

## 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	Czechia	Denmark	Hungary	Poland	Romania	Sweden
Period		Bulgarian lev BGN	Czech koruna CZK	Danish krone DKK	Hungarian forint HUF	Polish zloty PLN	Romanian leu RON	Swedish krona SEK
2023	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
	Dec.	1.9558	24.724	7.4529	382.80	4.3395	4.9756	11.0960
2024	Jan.	1.9558	24.891	7.4550	384.90	4.3330	4.9758	11.2682
	Feb.	1.9558	25.363	7.4540	393.48	4.3208	4.9706	11.2150
	Mar.	1.9558	25.305	7.4580	395.26	4.3123	4.9735	11.5250
	Apr.	1.9558	25.140	7.4583	390.68	4.3178	4.9759	11.7530
	May	1.9558	24.709	7.4588	388.83	4.2645	4.9767	11.4210
	June	1.9558	25.025	7.4575	395.10	4.3090	4.9773	11.3595
	July	1.9558	25.457	7.4621	395.78	4.2908	4.9749	11.6125
2024	July 22	1.9558	25.231	7.4617	389.73	4.2788	4.9720	11.6295
	23	1.9558	25.362	7.4610	390.43	4.2770	4.9729	11.6735
	24	1.9558	25.425	7.4618	393.28	4.2890	4.9706	11.6875
	25	1.9558	25.389	7.4625	393.33	4.2968	4.9697	11.7740
	26	1.9558	25.370	7.4626	390.95	4.2740	4.9718	11.7325
	29	1.9558	25.371	7.4625	392.50	4.2938	4.9725	11.7265
	30	1.9558	25.429	7.4619	394.50	4.2838	4.9766	11.6860
	31	1.9558	25.457	7.4621	395.78	4.2908	4.9749	11.6125
	Aug. 1	1.9558	25.454	7.4613	395.55	4.2958	4.9756	11.5220
	2	1.9558	25.271	7.4621	396.73	4.2890	4.9756	11.5843
	5	1.9558	25.314	7.4607	398.45	4.3128	4.9768	11.5340
	6	1.9558	25.286	7.4628	397.38	4.3105	4.9772	11.5590
	7	1.9558	25.270	7.4627	398.20	4.3173	4.9768	11.4235
	8	1.9558	25.273	7.4619	396.10	4.3190	4.9767	11.4955
	9	1.9558	25.234	7.4622	395.20	4.3253	4.9769	11.4955
	12	1.9558	25.178	7.4628	393.25	4.3058	4.9767	11.4935
	13	1.9558	25.203	7.4621	393.53	4.2890	4.9757	11.5060
	14	1.9558	25.197	7.4620	394.45	4.2975	4.9763	11.4843
	15	1.9558	25.200	7.4619	394.58	4.2815	4.9764	11.5135
	16	1.9558	25.239	7.4616	395.73	4.2703	4.9758	11.5435

