RUNNING HEAD: Economic News Coverage and Economic Perceptions

Media Effects on Perceptions of the State of the Economy in Germany. Evidence from a Time Series Analysis 1998 – 2007

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Abstract

In this paper, the question is addressed whether the economic news coverage affects the public's perceptions of the state of the economy. Economic perceptions are an especially interesting case study for communication scholars because both first-hand observations and economic news coverage are available as information sources. It is assumed that news coverage has stronger effects as media dependency grows and the availability of first-hand information declines. Furthermore, media effects are expected on the perception of national economic matters, while the personal environment is observed directly. In order to test these assumptions, a time series analysis of economic perceptions, economic news coverage and real business development in Germany 1998-2007 is performed. The empirical results reveal support for the assumptions. National economic situation and labor market are perceived solely via the mass media; consumer prices via both mass media and first-hand observations; and the personal financial situation mainly via first-hand experiences.

Keywords

Economic news coverage, economic perceptions, business cycle, media dependency, time series analysis

How the public perceives the state of the economy is significant for several reasons. According to findings in the field of economic voting the public's perception of the state of the economy influences political attitudes and voting decisions. The government is judged on the past development of the economic situation (Lewis-Beck, & Paldam, 2000). Further the economic perceptions affect the consumption behavior of private households. Their spending decisions depend on two factors (Katona, 1968, p. 22): the "ability to buy" which is based on the financial background and the "willingness to buy", which is mainly formed by "attitudes and expectations about personal finances and the economy as a whole". As the aggregate private household spending is an important element in the national economy, the aggregate economic expectations can indirectly affect the real economic development.

Taking this political and economic importance into account it seems relevant to look at the origins of the public's economic perception. Basically there are two main sources people can rely on when evaluating the state of economy: Firstly, almost everyone acts economically by some means or other, for example when buying consumer goods, deciding how to invest savings or offering one's workforce on the labor market. As active market participants people make their own experiences and observations and accordingly can judge the economic situation based on directly gathered information. Secondly, the mass media offer a broad range of economic news, ranging from the publication of the recent business indicators to expert statements and journalistic interpretations. The availability of both personal and mediated information makes economic evaluations especially interesting for scholars in mass communication (Brettschneider, 2000a). Here it can be tested whether the mass media affect the public's perceptions despite the availability of first-hand information.

This paper raises the question whether the economic news coverage affects the German public's perception of the economic situation. Specifically, I investigate how media effects on the perception of more concrete aspects of the economy differ. Moreover, I differentiate between the perception of past economic developments and the expectation of future change.

Specifying *perception of the state of the economy*

In economics it is common sense that the *one* state of the economy does not exist. Quite the contrary it is symptomatic for the business cycle that it is composed of a broad range of interdependent economic indicators which can develop in different directions. Consequently it makes sense to investigate the perception of several different aspects of the economic situation. A look at a basic economic cycle helps to identify the aspects directly and indirectly relevant for private consumers.

Please insert Figure 1 here

Four aspects are crucial: the financial situation of each private household (measured by the private incomes in proportion to the spending); the situation on the consumer goods market (measured by the consumer prices); the situation on the labor market (measured by the unemployment); and the state of the national economy (measured by the Gross Domestic Product). It makes sense to analyze the origins of the perception of these four more concrete aspects instead of the ambiguous construct state of the economy.

Furthermore, the perception of the economic situation is usually assessed as a comparative judgment (Caspers, 1996). People do not evaluate whether the economy is good or bad. Instead they judge whether the current situation is better or worse than at some point in the past or whether the economy will prospectively develop positively or negatively compared to the present. Thus, it makes sense to distinguish between different time-references. In the following I will speak of (retrospective) evaluations in reference to the first case and (prognostic) expectations in reference to the second.

