

News and the business climate

by Prof. Dr. Jan-Egbert Sturm /
University of Konstanz,
Thurgau Institute of Economics,
CESifo, München

This research project is a first attempt to address the effect of news as published in daily newspapers on firms' assessments of their own business development. For this purpose, we explore the informational content in data provided by **Medien Tenor** – an institute for media-analyses of policy- and economy-related news, located in Bonn – and the Business Survey results as collected by the Ifo Institute for Economic Research in Munich.

News potentially affects the sentiments of consumers, politicians and firms, which in turn might have consequences for the economic development of a nation, region or a sector. Here, we focus on firms in particular branches within the manufacturing sector and their assessment of their own business situation and development. From our point of view, this is one possible channel through which news agencies might consciously or unconsciously affect real economic developments.

The Ifo Institute conducts several surveys, which are at least partly intended for forecasting purposes. Each month, Ifo sends a survey ('Konjunkturtest Gewerbliche Wirtschaft') to nearly 7,000 firms in the sectors industry, construction and (retail and wholesale) trade all over Germany. **Medien Tenor** kindly provided us with positive, negative and neutral news reports on company and sector developments in manufacturing, construction or retail trade from 1999 onwards. In this note, we will only focus on results for the manufacturing sector. We refer to Sturm (2004) with respect to the other two sectors. The following newspaper, magazine and television sources are used: **Frankfurter Allgemeine Zeitung, Welt, Frankfurter Rundschau, Süddeutsche Zeitung, Spiegel, Focus, Zeit, Woche, Rheinischer Merkur, ARD Tagesschau, Tagesthemen, ZDF Heute, Heute Journal, RTL Aktuell, SAT.1 18:30, and ProSieben Nachrichten**. To allow comparison with the Ifo data, we focus on the balance between positive and negative news.

Econometric modeling

In order to test whether news influences business assessments, we perform so-called Granger-causality analysis in a 'Vector AutoRegression' (VAR) model using impulse response analysis. We have to restate our main hypothesis to make it testable: the balance between positive and negative news is said

to 'Granger cause' the assessment of the business climate and/or business expectations, if the time-series prediction of the Ifo indicators from their own past can be improved by adding lags of news balances to the equation.

In a VAR model, only endogenous variables enter: each variable is explained only by its own lagged values and the lagged values of the other endogenous variables. As no conditions concerning the causal relationship of the variables need to be identified a priori, the problem of simultaneity effects thus becomes solved. Since we are also interested in the direction of causality, this is a clear advantage. In our VAR model we use the following three variables: Medien Tenor News balances, the Ifo Business Expectation indicator and the Ifo Business Situation indicator. In this setting the analysis of a Granger-causal relation from news balances on the assessment of the (future) business climate boils down to testing whether each of the estimated coefficients for the lagged News balances in the business expectations and business situation equation differ from zero.

To determine the lag structure in the model and to overcome the problems of a large number of variables, possibly only slightly differing from zero, we follow Hsiao (1981) and start from univariate autoregressions to which sequentially lags and variables are added using Akaike's Final Prediction Error criterion.

As links between the three equations hamper interpretation of individual coefficients, we analyze the VAR models by observing the reactions of the estimated system to different shocks over time. Just as an autoregression has a moving average representation, a VAR can be converted into a Vector Moving Average (VMA). The VMA representation allows us to trace the time path of various shocks on the variables in the VAR system. Because the error terms are contemporaneously correlated, shocks that hit the economy affect all variables in the current period. Consequently, it is not possible to single out the effect of a separate shock. A standard solution for this identification problem is to impose restrictions of some kind. We use the Choleski factorization, which implies an ordering of the variables from the most pervasive, i.e. a shock to this variable affects all the other variables in the current period, to the least pervasive, i.e. a shock does not affect any other variable in the current period. The ordering we employ is 'Ifo Situation', 'Ifo Expectations' and 'News'. Placing News last allows it to be directly affected by the other variables in the model. Placing 'Ifo Situation' first is based on the assumption that contemporaneous shocks to the actual business climate are less likely to stem from the

