CONSUMPTION EXPENDITURE IN MALTA: BEHAVIOURAL TRENDS DURING THE 1990s

Jennifer Cassar and Gordon Cordina*

Abstract: Developments in private consumption hold several implications for an economy's growth and balance of payments. This paper describes some stylised facts about household consumption and saving in Malta, and attempts to derive some explanations to cover the observed developments in these variables over the past decade. To date, empirical studies in Malta were largely confined to explanations based on income. This paper seeks to address this issue by showing why such theories are incomplete and how innovations in the literature on the subject provide a better understanding as to developments in this variable over the period under consideration.

Introduction

Private consumption expenditure accounts for around 75 percent of GDP in the Maltese islands (henceforth Malta). Such a high contribution to national income illustrates the importance of understanding the major forces at work behind developments in this variable. This component of GDP represents outlays by households on final goods and services that yield direct utility and exerts a significant influence on the demand for domestic production and for imports. By absorbing part of households' disposable income, it also determines the extent of saving by the household sector. The latter is an important component of the total saving of the economy – standing at an average of 54.7 percent of total saving between 1988 and 1998 – thus contributing substantially to finance investment expenditure, the level of which is in turn crucial for the long-term growth of the economy.

§ The views expressed in this article pertain to the authors and do not necessarily reflect those of the institutions to which they are attached.

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The study of household consumption and saving behaviour is central to macroeconomic analysis because of these important links with aggregate demand and economic growth. It has been and remains one of the most intensive areas of research in economics. The past six decades have witnessed substantial innovations in the body of economic thought on the subject. Yet, to date there exists no fully satisfactory explanation for movements in this variable with each theory explaining only part of the overall behaviour, or remaining valid only for a limited period of time. This is probably because household consumption is strongly influenced by a number of factors, some of which are not readily observable – cultural, psychological and institutional as well as economic – and are thus not easily captured in a single model. This paper seeks to provide new insights into the developments of private consumption in Malta by showing that explanations based simply on current income are incomplete and that alternative and more recent theories may be better placed to understand such developments.

**Stylised Facts about Consumption in Malta**

*Composition of Household Consumption*

The composition of household consumption is an important indicator of the state of development of an economy. Since households tend to satisfy first and foremost their basic needs, a lower share of expenditure dedicated to necessities could indicate higher living standards. Another important consideration in this respect is the extent to which an economy relies on imports, rather than on domestic output, to meet its consumption needs. This indicates the dependence of the economy on the external environment, as well as the likely effects that changes in consumption expenditure would have on income and on the balance of payments position.

Table 1 shows the composition of Maltese household consumption at current market prices in 1988 and 1998. Over this period, the proportion of consumption dedicated to necessities fell significantly. Expenditure on food and beverages, for instance, declined from over one-third of total consumption in 1988 to just one-fourth in 1997. Similar changes took place in clothing and footwear and in rent, fuel and power. On the other hand, a significant increase took place in the proportion of expenditure
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Table 1
Distribution of Household Consumption at Current Prices

<table>
<thead>
<tr>
<th></th>
<th>1988</th>
<th>1998</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and Beverages</td>
<td>35.3%</td>
<td>25.1%</td>
</tr>
<tr>
<td>Clothing and Footwear</td>
<td>8.1%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Rent, Fuel and Power</td>
<td>5.8%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Furniture and Household Equipment</td>
<td>8.8%</td>
<td>8.8%</td>
</tr>
<tr>
<td>Medical and Health</td>
<td>3.6%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>2.9%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Transport and Communication</td>
<td>16.3%</td>
<td>17.5%</td>
</tr>
<tr>
<td>Recreation, Entertainment, Education, etc.</td>
<td>19.2%</td>
<td>30.1%</td>
</tr>
</tbody>
</table>

Source: National Accounts of the Maltese Islands 1998, Table 12.

on recreation, entertainment, education, and other services. These trends are typical of an economy experiencing growth in income over time.

