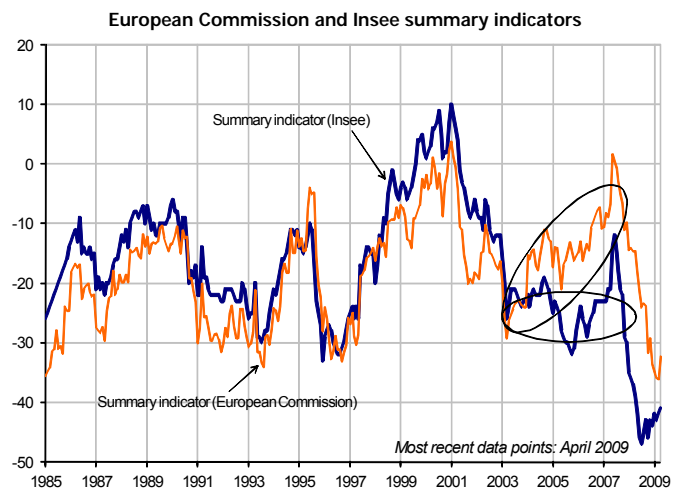# Survey of household confidence and French consumer spending

■ Insee's monthly consumer confidence survey allows us to model households' behaviour with regard to their consumption of goods and services. However, this model is weaker when the cycle goes into reverse.

■ The monthly consumer confidence survey administers eleven questions to ascertain households' perceptions of their economic environment. Replies are synthesised in the indicator of consumer confidence, which presents a fair view of the common trend running through the eleven opinion balances.

■ Until 2003, consumers' responses were directly linked to the change in unemployment. Inflation concerns appear to have gained in importance between 2003 and 2007, while the link between unemployment and the survey's overall findings weakened, particularly when unemployment fell. With the current crisis, unemployment has re-emerged as a key determinant of responses to the survey.

■ In fact, consumer responses to the survey appear to be influenced above all by what is most negative in their environment, with inflation concerns prevailing when this is high, and unemployment concerns moving to the fore when that is high.

■ The link between trends in the summary indicator and those for household consumption is too weak to produce a reliable forecast of consumption in the short-term based on this indicator alone, especially between 2003 and 2007, when the trends were reversed. On the other hand, by using some of the survey balances we can chart most of the dynamics of consumption in the short term.

European Commission and Insee summary indicators

Summary indicator (Insee)

Summary indicator (European Commission)

Most recent data points: April 2009

Sources: Insee, European Commission

1. Changes in the Insee summary indicator reflect more than just unemployment trends

The French national institute of statistics, Insee, conducts a monthly survey of French consumer sentiment[1], charting French consumers' perceptions of their economic environment via eleven qualitative questions.

- Three of these concern inflation and unemployment (past inflation and outlook, unemployment outlook)
- Two very general questions cover living standards in France (past change and outlook)
- Six questions have to do with respondents' personal position: financial position (past, present level and outlook), timeliness of saving, saving capacity, and timeliness of major purchases

1.1 French consumers have a clear perception of unemployment and inflation trends

The balance of consumer opinions[2] regarding the outlook for unemployment tracks actual unemployment changes fairly well (see Chart 1), especially so with the new quarterly unemployment rate series, which suggests that households have a clear perception of the labour market situation and that their responses are not based on available statistical indicators alone[3].

Chart 1: Observed unemployment (new series) and perceived unemployment

Most recent data points: April 2009 for the balance - Q4 2008 for the unemployment rate
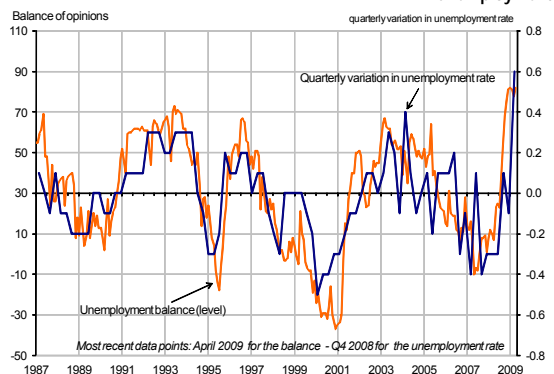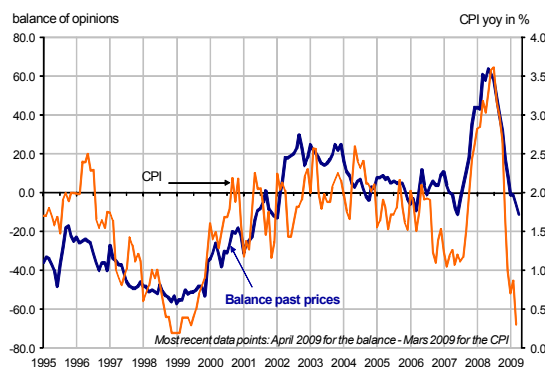
Source: Insee

