

FEATURE ARTICLE

THE RECENT BEHAVIOUR OF AGGREGATE CONSUMER SPENDING

by Alan Carruth and Andrew Henley, University of Kent at Canterbury

Introduction

The modelling and forecasting of consumer behaviour has in the last few years taxed economists considerably. By the middle of the boom of the late 1980s it was becoming apparent to most forecasters that their popular models of UK consumer behaviour were failing to forecast the extent of the sizeable growth in real consumer spending at the time. Personal sector savings rates reached post-war low levels and by 1988 real consumer spending growth reached 7 per cent per annum. Since that time we have witnessed a quite spectacular collapse in consumer spending and in confidence, to the extent that savings rates have been restored quite rapidly. During the latter half of Nigel Lawson's chancellorship policy failed to recognise the inflationary consequences of the relaxed monetary stance which followed the 1987 stock market crash and the considerable fiscal stimulus afforded by the cuts in higher and basic rate income tax. The underforecasts of consumer spending growth produced by agencies such as the UK Treasury and the Bank of England, and other independent forecasters, in part, contributed to this failure.

One consequence of this is that there is occurring, within the economics profession, a substantial reappraisal of existing forecasting methodology (for instance the "7 Wise Men" are now advising the Chancellor, based on the forecasting views of their respective agencies). The key element of any model of the UK personal sector is a consumption function specification. Initially, this reappraisal took the form of the incorporation of additional explanatory variables into consumption functions, in particular attempting to capture the effects of progressive financial deregulation in the 1980s and the importance of the housing market on spending patterns. Latterly modellers have begun to take on board the emphasis in the American literature on the extent to which consumer behaviour is "forward-looking". One further feature of consumer behaviour in Britain which has emerged in the 1980s, which is particularly important, is that it

exhibits considerable regional variation. The consumer boom of the mid 1980s was predominantly a south-eastern phenomenon. The North and Scotland were not affected to anything like the same extent.

The Failure to Forecast the 1980s Spending Boom

There is little doubt that the boom in consumer spending which occurred between 1985 and 1988 was encouraged by falling interest rates, strong growth in the economy and optimism about the future (optimism which with the benefit of hindsight was very misplaced). One consequence of the boom was that it is likely to have contributed significantly to the structural balance of payments deficit that the UK economy appears to be stuck with in the 1990s, along with a low level of confidence among those struggling to service their 1980s debt overhang.

Until the late 1980s most of the forecasting agencies employed a consumer spending model derived from the methodological approach of Davidson, Hendry, Srba and Yeo (1978), commonly denoted by the acronym DHSY. The core element of the DHSY approach is the idea that consumer spending behaviour is conducted with reference to a desired long-run (or steady state) proportional relationship between spending and income. In other words consumers (in aggregate) have some notion of a target average propensity to consume (or conversely an average rate of savings) and adjust spending patterns accordingly from one year to the next to maintain this target in the long run. The DHSY model implements this idea through a feedback mechanism (in the jargon an "error correction mechanism"), which means that if consumers in one year find themselves above their desired rate of saving they will allow the growth in their spending to ease off in the next. Conversely, if in one year they find themselves below the desired saving rate, they will allow spending growth to climb. Broadly speaking this representation of aggregate behaviour explains UK consumption data

with a high degree of explanatory power throughout the 1950s, 1960s and 1970s, and has proved to be a very successful empirical methodology for the study of economic time series data. High inflation rates in the 1970s present something of a problem in that it has been noted (Deaton 1977) that during high inflation consumers may, other things being equal, save more in order to compensate for real losses on nominally fixed holdings of liquid assets (for example Building Society deposits and Bank time deposits). This was a problem for the DHSY model when forecasting behaviour in the mid 1970s because high inflation was accompanied by negative real interest rates. It was dealt with by the explicit inclusion of an inflation variable in the forecasting model (which correlates with the nominal interest rate through the Fisher effect). Subsequent work formalised the relationship between spending, income and assets by including a measure of the liquid asset holdings of the personal sector in the model and by positing that consumers have an additional target relationship between income and assets (Hendry and von Ungern-Sternberg (HUS), 1981). By the mid 1980s the consumer spending equations of most of the forecasting agencies included a formulation along either DHSY or HUS lines.

Figure 1 shows the forecast performance of a DHSY consumption function (estimated from 1972 to 1986) over the two years 1987 and 1988. Figure 2 shows the forecast performance of the same model from the beginning of 1989. The two figures together show a dramatic underforecast of consumer spending growth in the earlier boom period, and an appreciable overforecast of consumer spending growth as the current recession began to bite. HUS-type models, which include consumer liquid assets as an additional explanatory variable, exhibit a similar, though less pronounced tendency to underforecast the boom and overpredict spending in the recession (Carruth and Henley 1990a).