Data on the distribution of household consumption between imports and domestic production are not readily available. Although data on imports of final consumption goods are regularly published, the extent of imports of industrial supplies that are destined to final domestic consumption is not known. The Central Bank, in its Annual Report for 1998, suggests that imports of industrial supplies can be distributed between domestic consumption and exports by means of a proportional relationship. In 1997, imports of consumer goods amounted to 30% of total consumption expenditure. Imports of industrial supplies within domestic consumption, according to the Central Bank methodology, amounted to a further 25% share. It thus appears that the import content of domestic consumption expenditure is quite high at around 55%, the remainder being domestically produced. Thus, changes in domestic consumption expenditure are bound to have an almost identical impact on the external balance of payments and on domestic output.

Developments over time

Over the period 1988 to 1998, household disposable income almost doubled, as Table 2 shows.
| 1. Wages and Salaries | 269.6 | 383.6 | 459.2 | 517.5 | 559.7 | 579.9 | 611.4 |
| 2. Distributed profits, rents and interest | 155.5 | 236.9 | 272.4 | 274.4 | 288.1 | 308.0 | 320.1 |
| 3. Social Security Benefits | 72.3 | 99.6 | 118.8 | 127.8 | 143.8 | 153.8 | 165.0 |
| 4. Net Transfers from abroad | 17.1 | 12.2 | 13.6 | 12.7 | 13.5 | 7.7 | 12.0 |
| 5. Personal Income (Rows 1+2+3+4) | 514.5 | 732.3 | 864.0 | 932.4 | 1005.1 | 1049.4 | 1108.5 |
| 6. Taxes on Income | 71.0 | 102.6 | 132.5 | 146.8 | 157.3 | 175.1 | 171.7 |
| 7. Disposable Income (Rows 5–6) | 443.5 | 629.7 | 731.5 | 785.6 | 847.8 | 874.3 | 936.8 |
| 8. Household Consumption | 387.6 | 531.4 | 608.3 | 700.4 | 764.9 | 803.5 | 846.0 |
| 9. Household Saving (Rows 7–8) | 55.9 | 98.3 | 123.2 | 85.2 | 82.9 | 70.8 | 90.8 |
| 10. Average propensity to consume (Rows 8/7x100) | 87.4 | 84.4 | 83.2 | 89.2 | 90.2 | 91.9 | 90.3 |
| 11. Average propensity to save (Rows 9/7x100) | 12.6 | 15.6 | 16.8 | 10.8 | 9.8 | 8.1 | 9.7 |
| 12. Consumer Prices (1995=100) | 77.4 | 86.4 | 96.0 | 100.0 | 102.0 | 105.4 | 108.3 |

Source: National Accounts of the Maltese Islands 1998, Table 2
This reflected household earnings from wages, dividends and interest, social security benefits received from Government, and net transfers from abroad less direct taxes paid to Government.

At the same time, the prices of consumer goods, which reflects the average of prices of commodities consumed in Malta scaled to a base of 100 in 1995, rose by slightly more than one-third. It may thus be argued that the purchasing power of households in Malta rose by 50% from 1988 to 1998.

This increase in purchasing power was accompanied by a drastic change in household consumption and saving behaviour. Between 1988 and 1992, as disposable income increased, both consumption and saving rose. Actually, saving rose at a faster rate than consumption, such that as a percentage of income (average propensity to save) it went up from 12.6% in 1988 to 16.8% in 1994. After 1994, however, consumption expenditure
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rose faster than income, such that the amount of household saving nearly fell by half in the four years to 1998.

The average propensity to consume rose significantly, as Figure 1 shows, reversing the mild downward trend observed in earlier years. Thus, what was traditionally said about the Maltese as being a nation of savers appears to have been abruptly contradicted in recent years.

Intrigued by the volatility of the average propensity to consume, Delia (1990) adjusted existing consumption statistics in line with results obtained from a study on tourist expenditures carried out by the National Tourism Organisation of Malta. He concluded that the consumption ratio may have been overestimated by as much as 4.1 percentage points as at 1988. These adjustments imply that official statistics showed a decline in savings for that year, when in actual fact savings had increased.

This approach and the correction to the official statistics that ensued therefrom however hardly served to result in a more stable consumption-income relationship in time series data over the past decade, as the foregoing discussion indicates. This paper seeks alternative explanations for the developments in household consumption in the other theoretical hypotheses used in macroeconomics, subject to the data problems that may exist.

Theories of Consumption

The development of different hypotheses of consumption often mark some breakthrough or substantial revision in economic thought. Indeed, it is often considered that one of the first studies of consumption, the income-based theory, hailed the birth of the study of macroeconomics. As this hypothesis succumbed to empirical tests over time, alternative explanations based on income were developed.

