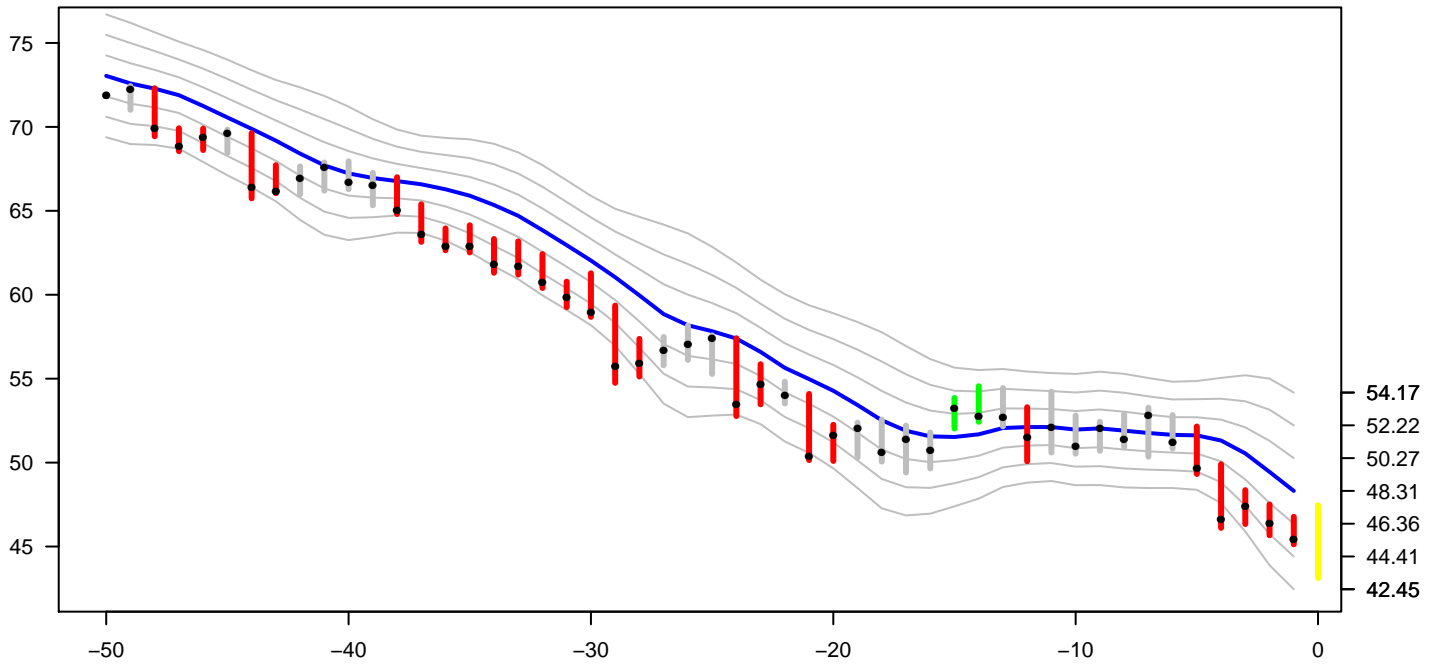
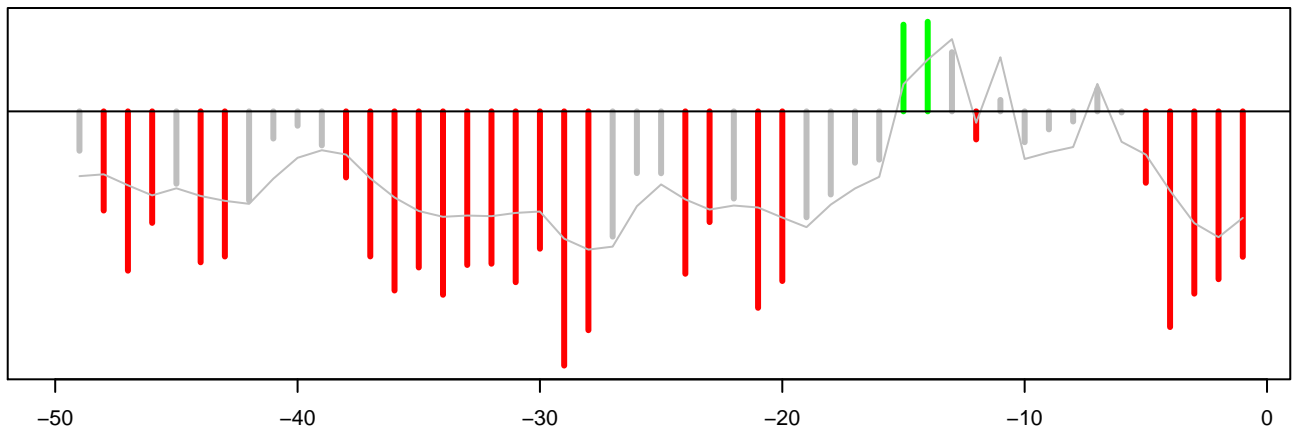


# Metal Price Analytics: Oil & Oil Related. 24-Dec-2018

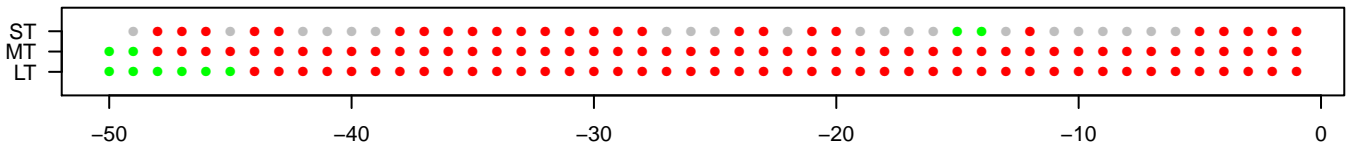
Nymex Oil (CL) Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals



## Nymex Oil (CL)

The short term signal is red, bearish

The medium term signal is red, bearish

The long term signal is red, bearish

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets. Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend. A short, medium and long term signal alert is given warning of a possible trend change. A channel alert is given warning that prices may move above or below the trend channel.

