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The willingness to pay for in-house piped water in urban and rural Indonesia

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Abstract. This paper analyses household preferences for in-house piped water in urban and rural Indonesia via a hedonic price model, specified as a constrained autoregression-structural equation model (ASEM). ASEM reduces bias due to time-varying omitted variables and measurement errors. In addition, it provides a convenient way of testing and correcting for endogeneity. On the basis of the Indonesia Family Life Survey data set, we find that on average urban and rural households have the same willingness to pay for in-house piped water, that is, 34.24 per cent of their monthly house rent. For the 25 per cent urban and rural households with lowest expenditure, this percentage is equivalent to 9.41 per cent and 7.57 per cent of their monthly expenditure, respectively. The findings support a need for further investment in in-house piped water in both areas, particularly for the households with the lowest expenditure levels.

JEL classification: C33, C38, R15, R22

Key words: Housing hedonic price model, structural equation model (SEM), constrained autoregression, piped water, urban and rural Indonesia

1 Introduction

Initiated by the Declaration of the International Clean Drinking Water Decade 1981–1990, parties responsible for promoting health in developing countries have focused on improving domestic water supply. This initiative was followed by including safe drinking water and basic sanitation into the United Nations' Millennium Development Goals (MGD). Indonesia, as one of the targeted countries, has actively participated in improving its domestic water supply. Currently, 82 per cent of the Indonesian population is served by improved water supply, namely, piped water (into dwelling, yard or lot, public tap or standpipe), tube-well or borehole, protected dug well or spring and rain water (UNICEF 2013). Nevertheless, the prevalence of water borne diseases is still high. For instance, annually about 30,300 deaths are estimated to be associated with diarrhoea incidence due to the consumption of contaminated water (WHO 2012). In