What was unusual about the mid 1980s spending boom was that, unlike in previous economic upswings (for example 1970 to 1973), the growth rate of spending consistently exceeded that of real disposable income, as illustrated in Figure 3. Table 1 shows some regional variation in this pattern. In Scotland spending growth did no more than keep pace with income growth between 1981 and 1989. Past experience suggests that consumers allow their savings rate to rise during booms and fall during recessions - in other words consumption is smoother over the cycle than income. This stylized fact in essence justifies the feedback mechanism in

the conventional forecasting models, but neglects forward looking behaviour on the part of consumers with respect to their "permanent" (lifetime) income. Clearly a situation in which consumer spending is accelerating away from income is unsustainable beyond a limited period of time. It can only be sustained to the extent that consumers are able to finance spending activity from other sources, principally from accumulated wealth. The unsustainability of consumer behaviour in the mid 1980s in one sense made inevitable the collapse in spending confidence that has occurred since.

Explanations for the spending boom

The re-examination of the determinants of UK consumer spending which followed the discovery of the poor 1980s forecast performance produced several alternative, and not necessarily mutually exclusive explanations for this apparent change in behaviour. We can deal with some of the explanations rather more quickly than others.

The explanation that most immediately springs to the mind of the sceptical observer is that the data had become unreliable, or more precisely that growing measurement error in the UK personal sector balance sheet was occurring during the 1980s. If this was becoming manifest in an apparently plummeting savings rate, then it would tend to suggest that official statistics were under-recording the income of the personal sector. Certainly the personal sector accounts, as well as a number of other important areas of the national accounts, among them the Balance of Payments account, did start to cause concern in the Government and reviews of procedure were initiated. To what extent personal disposable income is understated (or for that matter spending is overstated) is still unclear.

Another early explanation that emerged concerned the shifting demographic structure of the UK population. Researchers at the London Business School (Currie, Holly and Scott, 1989) observed that the mid 1980s coincided with a sharp period of decline in the relative size of the 45 to 64 year age cohort of the British population. Since about 1960 this cohort has been in long term relative decline but they noted a particular downward "blip" in the mid 1980s. According to life cycle theories consumers tend to dissave during the early part of their working lives (to finance house purchase, children etc.), save during "middle age", and dissave in retirement. Hence a reduction in the number of middle aged savers might induce a fall

in the aggregate savings rate. The blip in the size of this cohort corresponds to the sharp growth in consumer spending at the time - this correspondence is probably in good measure coincidental. The LBS work obtained a very sizeable coefficient on this cohort size when entered additively into their consumption function. The coefficient yielded an implausibly large effect on consumer spending from what was a relatively small demographic change (see Carruth and Henley, 1990b, for further discussion). What is clear is that if demography has exerted an influence on aggregate spending patterns in the 1980s the effect is more complex, and probably operates in conjunction with other factors, and would require investigation with a microeconomic database.

One attractive explanation for the spending boom, which is better grounded in the microeconomic theory of consumer behaviour, is that the 1980s witnessed an upward shift in the expected permanent or life cycle incomes of consumers (see King 1990). Consumers would have inferred this from higher current levels of disposable income. This would induce an immediate effect through higher spending. That effect might be quite pronounced if consumption is "excessively sensitive" to changes in current income (see Deaton, 1992, for a more general discussion). It also suggests that a structural break in the consumption function occurred in the mid 1980s. The source of these enhanced expectations about future income levels may have been derived from a number of sources. Firstly, during the mid 1980s real earnings rose steadily by two percent per annum, and if consumers anticipated an extended period of sustained economic growth, then they may have expected that rate of real earnings growth was sustainable for some time to come. Secondly, Conservative Party manifesto commitments to make future tax cuts, believed because of the gradual and deliberate shift from direct to indirect taxation in the first two terms of Conservative government, may have contributed to expectations of higher future disposable income. Thirdly real gains on assets, including housing, privatization share offers, and, until 1987, on stock market investments, may have induced an upward shift in consumers' beliefs about their total lifetime resources. Evidence for a structural shift in lifetime income expectations is difficult to pin down, particularly from macroeconomic data. Recent work by Attanasio and Weber (1992), using 15 years of individual consumer data from the Family Expenditure Survey, is therefore of particular interest. Individual level data over a period of time allows the spending

patterns of age cohorts of individuals to be traced through the 1980s boom. The authors find evidence for a substantial upward revision in permanent income in the 1980s, *particularly among younger consumers*.

