

II. Euro foreign exchange reference rates of the European Central Bank *

1. End-of-month and daily rates

EUR 1 = CU ...

		EU member countries							
		Bulgaria	Croatia ¹	Czechia	Denmark	Hungary	Poland	Romania	Sweden
Period		Bulgarian lev BGN	Kuna HRK	Czech koruna CZK	Danish krone DKK	Hungarian forint HUF	Polish zloty PLN	Romanian leu RON	Swedish krona SEK
2022 Nov.		1.9558	7.5490	24.338	7.4366	408.40	4.6635	4.9245	10.9345
Dec.		1.9558	7.5365	24.116	7.4365	400.87	4.6808	4.9495	11.1218
2023 Jan.		1.9558	–	23.792	7.4388	390.91	4.7090	4.9210	11.3480
Feb.		1.9558	–	23.497	7.4443	377.68	4.7125	4.9200	11.0780
Mar.		1.9558	–	23.492	7.4485	379.50	4.6700	4.9490	11.2805
Apr.		1.9558	–	23.502	7.4538	373.78	4.5815	4.9301	11.3515
May		1.9558	–	23.741	7.4480	370.85	4.5368	4.9695	11.6278
June		1.9558	–	23.742	7.4474	371.93	4.4388	4.9635	11.8055
July		1.9558	–	23.900	7.4529	386.93	4.4070	4.9349	11.5895
Aug.		1.9558	–	24.072	7.4523	380.13	4.4673	4.9420	11.8430
Sep.		1.9558	–	24.339	7.4571	389.50	4.6283	4.9735	11.5325
Oct.		1.9558	–	24.558	7.4647	382.13	4.4405	4.9659	11.8275
Nov.		1.9558	–	24.292	7.4548	380.75	4.3490	4.9718	11.4308
2023 Nov.	8	1.9558	–	24.666	7.4580	379.38	4.4655	4.9665	11.6555
	9	1.9558	–	24.555	7.4584	378.50	4.4490	4.9686	11.6340
	10	1.9558	–	24.525	7.4577	377.43	4.4243	4.9698	11.6290
	13	1.9558	–	24.581	7.4598	377.20	4.4280	4.9710	11.6100
	14	1.9558	–	24.551	7.4597	377.61	4.4211	4.9719	11.6537
	15	1.9558	–	24.506	7.4588	377.30	4.3970	4.9704	11.4510
	16	1.9558	–	24.446	7.4592	376.30	4.3730	4.9705	11.4898
	17	1.9558	–	24.461	7.4582	377.75	4.3770	4.9723	11.4810
	20	1.9558	–	24.541	7.4565	378.90	4.3690	4.9721	11.4270
	21	1.9558	–	24.509	7.4556	379.18	4.3625	4.9707	11.4040
	22	1.9558	–	24.480	7.4547	380.60	4.3625	4.9708	11.3900
	23	1.9558	–	24.367	7.4559	379.68	4.3655	4.9699	11.4385
	24	1.9558	–	24.406	7.4559	379.88	4.3638	4.9698	11.4390
	27	1.9558	–	24.364	7.4554	379.98	4.3590	4.9709	11.4210
	28	1.9558	–	24.365	7.4560	379.85	4.3473	4.9726	11.4330
	29	1.9558	–	24.260	7.4565	377.38	4.3355	4.9726	11.3655
	30	1.9558	–	24.292	7.4548	380.75	4.3490	4.9718	11.4308
Dec.	1	1.9558	–	24.331	7.4543	379.70	4.3430	4.9713	11.3715
	4	1.9558	–	24.394	7.4564	379.28	4.3393	4.9677	11.3210

		Other European and non-European countries							
		Australia	Brazil	Canada	China	Hong Kong	Iceland	India	Indonesia
Period		Australian dollar AUD	Brazilian real BRL	Canadian dollar CAD	Yuan (renminbi) CNY	Hong Kong dollar HKD	Icelandic krona ISK	Indian rupee INR	Indonesian rupiah IDR
2022 Nov.		1.5425	5.5063	1.4021	7.3437	8.0944	147.10	84.4215	16,271.81
Dec.		1.5693	5.6386	1.4440	7.3582	8.3163	151.50	88.1710	16,519.82
2023 Jan.		1.5476	5.5373	1.4570	7.3198	8.4898	153.10	88.6360	16,282.57
Feb.		1.5760	5.5280	1.4411	7.3663	8.3351	152.30	87.7205	16,193.42
Mar.		1.6268	5.5158	1.4737	7.4763	8.5367	148.30	89.3995	16,300.19
Apr.		1.6664	5.4872	1.4981	7.5979	8.6199	149.10	89.8555	16,111.90
May		1.6497	5.4288	1.4582	7.5926	8.3696	149.70	88.3400	16,030.39
June		1.6398	5.2788	1.4415	7.8983	8.5157	148.70	89.2065	16,384.54
July		1.6436	5.2031	1.4566	7.8808	8.5966	144.30	90.6690	16,622.65
Aug.		1.6785	5.3082	1.4721	7.9196	8.5250	142.30	89.9293	16,551.96
Sep.		1.6339	5.3065	1.4227	7.7352	8.2959	144.90	88.0165	16,383.62
Oct.		1.6739	5.3743	1.4712	7.7686	8.3079	147.50	88.4195	16,868.28
Nov.		1.6542	5.3984	1.4870	7.8008	8.5384	150.70	91.1143	16,981.14
2023 Nov.	8	1.6592	5.2132	1.4711	7.7699	8.3408	150.50	88.8760	16,729.41
	9	1.6699	5.2378	1.4736	7.7886	8.3505	150.90	89.0530	16,721.42
	10	1.6795	5.2579	1.4753	7.7874	8.3433	151.90	88.9803	16,764.67
	13	1.6742	5.2599	1.4754	7.7794	8.3309	153.30	88.8440	16,751.90
	14	1.6819	5.2449	1.4832	7.8171	8.3754	153.70	89.1958	16,841.35
	15	1.6648	5.2829	1.4854	7.8702	8.4852	153.90	90.2937	16,825.84
	16	1.6736	5.2703	1.4891	7.8655	8.4640	153.30	90.3145	16,901.66
	17	1.6709	5.2947	1.4908	7.8414	8.4785	153.30	90.5065	16,717.28
	20	1.6669	5.3364	1.4994	7.8378	8.5165	152.50	91.1060	16,881.57
	21	1.6653	5.3454	1.5029	7.8178	8.5409	152.50	91.2425	16,979.32
	22	1.6618	5.3402	1.4959	7.8015	8.5061	153.90	90.9030	17,023.45
	23	1.6633	5.3367	1.4940	7.7852	8.5000	152.90	90.8150	16,949.50
	24	1.6621	5.3325	1.4935	7.8090	8.5086	150.30	91.0390	16,995.99
	27	1.6575	5.3522	1.4929	7.8331	8.5310	150.50	91.2743	16,954.34
	28	1.6567	5.3593	1.4887	7.8323	8.5368	150.90	91.2550	16,955.57
	29	1.6586	5.3785	1.4920	7.8296	8.5711	150.50	91.5280	16,960.40
	30	1.6542	5.3984	1.4870	7.8008	8.5384	150.70	91.1143	16,981.14
Dec.	1	1.6448	5.3538	1.4736	7.7685	8.4970	150.90	90.6125	16,840.16
	4	1.6351	5.3175	1.4716	7.7580	8.4929	151.10	90.6200	16,819.75

