Danmarks Statistik
MODELGRUPPEN   Arbejdspapir*

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Household Wealth and Consumption[1]

Resumé:

This paper presents data for household wealth and illustrates the relation between the different household wealth components, consumption and income with a help of simple graphs. This is the preliminary work toward establishing a consumption function in ADAM based on household income and wealth.

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[1] Provisional

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Keywords: consumption, household wealth

1. Introduction

In ADAM, as in most macro models, private consumption is defined to be a function of income and wealth. The estimated long term relation is given as

$$\log(cpuxh \,/\, pcpuxh) = 0.9 * \log(ydl\_hc \,/\, pcpuxh)$$
$$+0.1 * \log(wcp \,/\, pcpuxh) - 0.196$$

(1)

Where *cpuxh* is private consumption excluding housing, *ydl_hc* is long term disposable income, *wcp* is private sector wealth.

Equation 1 implies, a rise (fall) in wealth/consumption ratio leads to a rise (fall) in consumption/income ratio. Figure 1 demonstrates. However, this positive relationship between consumption ratio and wealth ratio for the private sector cease to hold beginning the end of the 1990s. In addition, wealth for the private sector as a whole fails to reflect the role of share prices in explaining consumption, this is because what is asset for households is liability for corporations, and thus will cancel out. With wealth for the household sector only, the role of asset prices can be highlighted. In the following we present the data for household wealth, consumption and income.

Figure 1. consumption/income and wealth/consumption ratio, private sector
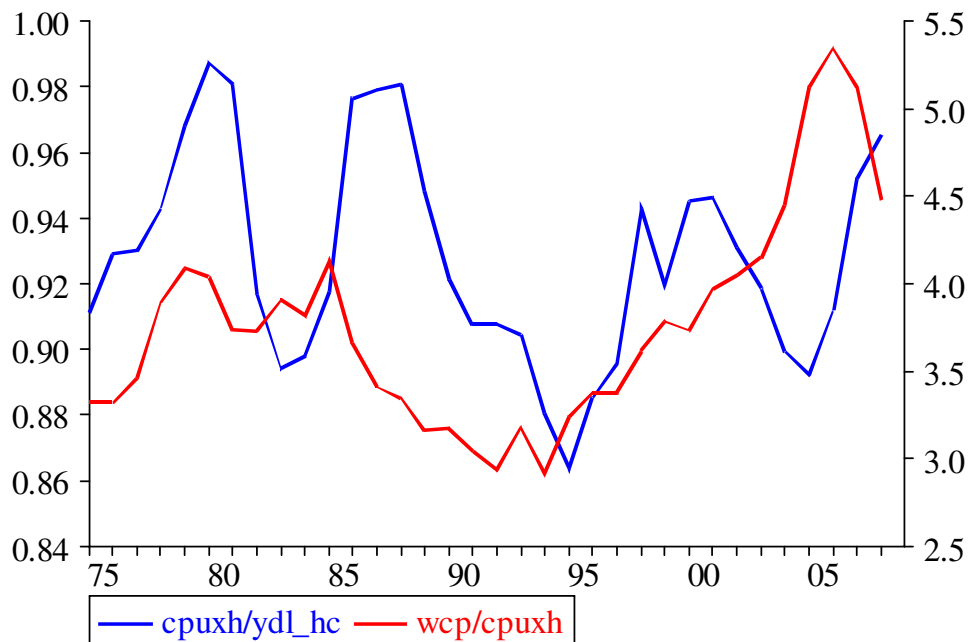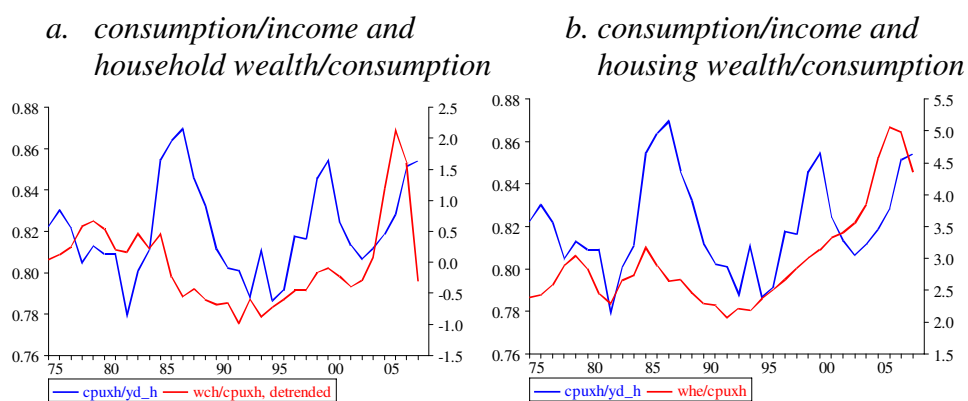