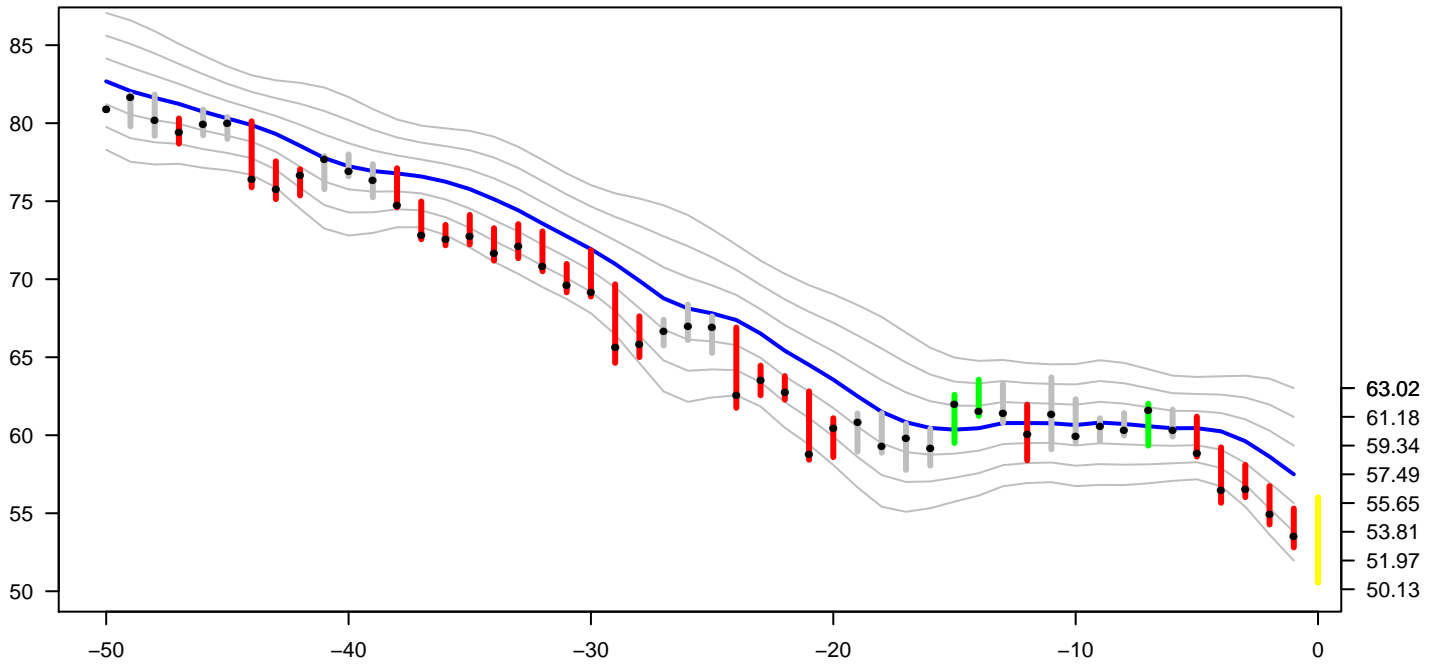
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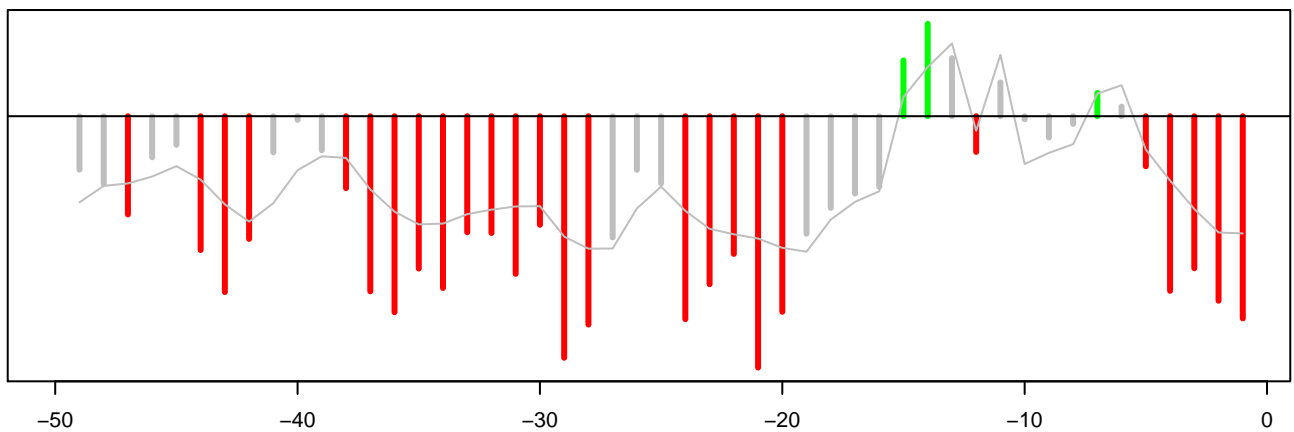


# Metal Price Analytics: Oil & Oil Related. 24-Dec-2018

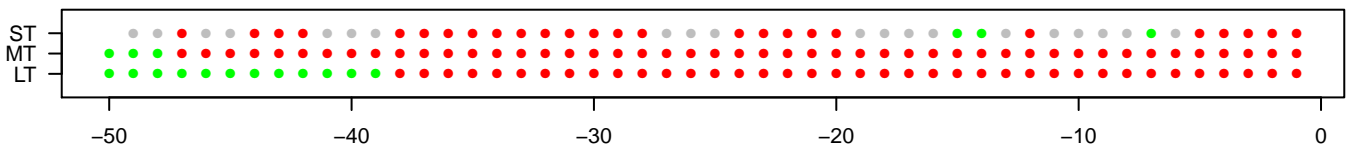
Brent Oil (BZ) Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals



Brent Oil (BZ). Channel Alert: The price may move below the lower channel.  
 The short term signal is red, bearish  
 The medium term signal is red, bearish  
 The long term signal is red, bearish

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets. Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend. A short, medium and long term signal alert is given warning of a possible trend change. A channel alert is given warning that prices may move above or below the trend channel.