State of Current Research

Plenty of research has been carried through dealing with media effects on so-called consumer confidence indices (CCI). Those composite indices consist of evaluations and expectations of different aspects of the state of the economy (Caspers, 1996; Curtin, 1982). The findings generally support the idea that media effects on economic judgments exist: Mass media coverage partly ex-

plains the development in the CCI after controlling for real world indicators (cp. for the U.S.: Blood & Phillips, 1995; Doms & Morin, 2004; Goidel & Langley, 1995; for Germany: Hagen, 2005). The future change in the CCI can be predicted using solely measures of economic news (cp. for the U.S.: Fan, 1993; Fan & Cook, 2003; Tims, Fan, & Freeman, 1989; for Germany: Wörsdorfer, 2005). Finally, the CCI correlates stronger with mass media coverage than with the more rational forecasts of business professionals (cp. for Germany: Hagen, 2005; for the Netherlands: Alsem, Brakman, Hoogduin, & Kuper, 2008). Only two studies fail at finding media effects on consumer confidence: De Boef and Kellstedt (2004) only show an indirect effect of news coverage on the evaluation of the economic expertise of the US-president, which in turn affects consumer confidence. And during the recession in Japan 1988-1999, the negative economic news coverage had no additional effect (Wu, McCracken, & Saito, 2004).

Fewer studies deal with media effects on the public perception of single aspects of the state of the economy. Most research focusing on a single aspect has been conducted on the state of the national economy. The expectations of that aspect have almost always shown to be affected by the economic news coverage (cp. for the U.S.: Nadeau, Niemi, Fan, & Amato 1999; for the U.K.: Soroka, 2006; for Germany: Vollbracht, 1999; Brettschneider, 1999, 2000a, 2000b). One study generally negates media effects on the retrospective evaluations of the state of the national economy in the US: "In economic life reality bites", Haller and Norpoth (1997, p. 567) conclude. As people make their own economic experiences, mass media have, if any, only reinforcing effects.

The state of current research concerning the public's perception of the labor market has mainly received attention regarding the question how important people perceive the issue unemployment to be. Most scholars agree that the mass media have an agenda setting effect regarding the national policy issue unemployment (cp. for Germany: Brettschneider, 1999, 2000a, 2000b; Hagen, 2005; Quiring, 2004). One study explores the expectations concerning the labor market trend: Doms and Morin (2004) show that the coverage of the general economic situation and, most important, the news on the labor market influence the public's expectations.

I could not identify any study dealing with the media's influence on the perception of consumer price changes.

To my knowledge only three studies include several aspects of the economic situation and/or time-references and thereby allow direct comparisons. Hagen (2005) includes both evaluations and expectations of the personal financial situation and the state of the national economy in Germany. The results suggest media effects on all four dimensions: The strongest media effects can be found on the retrospective evaluations of the national economic situation. How the media presents both general economic development and labor market has an influence here. The expectations of the same aspect are only dependent upon the labor market coverage. Both evaluations and expectations of the personal financial situation relate similarly to the general economic news. However, due to the absence of a synchronous relationship, the possibility of spurious correlations cannot be eliminated entirely. The study of Nadeau, Niemi and Amato (2000) allows a comparison between expectations of the personal financial situation and the state of the national economy in the U.K.. Most of the variance in both dependent variables is explained by economic indicators, but the media coverage has an additional explanatory power. Comparing the aspects, there are stronger media effects on the expectations of the national economic situation. Finally Wu, Stevenson, Chen and Guner (2002) contrast media effects on evaluations and expectations of the state of the national economy in the US. During the recession 1987-1990, the public's judgments are affected by the economic news coverage, the retrospective evaluations stronger than the prognostic expectations.

There is empirical evidence from a broad range of studies that despite directly available information, media coverage affects aggregate economic judgments. Only one study (Haller & Norpoth, 1997) generally disagrees here. The literature review also reveals research gaps: While plenty of work has been done on consumer confidence indices and the state of the national economy, other aspects have been widely neglected. Further, only very few studies include several aspects and both time-references.

