

Supplemental Operational Performance Data

Set forth below are tables that provide supplemental information regarding the operational performance results for the three months ended December 31, 2019, as well as the prior eight quarterly reporting periods for the payment programs of Mastercard International Incorporated and Mastercard Europe SA (collectively, "Mastercard"), the principal operating subsidiaries of Mastercard Incorporated.

1. Branded Volume and Transactions

The tables below set forth the gross dollar volume ("GDV"), purchase volume, cash volume and the number of purchase transactions, cash transactions, and cards on a regional basis for Mastercard™-branded cards. Growth rates over prior periods are provided for volume-based data.

GDV (\$ Billions)											
All Mastercard Credit,	_										
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	\$431	\$436	\$450	\$446	\$468	\$459	\$480	\$491	\$518	\$1,800	\$1,947
Canada	43	39	44	44	46	39	46	47	49	173	181
Europe	413	407	435	438	458	428	479	508	530	1,738	1,945
Latin America	106	102	100	99	111	105	110	114	123	412	451
Worldwide less United States	994	985	1,029	1,027	1,083	1,031	1,114	1,159	1,219	4,124	4,523
United States	422	419	442	442	465	451	486	493	507	1,769	1,938
Worldwide	1,416	1,404	1,471	1,469	1,549	1,482	1,600	1,652	1,726	5,893	6,461
Mastercard Credit and Charge Programs											
Worldwide less United States	530	528	545	535	560	530	560	577	602	2,168	2,268
United States	207	194	211	213	228	212	237	245	254	846	948
Worldwide	737	722	756	748	788	742	797	822	856	3,014	3,217
Mastercard Debit and Prepaid Programs											
Worldwide less United States	464	457	484	492	523	501	554	582	617	1,956	2,255
United States	215	225	232	229	238	238	249	249	253	923	989
Worldwide	679	682	715	721	761	739	804	830	870	2,879	3,244

GDV Local Growth											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	12.2%	12.2%	13.3%	12.8%	13.0%	11.1%	12.0%	12.2%	11.3%	12.8%	11.6%
Canada	9.6%	9.5%	9.2%	10.3%	11.6%	5.8%	7.7%	8.8%	5.2%	10.2%	6.8%
Europe	16.0%	18.8%	19.6%	18.7%	19.7%	17.3%	18.6%	19.7%	16.9%	19.2%	18.1%
Europe adjusted for Article 8	17 %										
Latin America	16.4%	17.0%	17.2%	16.2%	16.8%	13.3%	15.8%	18.3%	14.6%	16.8%	15.5%
Worldwide less United States	14.1%	15.2%	16.0%	15.5%	16.1%	13.6%	14.9%	15.8%	13.7%	15.7%	14.5%
WW less USA adjusted for Article 8	15%										
United States	9.1%	10.5%	9.4%	8.7%	10.2%	7.5%	9.9%	11.6%	9.0%	9.7%	9.5%
Worldwide	12.6%	13.8%	14.0%	13.3%	14.3%	11.7%	13.4%	14.5%	12.3%	13.8%	13.0%
Worldwide adjusted for Article 8	13%										
Mastercard Credit and Charge Programs											
Worldwide less United States	10.3%	11.6%	12.7%	11.6%	12.8%	9.0%	9.7%	11.0%	9.3%	12.2%	9.7%
United States	10.0%	9.0%	7.6%	7.7%	9.8%	9.3%	12.5%	14.9%	11.6%	8.5%	12.1%
Worldwide	10.2%	10.9%	11.3%	10.5%	11.9%	9.0%	10.5%	12.1%	10.0%	11.2%	10.4%
Mastercard Debit and Prepaid Programs											
Worldwide less United States	18.8%	19.6%	20.0%	19.9%	19.8%	18.9%	20.8%	21.0%	18.4%	19.8%	19.8%
United States	8.3%	11.9%	11.2%	9.6%	10.6%	6.0%	7.6%	8.6%	6.5%	10.8%	7.2%
Worldwide	15.3%	17.0%	17.0%	16.4%	16.8%	14.4%	16.3%	17.0%	14.7%	16.8%	15.6%