* See Explanatory notes, p. 48. **1** Accession to the euro area on 1 January 2023.

II. Euro foreign exchange reference rates of the European Central Bank *

1. End-of-month and daily rates (cont'd)

EUR 1 = CU ...

Other European and non-European countries (cont'd)										
Period	Israel New shekel ILS	Japan Japanese yen JPY	Korea, Republic of South Korean won KRW	Malaysia Malaysian ringgit MYR	Mexico Mexican peso MXN	New Zealand New Zealand dollar NZD	Norway Norwegian krone NOK	Philippines Philippine peso PHP		
2022 Nov.	3.5691	144.28	1,365.14	4.6147	20.0111	1.6634	10.2648	58.697		
2022 Dec.	3.7554	140.66	1,344.09	4.6984	20.8560	1.6798	10.5138	59.320		
2023 Jan.	3.7675	141.27	1,338.90	4.6211	20.3961	1.6858	10.9083	59.192		
Feb.	3.8821	145.23	1,401.84	4.7653	19.4480	1.7216	10.9713	58.760		
Mar.	3.9284	144.83	1,420.26	4.7986	19.6392	1.7392	11.3940	59.050		
Apr.	3.9939	149.35	1,470.89	4.8981	19.8182	1.7864	11.7910	60.923		
May	3.9713	149.13	1,416.29	4.9307	18.9263	1.7793	12.0045	60.053		
June	4.0486	157.16	1,435.88	5.0717	18.5614	1.7858	11.7040	60.082		
July	4.0714	156.73	1,405.49	4.9703	18.4088	1.7773	11.1805	60.522		
Aug.	4.1293	158.49	1,439.56	5.0428	18.1866	1.8259	11.5800	61.545		
Sep.	4.0472	158.10	1,425.26	4.9741	18.5030	1.7575	11.2535	59.969		
Oct.	4.2756	160.30	1,434.66	5.0594	19.1551	1.8224	11.8735	60.295		
Nov.	4.0597	161.19	1,418.78	5.0933	19.0235	1.7762	11.7200	60.623		
2023 Nov. 8	4.1091	160.97	1,402.03	4.9978	18.6974	1.8006	11.9305	59.742		
9	4.1101	161.57	1,401.90	5.0168	18.7570	1.8035	11.9335	59.715		
10	4.1458	161.77	1,408.82	5.0296	19.0402	1.8119	11.8725	59.680		
13	4.1267	161.96	1,413.72	5.0234	18.8820	1.8142	11.8770	59.842		
14	4.1117	162.67	1,421.73	5.0596	18.8358	1.8270	11.9450	60.065		
15	4.0943	163.39	1,410.50	5.0781	18.8419	1.7985	11.7460	60.546		
16	4.0970	164.05	1,403.37	5.0866	18.7435	1.8141	11.7675	60.440		
17	4.0487	162.29	1,405.00	5.0881	18.7042	1.8161	11.8110	60.416		
20	4.0811	162.12	1,412.56	5.1006	18.7590	1.8132	11.7200	60.497		
21	4.0655	161.61	1,413.92	5.0974	18.7681	1.8026	11.6700	60.724		
22	4.0638	162.25	1,418.10	5.1042	18.7421	1.8065	11.7020	60.698		
23	4.0784	162.98	1,418.85	5.1001	18.7094	1.8052	11.7110	60.364		
24	4.0807	163.30	1,425.61	5.1136	18.6962	1.7992	11.7345	60.507		
27	4.0818	162.86	1,422.61	5.1262	18.6759	1.7955	11.6840	60.793		
28	4.0546	162.74	1,419.89	5.1148	18.8095	1.7980	11.7165	60.696		
29	4.0365	162.12	1,418.07	5.1105	18.8765	1.7843	11.6965	60.835		
30	4.0597	161.19	1,418.78	5.0933	19.0235	1.7762	11.7200	60.623		
Dec. 1	4.0530	161.14	1,420.73	5.0824	18.8153	1.7638	11.6980	60.252		
4	4.0403	159.47	1,417.90	5.0618	18.7638	1.7555	11.6780	60.127		