Theoretical Considerations and Hypotheses

There is empirical evidence that despite direct observability of economic developments, media effects on aggregate economic evaluations and expectations of the private households exist. In the following I present a theoretical framework explaining why media effects occur and what differences can be expected for a) the different aspects of the state of the economy and b) retrospective evaluations and prognostic expectations.

As a general framework the media dependency model (Ball-Rokeach, 1985; Ball-Rokeach & DeFleur, 1976) explains media effects on the public's economic perceptions. In free market societies the national economy is a very complex matter which is characterized by manifold interrelations between various players. A lot of important information on that issue, for example the business cycle indicators and expert prognoses, are communicated mainly through mass media. The media system obviously serves as a significant information provider. In addition, free markets are characterized by a constant change in business conditions, leading to uncertainty among the market participants. For these reasons it can be assumed that the public depends on the mass media when forming perceptions of the economic situation. If media dependency is strong, media effects are more likely to occur (Bonfadelli, 2004). In consequence, media effects on the public's perception of the state of the economy can be assumed.

Implicitly building on the media dependency model, Kepplinger (1988, 1990; Kepplinger & Roth, 1978) argues that in the case of a bias between media coverage and reality, the mass media construct a biased reality perception among the public. The findings of various content analyses show a bias in economic news coverage: The mass media report negatively biased, oversimplified and limited to only very few issues (in particular the labor market) (cp. for Germany: Brettschneider, 1999, 2000a, 2000b; Friedrichsen, 1992; Hagen, 2005; Maurer & Reinemann, 2006; Quiring, 2004; Vollbracht, 1999, 2007). It is assumed that this kind of coverage does not only create a false image of the state of the economy among the public, but also causes simplified (and in the worst case wrong) ideas of how economy functions.

In addition to the macro level argumentations, the theoretical framework should offer an explanation on the individual level. This study, like most others in this field (cp. as an exception Brettschneider, 1999, 2000a, 2000b), is conceptualized as a time series analysis of aggregated data. Thus only interrelations between aggregates of news media, economic indicators and public perception can be demonstrated. While these effects are empirically relevant they are at the same time unsatisfying, since they do not explain individual economic information processing. This gap between aggregate effects and individual processes can only be narrowed theoretically (Jäckel, 2001; Keplinger & Noelle-Neumann, 2002). Therefore I build on the concept of bounded rationality (Simon, 1955, 1959, 1978). It is assumed that people try to act rational, but their resources of time and cognitive capacities are limited. Therefore they form most of their economic judgments using heuristic information processing strategies. Most importantly, people apply the availability heuristic, that is using only easily available information, and the representativeness heuristic, that is generalizing the easily availably pieces of information for broader judgments (Hagen, 2005; Kahneman, 2003; van Raaij, 1989; Tversky & Kahneman, 1973, 1974). Here the economic news coverage comes into play. Speaking with the words of Iyengar & Kinder (1987): By calling attention to some economic developments while ignoring others, economic news influence the standards by which the state of the economy and its aspects are judged (p. 63). As the media coverage makes some information more easily available than others, priming effects on the public's economic perception can be expected. A third heuristic strategy is the adoption of expert statements offered by the economic news. This strategy is most commonly mentioned by scholars of economics (cp. Carroll, 2003; Doms & Morin, 2004; Roos, 2005). They argue that adopting expert statements has the best cost/performance ratio of all possible ways of judging economic issues. As most people do not have direct access to experts of economics, mass media coverage serves as the common source for such statements.

Finally, the concept of impersonal influence (Mutz, 1998) helps to understand differences between the perception of personal and national economic matters. The basic assumption is that

people consciously distinguish between judgments of their personal environment and of social issues and that those two fields are quite independent from each other. If the personal economic situation is rated, first-hand information is used. In contrast, economic aggregates are intentionally observed via the mass media. Accordingly, one must differentiate between these dimensions to predict whether people rely on first-hand information or economic news coverage.

