

**REVISITING EMPIRICAL LINKAGES BETWEEN
DIRECTION OF CANADIAN STOCK PRICE INDEX
MOVEMENT AND OIL SUPPLY AND DEMAND SHOCKS:
ARTIFICIAL NEURAL NETWORKS AND SUPPORT
VECTOR MACHINES APPROACHES**

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Abstract

Over the years, the oil price has shown an impressive fluctuation and isn't without signification impact on the evolution of stock market returns. Because of the complexity of stock market data, developing an efficient model for predicting linkages between macroeconomic data and stock price movement is very difficult. This study attempted to develop two robust and efficient models and compared their performance in predicting the direction of movement in the Canadian stock market. The proposed models are based on two classification techniques, artificial neural networks and Support Vector Machines. Considering together world oil production and world oil prices in order to supervise for oil supply and oil demand shocks, strong evidence of sensitivity of stock price movement direction to the oil price shocks specifications is found. Experimental results showed that average performance of artificial neural networks model is around 96.75% that is significantly better than that of the Support Vector Machines reaching 95.67% .

Keywords: Oil price; Stock price movement; Oil supply shocks; Oil demand shocks; Artificial neural networks, Support Vector Machines.

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