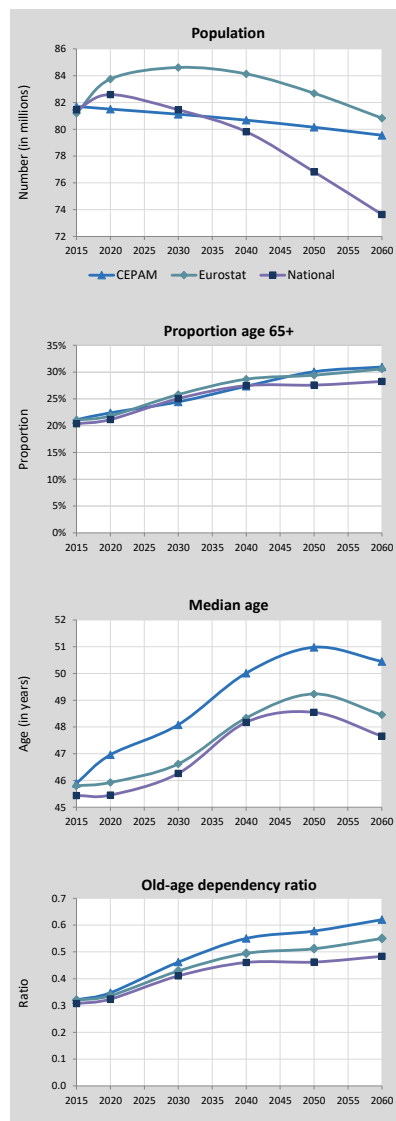


Germany

Detailed Human Capital projections to 2060

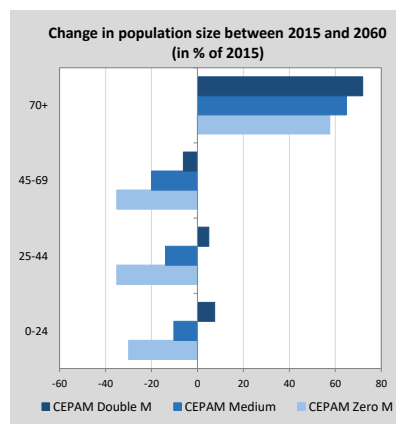
Comparison of CEPAM projections with other sources

Demographic indicators - CEPAM Medium Scenario (SSP2), Eurostat and national projections							
		2015	2020	2030	2040	2050	2060
Population (in millions)	CEPAM	81.71	81.51	81.12	80.68	80.15	79.55
	Eurostat	81.20	83.75	84.61	84.13	82.69	80.83
	National	81.46	82.59	81.45	79.82	76.82	73.64
Proportion age 65+	CEPAM	21.1%	22.4%	24.4%	27.4%	30.1%	30.9%
	Eurostat	21.0%	21.8%	25.8%	28.7%	29.4%	30.6%
	National	20.4%	21.1%	25.1%	27.5%	27.6%	28.3%
Proportion below age 20	CEPAM	18.1%	17.7%	17.9%	17.5%	17.0%	17.4%
	Eurostat	18.2%	18.0%	18.6%	18.3%	17.8%	18.4%
	National	18.5%	18.2%	18.6%	17.9%	17.4%	17.9%
Median age	CEPAM	45.9	47.0	48.1	50.0	51.0	50.5
	Eurostat	45.8	45.9	46.6	48.3	49.2	48.5
	National	45.4	45.5	46.3	48.2	48.5	47.7
Old-age dependency ratio (65+/15-64)	CEPAM	0.32	0.35	0.46	0.55	0.58	0.62
	Eurostat	0.32	0.34	0.43	0.49	0.51	0.55
	National	0.31	0.32	0.41	0.46	0.46	0.48
Young-age dependency ratio (0-14/15-64)	CEPAM	0.20	0.20	0.23	0.23	0.23	0.24
	Eurostat	0.20	0.21	0.23	0.23	0.23	0.25
	National	0.20	0.21	0.23	0.22	0.21	0.23
Parent support ratio (85+/50-64)	CEPAM	0.12	0.13	0.22	0.28	0.44	0.55
	Eurostat	0.12	0.13	0.21	0.25	0.35	0.42
	National	0.08	0.09	0.11	0.15	0.21	0.19
Demographic assumptions underlying projections		2010-2015	2015-2020	2025-2030	2035-2040	2045-2050	2055-2060
Total fertility rate	CEPAM	1.48	1.50	1.52	1.57	1.59	1.61
	Eurostat	1.49	1.51	1.52	1.56	1.59	1.63
	National	1.50	1.51	1.51	1.51	1.51	1.51
Life expectancy at birth (in years)							
Male	CEPAM	79.0	80.1	81.2	83.4	85.6	87.9
	Eurostat	78.9	79.8	80.5	82.0	83.3	84.6
	National	78.4	79.2	80.0	81.4	82.9	84.2
Female	CEPAM	83.6	84.7	85.7	87.9	90.1	92.3
	Eurostat	83.8	84.5	85.2	86.4	87.6	88.8
	National	83.3	84.0	84.7	86.0	87.1	88.2
Five-year net migration flow (in thousands)	CEPAM	841.0	926.1	1004.6	1144.6	1263.5	1354.0
	Eurostat	3310.6	1482.4	1386.5	1034.3	1028.2	940.2
	National	3089.4	1050.0	1000.0	1000.0	1000.0	1000.0



