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Table of Contents

Consumer confidence foreshadows developments in the economy

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Consumer confidence indicators are widely used in monitoring the economic cycle, as they are thought to contain forward-looking information on the path of the economy. Changes in consumer confidence have historically preceded shifts in the economic cycle by about six months. The value of forward-looking indicators is highlighted especially during exceptional inflection points in the economy, such as during the financial crisis or the currently prevailing coronavirus crisis, as these indicators provide readily available information about the future path of the economy. The rebound in consumer confidence and the recovery of the economy appear to be intimately connected.

Consumer confidence explains variations in GDP growth and private consumption growth relatively well

Consumer confidence and its sub-indices are frequently used as forward-looking indicators for economic growth. The consumer confidence indicator compiled by Statistics Finland is used by the Bank of Finland in all of its nowcasting models[1] to estimate current GDP growth. The relative significance of consumer confidence and its sub-components for modelling GDP growth and private consumption growth[2] can be evaluated by, for example, comparing in-sample fits of simple regression models where GDP growth and individual consumption expenditure growth are each regressed on a single variable and its lags.[3]

Table 1 denotes the R-squared values for the consumer confidence indicator and its chief sub-components when serving as explanatory variables for GDP growth and private consumption growth.[4] The R-squared statistic measures the fraction of variation in GDP growth and private consumption growth that is explained by variation in the consumer confidence indicator and its sub-components.

Statistics Finland's consumer confidence indicator comprises four sub-indices: consumer's own economy now, consumer's own economy in 12 months, Finland's economy in 12 months, and consumer's spending money on major purchases in the next 12 months compared to the past 12 months (Chart 1). In addition, expectations of unemployment in Finland in 12 months' time are included in the comparison. The R-squared values presented in Table 1 are reported for regressions where the monthly confidence indicator data have been available for all three months comprising each calendar quarter. Serving as the explanatory variable in the regression is the mean of the confidence indicator for current quarter and two lags, i.e. the means of the three observations taken over the preceding calendar quarter as well as the one before.

Based on the R-squared statistics, it can be posited that consumer confidence indicators do better, on average, at explaining GDP growth than private consumption growth (Table 1). However, the differences in the fit of the various indicators are relatively large. For example, expectations of consumer's own economy in 12 months' time explains less than a quarter of the variation in annual GDP growth, whereas the composite index explains over half of it. Similarly, expectations of economic conditions in Finland in 12 months' time performs relatively poorly in explaining private consumption growth, whereas intended spending on major purchases explains about half of it. It stands to reason that survey questions related to one's personal finances do better at predicting private consumption growth, while indicators focusing on general economic conditions perform relatively better at explaining GDP growth.

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1. See, for example, https://www.bofbulletin.fi/en/2017/5/new-tools-for-monitoring-the-economy/.
2. This has been explored in the academic literature by e.g. S.C Ludvigson in (2004), 'Consumer confidence and consumer spending', Journal of Economic Perspectives, Vol. 18(2), pp. 29–50.
3. This article examines the in-sample fits produced by the consumer confidence indicator and its sub-indices, not their ability to produce out-of-sample forecasts. The relative significance of the variables may change when assessing their forecasting ability.
4. The confidence indicators are included in the regression models in levels and are used to explain annual changes in real GDP or individual consumption expenditure. The consumer confidence figures are assumed to be stationary.

Chart 1.

