract following a fixed period contract under Article 2(a) according to Article 8 of "Conditions of employment of other servants", applicable to Temporary Staff
<b>BI2</b>	Indefinite period contract according to Article 8 of Condition of employment of other servants, applicable to Temporary Staff engaged according to Article 2©
<b>BI5</b>	Temporary Agent engaged to fill a post in accordance to Article 2 (f) of CEOS. Indefinite period contract in accordance to Article 8 §1
<b>DF1</b>	Fixed period contract according to Article 85 of "Conditions of employment of other servants", applicable to Contract Staff who were engaged to fill a post according to Article 3a. Contract for a maximum period of 5 years, renewable once for a fixed period of not more than 5 additional years.
<b>DF2</b>	Fixed period contract according to Article 88 of "Conditions of employment of other servants", applicable to Contract Staff who were engaged to fill a post according to Article 3b. Renewable contract with the limit of a total duration of 3 years
<b>DI1</b>	Indefinite period contract following a fixed period contract according to Article 85 of "Conditions of employment of other servants", for Contract Staff who were engaged to fill a post according to Article 3a.
<b>EF1</b>	Fixed period contract according to Article 130 of "Conditions of employment of other servants", applicable to Accredited Parliamentary Assistants. Two times renewable contract not exceeding the the end of the corresponding parliamentary term

**T1. Turnover due to the contract expiration**

Two assumptions have been defined:

- the ratio of indefinite contracts to fixed-length contracts;
- the average duration of contracts (in years).

## T2. Turnover due to voluntary and unexpected losses.

The number of active staff who left the institutions due to resignation, dismissal for incompetence and disappearance in the year N has been compared to the active population in the year N-1 to obtain the yearly T2 by contract type. The rate to be used in the PSEO actuarial calculation has been computed as the average of the observed losses in the last five years (2009 to 2013) compared to active staff from 2008 to 2012.

Table IX shows the rates of both assumptions above by contract type, based on observations made.

**Table IX. T2 rates by contract types**

Contract Types		T1 (end of contract)		T2 (other cause)
		F2I (CDI / CDD)	Contract Duration Average	
		1	2	3
AI1	FP. Contract with indefinite duration			0.000
BF1	TA. Fixed term contract. Art 8 and Art 2 (a)		5.7	0.010
BF2	TA. Fixed term contract. Art 8 and Art 2 (b)		5.7	0.005
BF3	TA. Fixed term contract. Art 8 and Art 2 (d)		5.9	0.002
BF4	TA. Fixed contract. Art 8 and Art 2(e )	n/a	n/a	n/a
BF5	TA. Fixed contract. Art 8 and Art 2 (f)	n/a	n/a	n/a
BI1	TA. Contract with indefinite duration. Art 8 and Art 2 (a)	0.73		0.007
BI2	TA. Contract with indefinite duration. Art 8 and Art 2 (c)			0.004
BI5	TA. Indefinite contract. Art 8 and ArArt 2(f)			0.033
DF1	CA. Fixed term contract. Art 85 and Art 3a		8.9	0.005
DF2	CA. Fixed term contract. Art 88 and Art 3b		2.7	0.007
DI1	CA. Contract with indefinite duration. Art 85 and Art 3a	0.9		0.005
EF1	PA. Fixed term contract. Art 130		4.9	0.005

**Column 1:** Weight of fixed contracts non renewed or converted to indefinite ones at the end of their period compared to the total of contracts:  $1 - \text{Indefinite contract} / (\text{Fixed} + \text{Indefinite contracts})$

**Column 2:** Contract duration is limited to 35 in indefinite contracts (AI1, BI1, BI2 and DI1). Cells in grey colour: na to indefinite contracts

**Column 3:** Turnover due to reasons other than decease, retirement, invalidity and T1 (end of contract)

According to the decision taken at the Art83 Working Group at its 27<sup>th</sup> June 2014 meeting, the turnover assumption is to be updated on occasion of the five-yearly assessment.

The same turnover rates as for the previous assessment have thus been used in 2017: no impact on the pension contribution rate was then observed.

**ACTION:** The T1 and T2 rates detailed above (same as in the previous assessment) will be used for the PSEO assessment at 31.12.2016. This assumption will be updated on the occasion of the 5 years assessment and be based on turnover observation in the 5 preceding years.

## 8. Invalidation table

The invalidity table reflects the evolution of beneficiaries of an "*invalidity allowance*" (category of population created by the Staff Regulation in force since the 1<sup>st</sup> May 2004).

According to the decision taken at the Art83 Working Group at its 27<sup>th</sup> June 2014 meeting, the invalidity table is to be updated on occasion of the five-yearly assessment.

