
Consumption, money and lending: a joint model for the UK household sector

Working Paper No. 134

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Consumption and money demand functions have been the object of countless empirical studies over the last half-century or so. These two relationships still provide the core of textbook models of the macroeconomy, at least at the undergraduate level, and are implicit in the foundations of the more sophisticated models used in graduate textbooks. Consumption behaviour continues to be a topic of major interest to policy-makers, not least because it is the largest single component of aggregate demand and so is central to any macroeconomic forecast. Money demand has been of much less concern recently since many monetary authorities have abandoned monetary targets and adopted inflation targets instead, although, for inflation targeting central banks, money is still of interest when it can be used to help forecast inflation. To do this it must contain leading-indicator properties for some component of aggregate demand, hence if 'money' is to provide useful information it must be demonstrated that it has linkages with consumption or investment expenditure. For the household sector that is studied in this paper it is consumption that is relevant. Any other variable that helped to forecast consumption would also be useful, and in this paper we incorporate credit as another variable of potential interest. Credit could be more useful than money as a leading indicator of consumption if households borrow extensively to finance their spending. Credit is taken out simultaneously with the decision to spend because interest charges are levied on amounts outstanding, but money can be held for long periods as idle balances and might also be regarded as an important form of saving.

Most previous work on consumption and money demand has estimated these relationships as separable single equations. There have been very few studies of credit but those that exist have also tended to use a single-equation approach. We know, however, that decisions to spend, change money holdings or borrow must be interrelated. In this paper we treat them as jointly determined by a common set of driving variables. The driving variables chosen are the obvious ones:

labour income, tangible net wealth, and various interest rate spreads between alternative assets and liabilities. The dependent variables are consumers' expenditure, household holdings of broad money (M4), and the stock of unsecured (M4) lending to households.

The method adopted involves estimation in two stages. The first stage identifies long-run (cointegrating) relationships for consumption, money and lending. These relationships include direct effects of money and lending on consumption and they also provide evidence of spillovers of deviations from each equation onto the others. A simple transformation of the estimated cointegrating relationships shows that these results are consistent with plausible parameter values, equivalent to long-run consumption and money demand functions. The long-run unsecured lending equation is less familiar but equally plausible and well determined.

In the second stage, deviations of actual dependent variables from their long-run values are embodied in dynamic equations that determine the growth rates of consumption, money holding and unsecured borrowing. Insignificant variables are eliminated from these equations using a general-to-specific search procedure until a parsimonious form is identified. The final form satisfies a battery of specification tests and produces sensible impulse responses to shocks.

The main results are, first, that unsecured household credit can be modelled in the same way as consumption and money demand, and, second, that there are significant spillovers from money and credit to consumption, and *vice versa*. This may be of particular use for policy-makers in the short run, as money and credit data are available monthly while consumption data are quarterly and are often subject to considerable later revision. Monetary targeting may have been superseded by inflation targets but money and credit data can still be of use as leading indicators of household spending, a major component of aggregate demand, and an underlying guide to future inflation.