Where inflation is concerned, consumers' perceptions are fairly close, historically, to inflation as measured by Insee's consumer price index (CPI) (see Chart 2), at least up until 2002. In 2001, when prices were indicated in both francs and euros, consumers began to perceive inflation as being higher than the figure measured by the rise in the consumer price index, and still more so at the time of the launch of euro notes and coins at the beginning of 2004[4]. Since then the gap has persisted, as if consumers had become structurally more pessimistic over price trends, even though the real impact of the euro on inflation was moderate (around ¼ of a percentage point) and short-lived, according to the Banque de France and Insee[5].

Chart 2: Observed and perceived inflation

Most recent data points: April 2009 for the balance - Mars 2009 for the CPI

Source: Insee

How to account for this gap between observed and perceived inflation? Several studies have concluded that consumers' expectations are adaptive for the most part. Yet, given consumers' "systematic expectation errors" regarding price trends, it is tempting to conclude that their expectations are neither rational nor adaptive. It is also possible that the consumer price index, as at present constructed, does not reflect the price perceptions of certain consumers, particularly the least well-off among them. Another explanation might be that perceived inflation corresponds to changes in the prices of just some of the goods and services covered by the CPI (e.g. food products, etc.) but less to changes in the price of others (e.g. electronics, etc.)[6]. After all, not all consumers are affected in the same way by rising prices. According to Lenglart[7], it is low-income consumers that are most exposed to price rises, given their consumption patterns. However, according to Lollivier[8], it takes only 10% of survey respondents to reverse the direction of the summary indicator, given the large proportion of respondents giving neutral answers. Thus it is possible that the balance on perceived inflation is determined chiefly by those consumers most exposed to rising prices.

---

(1) Twice-yearly survey from 1958; four-monthly from 1965; monthly, except in August, from 1987; then monthly, including August, from 2008.

(2) The balance of opinions is defined as the difference between the proportion of respondents expressing a positive opinion (up) and the proportion of those expressing a negative opinion (down).

(3) A minority of consumers is thought to form "rational expectations" in the sense that they harness all available information on price and unemployment trends, whereas the majority of consumers form "adaptive expectations", simply extrapolating from recent trends. See Gardes F., Ghabri S., Madre J.-L., Pichery M.-C. "Rationalité des anticipations des ménages: tests quantitatifs sur données individuelles françaises" (Rationality of consumer expectations: quantitative tests on data concerning French individuals), *Revue Économique (1997)*.

(4) Lefranc S., "*Le brouillage des prix induit par le passage à l'euro fiduciaire a-t-il affecté la consommation des ménages dans la zone euro?*" (Has the blurring of prices brought about by the introduction of the euro notes and coins affected household consumption in the Euro area?), *DP Analyses Économiques no. 20, November 2003*.

(5) Banque de France (2006), "*L'euro est-il inflationniste?*" (Is the euro inflationary?). *Documents et débats n°1, Janvier 2007*. Insee (2004), "*L'inflation au moment du passage à l'euro*" (Inflation at the time of the euro's launch), in *L'économie française - Édition 2003-2004*.

(6) See Report of the Commission on measuring consumer purchasing power "Mesure du pouvoir d'achat des ménages" chaired by Alain Quinet: http://www.minefe.gouv.fr/directions_services/sircom/rap_mesure_pouvoir_achat.pdf

(7) Lenglart F., "*Pouvoir d'achat mesuré, pouvoir d'achat perçu: les raisons du décalage*" (Measured purchasing power, perceived purchasing power: reasons for the gap) *Économie Française, 2007*.

(8) Lollivier S., "*Anticipations des ménages et environnement économique*" (Consumer expectations and the economic environment), *Économie et Statistique, 1999*.

1.2 The summary indicator of the survey calculated by Insee long reflected the change in unemployment, chiefly

The indicator most commonly used in commenting on the survey's results is a summary indicator calculated very simply by Insee, one that turns out to be useful in comprehensively summarising the common information yielded by the opinion balances for the period 1987-2009 (see Box 1).