		Other European and non-European countries						
		Australia	Brazil	Canada	China	Hong Kong	Iceland	India
Period		Australian dollar AUD	Brazilian real BRL	Canadian dollar CAD	Yuan (renminbi) CNY	Hong Kong dollar HKD	Icelandic krona ISK	Indian rupee INR
2023	July	1.6436	5.2031	1.4566	7.8808	8.5966	144.30	90.6690
	Aug.	1.6785	5.3082	1.4721	7.9196	8.5250	142.30	89.9293
	Sep.	1.6339	5.3065	1.4227	7.7352	8.2959	144.90	88.0165
	Oct.	1.6739	5.3743	1.4712	7.7686	8.3079	147.50	88.4195
	Nov.	1.6542	5.3984	1.4870	7.8008	8.5384	150.70	91.1143
	Dec.	1.6263	5.3618	1.4642	7.8509	8.6314	150.50	91.9045
2024	Jan.	1.6468	5.3749	1.4558	7.7789	8.4734	148.30	90.0010
	Feb.	1.6684	5.4054	1.4719	7.7888	8.4735	149.30	89.7458
	Mar.	1.6607	5.4032	1.4672	7.8144	8.4594	150.30	90.1365
	Apr.	1.6423	5.4928	1.4672	7.7609	8.3817	150.30	89.4155
	May	1.6315	5.6418	1.4804	7.8577	8.4838	149.10	90.5255
	June	1.6079	5.8915	1.4670	7.7748	8.3594	148.90	89.2495
	July	1.6635	6.0874	1.4977	7.8194	8.4589	149.90	90.6250
2024	July 22	1.6370	6.0986	1.4971	7.9191	8.5006	150.10	91.0885
	23	1.6396	6.0594	1.4944	7.9003	8.4788	149.70	90.9075
	24	1.6428	6.0759	1.4953	7.8934	8.4716	149.70	90.8080
	25	1.6638	6.1638	1.5020	7.8331	8.4682	149.50	90.8915
	26	1.6559	6.1170	1.5009	7.8750	8.4782	149.70	90.9495
	29	1.6534	6.1165	1.4976	7.8518	8.4490	149.90	90.5740
	30	1.6560	6.0843	1.4996	7.8489	8.4558	149.50	90.6235
	31	1.6635	6.0874	1.4977	7.8194	8.4589	149.90	90.6250
	Aug. 1	1.6501	6.1120	1.4912	7.8203	8.4320	149.90	90.3485
	2	1.6629	6.2570	1.5035	7.8075	8.4625	150.50	90.7280
	5	1.7008	6.3759	1.5188	7.8046	8.5335	150.50	92.2765
	6	1.6837	6.2028	1.5097	7.8071	8.5055	150.70	91.5925
	7	1.6643	6.1360	1.5010	7.8425	8.5162	150.90	91.6950
	8	1.6677	6.1544	1.5021	7.8393	8.5168	151.10	91.7590
	9	1.6609	6.0477	1.5007	7.8280	8.5140	151.10	91.6550
	12	1.6560	5.9998	1.4998	7.8439	8.5157	151.10	91.7375
	13	1.6572	6.0061	1.5014	7.8301	8.5143	151.10	91.7610
	14	1.6643	6.0024	1.5115	7.8627	8.5824	152.10	92.5025
	15	1.6609	6.0262	1.5090	7.8816	8.5800	152.10	92.4385
	16	1.6577	6.0112	1.5095	7.8758	8.5705	152.90	92.2775

\* See Explanatory notes, p. 48.

## 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	Indonesia Indonesian rupiah IDR	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
2023 July	16,622.65	4.0714	156.73	1,405.49	4.9703	18.4088	1.7773	11.1805
Aug.	16,551.96	4.1293	158.49	1,439.56	5.0428	18.1866	1.8259	11.5800
Sep.	16,383.62	4.0472	158.10	1,425.26	4.9741	18.5030	1.7575	11.2535
Oct.	16,868.28	4.2756	160.30	1,434.66	5.0594	19.1551	1.8224	11.8735
Nov.	16,981.14	4.0597	161.19	1,418.78	5.0933	19.0235	1.7762	11.7200
Dec.	17,079.71	3.9993	156.33	1,433.66	5.0775	18.7231	1.7504	11.2405
2024 Jan.	17,076.29	3.9431	160.19	1,444.63	5.1259	18.5817	1.7705	11.3510
Feb.	17,038.18	3.8736	162.53	1,447.43	5.1375	18.4969	1.7807	11.4920
Mar.	17,157.87	3.9799	163.45	1,458.67	5.1168	17.9179	1.8092	11.6990
Apr.	17,422.11	4.0172	168.27	1,479.67	5.1130	18.1895	1.8035	11.8150
May	17,641.72	4.0342	170.52	1,501.11	5.1080	18.4387	1.7696	11.3830
June	17,487.21	4.0200	171.94	1,474.86	5.0501	19.5654	1.7601	11.3965
July	17,634.43	4.0822	162.76	1,485.96	4.9749	20.3317	1.8289	11.8175
2024 July 22	17,648.14	3.9593	170.80	1,511.28	5.0961	19.6457	1.8171	11.9165
23	17,610.63	3.9314	169.64	1,505.59	5.0738	19.5254	1.8209	11.9635
24	17,622.09	3.9403	167.23	1,500.01	5.0687	19.8113	1.8267	11.9420
25	17,704.82	3.9666	165.62	1,497.33	5.0598	20.0980	1.8401	12.0825
26	17,694.04	3.9788	167.84	1,505.15	5.0580	19.9254	1.8427	11.9370
29	17,609.86	4.0321	166.44	1,496.41	5.0180	19.9420	1.8418	11.9155
30	17,681.92	4.0440	167.61	1,498.59	5.0034	20.1533	1.8386	11.8885
31	17,634.43	4.0822	162.76	1,485.96	4.9749	20.3317	1.8289	11.8175
Aug. 1	17,549.06	4.0855	162.66	1,474.13	4.9295	19.9936	1.8140	11.7465
2	17,562.88	4.1211	161.37	1,479.77	4.8730	20.5799	1.8196	11.9290
5	17,754.50	4.2013	155.98	1,495.97	4.8525	21.6414	1.8461	12.1108
6	17,653.43	4.1979	158.29	1,504.09	4.8834	21.0872	1.8423	12.0005
7	17,539.37	4.1367	160.62	1,501.94	4.9111	21.0692	1.8150	11.7810
8	17,378.97	4.1511	159.74	1,503.86	4.8912	21.0402	1.8230	11.8825
9	17,413.43	4.0722	160.33	1,491.07	4.8280	20.5652	1.8156	11.8295
12	17,444.00	4.1171	161.25	1,497.58	4.8682	20.5660	1.8110	11.7745
13	17,318.20	4.0855	161.17	1,498.93	4.8648	20.7235	1.8089	11.7970
14	17,194.60	4.1127	161.98	1,493.74	4.8704	20.8780	1.8324	11.7665
15	17,290.19	4.0770	162.14	1,495.28	4.8834	20.7475	1.8320	11.7455
16	17,259.48	4.0359	162.72	1,490.58	4.8720	20.5459	1.8240	11.8185