The 1970s saw a complete rethinking of macroeconomics with a substantial emphasis on the fundamental microeconomic behaviour of economic agents. This has influenced all areas of macroeconomics, particularly consumption theories by providing new insights as to the relationship between consumption and factors other than income.
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The Absolute-Income Hypothesis

The Keynesian Absolute-Income Hypothesis relation which dates back from the 1930s, can be specified as:

\[ C = a + bY \]

where \( C \) represents household consumption expenditure and \( Y \) represents income.\(^1\) The parameters \( a \) and \( b \) determine the exact relation between consumption and income and their precise values can vary between economies. It is nonetheless generally expected that \( a \) is positive, as it represents the amount of consumption that would take place to allow households to subsist even if they had no income. On the other hand, \( b \) represents the change in consumption that would take place when income changes by Lm1, also known as the marginal propensity to consume. Thus, \( b \) is expected to have a value between 0 and 1.\(^2\)

A consumption function of this kind implies that at a low income, the level of consumption relative to income is high, due to the importance of subsistence consumption. As income increases, the proportion of consumption out of income falls, as the importance of the subsistence part diminishes. While the average propensity to consume is falling as income rises, the average propensity to save rises commensurately.

Figure 2 plots data for household consumption and disposable income in Malta between 1970 and 1998.\(^3\) The scatter-points seem, at first glance, to fit a linear pattern. Using the Ordinary Least Squares technique, the consumption line that best fits the points is found to have a subsistence consumption level close to 0, and a relatively high marginal propensity to consume of 0.87. The formula for the consumption line thus becomes:

\[ C = 0.87Y \]

1. The economy’s total income and household disposable income are in this section used interchangeably for the sake of simplicity.
2. The marginal propensity to save, representing the increase in saving following a Lm1 increase in income, is the difference between the increase in income and that in consumption, namely 1–b.
3. In this section, the data set was extended backwards to 1970 so as to have enough observations for the Ordinary Least Squares technique to be meaningfully applied. The comparability of consumption data from 1988 onwards with that of earlier years is somewhat affected by a revision in statistical methodology.
implying that the average propensity to consume \((C/Y)\) is constant at 0.87, rather than falling as predicted by the theory. This relationship, however, does not hold for shorter periods of time.

Figure 3 plots the average propensity to consume between 1970 and 1997 against income, showing very little evidence in support of a constant average propensity to consume. There were episodes where the average propensity to consume was rising with income (1970–1985 and 1995–1997) and others when it fell (1986–1994). The value of 0.87 found in the consumption line is merely an average over a long run period.

It thus appears that on its own, the Keynesian consumption function is of little relevance in practice. Consumption appears to be moving proportionately with income in the long run. The hypothesis that the average propensity to consume falls with income does not seem to be borne out by the data.
Furthermore, the Keynesian consumption function appears to give no explanation of the determinants of consumption activity over shorter time horizons. These results may be explained in three ways:

i. A short-run relationship between consumption and income can be found within the backdrop of a constant average propensity to consume in the long run. Under this hypothesis, income remains the

4. It may be further suggested that the purported links between consumption and income reported in econometric studies are spurious in nature. Regression analysis of the levels of consumption and income between 1970 and 1997 give the following results:

\[
\text{consumption} = 0.871 \times \text{income} - 1.348 \quad R^2 = 0.9864
\]

(37.1)  (0.2)

implying a very strong relationship with a marginal propensity and constant average propensity to consume of 0.87.

Regression for the same period between the same variables, but expressed in differences, yields:

\[
\Delta \text{consumption} = 0.691 \times \Delta \text{income} + 2.106 \quad R^2 = 0.3527
\]

(3.1)  (0.9)

which represents a much weaker relationship with a marginal propensity to consume of just under 0.7.
primary determinant of consumption, only that the relationship between consumption and income would be more complicated than that indicated by the linear function.

ii. Income-based explanations of consumption are incomplete, as in practice there are other important determinants of consumption. These could include wealth, demographic changes, interest rates, psychological factors, etc.

iii. Income is completely irrelevant to consumption. Consumption and income are observed to move together in the long run, but this does not necessarily imply that income influences consumption.

