

# Reducing Revisions in Israel's House Price Index with Nowcasting Models

Doron Sayag<sup>a,b</sup>, Dano Ben-hur<sup>a</sup> and Danny Pfeffermann<sup>a,c,d</sup>

<sup>a</sup> Central Bureau of Statistics, Israel

<sup>b</sup> Bar-Ilan University, Israel

<sup>c</sup> Hebrew University of Jerusalem, Israel

<sup>d</sup> University of Southampton, UK

## Abstract

National Statistical Offices must balance between the timeliness and the accuracy of the indicators they publish. Due to *late-reported transactions* of sold houses, many countries, including Israel, publish a provisional House Price Index (HPI), which is subject to revisions as further transactions are recorded. Until 2018, the Israel Central Bureau of Statistics (ICBS) published provisional HPIs based solely on the known reported transactions, which suffered from large revisions. In this paper we propose a novel method for minimizing the size of the revisions. Noting that the *late-reported transactions* behave differently from the on-time reported transactions, three types of variables are predicted monthly at the sub-district level as input data for a nowcasting model: (1) the average characteristics of the late-reported transactions; (2) the average price of the late-reported transactions; and (3) the number of late-reported transactions. These three types of variables are predicted separately, based on models fitted to data from previous months. Evaluation of our model shows a reduction in the magnitude of the revisions by more than 50%. The model is now used by the ICBS for the official publication of the provisional HPIs at both the national and district levels.

**JEL Classification:** C43, C51, R31

**Keywords:** Hedonic model, Index revision, Provisional indicator, Real estate market, Revisable statistics, Timeliness, Time Dummy Method.