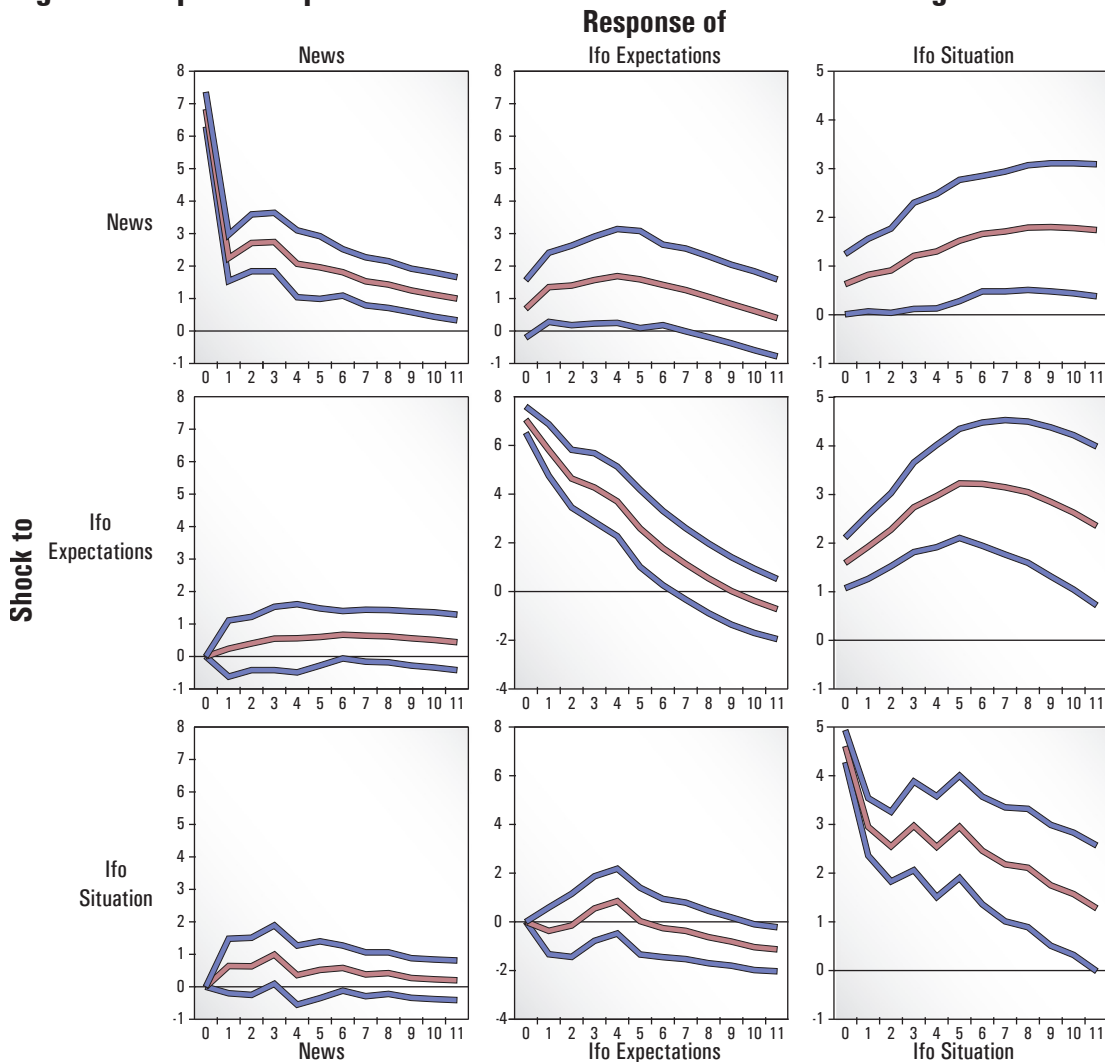
anticipation of future business climate movements and (future) news. Usually the choice of the ordering is not innocuous. Fortunately, the largest absolute correlation in our three-variable model, which is between the two Ifo indicators, equals only 0.24, implying that the ordering of the variables is of minor importance.