Each of these possibilities is discussed next.

Alternative Income-Based Theories

Alternative income-based theories allow the average propensity to consume to remain constant in the long run, while accounting for other kinds of influences of income on consumption in the short-term. As is well known, the principal theories of this kind are (a) the relative income hypothesis and (b) the permanent income hypothesis.

The principal disadvantage of these theories is that they do not show why the average propensity to consume can rise with income. In fact, they do not explain consumption behaviour in Malta in a significantly better way than the linear consumption function does. Furthermore, these theories describe the behaviour of individual households without showing how to relate these explanations to macroeconomic time series data. These theories also lack a proper explanation of why households may decide to alter the sensitivity of their consumption to income in the short- and in the long-run. They also fail to explain why consumption should at all be proportional to income in the long run.

Other Determinants of Consumption

The shortcomings of income-based theories of consumption reflected a major deficiency of macroeconomics up to the 1960s, namely that the concepts being discussed were not backed by analyses of behavioural patterns of households and other economic agents at a microeconomic level. This notion brought about the rational expectations revolution in
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economic thought during the 1970s. The idea behind this was to discuss economic behaviour in terms of actions that households and economic agents would take to optimise their utility or profits, and then to apply these conclusions at a macroeconomic level. Furthermore, households and economic agents were assumed to be rational and forward-looking, and to make best use of all the information that is available to them.

In discussing consumption under this approach, a representative agent whose aim is to maximise lifetime utility would be analysed. A household’s typical utility function with declining marginal utility is depicted in Figure 4. Assume the household is given the option to consume \( C_1 \) in period 1 and \( C_2 \) in period 2, or their average \( C_0 \) in both periods. By consuming different amounts in each period, the household would obtain an average utility \( u_A \). By consuming the average amount in each period, the household would be better off, obtaining an average utility \( u_B \). The household prefers consumption to be constant in each period, because of diminishing marginal utility that causes the increase in utility in period 2 not to offset the drop in utility in period 1. The conclusion of this argument is that households tend to smoothen their consumption over a lifetime. They would consume the total resources available over a lifetime equally over all periods.

This strong version of the consumption-smoothing hypothesis thus concludes that consumption should not be at all related to current

Figure 4
Household Utility Function

![Household Utility Function Diagram]
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income, but is a function of total lifetime resources. In periods when current income falls short of consumption, households would borrow. These loans would be repaid when current income exceeds consumption.

The life-cycle hypothesis puts these concepts within the context of the typical different stages of the life-cycle of a household. It explains that initially, a young household borrows. During the following intermediate stage, a household saves to repay borrowing and dissaves during retirement. This cycle allows households to smoothen consumption over their lifetime. This view of consumption is becoming increasingly relevant, as it is being found that the average propensity to consume is increasing as the population ages. This factor is probably relevant to Malta, and is likely to become even more so in the future.

The consumption-smoothing hypothesis also allows for an ambiguous role of interest rates. On one hand, high interest rates induce households to postpone consumption in order to enjoy higher interest income in the future. On the other, the very prospect of higher future interest income may induce households to consume more now. The role of interest rates on consumption is thus not clearly established, and is unlikely to have as yet had any important impact on consumption behaviour in Malta.

A re-assessment of household wealth may however have had an important influence on Maltese household consumption in recent years. Following the boom in real estate prices in the early 1990s, households may have revised their perceived stock of wealth upwards, and adjusted their consumption plans accordingly. This factor may have combined with the liquidity effect, in that higher property prices increased the availability of collateral that could be used for consumer credit.

To the extent that the consumption-smoothing hypothesis is representative of consumer behaviour, then anticipated changes in current income should have no effect whatsoever on consumption. Certain empirical studies, however, find evidence of a strong relationship between current income and consumption (Waldorf, 1969; Metwally, 1977; Briguglio L., 1988; Briguglio, M., 1992; Cordina 1998). Consequently, most modern research on consumption focuses on modifying the consumption-smoothing hypothesis to explain what is often referred to as the 'excess sensitivity' puzzle, that is changes in consumption are related to changes in current income.
One strand of thought has led to the investigation of the plausibility of the perfect capital markets assumption. This assumption is a basic tenet of the consumption-smoothing hypothesis and states that consumers can borrow and lend as much as they would like at the going interest rate. Another possible explanation lies in the uncertainty associated with future income, such that all changes in future income are unexpected. The consumption-smoothing hypothesis accommodates both lines of thought.

