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Intelligent decision support systems for oil price forecasting (Article)

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Abstract

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This research studies the application of hybrid algorithms for predicting the prices of crude oil. Brent crude oil price data and hybrid intelligent algorithm (time delay neural network, probabilistic neural network, and fuzzy logic) were used to build intelligent decision support systems for predicting crude oil prices. The proposed model was able to predict future crude oil prices from August 2013 to July 2014. Future prices can guide decision makers in economic planning and taking effective measures to tackle the negative impact of crude oil price volatility. Energy demand and supply projection can effectively be tackled with accurate forecasts of crude oil prices, which in turn can create stability in the oil market. The future crude oil prices predict by the intelligent decision support systems can be used by both government and international organizations related to crude oil such as organization of petroleum exporting countries (OPEC) for policy formulation in the next one year.

Author keywords

Crude oil prices Decision support system Fuzzy logic Probabilistic neural network Time delay neural network

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- 1 Aladwani, F., Iledare, W.
 Predicting Crude Oil Price Trends Using Artificial Neural Network Modeling Approach
 (2013) *International Association of Energy Economics USA web, in Proceedings of the 2005 Conference of the International Association of Energy Economics.*
 Denver, USA
<http://www.iaee.org/en/conferences/2005-denver.aspx>

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- 2 Alizadeh, A., Mafinezhad, Kh.
Monthly Brent oil price forecasting using artificial neural networks and a crisis index

(2010) *ICEIE 2010 - 2010 International Conference on Electronics and Information Engineering, Proceedings*, 2, art. no. 5559818, pp. V2465-V2468. Cited 13 times.
ISBN: 978-142447680-0
doi: 10.1109/ICEIE.2010.5559818

[View at Publisher](#)

- 3 Bahrammirzaee, A.
A comparative survey of artificial intelligence applications in finance: Artificial neural networks, expert system and hybrid intelligent systems

(2010) *Neural Computing and Applications*, 19 (8), pp. 1165-1195. Cited 92 times.
doi: 10.1007/s00521-010-0362-z

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- 4 Beale, M.H., Hagan, M.T., Demuth, H.B.
Neural network tool box TM 7 user's guide
(2013) *MathWorks Inc.*
Natick

- 5 Chan, F.T.S., Jiang, B., Tang, N.K.H.
Development of intelligent decision support tools to aid the design of flexible manufacturing systems

(2000) *International Journal of Production Economics*, 65 (1), art. no. 2134, pp. 73-84. Cited 108 times.
doi: 10.1016/S0925-5273(99)00091-2

[View at Publisher](#)

- 6 Chen, C.-T.
Extensions of the TOPSIS for group decision-making under fuzzy environment

(2000) *Fuzzy Sets and Systems*, 114 (1), pp. 1-9. Cited 1447 times.

[View at Publisher](#)

- 7 Dideková, Z., Kajan, S.
(2013) *Applications of intelligent hybrid systems in matlab.*
http://dsp.vscht.cz/konference:matlab/MATLAB09/prispevky/021_didekova.pdf

- 8 Ghaffari, A., Zare, S.
A novel algorithm for prediction of crude oil price variation based on soft computing

(2009) *Energy Economics*, 31 (4), pp. 531-536. Cited 47 times.
doi: 10.1016/j.eneco.2009.01.006

[View at Publisher](#)

- 9 Gholamian, M.R., Fatemi Ghomi, S.M.T., Ghazanfari, M.
A hybrid systematic design for multiobjective market problems: A case study in crude oil markets

(2005) *Engineering Applications of Artificial Intelligence*, 18 (4), pp. 495-509. Cited 12 times.
doi: 10.1016/j.engappai.2004.11.004

[View at Publisher](#)

- 10 Jammazi, R., Aloui, C.
Crude oil price forecasting: Experimental evidence from wavelet decomposition and neural network modeling
(2012) *Energy Economics*, 34 (3), pp. 828-841. Cited 76 times.
doi: 10.1016/j.eneco.2011.07.018
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-
- 11 Kaboudan, M.A.
Compumetric forecasting of crude oil prices
(2001) *Proceedings of the IEEE Conference on Evolutionary Computation, ICEC*, 1, pp. 283-287. Cited 30 times.
[View at Publisher](#)
-
- 12 Kim, H., Shin, K., Park, K.
Time Delay Neural Networks and Genetic Algorithms for Detecting Temporal Patterns in Stock Markets
(2005) *Springer-Verlag, Berlin Heidelberg*.
-
- 13 Mantzaris, D., Anastassopoulos, G., Adamopoulos, A.
Genetic algorithm pruning of probabilistic neural networks in medical disease estimation
(2011) *Neural Networks*, 24 (8), pp. 831-835. Cited 49 times.
doi: 10.1016/j.neunet.2011.06.003
[View at Publisher](#)
-
- 14 Niculescu, S.P.
Artificial neural networks and genetic algorithms in QSAR
(2003) *Journal of Molecular Structure: THEOCHEM*, 622 (1-2), pp. 71-83. Cited 119 times.
doi: 10.1016/S0166-1280(02)00619-X
[View at Publisher](#)
-
- 15 Zhang, G.Peter, Patuwo, B.Eddy, Hu, M.Y.
A simulation study of artificial neural networks for nonlinear time-series forecasting
(2000) *Computers and Operations Research*, 28 (4), pp. 381-396. Cited 165 times.
doi: 10.1016/S0305-0548(99)00123-9
[View at Publisher](#)
-
- 16 Shouyang, W., Lean, Y., Lai, K.K.
crude oil price forecasting with tei@i methodology
(2005) *Journal of System Science &Complexity*, 18 (2), pp. 145-166. Cited 95 times.
-
- 17 Specht, D.F.
Probabilistic neural networks
(1990) *Neural Networks*, 3 (1), pp. 109-118. Cited 2220 times.
doi: 10.1016/0893-6080(90)90049-Q
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-
- 18 Specht, D.F.
PNN from fast training to fast running In: Computational Intelligence
(1995) *A Dynamic System Perspective*.. Cited 2 times.
IEEE Press, New York

- 19 Yang, C.W., Hwang, M.J., Huang, B.N.
An analysis of factors affecting price volatility of the US oil market

(2002) *Energy Economics*, 24 (2), pp. 107-119. Cited 63 times.
doi: 10.1016/S0140-9883(01)00092-5

[View at Publisher](#)

- 20 Yu, L., Wang, S., Lai, K.K.
Forecasting crude oil price with an EMD-based neural network ensemble learning paradigm

(2008) *Energy Economics*, 30 (5), pp. 2623-2635. Cited 226 times.
doi: 10.1016/j.eneco.2008.05.003

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- 21 Yu, L., Wang, S., Lai, K.K.
A rough set refined text mining approach for crude oil market tendency forecasting
(2005) *International Journal of Knowledge and Systems Science.*, 2 (1), pp. 33-46. Cited 40 times.

- 22 Yun, W.-C., Jae Kim, H.
Hedging strategy for crude oil trading and the factors influencing hedging effectiveness

(2010) *Energy Policy*, 38 (5), pp. 2404-2408. Cited 2 times.
doi: 10.1016/j.enpol.2009.12.032

[View at Publisher](#)

- 23 Zhang, G., Eddy Patuwo, B., Y. Hu, M.
Forecasting with artificial neural networks: The state of the art

(1998) *International Journal of Forecasting*, 14 (1), pp. 35-62. Cited 1671 times.

[View at Publisher](#)

- 24 Zimmermann, H.J.
(2001) *Fuzzy set theory and its applications.* Cited 7174 times.
Springer, Boston

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