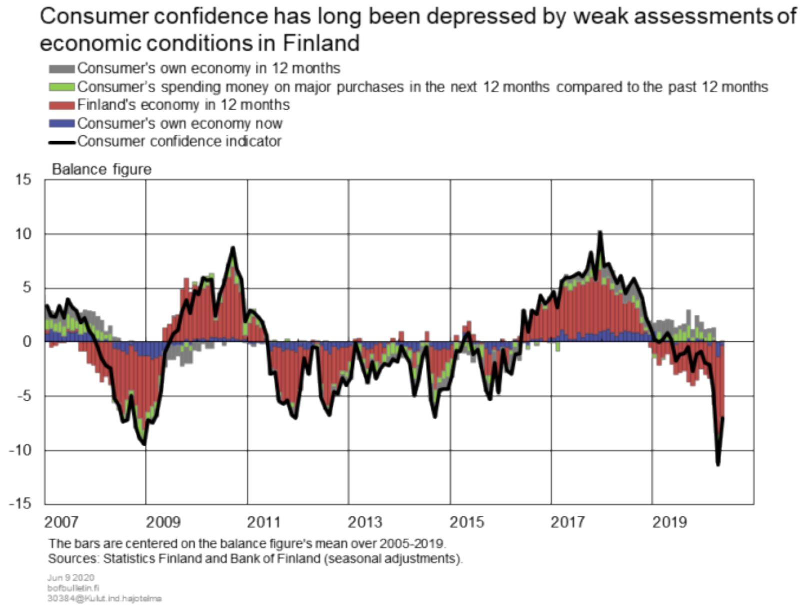


Table 1.

R-squared statistics for GDP growth and individual consumption expenditure growth

	GDP growth	Individual consumption expenditure growth
Consumer confidence, main index	0.58	0.32
Consumer's own economy now	0.47	0.45
Consumer's own economy in 12 months	0.23	0.26
Finland's economy in 12 months	0.36	0.16
Consumer's spending money on major purchases in the next 12 months compared to the past 12 months	0.57	0.49
Unemployment expectations over next 12 months	0.55	0.22

GDP growth is explained best by the main consumer confidence index, spending on major purchases over the next 12 months, and expectations of unemployment in Finland over next 12 months. The latter two indices reflect relatively specific and narrow facets of the economy. Private consumption, in turn, is best explained by expected consumer spending on major purchases. Assessments of one's own current economic situation provide a better fit for explaining private consumption growth than do expectations of one's economic position one year from now. This suggests, perhaps, that survey respondents are better at estimating their current financial position than at predicting the future. This observation may be reversed when the variables are instead used for forecasting private consumption growth.

Beyond these variables, GDP growth is better explained by other variables, including real industrial production (R-squared 0.81) and aggregate economic sentiment (R-squared 0.67). Better fits for private consumption growth can be obtained by regressing on the volume index for retail trade (R-squared 0.61) or on sales volumes of motor vehicles (R-squared 0.58), among other variables.[5]

Even when compared to a wider set of variables, the consumer confidence indicator's individual sub-components still perform relatively well in foreshadowing both GDP growth and private consumption growth. In addition, the consumer confidence indicator is published much earlier than, say, the volume index of industrial output, which can prove useful when forecasting. The consumer confidence indicator and its sub-indices have also been found to perform well when incorporated in models that try to predict turning points in the economic cycle.[6]

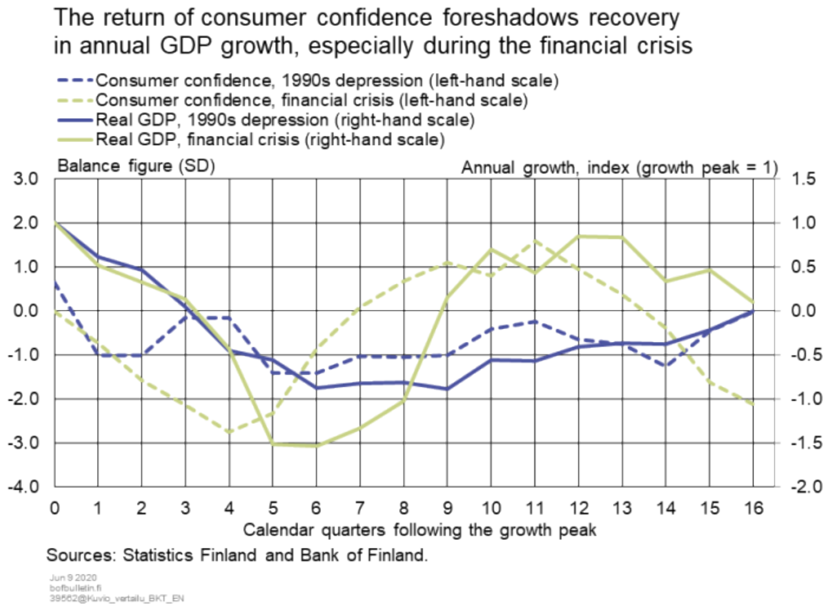
Consumer confidence can foreshadow turning points in the economic cycle

The viability of consumer confidence as a forward-looking indicator is especially interesting during the inflection points of the economic cycle. Periods of recession raise economic uncertainty, which can cause consumers to delay their consumption. Hence the return of consumer confidence may foreshadow a turn in the economic cycle. Conversely, sustained consumer pessimism may delay a similar recovery. In the following, we examine how movements in consumer confidence have correlated with turning points in the business cycle.

