

## II. Term structure of interest rates in the debt securities market \*

### a) Term structure of interest rates in the debt securities market - estimated values, listed Federal securities

% per annum

		Interest rate at a residual maturity of ... years									
End of year or month or trading day	1	2	3	4	5	6	7	8	9	10	
2013		0.13	0.24	0.44	0.69	0.95	1.21	1.47	1.70	1.92	2.11
2014	-	0.10	0.10	0.10	0.06	0.02	0.12	0.24	0.36	0.49	0.60
2015	-	0.39	0.35	0.26	0.14	0.01	0.13	0.28	0.42	0.56	0.70
2016	-	0.84	0.80	0.76	0.65	0.51	0.35	0.18	0.03	0.10	0.22
2017	-	0.72	0.64	0.50	0.34	0.18	0.02	0.12	0.25	0.37	0.48
2018	-	0.70	0.65	0.56	0.44	0.31	0.18	0.06	0.06	0.16	0.25
2019	-	0.69	0.63	0.58	0.54	0.49	0.44	0.37	0.31	0.25	0.19
2020	-	0.73	0.75	0.77	0.77	0.75	0.72	0.68	0.65	0.61	0.57
2021	-	0.73	0.68	0.62	0.56	0.50	0.44	0.38	0.33	0.28	0.24
2022		2.39	2.59	2.55	2.50	2.47	2.47	2.48	2.50	2.51	2.53
2023		2.97	2.35	2.04	1.91	1.87	1.88	1.92	1.96	2.01	2.06
2022 Oct.		1.93	1.92	1.92	1.95	2.00	2.05	2.09	2.13	2.17	2.19
Nov.		2.00	2.08	2.01	1.95	1.92	1.92	1.92	1.92	1.93	1.94
Dec.		2.39	2.59	2.55	2.50	2.47	2.47	2.48	2.50	2.51	2.53
2023 Jan.		2.65	2.59	2.43	2.31	2.25	2.23	2.23	2.25	2.27	2.28
Feb.		3.17	3.11	2.92	2.78	2.69	2.65	2.63	2.63	2.64	2.65
Mar.		2.82	2.65	2.53	2.44	2.39	2.36	2.34	2.34	2.34	2.35
Apr.		2.90	2.69	2.49	2.37	2.32	2.31	2.31	2.32	2.34	2.35
May		2.97	2.71	2.53	2.41	2.33	2.28	2.26	2.25	2.26	2.28
June		3.43	3.14	2.86	2.66	2.55	2.48	2.45	2.43	2.43	2.43
July		3.39	3.07	2.80	2.62	2.53	2.48	2.47	2.48	2.50	2.52
Aug.		3.34	2.98	2.70	2.54	2.47	2.44	2.44	2.46	2.48	2.51
Sep.		3.58	3.19	2.92	2.80	2.76	2.76	2.78	2.80	2.84	2.87
Oct.		3.47	3.00	2.74	2.63	2.61	2.63	2.66	2.71	2.76	2.80
Nov.		3.26	2.77	2.48	2.32	2.26	2.26	2.29	2.34	2.40	2.45
Dec.		2.97	2.35	2.04	1.91	1.87	1.88	1.92	1.96	2.01	2.06
2024 Jan.		3.12	2.53	2.24	2.11	2.07	2.08	2.11	2.15	2.19	2.24
Feb.		3.40	2.97	2.70	2.55	2.47	2.44	2.44	2.45	2.48	2.51
Mar.		3.29	2.82	2.54	2.37	2.29	2.26	2.26	2.27	2.30	2.33
2024 Mar. 4		3.35	2.86	2.58	2.43	2.36	2.33	2.33	2.35	2.37	2.40
5		3.37	2.88	2.60	2.43	2.35	2.32	2.32	2.33	2.36	2.38
6		3.36	2.87	2.58	2.41	2.33	2.30	2.29	2.31	2.34	2.37
7		3.34	2.84	2.55	2.39	2.31	2.27	2.27	2.28	2.30	2.32
8		3.29	2.77	2.47	2.31	2.24	2.21	2.21	2.23	2.25	2.28
11		3.28	2.75	2.45	2.30	2.22	2.19	2.20	2.22	2.25	2.28
12		3.31	2.79	2.49	2.33	2.25	2.23	2.23	2.25	2.28	2.31
13		3.34	2.82	2.52	2.36	2.28	2.26	2.26	2.27	2.30	2.33
14		3.34	2.85	2.56	2.41	2.33	2.31	2.31	2.33	2.36	2.39
15		3.37	2.90	2.63	2.48	2.41	2.38	2.39	2.40	2.43	2.46
18		3.38	2.91	2.64	2.49	2.42	2.40	2.40	2.42	2.44	2.47
19		3.36	2.89	2.62	2.47	2.40	2.37	2.38	2.40	2.42	2.45
20		3.34	2.87	2.60	2.44	2.37	2.34	2.35	2.37	2.40	2.44
21		3.31	2.83	2.56	2.41	2.34	2.32	2.33	2.35	2.38	2.41
22		3.30	2.82	2.54	2.39	2.32	2.29	2.30	2.32	2.35	2.39
25		3.29	2.81	2.52	2.37	2.29	2.27	2.27	2.29	2.32	2.36
26		3.30	2.83	2.54	2.39	2.31	2.28	2.28	2.30	2.33	2.36
27		3.28	2.81	2.53	2.38	2.30	2.27	2.27	2.29	2.32	2.35
28		3.29	2.82	2.54	2.37	2.29	2.26	2.26	2.27	2.30	2.33
Apr. 2		3.27	2.80	2.52	2.37	2.30	2.28	2.29	2.31	2.34	2.37
3		3.26	2.80	2.53	2.38	2.32	2.30	2.31	2.34	2.37	2.41
Memo item: yields, derived from the term structure of interest rates, on listed Federal securities with annual coupon payments											
2024 Mar. 28		3.29	2.83	2.55	2.39	2.30	2.27	2.27	2.28	2.30	2.33
Parameters for calculating the term structure of interest rates											
		Beta0	Beta1	Beta2	Beta3	Tau1	Tau2				
2024 Mar. 28		1.26198	2.76708	- 3.48813	4.48992	2.77008	10.40761				
Apr. 2		0.53340	3.50997	- 2.05645	6.32724	2.28160	12.92591				
3		0.56857	3.47293	- 1.99603	6.34441	2.21664	12.85639				