Purchase Volume (\$ Billions)											
All Mastercard Credit,	_										
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	\$291	\$296	\$307	\$305	\$319	\$307	\$319	\$327	\$345	\$1,228	\$1,298
Canada	42	37	42	42	45	37	44	45	47	166	174
Europe	266	269	286	289	304	286	320	339	355	1,148	1,300
Latin America	67	65	64	62	71	68	71	74	79	262	292
Worldwide less United States	666	668	699	698	738	699	754	785	826	2,803	3,064
United States	366	359	384	385	408	392	427	433	449	1,536	1,701
Worldwide	1,032	1,028	1,083	1,082	1,146	1,091	1,180	1,218	1,275	4,339	4,764
Mastercard Credit and Charge Programs											
Worldwide less United States	489	488	505	495	520	492	520	536	557	2,009	2,105
United States	198	185	202	205	219	203	228	235	244	811	910
Worldwide	687	673	707	700	739	695	748	770	801	2,819	3,015
Mastercard Debit and Prepaid Programs											
Worldwide less United States	177	180	194	202	218	207	233	249	269	794	959
United States	168	175	182	180	189	188	199	199	205	725	791
Worldwide	345	355	376	382	407	396	432	448	473	1,520	1,749

Purchase Volume Local Growth											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	10.2%	11.5%	14.7%	13.5%	13.7%	9.8%	9.9%	10.2%	9.8%	13.4%	9.9%
Canada	9.9%	9.7%	9.6%	10.4%	11.5%	5.7%	7.7%	9.3%	5.6%	10.3%	7.1%
Europe	17.5%	22.0%	23.2%	22.2%	22.8%	18.3%	20.5%	21.6%	18.4%	22.6%	19.7%
Europe adjusted for Article 8	20 %										
Latin America	20.7%	22.1%	22.0%	21.4%	21.6%	17.8%	20.2%	22.9%	19.3%	21.8%	20.1%
Worldwide less United States	14.0%	16.4%	18.4%	17.4%	17.9%	13.6%	15.0%	16.0%	14.0%	17.6%	14.7%
WW less USA adjusted for Article 8	15%										
United States	10.0%	11.1%	10.5%	10.7%	11.4%	9.0%	11.1%	12.6%	10.0%	10.9%	10.7%
Worldwide	12.5%	14.5%	15.5%	15.0%	15.5%	11.9%	13.6%	14.8%	12.5%	15.1%	13.2%
Worldwide adjusted for Article 8	13%										
Mastercard Credit and Charge Programs											
Worldwide less United States	11.1%	12.7%	13.9%	12.6%	13.5%	9.3%	10.0%	11.2%	9.2%	13.2%	9.9%
United States	10.0%	8.8%	8.2%	9.0%	10.4%	10.0%	12.7%	14.7%	11.5%	9.1%	12.2%
Worldwide	10.8%	11.6%	12.2%	11.6%	12.5%	9.5%	10.8%	12.2%	9.9%	12.0%	10.6%
Mastercard Debit and Prepaid Programs											
Worldwide less United States	22.9%	27.9%	32.0%	31.1%	30.0%	25.4%	27.8%	27.9%	25.4%	30.3%	26.6%
United States	9.9%	13.5%	13.2%	12.7%	12.6%	8.0%	9.5%	10.3%	8.2%	13.0%	9.0%
Worldwide	16.2%	20.4%	22.2%	21.7%	21.3%	16.5%	18.7%	19.4%	17.3%	21.4%	18.0%