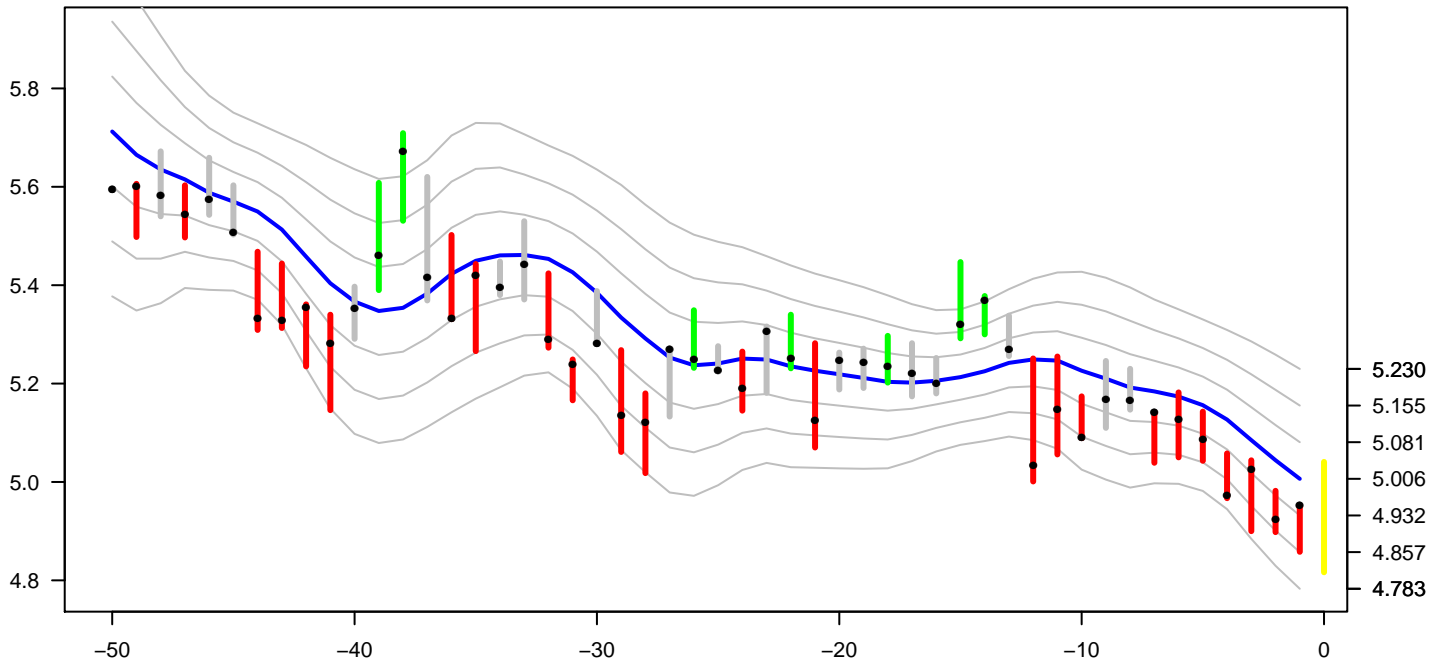
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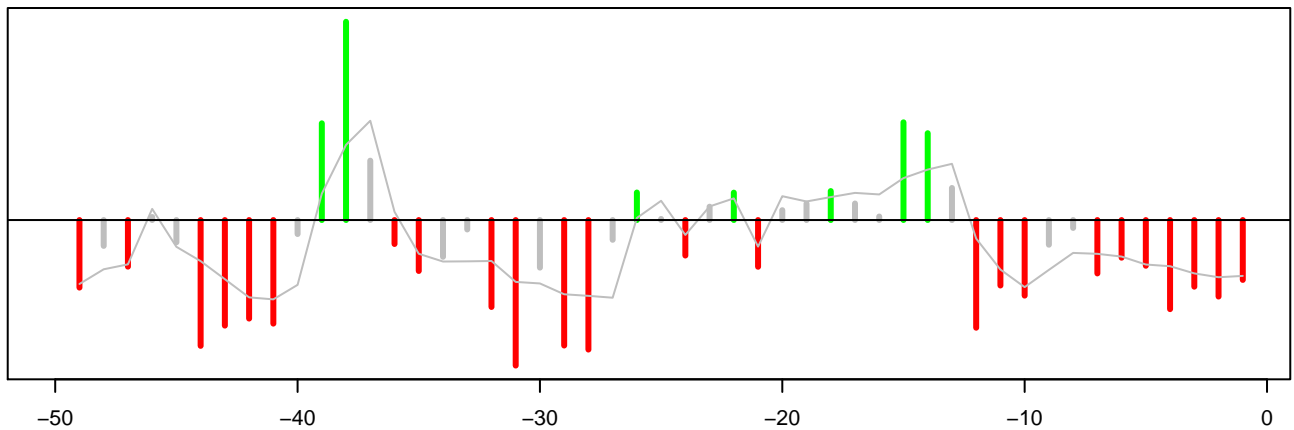


# Metal Price Analytics: Oil & Oil Related. 24-Dec-2018

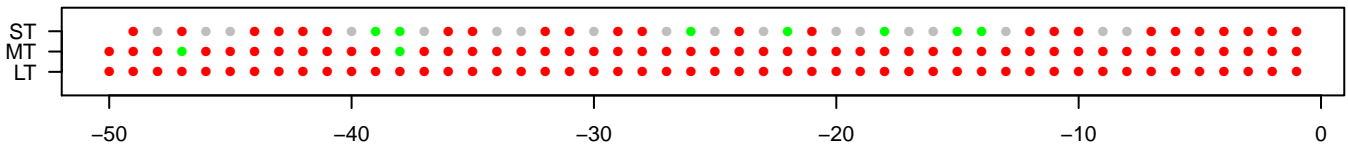
BP. Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals



BP.

The short term signal is red, bearish

The medium term signal is red, bearish

The long term signal is red, bearish

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets.

Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are

recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated

using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend.

A short, medium and long term signal alert is given warning of a possible trend change.

A channel alert is given warning that prices may move above or below the trend channel.

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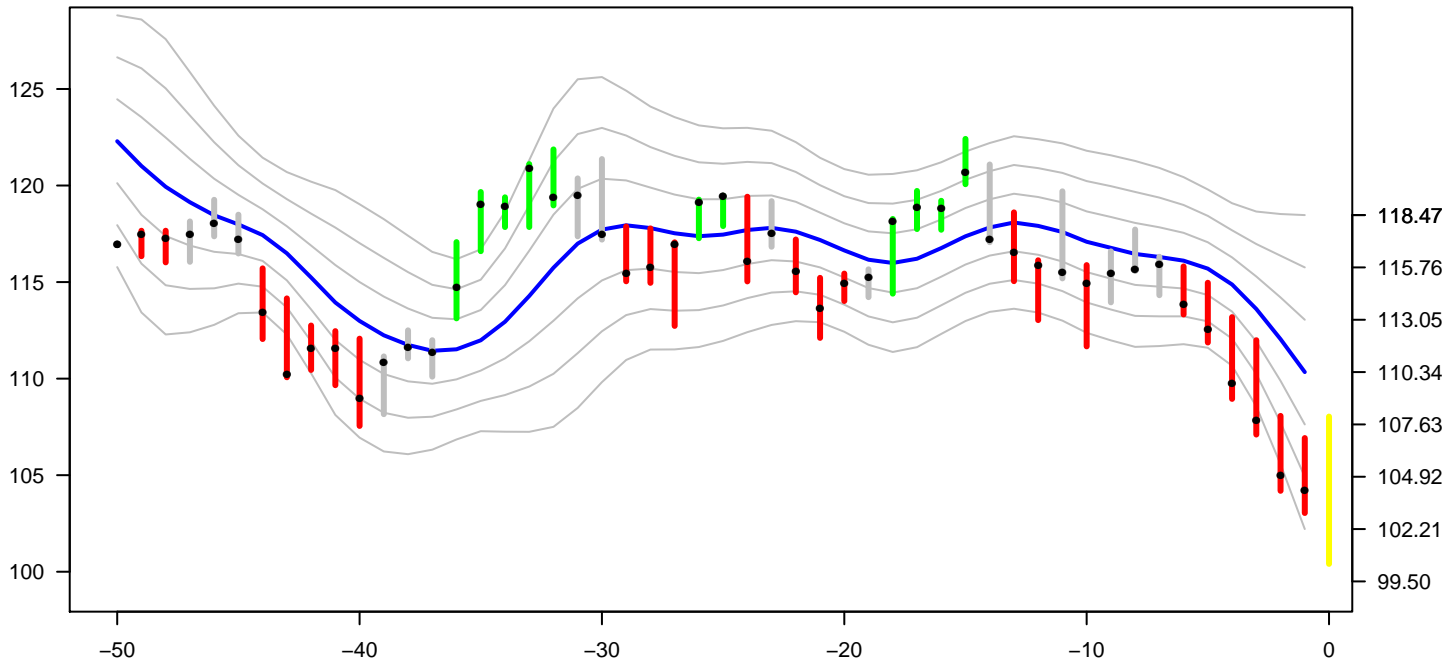
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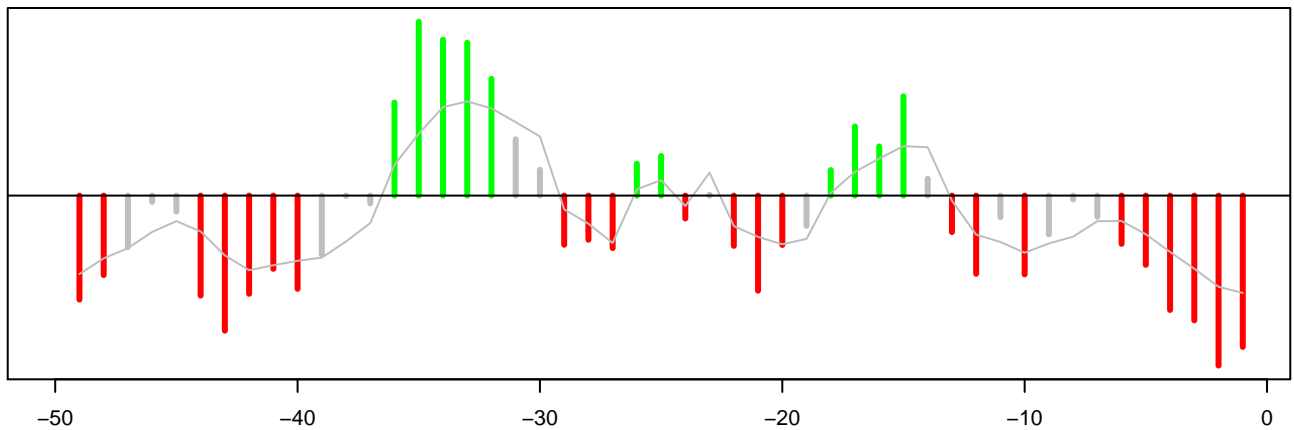


