

Comments on Data Case #6

	A	B	C
1	End of q price	Sum of YYYYQQ	
2	0.9664	19742	
3	0.972	19741	
4	0.9736	19762	
5	0.9751	19763	
6	0.9766	40223	
7	0.9783	20123	
8	0.9795	19722	
9	0.983	19723	
10	0.9859	19761	

	A	B	C
1			
2			
3	Row Labels	Average of end of quarter	
4	1	1.233062264	
5	2	1.222155769	
6	3	1.223746154	
7	4	1.233865385	
8	(blank)		
9	Grand Total	1.228230622	
10			
11			
12			
13			
14			
15			

For Task #2, the prices of the end of quarters will be chosen, not the prices of beginning of each quarter.

	A	B	C	D	E	F
1	observation_date	EXCAUS	QQQ	YYYYQQ	EOQ Price	
2	1971-01-01	1.0118	1	197101	1.0118	
3	1971-02-01	1.0075	1	197101		
4	1971-03-01	1.0064	1	197101		
5	1971-04-01	1.0077	2	197102	1.0077	
6	1971-05-01	1.0087	2	197102		
7	1971-06-01	1.0213	2	197102		
8	1971-07-01	1.0213	3	197103	1.0213	
9	1971-08-01	1.0130	3	197103		
10	1971-09-01	1.0130	3	197103		
11	1971-10-01	1.0047	4	197104	1.0047	
12	1971-11-01	1.0039	4	197104		
13	1971-12-01	0.9993	4	197104		

For Task #1, square the deviations instead of the exchange rate, see cell K4.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2	YYYYQQ	EXCAUS	Method1	Method2	Method3	Method4	Method1	Method2	Method3	Method4	Method1	Method2	Method3	Method4
3	197101	2.0182												
4	197102	1.0213	2.0182				-0.9969				1.04305369			
5	197103	1.013	1.0213				-0.0083				1.026169			
6	197104	0.9993	1.013	1.51975			-0.0137	-0.52045			0.99860049	2.30964006		
7	197201	0.9985	0.9993	1.01715			-0.0008	-0.01865			0.99700225	1.03459412		
8	197202	0.9795	0.9985	1.00615	1.26295		-0.019	-0.02665			0.95942025	1.01233782	1.5950427	
9	197203	0.983	0.9795	0.9989	1.008025		0.0035	-0.0159	-0.28345		0.966289	0.99780121	1.0161144	
10	197204	0.9968	0.983	0.989	0.997575		0.0138	0.0078	-0.025025		0.99361024	0.978121	0.99515588	
11	197301	0.9967	0.9968	0.98125	0.990075		-1E-04	0.01545	-0.000775		0.99341089	0.96285156	0.98024851	
12	197302	0.9984	0.9967	0.9899	0.98945	1.1262	0.0017	0.0085	0.006625	-0.1278	0.99680256	0.97990201	0.9790113	
13	197303	1.0083	0.9984	0.99675	0.989	0.9985125	0.0099	0.01155	0.00895	0.0097875	1.01666889	0.99351056	0.978121	1.26832644

For Task #2, your pivot table is not correct.

	A	B	C
1			
2			
3	Row Labels	Sum of END_OF_QUARTER_PRICE	
4	ene	24.5899	
5	1954	11.9829	
6	1955	12.607	
7	feb	24.2383	
8	1954	11.6465	
9	1955	12.5918	
10	mar	30.9549	
11	1954	15.329	
12	1955	15.6259	
13	abr	31.0307	
14	1954	15.1158	
15	1955	15.9149	
16	may	27.9897	
17	1954	16.3566	
18	1955	11.6331	

For Task #1, why did you calculate the percentage changes?

