

CHAPTER 1

INTRODUCTION

*The study of consumer behaviour – what, how much, and when individuals consume – has been a lifetime occupation of thousands of economists.
(Hall and Taylor 1993:267)*

1.1 INTRODUCTION AND BACKGROUND

Private consumption expenditure accounts for approximately 60 per cent of gross domestic product in South Africa. Any attempt to explain the dynamics of the South African economy by means of an econometric model must therefore capture aggregate consumption expenditure as accurately as possible. In order to understand consumer behaviour and price expectations formation by the average South African consumer, it is essential to be well informed on the composition of the South African population as well as socio-economic and demographic aspects such as income distribution, literacy rate and age distribution. For this purpose, a condensed socio-economic profile of the South-African consumer is included in section 1.4. The objective and layout of the study is presented in sections 1.2 and 1.3 respectively.

1.2 OBJECTIVE OF THE STUDY

In this study, the issues of concern are mainly: what determines consumption expenditure decisions and how do price expectations affect these decisions. The principal objective is to test the hypothesis that South African consumers are forward-looking with respect to prices when considering consumption expenditure decisions. To test this hypothesis, the relevant economic theory has to be considered in order to derive a theoretical model. A model for price expectations formation must be selected and the price expectations effect must subsequently be incorporated into a model of consumption expenditure.

Consumption expenditure, for purposes of this study, is disaggregated into three categories, namely durable consumption, non-durable consumption and services. These categories, as well as total private consumption expenditure, must be considered separately for unique determinants to be included in the information set. Starting with the theoretical model, a set of behavioural equations has to be estimated and subjected to thorough diagnostic checking in order to validate the model. If the price expectations variable is found to be statistically significant in explaining private consumption expenditure, one may conclude that South African consumers do consider the expected future price level when making consumption expenditure decisions.

1.3 LAYOUT OF THE STUDY

This first chapter is intended to provide a background and motivation for the study as well as a synopsis of documented results. The theoretical research and empirical findings are contained in Chapters 2 to 5 while Chapter 6 is devoted to final conclusions.

Chapter 2 commences with an account of the relevant economic theory of private consumption expenditure. A number of different theories of consumption developed in response to the simple Keynesian consumption function are discussed. These include the *life-cycle model* of Modigliani and Brumberg and also Ando and Modigliani and the *permanent-income model* of Friedman. The aforementioned theories are jointly referred to as the *forward-looking theory of consumption*. A survey of empirical results of international studies on consumption expenditure is conducted, paying particular attention to wealth and income effects, the current and expected price level and liquidity constraints on the level of consumption expenditure. The specifications of consumption functions in some well-known international macro-models are compared to conclude the chapter.

Expectations, that is anticipations or views of the future formed by economic agents, are considered in Chapter 3. This chapter surveys the theoretical developments on expectations formation, starting with the adaptive expectations hypothesis, followed by rational expectations (or model-consistent expectations) and finally the process of learning (or boundedly rational learning). The Kalman filter, a variable parameter estimation technique,

which will be utilised in the estimation of consumer price expectations in South Africa, is discussed. This chapter also deals with the implementation of expectations in macro-economic models, including reference to international studies concerning the learning approach.

Chapter 4 provides an overview of the relevant econometrics literature for the estimation of dynamic models that are applied in the empirical estimation of a learning model for private consumption expenditure in South Africa. This chapter highlights the problem of spurious regression when modelling non-stationary data series, and reports econometrics literature addressing this issue. Single equation estimation techniques are discussed namely two-step Engle-Granger estimation and three-step Engle-Yoo estimation, primarily to point out the limitations thereof as opposed to a multivariate estimation technique like the Johansen approach. The importance of diagnostic checking in the modelling process is also stressed.

In Chapter 5 a learning model for private consumption expenditure in South Africa is derived. The hypothesis that South African consumers are forward-looking with respect to prices when making consumption expenditure decisions is tested. In this study, it is assumed that consumers learn through a Kalman filter-based (boundedly rational learning) process for updating their expectations conditional on prior forecasting. The first stage of implementing the boundedly rational learning approach would involve the estimation of the time-varying mechanism, which represents economic agents using incomplete historical information to form expectations. In the next stage, the expectations formation mechanism is incorporated into the behavioural equations. Two sets of empirical results are presented in this chapter: first, the time-varying coefficients of the price expectations rule and associated Kalman filter result of the estimated one-period-ahead consumer price level and second, the set of behavioural equations containing the price expectations variable.