# Metal Price Analytics: Oil & Oil Related. 24-Dec-2018

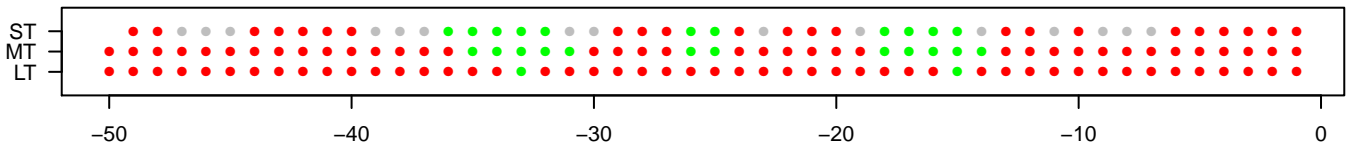
Chevron (CVX) Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals



Chevron (CVX). Channel Alert: The price may move below the lower channel.

The short term signal is red, bearish

The medium term signal is red, bearish

The long term signal is red, bearish

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets.

Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend. A short, medium and long term signal alert is given warning of a possible trend change.

A channel alert is given warning that prices may move above or below the trend channel.

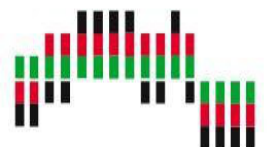
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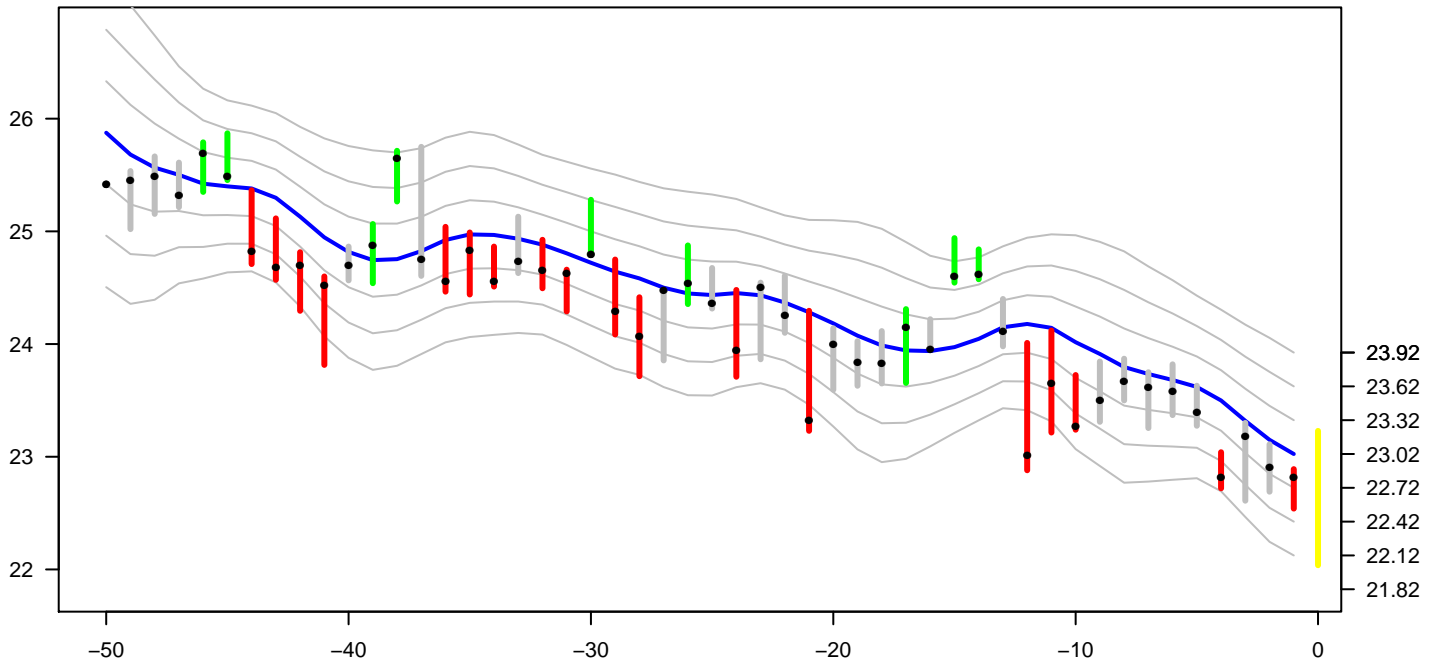
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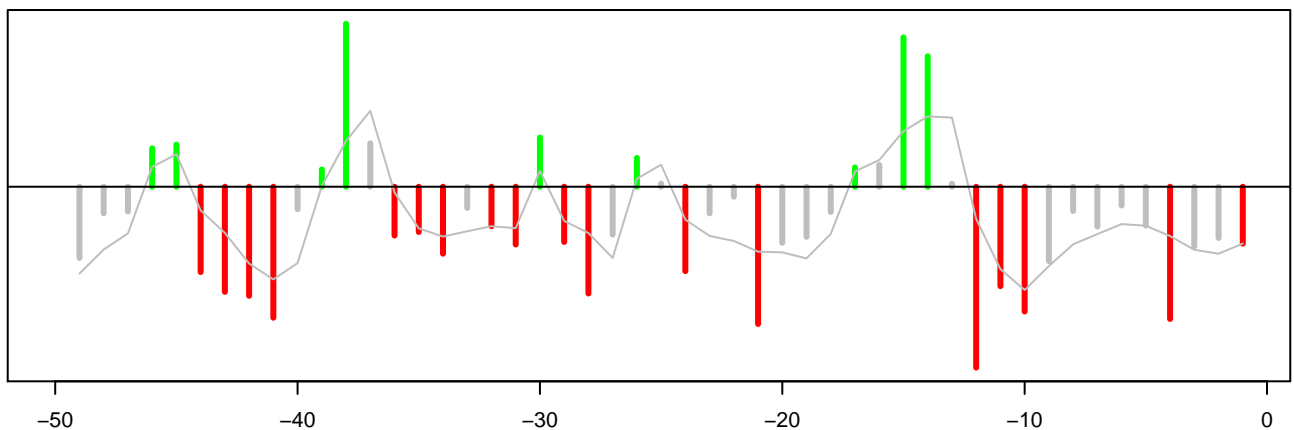


