

Predicting US Unemployment Rates Based On Housing Starts

Summary:

Housing starts have an extremely high correlation with unemployment rate in the United States. The probability that the two variables have a real connection is 99.99% based on a Pearson r linear correlation. It is also possible to accurately predict unemployment using regression analysis based on this correlation.

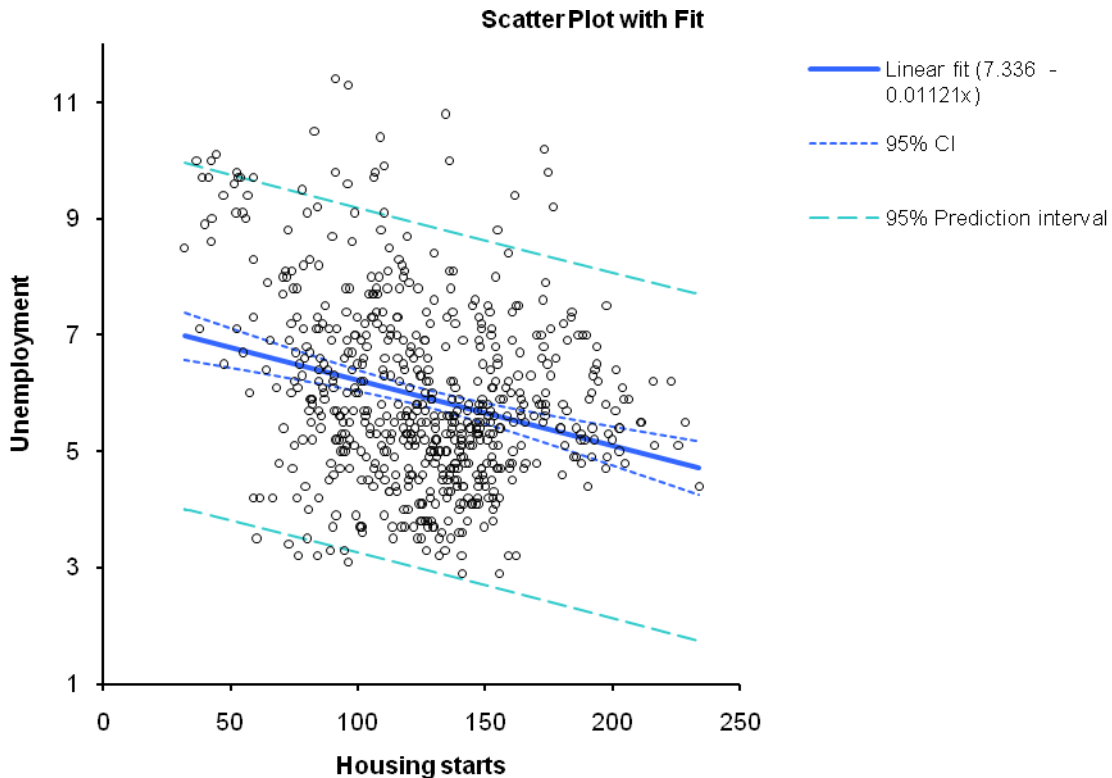
United States

Most economists agree that predicting the course of unemployment in America is crucial for planning a healthy economy. Some economists believe consumer confidence is the most important indicator, others retail sales, or, stock and bond declines, or interest rates. My research indicates that housing starts are the most powerful single predictor of the unemployment rate. This is because changes in housing starts signal unemployment rate changes ahead (often many months ahead) of other indicators. A correlation analysis of monthly US government reports of housing starts and unemployment data from 1959 to the present showed a negative inverse correlation (Pearson r linear correlation) of -0.27 ($df = 612$, $p < .01$). This is highly significant meaning it is highly unlikely that the connection between these two variables is due to chance. The probability there is a real connection between housing starts and unemployment is greater than 99.99%. I do not make the claim of a causal connection--that housing start reduction causes unemployment to go up. A significant Pearson r correlation does not prove causation and there may be other factors involved, but I do assert it is a powerful predictor of unemployment which can indicate to government, businesses and individuals that there will economic distress ahead, even if it is not yet generally apparent.

Pearson r Correlation between Housing Starts and Unemployment, 1959-Current

($df = 612$ $r = -0.27$ $p < 0.01$)

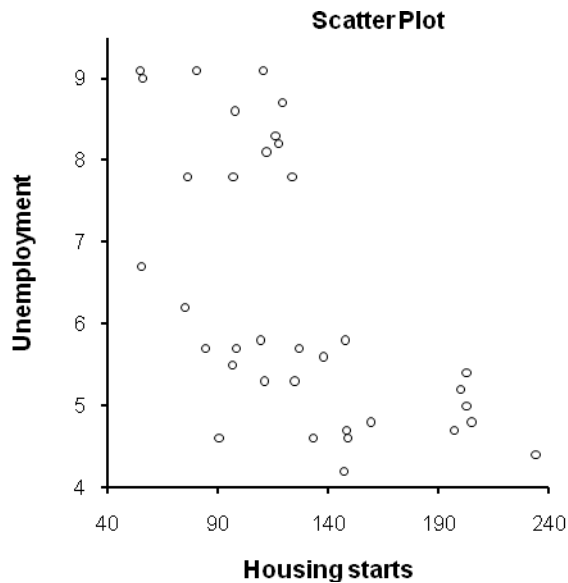
The dark line is the regression line for predicting unemployment rate from housing start activity



However significant this effect has been over the last fifty years, the most significant relationship between housing starts and unemployment (with the greatest degree of predictability) occurs in times of deep recession when the government most needs to have a firm grasp of what to expect in the months ahead.