Other European and non-European countries (cont'd)								
Period	Philippines Philippine peso PHP	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
2023 July	60.522	1.4660	19.5511	0.9619	37.732	29.7126	0.85765	1.1023
Aug.	61.545	1.4686	20.4199	0.9584	38.005	28.9848	0.85718	1.0868
Sep.	59.969	1.4443	19.9813	0.9669	38.679	29.0514	0.86458	1.0594
Oct.	60.295	1.4525	19.9507	0.9607	38.266	30.0455	0.87366	1.0619
Nov.	60.623	1.4602	20.5703	0.9562	38.494	31.5441	0.86368	1.0931
Dec.	61.283	1.4591	20.3477	0.9260	37.973	32.6531	0.86905	1.1050
2024 Jan.	61.023	1.4517	20.3238	0.9348	38.461	32.8984	0.85435	1.0837
Feb.	60.858	1.4570	20.9007	0.9534	38.909	33.8067	0.85655	1.0826
Mar.	60.797	1.4587	20.5226	0.9766	39.412	34.9487	0.85510	1.0811
Apr.	61.830	1.4593	20.0682	0.9787	39.732	34.7045	0.85478	1.0718
May	63.604	1.4663	20.2927	0.9818	39.925	34.9691	0.85365	1.0852
June	62.560	1.4513	19.4970	0.9634	39.319	35.1868	0.84638	1.0705
July	63.218	1.4491	19.7400	0.9533	38.629	35.9085	0.84380	1.0828
2024 July 22	63.575	1.4648	19.8948	0.9671	39.540	35.9064	0.84215	1.0888
23	63.498	1.4615	20.0068	0.9681	39.324	35.7592	0.84073	1.0860
24	63.558	1.4577	19.8662	0.9609	39.197	35.6509	0.83973	1.0848
25	63.576	1.4566	20.0649	0.9534	39.264	35.9078	0.84280	1.0851
26	63.377	1.4594	19.8121	0.9594	39.112	35.7984	0.84378	1.0860
29	63.343	1.4540	19.9041	0.9578	38.914	35.7096	0.84345	1.0817
30	63.502	1.4554	19.8815	0.9592	38.961	35.8199	0.84260	1.0824
31	63.218	1.4491	19.7400	0.9533	38.629	35.9085	0.84380	1.0828
Aug. 1	62.912	1.4437	19.6134	0.9467	38.409	35.7061	0.84328	1.0789
2	62.885	1.4424	19.7048	0.9433	38.296	35.9419	0.85000	1.0835
5	63.303	1.4475	20.3713	0.9304	38.732	36.5848	0.85878	1.0966
6	63.049	1.4485	20.1616	0.9325	38.797	36.6472	0.85998	1.0915
7	63.015	1.4499	20.0340	0.9409	38.866	36.5786	0.85808	1.0922
8	62.738	1.4474	20.0993	0.9368	38.577	36.6133	0.86093	1.0930
9	62.533	1.4453	20.0169	0.9435	38.450	36.6275	0.85708	1.0917
12	62.611	1.4474	19.9047	0.9491	38.527	36.6293	0.85554	1.0925
13	62.322	1.4454	19.8621	0.9480	38.384	36.6789	0.85458	1.0931
14	62.761	1.4494	19.9267	0.9515	38.429	36.9665	0.85783	1.1019
15	62.744	1.4505	19.8284	0.9541	38.483	37.0147	0.85615	1.1011
16	62.843	1.4497	19.6993	0.9540	38.408	37.0448	0.85128	1.0994

