

Lampiran 4 Output Weighted Exponential Moving Average (WEMA)

```

> data.cp=read.delim("clipboard",header=TRUE)
> head(data.cp)
  Close
1  2150
2  2180
3  2190
4  2380
5  2320
6  2320
> library(minpack.lm)
> wema=function(par,data.cp)
+ {
+   #panjang data
+   n=(dim(data.cp))[1];
+   N=n+1
+
+   #pembentukan matriks
+   F0=matrix(0,n,1);
+
+   #initial value
+   F0[6]=(((data.cp[5,1]*5)+(data.cp[4,1]*4)+(data.cp[3,1]*3)+
+           (data.cp[2,1]*2)+(data.cp[1,1]*1))/(sum(1:5)));
+
+   for (i in 7:N)
+   {
+     F0[i]=par*data.cp[i-1,1]+(1-par)*F0[i-1];
+   }
+   return(F0)
+ }
> forecast = wema(0.3333,data.cp)
> data=as.data.frame(forecast)
> head(forecast)
[1] 0 0 0 0 0 2280
> view(forecast)

```

1	0.000
2	0.000
3	0.000
4	0.000
5	0.000
6	2280.000
7	2293.332
8	2292.221
9	2278.149
10	2288.765
11	2302.509
12	2301.672
13	2307.781
14	2328.519
15	2349.010
16	2386.003
17	2404.000
18	2406.000
19	2390.668
20	2370.448
21	2380.297
22	2373.532
23	2372.355

Showing 1 to 23 of 257 entries

235	2262.674
236	2251.784
237	2247.856
238	2251.904
239	2231.271
240	2220.849
241	2230.565
242	2267.040
243	2288.024
244	2332.012
245	2348.006
246	2355.337
247	2376.889
248	2391.258
249	2420.836
250	2433.889
251	2422.594
252	2415.063
253	2416.709
254	2424.472
255	2442.979
256	2455.318
257	2456.879

Showing 235 to 257 of 257 entries

```
> mse_wema=function(par ,data. cp)
+ {
+   n=nrow(data. cp);
+   forecast=wema(par ,data. cp);
+   data=as. data. frame(forecast)
+   error2=(data[6:n,]-data. cp[6:n,])^2
+   mse_wema=mean(error2)
+ }
> mse= mse_wema(0. 3333,data. cp)
> mse
[1] 3337.424
> mapewema=function(par ,data)
+ {
+   n=nrow(data. cp);
+   data. cp2=data. cp[6:n,]
+   forecast=wema(par ,data. cp);
+   data= as. data. frame(forecast);
+   error=(data[6:n,]-data. cp[6:n,])
+   pei=(error/data. cp2)*-1
+   mapewema=mean(abs(pei))*100
+ }
> mape= mapewema(0. 3333,data. cp)
> mape
[1] 2.026967
```