Consumption expenditure is disaggregated into the following categories: durable consumption, non-durable consumption and services. Empirical estimation results for total private consumption expenditure are reported, followed by durable consumption expenditure and non-durable consumption expenditure. Since stochastic estimation of total private consumption expenditure is believed to be more reliable than that of consumption

expenditure on services, the latter is deterministically determined as the residual of the total and the other two categories.

Chapter 6 summarises the empirical results and reports final conclusions with respect to consumption expenditure behaviour of the South African consumer.

1.4 SOCIO-ECONOMIC PROFILE OF THE AVERAGE SOUTH AFRICAN CONSUMER

An assessment of the socio-economic profile of South Africa can provide important insights into average consumer behaviour and can be instrumental in the *a priori* theorisation on the wealth and income effects on consumption, price expectations formation and the effect of price expectations on consumption expenditure decisions.

The socio-economic profile of South Africa is characterised by an unequal income distribution, very high unemployment rates and concomitant inescapable poverty.

The sample period under consideration in this study spans the 1970s up to 1998. Over this period, real economic growth as measured by changes in the real gross domestic product displays an overall downward trend, with average economic growth equal to 3.2 per cent for the 1970s, 2.2 per cent for the 1980s and 1.3 per cent for the 1990s. Average population growth declined slightly from 2.4 per cent for the 1970s to about 2.1 per cent during the 1990s. Disposable income per capita in real terms increased only by 0.4 per cent over the period under consideration, while a slight decrease of 0.25 per cent for the 1990s was realised (South African Reserve Bank, Quarterly Bulletin, Various issues).

Despite being classified as an upper middle-income country by the World Bank, South Africa has a high level of absolute poverty. A household is deemed to live in poverty if its total income is less than the poverty income level. The minimum living level as defined by the Bureau of Market Research (BMR) is R950 per month for a household of four persons (Whiteford and van Seventer 1999:32). This translates to US\$1.80 per person per day at an exchange rate of R6.00/US\$ (which is substantially higher than the US\$1.00 per person

per day poverty line frequently used in international studies). Based on the standard set by the BMR, 57 per cent of the South African population are living in poverty, amounting to nearly 23 million people (*op. cit.*:32). Poor living conditions are further highlighted by the lack of access to basic services, considering the fact that 55 per cent of households do not have access to tap water in their dwelling, while 12 per cent of households are without any sanitation facilities (Stats SA 1998). The aggregate poverty gap in 1996 was estimated to be R41.5 billion, which amounts to just over 10 per cent of total income earned by households (Whiteford and van Seventer 1999:34). Viewed simplistically, this means that a perfectly targeted annual transfer of 10 per cent of total household income from non-poor households to poor households could eliminate poverty in South Africa.

The South African income distribution rates among the most unequal in the world, and there has been little change for all population groups together over the sample period. The Gini-coefficient increased from 0.68 in 1975 to 0.69 in 1996. Changes occurred within population groups, with the most notable change within the African population group from 0.47 in 1975 to 0.66 in 1996 and within the White population group from 0.36 in 1975 to 0.55 in 1996 (*op. cit.*:17). Despite the significant income redistribution towards previously disadvantaged population groups, racial inequalities still persist and white per capita income was almost nine times higher than African per capita income in 1996, and 4.5 and 2.3 times higher than coloured and Asian per capita incomes respectively.

Income inequality among households is also very high and has even risen slightly between 1991 and 1996 with the richest 10 per cent of households' share of total income rising from 52.3 per cent to 53 per cent. This was accompanied by a slight decline in the poorest 40 per cent of households' income from 3.8 per cent in 1991 to just 3.4 per cent in 1996. Unemployment levels have risen dramatically over the period and reached a level of 36.3 per cent or 6.7 million people in 1998. The economy has lost about 272 000 jobs over the period 1991 to 1996 while the labour force grew in size by more than 300 000 people each year (Viljoen 1998).

High unemployment levels, particularly among less-skilled and unskilled persons, cannot be separated from the relative low literacy rate of the population. The literacy rate (completion of primary school education) of the adult population (20 years and older) was

64 per cent in 1996. On the other hand, 19.3 per cent of the adult population has received absolutely no schooling (Stats SA 1998). Population Development indicators (DBSA 1995:25) suggest that in 1991, nearly one in every ten children of school-going age was not attending school.

What can be concluded from the above, is that a large portion of South African consumers is subjected to very low living standards, earns very little income and possesses virtually no wealth. Furthermore, low income levels lead to severe liquidity constraints on the consumer through limited access to credit and thus influence the intertemporal distribution of consumption expenditure over their life span. Lastly, seeing that living standards of 57 per cent of the population fail to comply with minimum standards, it can be expected that whatever little income these consumers earn, will be spent on non-durable goods, leaving little for durable consumption and even less for wealth accumulation.