Other European and non-European countries (cont'd)										
Period	Russian Federation Russian rouble RUB 1	Singapore Singapore dollar SGD	South Africa South African rand ZAR	Switzerland Swiss franc CHF	Thailand Thai baht THB	Turkey Turkish lira TRY	United Kingdom Pound sterling GBP	United States US dollar USD		
2022 Nov.	–	1.4180	17.5768	0.9854	36.588	19.3333	0.86488	1.0376		
2022 Dec.	–	1.4300	18.0986	0.9847	36.835	19.9649	0.88693	1.0666		
2023 Jan.	–	1.4268	18.9223	1.0032	35.787	20.3787	0.88073	1.0833		
Feb.	–	1.4314	19.5518	0.9947	37.485	20.0556	0.87701	1.0619		
Mar.	–	1.4464	19.3275	0.9968	37.111	20.8632	0.87920	1.0875		
Apr.	–	1.4679	20.1558	0.9839	37.467	21.3608	0.88050	1.0981		
May	–	1.4467	21.1353	0.9724	37.134	22.1320	0.86405	1.0683		
June	–	1.4732	20.5785	0.9788	38.482	28.3193	0.85828	1.0866		
July	–	1.4660	19.5511	0.9619	37.732	29.7126	0.85765	1.1023		
Aug.	–	1.4686	20.4199	0.9584	38.005	28.9848	0.85718	1.0868		
Sep.	–	1.4443	19.9813	0.9669	38.679	29.0514	0.86458	1.0594		
Oct.	–	1.4525	19.9507	0.9607	38.266	30.0455	0.87366	1.0619		
Nov.	–	1.4602	20.5703	0.9562	38.494	31.5441	0.86368	1.0931		
2023 Nov. 8	–	1.4481	19.7290	0.9599	37.917	30.4255	0.87015	1.0671		
9	–	1.4523	19.8926	0.9637	38.089	30.4699	0.87205	1.0691		
10	–	1.4525	20.0296	0.9636	38.395	30.5149	0.87435	1.0683		
13	–	1.4520	20.0025	0.9656	38.407	30.5041	0.87155	1.0670		
14	–	1.4592	20.0694	0.9668	38.665	30.7098	0.87230	1.0724		
15	–	1.4645	19.7127	0.9640	38.560	31.1558	0.87188	1.0868		
16	–	1.4634	19.8718	0.9651	38.492	31.1057	0.87520	1.0849		
17	–	1.4610	19.9254	0.9643	38.068	31.1970	0.87395	1.0872		
20	–	1.4641	20.1445	0.9665	38.494	31.4332	0.87630	1.0928		
21	–	1.4638	20.1403	0.9673	38.545	31.5552	0.87326	1.0955		
22	–	1.4622	20.3008	0.9640	38.379	31.4546	0.87030	1.0911		
23	–	1.4618	20.5225	0.9644	38.444	31.3536	0.86940	1.0900		
24	–	1.4640	20.6312	0.9640	38.692	31.5270	0.86818	1.0916		
27	–	1.4641	20.4087	0.9640	38.389	31.6571	0.86671	1.0951		
28	–	1.4630	20.4833	0.9645	38.234	31.6793	0.86820	1.0949		
29	–	1.4629	20.3397	0.9628	38.228	31.7630	0.86525	1.0985		
30	–	1.4602	20.5703	0.9562	38.494	31.5441	0.86368	1.0931		
Dec. 1	–	1.4551	20.3329	0.9530	38.215	31.4452	0.86045	1.0875		
4	–	1.4515	20.3627	0.9476	38.035	31.3983	0.85790	1.0868		

* See Explanatory notes, p. 48. 1 The ECB has suspended the publication of the euro foreign exchange reference rate against the Russian rouble with effect from 2 March 2022.

II. Euro foreign exchange reference rates of the European Central Bank *

2. Annual and monthly averages +

EUR 1 = CU ...