Based on these theoretical considerations, the following questions should be answered for each aspect of the state of the economy to predict whether economic news coverage or first-hand information is more important: 1) How strong is the media dependency regarding a certain aspect? That is, are there other available sources, or do the mass media serve as the main information source? This question is closely connected to the availability heuristic: Is information for a certain aspect more easily available from own observations or from the economic news coverage? Media effects are expected to be stronger if the media dependency grows, and if information is more easily available from the mass media. 2) Does a certain aspect belong to the personal environment or to the national economy? Media effects are presumably stronger on aspects associated with the national economy.

Perception of the state of the national economy: 1) Quite obviously, almost no first-hand information is available on the national economic situation as a whole. The part that can be observed by each individual is negligible. The mass media provide overall views by economic experts and by transmitting the business cycle indicators, most importantly the GDP growth rate. A strong media dependency can be expected. 2) No further discussion should be necessary to proof that the state of the economy as a whole is a national issue and therefore observed via the economic news coverage. It is hypothesized:

H1a: The perception of the state of the national economy is strongly dependent upon the economic news coverage.

Perception of the financial situation of the private households: 1) It can be assumed that most information regarding each household's own budget can be accessed first-hand and is thereby

easily available by own experience and observation. In contrast, the mass media report only infrequently on this aspect (cp. below, Table 5). 2) Moreover, the household's financial situation is clearly part of the personal environment. It is hypothesized:

H2a: The perception of the private households' financial situation is not dependent upon the economic news coverage.

Perception of consumer prices: 1) People experience the prices of fast moving consumer goods very regularly during shopping. The prices of other, for example more durable goods, or products they do not use themselves, are observed less often. Consequently, the change in prices is partly perceived first-hand. By publishing the inflation rate, mass media give additional information on the change in consumer prices as a whole. Comparing the sources, it is assumed that media dependency is quite low, as plentiful direct information exists, which is also available more easily due to a higher contact frequency. Although the media constantly reports on the price change, the coverage is not very intense (cp. below, Table 5). 2) The consumer prices have both personal (prices of the goods actually consumed) and national (the inflation rate) relevance. Due to the personal impact a price change has for most people, it is assumed that the consumer prices are perceived as a rather personal issue. Summing up, it is expected:

H3a: The perception of consumer prices is rather weakly dependent upon the economic news coverage. First-hand information is more important.

Perception of unemployment: 1) As for the perception of consumer prices both first-hand and mediated information is available: One the one hand people participate in the labor market, on the other hand the mass media reports on the labor market situation. But here the ratio of first-hand observations and economic news coverage is quite the contrary. The labor market can only be directly monitored to a small extent – in the own employing situation and maybe the ones of friends and family. Especially the *change* in unemployment can therefore hardly be observed, as (in regular economic times) most employment relations are quite stable. The economic news coverage provides the overview on the job market as a whole, and pays much attention to the issue (cp. be-

low, Table 5). In consequence, media dependency can be considered as strong, and information from the mass media can be regarded as more easily available. 2) Again, the aspect has personal (the own job) and national (the unemployment rate and its various consequences) facets. Of course, for people who lose their jobs the personal relevance is enormous. But in the aggregate of the German population, the much bigger part is not directly affected by the problem. Thus, it is assumed that most people see unemployment as a national problem. In summary, it is predicted:

H4: The perception of unemployment is rather strongly dependent upon the economic news coverage. First-hand information is less important.

Differences can also be expected between the evaluations and the expectations of one aspect. Again the media dependency of the public is a relevant consideration. It can be assumed that media dependency is stronger in regard to the expectations. Firstly, the mass media almost has a monopoly on distributing experts' or business professionals' prognoses, and journalistic viewpoints. Secondly, only very few information on future development is available first-hand, so there are no alternative sources. Thirdly, in a free market society the future development can never be predicted perfectly. Thereby, the public is always to some extent uncertain about the future, which enhances media dependency. Summing up, media effects are assumed to be stronger on the public's prognostic expectations than on the retrospective evaluations. For each aspect of the economic situation a second hypothesis is added. Only the aspect of unemployment cannot be included here due to missing data on the evaluations (cp. below, Method and Data).