A moving average of five years of invalidity observations is used: the total number of observed invalids for the 2009 to 2013 period was 499 as shown in Table X.

**Table X. Invalids from 2009 to 2013**

Year	Invalides
2009	93
2010	105
2011	96
2012	116
2013	89
<b>Total</b>	<b>499</b>

The 2009 to 2013 invalidity observations have been used to update the invalidity table by sex (EU-2013 Invalidation Table). Table XI is an extract from the unisex version of the table for presentation purposes only, whereas the complete table by sex was used in computations.



**Table XI. 2014-EU Invalidation table – Unisex version (extract)**

Age	Invalidity probabilities of becoming invalid at age x
x	$q'_x$
20	0.000032
25	0.000162
30	0.000162
35	0.000435
40	0.000795
45	0.001346
50	0.002767
55	0.003874
60	0.002993
65	0.001250

Having the same Invalidation Table been used also for the previous assessment, no impact to the pension contribution rate could be observed.

**ACTION:** The 2014 Invalidation table will be used in the assessment at 31.12.2016. This assumption will be updated on the occasion of the 5 years assessments and be based on invalidity observation in the 5 preceding years.

## 9. Life Table of healthy persons

A first version of the International Civil Servants Life Table was developed by Eurostat and ISRP (International Service for Remuneration and Pensions of the Coordinated organisation) in 2008 (ICSLT2008), and used by Eurostat in the 2008 to 2012 actuarial calculations.

After 5 years, this life table had to be updated in compliance with the relevant legal provisions (Art. 9 in Annex XII of the SR) and in line with recommended actuarial practices.

In 2014, the ISRP in collaboration with several international institutions based in Europe (EC (Eurostat), Council of Europe (CoE), European Space Agency (ESA), European Patent Office (EPO), Organisation for Economic Cooperation and Development (OECD), North Atlantic Treaty Organisation (NATO), BEI, OHIM, and Eurocontrol), has delivered a new Life Table denominated ICSLT2013 which has already been used in the 2014 actuarial calculations by Eurostat.

The methodology used to set up this life table was presented to the Article 83 Working Group at the 27 June 2014 meeting (document 20140627 Art83\_06). The ICSLT2013 is a prospective table which incorporates a trend of life expectancies over a 30 years' time horizon based on the evolution of mortality in five main EU Member States.

As to art. 9 in Annex XII of the SR, the life table is to be updated on occasion of the five-yearly assessment.

Having the same Life Table been used also for the previous assessment, no impact to the pension contribution rate could be observed.

Table XII is an extract from this table.

### XII. Extract of the ICSLT2013 (extract from 1<sup>st</sup> year)

Age x, y	Men		Women	
	Dying probability	Life expectancy	Dying probability	Life expectancy
	qx	ex	qy	ey
40	0.00056570	44	0.00043015	46
45	0.00094720	39	0.00072316	41
50	0.00157579	34	0.00119636	36
55	0.00252333	30	0.00190203	32
60	0.00430052	25	0.00333004	27
65	0.00758094	21	0.00668436	22
70	0.01318251	17	0.01168035	18
75	0.02673679	13	0.02025390	14
80	0.04744705	10	0.03594424	11
85	0.08048723	7	0.06342273	8
90	0.13646467	5	0.11077097	6

**ACTION:** The ICSLT2013 will be used in the PSEO assessment at 31.12.2016. This Life Table will be updated on the occasion of the next 5 years assessments and be based on mortality observed in the 5 preceding years.

#### 10. Life table of disabled people

It is normal actuarial practice to consider life expectancy of disabled people as slightly shorter than that of healthy persons. Eurostat has applied this actuarial practice since the 2008 pension assessment.

The Life table of invalids will be based on the ICSLT2013. A mortality rate corresponding to a healthy person 3 years older than the invalid must be applied to the invalid population.

According to the decision taken at the Art83 Working Group at its 27<sup>th</sup> June 2014 meeting, this table is to be updated on occasion of the five-yearly assessment.

Having the same Life Table of disabled people been used also for the previous assessment, no impact to the pension contribution rate could be observed.

**ACTION:** No change is proposed. A mortality rate corresponding to a healthy person 3 years older than the invalid will be applied to the invalid population. This assumption will be updated on the occasion of the 5 years assessments and be based on mortality observed in the 5 precedent years.

## 11. Assumed retirement age

The “**average retirement age**”, also named “**assumed retirement age**”, is used in the context of actuarial calculations as defined in Annex XII of Staff Regulations.

More precisely, the Article 4(3) of Annex XII stipulates that: *“It is assumed that all retirements (except for invalidity) will occur at a fixed average age (r). The average retirement age shall be updated only on the occasion of the five-yearly actuarial assessment referred to in Article 1 of this Annex and may be different for different groups of staff”*.