# Metal Price Analytics: Oil & Oil Related. 24-Dec-2018

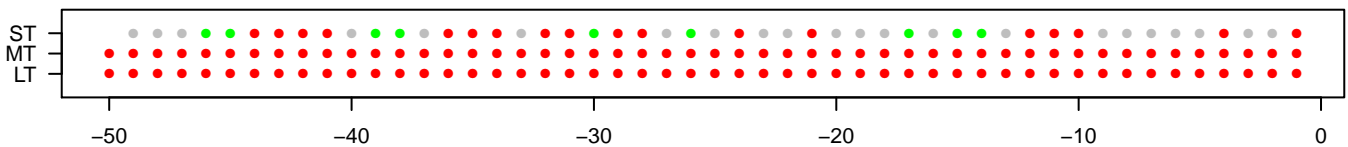
Royal Dutch Shell (RDSB) Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals



Royal Dutch Shell (RDSB). Channel Alert: The price may move below the lower channel.

The short term signal is red, bearish

The medium term signal is red, bearish

The long term signal is red, bearish

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets.

Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend. A short, medium and long term signal alert is given warning of a possible trend change.

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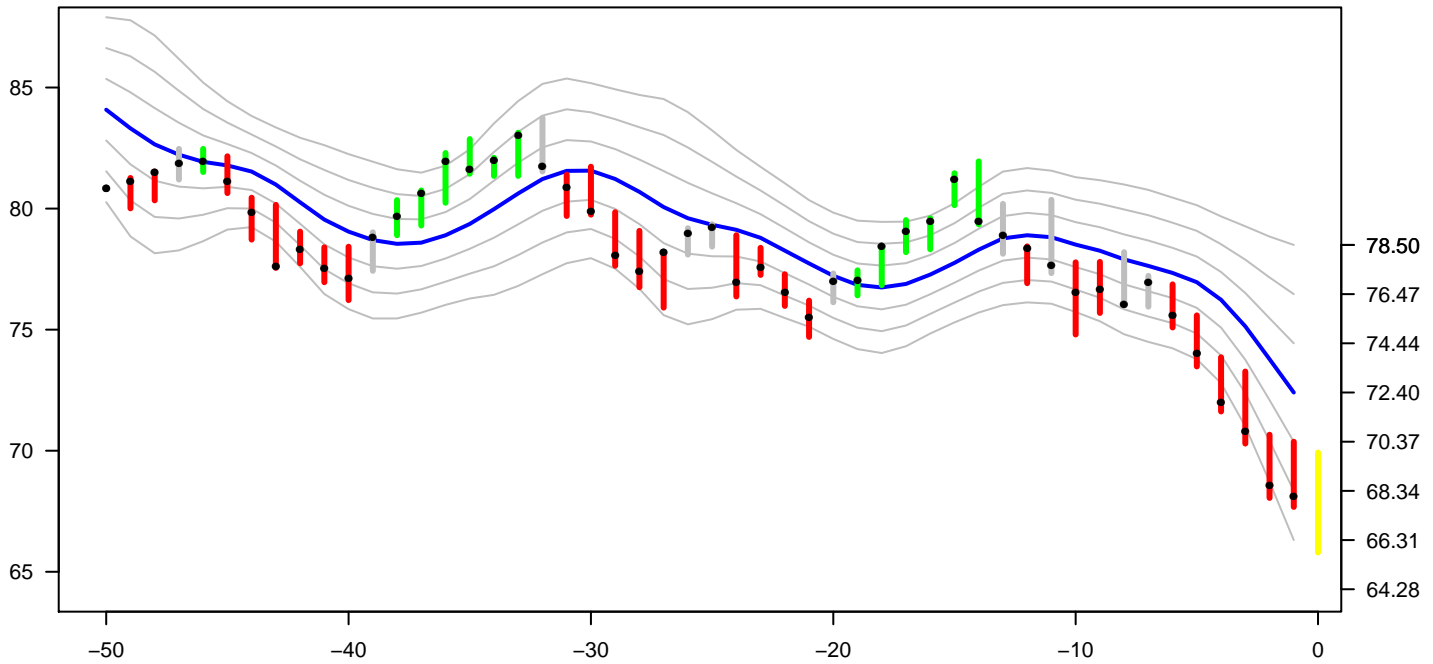
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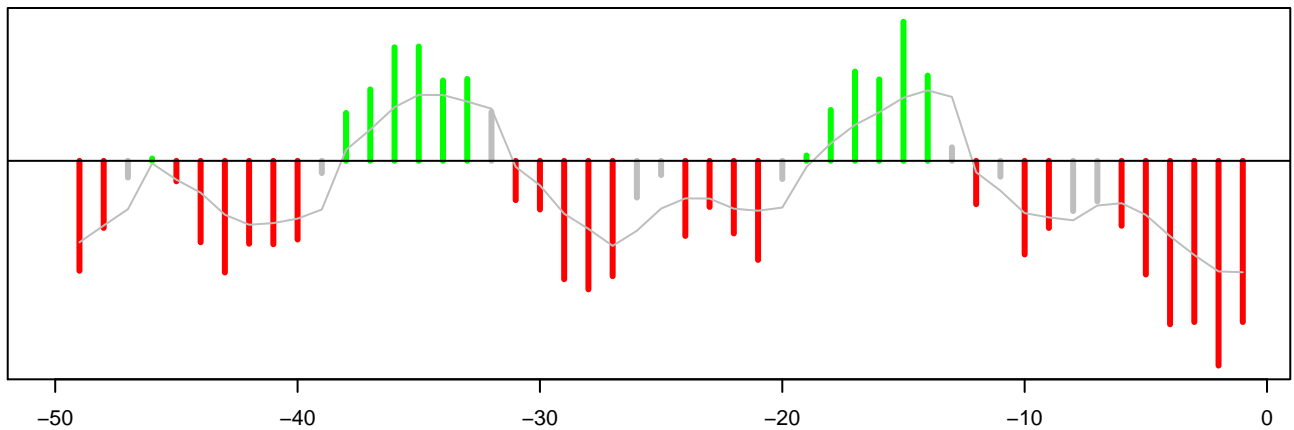