\* Interest rates on (theoretical) zero coupon bonds without a default risk, estimated according to the procedure outlined in the explanatory notes. The estimates are based on the prices of Federal bonds, five-year Federal notes and Federal Treasury notes with

a residual maturity of at least three months. The interest rates are estimated using a non-linear, parametric approach.

## II. Term structure of interest rates in the debt securities market \*

still: a) Term structure of interest rates in the debt securities market - estimated values, listed Federal securities

% per annum

		Interest rate at a residual maturity of ... years									
End of year or month or trading day		11	12	13	14	15	16	17	18	19	20
2013		2.28	2.42	2.55	2.66	2.75	2.82	2.87	2.92	2.95	2.97
2014		0.71	0.81	0.90	0.98	1.05	1.12	1.18	1.23	1.27	1.32
2015		0.82	0.94	1.04	1.14	1.22	1.30	1.36	1.41	1.46	1.50
2016		0.33	0.42	0.49	0.56	0.62	0.67	0.72	0.76	0.80	0.83
2017		0.57	0.66	0.74	0.81	0.87	0.92	0.97	1.02	1.06	1.10
2018		0.33	0.40	0.47	0.52	0.57	0.62	0.66	0.69	0.73	0.76
2019		–	0.14	–	0.04	–	0.00	0.04	0.11	0.13	0.19
2020		–	0.53	–	0.46	–	0.40	–	0.35	–	0.30
2021		–	0.20	–	0.13	–	0.07	–	0.03	–	0.01
2022		2.55	2.56	2.57	2.57	2.58	2.58	2.57	2.57	2.56	2.55
2023		2.11	2.15	2.19	2.22	2.25	2.27	2.28	2.30	2.30	2.31
2022 Oct.		2.22	2.24	2.25	2.26	2.27	2.28	2.28	2.28	2.27	2.27
Nov.		1.94	1.95	1.95	1.95	1.94	1.94	1.93	1.92	1.91	1.90
Dec.		2.55	2.56	2.57	2.57	2.58	2.58	2.57	2.57	2.56	2.55
2023 Jan.		2.30	2.32	2.33	2.34	2.34	2.35	2.34	2.34	2.33	2.32
Feb.		2.66	2.67	2.67	2.68	2.68	2.68	2.68	2.67	2.67	2.66
Mar.		2.36	2.38	2.39	2.40	2.42	2.42	2.43	2.44	2.44	2.44
Apr.		2.37	2.38	2.39	2.40	2.41	2.41	2.42	2.43	2.43	2.44
May		2.30	2.32	2.35	2.37	2.40	2.42	2.43	2.45	2.46	2.46
June		2.43	2.43	2.43	2.43	2.44	2.44	2.44	2.44	2.44	2.44
July		2.54	2.56	2.58	2.59	2.61	2.62	2.63	2.63	2.63	2.63
Aug.		2.53	2.56	2.58	2.60	2.62	2.63	2.64	2.65	2.65	2.65
Sep.		2.90	2.92	2.95	2.97	2.99	3.00	3.02	3.02	3.03	3.03