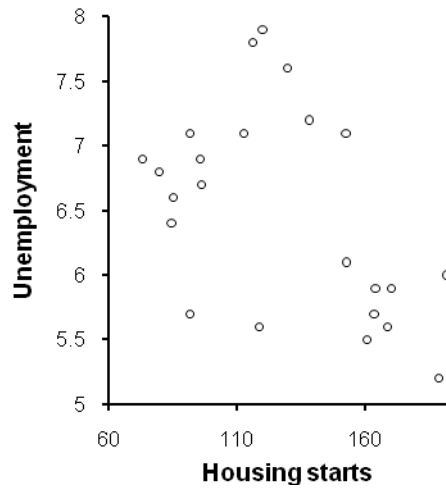
In the US during the period from January 1973 to December 1975 (which includes the severe recession of the 1970's) there is a significant negative correlation between housing starts and unemployment reaching $r = -.60$ ($df = 33, p = <.01$). In the period of January 1979 to December 1980, which includes another recession in early 1980, the correlation between housing starts and unemployment was $r = -.49$ ($df = 21, p <.02$). From January 1990 to December 1991 a correlation of $r = -.63$ ($df = 21, p <.01$) existed between housing starts and unemployment and from January 2007 to March 2009, a correlation of $-.83$ ($df = 24, p <.01$) occurred. Because these correlations are so highly significant, it is possible to do powerful regression analysis to predict the likely rise in unemployment rate that will occur many months in advance.

Pearson r Correlation Housing Starts and Unemployment: 1/1973-12/1975
(df 33 r -0.60 p<0.01)



Pearson r Correlation Housing Starts and Unemployment: 1/1979 to 12/1980
(df 21 r -0.49 p<0.02)

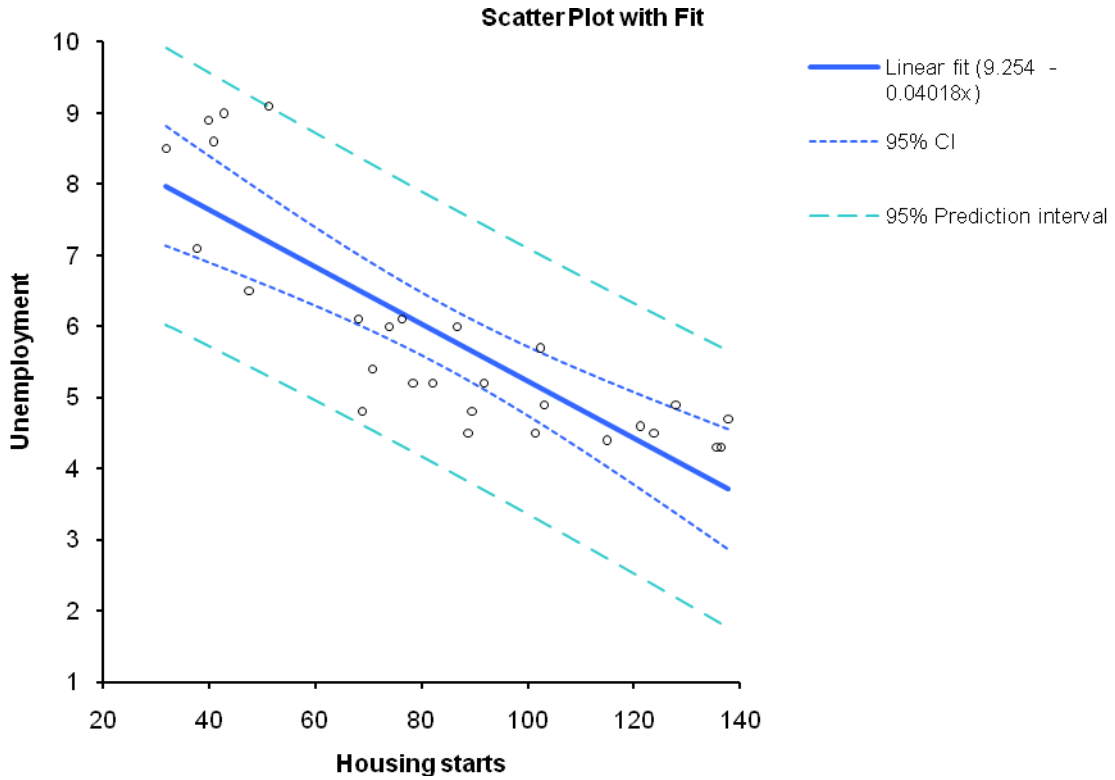
Scatter Plot



Pearson r Correlation Between Housing Starts and Unemployment: 1/2007-3/2009

(df 26 r -0.83 p<0.01)

The dark line is the regression line for predicting unemployment rate from housing start activity



Canada

The effect is not limited to the United States. From the reporting period of January 1976 to the current time, in Canada, a highly significant correlation between housing starts and unemployment exists. ($r = -.56$, $df = 398$, $p < .01$). From January 2007 to May 2009, the effect was even stronger. ($r = -.76$, $df = 26$, $p < .01$).