Empirical Results

Figure 1 displays the impulse-response functions and their error bands for the estimated equations over a period of 12 months ($t=0, \dots, 11$). In interpreting the graphs, note that the variables are all in levels. Hence, a one-point movement corresponds to a change in the balance of the respective variable of one. In addition,

NOTE: The blue lines form the 95% confidence intervals.

Figure 1: Impulse responses for six branches within manufacturing



To give an indication of statistical reliability and therefore to be able to interpret significant movements as evidence in favor of Granger causality, we report the impulse responses along with a 95 per cent confidence interval, using a computational procedure developed by Giannini (1992), which is based on asymptotic Gaussian approximations of the distribution of the responses. Given that only data from 1999 onwards are available for this analysis, we use the above set-up in a panel data framework in which sector-dummies are included.

reading across any column, the scale on the vertical axis is the same for all of the shocks. These graphs allow several conclusions. The size of a positive shock is equal to the standard deviation of the respective variable and can be read from the diagonal panels at $t = 0$. The panels on the diagonal indicate that News depreciates quickly after one month, but then sticks on a low but significant level for quite some time. A similar but less pronounced development is observed with respect to the Ifo Business Situation. Both retain significant for almost a year. The Ifo Business Ex-

Research Links:

www.uni-konstanz.de
www.cesifo.de

The complete study
 available at:
www.medientenor.de

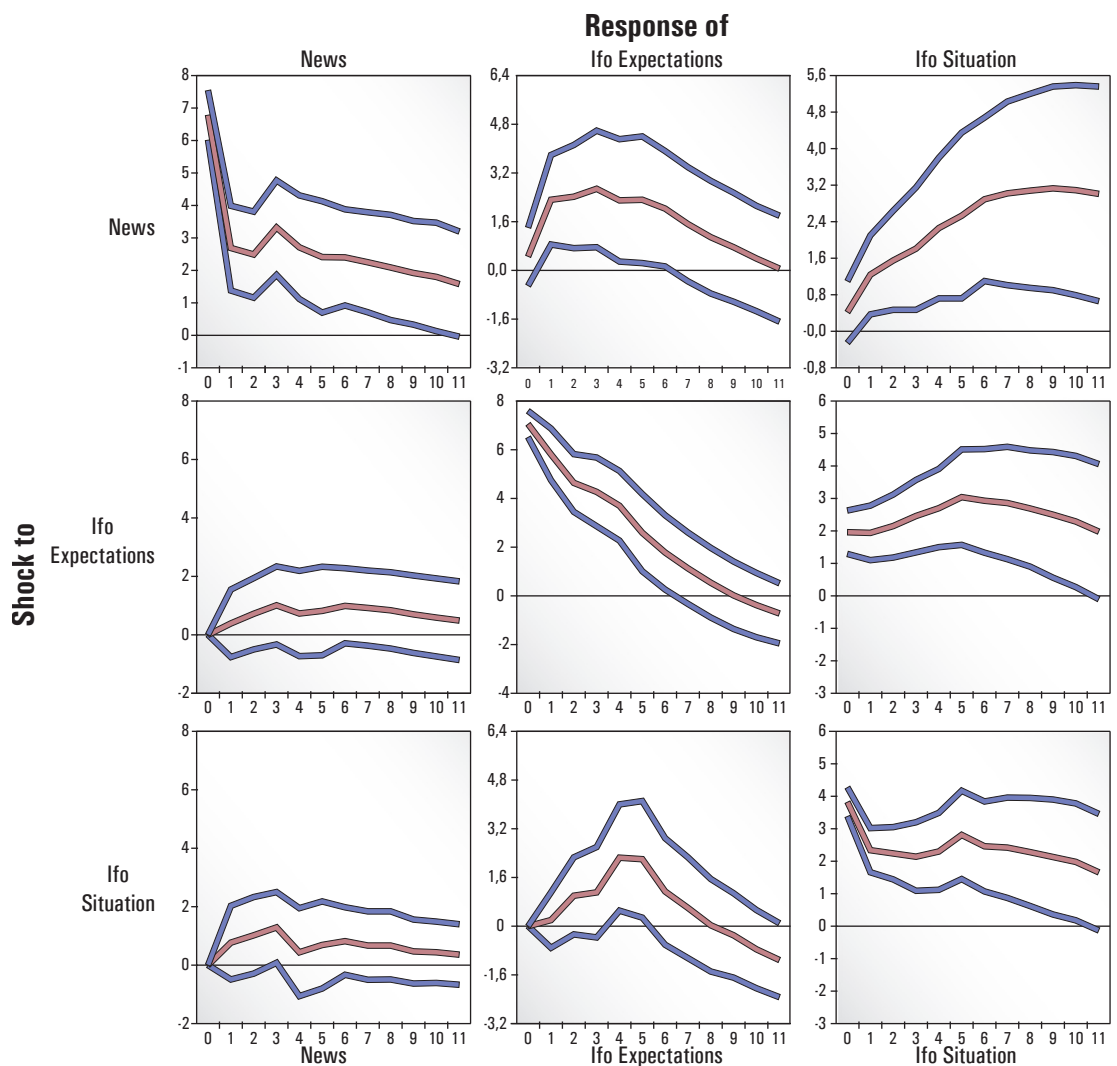
NOTE: The blue lines
 form the 95% confi-
 dence intervals.

