

Forecasting innovative start-ups through automatic variable selection and MIDAS regressions

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The paper focuses on the role that both macroeconomic indicators, such as GDP, inflation, and purchasing power and financial factors, like financial market fluctuations and credit accessibility, have as drivers for the birth of innovative start-ups over time.

The analysis makes use of a novel algorithm, based on high-dimensional graphical models, to select the variables that are relevant for explaining the number of innovative start-ups among the multitude of potential determinants. Being the latter sampled at different frequencies, mixed data sampling models are then employed for estimation and forecasting purposes. The need to reduce the number of regressors, for reasons related to the estimability of these models, is then met by resorting to principal component analysis of the potential determinants.

An empirical application to the set of Italian innovative start-ups, both in their entirety and divided according to their specific requirements, highlights the effectiveness of this approach. The information it allows to gain proves crucial for the assessment of national innovation policies, and the evaluation of the innovative start-ups to persist and contribute at the recovery during the actual crisis still affected by the pandemic.