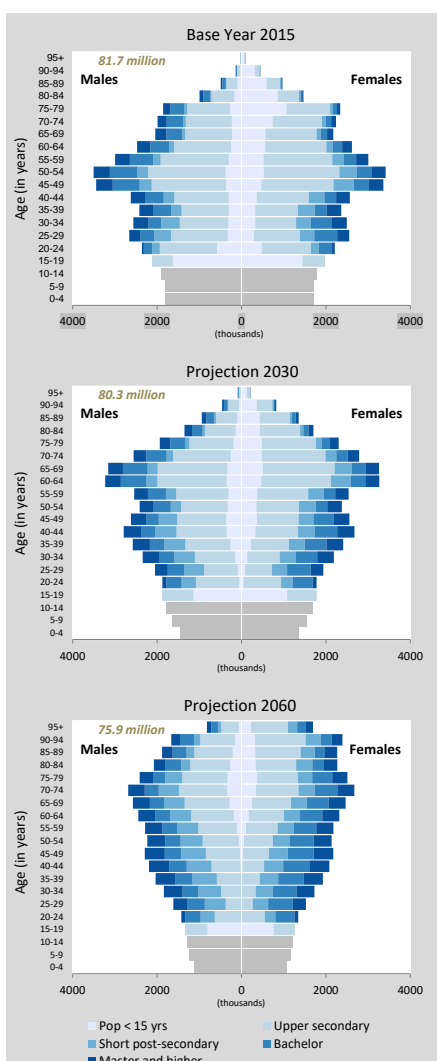
Changes in population size and structure according to CEPAM scenarios (impact of migration)

Population size according to CEPAM projections to 2060							
		2015	2020	2030	2040	2050	2060
Population (in millions)	Zero M	81.71	80.61	77.92	74.56	70.62	66.14
	Medium	81.71	81.51	81.12	80.68	80.15	79.55
	Double M	81.71	82.40	84.25	86.51	89.02	91.75
Population 0-24 (in millions)	Zero M	19.39	18.36	17.21	16.03	14.52	13.59
	Medium	19.39	18.63	18.21	17.96	17.41	17.40
	Double M	19.39	18.90	19.19	19.80	20.08	20.84
Population 25-44 (in millions)	Zero M	20.24	19.57	17.49	14.74	13.95	13.15
	Medium	20.24	20.09	19.13	17.23	17.24	17.43
	Double M	20.24	20.60	20.72	19.57	20.25	21.25
Population 45-69 (in millions)	Zero M	29.03	29.28	27.42	23.78	21.82	18.86
	Medium	29.03	29.38	27.95	25.37	24.83	23.22
	Double M	29.03	29.47	28.47	26.91	27.68	27.26
Population 70+ (in millions)	Zero M	13.04	13.40	15.79	20.00	20.33	20.54
	Medium	13.04	13.41	15.83	20.12	20.67	21.49
	Double M	13.04	13.42	15.87	20.24	21.00	22.41



