

1. 1991 – 2013 .

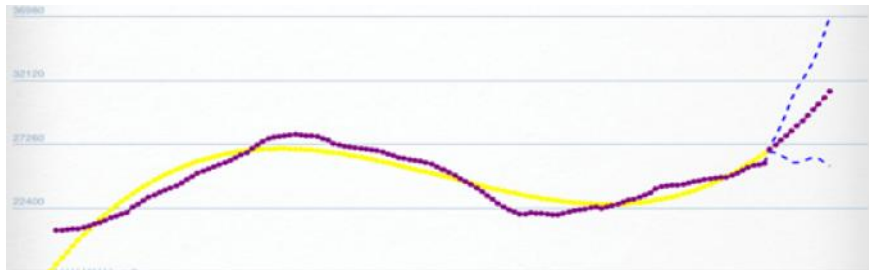
2.

, , , .
 (.1),

2 3,



2.



3.

.....

1.
[1, 2].

MAD (Mean Absolute Derivation):

$$MAD = \frac{1}{n} \sum_{t=1}^n |y_t - \hat{y}_t|;$$

MAPE (Mean Absolute Percentage Error):

$$MAPE = \frac{1}{n} \sum_{t=1}^n \frac{|y_t - \hat{y}_t|}{y_t}.$$

(Mean Percentage Error):

$$MPE = \frac{1}{n} \sum_{t=1}^n \frac{y_t - \hat{y}_t}{y_t}.$$

MPE

MPE

5 %.

1.

MAD	850,81	3019,55
MAPE	0,2939 %	0,8867 %
MPE	0,0178 %	0,7598 %

3.

[1, 2].

2008

1.

().

$$T_t = \alpha y_t + (1 - \alpha)(L_{t-1} + T_{t-1}).$$

2.

$$T_t = \beta(L_t - L_{t-1}) + (1-\beta)T_{t-1}.$$

3.

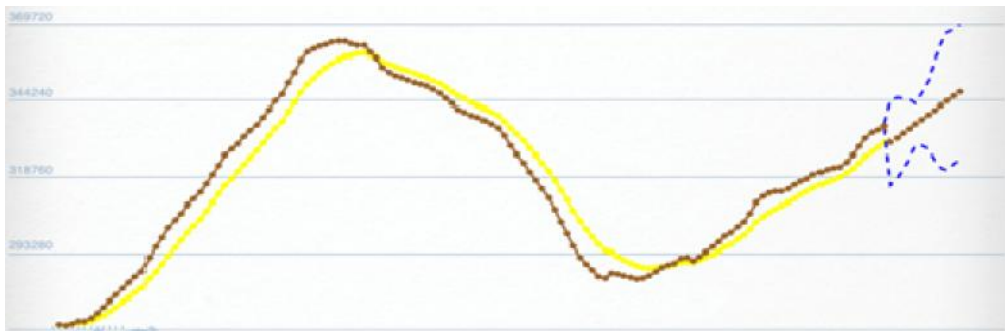
$$\hat{y}_{n+\tau} = L_n + \tau T_n,$$

(0 1); y_t - ; - () t ; - ; -
 (0 1); t - () ; -
 ; - () ; $n+$ -

([1]),

= 0.3, = 0.7,
 . 4

. 2.



. 4.

2.

MAD	395,00
MAPE	0,12 %
MPE	0,12 %

4.

[1, 2].

1.

$$L_t = \alpha \frac{y_t}{S_{t-m}} + (1 - \alpha)(L_{t-1} + T_{t-1}).$$

2.

$$T_t = \beta(L_t - L_{t-1}) + (1 - \beta)T_{t-1}.$$

3.

$$S_t = \gamma \frac{y_t}{L_t} + (1 - \gamma)S_{t-m}.$$

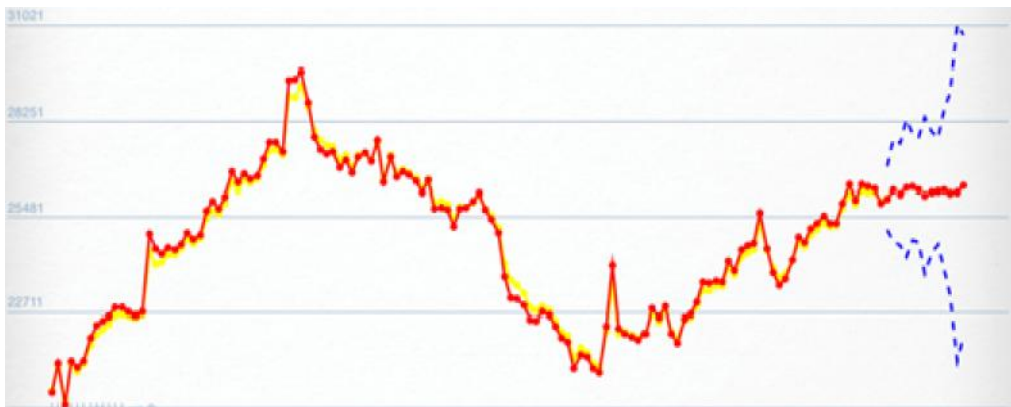
4.

$$\hat{y}_{n+\tau} = (L_n + \tau T_n)S_{n+\tau-m},$$

: $\alpha = 0.5, \beta = 0.6, \gamma = 0.5.$

. 5.

. 3.



. 5.

3.

MAD	478,27
MAPE	0,15 %
MPE	-0,10 %

5. [3 – 5].

4. 63 %.

	156	204	252
MAD	5834,41	2392,03	1010,79
MAPE	0,81 %	0,47 %	0,34 %
MPE	0,81 %	0,47 %	0,34 %

5. 56 %.

	156	204	252
MAD	3257,41	1930,21	1430,09
MAPE	0,54 %	0,32 %	0,23 %
MPE	0,48 %	0,28 %	0,23 %

40 %.

50 %

[6, 7].

L.F. Hulianytskyi, T.H. Bondar

STUDY ON ADAPTIVE FORECASTING METHODS EFFICIENCY

The paper studies the efficiency of the well-known Holt and Winters forecasting methods depending on their parameters. The results obtained (time-series length reduction and MAPE decrease) testify the usefulness of the proposed approach for the forecasting long-time series problem. Winter's method with segmentation has provided better results in computational experiment. In addition, the increase of an initial dataset size also produces an efficiency increase of the forecasting techniques based on time-series segmentation.

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04.05.2018

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