An explanatory factor that is frequently cited, particularly in the work of John Muellbauer and Anthony Murphy (1990), is financial deregulation. The key changes were the entry of the clearing banks into the mortgage market in the early 1980s and the 1986 Banking Act which allowed Building Societies to operate as banks. Rather than inducing an upward shift in perceived permanent income, financial deregulation operates to allow consumers greater flexibility in the intertemporal allocation of consumption. Easier access to credit, the increased "fungibility" of housing assets (which we shall discuss in greater detail shortly) etc. may have allowed consumers to bring forward spending plans than under a previous more strict financial regime which would have had to be postponed until current incomes or accumulated savings were higher. The importance of the housing market may have been critical here and we examine this in a separate section.

The Housing Market and Consumer Spending

The importance of the housing sector in the UK is linked to the strong growth in home ownership in the post-war period, largely because of substantial fiscal privilege in favour of those who own housing assets. Owner-occupation in Britain rose from 30 percent of total housing tenure in 1950 to close to 70 percent in 1990, although as Table 2 illustrates there is considerable regional variation in this rate. Householders in Scotland, for example, have never shown the same predisposition to owner-occupation as the English, and have levels of home ownership closer to those observed in other major developed economies. By 1990 the owner-occupied UK housing stock was worth at market prices almost £1,000bn, or nearly £18,000 per capita. Secured on this was a total mortgage debt of £290bn, or over £5000 per capita. The difference represents the personal sector equity stake in housing. Once again there is a very considerable regional variation in per capita levels of housing equity. Figure 3 shows that in 1989 on average in the South-East of England housing equity amounted to £12,500 in 1985 prices for every man, woman and child. In Scotland the same statistic is five times lower at around £2,500. An important question has been to isolate how this equity stake has been translated into spending.

One idea is that the relationship between consumer spending and the housing market comes about through the practice of Housing Equity Withdrawal (HEW for short, see Lee and Robinson, 1990). The most common example of this is the tendency of individuals, when they move, to increase their mortgages by more than the difference in price between their old house and their new house. In other words they take advantage of their house move to remove some part of the equity or value that they have accumulated in their existing property. In other words it is turnover activity in the housing market that can create the conditions for individuals to use their housing equity to "top-up" income and facilitate additional spending. They might want to do this for very good reasons. Moving house costs a lot of money, in estate agents' fees, solicitors' fees, survey fees, removal costs, and in stamp duty. In addition movers might wish to "overborrow" to finance improvements to their new property, such as refitting the kitchen; or they may simply take the opportunity to finance additional spending on consumer durables such as carpets or household appliances at mortgage rates of interest. This is attractive to households because mortgage rates, secured by a charge on the consumer's property are considerably below rates payable on bank overdrafts and credit card accounts, and attract a fiscal privilege through the operation of the MIRAS system. HEW may also result from final disposals of housing assets. Where a house sale is undertaken by the relatives of a recently deceased person, and those relatives already own housing property, then there is a good chance that a considerable proportion of the proceeds will be spent. This may be of growing importance since large numbers of existing owner-occupiers are currently inheriting houses bought by their parents after the Second World War, and may be linked to the demographic effects discussed above.

The measurement of equity withdrawal is complicated by equity injections by other participants in the housing markets - for example equity injections by first-time buyers or asset portfolio adjustments by existing owners. (Lee and Robinson, 1990, illustrate equity withdrawal in typical housing market transaction "chains"). Even though for every seller of a house there must be a buyer, the equity withdrawal effect need not net out. This is because the system of financing property purchase and credit creation means that an exogenous increase in personal sector wealth can be translated into higher spending financed through housing-secured borrowing. However, it must be

noted that possibilities for equity withdrawal do not automatically presuppose dissaving, as investment in other financial assets may be part of the choice process.

The net equity value of the housing stock in 1988 was roughly £650bn. Now only a proportion of this stock is traded; about 15% at the peak of the 1980s housing boom. Therefore 15% of the £650bn of net housing equity gives a traded volume of equity of nearly £100bn. So households have the potential to withdraw some proportion of this £100bn to boost current incomes for spending purposes. Empirical estimates by the present authors (Carruth and Henley, 1990c) for the aggregate economy suggest that this withdrawal proportion rose to as high as 12% in the housing boom of the 1980s. So in 1988 12% of the value of £100bn worth of housing stock represents an equity withdrawal into incomes of £12bn. In 1988 UK consumer spending was growing at 7% per annum; and on these estimates equity withdrawal could have accounted for 50% of that growth rate. Regionally disaggregated estimates of HEW are more difficult to obtain because regional information on housing turnover is not available over any length of time. However, it seems certain that HEW will have been of very considerably less importance in Scotland because of the much lower rates of owner-occupation, lower rates of housing turnover and much lower appreciation in the value of housing in the 1980s.