Germany (Continued)

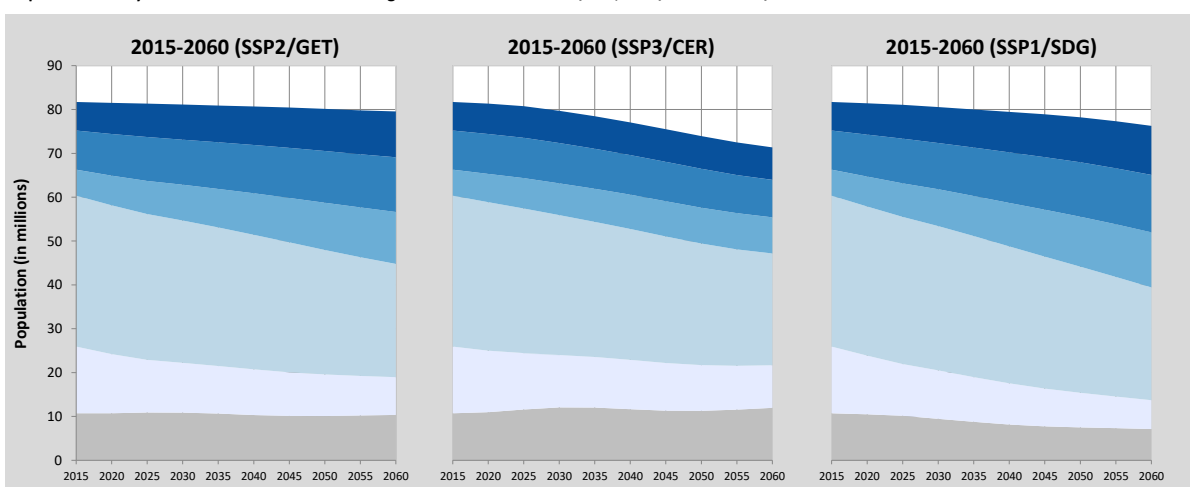
Pyramids by education, CEPAM Medium



Detailed Human Capital projections to 2060

Human Capital indicators, CEPAM Medium (SSP2)						
	2015	2020	2030	2040	2050	2060
Population age 25+: highest educational attainment (columns sum to 100%)						
E1-E4 - lower secondary and below	17.8%	16.4%	13.9%	12.3%	11.0%	9.8%
E5 - upper secondary	49.5%	48.7%	46.9%	44.5%	41.6%	38.7%
E6 - short post-secondary	8.9%	9.9%	11.9%	13.9%	15.8%	17.5%
E7 - bachelor	13.5%	14.0%	14.9%	15.9%	16.9%	18.0%
E8 - master and higher	10.3%	11.0%	12.3%	13.5%	14.7%	16.0%
Mean years of schooling (in years)	13.53	13.62	13.80	13.95	14.11	14.30
Age gap: highest educational attainment (ratio 35-44/50-64)						
E1-E4 - lower secondary and below	0.91	1.04	0.93	0.64	0.57	0.65
E5 - upper secondary	0.87	0.82	0.84	0.93	0.91	0.87
E6 - short post-secondary	1.65	1.50	1.34	1.20	1.19	1.16
E7 - bachelor	1.02	1.04	1.13	1.17	1.19	1.16
E8 - master and higher	1.27	1.33	1.22	1.17	1.19	1.16
Mean years of schooling (35-44 minus 50-64)	0.26	0.20	0.27	0.49	0.61	0.69
Gender gap (population age 25+): highest educational attainment (% males - %females)						
E1-E4 - lower secondary and below	-11.97	-9.24	-5.17	-2.76	-1.48	-0.78
E5 - upper secondary	4.12	3.12	2.24	2.71	3.74	4.88
E6 - short post-secondary	-1.65	-1.31	-0.68	-0.02	0.90	2.06
E7 - bachelor	6.92	5.34	2.39	-0.39	-3.08	-5.70
E8 - master and higher	2.58	2.09	1.22	0.45	-0.08	-0.46
Mean years of schooling (male minus female)	0.70	0.50	0.30	0.10	-0.10	-0.20
Women age 20-39: highest educational attainment (columns sum to 100%)						
E1-E4 - lower secondary and below	15%	13%	9%	7%	6%	6%
E5 - upper secondary	44%	42%	40%	37%	34%	32%
E6 - short post-secondary	13%	13%	15%	16%	18%	19%
E7 - bachelor	17%	20%	23%	25%	27%	28%
E8 - master and higher	11%	12%	13%	14%	15%	16%
Mean years of schooling (in years)	13.85	14.02	14.42	14.70	15.00	15.22
Age gap among women: highest educational attainment (ratio 35-44/50-64)						
E1-E4 - lower secondary and below	0.78	0.91	0.83	0.61	0.55	0.64
E5 - upper secondary	0.84	0.77	0.80	0.91	0.87	0.83
E6 - short post-secondary	1.68	1.28	0.97	1.09	1.20	1.17
E7 - bachelor	1.17	1.50	1.84	1.33	1.20	1.17
E8 - master and higher	1.46	1.50	1.26	1.17	1.20	1.17
Mean years of schooling (35-44 minus 50-64)	0.49	0.44	0.50	0.62	0.71	0.77