This indicator reflects the impact of major events such as elections or strikes, etc. (see Chart 5) on consumer sentiment at certain very brief moments in time. But it serves above all to summarise consumer sentiment on the economic situation[9].

Box 1: The summary indicator provides a good synthesis of the trend common to all eleven opinion balances

Insee's summary indicator is the mean of the five balances, including personal financial position (past change and outlook), living standards in France (past change and outlook), and timeliness of purchases. The construction of the Insee synthetic indicator, consequently, is simpler than the one calculated for other surveys, e.g. the Industry survey, which is based on a factor analysis. However, it is very close to the first factor derived from a static factor analysis[a] conducted on the survey's eleven balances between 1987 and 2008, which is calculated to best summarise the variance common to all of the balances (see Chart 3). The five balances that most explain the variance common to all of the balances turn out to be the ones used by Insee to calculate the summary indicator (see Chart 4), and more particularly past living standards and personal financial position. The main difference between this first factor and Insee's summary factor is the weighting assigned to each balance: in the Insee indicator, the five balances are given the same weighting, whereas in the first factor it is the balance associated with past living standards that has the highest weighting. This tends to underline the appropriateness of the summary indicator, and in particular the non-inclusion of the balances on unemployment and inflation, since changes in these are already captured in the balances included in the summary indicator.

Graphique 3 : Summary indicator and first common factor
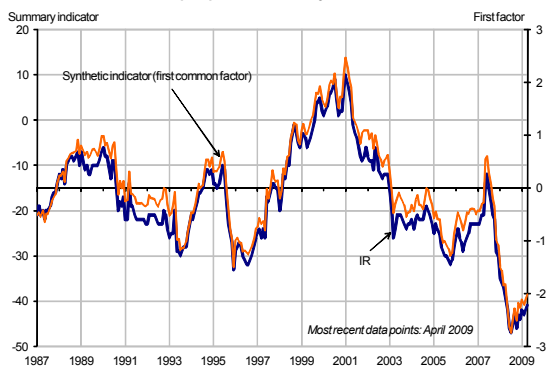
Sources: Insee, DGTPE

Graphique 4 : Weighting of the different balances in the first common factor
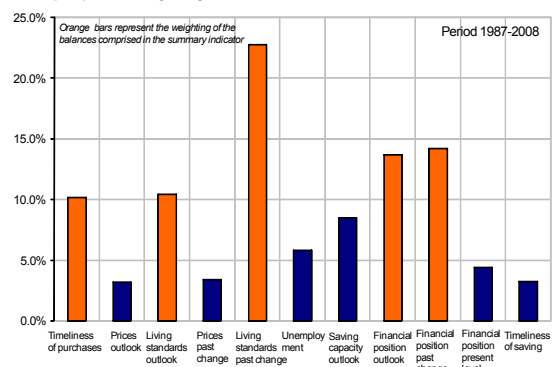
Sources: Insee, calculs DGTPE

a. Factor analysis serves to chart the information common to the balances considered, based on the first common factor extracted, permitting a simplified interpretation of the survey. Each opinion balance is broken down into common components (a proportional term of the common factor) and a specific component (the residue of each balance). The first common factor obtained is thus the linear combination of the selected balances (the weighted sum, where the coefficient associated with each balance represents the weight of each balance in the common variance of all of the balances).

Chart 5: Summary indicator of consumer confidence
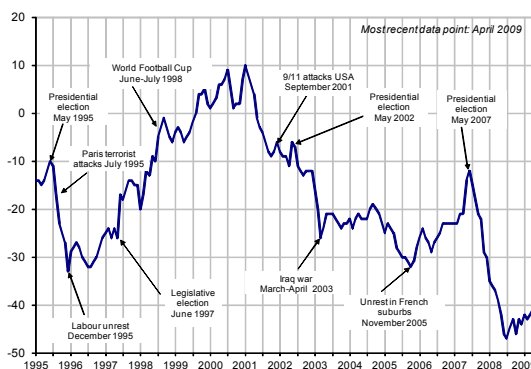
Source: Insee

This summary indicator does not include the balances of opinions on inflation and unemployment, but when consumers do express their opinions on changes in general living standards in France, they implicitly factor in information on inflation and unemployment. That also applies to the question on personal financial position: each respondent no doubt takes into account the work situation on each member of the household relative to the risk of unemployment and his/her purchasing power.