# Metal Price Analytics: Oil & Oil Related. 24-Dec-2018

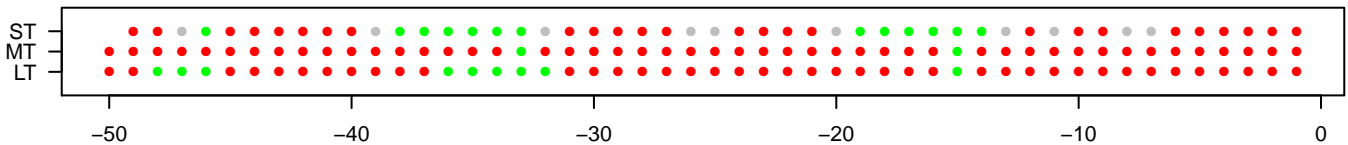
Exxon Mobil (XOM) Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals

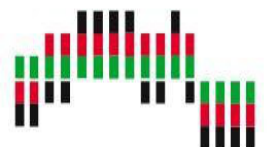


Exxon Mobil (XOM). Channel Alert: The price may move below the lower channel.  
 The short term signal is red, bearish  
 The medium term signal is red, bearish  
 The long term signal is red, bearish

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets. Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend. A short, medium and long term signal alert is given warning of a possible trend change. A channel alert is given warning that prices may move above or below the trend channel.

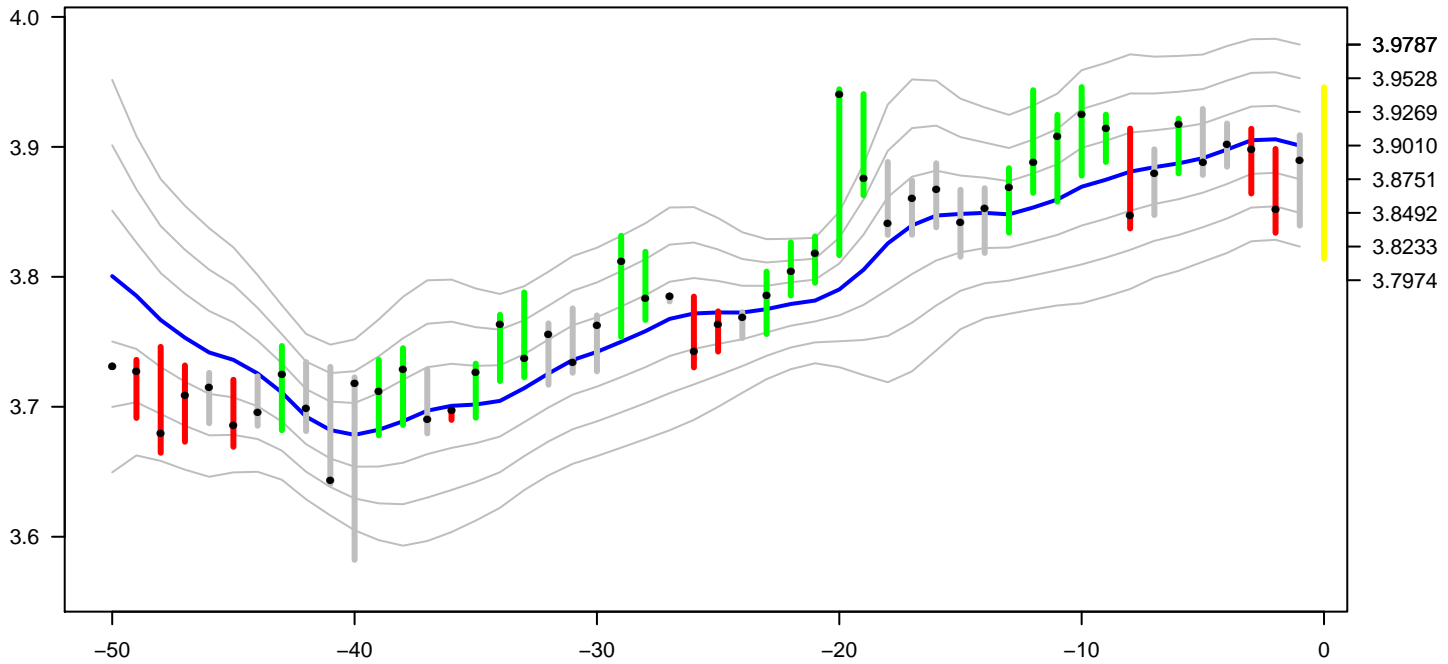
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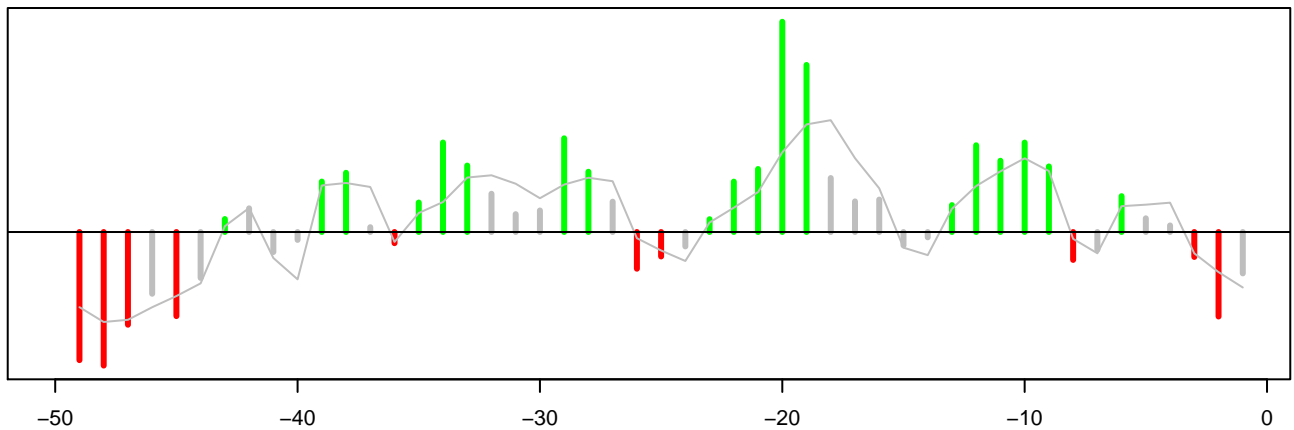


# Metal Price Analytics: Oil & Oil Related. 24-Dec-2018

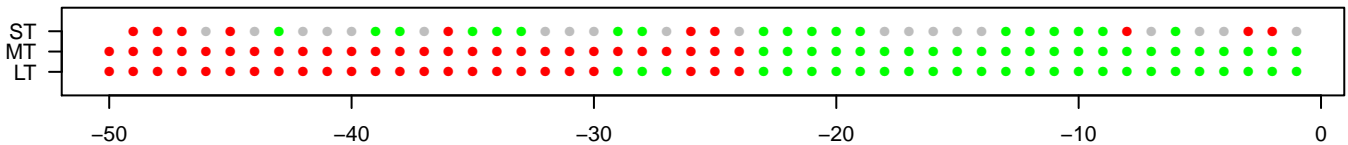
Brazilian Real (USDBRL) Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals



Brazilian Real (USDBRL). Channel Alert: The price may move below the lower channel.  
 The short term signal is grey, neutral.  
 The medium term signal is green, bullish.  
 The long term signal is green, bullish.