Population size by educational attainment according to three scenarios: SSP2/GET, SSP3/CER and SSP1/SDG



Colour legend as in pyramids above

Education scenarios

SSP2/GET : Global Education Trend Scenario (Medium assumption)

SSP3/CER : Constant Enrollment Rates Scenario (assumption of no future improvements)

SSP1/SDG : Sustainable Development Goal Scenario (universal primary and secondary education by 2030)

Germany (Continued)

Alternative scenarios to 2100

Projection results by scenario (SSP1-SSP3)

	2015	2020	2030	2050	2060	2075	2100
Population (in millions)							
SSP1 - Rapid Development	81.71	81.42	80.56	78.22	76.27	73.71	70.93
SSP2 - CEPAM Zero Migration	81.71	80.61	77.92	70.62	66.14	60.50	53.42
SSP2 - CEPAM Medium	81.71	81.51	81.12	80.15	79.55	80.36	84.17
SSP2 - CEPAM Double Migration	81.71	82.40	84.25	89.02	91.75	97.81	109.53
SSP3 - Stalled Development	81.71	81.34	79.70	73.94	71.36	69.59	71.42

Proportion age 65+

SSP1 - Rapid Development	21.1%	22.6%	28.5%	36.6%	40.2%	44.1%	51.3%
SSP2 - CEPAM Zero Migration	21.1%	22.6%	28.4%	35.5%	37.6%	38.5%	41.9%
SSP2 - CEPAM Medium	21.1%	22.4%	27.4%	32.0%	33.3%	33.8%	36.5%
SSP2 - CEPAM Double Migration	21.1%	22.2%	26.4%	29.5%	30.6%	31.4%	34.7%
SSP3 - Stalled Development	21.1%	22.3%	26.8%	30.2%	30.2%	27.4%	26.9%

Proportion below age 20

SSP1 - Rapid Development	18.1%	17.4%	16.3%	13.2%	12.8%	11.7%	10.5%
SSP2 - CEPAM Zero Migration	18.1%	17.7%	17.6%	16.0%	16.3%	16.0%	15.5%
SSP2 - CEPAM Medium	18.1%	17.7%	17.9%	17.0%	17.4%	17.3%	16.8%
SSP2 - CEPAM Double Migration	18.1%	17.8%	18.2%	17.7%	18.1%	18.0%	17.3%
SSP3 - Stalled Development	18.1%	18.0%	19.6%	20.5%	22.0%	23.3%	23.8%