Statistics Finland began conducting its Consumer Confidence Survey (formerly Consumer Barometer) in its current format in 1995. Before this, the agency published an earlier rendition of the indicator beginning from 1987, but its data are not entirely comparable with the current iteration.[7] Nevertheless, the Finnish economy experienced two major recessions over the combined time period: the Finnish depression of the 1990s and the 2008–2009 financial crisis.

5. All regressors other than the confidence variables are included as year-on-year growth rates.
6. See e.g. Christiansen, C, Eriksen, J N and Møller, S T (2014) Forecasting US recessions: The role of sentiment, Journal of Banking and Finance, 49:459–468; and for Finland, e.g. Pönkä, H and Stenborg, M (2019) Forecasting the state of the Finnish business cycle, Ministry of Finance publications 20219:13.
7. The time series for the historical consumer confidence indicator is available from Statistics Finland for research purposes. The backwards-chained consumer confidence indicator is strictly an unofficial time series.

Chart 2.



Charts 2 and 3 illustrate the temporal relationship between the consumer confidence indicator and year-on-year growth in GDP and private consumption expenditure during the 1990s depression and the financial crisis. In both charts, the annual growth rates for real GDP and private consumption expenditure are respectively indexed at the expansionary peak of each business cycle, meaning that the annual growth index receives the value 1 in the calendar quarter where year-on-year GDP growth is at its peak.

Before the 1990s depression the expansionary phase of the economic cycle peaked during the third quarter of 1989, when GDP increased by almost 7% on the previous year. Before the financial crisis, in turn, annual GDP growth peaked during the fourth quarter of 2007, at almost 6% over the previous year. The charts display annual growth rates for 16 quarters or, equivalently, four years following the expansionary peak preceding each recession. The consumer confidence indicator has been standardised for each period, i.e. it is denoted as standard deviations (SD) from its historical mean over each respective period.[8] This makes the level of the confidence indicator easier to compare over both recessionary periods. As a rule of thumb, observations that fall at least two standard deviations above or below the mean can be considered historically unusual.

The recovery of consumer confidence preceded the economic recovery by about two calendar quarters during the financial crisis. Similarly, diminishing consumer confidence portended a decline in GDP growth at the threshold of the European sovereign debt crisis, which began in 2012 (Chart 2).

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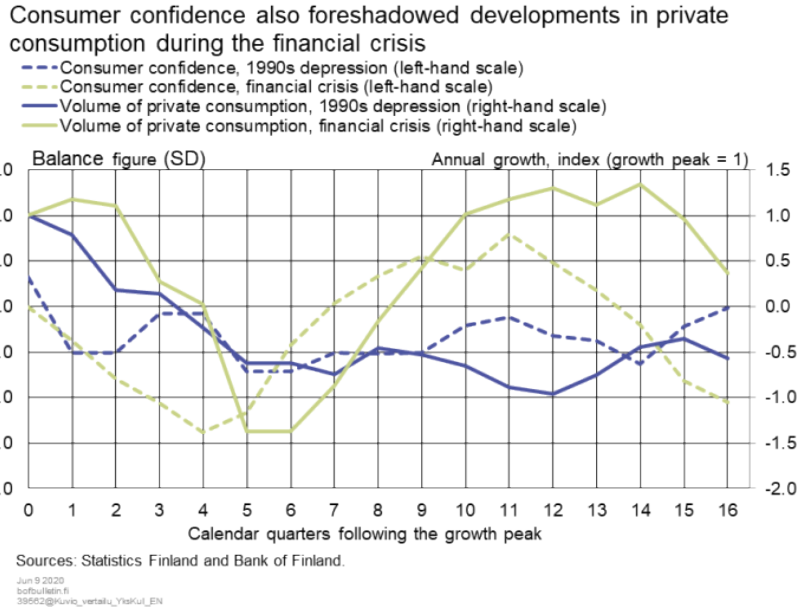
8. The historical indicator has been standardised over the sample period 1987–1994, and the current indicator over 1995–2019.

