

How should we think about consumer confidence?

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In the United Kingdom, movements in confidence have been closely related to annual real consumption growth over the past 30 years. But both these series have common determinants. This article shows that the standard economic determinants of consumption such as income, wealth and interest rates can 'explain' a large part of the movements in consumer confidence. However, confidence is also affected by non-economic events, or may react in a complex manner to unusual economic events. We find that such 'unexplained' movements in consumer confidence do not appear to be closely related to households' spending decisions on average. So although consumer confidence indices are published well ahead of official data on consumer spending it is important to consider why confidence has changed before assessing its likely implications for consumption.

Introduction

Consumer confidence indices, such as that produced by GfK in the United Kingdom, receive considerable coverage in the media. And survey measures of consumer confidence are often used as indicators of household spending intentions. But it is not always clear exactly what information is being captured by these surveys. This article considers some possible interpretations of the consumer confidence data and assesses whether they provide useful incremental information for predicting consumption.

What is consumer confidence?

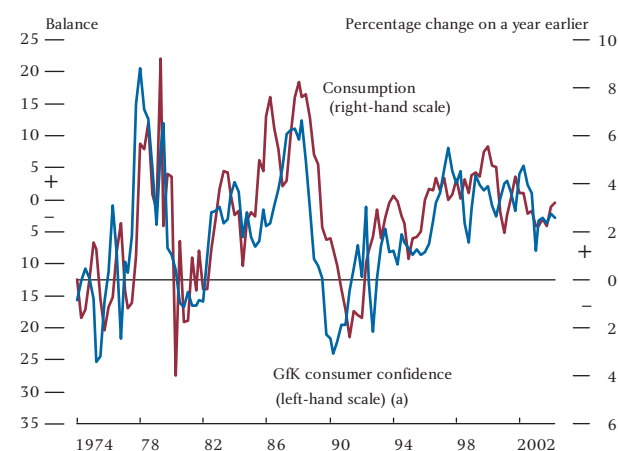
Consumer confidence is a somewhat nebulous concept. Confidence surveys typically ask a variety of questions that capture household perceptions of different economic factors (see box below). Positive responses to these questions are likely to be associated with households feeling more confident. But even if the survey balances do provide an accurate description of consumer confidence, it is not clear how that helps us to understand developments in the economy. Their usefulness depends on the additional information they provide when assessing developments in the household sector.

Why do we look at measures of consumer confidence?

One reason why confidence measures are followed closely is the observed relationship between confidence

and household consumption growth. Chart 1 shows that, in the United Kingdom, movements in confidence have been closely related to annual real consumption growth over the past 30 years.⁽¹⁾ The contemporaneous correlation between confidence and annual real consumption growth since 1974 is 0.6, and the correlation between confidence now and annual real consumption growth in a year's time is 0.5. Care should be taken in interpreting the correlations over the entire sample period, however. The contemporaneous relationship between confidence and consumption is not stable over time. Looking at five or ten-year rolling

Chart 1
Consumer confidence and consumption



Sources: Gallup, Martin Hamblin GfK and ONS.

(a) Seasonally adjusted (see the box below).

(1) It is worth noting that the chart suggests that consumers tend to be pessimistic: the long-run average of the GfK balance is negative at -5, while average annual real consumption growth over this period is 2.6%.

How is consumer confidence measured in practice?

In the United Kingdom there are two main consumer confidence surveys, undertaken by GfK and MORI.

The GfK survey asks a series of questions on household finances, the general economic outlook and so on.⁽¹⁾ Five of these questions are aggregated—by a simple average—to form an overall consumer confidence measure. These are:

- How has the financial situation of your household changed over the last twelve months?
- How do you expect the financial position of your household to change over the next twelve months?
- How do you think the general economic situation in this country has changed over the last twelve months?
- How do you expect the general economic situation in this country to develop over the next twelve months?
- In view of the general economic situation, do you think now is the right time for people to make major purchases such as furniture or electrical goods?