pectation indicator on the other hand dies out quicker and more evenly over time.

The only three other panels showing at least partly significant responses to a one time shock – and therefore evidence of a Granger causal relation – are to the upper-right of the diagonal. This means that, for instance, one period after the publication of the Ifo Business Situation indicator the newspapers and newscasts do not tend to report about the manufacturing sectors in a similar vein (lower-left panel).

peak. We expect that more positive news will induce firms to have a brighter outlook for the future. This is what the upper-middle panel in Figure 2 arms. The News shock starts affecting firms' expectations about future business cycle developments after one month. These effects last for approximately half a year. More importantly, these News shocks do also significantly change firms' assessments of the actual situation after three months (upper-right panel). As compared to an Ifo Expectations shock, a News shock has roughly

Figure 2: Impulse responses for Machinery, Electronics and Chemicals



The middle-right panel clearly shows that shocks in Ifo Expectations do get realized in the Ifo Business Situation indicator to over 40 per cent after some months and do last for at least a year. Note that the expectations question in the Ifo Survey asks the firms to assess their future business situation in six months; after roughly six months the response of Ifo Situation to an Ifo Expectations shock reaches its

half the impact on the situation indicator. Hence, the News indicator appears to have some predictive power for the actual assessment of firms in the future. News is not only changing the expectations of firms; it is actually influencing their future assessment of the current situation.

In view of the heterogeneous character of the manufacturing sector, we split up the six branches used

in Figure 1 in two more or less equally sized groups. One group contains those sectors which we expect news reporters to usually refer to when addressing business cycle movements: Machinery, Electronic equipment and Chemical products. News related to the other group, i.e. Motor vehicles, Textiles and Food, more often point in a different direction, like e.g. the development of new product lines. Hence, we expect a much closer link between the business climate and news reports for the first group as compared to the second. As Figure 2 shows, this is clearly confirmed by the upper rows in both panels: while News is not affecting either expectations or situation assessments of firms in Motor vehicles, Textiles and Food, it clearly does so in Machinery, Electronics and Chemicals. In the latter case, and more clearly than before, News first affects firms' expectations, which then in turn induce an actual change in the situation assessment.

Summary and conclusions

To summarize the above, economic news does Granger cause business climate expectations and actual business climate assessment. As to be expected, the effect on the expectations is in general (somewhat) larger than on the assessment. However, the assessment of the business situation is more persistent, i.e. longer-lived. The change in expectations starts to die out after three to six months, whereas the assessment is influenced persistently and generally stays on a higher level. These conclusions for the manufacturing sector hold true in particular when we concentrate on the branches machinery, electrical equipment and chemical products.

