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Liquidity constraints, precautionary saving and aggregate consumption: an international comparison

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Abstract

This paper has three objectives. First, to expand Hall's [J. Polit. Econ. 86 (1978) 971] rational expectations permanent income/life cycle hypotheses (REPIH/RELCH) representative agent model to allow for current income consumers, the durable component of total consumer expenditures and for intertemporal substitution, which are often cited as the main reasons for the rejection of Hall's model. Second, to apply this modified model to 20 OECD countries over the post-World War II period. The GMM estimation method is employed. Third, to examine the relative influence of liquidity constraints and precautionary saving on the cross-country variation in the proportion of current income consumers, using cross-country regressions and a non-linear model of panel data. The presence of current income consumers, which is primarily due to liquidity constraints and to a lesser extent to precautionary saving, is the major factor for the rejection of the basic REPIH/RELCH model in all OECD countries.

JEL classifications: E21; C51

Keywords: Consumption; Liquidity constraints; Precautionary saving; OECD countries

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1. Introduction

This paper has three objectives. First, to expand the Hall (1978) rational expectations permanent income/life cycle hypotheses (REPIH/RELCH) representative agent model to allow for current income consumers, the durable component of total consumer expenditures and for intertemporal substitution, which are often cited as the main reasons for the rejection of Hall's model. Second, to apply this modified model to 20 OECD countries during the post-second World war period. Third, to examine the relative influence of liquidity constraints and precautionary saving on the cross-country variation in the proportion of current income consumers.

The modified REPIH/RELCH model is developed in logarithmic form. Directly producing the model in logarithms avoids the approximation involved when deriving models in *levels* and then estimating them in logarithms (e.g. Caballero 1994), and helps to guard against potential heteroscedasticity, which may arise from *levels* estimation. As Campbell and Mankiw (1991) point out, '…the process driving aggregate consumption and income seem to be log-linear rather than linear' (p. 729).

This derived model is compared to those of Hall (1988), Campbell and Mankiw (1991), Caballero (1994) and Jin (1994). Each of these authors have derived various components of the specification detailed here, but none have produced a unified model in logarithmic form incorporating current income consumers, explicitly allowing for durability and extended for variable interest rates. For example, the Caballero (1994) model is derived in levels, does not account for current income consumers and is strictly appropriate for completely durable expenditures, while the Campbell and Mankiw (1991) specification does not account for durability. Although the Jin (1994) model enables the proportion of income accruing to current income consumers to be directly estimated, its functional form is semi-logarithmic, includes potentially non-stationary regressors and only implicitly allows for durability by employing Newey and West (1987) coefficient standard errors. Furthermore, Jin (1994) uses an approximate measure of private disposable income and a smaller sample size.

The full modified REPIH/RELCH model is estimated with the generalised method of moments (GMM) with Newey and West (1987) adjusted standard errors. We also examine the instrument set to be used. Estimates of the proportion of current income consumers and assessment of the degree of intertemporal substitution are provided for 20 OECD countries over the period 1960–1994.

As far as we are aware, the only study that investigated cross-country variations in the proportion of current income consumers is that by Jin (1994).[1] In addition to the expansion of the sample period to cover the 1990s, our study expands the range of proxies for liquidity constraints used by Jin (1994) and also considers the role of precautionary saving. Two modelling approaches are employed in our cross-

[1] Both Jappelli and Pagano (1989) and Campbell and Mankiw (1991) note that the estimated proportions of credit constrained consumers appear to be lower in countries with more developed financial markets; however, no systematic regression analysis is conducted.