## ESTIMATING THE EFFECT OF THE 1997 ECONOMIC CRISIS ON THE DEMAND FOR HOUSE CHARACTERISTICS IN RURAL INDONESIA

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## ABSTRACT

In 1997, Indonesia suffered an economic crisis. This crisis had a great impact on the livelihoods in Indonesia. In this paper we estimate the effect of the crisis on demand for house characteristics. We express the demand on house characteristics in terms of willingness to pay, which is elicited from a hedonic price model. To estimate the crisis effect, we adopt a continuous time modeling approach, namely the exact discrete time-structural equation model (EDM-SEM), and apply it to a three-wave panel data set of Indonesia Family Life Survey (IFLS). We show that due to the crisis, the average valuation on certain house characteristics is reduced by 46.52%.

Keywords: exact discrete time model, structural equation model, panel data, hedonic price model, economic crisis effect.

## **1. INTRODUCTION**

Starting in September 1997, a crisis hit the Indonesian economy and lasted until the beginning of 1999. This crisis resulted in a high inflation rate. During 1998, inflation reached 75% (UNDP, 2009). This high inflation rate had a great impact on Indonesian livelihoods. Particularly at the household level, the crisis decreased household real income significantly. Generally, a decrease of income will decrease the demand on goods and services, including the demand on house characteristics.

We observed that only one study of demand on house characteristics during an economic crisis, namely Suparman et al. (2008). They conducted a hedonic price study to estimate the demand of house characteristics, particularly in-house piped water service, which are expressed in the terms of willingness to pay (WTP). By means of a discrete time model, the estimation was based on three-wave Indonesia Family Life Survey (IFLS) panel data, whose time interval covered the 1997 crisis. Suparman et al. accommodated the crisis effect implicitly by allowing the intercepts in the model to be varied. No explicit crisis effect parameter was defined in their model.

In the current paper we aim to estimate the effect of the 1997 economic crisis on the demand on house characteristics by applying a continuous time model, namely the exact discrete time – structural equation model (EDM-SEM) (Oud and Jansen, 2000). We use the same data set as Suparman et al. (2008) i.e. the three-wave IFLS panel data set and