2. Household wealth and Consumption

The use of data for households is theoretically more adequate when modeling private consumption. Household wealth, *wch*, consists of housing wealth, financial wealth and pension fund, i.e

$$wch = kknbhl * knbhl + whe + kncb + wn\_h - wp$$
$$+[(wpio\_bf + wpco\_bf) * (1 - tsyp) \qquad\qquad (2)$$
$$+(wp - wpio\_bf - wpco\_bf) * (1 - tss0 - tssp0 - tss1 - tssp1)] * kwps$$

All variables are as defined in ADAM. Data before 1994 for household financial wealth, *wn_h*, is obtained from national bank.

Figure 2a shows the relation between consumption ratio and household wealth ratio. In contrast to figure 1, one can see a clear positive relation between the two ratios in recent periods. The wealth ratio is detrended to take out the observed growing propensity to save and the trend in housing wealth, see figure 2b & 2d. The detrended wealth ratio is the residual from regressing wealth ratio on a trend and constant. Figure 2b shows the relation between consumption and housing wealth. The role of housing wealth in explaining consumption is significant particularly in early periods. Figure 2c shows the relation between consumption and financial wealth. The relation between financial wealth and consumption is not consistent throughout the sample period. In the early periods a rise (fall) in consumption ratio is accompanied with a fall (rise) in financial wealth, this coincides with the positive relation between housing wealth and consumption such that a rise in consumption drives saving down. In recent times there is a tendency for consumption to follow financial wealth. Figure 2d shows the relation between consumption and pension fund. Pension savings have been growing through the sample period considered. Finally figure 2e shows the relation between consumption and share price *pws_kax*. One can see a clear positive relation between consumption ratio and share price in recent years, which is not apparent in figure 1.
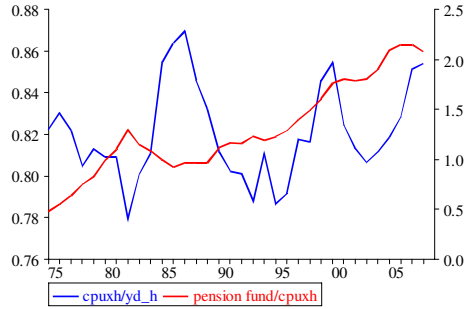
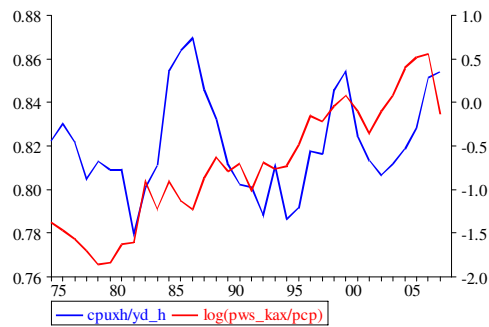**Figure 2. consumption, wealth and share price**

a. *consumption/income and household wealth/consumption*

b. *consumption/income and housing wealth/consumption*

c. consumption/income and financial wealth/consumption
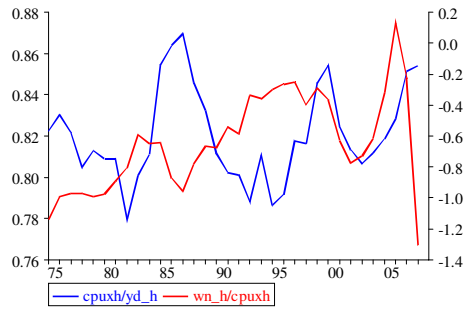
d. consumption/income and pension fund/consumption

e. consumption/income and share price

It is households that are accounted in private consumption, and hence a consumption relation based on income and wealth for households is theoretically more adequate than a consumption relation based on income and wealth for private sector. This has also received an empirical support, see for instance Olesen (2008).[2]

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[2] Olesen, Jan Overgaard (2008). En forbrugsrelation for husholdningerne. Danmarks Nationalbank, Arbejdspapir.