This thesis investigates the relationship between daily spot and futures prices for maturities of one, two, three and four months of West Texas Intermediate (WTI) crude oil. The data cover period January 1987-April 2015. Based on economic theory, the futures prices should be closely related to the spot price, which - in the case of crude oil market - this thesis analyses using wavelet-based approach. Main contributions of this thesis are findings in the field of time-frequency relationship of spot-futures prices of crude oil, where an alternative methodology - wavelet transformation - is used. The usage of this advanced method is also an additional contribution of this thesis because it allows us to rigorously study how co-movement (relationship) differs across frequencies/scales and time. In this thesis wavelet Coherence, wavelet bivariate correlation and relatively new method wavelet band spectral regression (WBLS) are used.

This thesis brings 4 main findings. First, relationship between Futures and spot prices of crude oil is strong in all time-periods (frequencies/scales), which supports economic theory. Second and In contrary to the first finding, in the gasoline spot-futures market, we find that the relationship is strong mainly in higher scales (lower frequencies) while in lower scales (higher frequencies) the relationship is weak, so this goes against economic theory. Third, the crude oil relationship between forward prices and expected spot price are mainly in higher scales while in lower scales there is almost no relationship. Fourth, futures prices could be a good predictor of futures spot prices mainly in long-term period while in short-term futures prices seems to be biased predictor of futures spot prices due to existence of risk premia.