EU member countries								
Period	Bulgaria	Croatia ¹	Czechia	Denmark	Hungary	Poland	Romania	Sweden
	Bulgarian lev BGN	Kuna HRK	Czech koruna CZK	Danish krone DKK	Hungarian forint HUF	Polish zloty PLN	Romanian leu RON	Swedish krona SEK
2021	1.9558	7.5284	25.640	7.4370	358.52	4.5652	4.9215	10.1465
2022	1.9558	7.5349	24.566	7.4396	391.29	4.6861	4.9313	10.6296
2021 Oct.	1.9558	7.5135	25.496	7.4398	360.82	4.5909	4.9480	10.0557
Nov.	1.9558	7.5195	25.391	7.4373	364.50	4.6462	4.9494	10.0459
Dec.	1.9558	7.5201	25.246	7.4362	367.50	4.6137	4.9492	10.2726
2022 Jan.	1.9558	7.5247	24.470	7.4411	358.68	4.5522	4.9454	10.3579
Feb.	1.9558	7.5338	24.437	7.4408	356.97	4.5487	4.9458	10.5342
Mar.	1.9558	7.5711	25.007	7.4404	376.64	4.7522	4.9482	10.5463
Apr.	1.9558	7.5577	24.435	7.4391	374.87	4.6485	4.9442	10.3175
May	1.9558	7.5356	24.750	7.4405	384.45	4.6485	4.9460	10.4956
June	1.9558	7.5252	24.719	7.4392	396.66	4.6471	4.9444	10.6005
July	1.9558	7.5185	24.594	7.4426	404.10	4.7682	4.9396	10.5752
Aug.	1.9558	7.5138	24.568	7.4393	402.10	4.7233	4.8943	10.5021
Sep.	1.9558	7.5222	24.576	7.4366	404.19	4.7414	4.9097	10.7840
Oct.	1.9558	7.5298	24.528	7.4389	418.31	4.8040	4.9259	10.9503
Nov.	1.9558	7.5426	24.369	7.4387	406.68	4.6964	4.9142	10.8798
Dec.	1.9558	7.5448	24.269	7.4377	407.68	4.6832	4.9224	10.9859
2023 Jan.	1.9558	–	23.958	7.4383	396.03	4.6974	4.9242	11.2051
Feb.	1.9558	–	23.712	7.4447	384.91	4.7415	4.9087	11.1725
Mar.	1.9558	–	23.683	7.4456	385.01	4.6893	4.9263	11.2276
Apr.	1.9558	–	23.437	7.4518	375.34	4.6320	4.9365	11.3370
May	1.9558	–	23.595	7.4485	372.37	4.5345	4.9477	11.3697
June	1.9558	–	23.695	7.4492	370.60	4.4608	4.9600	11.6766
July	1.9558	–	23.892	7.4508	379.04	4.4431	4.9411	11.6343
Aug.	1.9558	–	24.108	7.4522	385.05	4.4601	4.9411	11.8117
Sep.	1.9558	–	24.380	7.4566	386.43	4.5981	4.9656	11.8417
Oct.	1.9558	–	24.584	7.4604	385.33	4.5124	4.9682	11.6472
Nov.	1.9558	–	24.485	7.4581	379.19	4.4020	4.9703	11.5475

Other European and non-European countries								
Period	Australia	Brazil	Canada	China	Hong Kong	Iceland	India	Indonesia
	Australian dollar AUD	Brazilian real BRL	Canadian dollar CAD	Yuan (renminbi) CNY	Hong Kong dollar HKD	Icelandic krona ISK	Indian rupee INR	Indonesian rupiah IDR
2021	1.5749	6.3779	1.4826	7.6282	9.1932	150.15	87.4392	16,920.72
2022	1.5167	5.4399	1.3695	7.0788	8.2451	142.24	82.6864	15,625.25
2021 Oct.	1.5669	6.4204	1.4436	7.4500	9.0257	149.66	86.9571	16,450.02
Nov.	1.5615	6.3434	1.4339	7.2927	8.8922	149.16	85.0038	16,298.12
Dec.	1.5781	6.3841	1.4463	7.1993	8.8155	147.15	85.1762	16,184.17
2022 Jan.	1.5770	6.2673	1.4282	7.1922	8.8166	146.09	84.2273	16,227.12
Feb.	1.5825	5.8903	1.4422	7.1957	8.8461	141.99	85.0312	16,271.78
Mar.	1.4946	5.4884	1.3950	6.9916	8.6199	143.39	83.9933	15,802.12
Apr.	1.4663	5.1342	1.3652	6.9605	8.4828	139.83	82.4033	15,566.64
May	1.4995	5.2460	1.3588	7.0830	8.3030	138.46	81.7828	15,422.62
June	1.5044	5.3209	1.3537	7.0734	8.2922	138.47	82.5112	15,531.74
July	1.4856	5.4718	1.3180	6.8538	7.9895	139.05	81.0182	15,258.22
Aug.	1.4550	5.2111	1.3078	6.8884	7.9473	140.12	80.5563	15,024.16
Sep.	1.4820	5.1791	1.3187	6.9508	7.7738	140.35	79.4558	14,847.40
Oct.	1.5474	5.1658	1.3477	7.0687	7.7128	141.50	80.9180	15,172.93
Nov.	1.5455	5.3846	1.3708	7.3171	7.9873	146.98	83.3384	15,975.07
Dec.	1.5685	5.5589	1.4379	7.3859	8.2434	150.76	87.3381	16,503.30
2023 Jan.	1.5523	5.6047	1.4474	7.3173	8.4217	154.06	88.1441	16,427.04
Feb.	1.5514	5.5386	1.4400	7.3244	8.4077	153.11	88.5004	16,232.58
Mar.	1.6034	5.5784	1.4649	7.3807	8.4026	149.89	88.1159	16,364.98
Apr.	1.6389	5.4995	1.4792	7.5561	8.6093	149.62	89.9311	16,313.20
May	1.6346	5.4092	1.4687	7.5948	8.5167	150.47	89.4602	16,116.84
June	1.6157	5.2695	1.4414	7.7653	8.4899	149.35	89.1134	16,194.88
July	1.6423	5.3099	1.4618	7.9482	8.6437	146.79	90.8395	16,639.99
Aug.	1.6818	5.3427	1.4703	7.9096	8.5370	143.87	90.3518	16,639.40
Sep.	1.6622	5.2770	1.4458	7.7967	8.3640	144.46	88.7372	16,424.67
Oct.	1.6637	5.3509	1.4474	7.7200	8.2648	146.50	87.8937	16,646.67
Nov.	1.6634	5.2963	1.4828	7.8087	8.4380	151.44	90.0102	16,853.56

* See Explanatory notes, p. 48. + Averages: Bundesbank calculations based on the daily euro foreign exchange reference rates published by the ECB. ¹ Accession to the euro area on 1 January 2023.

