

Consumption Response in Estonia: Persistent vs. Temporary Income Shocks

Merike Kukk

Tallinn University of Technology, Estonia

Dmitry Kulikov

Eesti Pank, Estonia

Karsten Staehr

Tallinn University of Technology, Estonia

This paper investigates the reaction of consumption to income shocks of different persistence in Estonia. Estonia is an emerging country and during last two decades it has experienced rapid economic changes that have been accompanied by substantial changes in house-hold incomes. We estimate the marginal propensity to consume out of persistent and temporary income shocks. The novelty of the research is to use a dataset which comprises households' self-reported assessment of their long-term or regular income and their current income. The dataset thus provides a unique opportunity to distinguish persistent and temporary shocks based on the assessment of households instead of statistical identification of the shocks.

The insight that households may react differently to income shocks of different persistence follows directly from Friedman's Permanent Income Hypothesis (PIH). The PIH implies that the consumption of the each household follows the permanent income and not the current income at any particular time. The difference between current income and permanent income is transitory income. After receiving new information about permanent income (for instance by a permanent income shock), households adapt their consumption fully to the income innovation. According to the theory households do not respond to innovations in transitory income as this kind of shock will be smoothed by saving or dissaving.

It is challenging to test empirically the PIH, including the implied different responses of consumption to shocks of different persistence. Permanent income is usually not known; only current income is observed. Statistical decomposition of income shocks on panel data has been used to compare the response to permanent and transitory income innovations. The influential research of Hall & Mishkin (1982) investigated the sensitivity of food consumption to permanent and transitory income shocks using US Panel Study of Income Dynamics (PSID). Blundell et al. (2008) combine in their study PSID and the Consumer Expenditure Survey. Kaufmann & Pistaferri (2009) use the Italian Survey of Household Income and Wealth. Japelli & Pistaferri (2010b) compare the behaviour of Italian households with the behaviour of UK households based on the Family Expenditure Survey and British Household Panel Survey.

Instead of statistical decomposition this paper utilises self-reported information from households distinguish between persistent and temporary innovations in income. The survey we are using, the Estonian Household Budget Survey, uniquely includes a question about regular income of households which can be interpreted as a long-term or persistent income of households. The difference between regular and current income can be interpreted as transitory income. This implies that income innovations can be decomposed into changes that are perceived as persistent

or even permanent (regular shocks) and changes that are transitory (temporary shocks). We are using data from the period 2002-2007.

We test PIH about different consumption response to different types of shocks by using regular shock as a proxy for permanent income shock and temporary shock as a proxy for transitory shock. We estimate the conventional consumption model with income shocks of different persistence which was introduced by Hall & Mishkin (1982). Its modifications are used for the estimation of consumption sensitivities, as is given by Japelli & Pistaferri (2010a). The model has the assumption that permanent shocks are fully carried into consumption while transitory shocks are not reflected in consumption to any larger extent.

A large number of estimations of the consumption model reveal, inter alia, the following results:

- When investigating the components of the income process which are derived from self-reported assessment of households, we confirm the different persistence of the income shocks. It shows that households are well aware of their income process where regular shocks are persistent and temporary shocks mean-reverting.
- Consumption has higher sensitivity to persistent income shocks than to temporary shocks in Estonia, which is consistent with PIH. The difference is more significant when looking at the effects of negative income shocks. The results imply that households indeed distinguish between negative income shocks of different persistence and react in their consumption behaviour more to persistent than to temporary shocks.
- Still we find consumption to be proportional to positive income shocks of different persistence in Estonia. Households treat positive income shocks similarly, although they distinguish different persistence of the shocks.
- Excess smoothness to persistent income shocks is not due to anticipation of the shocks or income processes with a deterministic trend. The estimations show that households' consumption does not react to predicted income innovations in different way than to unpredicted ones. It indicates that households in Estonia do not tend to use future information about income in their consumption behaviour.

The excess sensitivity to temporary shocks has its implication on specification of consumption model. Conventional consumption model with income shocks uses the restrictive assumption of (almost) no consumption reaction to temporary income shocks. The excess sensitivity of temporary shocks induces estimations which are biased towards zero for both income shocks when the effect of previous temporary shock is not taken into account in the model.

Keywords: household consumption model, income shocks, excess sensitivity, excess smoothness.

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