References

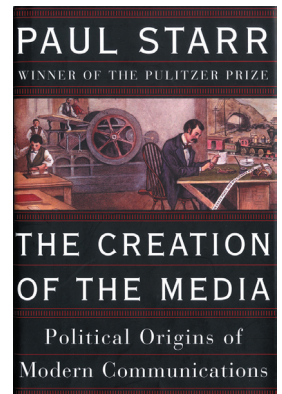
- Giannini, C.** (1992), Topics in structural VAR econometrics, Springer Verlag, Berlin.
- Hsiao, C.** (1981), "Autoregressive modelling and money-income causality detection", *Journal of Monetary Economics*, 7, 85–106.
- Sturm, J.-E.** (2004), Economic news and its effect on the Ifo business climate survey: first results based on sector data for trade and industry, University of Konstanz and TWI – Thurgau Institute of Economics, <http://www.uni-konstanz.de/monec/papers/newsifo.pdf>

This text is a summary of a Study "Economic News and its Effect on the Ifo Business Climate Survey: First Results Based on Sector Data for Trade and Industry (Version May 2004) by Prof. Dr. Jan-Egbert Sturm (University of Konstanz, Konstanz, Germany, Thurgau Institute of Economics, Kreuzlingen, Switzerland, CESifo, Munich, Germany). The complete version of the study with all illustrations is available on www.medientenor.de.

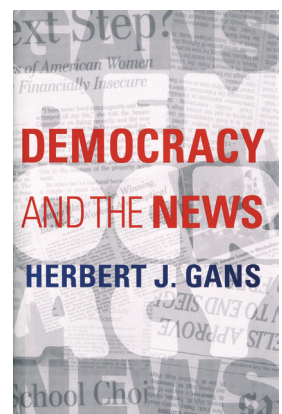
The Pulitzer Prize winning sociologist and professor Paul Starr has discovered the media system as a subject, redrawing the socio-political origins of the world of newspapers, radio and television. On more than 400 pages he tries to prove his point that the characteristics of the US media system could be attributed to the American Revolution, and that this explained its difference to journalism in Europe. Whoever knows the book "The Reality of Mass Media" by the sociologist Niklas Luhmann, might have expected something similar from his colleague Starr. But as with many things, approaches on both sides of the Atlantic differ significantly from one another. Starr offers a detailed and in-depth look at the beginnings of American journalism. Unfortunately, the book ends at around the time when the current media system took shape. But maybe a sequel is in the making. rs

A little more than 20 years ago, Columbia University Professor Robert S. Lynd was one of the first to look at the consequences of unbalanced news selection in his book "Deciding What's News". While Lynd was primarily interested in journalism, Gans, in his new book, focuses on the consequences for democracy. According to him, imbalances in portrayal will lead to questioning and damaging the democratic system altogether, since the process of an election is ideally based on the premise of decision-making competence. As long as voters receive free access to the most comprehensive information possible on their political representatives, they will be able to not only control them, but also make well-founded decisions on voting. At present, political coverage in general and that on factual issues such as education, taxes and the environment in particular is increasingly losing ground against personalization without substance. This ultimately raises the question whether or not there is still a basis for people's decision-making. rs

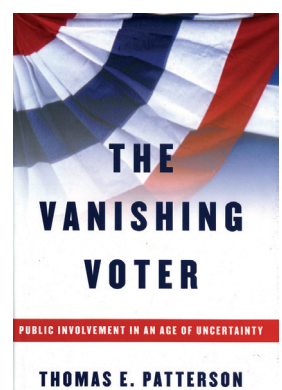
More than a decade ago, with his book "Out of Order", Thomas Patterson has put his finger into the open wound of increasingly superficial political journalism. Throughout the 2000 presidential campaign, the Harvard professor conducted one of the most comprehensive opinion surveys to measure the impact of this type of political coverage on a weekly basis. The result is a mountain of data, which clearly illustrate the pattern of the "Vanishing Voters": The party of non-voters has become the most powerful group in the US. The people not only feel poorly represented by those elected, but have also lost faith in the idea of democracy altogether. The author makes his depressing point of how the system of the people's sovereignty lost its attractiveness by providing several cross-references to the history of US elections. The book was published in 2002, but the current results of the 2004 campaign suggest that it remains very topical. rs



Paul Starr:
The Creation of the Media



Herbert J. Gans:
Democracy and the News



Thomas E. Patterson:
The Vanishing Voter