Chart 3.



Over the entire more recent sample period (1995Q4–2019Q4), the consumer confidence indicator sees its highest temporal correlation with annual GDP growth two quarters in the future (correlation coefficient 0.83).[9] Looking at the confidence indicator's sub-components, expectations of general economic conditions in 12 months' time correlate most strongly with GDP growth three quarters into the future. By contrast, assessments of one's own economic situation in 12 months and intentions of spending money on major purchases over the next 12 months correlate most highly with GDP growth just one quarter ahead.

Consumer confidence’s temporal relationship with private consumption growth during the financial crisis is very similar to its relationship with annual GDP growth (Chart 3). Over the entire sample period the confidence indicator correlates most strongly with annual private consumption growth 2–3 quarters into the future (correlation coefficient 0.67).

By contrast, consumer confidence and business cycle developments appear not to have diverged notably from each other during the 1990s depression (Charts 2 and 3). The nature of the 1990s depression was different from the financial crisis. The former not only began, but also advanced slowly, driven by a multitude of individual factors, and so did its recovery also take a significant amount of time. It would appear that during the Finnish depression of the 1990s protracted economic recession and consumer pessimism went hand in hand. This stands in contrast to the financial crisis, which began more abruptly, whose contractionary phase was deeper, and whose subsequent recovery phase was rapid.

Looking at the 1988Q1–1994Q4 sample period, the historical consumer confidence

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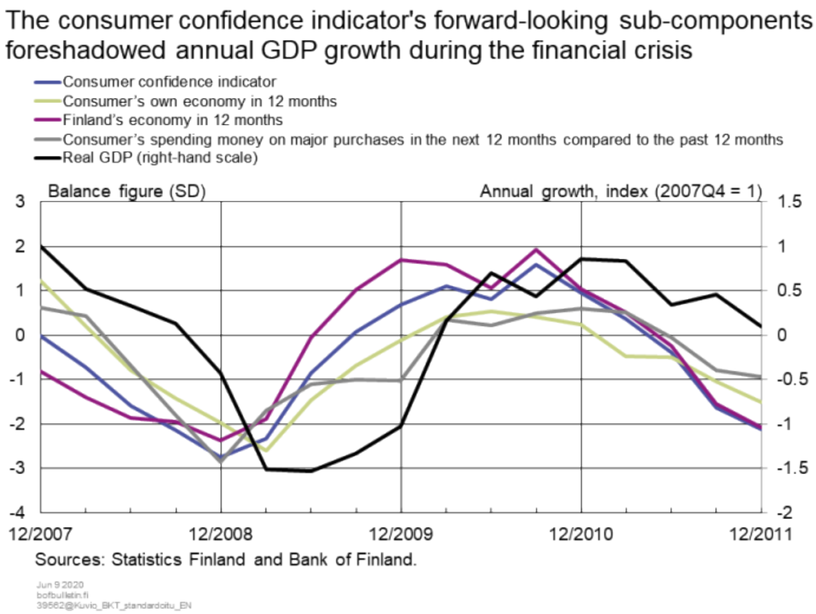
9. This temporal correlation structure is consistent with the observation that the fits of the regression models introduced in section 1 do not noticeably improve when more than two lags of the confidence indices are included.

indicator is still most highly correlated with annual GDP growth two calendar quarters into the future (correlation coefficient 0.81), just as in the later sample period.[10] Similarly, when the entire combined 1988Q1–2019Q4 time period is examined, the resulting unofficial chain-linked confidence indicator still correlates most strongly with GDP growth two calendar quarters ahead (correlation coefficient 0.79). Thus the temporal correlation structure between consumer confidence and the business cycle appears to have remained quite stable over recent decades. Over the entire time period, the strongest correlation between private consumption growth and consumer confidence is observed when the consumer confidence indicator is lagged by two quarters (correlation coefficient 0.65).