The Regional Dimension

Given the rather different performance of the housing market in the 1980s across the UK, an interesting issue is to what extent the debate on aggregate consumer spending applies consistently at the regional level. We have noted from Table 1 that consumer spending and income growth in Scotland behaved in a similar fashion, but much lower levels of housing equity in Scotland and the North would suggest that the relationship between the housing market and consumer spending might be rather different. More generally it seems likely that there are significant differences in consumer responses to income growth in different parts of the UK, given that the spending boom of the 1980s was more pronounced in the South East, East Anglia and the South West. Holden and McGregor (1990) find significant differences between consumer behaviour in Scotland and the whole of the UK, in particular that in Scotland spending is more sensitive in the short-run to income changes, and that savings are more sensitive to the Deaton/Fisher inflation effect. Recent work by the present authors (Carruth and

Henley, 1993) suggests that statistically significant differences in the structure of a DHSY-type consumption function are apparent across all regions of the UK. Not unexpectedly the evidence suggests that consumer spending has in the 1970s and 1980s been most significantly affected by short-term movements in housing equity in the South East. The effects in most other regions, including Scotland, are modest or insignificant. Table 3 shows the annual growth rates of the gross real value of the housing stock and of real house prices. While real gains in the 1980s housing market in the South-East provided the perception of higher permanent income for the majority, in Scotland it seems likely that modest housing gains affected the spending patterns of only a few, with no significant influence in aggregate.

Estimation of region by region consumption functions allows the calculation of the steady-state or target average propensity to consume (APC) for each region, discussed earlier. Our own estimates of these are shown in Figure 4. These show that there is a clear tendency for the steady-state APC in the 1980s to be higher in the south of Britain. The South-East estimate implies an equilibrium savings rate of only one per cent, and underlines at the regional level the unprecedented excess of aggregate consumer spending over real income growth. This is strongly suggestive of the fact that it was in the south rather than in the north and Scotland where consumers revised upwards their perceived permanent income.

Conclusion

In the mid 1980s it is undoubtedly the case that many households perceived a substantial revision in the level of their permanent income. Whether this arose because of an exceptionally buoyant housing market, initially in the South East of England, or whether the contributory factors are more varied, to do with the psychology of direct tax cuts and real earnings growth, is still a matter of debate. It is tempting to conclude that the North and Scotland were less fooled by an alleged "Thatcher miracle" than those in the South East. In addition financial deregulation relaxed liquidity constraints on many households, allowing life-cycle spending plans to be brought forward. For macro-modellers the experience resulted in considerable reassessment of the way in which the personal sector is modelled for forecasting purposes. The way forward seems to be one which, drawing on recent developments in particular in the American literature, models consumer spending as responding in a forward

looking way. Changes in consumer perceptions about the future and about the way that revised expectations about the future alter anticipations about life-cycle income will therefore affect present spending decisions. Life-cycle expectations about income depend on expectations about wealth as well as about future incomes. In this respect they are likely to vary considerably from region to region to the extent that assets holdings, particularly in housing, vary so much. In Scotland, where levels of owner-occupation are much lower and where the housing market is much less cyclically sensitive, the boom and bust of consumer spending in London and South East England must have been observed with considerable bemusement.

The present slump in consumer spending in the South especially represents a "hangover" from the debt overhang created by the one-off impact of financial deregulation. It also reflects a considerable downward re-revision of expectations about permanent income, as consumers have caught on to the unsustainability of the 1980s-style promise of rising future disposable incomes in the context of 1990s-style recession. After the "boom" and "bust" DHSY-type consumption models appear on casual observation to be back on track. What forecasters and modellers now know is that to be more confident of making accurate predictions about spending levels they need to take account of consumer behaviour in a much more sophisticated way.