Purchase Transactions (Millions)											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	4,798	4,756	5,215	5,468	5,856	5,634	6,238	6,534	6,868	21,296	25,274
Canada	599	554	635	651	698	611	710	748	753	2,538	2,821
Europe	6,461	6,461	7,328	7,780	8,410	8,299	9,585	10,229	10,776	29,978	38,889
Latin America	2,087	2,062	2,186	2,300	2,529	2,474	2,723	2,926	3,084	9,077	11,206
Worldwide less United States	13,944	13,833	15,364	16,199	17,494	17,017	19,256	20,437	21,480	62,890	78,190
United States	6,510	6,359	6,865	6,931	7,242	6,894	7,559	7,745	7,897	27,398	30,095
Worldwide	20,455	20,192	22,230	23,130	24,736	23,911	26,815	28,182	29,377	90,288	108,285
Mastercard Credit and Charge Programs											
Worldwide less United States	7,639	7,444	8,090	8,427	9,012	8,606	9,565	10,136	10,534	32,974	38,841
United States	2,220	2,020	2,248	2,321	2,485	2,250	2,559	2,690	2,795	9,073	10,294
Worldwide	9,860	9,464	10,338	10,748	11,497	10,856	12,123	12,826	13,330	42,047	49,135
Mastercard Debit and Prepaid Programs											
Worldwide less United States	6,305	6,389	7,274	7,771	8,481	8,412	9,691	10,301	10,946	29,916	39,349
United States	4,290	4,340	4,617	4,610	4,758	4,644	5,000	5,055	5,101	18,325	19,801
Worldwide	10,595	10,728	11,892	12,381	13,239	13,056	14,691	15,356	16,047	48,240	59,150

Purchase Transactions Growth											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	16.7%	17.8%	21.2%	20.1%	22.0%	18.5%	19.6%	19.5%	17.3%	20.4%	18.7%
Canada	10.3%	10.5%	11.1%	11.8%	16.6%	10.2%	11.8%	14.9%	7.8%	12.6%	11.1%
Europe	25.9%	29.4%	30.7%	29.2%	30.2%	28.4%	30.8%	31.5%	28.1%	29.9%	29.7%
Europe adjusted for Article 8	28%										
Latin America	19.8%	14.4%	20.2%	19.2%	21.2%	20.0%	24.6%	27.2%	21.9%	18.9%	23.5%
Worldwide less United States	21.0%	22.0%	24.9%	23.8%	25.5%	23.0%	25.3%	26.2%	22.8%	24.1%	24.3%
WW less USA adjusted for Article 8	22%										
United States	8.4%	10.0%	9.8%	9.8%	11.2%	8.4%	10.1%	11.7%	9.0%	10.2%	9.8%
Worldwide	16.7%	18.0%	19.8%	19.2%	20.9%	18.4%	20.6%	21.8%	18.8%	19.5%	19.9%
Worldwide adjusted for Article 8	17%										
Mastercard Credit and Charge Programs											
Worldwide less United States	13.7%	13.8%	15.6%	15.3%	18.0%	15.6%	18.2%	20.3%	16.9%	15.8%	17.8%
United States	7.5%	7.1%	7.3%	8.6%	11.9%	11.4%	13.8%	15.9%	12.5%	8.8%	13.5%
Worldwide	12.3%	12.3%	13.7%	13.8%	16.6%	14.7%	17.3%	19.3%	15.9%	14.2%	16.9%
Mastercard Debit and Prepaid Programs											
Worldwide less United States	31.1%	33.2%	37.2%	34.5%	34.5%	31.7%	33.2%	32.5%	29.1%	34.9%	31.5%
United States	8.9%	11.4%	11.0%	10.3%	10.9%	7.0%	8.3%	9.7%	7.2%	10.9%	8.1%
Worldwide	21.1%	23.4%	25.7%	24.4%	25.0%	21.7%	23.5%	24.0%	21.2%	24.6%	22.6%

Cash Volume (\$ Billions)											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	\$140	\$140	\$143	\$141	\$149	\$151	\$161	\$164	\$173	\$573	\$649
Canada	2	2	2	2	2	2	2	2	2	7	7
Europe	147	138	149	149	154	142	159	169	175	591	645
Latin America	39	37	37	37	40	37	39	39	43	150	159
Worldwide less United States	328	317	330	329	346	332	361	374	393	1,321	1,459
United States	56	60	58	57	57	59	59	60	59	233	237
Worldwide	384	376	388	386	403	391	420	434	452	1,554	1,696
Mastercard Credit and Charge Programs											
Worldwide less United States	41	40	40	39	40	38	39	41	44	159	163
United States	9	9	9	8	9	9	9	10	10	35	38
Worldwide	50	49	49	48	49	47	49	51	54	195	202
Mastercard Debit and Prepaid Programs											
Worldwide less United States	287	277	290	290	305	294	321	332	348	1,161	1,296
United States	47	50	50	49	49	50	50	50	49	197	199
Worldwide	334	327	340	338	354	344	371	382	397	1,359	1,494