Proportion of women age 20-39 with post-secondary education

SSP1 - Rapid Development	41.2%	46.6%	55.3%	70.6%	75.8%	80.4%	83.5%
SSP2 - CEPAM Zero Migration	41.2%	47.3%	56.1%	68.7%	73.6%	78.2%	82.3%
SSP2 - CEPAM Medium	41.2%	46.3%	54.1%	65.9%	70.6%	75.3%	79.9%
SSP2 - CEPAM Double Migration	41.2%	45.3%	52.5%	64.0%	68.8%	73.8%	78.9%
SSP3 - Stalled Development	41.2%	42.4%	43.0%	42.1%	42.7%	42.1%	42.4%

Mean years of schooling, age 25+

SSP1 - Rapid Development	13.5	13.6	13.9	14.3	14.6	15.0	15.5
SSP2 - CEPAM Zero Migration	13.5	13.7	14.0	14.4	14.7	15.0	15.5
SSP2 - CEPAM Medium	13.5	13.6	13.8	14.1	14.3	14.6	15.1
SSP2 - CEPAM Double Migration	13.5	13.6	13.7	13.9	14.0	14.4	15.0
SSP3 - Stalled Development	13.5	13.6	13.8	14.1	14.1	14.2	14.2

Demographic assumptions underlying SSPs

	2015-2020	2020-2025	2030-2035	2050-2055	2060-2065	2075-2080	2095-2100
Total fertility rate							
SSP1 - Rapid Development	1.37	1.29	1.21	1.20	1.21	1.22	1.24
SSP2 - CEPAM Zero Migration	1.48	1.50	1.55	1.60	1.61	1.63	1.65
SSP2 - CEPAM Medium	1.48	1.50	1.55	1.60	1.62	1.63	1.65
SSP2 - CEPAM Double Migration	1.48	1.50	1.55	1.60	1.62	1.63	1.65
SSP3 - Stalled Development	1.60	1.76	1.97	2.13	2.15	2.17	2.20

Life expectancy at birth for females (in years)

SSP1 - Rapid Development	84.1	85.7	88.8	95.2	98.4	103.1	109.5
SSP2 - CEPAM Zero Migration	83.6	84.7	86.9	91.3	93.5	96.8	101.1
SSP2 - CEPAM Medium	83.6	84.7	86.8	91.2	93.4	96.6	101.0
SSP2 - CEPAM Double Migration	83.6	84.7	86.8	91.1	93.3	96.6	100.9
SSP3 - Stalled Development	83.1	83.7	84.8	87.2	88.4	90.1	92.4

Migration – net flow over five years (in thousands)

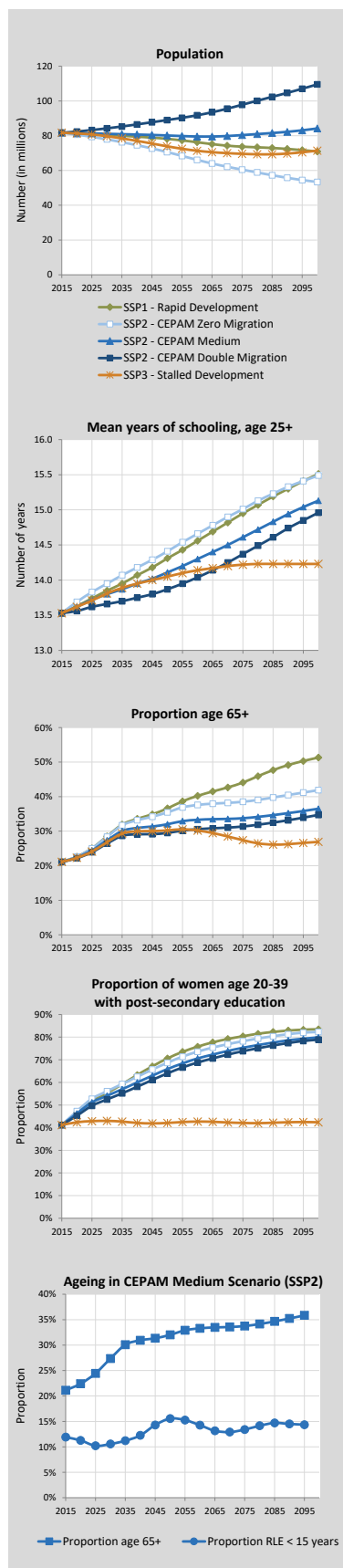
SSP1 - Rapid Development	841.4	916.6	1023.9	1142.7	1152.9	1102.4	955.3
SSP2 - CEPAM Zero Migration	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSP2 - CEPAM Medium	841.2	925.6	1076.2	1304.5	1370.6	1397.9	1341.1
SSP2 - CEPAM Double Migration	1680.8	1827.2	2077.7	2417.5	2487.4	2454.1	2241.0
SSP3 - Stalled Development	560.8	312.8	1.0	1.4	1.6	1.9	2.2