For the first four questions, there are five possible answers. Respondents can answer ‘no change’ and ‘a little’ or ‘a lot’ better or worse. The results are published as a net balance of positive less negative responses, with those who answered ‘a lot’ in either direction given twice the weight of those who answered ‘a little’. For the fifth question, there are only three possible answers: yes, no or evenly balanced.⁽²⁾

The survey contains further questions covering a wider range of subjects such as inflation and unemployment expectations, and savings intentions. These questions, though not affecting the aggregate balance, may provide further useful information on consumers’ current outlook and willingness to spend.

The MORI survey asks only one question on the economic outlook for the next twelve months. It is therefore similar to the fourth question in the GfK survey and represents only a subset of the GfK measure. MORI respondents can only answer whether they think the economy will improve, stay the same or get worse. In this article, we focus on the GfK measure due to the wider range of questions, which help to shed more light on the underlying determinants of consumption.

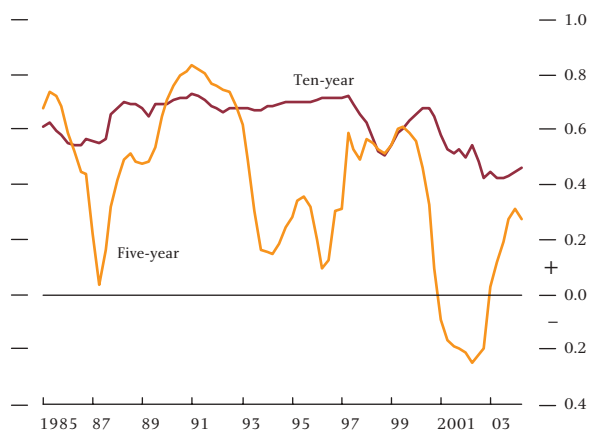
(1) From 1974 to 1995 this survey was carried out by Gallup. Both surveys were carried out in June and July 1995, and differences in the levels recorded in those months have been used to splice the Gallup data onto the GfK data.

(2) The major purchases balance shows a distinct seasonal pattern, and tends to rise significantly in months of strong price discounting (most notably in January). In this article we use a version of this balance that has been seasonally adjusted, using the US Census Bureau’s X-12 programme, and a seasonally adjusted aggregate balance that is a simple average of the published data on questions one to four and the seasonally adjusted major purchases balance.

contemporaneous correlations shows that the relationship between consumption and confidence has varied over time, and has weakened considerably during the past three years (see Chart 2).

Given the reasonably close relationship shown in Chart 1, confidence surveys are often considered as indicators of current and future consumption prospects. The permanent income hypothesis—a standard theoretical framework for analysing consumption⁽¹⁾—suggests that past values of confidence (or any other variable) should not have a role in forecasting future consumption growth. But distortions in the real economy, such as credit constraints, mean that the permanent income hypothesis is unlikely to hold fully in practice. And moreover, contemporaneous values of confidence indices are published well ahead of direct estimates of household spending. So if confidence

Chart 2
Rolling correlations of confidence and consumption growth



Sources: Gallup, Martin Hamblin GfK and ONS.

(1) See Hall (1978).

measures contain information about people's perceptions or expectations of their lifetime resources, they may therefore give us an early indication of current consumption growth.

Despite the relationship between confidence and consumption, the source of the information in confidence measures is important in determining their usefulness in predicting consumer spending. It may simply be a summary of households' interpretation of other publicly available information, such as income growth and asset prices. But it may also contain private, incremental, information, which is more likely to be useful in improving forecasts of consumption growth. The following section considers which type of information confidence measures may be capturing.