\* See Explanatory notes, p. 48.

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

### 2. Annual and monthly averages +

EUR 1 = CU ...

EU member countries								
Period	Bulgaria Bulgarian lev BGN	Croatia <sup>1</sup> Kuna HRK	Czechia Czech koruna CZK	Denmark Danish krone DKK	Hungary Hungarian forint HUF	Poland Polish zloty PLN	Romania Romanian leu RON	Sweden Swedish krona SEK
2022	1.9558	7.5349	24.566	7.4396	391.29	4.6861	4.9313	10.6296
2023	1.9558	–	24.004	7.4509	381.85	4.5420	4.9467	11.4788
2022 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
Dec.	1.9558	–	24.478	7.4556	381.80	4.3335	4.9707	11.2028
2024 Jan.	1.9558	–	24.716	7.4572	382.04	4.3648	4.9749	11.2834
Feb.	1.9558	–	25.232	7.4550	388.04	4.3256	4.9746	11.2500
Mar.	1.9558	–	25.292	7.4566	395.09	4.3069	4.9708	11.3054
Apr.	1.9558	–	25.278	7.4596	392.41	4.3026	4.9730	11.5910
May	1.9558	–	24.819	7.4606	387.18	4.2796	4.9754	11.6186
June	1.9558	–	24.779	7.4592	394.76	4.3209	4.9767	11.2851
July	1.9558	–	25.299	7.4606	392.84	4.2817	4.9730	11.5324

Other European and non-European countries								
Period	Australia Australian dollar AUD	Brazil Brazilian real BRL	Canada Canadian dollar CAD	China Yuan (renminbi) CNY	Hong Kong Hong Kong dollar HKD	Iceland Icelandic krona ISK	India Indian rupee INR	Indonesia Indonesian rupiah IDR
2022	1.5167	5.4399	1.3695	7.0788	8.2451	142.24	82.6864	15,625.25
2023	1.6288	5.4010	1.4595	7.6600	8.4650	149.13	89.3001	16,479.62
2022 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
Dec.	1.6321	5.3428	1.4653	7.7870	8.5152	150.55	90.8009	16,910.33
2024 Jan.	1.6422	5.3569	1.4631	7.8201	8.5244	149.43	90.6347	17,049.43
Feb.	1.6533	5.3559	1.4564	7.7651	8.4432	148.68	89.5608	16,898.59
Mar.	1.6586	5.4157	1.4726	7.8297	8.5049	149.04	90.2515	17,063.66
Apr.	1.6469	5.4975	1.4661	7.7658	8.4006	150.35	89.4676	17,258.77
May	1.6317	5.5529	1.4780	7.8206	8.4458	150.00	90.1573	17,375.67
June	1.6206	5.7884	1.4750	7.8051	8.4023	149.36	89.8106	17,595.94
July	1.6257	6.0053	1.4868	7.8750	8.4684	149.43	90.6557	17,623.29