II. Euro foreign exchange reference rates of the European Central Bank *

2. Annual and monthly averages + (cont'd)

EUR 1 = CU ...

Other European and non-European countries (cont'd)								
	Israel	Japan	Korea, Republic of	Malaysia	Mexico	New Zealand	Norway	Philippines
Period	New shekel ILS	Japanese yen JPY	South Korean won KRW	Malaysian ringgit MYR	Mexican peso MXN	New Zealand dollar NZD	Norwegian krone NOK	Philippine peso PHP
2021	3.8208	129.88	1,354.06	4.9015	23.9852	1.6724	10.1633	58.299
2022	3.5345	138.03	1,358.07	4.6279	21.1869	1.6582	10.1026	57.314
2021 Oct.	3.7292	131.21	1,371.23	4.8307	23.7308	1.6452	9.8143	58.835
Nov.	3.5588	130.12	1,351.74	4.7695	23.8113	1.6261	9.9661	57.473
Dec.	3.5426	128.80	1,338.49	4.7599	23.6159	1.6649	10.1308	56.917
2022 Jan.	3.5487	130.01	1,353.61	4.7405	23.1891	1.6789	10.0070	58.000
Feb.	3.6452	130.66	1,358.53	4.7492	23.1808	1.6982	10.0544	58.163
Mar.	3.5710	130.71	1,345.66	4.6277	22.6476	1.6049	9.7367	57.415
Apr.	3.5106	136.61	1,337.58	4.6208	21.7206	1.5978	9.6191	56.264
May	3.5758	136.24	1,340.10	4.6344	21.1861	1.6515	10.1453	55.421
June	3.6038	141.57	1,351.47	4.6496	21.1240	1.6640	10.2972	56.756
July	3.5309	139.17	1,332.00	4.5197	20.8955	1.6436	10.1823	56.917
Aug.	3.3408	136.85	1,337.90	4.5233	20.3909	1.6158	9.8309	56.542
Sep.	3.4181	141.57	1,381.71	4.5005	19.8718	1.6691	10.1697	57.074
Oct.	3.4823	144.73	1,403.51	4.6127	19.6481	1.7299	10.3919	57.738
Nov.	3.5488	145.12	1,384.19	4.7002	19.8393	1.6828	10.3357	58.655
Dec.	3.6562	142.82	1,370.59	4.6721	20.7608	1.6660	10.4480	58.888
2023 Jan.	3.7126	140.54	1,341.38	4.6589	20.4573	1.6851	10.7149	59.162
Feb.	3.7975	142.38	1,368.77	4.6794	19.9543	1.7016	10.9529	58.743
Mar.	3.8742	143.01	1,398.25	4.7816	19.7242	1.7242	11.2858	58.581
Apr.	3.9877	146.51	1,452.07	4.8561	19.8195	1.7673	11.5187	60.807
May	3.9863	148.93	1,442.31	4.9119	19.2755	1.7481	11.7330	60.604
June	3.9502	153.15	1,406.43	5.0208	18.6993	1.7686	11.7164	60.475
July	4.0546	155.94	1,419.16	5.0754	18.7085	1.7758	11.3474	60.690
Aug.	4.0861	157.96	1,443.24	5.0294	18.5202	1.8195	11.4127	61.461
Sep.	4.0793	157.80	1,424.53	5.0024	18.4757	1.8012	11.4525	60.665
Oct.	4.2034	158.04	1,427.33	5.0142	19.0882	1.7916	11.6284	59.994
Nov.	4.1118	161.84	1,412.57	5.0667	18.7877	1.8033	11.7958	60.285

Other European and non-European countries (cont'd)								
	Russian Federation	Singapore	South Africa	Switzerland	Thailand	Turkey	United Kingdom	United States
	Russian rouble RUB 1	Singapore dollar SGD	South African rand ZAR	Swiss franc CHF	Thai baht THB	Turkish lira TRY	Pound sterling GBP	US dollar USD
2021	87.1527	1.5891	17.4766	1.0811	37.837	10.5124	0.85960	1.1827
2022	–	1.4512	17.2086	1.0047	36.856	17.4088	0.85276	1.0530
2021 Oct.	82.7727	1.5673	17.2300	1.0708	38.813	10.6809	0.84694	1.1601
Nov.	83.1111	1.5487	17.7055	1.0522	37.773	12.2361	0.84786	1.1414
Dec.	83.4913	1.5403	17.9331	1.0408	37.931	15.4045	0.84875	1.1304
2022 Jan.	86.5552	1.5286	17.5286	1.0401	37.607	15.3525	0.83503	1.1314
Feb.	88.8910	1.5274	17.2663	1.0461	37.014	15.4901	0.83787	1.1342
Mar.	–	1.4972	16.5138	1.0245	36.648	16.1233	0.83638	1.1019
Apr.	–	1.4775	16.2796	1.0211	36.559	15.9311	0.83655	1.0819
May	–	1.4621	16.8131	1.0355	36.392	16.5412	0.84969	1.0579
June	–	1.4624	16.6961	1.0245	36.928	17.9599	0.85759	1.0566
July	–	1.4211	17.1606	0.9876	37.028	17.7896	0.84955	1.0179
Aug.	–	1.4016	16.9182	0.9690	36.306	18.2701	0.84499	1.0128
Sep.	–	1.3999	17.3828	0.9640	36.670	18.1465	0.87463	0.9904
Oct.	–	1.4003	17.8214	0.9791	37.286	18.2655	0.87058	0.9826
Nov.	–	1.4144	17.8328	0.9842	37.087	18.9877	0.86892	1.0201
Dec.	–	1.4313	18.3036	0.9865	36.817	19.7613	0.86950	1.0589
2023 Jan.	–	1.4283	18.4320	0.9961	35.840	20.2312	0.88212	1.0769
Feb.	–	1.4262	19.1765	0.9905	36.486	20.1981	0.88550	1.0715
Mar.	–	1.4354	19.5602	0.9908	36.912	20.3491	0.88192	1.0706
Apr.	–	1.4609	19.9205	0.9846	37.549	21.2267	0.88115	1.0968
May	–	1.4555	20.6864	0.9751	37.166	21.4918	0.87041	1.0868
June	–	1.4596	20.3033	0.9764	37.852	25.7697	0.85861	1.0840
July	–	1.4753	20.1074	0.9663	38.243	29.3212	0.85856	1.1058
Aug.	–	1.4735	20.4723	0.9588	38.195	29.3788	0.85892	1.0909
Sep.	–	1.4562	20.2780	0.9600	38.301	28.8643	0.86158	1.0684
Oct.	–	1.4462	20.1390	0.9547	38.549	29.4506	0.86798	1.0563
Nov.	–	1.4575	20.0397	0.9634	38.327	30.9786	0.87045	1.0808