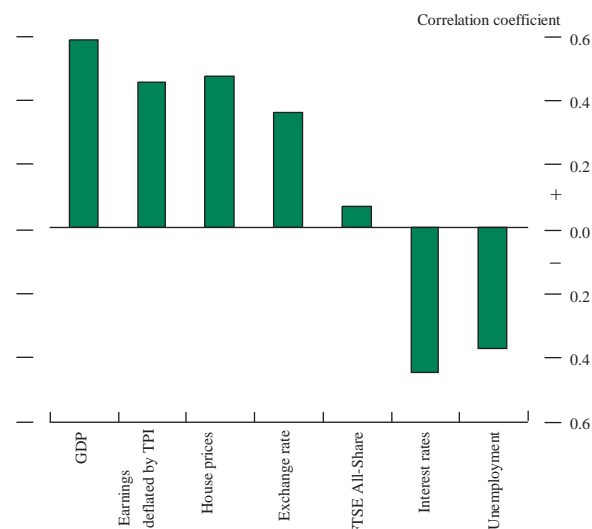
What do consumer confidence measures capture?

In order to be certain of what information respondents are taking into account when answering the confidence surveys, we would need to know how each respondent interpreted the questions. Although this is impossible, we may be able to draw some conclusions by analysing how the observed consumer confidence measures react to developments over time.

Chart 3 shows the correlations between the GfK aggregate balance and a range of other economic indicators in the United Kingdom. To the extent that there are strong relationships between the confidence measures and other macroeconomic variables, it is more likely that the survey balances are simply summarising information available from other sources. The correlations between economic variables and confidence generally have the signs we might expect: positive for income variables, asset prices and GDP growth, and negative for interest rates and changes in unemployment. And most of the correlation coefficients are significant.

These correlations might indicate that the survey balances are simply summarising information available from other sources, and that there is little incremental information in the confidence measure. But all the relationships shown here are bivariate. Ideally, we need to aggregate the other information sources in order to assess how much of the variation in the survey balances is associated with changes in these variables. The next section considers one way of doing this.

Chart 3
Correlations between consumer confidence and macroeconomic variables^(a)



Sources: Bank of England, Halifax and ONS.

(a) Quarterly correlations over the period 1984 Q1 to 2004 Q2. All macroeconomic variables are expressed as four-quarter percentage changes, except the unemployment rate which is the four-quarter percentage point change, and interest rates which are in levels (per cent).

Explaining movements in consumer confidence

Although consumer confidence appears to be related to a number of key macroeconomic variables, there may also be other factors affecting the confidence survey balances that provide important incremental information on consumers' views. This could be particularly important in assessing the usefulness of the confidence measures in forecasting consumption. One way to identify the potential incremental information in the survey balances is to filter out the effects of standard economic determinants of consumption. The movements in confidence predicted by these variables would constitute the 'explained' component of confidence, while the residual element would represent the 'unexplained' component. The unexplained component may reflect how consumer confidence reacts to non-economic factors, such as wars and terrorist attacks. Or it may reflect the fact that the interactions between the economic determinants of confidence are more complex than allowed for in a simple econometric equation. For example, confidence may react more strongly than typically expected to unusual or large economic events, such as the exit from the ERM in 1992. Both of these would be captured by the unexplained component, and so that may contain incremental information for spending decisions.

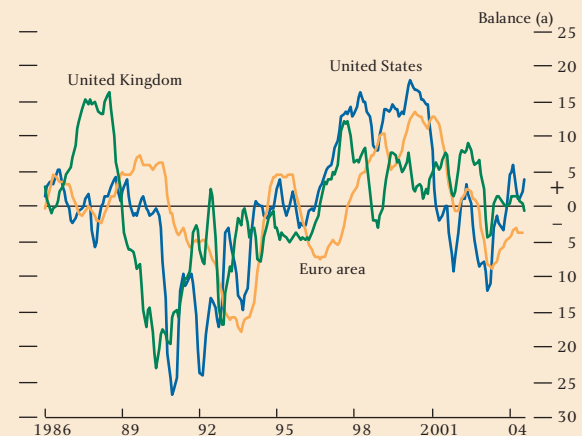
We use a simple equation that filters out the effects of earnings growth, the change in the unemployment rate,

Comparisons with consumer confidence surveys in other countries

The University of Michigan survey in the United States and the European Commission survey in the euro area are based on very similar questions to the GfK survey. Chart A shows the headline measures for the three different economies. All three follow a broadly similar pattern, consistent with the somewhat synchronised developments in the three areas over the past 20 years. But there are substantial differences in shorter-term movements, reflecting economy-specific factors. Confidence in the United Kingdom was unusually high in the late 1980s, and also remained somewhat stronger than in the United States and the euro area in 2002. This is consistent with the relatively strong economic performance in the United Kingdom during those periods.