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets. Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend. A short, medium and long term signal alert is given warning of a possible trend change. A channel alert is given warning that prices may move above or below the trend channel.

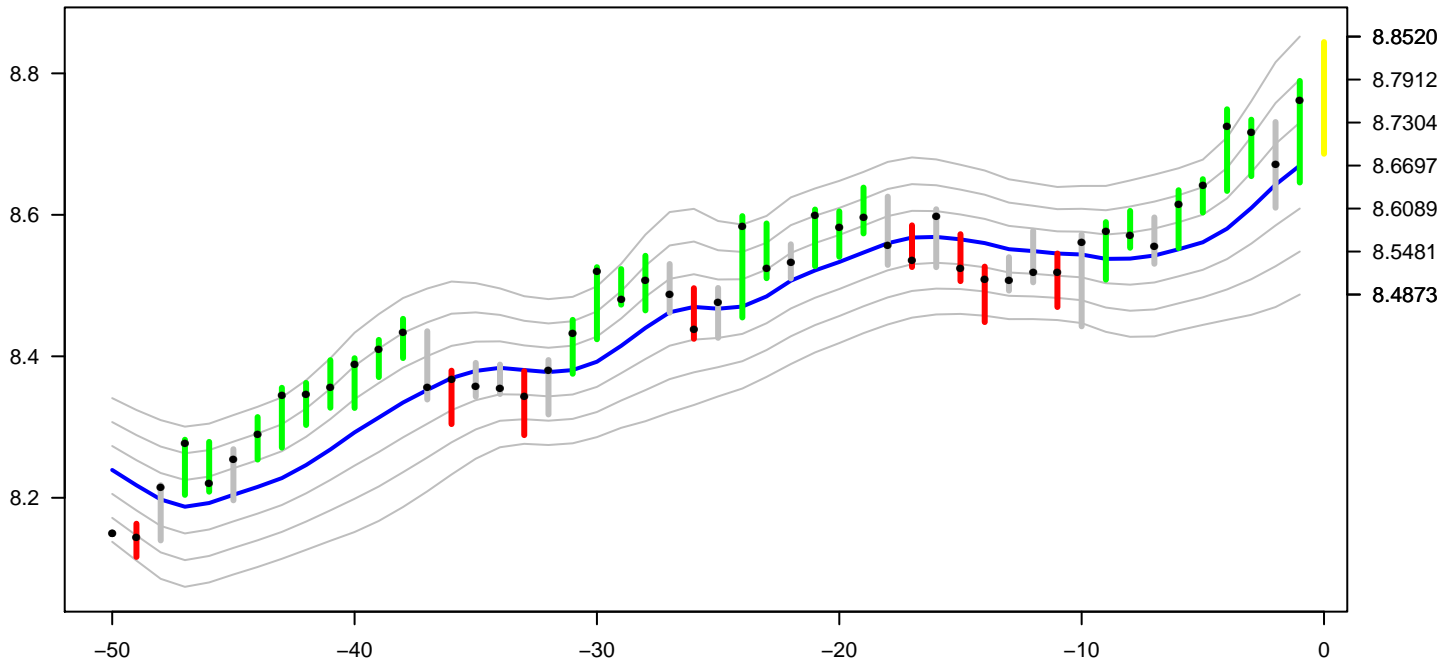
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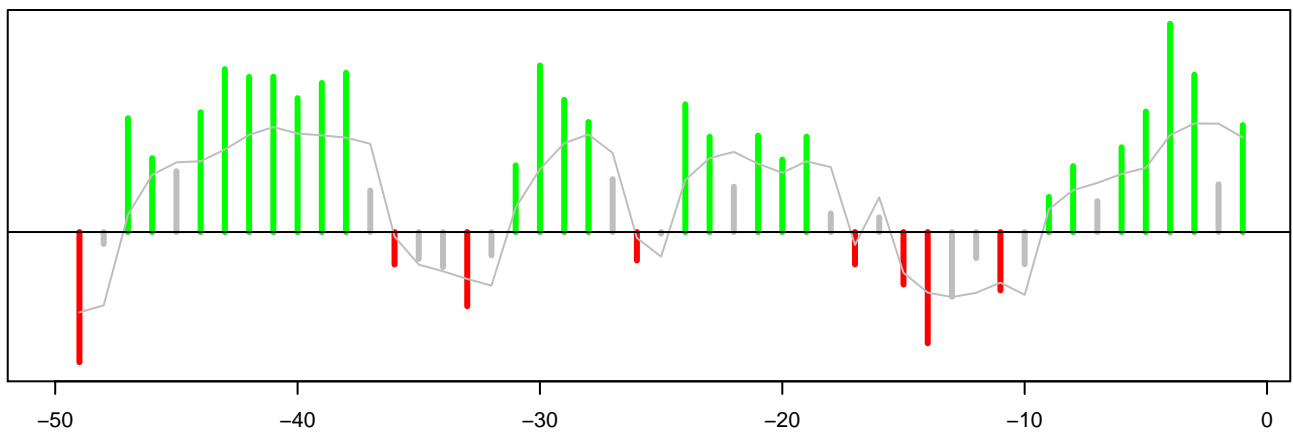


# Metal Price Analytics: Oil & Oil Related. 24-Dec-2018

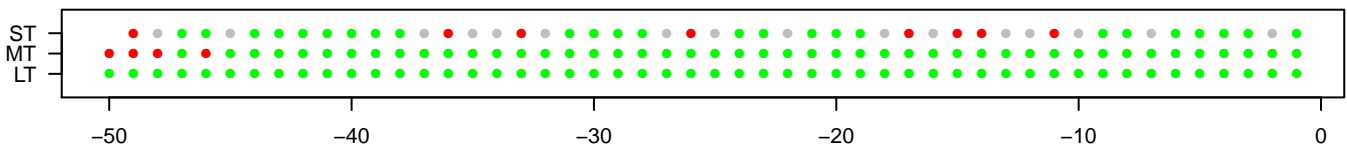
Norwegian Krone (USDNOK) Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals



## Norwegian Krone (USDNOK)

The short term signal is green, bullish.  
 The medium term signal is green, bullish.  
 The long term signal is green, bullish.

