Chapter 8

A Note on the Hedonic Model Specification for Income Properties

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8.1 Introduction

8.1.1 Background

The hedonic technique is well established as a tool for analysing the determinants of property prices on the market for single-family housing. The theoretical foundation is solid, including particularly the work by Rosen (1974), and there is a large body of empirical applications. There are fewer papers applying the technique to the investigation of market prices for income property;
An important issue in the literature on hedonic estimation with respect to single-family housing, is the choice of functional form for the price equation. A number of critical reviews of the research carried out have pointed out the additive form as being the least suitable; Lessinger (1969), MacLennan (1977). In several papers, the argument is raised that theory does not give any guidance to what the proper functional form should be and that models rather should be evaluated in terms of goodness-of-fit; Halvorsen and Pollakowski (1981). An important argument is that if the hedonic price estimates are to be used in the estimation of the demand for individual property attributes, then one needs second order derivatives of the price function; Rosen (1974).

Almost no similar debate regarding the modelling issues seems to exist with respect to hedonic applications to income property. However, one exception was found; de Silva and Gruenstein (1988). They use different goodness-of-fit estimates as criteria for identifying the best functional form for the price of office buildings.

The Box-Cox transformation technique is often used for testing functional form. It is regarded particularly suitable for this purpose as this general functional form includes the most commonly used model specifications as subsets, including log linear, semi-log linear and trans-log linear models. However, using Box-Cox transformation as a tool for testing functional form is only relevant under the assumption that goodness-of-fit is a reasonable test criterion. Furthermore, there are several other arguments against using the Box-Cox technique; Cassel and Mendelsohn (1985).

8.1.2 Purpose

The purpose of the present study is to compare two standard multiplicative regression model specifications when applied to the study of prices for mixed-use income properties. The first model has basically a log-linear specification. The second model is semi-log linear. The main features of the paper are regressions on a market data sample with the two models and an illustration of differences in terms of the empirical results obtained. The sample consists of income properties centrally located in Stockholm. The regressions are specific to the particular case investigated, but the discussion is partly general.

8.1.3 Organisation

This chapter is organised in the following way. Firstly, some general modelling considerations are discussed and the two models are presented. In the