US and euro-area consumer confidence seem to be related to the same macroeconomic factors as in the United Kingdom. There are strong positive correlations between confidence and real income and

Chart A
Consumer confidence



Sources: Martin Hamblin GfK and Thomson Financial Datastream.

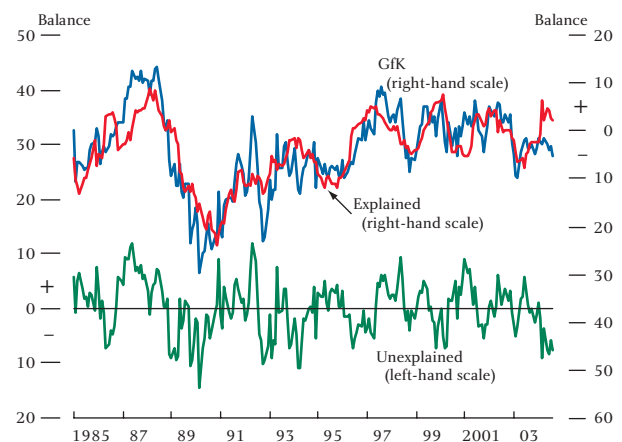
(a) Three-month moving averages of deviations from averages since 1986.

GDP growth, and negative correlations with interest rates and changes in unemployment.

interest rates, changes in the cost of living as measured by the tax and prices index (TPI), house price inflation, and equity price and exchange rate changes on the monthly GfK aggregate confidence balance (see equation (1) in the appendix).⁽¹⁾ Such an equation can explain two thirds of the movements in UK confidence over the past 20 years. As can be seen in Chart 4, the equation fits reasonably well over the past, with economic fundamentals explaining the broad trends in consumer confidence.

Looking at the unexplained component in a bit more detail, we find that many of the sharp movements in the unexplained component of confidence are concentrated around key events (see Chart 5). For example, it fell sharply in the build-up to the Gulf War in the early 1990s, the UK exit from the ERM (even after accounting for the direct impact of the exchange rate depreciation on confidence), 11 September, and the build-up to the war in Iraq last year. There were also rises in the unexplained component: for example following the general elections in April 1992 and May 1997. There was a sustained period of positive unexplained confidence in the second half of 1997, which may have reflected the

Chart 4
Explained and unexplained confidence



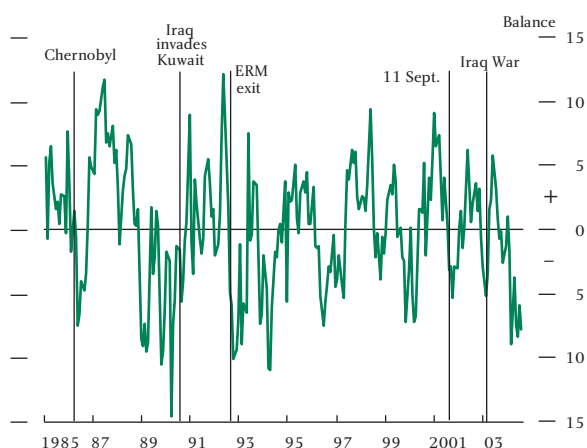
perceived boost to households' current and lifetime resources from the building society demutualisations that summer when UK households received windfall payments of around £30 billion.⁽²⁾

There are also some periods where there are no obvious events which might have led confidence to diverge from its determinants. For example, confidence fell sharply in Spring 1994 when its determinants remained robust.

(1) We use lagged values of these data so this decomposition can be done when the GfK data are published.

(2) In theory, as households who received these windfalls were previously members of the society, they already 'owned' this wealth. The windfall payments simply converted their claim on the assets of the building society into a more liquid form. However, the payments would boost households' view of their available resources if they did not previously realise the value of their building society assets or if they were previously credit constrained (for further details see boxes in the *Inflation Report* in February and November 1997).