Oct.		2.84	2.88	2.92	2.95	2.98	3.00	3.02	3.04	3.05	3.06
Nov.		2.51	2.56	2.60	2.64	2.66	2.69	2.70	2.71	2.71	2.72
Dec.		2.11	2.15	2.19	2.22	2.25	2.27	2.28	2.30	2.30	2.31
2024 Jan.		2.28	2.32	2.35	2.38	2.41	2.43	2.44	2.46	2.47	2.47
Feb.		2.54	2.57	2.60	2.62	2.64	2.65	2.66	2.67	2.68	2.68
Mar.		2.36	2.39	2.42	2.44	2.46	2.48	2.49	2.50	2.50	2.50
2024 Mar.	4	2.43	2.45	2.48	2.50	2.52	2.53	2.55	2.55	2.56	2.56
	5	2.42	2.44	2.47	2.49	2.51	2.53	2.54	2.55	2.56	2.56
	6	2.40	2.42	2.45	2.47	2.49	2.51	2.52	2.53	2.53	2.54
	7	2.35	2.37	2.39	2.41	2.43	2.44	2.45	2.46	2.47	2.47
	8	2.31	2.34	2.36	2.38	2.40	2.42	2.43	2.44	2.45	2.46
	11	2.31	2.34	2.37	2.39	2.41	2.43	2.44	2.45	2.46	2.47
	12	2.34	2.37	2.39	2.42	2.44	2.45	2.46	2.47	2.48	2.48
	13	2.36	2.38	2.41	2.43	2.45	2.47	2.48	2.49	2.49	2.50
	14	2.42	2.45	2.48	2.50	2.52	2.54	2.55	2.56	2.57	2.57
	15	2.49	2.51	2.54	2.56	2.58	2.60	2.61	2.61	2.62	2.62
	18	2.51	2.53	2.56	2.58	2.60	2.62	2.63	2.64	2.64	2.65
	19	2.49	2.51	2.54	2.56	2.58	2.60	2.61	2.62	2.63	2.63
	20	2.47	2.50	2.53	2.55	2.57	2.59	2.60	2.61	2.61	2.62
	21	2.45	2.48	2.51	2.53	2.55	2.57	2.58	2.59	2.60	2.61
	22	2.42	2.45	2.48	2.51	2.53	2.55	2.56	2.57	2.58	2.58
	25	2.39	2.42	2.45	2.48	2.50	2.52	2.53	2.54	2.55	2.55
	26	2.39	2.42	2.45	2.48	2.50	2.52	2.53	2.54	2.55	2.55
	27	2.38	2.41	2.44	2.46	2.48	2.50	2.51	2.52	2.53	2.53
	28	2.36	2.39	2.42	2.44	2.46	2.48	2.49	2.50	2.50	2.50
Apr.	2	2.41	2.44	2.47	2.50	2.52	2.54	2.55	2.56	2.57	2.57
	3	2.44	2.48	2.51	2.54	2.56	2.58	2.59	2.60	2.61	2.61
Memo item: yields, derived from the term structure of interest rates, on listed Federal securities with annual coupon payments											
2024 Mar.	28	2.36	2.39	2.41	2.43	2.45	2.46	2.47	2.48	2.48	2.48
Parameters for calculating the term structure of interest rates											
		Beta0	Beta1	Beta2	Beta3	Tau1	Tau2				
2024 Mar.	28	1.26198	2.76708	– 3.48813	4.48992	2.77008	10.40761				
Apr.	2	0.53340	3.50997	– 2.05645	6.32724	2.28160	12.92591				
	3	0.56857	3.47293	– 1.99603	6.34441	2.21664	12.85639				

