Statistics/Data Analysis

```
      name:  <unnamed>
       log:  C:\Users\Spandan\Desktop\College and research\IETF\Value At risk Project\
> Summary_Statistics.smcl
  log type:  smcl
 opened on:  12 Nov 2023, 12:04:14

1 .
2 . su rtn_gbpusd, detail

                         RTN_GBPUSD
-------------------------------------------------------------
      Percentiles      Smallest
 1%      -.01493       -.03485
 5%      -.00933       -.03031
10%      -.00671       -.02906       Obs               5,180
25%      -.00324       -.02848       Sum of Wgt.       5,180

50%       .00005                     Mean           .0000667
                        Largest      Std. Dev.      .0060047
75%       .00323        .03872
90%       .00679        .04181       Variance       .0000361
95%      .009555        .04232       Skewness       .6848122
99%       .01618        .07909       Kurtosis       11.85887

3 .
4 .
5 .
6 . bysort year :su rtn_gbpusd, detail

-------------------------------------------------------------------------------------
-> year = 2003

                         RTN_GBPUSD
-------------------------------------------------------------
      Percentiles      Smallest
 1%      -.00718       -.00718
 5%      -.00679       -.00679
10%      -.00644       -.00644       Obs                  23
25%      -.00606       -.00644       Sum of Wgt.          23

50%      -.00064                     Mean          -.0017404
                        Largest      Std. Dev.      .0035641
75%       .00051        .00192
90%       .00322        .00322       Variance       .0000127
95%       .00329        .00329       Skewness      -.1220293
99%       .00429        .00429       Kurtosis       1.846602

-------------------------------------------------------------------------------------
-> year = 2004

                         RTN_GBPUSD
-------------------------------------------------------------
      Percentiles      Smallest
 1%       -.0134       -.01972
 5%      -.01019       -.01363
10%      -.00767        -.0134       Obs                 261
25%      -.00474       -.01224       Sum of Wgt.         261

50%       -.0009                     Mean          -.0002707
                        Largest      Std. Dev.      .0063621
75%        .0037        .01542
90%       .00826        .01569       Variance       .0000405
95%       .01082        .01603       Skewness       .2913139
99%       .01569        .01978       Kurtosis       3.087254

-------------------------------------------------------------------------------------
-> year = 2005
```

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01099	-.01607		
5%	-.00853	-.01131		
10%	-.00642	-.01099	Obs	259
25%	-.00296	-.01049	Sum of Wgt.	259
50%	.00033		Mean	.000423
		Largest	Std. Dev.	.0049831
75%	.00388	.0111		
90%	.00661	.01201	Variance	.0000248
95%	.00819	.0121	Skewness	-.1867954
99%	.01201	.01405	Kurtosis	2.9605

-> year = 2006

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01195	-.01696		
5%	-.008795	-.01328		
10%	-.007365	-.01195	Obs	260
25%	-.00338	-.0119	Sum of Wgt.	260
50%	0		Mean	-.0004993
		Largest	Std. Dev.	.0047624
75%	.002835	.00898		
90%	.005145	.00909	Variance	.0000227
95%	.00686	.00925	Skewness	-.4290981
99%	.00909	.00996	Kurtosis	3.06101

-> year = 2007

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.00989	-.01307		
5%	-.00748	-.01222		
10%	-.00539	-.00989	Obs	257
25%	-.00304	-.00978	Sum of Wgt.	257
50%	-.0003		Mean	-.0000543
		Largest	Std. Dev.	.0048468
75%	.00199	.01542		
90%	.00593	.01806	Variance	.0000235
95%	.00766	.01872	Skewness	.7775085
99%	.01806	.01942	Kurtosis	5.233956

-> year = 2008

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.02308	-.03485		
5%	-.01292	-.02336		
10%	-.0089	-.02308	Obs	256
25%	-.002525	-.0207	Sum of Wgt.	256
50%	.000525		Mean	.0011876
		Largest	Std. Dev.	.0088183
75%	.0051	.02878		
90%	.01101	.02958	Variance	.0000778
95%	.01645	.03096	Skewness	.2342524
99%	.02958	.03439	Kurtosis	5.711156

-> year = 2009

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01877	-.0206		
5%	-.01439	-.0197		
10%	-.01171	-.01877	Obs	261
25%	-.00611	-.01753	Sum of Wgt.	261
50%	-.00076		Mean	-.0003794
		Largest	Std. Dev.	.0089782
75%	.00463	.02401		
90%	.01017	.0244	Variance	.0000806
95%	.01618	.02565	Skewness	.5856726
99%	.0244	.03872	Kurtosis	4.231558

-> year = 2010

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01279	-.01721		
5%	-.00993	-.01471		
10%	-.00812	-.01279	Obs	261
25%	-.00433	-.01256	Sum of Wgt.	261
50%	.00043		Mean	.0001806
		Largest	Std. Dev.	.0062604
75%	.00436	.01557		
90%	.00741	.01562	Variance	.0000392
95%	.01069	.01666	Skewness	.084677
99%	.01562	.01722	Kurtosis	2.914901

-> year = 2011

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01107	-.01558		
5%	-.00901	-.0126		
10%	-.00692	-.01107	Obs	259
25%	-.00388	-.01051	Sum of Wgt.	259
50%	-.00003		Mean	5.33e-06
		Largest	Std. Dev.	.0053502
75%	.00391	.01213		
90%	.00676	.01214	Variance	.0000286
95%	.00947	.0142	Skewness	.0677741
99%	.01214	.01447	Kurtosis	2.828605