Chart 5
Unexplained confidence at key dates



And confidence appeared unusually resilient in late 2000 and early 2001 as its determinants, particularly real earnings growth, weakened. In 2004 confidence has remained subdued whereas continued rises in house prices, a recovery in equity markets and strong growth in earnings suggest that confidence should have risen back to the levels seen in 2002.⁽¹⁾ This weakness could reflect continued worries about the geopolitical situation, or consumers' expectations about economic variables (eg future interest rate rises or a slowing in house price inflation) which we do not directly capture in our simple model.

But the crucial question remains whether consumer confidence, either the explained or unexplained component, provides useful additional information for variables such as consumption. This we explore in the next section.

Similar analysis can be undertaken on the US and euro-area measures of consumer confidence. In the United States, using a similar equation to model confidence, we find that the chosen macroeconomic factors can explain the broad trend in confidence. And again, many of the significant declines in the unexplained component occur around the time of military action and terrorist attacks. In the euro area, data constraints make this type of analysis more difficult. However, the strong (inverse) correlation between confidence and changes in unemployment means that this alone can explain the broad movements in confidence. But there is still evidence that euro-area confidence fell by more than economic

factors suggested in the build-up to the recent war in Iraq.

Consumer confidence and consumer spending

In the previous section we showed how confidence could be explained in large part by the determinants of consumption suggested by economic theory. We now consider whether it is the common economic determinants of both confidence and consumption that explain the strong observed correlation between the two, or whether the unexplained component of confidence also plays a role. In order to examine the relationship between monthly changes in confidence and consumer behaviour, retail sales data (which, unlike the broader measure of household consumption, are available at a monthly frequency) are used in the analysis.

Looking at the data, retail sales seem to move more in line with the explained than the unexplained component of confidence (see Charts 6 and 7). And this is borne out by simple correlations which suggest that the unexplained component is not related to annual retail sales volumes growth, whereas the explained component is strongly correlated—indeed, more so than the aggregate balance. Further, looking at regressions of retail sales on consumer confidence, we can better explain retail sales by splitting out the explained and unexplained components of GfK than using the aggregate balance (see equation (2) in the appendix). And the unexplained component is insignificant in that equation. This suggests that, on average, the confidence indicator does not contain additional information on how households aggregate news on economic fundamentals. And although other non-economic factors may influence confidence, they do not appear to affect spending decisions, at least systematically. Care should be taken, therefore, when considering the implications for consumption of a given change in confidence, especially for changes that do not appear to be related to economic fundamentals. For example, in 2004, retail sales growth has picked up in line with explained confidence, suggesting that the unexplained factors that have affected overall confidence negatively have not affected consumer spending on goods.

A more sophisticated way to look at the information contained in confidence balances is to take a standard forecasting equation for consumption and look at

(1) Part of this pickup reflects the sharp increase in bonuses included in our earnings measure around the turn of the year. Excluding bonuses the rise would have been less sharp, but we do not have a long-run series excluding bonuses to use in this analysis.