\* Interest rates on (theoretical) zero coupon bonds without a default risk, estimated according to the procedure outlined in the explanatory notes. The estimates are based on the prices of Federal bonds, five-year Federal notes and Federal Treasury notes with

a residual maturity of at least three months. The interest rates are estimated using a non-linear, parametric approach.

## II. Term structure of interest rates in the debt securities market \*

still: a) Term structure of interest rates in the debt securities market - estimated values, listed Federal securities

% per annum

		Interest rate at a residual maturity of ... years									
End of year or month or trading day	21	22	23	24	25	26	27	28	29	30	
2013	2.99	2.99	2.99	2.98	2.97	2.96	2.94	2.92	2.89	2.86	
2014	1.36	1.39	1.43	1.46	1.48	1.51	1.53	1.55	1.57	1.59	
2015	1.53	1.56	1.57	1.59	1.59	1.60	1.60	1.59	1.59	1.58	
2016	0.86	0.89	0.91	0.94	0.96	0.98	1.00	1.01	1.03	1.04	
2017	1.13	1.16	1.19	1.22	1.24	1.26	1.28	1.30	1.32	1.34	
2018	0.78	0.81	0.83	0.85	0.87	0.89	0.90	0.92	0.93	0.95	
2019	0.21	0.23	0.25	0.26	0.28	0.29	0.31	0.32	0.33	0.34	
2020	-	0.26	-	0.23	-	0.20	-	0.17	-	0.15	
2021	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.12	
2022	2.53	2.52	2.50	2.48	2.47	2.45	2.43	2.41	2.39	2.36	
2023	2.31	2.31	2.30	2.30	2.29	2.28	2.27	2.25	2.24	2.22	
2022 Oct.	2.26	2.25	2.24	2.23	2.22	2.21	2.20	2.19	2.17	2.16	
Nov.	1.89	1.87	1.86	1.84	1.83	1.81	1.80	1.78	1.77	1.75	
Dec.	2.53	2.52	2.50	2.48	2.47	2.45	2.43	2.41	2.39	2.36	
2023 Jan.	2.31	2.30	2.28	2.26	2.24	2.22	2.20	2.18	2.16	2.13	
Feb.	2.65	2.63	2.62	2.60	2.58	2.57	2.55	2.53	2.51	2.48	
Mar.	2.43	2.42	2.41	2.40	2.39	2.37	2.36	2.34	2.32	2.29	
Apr.	2.44	2.44	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	
May	2.47	2.47	2.46	2.46	2.44	2.43	2.42	2.40	2.38	2.36	
June	2.44	2.44	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	
July	2.63	2.62	2.62	2.61	2.60	2.58	2.57	2.56	2.54	2.52	
Aug.	2.65	2.65	2.64	2.63	2.62	2.61	2.60	2.59	2.57	2.56	
Sep.	3.03	3.03	3.03	3.02	3.02	3.01	3.00	2.99	2.98	2.96	
Oct.	3.07	3.07	3.07	3.07	3.06	3.06	3.05	3.04	3.03	3.02	
Nov.	2.71	2.71	2.70	2.69	2.68	2.67	2.66	2.65	2.63	2.62	
Dec.	2.31	2.31	2.30	2.30	2.29	2.28	2.27	2.25	2.24	2.22	