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets. Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend. A short, medium and long term signal alert is given warning of a possible trend change. A channel alert is given warning that prices may move above or below the trend channel.

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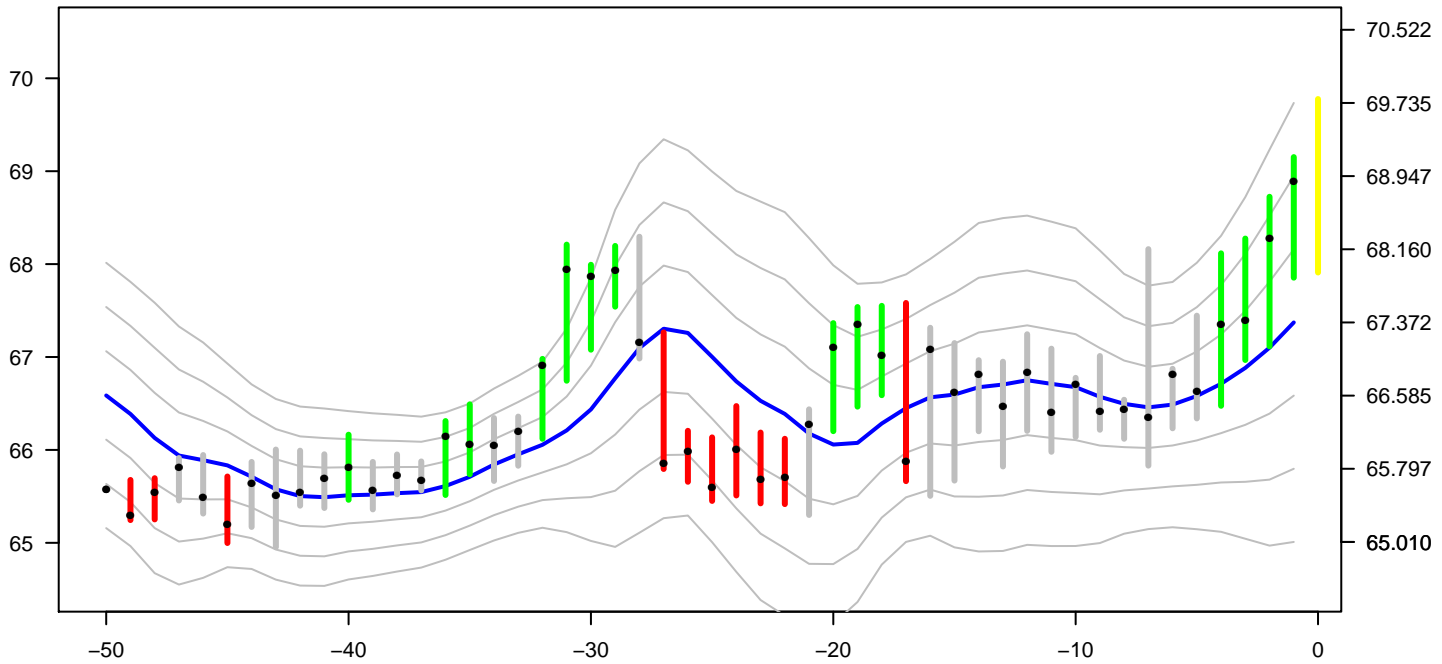
*Metal Price Analytics Ltd*



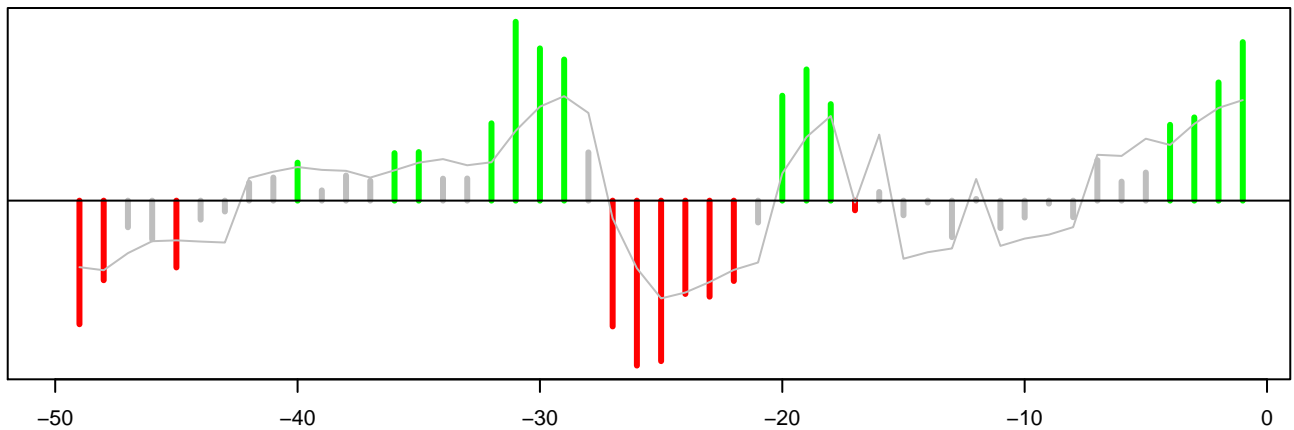


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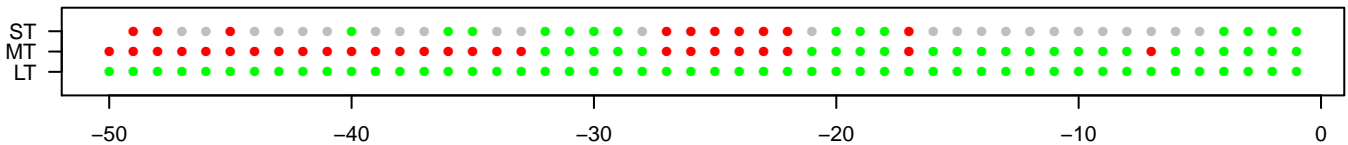
Russian Ruble (USDRUB) Price and Factor Model Trend Channel.  
 Last Price History Date: 21 Dec 2018. Expected region for the next day: Yellow Bar.



Short Term Signal Oscillator. Green: Bullish. Red: Bearish. Grey: Neutral, uncertainty in direction.



Short (ST), Medium (MT) and Long Term (LT) Signals



Russian Ruble (USDRUB). Channel Alert: The price may move above the upper channel.  
 The short term signal is green, bullish.  
 The medium term signal is green, bullish.  
 The long term signal is green, bullish.

The trend channel is constructed from a factor model that looks at the dynamic relationship between related markets. Among the factors considered in the model are Currencies, U.S. Bonds, Indexes. These weightings can vary through time and are recalculated daily using lasso and ridge regression. The short term signal is obtained from the Signal Oscillator which is calculated using an algorithm on the price movement around the Factor Trend Channel. Signals are also given for the medium and long term trend. A short, medium and long term signal alert is given warning of a possible trend change. A channel alert is given warning that prices may move above or below the trend channel.

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