Ageing indicators by scenario

	2015	2020	2030	2050	2060	2075	2095
Median age							
SSP1 - Rapid Development	45.9	47.2	49.2	55.2	57.0	60.2	65.3
SSP2 - CEPAM Zero Migration	45.9	47.3	49.3	54.0	54.1	55.0	56.8
SSP2 - CEPAM Medium	45.9	47.0	48.1	51.0	50.5	51.0	52.1
SSP2 - CEPAM Double Migration	45.9	46.6	47.0	49.0	48.5	49.2	50.7
SSP3 - Stalled Development	45.9	46.9	47.7	48.7	45.6	44.3	43.0

Proportion with less than 15 years of remaining life expectancy (RLE)

SSP1 - Rapid Development	11.9%	11.3%	10.5%	15.6%	14.3%	13.4%	14.4%
SSP2 - CEPAM Zero Migration	12.4%	12.1%	11.4%	17.4%	15.6%	16.7%	14.4%
SSP2 - CEPAM Medium	12.4%	12.0%	11.0%	15.5%	13.2%	13.4%	11.3%
SSP2 - CEPAM Double Migration	12.4%	11.8%	10.6%	14.0%	11.5%	11.6%	10.2%
SSP3 - Stalled Development	12.7%	12.1%	12.7%	16.5%	14.7%	14.5%	10.4%



Germany (Continued)

Labour force projections to 2060

Labour force indicators	2015	2020	2030	2040	2050	2060
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Labour force size, by participation and migration scenario (in millions)

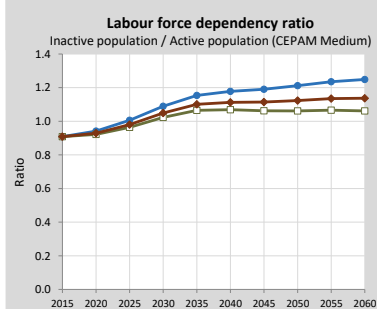
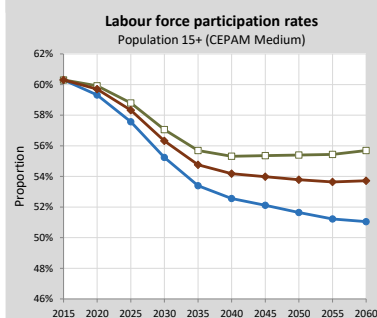
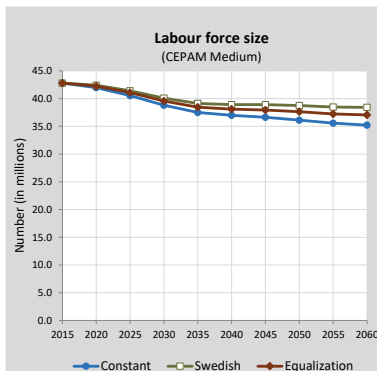
Constant (CEPAM Zero Migration)	42.81	41.48	36.94	33.40	30.57	27.71
Constant (CEPAM Medium)	42.81	41.99	38.81	36.98	36.13	35.22
Constant (CEPAM Double Migration)	42.81	42.50	40.63	40.41	41.31	42.03
Swedish (CEPAM Zero Migration)	42.81	41.89	38.17	35.18	32.86	30.29
Swedish (CEPAM Medium)	42.81	42.41	40.09	38.92	38.76	38.42
Swedish (CEPAM Double Migration)	42.81	42.92	41.96	42.49	44.26	45.80
Equalization (CEPAM Zero Migration)	42.81	41.74	37.65	34.39	31.82	29.14
Equalization (CEPAM Medium)	42.81	42.26	39.57	38.12	37.63	37.06
Equalization (CEPAM Double Migration)	42.81	42.78	41.45	41.67	43.05	44.25
Constant (CEPAM Medium-low fertility)	42.81	41.99	38.79	36.54	34.52	32.03
Swedish (CEPAM Medium-low fertility)	42.81	42.41	40.07	38.44	37.00	34.97
Equalization (CEPAM Medium-low fertility)	42.81	42.26	39.55	37.67	35.98	33.75