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Table 1: Average Annual Growth Rates of Consumption and Income

% per annum Region	1974-81			1982-89		
	C	Y	C-Y	C	Y	C-Y
North	0.00	0.53	0.53	3.36	2.75	-0.61
Yorks & Humbs.	2.08	0.85	-1.23	4.25	3.25	-1.00
E. Midlands	1.48	1.90	0.42	3.75	3.73	-0.02
E. Anglia	1.18	1.37	0.19	5.81	5.36	-0.45
South East	0.34	0.35	0.01	4.59	4.05	-0.54
South West	2.44	2.09	-0.35	5.14	4.88	-0.26
W. Midlands	0.64	-0.35	-0.99	3.69	3.72	0.03
North West	0.17	0.06	-0.11	3.78	2.80	-0.98
Wales	1.13	0.85	-0.28	3.77	3.34	-0.43
Scotland	0.99	1.23	0.24	3.48	2.69	-0.79
N. Ireland	0.89	1.21	0.32	4.49	4.46	-0.03

C: real consumer spending

Y: real personal disposable income

C-Y: difference between average consumer spending growth and income growth

Source: Regional Trends, regional price deflators obtained from Reward Group (1991)

Table 2: Percentage Owner-Occupation by Region in 1989

	Percentage
North	59
Yorkshire & Humberside	66
East Midlands	70
East Anglia	70
South East	69
South West	73
West Midlands	67
North West	68
Wales	71
Scotland	49
Northern Ireland	64
UK Total	67

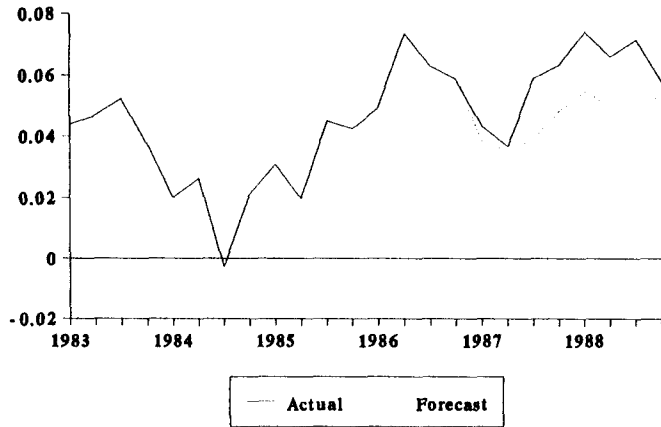
Source: Regional Trends

Table 3: Average Annual Growth Rates of House Prices and Wealth by Region, 1982-89

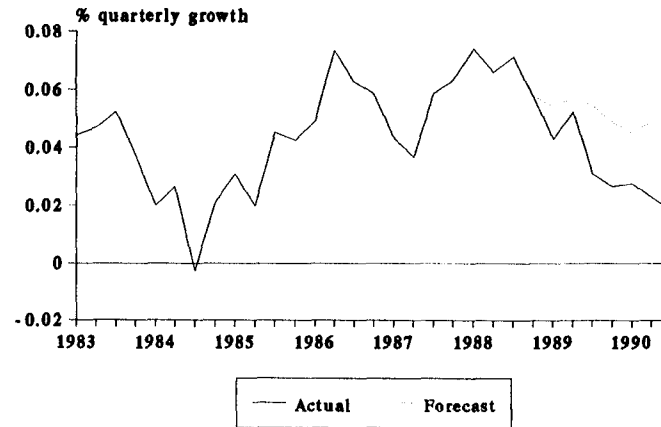
Region	Real Gross Housing Wealth	Real House Prices
North	7.53	4.09
Yorkshire & Humberside	7.50	4.82
East Midlands	9.80	6.55
East Anglia	11.53	8.02
South East	10.24	7.38
South West	10.23	7.33
West Midlands	8.06	5.36
North West	6.04	4.03
Wales	7.56	4.64
Scotland	4.54	0.37
Northern Ireland	4.26	0.71

Source: Carruth and Henley (1993)

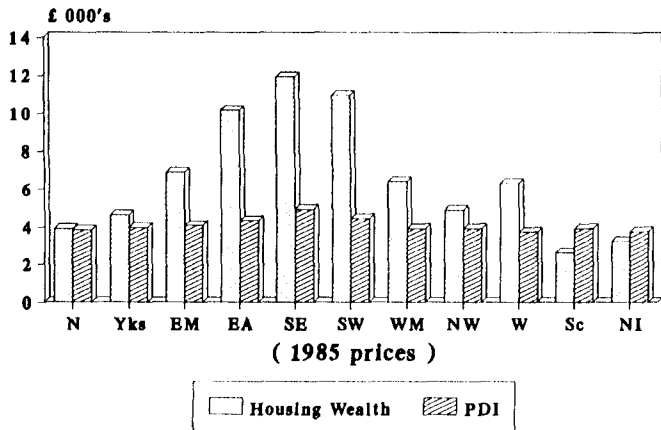
**Figure 1. Forecast performance
DHSY model 1987 - 1988**



**Figure 2. Forecast Performance
DHSY model 1989 - 1990**



**Figure 3. Personal disposable income and
housing equity per capita in 1989**



**Figure 4. Estimates of equilibrium
Average Propensity to Consume by region**