* See Explanatory notes, p. 48. + Averages: Bundesbank calculations based on the daily euro foreign exchange reference rates published by the ECB. 1 The ECB has suspended

the publication of the euro foreign exchange reference rate against the Russian rouble with effect from 2 March 2022.

II. Euro foreign exchange reference rates of the European Central Bank *

3. End-of-year rates and annual averages

EUR 1 = CU ...

EU member countries									
	Bulgaria	Croatia ¹	Czechia	Denmark	Estonia ¹	Hungary	Latvia ¹	Lithuania ¹	Poland
Period	Bulgarian lev BGN	Kuna HRK	Czech koruna CZK	Danish krone DKK	Estonian kroon EEK	Hungarian forint HUF	Latvian lats LVL	Lithuanian litas LTL	Polish zloty PLN
End of year									
2009	1.9558	7.3000	26.473	7.4418	15.6466	270.42	0.709300	3.4528	4.1045
2010	1.9558	7.3830	25.061	7.4535	15.6466	277.95	0.709400	3.4528	3.9750
2011	1.9558	7.5370	25.787	7.4342	–	314.58	0.699500	3.4528	4.4580
2012	1.9558	7.5575	25.151	7.4610	–	292.30	0.697700	3.4528	4.0740
2013	1.9558	7.6265	27.427	7.4593	–	297.04	0.702804	3.4528	4.1543
2014	1.9558	7.6580	27.735	7.4453	–	315.54	–	3.4528	4.2732
2015	1.9558	7.6380	27.023	7.4626	–	315.98	–	–	4.2639
2016	1.9558	7.5597	27.021	7.4344	–	309.83	–	–	4.4103
2017	1.9558	7.4400	25.535	7.4449	–	310.33	–	–	4.1770
2018	1.9558	7.4125	25.724	7.4673	–	320.98	–	–	4.3014
2019	1.9558	7.4395	25.408	7.4715	–	330.53	–	–	4.2568
2020	1.9558	7.5519	26.242	7.4409	–	363.89	–	–	4.5597
2021	1.9558	7.5156	24.858	7.4364	–	369.19	–	–	4.5969
2022	1.9558	7.5365	24.116	7.4365	–	400.87	–	–	4.6808
Annual averages +									
2009	1.9558	7.3400	26.435	7.4462	15.6466	280.33	0.7057	3.4528	4.3276
2010	1.9558	7.2891	25.284	7.4473	15.6466	275.48	0.7087	3.4528	3.9947
2011	1.9558	7.4390	24.590	7.4506	–	279.37	0.7063	3.4528	4.1206
2012	1.9558	7.5217	25.149	7.4437	–	289.25	0.6973	3.4528	4.1847
2013	1.9558	7.5786	25.980	7.4579	–	296.87	0.7015	3.4528	4.1975
2014	1.9558	7.6344	27.536	7.4548	–	308.71	–	3.4528	4.1843
2015	1.9558	7.6137	27.279	7.4587	–	310.00	–	–	4.1841
2016	1.9558	7.5333	27.034	7.4452	–	311.44	–	–	4.3632
2017	1.9558	7.4637	26.326	7.4386	–	309.19	–	–	4.2570
2018	1.9558	7.4182	25.647	7.4532	–	318.89	–	–	4.2615
2019	1.9558	7.4180	25.670	7.4661	–	325.30	–	–	4.2976
2020	1.9558	7.5384	26.455	7.4542	–	351.25	–	–	4.4430
2021	1.9558	7.5284	25.640	7.4370	–	358.52	–	–	4.5652
2022	1.9558	7.5349	24.566	7.4396	–	391.29	–	–	4.6861