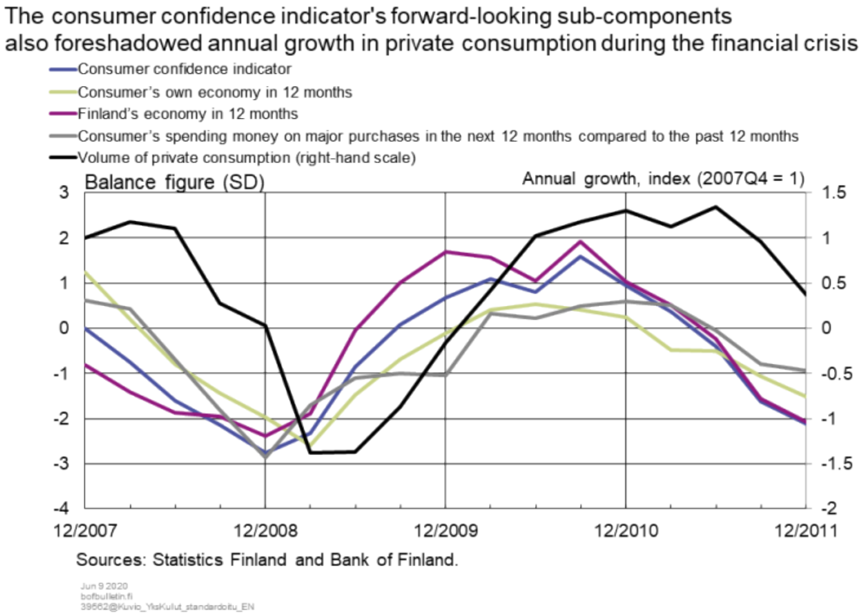
Charts 4 and 5 illustrate in greater detail the temporal relationship between the consumer confidence indicator's forward-looking sub-components and changes in GDP and private consumption expenditure during the financial crisis and after, 16 quarters on from the expansionary peak.

Chart 4.



10. Due to the short sample (N=28) the strength of the correlation is subject to statistical uncertainty.

Chart 5.



Conclusions

Consumer confidence has historically served as a forward-looking indicator for both GDP growth and private consumption growth. It would also seem that, at least during the financial crisis, the consumer confidence indicator, as well as several of its sub-components, foreshadowed a turning point for the cyclical trough. In addition, relatively good in-sample fits can be obtained by regressing GDP growth and private consumption growth on the consumer confidence indicator and its sub-components.

On the other hand, the explanatory power of the consumer confidence indicator and its sub-indices for GDP growth are weaker than with many other economic indicators. The extent to which data gathered from consumer confidence surveys actually yields new, independent information on consumer intentions remains unclear. It is likely that consumers base their assessments of the economy in general on publicly available information, such as financial news. Consequently, the information contained in the consumer confidence indicator might also be found in other, 'hard' indicators, such as volume indices for industrial output or trade volumes, which indeed fare better at explaining GDP growth. On the other hand, such indicators become available much later than the consumer confidence indicator, so the latter still has an important role in predicting shifts in the economy.

Drawing comparisons between the two major recessions in Finland's recent economic history — the 1990s depression and the financial crisis — is difficult, as the information contents and methodology of the confidence indicator has changed in the intervening period. In addition, the analysis presented in the previous sections does not allow anything to be inferred about the causal relationship between consumer confidence and the pace of economic recovery. Nevertheless, there appears to be a strong correlation between the two. Put differently, the return of consumer confidence and the recovery of the economy are tightly interlinked. The temporal relationship between developments in consumer confidence and the economic cycle also seems to have remained quite stable over recent decades: change in the confidence indicator's balance figure anticipates change in GDP growth and private consumption growth about two quarters ahead.

The current crisis brought on by the coronavirus pandemic is so far more reminiscent of the financial crisis than the 1990s depression. Similar to the financial crisis, confidence has collapsed in response to a sudden external shock. It remains a distinct possibility that consumer confidence and economic activity will both recover quickly once the spread of the coronavirus has been contained and once it becomes possible to gradually begin lifting the lockdown measures put in place. However, the uncertainty caused by the virus may deter the return of confidence, even well past the time when the actual lockdown measures can be lifted. Because the coronavirus poses a tangible threat to health and human life, consumers may remain cautious until it is likely that the virus has been permanently thwarted.

Tags

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