2024 Jan.	2.48	2.48	2.47	2.47	2.46	2.45	2.44	2.43	2.41	2.40	
Feb.	2.67	2.67	2.66	2.65	2.64	2.63	2.62	2.60	2.59	2.57	
Mar.	2.50	2.50	2.49	2.49	2.48	2.47	2.45	2.44	2.43	2.41	
2024 Mar. 4	2.56	2.56	2.56	2.55	2.54	2.53	2.52	2.51	2.50	2.48	
5	2.56	2.56	2.55	2.54	2.53	2.52	2.51	2.50	2.48	2.47	
6	2.54	2.53	2.53	2.52	2.51	2.50	2.49	2.48	2.46	2.45	
7	2.47	2.47	2.46	2.46	2.45	2.44	2.43	2.41	2.40	2.38	
8	2.46	2.46	2.45	2.45	2.44	2.43	2.42	2.41	2.40	2.38	
11	2.47	2.47	2.46	2.46	2.45	2.44	2.43	2.42	2.41	2.39	
12	2.48	2.48	2.48	2.47	2.46	2.45	2.44	2.42	2.41	2.39	
13	2.50	2.50	2.49	2.49	2.48	2.47	2.46	2.44	2.43	2.41	
14	2.57	2.57	2.57	2.56	2.55	2.54	2.53	2.52	2.50	2.49	
15	2.62	2.62	2.61	2.60	2.59	2.58	2.57	2.56	2.54	2.52	
18	2.65	2.64	2.64	2.63	2.62	2.61	2.59	2.58	2.56	2.55	
19	2.63	2.63	2.62	2.61	2.61	2.59	2.58	2.57	2.55	2.54	
20	2.62	2.61	2.61	2.60	2.59	2.58	2.57	2.56	2.54	2.53	
21	2.61	2.60	2.60	2.59	2.58	2.57	2.56	2.55	2.53	2.52	
22	2.58	2.58	2.57	2.57	2.56	2.55	2.53	2.52	2.50	2.49	
25	2.55	2.55	2.54	2.54	2.53	2.52	2.51	2.49	2.48	2.46	
26	2.55	2.55	2.54	2.53	2.52	2.51	2.50	2.48	2.47	2.45	
27	2.53	2.53	2.52	2.52	2.51	2.50	2.48	2.47	2.46	2.44	
28	2.50	2.50	2.49	2.49	2.48	2.47	2.45	2.44	2.43	2.41	
Apr. 2	2.57	2.57	2.57	2.56	2.55	2.54	2.53	2.51	2.50	2.48	
3	2.61	2.61	2.60	2.60	2.59	2.58	2.56	2.55	2.53	2.52	
Memo item: yields, derived from the term structure of interest rates, on listed Federal securities with annual coupon payments											
2024 Mar. 28	2.48	2.48	2.48	2.47	2.47	2.46	2.45	2.44	2.43	2.42	
Parameters for calculating the term structure of interest rates											
Beta0      Beta1      Beta2      Beta3      Tau1      Tau2											
2024 Mar. 28	1.26198	2.76708	- 3.48813	4.48992	2.77008	10.40761					
Apr. 2	0.53340	3.50997	- 2.05645	6.32724	2.28160	12.92591					
3	0.56857	3.47293	- 1.99603	6.34441	2.21664	12.85639					

\* Interest rates on (theoretical) zero coupon bonds without a default risk, estimated according to the procedure outlined in the explanatory notes. The estimates are based on the prices of Federal bonds, five-year Federal notes and Federal Treasury notes with

a residual maturity of at least three months. The interest rates are estimated using a non-linear, parametric approach.