EU member countries (cont'd)		Other European and non-European countries						
	Romania	Sweden	Australia	Brazil	Canada	China	Hong Kong	Iceland
	Romanian leu RON	Swedish krona SEK	Australian dollar AUD	Brazilian real BRL	Canadian dollar CAD	Yuan (renminbi) CNY	Hong Kong dollar HKD	Icelandic krona ISK ²
End of year								
2009	4.2363	10.2520	1.6008	2.5113	1.5128	9.8350	11.1709	–
2010	4.2620	8.9655	1.3136	2.2177	1.3322	8.8220	10.3856	–
2011	4.3233	8.9120	1.2723	2.4159	1.3215	8.1588	10.0510	–
2012	4.4445	8.5820	1.2712	2.7036	1.3137	8.2207	10.2260	–
2013	4.4710	8.8591	1.5423	3.2576	1.4671	8.3491	10.6933	–
2014	4.4828	9.3930	1.4829	3.2207	1.4063	7.5358	9.4170	–
2015	4.5240	9.1895	1.4897	4.3117	1.5116	7.0608	8.4376	–
2016	4.5390	9.5525	1.4596	3.4305	1.4188	7.3202	8.1751	–
2017	4.6585	9.8438	1.5346	3.9729	1.5039	7.8044	9.3720	–
2018	4.6635	10.2548	1.6220	4.4440	1.5605	7.8751	9.9675	133.20
2019	4.7830	10.4468	1.5995	4.5157	1.4598	7.8205	8.7473	135.80
2020	4.8683	10.0343	1.5896	6.3735	1.5633	8.0225	9.5142	156.10
2021	4.9490	10.2503	1.5615	6.3101	1.4393	7.1947	8.8333	147.60
2022	4.9495	11.1218	1.5693	5.6386	1.4440	7.3582	8.3163	151.50
Annual averages +								
2009	4.2399	10.6191	1.7727	2.7674	1.5850	9.5277	10.8114	–
2010	4.2122	9.5373	1.4423	2.3314	1.3651	8.9712	10.2994	–
2011	4.2391	9.0298	1.3484	2.3265	1.3761	8.9960	10.8362	–
2012	4.4593	8.7041	1.2407	2.5084	1.2842	8.1052	9.9663	–
2013	4.4190	8.6515	1.3777	2.8687	1.3684	8.1646	10.3016	–
2014	4.4437	9.0985	1.4719	3.1211	1.4661	8.1857	10.3025	–
2015	4.4454	9.3535	1.4777	3.7004	1.4186	6.9733	8.6014	–
2016	4.4904	9.4689	1.4883	3.8561	1.4659	7.3522	8.5922	–
2017	4.5688	9.6351	1.4732	3.6054	1.4647	7.6290	8.8045	–
2018	4.6540	10.2583	1.5797	4.3085	1.5294	7.8081	9.2559	127.89
2019	4.7453	10.5891	1.6109	4.4134	1.4855	7.7355	8.7715	137.28
2020	4.8383	10.4848	1.6549	5.8943	1.5300	7.8747	8.8587	154.59
2021	4.9215	10.1465	1.5749	6.3779	1.4826	7.6282	9.1932	150.15
2022	4.9313	10.6296	1.5167	5.4399	1.3695	7.0788	8.2451	142.24

* See Explanatory notes, p. 48. + Averages: Bundesbank calculations based on the daily euro foreign exchange reference rates published by the ECB. ¹ Accession to the euro

area, see p. 7 (Table I. 1.). ² The ECB did not fix euro foreign exchange reference rates for the Icelandic krona from 4 December 2008 to 31 January 2018.

II. Euro foreign exchange reference rates of the European Central Bank *

3. End-of-year rates and annual averages (cont'd)

EUR 1 = CU ...

Other European and non-European countries (cont'd)									
India	Indonesia	Israel	Japan	Korea, Republic of	Malaysia	Mexico	New Zealand	Norway	
Indian rupee INR	Indonesian rupiah IDR	New shekel ILS ¹	Japanese yen JPY	South Korean won KRW	Malaysian ringgit MYR	Mexican peso MXN	New Zealand dollar NZD	Norwegian krone NOK	
End of year									
2009	67.0400	13,626.13	5.4524	133.16	1,666.97	4.9326	18.9223	1.9803	8.3000
2010	59.7580	12,002.14	4.7321	108.65	1,499.06	4.0950	16.5475	1.7200	7.8000
2011	68.7130	11,731.47	4.9453	100.20	1,498.69	4.1055	18.0512	1.6737	7.7540
2012	72.5600	12,713.97	4.9258	113.61	1,406.23	4.0347	17.1845	1.6045	7.3483
2013	85.3660	16,764.78	4.7880	144.72	1,450.93	4.5221	18.0731	1.6762	8.3630
2014	76.7190	15,076.10	4.7200	145.23	1,324.80	4.2473	17.8679	1.5525	9.0420
2015	72.0215	15,039.99	4.2481	131.07	1,280.78	4.6959	18.9145	1.5923	9.6030
2016	71.5935	14,173.43	4.0477	123.40	1,269.36	4.7287	21.7719	1.5158	9.0863
2017	76.6055	16,239.12	4.1635	135.01	1,279.61	4.8536	23.6612	1.6850	9.8403
2018	79.7298	16,500.00	4.2972	125.85	1,277.93	4.7317	22.4921	1.7056	9.9483
2019	80.1870	15,595.60	3.8845	121.94	1,296.28	4.5953	21.2202	1.6653	9.8638
2020	89.6605	17,240.76	3.9447	126.49	1,336.00	4.9340	24.4160	1.6984	10.4703
2021	84.2292	16,100.42	3.5159	130.38	1,346.38	4.7184	23.1438	1.6579	9.9888
2022	88.1710	16,519.82	3.7554	140.66	1,344.09	4.6984	20.8560	1.6798	10.5138
Annual averages +									
2009	67.3611	14,443.74	5.4668	130.34	1,772.90	4.9079	18.7989	2.2121	8.7278
2010	60.5878	12,041.70	4.9457	116.24	1,531.82	4.2668	16.7373	1.8377	8.0043
2011	64.8859	12,206.51	4.9775	110.96	1,541.23	4.2558	17.2877	1.7600	7.7934
2012	68.5973	12,045.73	4.9536	102.49	1,447.69	3.9672	16.9029	1.5867	7.4751
2013	77.9300	13,857.50	4.7948	129.66	1,453.91	4.1855	16.9641	1.6206	7.8067
2014	81.0406	15,748.92	4.7449	140.31	1,398.14	4.3446	17.6550	1.5995	8.3544
2015	71.1956	14,870.39	4.3122	134.31	1,256.54	4.3373	17.6157	1.5930	8.9496
2016	74.3717	14,720.83	4.2489	120.20	1,284.18	4.5835	20.6673	1.5886	9.2906
2017	73.5324	15,118.01	4.0622	126.71	1,276.74	4.8527	21.3286	1.5897	9.3270
2018	80.7332	16,803.22	4.2423	130.40	1,299.07	4.7634	22.7054	1.7065	9.5975
2019	78.8361	15,835.27	3.9901	122.01	1,305.32	4.6374	21.5565	1.6998	9.8511
2020	84.6392	16,627.37	3.9258	121.85	1,345.58	4.7959	24.5194	1.7561	10.7228
2021	87.4392	16,920.72	3.8208	129.88	1,354.06	4.9015	23.9852	1.6724	10.1633
2022	82.6864	15,625.25	3.5345	138.03	1,358.07	4.6279	21.1869	1.6582	10.1026