Eurostat has fixed the assumed retirement age at **63, 64 or 65**. The choice of the corresponding age takes account of the normal pensionable year as defined in Article 52 of the SR and Article 22 of Annex XIII. These ages are influenced by the entry date in service, the years of service at 1<sup>st</sup> May 2004, the age at 1<sup>st</sup> May 2004 and the age at 1<sup>st</sup> May 2014.

**ACTION:** An assumed retirement age equal to 63, 64 or 65, depending on the entry date in service, the years of service at 1<sup>st</sup> May 2004, the age at 1<sup>st</sup> May 2004 and the age at 1<sup>st</sup> May 2014 of the official, will be used in calculations.

## 12. Bonus for late retirement

Officials who remain in service after pensionable age are entitled to an increase of their pension equal to 1.5% of the basic salary taken into account for the calculation of their pension per year worked after that age in accordance with article 5 of the Annex VIII of SR.

Notwithstanding article 5 above, the bonus is set at 2.5% of the final basic salary or 5% of the amount of the pension rights acquired at the age of 60 in accordance with Article 22 of the Annex XIII. Thus, the bonus depends on the entry date in service, the pensionable years on 1<sup>st</sup> May 2004 and the age on 1<sup>st</sup> May 2004.

**ACTION:** A bonus equal to 1.5% or 2.5% of the basic salary at retirement, or 5% of the amount of the pension rights acquired at the age of 60, depending on the entry date in service, the years of service at 1<sup>st</sup> May 2004 and the age on 1<sup>st</sup> May 2004 of the official, will be used in calculations.

## 13. Reduction for early retirement

The pension shall be reduced by 3.5% for every year before the one in which the officials would become entitled to a retirement pension in accordance with Article 9 of Annex VIII of the SR or by 1.75% in accordance with Article 22 in Annex XIII of the SR. Thus, the reduction rate depends on entry date in service of the official and the assumed retirement age.

**ACTION:** A reduction rate of 3.5% or 1.75% for every year before the one in which the officials would become entitled to a retirement pension, depending on entry date in service of the official and the assumed retirement age will be applied.

#### 14. Average age difference between men and women

Observations made on the PSEO population revealed that male officials are 1.9 years older than their partners and female officials are 2.6 years younger than their partners. After weighting the figures above to take into account the women and men proportions in the PSEO population the average age difference between men and women has been set to 2 years.

According to the decision taken at the Art83 Working Group at its 27<sup>th</sup> June 2014 meeting, the "*average difference between men and women at retirement*" assumption is to be updated on occasion of the five-yearly assessment.

The average age difference between married men and women at retirement (2 years) has remained the same as in 2015: thus no impact on the calculated pension contribution rate was observed.

**ACTION:** A 2 years difference between men and women ages will be used in the PSEO assessment at 31.12.2016. This assumption will be updated on the occasion of the 5 years assessments

#### 15. Probability of being married for men and women

The probability of being married at retirement has been set to 81% for men and 49% for women.

The same probabilities had been used in the 2015 assessment.

According to the decision taken at the Art83 Working Group at its 27<sup>th</sup> June 2014 meeting, the "*probability of being married at retirement*" assumption is to be updated on occasion of the five-yearly assessment.

Having this actuarial assumption not been modified, no impact on the pension contribution rate was observed

**ACTION:** The probabilities of being married at retirement (0.81 for men and 0.49 for women) will be used in the PSEO assessment at 31.12.2016. This assumption will be updated on the occasion of the 5 years assessments

#### 16. Loading factor for orphan's and survivor spouse's pension

Current actuarial practice is to add a loading factor to a payable reversion pension to allow for the pension payable to orphans after the death of the surviving spouse (or of the official if there is no surviving spouse) and any pension payable to divorced spouses.

This loading factor has been set to 13% (same as in previous valuations) on the basis of the observations made.

According to the decision taken at the Art83 Working Group at its 27<sup>th</sup> June 2014 meeting, the "*loading factor for orphan and divorced spouse's pension*" assumption is to be updated on occasion of the five-yearly assessment.

Having the value of the loading factor remained the same as in 2014 assessment, no impact to the contribution rate could be observed.

**ACTION:** A loading factor of 13% will be used in the actuarial PSEO assessment at 31.12.2016.

## 17. Conclusions

Eurostat has updated the actuarial assumptions in compliance with the recently updated legal basis and with the best actuarial practices.

Taking also into account the new population of the scheme (active staff as at 31.12.2016), the PSEO assessment has led to a calculated contribution rate of 9.8%, involving no changes compared to the PSEO assessment at 31.12.2015.

Document "20170627 Art83\_06" provides further details.

**ACTION:** The Working Group is invited to give its opinion on Eurostat's proposals and action points above.