\* See Explanatory notes, p. 48. + Averages: Bundesbank calculations based on the daily euro foreign exchange reference rates published by the ECB. <sup>1</sup> 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
2022	3.5345	138.03	1,358.07	4.6279	21.1869	1.6582	10.1026	57.314
2023	3.9880	151.99	1,412.88	4.9320	19.1830	1.7622	11.4248	60.163
2022 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
Dec.	4.0057	157.21	1,423.13	5.0826	18.7665	1.7556	11.5333	60.593
2024 Jan.	4.0493	159.46	1,447.18	5.1105	18.6268	1.7673	11.3501	61.090
Feb.	3.9345	161.38	1,437.37	5.1468	18.4425	1.7618	11.3843	60.486
Mar.	3.9442	162.77	1,448.12	5.1272	18.2610	1.7869	11.5214	60.736
Apr.	4.0240	165.03	1,469.42	5.1139	18.0066	1.7992	11.6828	61.171
May	4.0062	168.54	1,474.96	5.0971	18.1549	1.7819	11.5988	62.523
June	4.0074	169.81	1,485.38	5.0680	19.6134	1.7539	11.4178	63.177
July	3.9902	171.17	1,499.62	5.0737	19.6397	1.7985	11.7160	63.416

Other European and non-European countries (cont'd)							
	Singapore	South Africa	Switzerland	Thailand	Turkey	United Kingdom	United States
	Singapore dollar SGD	South African rand ZAR	Swiss franc CHF	Thai baht THB	Turkish lira TRY	Pound sterling GBP	US dollar USD
2022	1.4512	17.2086	1.0047	36.856	17.4088	0.85276	1.0530
2023	1.4523	19.9551	0.9718	37.631	25.7597	0.86979	1.0813
2022 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
Dec.	1.4533	20.3373	0.9441	38.176	31.7243	0.86168	1.0903
2024 Jan.	1.4569	20.5161	0.9368	38.401	32.8165	0.85873	1.0905
Feb.	1.4513	20.5082	0.9462	38.709	33.2644	0.85466	1.0795
Mar.	1.4573	20.4955	0.9656	39.079	34.8229	0.85524	1.0872
Apr.	1.4554	20.2378	0.9761	39.454	34.6926	0.85658	1.0728
May	1.4606	19.9079	0.9830	39.607	34.8605	0.85564	1.0812
June	1.4547	19.8144	0.9616	39.492	35.0667	0.84643	1.0759
July	1.4602	19.7950	0.9676	39.324	35.6969	0.84332	1.0844

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

## 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 <sup>1</sup>	Czechia	Denmark	Estonia <sup>1</sup>	Hungary	Latvia <sup>1</sup>	Lithuania <sup>1</sup>	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
<b>End of year</b>									
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
2023	1.9558	–	24.724	7.4529	–	382.80	–	–	4.3395
<b>Annual averages +</b>									
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
2023	1.9558	–	24.004	7.4509	–	381.85	–	–	4.5420

EU member countries (cont'd)		Other European and non-European countries						
	Romania	Sweden	Australia	Brazil	Canada	China	Hong Kong	Iceland
Period	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 <sup>2</sup>
<b>End of year</b>								
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	8.9675	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
2023	4.9756	11.0960	1.6263	5.3618	1.4642	7.8509	8.6314	150.50
<b>Annual averages +</b>								
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
2023	4.9467	11.4788	1.6288	5.4010	1.4595	7.6600	8.4650	149.13

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

area, see p. 7 (Table I. 1.). <sup>2</sup> 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 †	Japanese yen JPY	South Korean won KRW	Malaysian ringgit MYR	Mexican peso MXN	New Zealand dollar NZD	Norwegian krone NOK	
<b>End of year</b>									
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
2023	91.9045	17,079.71	3.9993	156.33	1,433.66	5.0775	18.7231	1.7504	11.2405
<b>Annual averages +</b>									
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
2023	89.3001	16,479.62	3.9880	151.99	1,412.88	4.9320	19.1830	1.7622	11.4248

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 ‡	Singapore dollar SGD	South African rand ZAR	Swiss franc CHF	Thai baht THB	Turkish lira TRY	Pound sterling GBP	US dollar USD	
<b>End of year</b>									
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
2023	61.283	-	1.4591	20.3477	0.9260	37.973	32.6531	0.86905	1.1050
<b>Annual averages +</b>									
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
2023	60.163	-	1.4523	19.9551	0.9718	37.631	25.7597	0.86979	1.0813

\* See Explanatory notes, p. 48. + Averages: Bundesbank calculations based on the daily euro foreign exchange reference rates published by the ECB. † Up to December 2010, ECB indicative rates. ‡ 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. <sup>1</sup> Bundesbank calculations based on the daily euro foreign exchange reference rates published by the ECB.