Other European and non-European countries (cont'd)									
Philippines	Russian Federation	Singapore	South Africa	Switzerland	Thailand	Turkey	United Kingdom	United States	
Philippine peso PHP	Russian rouble RUB ²	Singapore dollar SGD	South African rand ZAR	Swiss franc CHF	Thai baht THB	Turkish lira TRY	Pound sterling GBP	US dollar USD	
End of year									
2009	66.507	43.1540	2.0194	10.6660	1.4836	47.986	2.1547	0.88810	1.4406
2010	58.300	40.8200	1.7136	8.8625	1.2504	40.170	2.0694	0.86075	1.3362
2011	56.754	41.7650	1.6819	10.4830	1.2156	40.991	2.4432	0.83530	1.2939
2012	54.107	40.3295	1.6111	11.1727	1.2072	40.347	2.3551	0.81610	1.3194
2013	61.289	45.3246	1.7414	14.5660	1.2276	45.178	2.9605	0.83370	1.3791
2014	54.436	72.3370	1.6058	14.0353	1.2024	39.910	2.8320	0.77890	1.2141
2015	50.999	80.6736	1.5417	16.9530	1.0835	39.248	3.1765	0.73395	1.0887
2016	52.268	64.3000	1.5234	14.4570	1.0739	37.726	3.7072	0.85618	1.0541
2017	59.795	69.3920	1.6024	14.8054	1.1702	39.121	4.5464	0.88723	1.1993
2018	60.113	79.7153	1.5591	16.4594	1.1269	37.052	6.0588	0.89453	1.1450
2019	56.900	69.9563	1.5111	15.7773	1.0854	33.415	6.6843	0.85080	1.1234
2020	59.125	91.4671	1.6218	18.0219	1.0802	36.727	9.1131	0.89903	1.2271
2021	57.763	85.3004	1.5279	18.0625	1.0331	37.653	15.2335	0.84028	1.1326
2022	59.320	-	1.4300	18.0986	0.9847	36.835	19.9649	0.88693	1.0666
Annual averages +									
2009	66.338	44.1376	2.0241	11.6737	1.5100	47.804	2.1631	0.89094	1.3948
2010	59.739	40.2629	1.8055	9.6984	1.3803	42.014	1.9965	0.85784	1.3257
2011	60.260	40.8846	1.7489	10.0970	1.2326	42.429	2.3378	0.86788	1.3920
2012	54.246	39.9262	1.6055	10.5511	1.2053	39.928	2.3135	0.81087	1.2848
2013	56.428	42.3370	1.6619	12.8330	1.2311	40.830	2.5335	0.84926	1.3281
2014	58.979	50.9518	1.6823	14.4037	1.2146	43.147	2.9065	0.80612	1.3285
2015	50.522	68.0720	1.5255	14.1723	1.0679	38.028	3.0255	0.72584	1.1095
2016	52.556	74.1446	1.5275	16.2645	1.0902	39.043	3.3433	0.81948	1.1069
2017	56.973	65.9383	1.5588	15.0490	1.1117	38.296	4.1206	0.87667	1.1297
2018	62.210	74.0416	1.5926	15.6186	1.1550	38.164	5.7077	0.88471	1.1810
2019	57.985	72.4553	1.5273	16.1757	1.1124	34.757	6.3578	0.87777	1.1195
2020	56.615	82.7248	1.5742	18.7655	1.0705	35.708	8.0547	0.88970	1.1422
2021	58.299	87.1527	1.5891	17.4766	1.0811	37.837	10.5124	0.85960	1.1827
2022	57.314	-	1.4512	17.2086	1.0047	36.856	17.4088	0.85276	1.0530

* See Explanatory notes, p. 48. + Averages: Bundesbank calculations based on the daily euro foreign exchange reference rates published by the ECB. ¹ Up to December 2010, ECB indicative rates. ² The ECB has suspended the publication of the euro foreign exchange reference rate against the Russian rouble with effect from 2 March 2022.

II. Euro foreign exchange reference rates of the European Central Bank*

4. Exchange rates of major currencies



* See explanatory notes, p. 48. ¹ Bundesbank calculations based on the daily euro foreign exchange reference rates published by the ECB.