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Consumptor economicus: How do consumers form expectations on economic variables?[☆]

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ABSTRACT

Consumptor economicus, the economic consumer, is more complex than *homo economicus*. We find consumers form monthly expectations on inflation, unemployment and economic conditions based on coherent evaluations of relevant news. Relevant information is incorporated gradually, leading to a transient bias in consumer expectations, an established result. But expectations are also based on emotional responses to irrelevant events. We borrow the partisan bias from the political science and social psychology literature to identify exogenously emotional responses. Our results demonstrate that consumers also incorporate irrelevant emotive events immediately, leading to a persistent emotional bias in expectations, a new result.

1. Motivation

Expectations play a key role in macroeconomics but how do ordinary consumers actually form views on macroeconomic variables? We find consumers form expectations on inflation, unemployment and economic conditions based on a combination of reasoning, emotions and perceptions. Consumers incorporate structural economic information gradually, leading to a transient bias in expectations, an established result. Revealing their partisan bias, consumers also incorporate irrelevant emotive events immediately, leading to a persistent emotional bias in expectations, a new result.

We regress consumer expectations from the monthly Consumer Attitudes, Sentiments and Expectations (CASiE) survey, the Australian version of the Michigan Survey of Consumers, on relevant economic news and on irrelevant emotive events. If relevant information affects expectations, reasoning plays a role in expectations formation; if irrelevant yet deterministic

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events have a persistent impact on actual consumer forecasts, this suggests that emotions also affect consumer expectations. The term 'irrelevant' here is used for events that are clearly extrinsic to the underlying data generating process (DGP) of the variable to be forecast. We rely on economic theory to identify relevant information and borrow from the political science and social psychology literature to identify exogenously irrelevant emotive events. The political science literature proposes that voting choice impacts views on the economy; see Erikson (2004), Wlezien et al. (1997), Evans and Andersen (2006) and Gerber and Huber (2009) for empirical applications. The presence of this 'partisan screen' means that voters take a favourable view on the economy if they support the incumbent government and take a less favourable view on the economy if they dislike the incumbent irrespective of actual real economic activity.[1] From a social psychology standpoint, partisanship is driven by a person's attitude that consists of cognitive, affective, and behavioral components and by the person's group attachment; see Greene (2002). Leigh (2005) finds that a large portion of voter behavior in Australia is driven by the affective component of partisanship (feelings, moods and emotions) which allows us to use partisanship to identify exogenously emotional responses.[2]

We apply simple ordinary least squares (OLS) and regress consumer expectations on variables that broadly cover the macroeconomy, i.e., measures of unemployment, inflation, activity, monetary policy and financial markets and match federal election dates that brought a change in government in Australia with CASiE survey dates. Results suggest that consumers form expectations by evaluating economic data but also by emotionally reacting to the party in power. We show that a change in government lowers expected inflation and expected unemployment, and raises the economic outlook of respondents who support the incoming government; for respondents who support the outgoing government, the change raises expected inflation and expected unemployment, and lowers the economic outlook. The effect persists until the government changes again, *ceteris paribus*. Bovi (2009) demonstrates a persistent bias that is consistent with overoptimistic consumers but can only speculate on that link while Barsky and Sims (2012) posit that emotions only have small and transient effects.

Perceptions also seem important for inflation expectations. We define perceptions as"[t]he way in which something is regarded, understood, or interpreted."[3] There are two aspects to consumers' inflation forecasting. On the one hand, the effects of relevant economic information indicate that inflation expectations formation is theory-consistent with a Phillips curve. On the other hand, the effects of emotive events indicate that consumers seem to regard high inflation as 'bad' and low inflation as 'good' which leads to inflation expectations that are not theory consistent with unemployment expectations.

Perhaps surprisingly, inflation expectations rise in response to a rise in the target cash rate (Australia's monetary policy rate) and expectations fall in response to a decline in the target cash rate. If the central bank has private information or is simply a better forecaster than consumers, a change in policy can convey new information on the state of the economy. When consumers update their forecasts in response to these signals, consumer responses may seem atheoretical; see García-Schmidt (2015). Here, a rise in the target cash rate seems to be interpreted as a signal that the central bank expects robust growth, inflationary pressures, and lower unemployment. A decline in the target cash rate is regarded as a signal of moderating growth and inflation, and upward pressure on unemployment.

The importance of emotions and perceptions in consumer expectations formations likely contributes to consumers forming expectations that are not consistent with economic theory. Recent evidence from the Michigan Survey of Consumers shows that expectations of the majority of U.S. consumers are not consistent with economic theory; Carvalho and Nechio (2014) demonstrate that at least some households form expectations that are consistent with a Taylor (1993)-type rule while Dräger et al. (2016) find that only 6% of consumers form expectations consistent with all three concepts: the Phillips curve, the Taylor rule and the Income Fisher equation. Malmendier and Nagel (2016) show that, when forming macroeconomic expectations, individuals put a higher weight on realizations of macroeconomic data experienced during their life-times compared with other available historical data. Claus and Nguyen (2015) find that, on average, younger consumers (18–34 years old) are more likely to form inflation and unemployment expectations consistent with a Phillips curve than older groups (35 years old and above), perhaps reflecting the periods of high inflation and unemployment over the 1970s and 1980 followed by low and stable inflation since the introduction of inflation targeting in Australia in 1992.

The limited empirical literature on consumer expectations suggests that consumer forecasts are biased; see, for example, Mankiw et al. (2004), Bovi (2009), Coibion and Gorodnichenko (2015a,b) and Lamla and Lein (2014). This bias could be the results of rigidities where consumers incorporate new information only slowly into their forecasts. Several explanations have been put forward in the economics literature to account for these rigidities. Mankiw and Reis (2002) propose a sticky information model where information is costly to acquire and to evaluate, leading agents to update their expectations only periodically. This means that new information is only gradually incorporated in expectations. Woodford (2003) models rigidities within a signal to noise extraction problem. Agents understand the underlying DGP and continuously update their information set but have to filter information on the true state of the economy from noise. Sims (2003) contends that agents display 'rational inattention' because they have only limited capacity to process information while Carroll (2003) suggests that consumers only occasionally pay attention to news reports whose interpretations of underlying information are used to update expectations. These explanations are firmly rooted in economics, in the sense that the rigidities are caused by costs and incentives, and lead to a transient bias in consumer expectations but asymptotically rational forecasts. Our results

[1] Although confirmation bias and partisan bias are related, the former is about *ex post* evaluations of events and the latter on *ex ante* evaluations.

[2] We thank one of the anonymous referees for the clarification why elections with a change of government can be identified as an emotive event.

[3] Oxford Dictionaries https://en.oxforddictionaries.com/definition/perception; Accessed 23 January 2018.