Cash Volume Local Growth											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	16.7%	13.6%	10.2%	11.4%	11.6%	13.9%	16.4%	16.2%	14.4%	11.7%	15.2%
Canada	2.2%	4.5%	-1.0%	9.3%	13.8%	8.6%	6.9%	-4.2%	-5.5%	6.6%	1.1%
Europe	13.3%	13.0%	13.2%	12.4%	14.0%	15.2%	14.9%	16.0%	13.9%	13.2%	15.0%
Latin America	9.8%	8.9%	9.6%	8.3%	9.4%	5.8%	8.6%	10.4%	6.9%	9.0%	7.9%
Worldwide less United States	14.2%	12.7%	11.4%	11.5%	12.4%	13.5%	14.8%	15.4%	13.2%	12.0%	14.2%
United States	4.0%	7.4%	2.9%	-3.2%	2.1%	-1.6%	1.9%	4.9%	2.1%	2.2%	1.8%
Worldwide	12.6%	11.8%	10.0%	9.0%	10.8%	10.9%	12.8%	13.8%	11.6%	10.4%	12.3%
Mastercard Credit and Charge Programs											
Worldwide less United States	1.3%	0.0%	0.3%	0.4%	5.0%	4.7%	5.0%	8.2%	11.0%	1.4%	7.3%
United States	9.1%	12.4%	-4.4%	-16.9%	-3.3%	-5.2%	8.1%	19.9%	13.4%	-3.7%	8.7%
Worldwide	2.6%	2.2%	-0.5%	-3.1%	3.4%	2.6%	5.6%	10.3%	11.4%	0.5%	7.6%
Mastercard Debit and Prepaid Programs											
Worldwide less United States	16.4%	14.8%	13.1%	13.1%	13.5%	14.7%	16.1%	16.3%	13.5%	13.6%	15.1%
United States	3.1%	6.5%	4.2%	-0.4%	3.1%	-1.0%	0.9%	2.3%	0.1%	3.3%	0.6%
Worldwide	14.3%	13.5%	11.7%	11.0%	11.9%	12.1%	13.8%	14.3%	11.7%	12.0%	13.0%

Cash Transactions (Millions)											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	1,468	1,451	1,509	1,529	1,624	1,601	1,668	1,715	1,799	6,112	6,783
Canada	5	6	6	6	6	6	6	6	6	24	22
Europe	1,001	937	1,054	1,067	1,099	1,044	1,173	1,194	1,210	4,157	4,621
Latin America	279	264	272	273	298	275	295	301	320	1,106	1,191
Worldwide less United States	2,753	2,658	2,840	2,875	3,026	2,926	3,142	3,216	3,334	11,400	12,617
United States	326	328	340	337	328	322	337	339	323	1,333	1,320
Worldwide	3,079	2,986	3,180	3,213	3,355	3,248	3,479	3,555	3,656	12,733	13,938
Mastercard Credit and Charge Programs											
Worldwide less United States	183	170	180	182	187	173	185	189	199	719	746
United States	9	8	9	9	9	8	9	9	9	34	36
Worldwide	192	178	189	191	196	181	194	199	208	753	782
Mastercard Debit and Prepaid Programs											
Worldwide less United States	2,570	2,489	2,660	2,693	2,839	2,753	2,957	3,027	3,135	10,681	11,871
United States	317	320	331	328	319	314	328	330	313	1,299	1,285
Worldwide	2,887	2,808	2,991	3,022	3,159	3,067	3,285	3,356	3,448	11,980	13,156