Liquidity constraints mean that individuals cannot borrow or save as much as they would like. Such constraints may arise because of a high probability of default on behalf of the borrower or if banks cannot insure themselves against this risk by charging higher interest rates, as in the case of lending rate ceilings. Liquidity constraints are generally restricted to the young end of the population age distribution, i.e. the young cannot use future labour income as collateral such that they are denied credit. Up to a few years ago, liquidity constraints appear to have been pervasive in Malta and were not only restricted to the young. This was largely the result of a heavily regulated and underdeveloped financial sector. Interest rate ceilings constrained the banks’ ability to charge higher rates in cases of higher default. With the liberalisation of the financial sector during the 1990s, this constraint may have been relaxed allowing consumers to adjust their consumption patterns by resorting to credit. This may in part explain the boom in consumption in Malta in recent years, as shown by the development in consumption expenditure and bank credit for purchases of consumer goods shown in Figure 5.

![Figure 5: Consumption and Consumer Credit (Lm Millions)](image-url)
As aforementioned, the presence of uncertainty over earnings may also result in behaviour similar to that predicted by the Keynesian hypoth-
thesis. An important assumption of the consumption-smoothing hypoth-
esis is that there exists perfect certainty. This allows individuals to
compute the expected present value of their income and consequently
plan their desired consumption path over their lifetime. Uncertainty
may also exist over individuals’ life span, taxes or interest rates, which
would produce similar behaviour. If consumers experience high income-
variability, their consumption will closely follow current income. This
occurs because consumers discount variable future income more heavily,
allowing a greater role for current income in determining current
consumption decisions. The more averse to risk consumers are and the
lower the cushion of assets they have to ‘buffer’ their way through
unexpected drops in their income, the more closely shall current con-
sumption follow current income, i.e. the higher the discount rate applied
to future income.

The existence of liquidity constraints and uncertainty thus explain what
may seem to be ‘Keynesian’ behaviour in terms of obstacles to
intertemporal maximising behaviour. This further discards the rele-
vance of income-based hypotheses in explaining consumption behav-
avour as analysis based on the microeconomic behaviour of economic
agents provides new insights as to the role of income. The principal
advantage of this approach is that it provides a number of possible
explanations of how consumption is determined, all of which may have
important influences in practice. However, these explanations are usu-
ally more difficult to assess empirically, mainly due to the lack of
sufficient data over an adequate span of time. A major conceptual
difficulty is the assumption that households behave rationally and take
account of all the information that they have available. Furthermore,
factors such as changes in perceptions and moral values probably have
an important effect on consumption, but are not readily incorporated in
economic models.

Correlation without Causality

The existing relationship between current income and consumption may
also be explained by acknowledging that two variables may be observed
to be moving together, as consumption and income do, but neither one
influences the other. It may well have been that the common development of the two variables was coincidental. More likely, it may have been caused by a third common determinant. The latter may be simply the passage of time. Economic variables, such as consumption and income, tend to grow over time. Similar growth patterns in two variables over time may easily be mistaken for a causal relationship, even though none may exist.

In this case, it may well also be that consumption is influencing income, but not the other way round. If consumption depends on factors other than income, as predicted by the strong version of the consumption-smoothing theory, then it would be autonomously determined, and income would respond to it as output changes in line with movements in expenditure.

**Conclusion**

Household consumption behaviour has important implications on the economy's output, income, balance of payments, and future growth prospects. Yet, a complete explanation of the main determinants of this variable remains elusive. The traditional macroeconomic theory, relating consumption to income, fails empirical tests and suffers from conceptual shortfalls. Recent advances in the study of consumption behaviour based on the microeconomic optimising behaviour of households are giving more plausible results. Yet, they remain subject to the assumption of households acting rationally upon the information they have available.

These considerations apply to the analysis of household consumption behaviour in Malta. During the past few years, consumption rose at a rapid pace, in excess of what may be attributable to the increase in income. It is probable that factors such as the boom in property prices, financial liberalisation, as well as demographic considerations had an important influence in this respect. There may however have been other influences of a social and psychological nature on household consumption behaviour, which are not easily incorporated in economic models.
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References


