

	2019Q4	2020Q1	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2
Consumer expenditure	1795,312	1726,044	1515,507	1711,423	1671,714	1647,206	1698,514
Inflation	1,6%	1,2%	0,8%	0,3%	0,3%	1,7%	2,2%
	Cons exp		inflation		d		d^2
2019Q4	1795,312	2	1,6%	9	7	49	2019Q4
2020Q1	1726,044	8	1,2%	10	2	4	2020Q1
2020Q2	1515,507	13	0,8%	11	2	4	2020Q2
2020Q3	1711,423	9	0,3%	12	3	9	2020Q3
2020Q4	1671,714	11	0,3%	13	2	4	2020Q4
2021Q1	1647,206	12	1,7%	8	4	16	2021Q1
2021Q2	1698,514	10	2,2%	7	3	9	2021Q2
2021Q3	1769,628	7	3,6%	6	1	1	2021Q3
2021Q4	1776,083	6	5,3%	5	1	1	2021Q4
2022Q1	1776,752	5	7,8%	4	1	1	2022Q1
2022Q2	1794,265	3	9,6%	3	0	0	2022Q2
2022Q3	1806,139	1	10,9%	1	0	0	2022Q3
2022Q4	1791,468	4	10,4%	2	2	4	2022Q4

102

$$r_R = 1 - \frac{6 \sum_i d_i^2}{n(n^2 - 1)}$$

2021Q3	2021Q4	2022Q1	2022Q2	2022Q3	2022Q4
1769,628	1776,083	1776,752	1794,265	1806,139	1791,468
3,6%	5,3%	7,8%	9,6%	10,9%	10,4%

ρ value

0,9999998942

0,999999881

0,9999998242

0,9999998779

0,999999869

0,9999998631

0,9999998751

0,9999998896

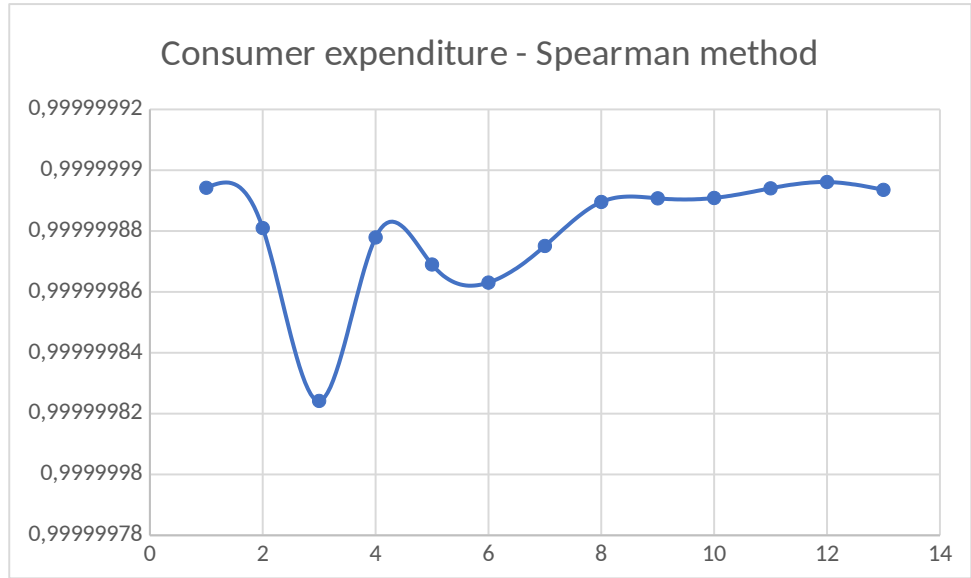
0,9999998908

0,9999998909

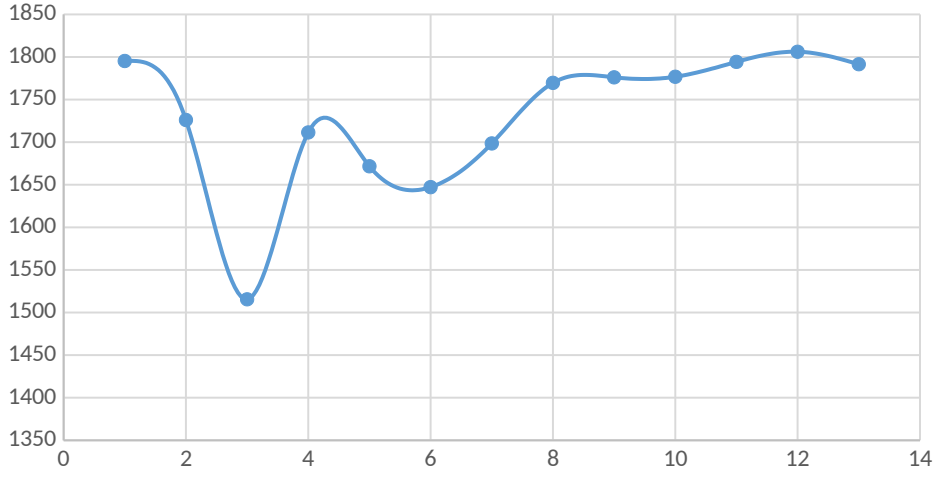
0,9999998941

0,9999998961

0,9999998936



Consumer expenditure, in billion EUR



Year	E-commerce retail	E-commerce change in %	Total consumer expenditure
2019	480,4	9 %	7133,755
2020	629,5	31 %	6624,688
2021	731,7	16 %	6891,431
2022	827,9	13 %	7168,624
2018	439,6		7026,04

Expenditure change in %

2 %

-7 %

4 %

4 %