Until 2002, the summary indicator was highly (negatively) correlated with consumer perceptions of unemployment (see Chart 6). The correlation with perceptions of price changes is much less clear cut, but it has strengthened considerably since 2004 (see Chart 7). This shows that the general questions on the economic situation comprised in the summary indicator (living standards, financial position, timeliness of purchases) did indeed incorporate the perception of unemployment (and relatively little that of inflation) until 2001, but that this was less true thereafter.

Chart 6: Summary indicator and perceived unemployment
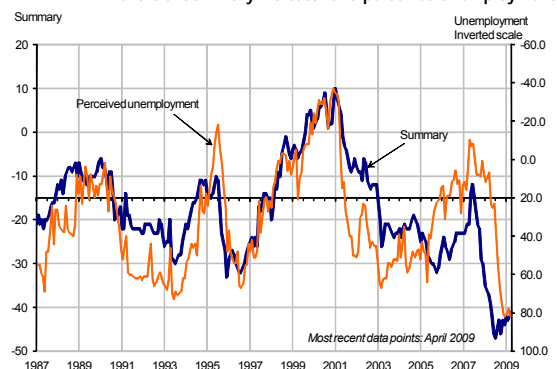
Source: Insee

---

(9) Lollivier S., "*Anticipations des ménages et environnement économique*" (Consumer expectations and the economic environment), *Économie et Statistique, 1999*.

Chart 7: Summary indicator and past prices
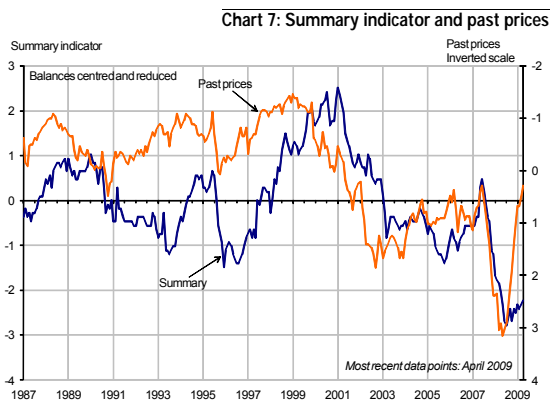
Source: Insee

1.3 Can the fact that the balance of perceptions of unemployment is not included in the summary indicator skew the summary indicator in certain periods?

These results raise questions as to the key message embodied in the summary indicator: until 2003, the message mainly concerned the impact of unemployment on consumers' economic environment, even if the balance on perceived unemployment was not included in the calculation of the summary indicator. Consumers' behaviour in responding to general questions on the economic situation (living standards, financial position, timeliness of purchases) appears to have shifted since 2003, giving less weight to changes in unemployment in their responses to these questions.

Chart 8: Insee's summary indicator with and without unemployment
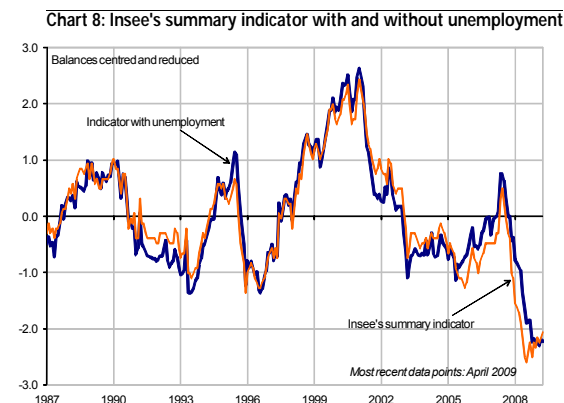
Sources: Insee, DGTPE

Interpretation: The indicator with the balance on unemployment thus calculated is the arithmetic mean of balances on unemployment, past and future living standards and future financial position.


Box 2: Comparison with the survey published by the European Commission

The Insee survey of consumer confidence is part of the programme of harmonised Europe-wide surveys. The European Commission has opted for a different approach from that of Insee in summarising the survey results, using four balances instead of five. Only two of the balances used to calculate the summary indicator are common to both approaches, namely future personal financial position and future living standards. The Commission rejects all retrospective balances and includes future saving capacity and the outlook for unemployment.