H1b: The prognostic expectations of the consumer prices depend more strongly upon the economic news coverage than the retrospective evaluations.

H2b: The prognostic expectations of the private households' financial situation depend more strongly upon the economic news coverage than the retrospective evaluations.

H3b: The prognostic expectations of the state of the national economy depend more strongly upon the economic news coverage than the retrospective evaluations.

Method and Data

Overview

To explore these hypotheses, a time series analysis of secondary data was conducted. The data cover three sources: public opinion polls on the perception of the economic situation differentiated by aspects and time-references; content analyses on the economic news coverage; and business cycle indicators as objective measures of the state of the economy. All data are available aggregated on a monthly basis from February 1998 to August 2007, including a total of 115 cases.

Dependent Variable: Perception of the State of the Economy

The data on the public's perception of the state of the economy are derived from the "Joint Harmonised EU Programme of Business and Consumer Surveys" conducted in Germany on behalf of the European Commission (European Commission, 2007a).[1] Table 1 presents the seven questions of the consumer survey used in this study.

Please insert Table 1 here

Evaluations and expectations are available for all four relevant aspects except for the development of unemployment, where unfortunately only the expectations are surveyed. Responses are measured on a five point ordinal scale from 'very positive' to 'very negative', each point with an adequate wording for the respective question. Further, the option 'don't know' is offered.

The variables for the data analyses were transformed as follows: First, the two positive and the two negative options were each summed up to enhance the reliability of the data (Caspers, 1996). Second a relative monthly balance was computed for each question. Therefore, the percentage of respondents choosing a negative option was subtracted from the percentage choosing a positive option. The result from the subtraction was divided by the percentage of all respondents giving a substantial answer (excluding 'don't know') to include the respondents who perceived no change. After this transformation each time series has a theoretical range from -100 (all respondents who give a substantial answer perceive a negative development) to +100 (all respondents who give

a substantial answer perceive a positive development). Table 2 gives a descriptive overview of the seven time series.

Please insert Table 2 here

Here the discrepancy between the perception of the personal and the national situation is most obvious. Both maximum and minimum are more extreme for the perception of the state of the national economy. This higher volatility is a first sign that the national situation depends more strongly on the mass media coverage than on the more stable perception of the personal financial situation.

Independent Variable I: Economic News Coverage

The data on the economic news coverage are provided by the media research institute Media Tenor International AG. The sample includes the four most important German opinion-leading quality newspapers, the two national news magazines, and the six most important TV newscasts. The only major limitation is that the most important and highest-circulating yellow press outlet is missing.[2] But overall the media sample covers the German media market quite accurately. It is to my knowledge the largest media sample compared to similar studies.

The content analysis covers all articles on politics and economics (print media) and all news stories (TV news) that report on the state of economy in Germany. The coding unit is the article or news story. Up to 12 thematic categories are available for each coding unit and each description of an aspect is rated as positive, neutral or negative. I chose four thematic aspects that match the dimensions of the consumer survey: the coverage on the general economic situation and the GDP, on the labor market, on the prices and on private incomes. Table 3 presents these thematic aspects and gives examples for each category.

Please insert Table 3 here

The data are prepared for the analyses applying two steps. First the consonance of the media's economic ratings has to be tested for theoretical and methodological reasons. As Noelle-

Neumann (1973) argues, consonance of the published opinion is one main pre-condition for societal media effects. Only if the people receive the same messages from all available media sources, the public opinion follows the published opinion. From the methodological viewpoint, consonance is a pre-condition to investigate media effects based on aggregate data. This condition must be fulfilled to assume that most of the individuals within the aggregate have in fact received similar information by the mass media (Maurer, 2004).