Cash Transactions Growth											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	13.5%	13.7%	10.7%	11.3%	10.6%	10.4%	10.6%	12.2%	10.8%	11.5%	11.0%
Canada	0.0%	2.9%	14.7%	8.8%	15.2%	-3.5%	-11.2%	-6.8%	-11.4%	10.4%	-8.4%
Europe	8.2%	8.8%	10.0%	9.3%	9.7%	11.3%	11.4%	11.9%	10.1%	9.5%	11.2%
Latin America	5.8%	4.0%	4.7%	4.4%	6.7%	4.3%	8.6%	10.4%	7.4%	5.0%	7.7%
Worldwide less United States	10.7%	10.9%	9.8%	9.8%	9.9%	10.1%	10.6%	11.9%	10.2%	10.1%	10.7%
United States	0.5%	2.4%	0.6%	-2.4%	0.8%	-1.8%	-1.0%	0.6%	-1.7%	0.3%	-1.0%
Worldwide	9.5%	9.9%	8.8%	8.4%	8.9%	8.8%	9.4%	10.7%	9.0%	9.0%	9.5%
Mastercard Credit and Charge Programs											
Worldwide less United States	-3.3%	-2.9%	-3.2%	-1.8%	2.2%	2.0%	2.8%	4.1%	6.2%	-1.4%	3.8%
United States	-2.9%	0.2%	-4.1%	-6.8%	0.4%	-1.4%	4.7%	7.2%	4.8%	-2.7%	3.9%
Worldwide	-3.3%	-2.7%	-3.2%	-2.0%	2.1%	1.9%	2.8%	4.2%	6.1%	-1.5%	3.8%
Mastercard Debit and Prepaid Programs											
Worldwide less United States	11.9%	12.0%	10.8%	10.7%	10.5%	10.6%	11.2%	12.4%	10.4%	11.0%	11.1%
United States	0.6%	2.5%	0.7%	-2.3%	0.8%	-1.8%	-1.1%	0.4%	-1.9%	0.4%	-1.1%
Worldwide	10.5%	10.8%	9.6%	9.1%	9.4%	9.2%	9.8%	11.1%	9.2%	9.7%	9.8%

Cards (Millions)											
All Mastercard Credit,	_										
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	695	712	730	756	791	811	821	831	829	791	829
Canada	52	56	58	59	61	61	61	62	62	61	62
Europe	475	485	499	512	528	542	560	581	599	528	599
Latin America	176	168	172	176	183	188	195	202	211	183	211
Worldwide less United States	1,399	1,421	1,459	1,502	1,563	1,602	1,638	1,676	1,701	1,563	1,701
United States	410	415	419	429	437	447	456	465	473	437	473
Worldwide	1,809	1,837	1,878	1,931	1,999	2,049	2,094	2,141	2,174	1,999	2,174
Mastercard Credit and Charge Programs											
Worldwide less United States	600	603	615	627	641	652	666	684	700	641	700
United States	211	211	211	218	227	230	235	240	243	227	243
Worldwide	811	813	826	845	868	882	901	924	943	868	943
Mastercard Debit and Prepaid Programs											
Worldwide less United States	798	819	844	875	921	950	972	992	1,001	921	1,001
United States	199	205	208	211	210	217	221	225	230	210	230
Worldwide	998	1,023	1,052	1,086	1,131	1,167	1,193	1,217	1,231	1,131	1,231