#### Table 1: Balances comprised within the summary indicator

	Insee	European Commission
Living standards past change	X	
Living standards outlook	X	X
Personal financial position-past change	X	
Personal financial position-outlook	X	X
Timeliness of major purchases	X	
Unemployment-outlook		X
Future saving capacity		X

Graphique 9 : The European Commission's and Insee's summary indicators
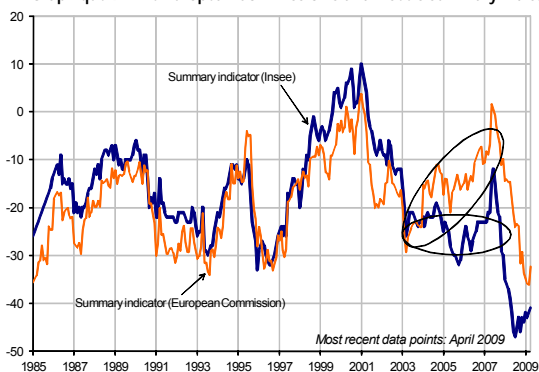
Sources: Insee, European Commission

Graphique 10 : Indicators of consumer confidence in the Euro area
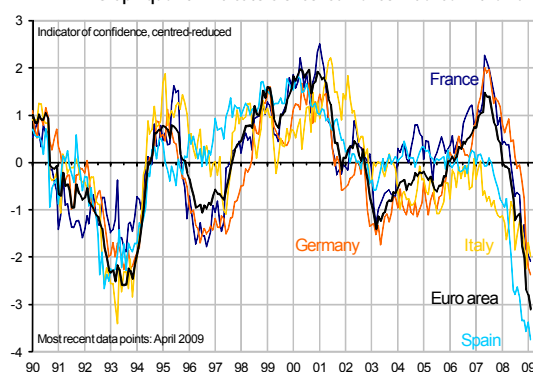
Source: European Commission

The summary indicator calculated by the Commission has reflected less pessimistic consumer sentiment than the one calculated by Insee since 2003. Consequently the optimism found in consumer perceptions in the Commission's indicator over the period 2005-2007 stems from the inclusion of the improving labour market in France.

Mainly because of these differences in the choice of questions making up the summary indicator, the relative position of French consumer sentiment on the economic situation differs from that of the other major Euro area countries (see Chart 10).

This then raises the question as to whether the absence of a balance on unemployment in the calculation of the summary indicator, since 2003, has not resulted in a summary indicator giving an over-pessimistic picture of consumer perceptions of the economic situation. This question is all the more legitimate given that the European Commission's summary indicator includes it in its summary indicator and provides a less negative picture of consumer sentiment regarding the economic situation between 2003 and 2008 (see Box 2).

Consequently, by building a summary indicator comprising the same balances as the one calculated by Insee but including the balance on the change in unemployment, and by removing the one on past financial position (this being the balance most correlated with the others), we obtain an indicator presenting a less pessimistic picture of consumers' perceptions of their economic environment between 2005 and mid-2008 (see Chart 8).

2. Consumers' response behaviour has changed, highlighting the shift between unemployment and inflation

2.1 A change in consumers' response behaviour...

The previously observed gap between the summary indicator and the change in unemployment over the period 2004 and 2007 heralds a possible change of behaviour in responses to the survey over this period. The fact of correctly perceiving the fall in unemployment might have had less influence than previously on responses to the other questions (living standards in France, financial position, timeliness of purchases, etc.).

Thus it may be that the way in which French consumers assess past or future changes in inflation and unemployment may not affect their response behaviour regarding all of the survey questions in the same way, depending on the period.

2.2 ... borne out by factor analysis

This possible change in response behaviour can be grasped by conducting a static factor analysis on all opinion balances at different periods: the change in the weighting of the different balances in the common variance of all balances will be taken here as an indicator of changes in response behaviour. The first result, not dealt with in detail here, is the considerable instability in the weighting of the different balances in the variation common to all of the opinion balances. This shows that the summary indicator, which is close to the first common factor of a factor analysis over the period 1987-2008, correctly summarises the survey over the whole of this period, but not necessarily for certain sub-periods.

Between January 1998 and December 2007 that the weighting of consumers' perceptions of price changes gradually become greater than that of perceptions of unemployment (see Chart 11).