-> year = 2012

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01032	-.01278		
5%	-.00594	-.0105		
10%	-.00499	-.01032	Obs	261
25%	-.00267	-.01008	Sum of Wgt.	261
50%	-.00016		Mean	-.0001814
		Largest	Std. Dev.	.0038963
75%	.00222	.009		
90%	.00491	.00964	Variance	.0000152
95%	.0069	.00967	Skewness	.0330775
99%	.00964	.00976	Kurtosis	3.349513

-> year = 2013

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01285	-.02121		
5%	-.008125	-.01424		
10%	-.005765	-.01285	Obs	260
25%	-.003095	-.0128	Sum of Wgt.	260
50%	0		Mean	-.0000783
		Largest	Std. Dev.	.004975
75%	.002775	.01067		
90%	.00611	.01088	Variance	.0000248
95%	.008275	.01288	Skewness	-.1996336
99%	.01088	.01553	Kurtosis	4.236901

-> year = 2014

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.00975	-.01033		
5%	-.0054	-.01002		
10%	-.00397	-.00975	Obs	261
25%	-.00188	-.00837	Sum of Wgt.	261
50%	.00018		Mean	.0002216
		Largest	Std. Dev.	.0035884
75%	.00185	.01025		
90%	.00436	.01098	Variance	.0000129
95%	.00719	.01098	Skewness	.3402017
99%	.01098	.01221	Kurtosis	4.276533

-> year = 2015

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01324	-.01445		
5%	-.00916	-.01413		
10%	-.00628	-.01324	Obs	261
25%	-.00293	-.01236	Sum of Wgt.	261
50%	.00047		Mean	.0001891
		Largest	Std. Dev.	.0051996
75%	.00301	.01348		
90%	.0059	.01363	Variance	.000027
95%	.00896	.01372	Skewness	.0426997
99%	.01363	.0191	Kurtosis	3.853735

-> year = 2016

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01799	-.02263		
5%	-.0097	-.0201		
10%	-.00733	-.01799	Obs	261
25%	-.00361	-.01552	Sum of Wgt.	261
50%	.00076		Mean	.0007176
		Largest	Std. Dev.	.0083327
75%	.00455	.0192		
90%	.0083	.02454	Variance	.0000694
95%	.01048	.02805	Skewness	3.234932
99%	.02454	.07909	Kurtosis	32.2306

-> year = 2017

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01451	-.02848		
5%	-.00837	-.02258		
10%	-.00661	-.01451	Obs	258
25%	-.00322	-.01305	Sum of Wgt.	258
50%	-.0003		Mean	-.0003477
		Largest	Std. Dev.	.0054363
75%	.00277	.01255		
90%	.00566	.01333	Variance	.0000296
95%	.00864	.01536	Skewness	-.4759204
99%	.01333	.01862	Kurtosis	6.651975

-> year = 2018

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01402	-.01818		
5%	-.0077	-.01442		
10%	-.00558	-.01402	Obs	261
25%	-.00315	-.01299	Sum of Wgt.	261
50%	-.00013		Mean	.0002193
		Largest	Std. Dev.	.0051731
75%	.00353	.01195		
90%	.00647	.01264	Variance	.0000268
95%	.00826	.01445	Skewness	-.0475969
99%	.01264	.01706	Kurtosis	3.739237

-> year = 2019

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01787	-.02063		
5%	-.00883	-.01983		
10%	-.005835	-.01787	Obs	260
25%	-.00295	-.01661	Sum of Wgt.	260
50%	.0003		Mean	-.0001251
		Largest	Std. Dev.	.0052519
75%	.00323	.01139		
90%	.005435	.01295	Variance	.0000276
95%	.007085	.01381	Skewness	-.6027667
99%	.01295	.01839	Kurtosis	5.2247

-> year = 2020

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.0168	-.02906		
5%	-.01089	-.02049		
10%	-.00753	-.0168	Obs	262
25%	-.00408	-.01518	Sum of Wgt.	262
50%	-.000485		Mean	-.000148
		Largest	Std. Dev.	.0069262
75%	.00312	.01479		
90%	.00837	.01483	Variance	.000048
95%	.01133	.01953	Skewness	.6522416
99%	.01483	.04181	Kurtosis	8.538474

-> year = 2021

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01021	-.01261		
5%	-.00619	-.01077		
10%	-.00493	-.01021	Obs	261
25%	-.00295	-.00785	Sum of Wgt.	261
50%	.00028		Mean	.0000372
		Largest	Std. Dev.	.0041475
75%	.00242	.00995		
90%	.00489	.01092	Variance	.0000172
95%	.0071	.0117	Skewness	.1994107
99%	.01092	.0137	Kurtosis	3.339946

-> year = 2022

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.0177	-.03031		
5%	-.01267	-.0284		
10%	-.0088	-.0177	Obs	260
25%	-.00311	-.01723	Sum of Wgt.	260
50%	.000495		Mean	.0004345
		Largest	Std. Dev.	.0076944
75%	.00448	.01871		
90%	.009295	.0189	Variance	.0000592
95%	.01149	.02033	Skewness	.2003465
99%	.0189	.04232	Kurtosis	7.272268

-> year = 2023

RTN_GBPUSD

	Percentiles	Smallest		
1%	-.01102	-.01699		
5%	-.00738	-.01307		
10%	-.00628	-.01102	Obs	217
25%	-.00369	-.01012	Sum of Wgt.	217
50%	.00003		Mean	-.0000416
		Largest	Std. Dev.	.0050953
75%	.0029	.01208		
90%	.00644	.01357	Variance	.000026
95%	.00839	.01466	Skewness	.2117701
99%	.01357	.01666	Kurtosis	3.586282

```
7 .
8 . log close
      name:  <unnamed>
       log:  C:\Users\Spandan\Desktop\College and research\IETF\Value At risk Project\
> Summary_Statistics.smcl
  log type:  smcl
 closed on:  12 Nov 2023, 12:04:14
```