Cards Growth											
All Mastercard Credit,											
Charge, Debit and Prepaid Programs	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	FY 2018	FY 2019
APMEA	13.3%	12.9%	12.2%	11.3%	13.8%	13.9%	12.5%	9.9%	4.9%	13.8%	4.9%
Canada	8.9%	14.7%	17.5%	17.0%	15.7%	9.7%	6.4%	5.9%	2.9%	15.7%	2.9%
Europe	10.3%	10.5%	11.3%	10.1%	11.2%	11.6%	12.1%	13.6%	13.3%	11.2%	13.3%
Latin America	6.9%	0.6%	2.1%	2.5%	3.8%	11.7%	13.6%	14.8%	15.1%	3.8%	15.1%
Worldwide less United States	11.3%	10.5%	10.8%	10.0%	11.7%	12.7%	12.3%	11.6%	8.9%	11.7%	8.9%
United States	4.9%	6.2%	5.7%	7.5%	6.5%	7.7%	8.9%	8.4%	8.2%	6.5%	8.2%
Worldwide	9.8%	9.5%	9.6%	9.4%	10.5%	11.6%	11.5%	10.9%	8.7%	10.5%	8.7%
Mastercard Credit and Charge Programs											
Worldwide less United States	6.3%	6.0%	6.8%	6.3%	6.8%	8.1%	8.3%	9.1%	9.1%	6.8%	9.1%
United States	5.4%	4.2%	3.0%	5.5%	7.6%	9.5%	11.5%	10.1%	7.0%	7.6%	7.0%
Worldwide	6.1%	5.5%	5.8%	6.1%	7.0%	8.5%	9.1%	9.4%	8.6%	7.0%	8.6%
Mastercard Debit and Prepaid Programs											
Worldwide less United States	15.3%	14.1%	13.9%	12.8%	15.4%	16.0%	15.1%	13.3%	8.7%	15.4%	8.7%
United States	4.4%	8.3%	8.5%	9.7%	5.3%	5.9%	6.2%	6.7%	9.5%	5.3%	9.5%
Worldwide	13.0%	12.9%	12.8%	12.2%	13.4%	14.0%	13.3%	12.0%	8.8%	13.4%	8.8%

Note that the figures in the preceding tables may not sum due to rounding; growth represents change from the comparable yearago period.

Footnote

The tables set forth the gross dollar volume ("GDV"), purchase volume, cash volume and the number of purchase transactions, cash transactions, and cards on a regional and global basis for Mastercard™-branded cards. Growth rates over prior periods are provided for volume-based data.

Debit transactions on Maestro® and Cirrus®-branded cards and transactions involving brands other than Mastercard are not included in the preceding tables.

For purposes of the table: GDV represents purchase volume plus cash volume and includes the impact of balance transfers and convenience checks; "purchase volume" means the aggregate dollar amount of purchases made with Mastercard-branded cards for the relevant period; and "cash volume" means the aggregate dollar amount of cash disbursements obtained with Mastercard- branded cards for the relevant period. The number of cards includes virtual cards, which are Mastercard-branded payment accounts that do not generally have physical cards associated with them.

The Mastercard payment product is comprised of credit, charge, debit and prepaid programs, and data relating to each type of program is included in the tables. The tables include information with respect to transactions involving Mastercard-branded cards that are not switched by Mastercard and transactions for which Mastercard does not earn significant revenues.

Information denominated in U.S. dollars is calculated by applying an established U.S. dollar/local currency exchange rate for each local currency in which Mastercard volumes are reported. These exchange rates are calculated on a quarterly basis using the average exchange rate for each quarter. Mastercard reports period-over-period rates of change in purchase volume and cash volume on the basis of local currency information, in order to eliminate the impact of changes in the value of foreign currencies against the U.S. dollar in calculating such rates of change.

The data set forth in the GDV, purchase volume, purchase transactions, cash volume and cash transactions columns is provided by Mastercard customers and is subject to verification by Mastercard and partial cross-checking against information provided by Mastercard's transaction switching systems. The data set forth in the cards columns is provided by Mastercard customers and is subject to certain limited verification by Mastercard. A portion of the data set forth in the cards columns reflects the impact of routine portfolio changes among customers and other practices that may lead to over counting of the underlying data in certain circumstances. All data is subject to revision and amendment by Mastercard or Mastercard's customers.

Effective Q1'18, our operational metrics reflect the impact of the Venezuela deconsolidation. Prior to Q1'18 all metrics include Venezuela. We are providing additional information regarding our Switched Transactions and Card growth rates. The adjusted growth rates eliminate Venezuelan Switched Transactions and Card counts from prior periods. In addition, we are providing further adjusted growth rates for switched transactions and adjusted rates for cross border volume to normalize for the effects of differing switching days between periods. Starting this quarter, we are further adjusting these growth rates to normalize for the effects of differing number of carryover days between periods. Carryover days are those where transactions and volumes from days where we do not clear and settle are processed. These adjustments have been made to current and prior quarters. This information is being provided so that you can better understand the underlying growth rates of our operating metrics.