This period is characterised by an increased perception of inflation at the time of the euro's launch together with an overall improvement in the labour market. Since that increase in inflation, perceptions of price changes now make a greater specific contribution to the common variance than perceptions of unemployment, whereas previously the reverse was true.
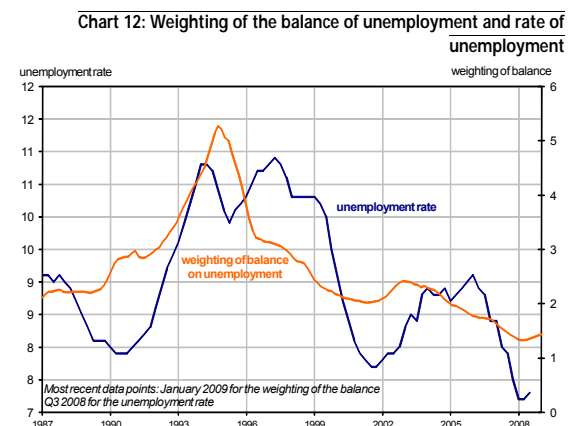
The weighting of the balance on perceptions of change in unemployment, on the other hand, tends to decline with falling unemployment. This because there is a positive correlation between the level of unemployment and the relative importance of the balance on unemployment in the variance common to the survey balances (see Chart 12). This means that when the labour market improves, the balance associated with unemployment carries less weight in the variance common to all of the balances, as if consumers retained a pessimistic bias lessening the impact of the fall in unemployment (although this is clearly perceived, see part 1).

Since summer 2008, on the other hand, the question on inflation is becoming less important, given the recent fall in prices, whereas unemployment concerns are starting to gain ground as the economic situation worsens.

Overall, it looks as if consumers are influenced in their responses to the survey mainly by whatever is most negative, switching from a dominant concern with inflation when that is high, to a dominant concern with unemployment when that is high.

Chart 11: relative weighting of balances in the common variance

Source: DGTPE calculations
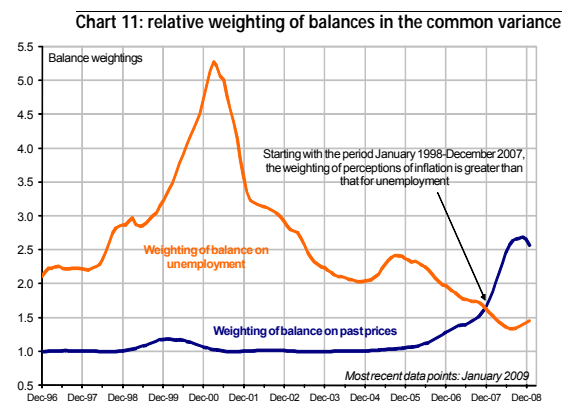
Interpretation: each data point is the result of a factor analysis performed over a 10-year period; thus the period for the first factor analysis (first data point) runs from January 1987 to December 1996, while the last data point covers the period from February 1999 to January 2009.

Chart 12: Weighting of the balance of unemployment and rate of unemployment

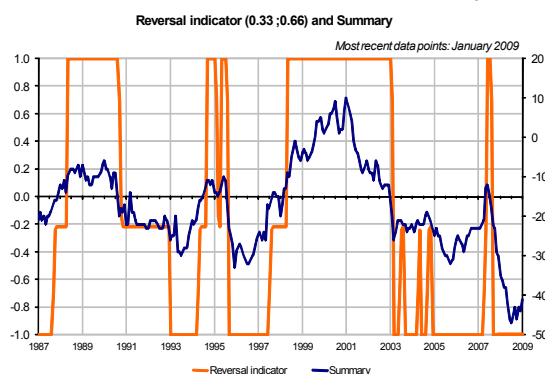*Sources: Insee, DGTPE calculations*

2.3 Constructing a cycle reversal indicator confirms this diagnosis

A consumer confidence survey cycle reversal indicator has been calculated on the first factor of a factor analysis based on all of the questions used to calculate Insee's summary indicator. The method used by Baron-Baron[10] has been adopted for this purpose.

Its contribution to cyclical analysis appears limited, however, since regime changes generally coincide with the shift in Insee's summary indicator above or below its long-term average.

Chart 13: Reversal indicator and Insee's summary indicator

Reversal indicator (0.33 ;0.66) and Summary

Source: DGTPE calculations

3. The survey allows us to reconstitute the short-term dynamics of consumer behaviour

3.1 The summary indicator in the consumer confidence survey very loosely captured the dynamics of consumer behaviour before 2003, and this linkage broke between 2003 and 2007

At first sight, favourable economic conditions, with rising employment and real wages, are conducive to improving consumer confidence and hence increased consumer spending. One would therefore expect to find a link between the consumer confidence survey's summary indicator and consumption: a rise in the indicator would capture buoyant incomes and / or a drop in the saving rate as precautionary savings fall.

