

# On factor-augmented univariate forecasting

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**Abstract:** For fews years ago, the increasing size of available economic and financial data has fed econometricians to develop and adapt new methods in order to efficiently summarizes information contains in large datasets. Among these methods, dynamic factors have known a rapid development and a large success among macroeconomics. The question we examine in this paper is the problem of improvement of univariate forecasting when the variable of interest belongs to a panel with dependant across units. We analyse in possibly nonstationary framework, to what extent forecast based on the augmented univariate process implied by a factor model can show substantial advantages in terms of expected gains, with respect to simple univariate model. Moreover we consider identical autoregressive (AR) roots over the cross sections. Analyses are done theoretically and on the basis of Monte Carlo simulations. Our results show that in the general case where non stationarity is allowed, substantial forecast error reduction of the univariate process can be achieved by simply augmenting each individual time series with its idiosyncratic factor.

**Keywords:** Dynamic Factors Models, Non Stationarity, Forecasting.

**JEL Classification:** C13; C51; C33; C51; F47.

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