	A	B	C	D	E	F	G	H	I	J	K
1							Mean Squared error	0.00256855	0.00155744	0.00111683	0.00097587
2							Min	0.00097587			
3											
4	YYYYQQ	EXCAUS	ret_annual	Method1	Method2	Method3	Method4	Error 1	Erroe2	Error3	Error4
5	197101	2.0182									
6	197102	1.0213	-0.493955								
7	197103	1.013	-0.0081269	-0.493955				0.23602895			
8	197104	0.9993	-0.0135242	-0.0081269	-0.251041			2.9131E-05	0.05641421		
9	197201	0.9985	-0.0008006	-0.0135242	-0.0108255			0.00016189	0.0001005		
10	197202	0.9795	-0.0190285	-0.0008006	-0.0071624	-0.1291017		0.00033226	0.00014081	0.01211609	
11	197203	0.983	0.00357325	-0.0190285	-0.0099146	-0.01037		0.00051084	0.00018192	0.00019442	
12	197204	0.9968	0.01403866	0.00357325	-0.0077276	-0.007445		0.00010952	0.00047377	0.00046155	
13	197301	0.9967	-0.0001003	0.01403866	0.00880595	-0.0005543		0.00019991	7.9322E-05	2.061E-07	
14	197302	0.9984	0.00170563	-0.0001003	0.00696917	-0.0003792	-0.064740451	3.2615E-06	2.7705E-05	4.3467E-06	0.00441508
15	197303	1.0083	0.00991587	0.00170563	0.00080265	0.0048043	-0.002782871	6.7408E-05	8.3051E-05	2.6128E-05	0.00016126
16	197304	0.9994	-0.0088267	0.00991587	0.00581075	0.00638996	-0.000527526	0.00035129	0.00021426	0.00023155	6.8877E-05
17	197401	0.972	-0.0274164	-0.0088267	0.00054456	0.00067361	5.96551E-05	0.00034558	0.00078182	0.00078905	0.00075494
18	197402	0.9664	-0.0057613	-0.0274164	-0.0181216	-0.0061554	-0.003267331	0.00046894	0.00015278	1.5532E-07	6.22E-06
19	197403	0.9864	0.02069536	-0.0057613	-0.0165889	-0.0080222	-0.001608928	0.00069996	0.00139012	0.0008247	0.00049748
20	197404	0.9882	0.00182482	0.02069536	0.00746702	-0.0053273	0.000531336	0.0003561	3.1834E-05	5.1153E-05	1.6731E-06
21	197501	1.0005	0.01244687	0.00182482	0.01126009	-0.0026644	-0.000995394	0.00011283	1.4085E-06	0.00022835	0.00018069
22	197502	1.0264	0.02588706	0.01244687	0.00713585	0.00730143	0.000573006	0.00018064	0.00035161	0.00034543	0.0006408
23	197503	1.0263	-9.743E-05	0.02588706	0.01916696	0.01521353	0.003595684	0.00067519	0.00037112	0.00023443	1.3639E-05

Where are your formulae (e.g., cell E4)?

	A	B	C	D	E	F	G	H	I
1				Predicted	Observed	Difference	ABS Value	SQR Value	
2	Liam Mulderig and Adam Astarita		DATE	EXCAUS	EXCAUS				
3			3/1/1971	1.0064	1.0086	0.0022	0.0022	0.000004694	
4			6/1/1971	1.0213	1.0126	-0.0087	0.0087	0.000076271	
5			9/1/1971	1.013	1.0158	0.0028	0.0028	0.000007654	
6			12/1/1971	0.9993	1.0026	0.0033	0.0033	0.000011111	
7			3/1/1972	0.9985	1.0030	0.0045	0.0045	0.000020551	
8			6/1/1972	0.9795	0.9880	0.0085	0.0085	0.000072818	
9			9/1/1972	0.983	0.9831	0.0001	0.0001	0.000000018	
10			12/1/1972	0.9968	0.9890	-0.0078	0.0078	0.000061361	
11			3/1/1973	0.9967	0.9972	0.0005	0.0005	0.000000250	
12			6/1/1973	0.9984	1.0000	0.0016	0.0016	0.000002454	
13			9/1/1973	1.0083	1.0039	-0.0044	0.0044	0.000019360	
14			12/1/1973	0.9994	0.9999	0.0005	0.0005	0.000000218	

The forecasting error for each quarter is defined as the difference between the realized values and the forested value. In other words, you can not use one forested values for other quarters, see Cell D3 .

	A	B	C	D
1	DATE	EXCAUS	Average of last 2 quarters	Absolute errors
2	3/1/1971	1.0064	1.273	0.2666
3	6/1/1971	1.0213		0.2517
4	9/1/1971	1.013		0.26
5	12/1/1971	0.9993		0.2737
6	3/1/1972	0.9985		0.2745
7	6/1/1972	0.9795		0.2935
8	9/1/1972	0.983		0.29
9	12/1/1972	0.9968		0.2762
10	3/1/1973	0.9967		0.2763
11	6/1/1973	0.9984		0.2746
12	9/1/1973	1.0083		0.2647
13	12/1/1973	0.9994		0.2736
14	3/1/1974	0.972		0.301

For Task #2, the objective is to convert a monthly data set to its corresponding quarterly frequency by picking up the last value of each quarterly, not the mean value for each quarter. In addition, don't manually calculate.

Clipboard		Font		Alignment			
D14				=AVERAGE(B12:B14)			
	A	B	C	D	E	F	G
1	FRED Graph Observations						
2	Federal Reserve Economic Data						
3	Link: https://fred.stlouisfed.org						
4	Help: https://fredhelp.stlouisfed.org						
5	Economic Research Division						
6	Federal Reserve Bank of St. Louis						
7							
8	EXCAUS	Canadian Dollars to U.S. Dollar Spot Exchange Rate, Canadian Dollars to One U					
9							
10	Frequency: Monthly						
11	observation_date	EXCAUS		Quarterly Exchange Rate			
12		1971-01-01	1.0118				
13		1971-02-01	1.0075				
14		1971-03-01	1.0064	!	1.0086		
15		1971-04-01	1.0077				
16		1971-05-01	1.0087				
17		1971-06-01	1.0213		1.0126		

For Task #1, why choose a sub-period?

