A MODEL OF REAL AND FINANCIAL HOUSEHOLD BEHAVIOUR

BY

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1 INTRODUCTION

Most macroeconometric models contain separate equations for consumption and portfolio behaviour. Once a consumption function has been specified, saving is treated as a residual. Saving is the difference between current income and current consumption. Portfolio theory on the other hand takes wealth, and hence saving, as given. The interrelationship between consumption and portfolio theory has been ignored. Theoretical insights however stress the importance of integrated modelling of consumption and portfolio decision making. An example is the monetarist view of integrating the consumption of durables into the total wealth position, and by that, into the portfolio model of households. In this paper we will stress the necessity of integrated modelling of real and financial household behaviour, both in a theoretical and an empirical context. Consumption and portfolio decisions are taken simultaneously. Our empirical work consists of an integrated model of Dutch household behaviour. Other Dutch macroeconometric models, like FREIA-KOMPAS (Van den Berg et al. (1987)), MORKMON (De Nederlandsche Bank (1984)) and CCSO (see Kuipers, Kuper and Sterken (1987)), specify consumption functions, which include a wealth variable, without explaining the composition of household wealth. In our analysis we stress the influence of the composition of financial wealth on consumption planning (see Purvis (1978) and Pissarides (1978)).

Integrated modelling of expenditure and portfolio behaviour is necessary to explain wealth and liquidity effects on consumption behaviour and expenditure effects on financial behaviour. In the standard Brainard-Tobin (1968) Pitfalls approach to describe the financial sphere of the economic system, no explicit attention has been paid to the quantity of transmission to and from the real sector. The accounting framework of real and financial transactions of different economic sectors (firms, households, government, financial institutions, etc.) takes account of the transmission of income shortages from the real sector to

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the monetary sector. This form of \textit{balance sheet} transmission has been used by all large scale macroeconometric models. However, no behavioural transmission has been built into the models, because no explicit attention has been given to the underlying consumer optimization process.

In the literature there exists a large number of studies on consumption behaviour. The same holds for studies on portfolio behaviour. In section 2 a brief survey of the literature on these topics will be given. Section 2 also contains a survey of integrated modelling of consumption and portfolio behaviour. A detailed survey of integrated modelling of expenditure and financial decisions can be found in Owen (1986). Our basic model is the model proposed by Purvis (1978). This model can be derived from an explicit optimizing framework, and has been shown by Parkin, Cooper, Henderson and Danes (1975).

One of the problems of estimating a Purvis-type model for The Netherlands is the absence of appropriate statistical information on the wealth position of households. Van Loo (1983) makes some assumptions on financial asset holdings of households. For our study it was, however, necessary to disaggregate the financial stock holdings of households a bit further. In Sterken (1987a) the results of a detailed description of the Dutch capital market for the period 1957–1983 are shown. This information has been supplemented with estimates of the liquidity holdings of households and the demand for short-term bank credit by households. The data can be found in the appendix. Section 3 contains the estimations for a system of equations on consumption and portfolio behaviour of Dutch households in the period 1958–1983. Two model versions, based on different income concepts, are used. First, we include actual wage and non-wage income as independent variables. They represent the current income restriction on consumption and saving decisions. In this approach it has been assumed that short-term income considerations dominate long-term permanent income ideas. Consumers are believed to have a short-term planning horizon (one period in this case), so intertemporal substitution is not believed to influence current consumption behaviour. Secondly, we include lagged consumption as a proxy for permanent income and delete current income variables. In this approach, long-term income considerations dominate short-term income restrictions, and intertemporal substitution plays a role in real household behaviour.

2 INTEGRATED MODELLING OF CONSUMPTION AND PORTFOLIO BEHAVIOUR

In this section we will discuss the literature on modelling the consumption function and portfolio behaviour. Both models that separate and integrate consumption and portfolio decisions are reviewed. After that we will discuss in detail the model, which will be used as a framework for describing Dutch household behaviour.

The consumption function is the object of a large number of studies in the