1086-62-2745 **Constantine Georgakis*** (cgeorgak@depaul.edu), Constantine Georgakis, Department of Mathematics, DePaul University, Chicago, IL 60712. *A Note on the Additive Seasonal Decomposition of Time Series.* Preliminary report.

Over the last 75 years a statistical methodology has evolved, which is used in the U.S. by Bureau of the Census, the Bureau of Labor Statistics, and the Federal Reserve Bank for the seasonal adjustment of leading economic indicators. The simplest model for adjusting a time series x(t) for seasonal variation is the additive decomposition model. That is, x(t)=m(t)+s(i)+e(t); m(t) is the trend-cycle component that captures the long term movement of the series; s(i) are the seasonal effects for monthly data if i=1 to 12 or for quarterly data if i=1 to 4 that are due to weather or institutional factors and sum to zero; e(t) is a white noise of independent random variables with mean zero and constant variance. In this model, the trend-cycle component is estimated by applying the twelve month centered moving average to the original data series, and the seasonal effects by averaging the resulting difference between the original series and the trend –cycle estimate. We present a streamlined proof that if the trend-cycle is pure quadratic function of time then the estimators of the seasonal effects are unbiased, a result due to James Durbin. (Received September 25, 2012)