Article 8 of the EU Interchange Fee Regulation related to card payments that became effective June 9, 2016 states that a network can no longer charge fees on domestic EEA payment transactions that do not use its payment brand. Prior to that, Mastercard collected a de minimis assessment fee in a few countries, particularly France, on transactions with Mastercard co-badged cards if the brands of domestic networks (as opposed to Mastercard) were used. As a result, the non-Mastercard co-badged volume is no longer being included.

To aid in understanding the underlying trends in the business, the table above reflects adjusted growth rates for the impact of Article 8, by eliminating the related co-badged volumes where relevant.

2. Switched Transactions

The table below sets forth the total number of transactions switched by Mastercard and growth from the comparable year-ago period.

	Switched Trans.	
Period	(Mil.)	Growth ⁽¹⁾⁽²⁾
2019Q4	23,807	19%
2019Q3	22,891	19%
2019Q2	21,429	18%
2019Q1	19,205	17%
2018Q4	20,124	17%
2018Q3	18,825	17%
2018Q2	18,161	17%
2018Q1	16,681	16%
2017Q4	17,739	16%
FY 2019	87,332	19%
FY 2018	73,791	17%

3. Cross Border Volume

The table below sets forth the Cross Border Volume Growth from the comparable year-ago period, on a local currency basis and U.S. dollar-converted basis, for all Mastercard-branded programs.

	Growth	Growth
Period	(Local) ⁽²⁾	(USD) ⁽²⁾
2019Q4	16%	14%
2019Q3	16%	13%
2019Q2	16%	10%
2019Q1	14%	7%
2018Q4	16%	12%
2018Q3	18%	15%
2018Q2	19%	24%
2018Q1	20%	30%
2017Q4	18%	24%
FY 2019	16%	11%
FY 2018	18%	19%

Note:

- (1) Growth rates eliminate Venezuela transactions from current and past periods
- (2) The cross-border volume and switched transactions growth rates have been normalized to eliminate the effects of differing switching and carryover days between periods. Carryover days are those where transactions and volumes from days where the company does not clear and settle are processed.

4. CardsThe tables below set forth the number of Mastercard, Maestro and Total Cards with growth rates from the comparable year-ago period.

Mastercard Cards				Maestro Cards			Total WW Mastercard & Maestro Cards				
			Growth				Growth				Growth
	Cards	Actual	Adj for		Cards	Actual	Adj for		Cards	Actual	Adj for
Period	(Mil.)	Growth	Ven	Period	(Mil.)	Growth	Ven	Period	(Mil.)	Growth	Ven
2019Q4	2,174	8.7%	9%	2019Q4	442	-9.7%	-10%	2019Q4	2,615	5.1%	5%
2019Q3	2,141	10.9%	11%	2019Q3	449	-11.9%	-12%	2019Q3	2,590	6.1%	6%
2019Q2	2,094	11.5%	11%	2019Q2	454	-12.8%	-13%	2019Q2	2,547	6.2%	6%
2019Q1	2,049	11.6%	12%	2019Q1	466	-11.7%	-12%	2019Q1	2,515	6.4%	6%
2018Q4	1,999	10.5%	11%	2018Q4	489	-17.8%	-12%	2018Q4	2,488	3.5%	6%
2018Q3	1,931	9.4%	10%	2018Q3	509	-15.5%	-9%	2018Q3	2,440	3.1%	5%
2018Q2	1,878	9.6%	10%	2018Q2	520	-14.8%	-9%	2018Q2	2,398	3.2%	5%
2018Q1	1,837	9.5%	10%	2018Q1	528	-16.2%	-11%	2018Q1	2,365	2.5%	5%
2017Q4	1,809	9.8%	10%	2017Q4	595	-7.6%	-9%	2017Q4	2,404	4.9%	5%