Chart 6
Explained confidence and retail sales

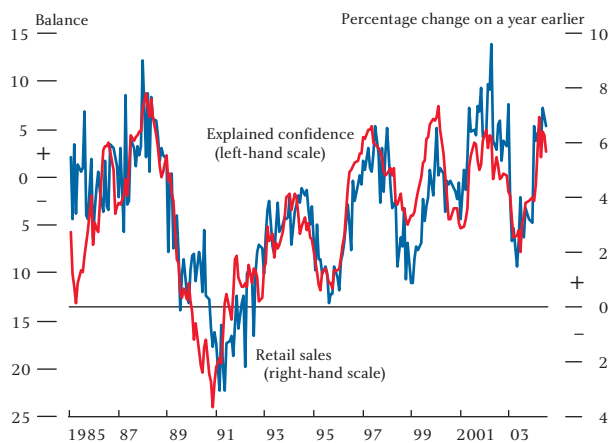
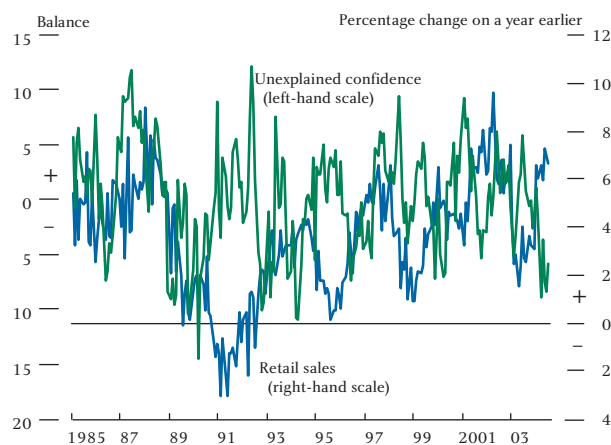


Chart 7
Unexplained confidence and retail sales



whether adding consumer confidence as an explanatory variable can improve its performance. As with the analysis above, this separates out that part of confidence not captured by the other variables in the equation. We find that a standard error-correction model⁽¹⁾ (where consumption is a function of labour income, wealth and interest rates in the long run, and labour income, house prices, equity prices, employment growth, and interest rates in the short run) is only slightly improved by adding the aggregate confidence balance contemporaneously (see equation (3) in the appendix).⁽²⁾ And past values of confidence have a similar impact. This is consistent with the results shown above: once we strip out that part of confidence explained by the other dynamic terms in the equation, it has little explanatory power for consumption. In contrast, Pain and Weale (2001) estimate ECM consumption functions with dynamics in income and

net wealth for the United States and the United Kingdom and find a more significant role for confidence in both countries. Their findings have some economic as well as statistical significance—a 10 percentage point fall in the GfK balance in the United Kingdom is estimated to reduce quarterly consumption growth by nearly 0.3 percentage points, around 30% larger than the coefficient found in our analysis. One reason why their results differ from those we have found for the United Kingdom is the choice of dynamic terms in the consumption function. Our equation contains dynamic terms in a greater variety of series so the more significant confidence term found by Pain and Weale may in part reflect the omitted dynamic series.

Our analysis suggests that confidence measures in themselves contain little information on consumption behaviour over and above that available from other sources. But it is important to remember that these methods can only tell us about the average effects of unexplained confidence on spending. By its nature, it is likely that unexplained confidence is picking up a wide variety of economic and non-economic shocks, some of which are more likely to affect spending decisions than others. Many of those who do not think confidence has incremental power in general conclude that it can contain independent information at some times. For example, Garner (2002) looked at 'unusual' events and concluded that confidence did have explanatory power for US consumption growth at times (the first Gulf war) but not at others (11 September 2001). Looking at our data series, the fall in unexplained confidence in 1998 does seem to be related to the slowdown in retail sales growth. But at other times, consumers seem to have carried on spending despite their relative pessimism. Such event analysis is not very helpful for economic forecasting, therefore, as it is not possible to know at the time of an event that affects confidence whether or not it will also affect consumption.

In contrast to the UK results, there does appear to be some information in both the explained and unexplained components of confidence in the United States. Using a simple equation to explain monthly consumption data, both the explained and unexplained components are significant at the 10% level. Other authors have found similar results using a variety of different variables to proxy confidence. Some, such as

(1) See for example equation 6.2.8 in Bank of England (2000), *Economic models at the Bank of England, September 2000 update*, available at www.bankofengland.co.uk/modcouupdate.htm. The equation is estimated between 1975 Q2 and 2002 Q4.

(2) The R^2 increases by less than 0.1 percentage points when confidence is added to the equation.

Carroll, Fuhrer and Wilcox (1994) find a role for confidence once they have controlled for income growth, and Fuhrer (1993) concludes that the incremental information in confidence indices is statistically significant, but the economic significance is small, with contemporaneous forecasts of consumption improved only modestly. However, Garner (1991) concludes that confidence does not in general have incremental power, and in ordinary times forecasts of consumption using the determinants of confidence produce better forecasts than using confidence itself.