To test for the consonance of the economic news coverage I proceeded as follows: First I computed an absolute monthly balance of positive minus negative articles/news stories for each of the four categories separately for every media outlet (Kepplinger & Maurer, 2001). The consonance of media's economic judgments is then tested with a factor analysis over the 48 balances (12 media outlets * 4 thematic aspects). The first factor analysis[3] produced unsatisfactory results. While the ratings of all outlets on 'General/GDP' and 'Labor market' and at least 10 out of 12 outlets' ratings on 'Prices' each load on one particular factor, the ratings on 'Income' show almost no sign of consonance. Accordingly, the latter were removed and a second factor analysis was conducted on the remaining 36 balances. Now the component matrix shows consistent results.

Please insert Table 4 here.

The judgments of almost all media outlets on each thematic aspect load on one factor. Solely the rating of the Focus on consumer prices load on a wrong factor. Thus, the pre-condition of consonance of the economic news coverage is met for the issues 'General/GDP', 'Labor market' and 'Prices'.

In a second step I compute a sum index for each category over all 12 media outlets. Table 5 shows the descriptive statistics of the three media time series. Furthermore, the time series of reports on private incomes is presented to prove the point that this topic is only infrequently covered.

Please insert Table 5 here

Independent Variable II: Business Cycle Indicators

The business cycle indicators fulfill a double function in this analysis. Firstly, they are indicators for the economic developments that people observe or experience first-hand. As the polling data are representative for the German population and the indicators are representative for the German national economy, this should fit quite well. Secondly, the business cycle indicators are required to differentiate between media effects that occur due to the mere distribution of the recent business cycle indicators and media effects that occur due to additional judgments by the mass media. In an aggregate data analysis this discrimination can only be realized by interpreting the time lag of the relation between the publication of the economic indicators and the public's perceptions. If the development of a business cycle indicator affects the public perception before it is published, a direct observation can be assumed. If the time lag of the effect equals the period between the month under report and the publication date, mass media effects are a more likely interpretation for this relation.

Two criteria were significant for selecting the business cycle indicators: they have to match the different aspects of the state of the economy and they have to be available on a monthly basis. The following business cycle indicators were selected: for the state of the national economy the "Index of Production", which is a monthly available equivalent of the GDP and is published 38 days after the month under report (Statistisches Bundesamt, 2007a); for the development of the labor market the unemployment rate, which is published at the beginning of each month for the previous one (Bundesagentur für Arbeit, n.D.); for the development of the consumer prices the Consumer Price Index (CPI), which is published on the last day of the month under report (Statistisches Bundesamt, 2008). Unfortunately, there is no monthly available indicator for the development of the financial situation of the private households. This is surely a limitation, but cannot be resolved.

For the data analyses rates of change are computed from each business indicator time series. The change of the Production Index and the CPI are used in the form of growth rates as they follow an exponential growth function. The change of the unemployment rate is calculated as a simple difference. Each indicator is included in the analyses in two ways: the monthly and the annual change. The monthly changes are important because of the availability heuristics. It can be assumed that the most recent changes are most easily available for the people. The monthly changes are based on seasonally adjusted time. The annual equivalent is the change rate mainly discussed in the economic news and also corresponds with the questions asked in the consumer survey. The annual change is based on the non-adjusted time series.[4] Table 6 presents the descriptive statistics for the business cycle indicators.