But various studies have shown that it is hard to establish a short-term relationship between consumption and the summary indicator. Braun-Lemaire[11] and Brahami[12] have shown that in the short term neither household consumption nor the saving rate can be correctly forecast solely by means of the summary indicator. Studies of data for the United States show that there is therefore more of a long-term causal relationship in the indicator of American consumer confidence[13] than a short-term one. In graphic terms (see Chart 14), it seems nevertheless that the summary indicator of consumer confidence and of households' consumption of goods and services moved in the same direction until 2003. Since 2003, though, their movements appear to be disconnected, with consumption proving to be more vigorous than suggested by the summary indicator.

Between 2003 and 2007, for instance, the sharp deterioration in the consumer confidence survey's summary indicator reflects a widespread pessimism that was more subjective than fact-based, in the sense that it was less associated with a fall in the pace of consumption than in the past.

This diminished linkage between the summary indicator and consumption since 2003 probably reflects a change in the way

in which consumers respond to general questions, with the weighting fluctuating between the respective importance attached to the labour market situation and to inflation for responses to general questions (as discussed in detail in the previous section). This argues for a short-term modelling of consumption based not on the summary indicator but on all of the balances, including those not comprised in the summary indicator.

Chart 14: Summary indicator and consumption of goods and services
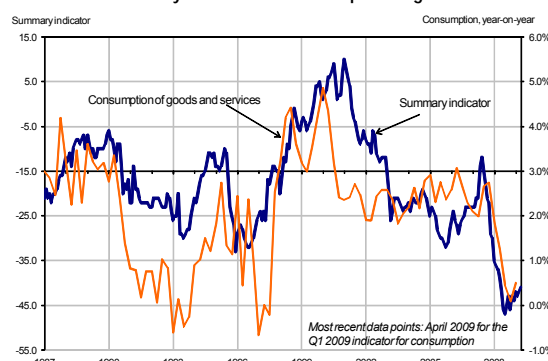
Source: Insee

3.2 It is possible to reconstitute the short-term dynamics of consumption by means of the survey questions, and especially those not incorporated into the summary indicator

It has already been shown that certain components of the survey can be used to chart changes in the household saving rate (Brahami 2005). Accordingly, the balances on the timeliness of purchases, of saving, of the present financial position and perceived inflation, correctly reflect consumers' saving

(10) Baron H. and Baron G., "*Un indicateur de retournement conjoncturel dans la zone euro*", (A cycle reversal indicator in the Euro area) *Économie et Statistique no. 359-360, 2002.* Model based not on the sign of the innovations (as in the Grégoire-Lenglart model), but on the sign and amplitude of the variation (3 states) of one or more balances. An innovation is calculated on the basis of the amplitude of variations relative to what is observed over the whole of the past. The density of these innovations defines the state of cycle based on predefined thresholds that permit this coding: the cycle is at a low state if the density of innovations is less than 1/3, in a high state if it is greater than 2/3, neutral otherwise.

(11) Braun-Lemaire I., Gautier A., "Opinion des ménages et analyse conjoncturelle" (Consumer opinion and cyclical analysis) *Note de conjoncture de l'Insee, March 2001*.

(12) Brahami A., "Taux d'épargne: quel lien avec les indicateur de confiance de l'Insee?" (What is the linkage between the saving rate and the Insee indicator of confidence?) *Diagnostics Prévisions et Analyses Économiques no. 69, April 2005*.

(13) Gelper S., Lemmens A., Croux C., (2007), "Consumer sentiment and consumer spending: decomposing the Granger causal relationship in the time domain".

behaviour over a six-month period (but not necessarily from one quarter to the next).

Based on the same method[14], we can satisfactorily model quarterly consumption changes (see Chart 15: Estimation with survey) by selecting balances empirically.

However, the model of consumption based on consumer survey balances is weaker in periods of recession or sharp slowdown (1993, 2001), making its use less reliable for the recent period. In an attempt to remedy this difficulty, a supplementary model has been estimated with a variable intended to provide information on household incomes. The introduction of a lagged GDP growth rate[15] as an indicator of wealth creation and reflecting a sizeable share of household income improves the quality of adjustment at the bottom of the cycle, but not at the end of the period, unfortunately.