Conclusion

Consumer confidence is closely related to consumption in the United Kingdom, and has predictive power for future consumption. But this appears to reflect the fact that the two series have common determinants. The standard economic determinants of consumption, such

as income, wealth, and interest rates, can explain a large part of the movements in consumer confidence. This economically explained element of confidence does not add any incremental information on UK consumption as it is already captured in readily available official data. The unexplained component represents the potential incremental information for consumption in the consumer confidence measure. But that does not appear to be closely related to consumer spending on average. And, as a result, adding consumer confidence to a standard forecasting equation for UK consumption only improves its ability to explain the past a little. Confidence measures may still be useful as a more timely indicator of consumption, but they can be misleading. Other influences on confidence, such as non-economic events, do not appear to influence UK households' spending decisions in a predictable manner. It is important therefore to assess why consumer confidence has changed before determining its likely implications for consumption.

Appendix

Estimated by OLS January 1985 to August 2004:

$$\begin{aligned} \text{GfK} = & -0.017 - 1.006 \cdot \text{RS}(-1) - 0.990 \cdot \Delta_{12} \text{U}(-1) + 155 \cdot \Delta_{12} \text{earn}(-2) - 232 \cdot \Delta_{12} \text{tpi}(-1) + 9.47 \cdot \Delta_{12} \text{eqp}(-1) \\ & (0.928) \quad (0.311) \quad (0.386) \quad (41.5) \quad (24.2) \quad (2.33) \\ & + 21.3 \cdot \Delta_{12} \text{eri}(-1) + 24.6 \cdot \Delta_{12} \text{hp}(-1) \end{aligned} \quad (1)$$

$$\bar{R}^2 = 0.65$$

Estimated by two-stage least squares January 1985 to July 2004:

$$\Delta_{12} \text{sales} = 0.0451 + 0.00264 \cdot \hat{\text{GfK}} + 0.000312 \cdot (\text{GfK} - \hat{\text{GfK}}) \quad (2)$$

$$\bar{R}^2 = 0.61$$

Estimated by OLS 1975 Q2 to 2002 Q4:

$$\begin{aligned} \Delta c = & -0.042 + 0.215 \cdot \Delta \text{ly} + 0.477 \cdot \Delta \text{emp}(-1) + 0.024 \cdot \Delta \text{nfw} + 0.110 \cdot \Delta \text{ghw} - 0.001 \cdot \Delta \text{RS} - 0.001 \cdot \Delta \text{RS}(-1) \\ & (0.0138) \quad (0.0451) \quad (0.182) \quad (0.00930) \quad (0.0350) \quad (0.000577) \quad (0.000571) \\ & - 0.165 \cdot (\text{c}(-1) - \text{ly}(-1)) - 0.022 \cdot (\text{c}(-1) - (\text{nfw}(-1) + \text{ghw}(-1))) - 0.0003 \cdot (\text{RS}(-2) - \text{INFE}(-2)) + 0.000181 \cdot \text{GfK} + \text{dummies} \\ & (0.0349) \quad (0.00559) \quad (0.000192) \quad (0.0000912) \end{aligned} \quad (3)$$

$$\bar{R}^2 = 0.73$$

GfK = GfK consumer confidence aggregate balance (seasonally adjusted).

RS = Base rate of interest.

U = Unemployment rate.

EARN = Average earnings index.

TPI = Tax and prices index.

EQP = FTSE All-Share.

ERI = Sterling ERI.

HP = Halifax house price index.

$\hat{\text{GfK}}$ = Fitted values from equation (1).

Sales = Retail sales volumes.

C = Household final consumption expenditure.

LY = Households' real labour income.

Emp = Employment rate.

NFW = Households' real net financial wealth.

GHW = Households' real gross housing wealth.

INFE = Expectations of annual RPIX inflation.

Lower-case letters indicate natural logarithms.

Standard errors in brackets.

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