

```
In[42]:= price = FinancialData["IBM", "Jan. 1, 1990"];
```

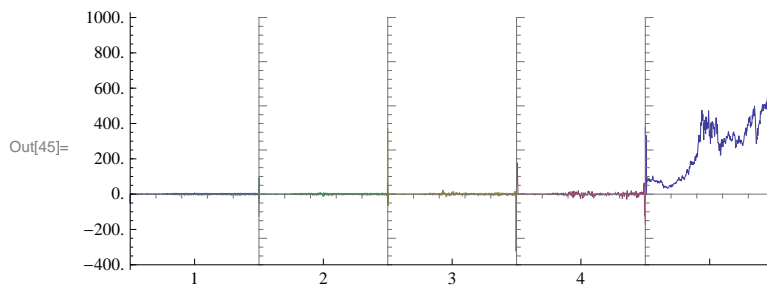
```
In[43]:= DateListPlot[price, Joined → True, Frame → False]
```



Find a ternd

```
In[44]:= dwd = DiscreteWaveletTransform[price[[All, 2]], BiorthogonalSplineWavelet[3, 3], 4];
```

```
In[45]:= WaveletListPlot[dwd, PlotLayout → "CommonYAxis"]
```



```
In[46]:= tr = InverseWaveletTransform[WaveletThreshold[dwd, {"Hard", 100}]];
```

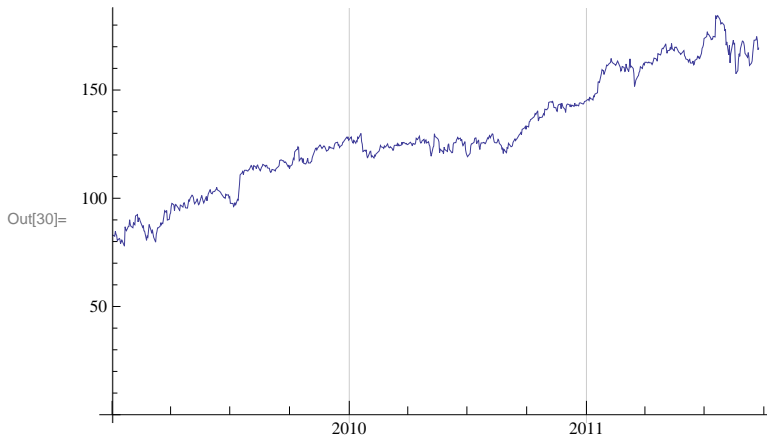
```
In[47]:= DateListPlot[Transpose[{price[[All, 1]], tr}], Joined → True, Frame → False]
```



Detrend

```
In[29]:= price = FinancialData["IBM", "Jan. 1, 2009"];
```

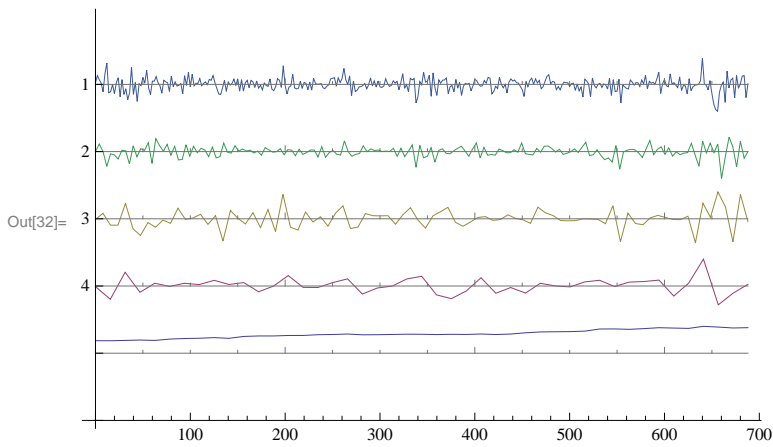
```
In[30]:= DateListPlot[price, Joined → True, Frame → False]
```



```
In[31]:= dwd = DiscreteWaveletTransform[
  price[[All, 2]], SymletWavelet[2], 4, Padding → "Extrapolated"]
```

```
Out[31]= DiscreteWaveletData[ <<DWT>>, <4>, {688}]
```

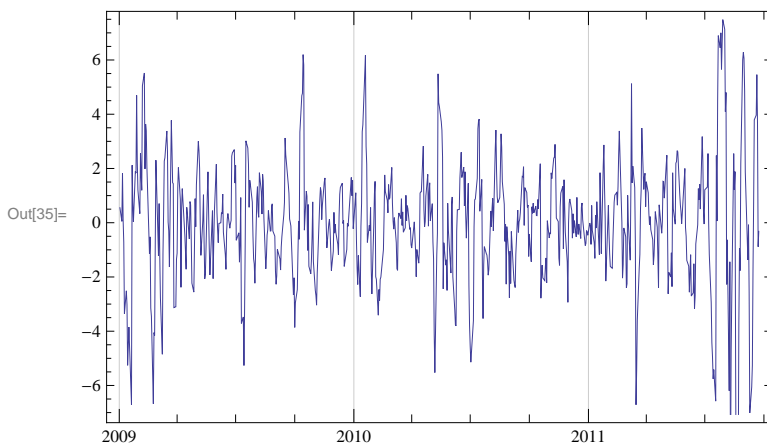
```
In[32]:= WaveletListPlot[dwd]
```



Remove trend

```
In[34]:= dtr = InverseWaveletTransform[WaveletMapIndexed[# 0.0 &, dwd, {____, 0}]];
```

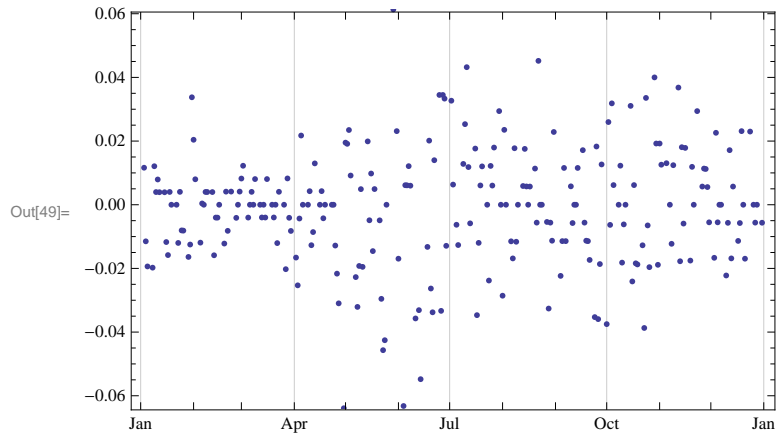
```
In[35]:= DateListPlot[Transpose[{price[[All, 1]], dtr}], Joined → True]
```



Variance: Time Series Analysis

```
In[48]:= ret = FinancialData["IBM", "Return", {{1962, 1, 1}, {1963, 1, 1}}, "Day"];
```

```
In[49]:= DateListPlot[ret]
```



```
In[50]:= dwd1 = DiscreteWaveletTransform[ret[[All, 2]], HaarWavelet[], 4];
```

```
In[51]:= WaveletListPlot[dwd1, PlotLayout -> "CommonYAxis"]
```