Four consumer survey balances have explanatory power in explaining the volume of consumption of goods and services. Only two of these (past and future living standards) are used in calculating the summary indicator.

The other two, not included in the summary indicator, namely present financial position and timeliness of saving, move differently from the balances on past and future living standards, in certain periods.

Aside from the balance on past living standards, the other balances used are not those that contribute most to the common variance of all balances. This brings us back to the observation made in the previous section, namely that perhaps the consumer survey captures a climate of confidence that is more subjective than real (in the sense that a real climate would reflect the dynamics of consumption).

Chart 15: Consumption of goods and services, and estimation with survey balances and lagged GDP
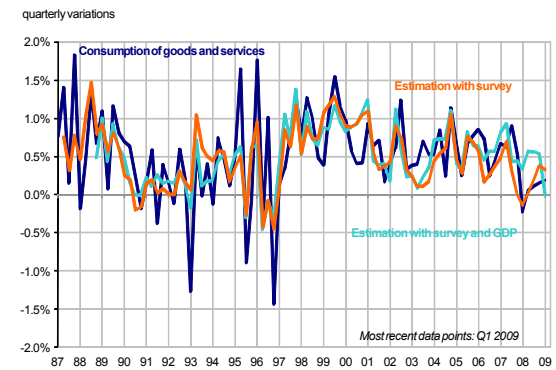
Sources: Insee, DGTPE

Chart 16: Difference between balances on past and future living standards in the consumer survey (PLS and FLS)
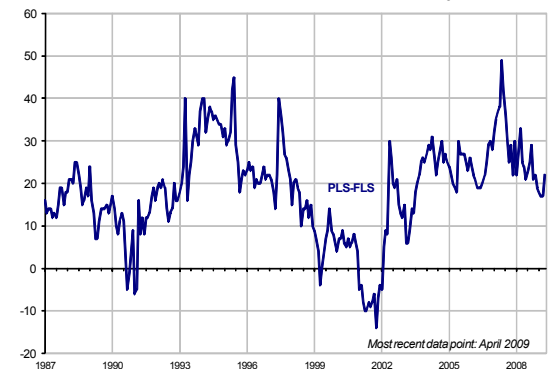
Source: Insee

Table 2: Model for forecasting the quarterly change in consumption based on the consumer survey balances

Estimation period: Q1 1987-Q4 2006	Model with lagged GDP		Model with survey only	
	Coefficient	Student's statistic	Coefficient	Student's statistic
Constant	0.0037	1.52	0.0068	9.87
Living standards-outlook	0.0002	2.53	0.0002	8.11
Living standards-past	−0.0001	−2.45	−0.0002	−6.77
Financial position-present level	0.0005	5.38	0.0004	9.22
Timeliness of saving	−0.0003	−4.27	−0.0003	−15.23
GDP (−1)	0.4950	3.80		
AR(1)			−0.6046	−5.59
CONSUMPTION (−1)	−0.3881	−3.78		
MA(2)	−0.3590	−2.80	−0.6054	−5.17
	adjusted R^2: 0.48		adjusterd R^2: 0.47	
	DW : 2.21	RMSE : 0.4%	DW : 1.81	RMSE : 0.5%

Source: DGTPE calculations

The signs associated with the coefficients of the selected variables (see table 2) are intuitive: a decline in the timeliness of saving may boost consumption, for example. The negative sign of the coefficient in front of the balance on past living standards may seem surprising, but it needs to be seen in the context of an identical coefficient, bar the sign, for future living standards: consequently it is the gap between the outlook for change and past change that is used for forecasting purposes, with a positive sign as expected (see Chart 16). This gap was still substantial at the beginning of 2008 even though opinions on living standards were negative. This means the balances on living standards need to be qualified when commenting on the link between surveys and consumption.

The coefficient associated with the autoregressive variable is fairly large, which explains why forecast consumption sometimes "lags" relative to observed consumption.

Slim DALI

(14) Albeit with one simplification: only one model with quarterly balance is estimated, rather than a different model depending on the number of known survey months in the quarter.

(15) Which can be extended for forecasting purposes by a GDP forecast not dependent on forecast consumption, for example by benchmarking against business sentiment surveys in industry, building and services.

Recent Issues in English

http://www.minefe.gouv.fr/directions_services/dgtpe/TRESOR_ECO/tresorecouk.htm

DGTPE