Clipboard		Font		Alignment										
D22				=C22-B22										
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Data Case #6 - International Finance												YYYYQQ	EXCAUS
2												1971 - 01	2.0182	
3	How to forecast the Exchange Rate between Canadian Dollar and US Dollar												1971 - 02	1.0213
4												1971 - 03	1.013	
5												1971 - 04	0.9993	
6	Method I : Last Quarter												1972 - 01	0.9985
7				<u>Mean Absolute Error Method</u>			<u>Mean of Squared Method</u>					1972 - 02	0.9795	
8	Period	Method I	Realized	Error	Error	Error	Error	Error ^2				1972 - 03	0.983	
9	1975 - 01	0.9882	1.0005	0.0123	0.0123	0.0123	0.0123	0.000151				1972 - 04	0.9968	
10	1975 - 02	1.0005	1.0264	0.0259	0.0259	0.0259	0.0259	0.000671				1973 - 01	0.9967	
11	1975 - 03	1.0264	1.0263	-1E-04	1E-04	-1E-04	1E-04	1E-08				1973 - 02	0.9984	
12	1975 - 04	1.0263	1.0139	-0.0124	0.0124	-0.0124	0.0124	0.000154				1973 - 03	1.0083	
13	1976 - 01	1.0139	0.9859	-0.028	0.028	-0.028	0.028	0.000784				1973 - 04	0.9994	
14	1976 - 02	0.9859	0.9736	-0.0123	0.0123	-0.0123	0.0123	0.000151				1974 - 01	0.972	
15	1976 - 03	0.9736	0.9751	0.0015	0.0015	0.0015	0.0015	2.25E-06				1974 - 02	0.9664	
16	1976 - 04	0.9751	1.0183	0.0432	0.0432	0.0432	0.0432	0.001866				1974 - 03	0.9864	
17			<u>Mean Absolute Error</u>	0.016963		<u>Mean Squared Error</u>	0.000472					1974 - 04	0.9882	
18												1975 - 01	1.0005	
19	Method II: Average of Last 2 Quarters												1975 - 02	1.0264
20				<u>Mean Absolute Error Method</u>			<u>Mean of Squared Method</u>					1975 - 03	1.0263	
21	Period	Method II	Realized	Error	Error	Error	Error	Error ^2				1975 - 04	1.0139	
22	1975 - 01	0.9873	1.0005	0.0132	0.0132	0.0132	0.0132	0.000174				1976 - 01	0.9859	
23	1975 - 02	0.99435	1.0264	0.03205	0.03205	0.03205	0.03205	0.001027				1976 - 02	0.9736	
24	1975 - 03	1.01345	1.0263	0.01285	0.01285	0.01285	0.01285	0.000165				1976 - 03	0.9751	
25	1975 - 04	1.02635	1.0139	-0.01245	0.01245	-0.01245	0.01245	0.000155				1976 - 04	1.0183	
26	1976 - 01	1.0201	0.9859	-0.0342	0.0342	-0.0342	0.0342	0.00117				1977 - 01	1.0513	

Today is 4/27/2023, the second quarter in 2023 (Q2 2023). The next quarter is Q3 in 2023, not Q1 in 2023.

	A	B	C	D
1	Alec Wolfe			
2			=B5	=AVERAGE(B5:B6)
3	DATE	EXCAUS	Last Quarter	Average of last 2 quarters
4	3/1/1971	1.0064	1.0213	1.01715
5	6/1/1971	1.0213	1.013	1.00615
6	9/1/1971	1.013	0.9993	0.9989
7	12/1/1971	0.9993	0.9985	0.989
8	3/1/1972	0.9985	0.9795	0.98125
9	6/1/1972	0.9795	0.983	0.9899
10	9/1/1972	0.983	0.9968	0.99675

For Task #2, you should generate the corresponding quarterly data from a given monthly data set. Not just copy the quarterly data.

	A	B
1	Row	Sum of EXCAUS
2	197101	2.0182
3	197102	1.0213
4	197103	1.013
5	197104	0.9993
6	197201	0.9985
7	197202	0.9795
8	197203	0.983
9	197204	0.9968
10	197301	0.9967
11	197302	0.9984
12	197303	1.0083
13	197304	0.9994
14	197401	0.972
15	197402	0.9664
16	197403	0.9864
17	197404	0.9882
18	197501	1.0005