Labour force participation rates, age 15+, by participation scenario (CEPAM Medium)

TOTAL (Constant)	60.3%	59.3%	55.2%	52.6%	51.6%	51.0%
TOTAL (Swedish)	60.3%	59.9%	57.1%	55.3%	55.4%	55.7%
TOTAL (Equalization)	60.3%	59.7%	56.3%	54.2%	53.8%	53.7%
MALE (Constant)	66.2%	65.0%	60.4%	57.3%	56.3%	55.5%
MALE (Swedish)	66.2%	65.5%	62.0%	59.7%	59.5%	59.4%
MALE (Equalization)	66.2%	65.0%	60.4%	57.3%	56.3%	55.5%
FEMALE (Constant)	54.6%	53.8%	50.2%	48.0%	47.1%	46.7%
FEMALE (Swedish)	54.6%	54.5%	52.3%	51.1%	51.4%	52.1%
FEMALE (Equalization)	54.6%	54.6%	52.4%	51.1%	51.3%	52.0%

Labour force (15+) by highest level of educational attainment. Columns sum to 100%. (CEPAM Medium; Constant participation)

TOTAL E1-E4 - lower secondary and below	12.7%	11.9%	11.1%	10.4%	8.9%	7.3%
TOTAL E5 - upper secondary	49.3%	47.1%	42.8%	39.1%	36.0%	33.2%
TOTAL E6 - short post-secondary	11.3%	12.7%	15.2%	17.1%	18.8%	20.4%
TOTAL E7 - bachelor	15.1%	15.8%	16.9%	18.1%	19.7%	21.2%
TOTAL E8 - master and higher	11.7%	12.4%	14.0%	15.3%	16.6%	18.0%
MALE E1-E4 - lower secondary and below	12.4%	11.9%	11.7%	11.4%	10.0%	8.3%
MALE E5 - upper secondary	49.7%	48.0%	44.5%	41.8%	39.3%	37.0%
MALE E6 - short post-secondary	9.5%	11.3%	14.7%	17.6%	19.8%	21.5%
MALE E7 - bachelor	16.5%	16.3%	15.4%	14.5%	14.9%	15.9%
MALE E8 - master and higher	11.9%	12.5%	13.7%	14.7%	15.9%	17.2%
FEMALE E1-E4 - lower secondary and below	13.1%	11.8%	10.4%	9.3%	7.6%	6.1%
FEMALE E5 - upper secondary	48.7%	46.1%	40.8%	36.0%	32.2%	28.7%
FEMALE E6 - short post-secondary	13.3%	14.3%	15.7%	16.5%	17.7%	19.1%
FEMALE E7 - bachelor	13.6%	15.3%	18.8%	22.3%	25.2%	27.3%
FEMALE E8 - master and higher	11.4%	12.4%	14.4%	15.9%	17.4%	18.9%



Labour force size by educational attainment according to three migration scenarios, 2015-2060 (Labour force participation = Constant scenario)