Please insert Table 6 here

Statistical Analyses

In the original study I applied five statistical methods to investigate the effects of economic news coverage and business cycle indicators on the public's perception of the state of the economy: 1) bivariate cross-correlations of the original time series; 2) bivariate tests for Granger causality (Granger, 1969); 3) bivariate cross-correlations of the ARIMA-adjusted time series (Box & Jenkins, 1976); 4) multivariate tests for Granger causality; 5) OLS-regression analyses of the ARIMA-adjusted time series. As a pre-condition for all tests the time series have to be stationary and non-deterministic (Scheufele, 1999). This condition is surely met by the time series of the public's perception, the economic news coverage and the unemployment rate. There is no meaningful reason why those time series should follow a deterministic trend or why their variance should be a function of the time. Unlike these three aspects, the time series of the Index of Production and the CPI follow an exponential growth function. By using only the growth rate of the indicators, the preconditions are met and consequently all statistical tests can be applied to the data. Due to the limited scale of this paper I report only the results of the tests 3) and 5). Analyses of ARIMA-adjusted time series can be considered as conservative tests that rather underestimate the relation-

ship between time series (Scheufele, 1999). Thus these two methods avoid the danger of over-interpreting the media's influence. The results of all other tests support the findings presented below and are available from the author on request.

Results

Evaluations of the State of the National Economy

H1a assumes that the perception of the national economic situation is strongly dependent upon the economic news coverage. Table 7 presents the results of the cross-correlations of the retrospective evaluations of the state of the economy and all independent time series.

Please insert Table 7 here

The bivariate correlations reveal first evidence for media effects, in particular for the media's rating of the general economic development. The time series 'General/GDP' leads the public's evaluations by one lag. Additionally the annual growth of the Index of Production leads the public by two months, corresponding with the time period until the statistics is published in the mass media. In contrast, no synchronous correlation between one of the Index of Production time series and the dependent measure reaches statistical significance. That means it is unlikely that people form their evaluations based on first-hand information. Further the public's evaluation correlates synchronously with both the media's judgment of the labor market situation and with the annual change of the unemployment rate. And also the monthly change of that indicator leads the public by one lag. These mixed results can be clarified by the multivariate regression analysis (cp. Table 8). Finally it can be stated that the consumer prices are not related to the evaluation of the national economic situation: neither the CPI series nor the media's ratings of that aspect show significant correlations.

In a second step a multivariate OLS-regression is computed. As the time series of the evaluations of the national economic situation (like all time series of the public's perception in this study) follows an AR(1)-process, the non-adjusted series is used here. Instead of the adjustment the first lag of the dependent series is added as an additional regressor. In this proceeding the AR(1)-

adjustment is reproduced accurately, taking the advantage that the extent of the autoregressive process can be easily compared with the influence of the independent variables. All media coverage and business cycle time series that revealed significant correlations with the dependent variable in the bivariate analyses are included as further regressors. The regressors are lagged by the time period of the significant correlation.

Please insert Table 8 here

The results of the multivariate analysis support the assumption that the general economic judgments by the mass media affect the public's evaluation. Their influence remains significant after the inclusion of the business cycle indicators. In contrast, the impact of both synchronous effects of the media's labor market coverage and the annual change of the unemployment rate vanishes, only the effect of the monthly change of the unemployment rate lagged by one month remains. This finding implies that the people orientate themselves on the labor market statistics distributed by the mass media. The unemployment figures of the last month are published during field time of the consumer survey, so that information is very present among the public. The interpretations of the labor market situation by the economic news coverage do not affect the public's evaluations in addition.

In conclusion, the findings support H1a for the public's evaluations of the national economic situation. The way the media rate the general economic situation is important for the public's evaluations. Furthermore, the results imply that the business cycle indicators are received by the public through the news. In contrast, there is no evidence that first-hand information leaves its mark on the evaluations of the national economic situation.

Expectations of the State of the National Economy

Please insert Table 9 & Table 10 here

The results on the public's expectations of the state of the national economy are quite similar to those regarding the evaluations. Media coverage of the general economic situation affects the

public's expectations. Both the bivariate and the multivariate analyses imply this conclusion. In contrast to the evaluations, the monthly change of the Index of Production is synchronously related to the public's expectations. As no official statistics are published up to this point in time, this is an indication that people perceive the most recent changes of the economic development by their own observations and use this information for their expectations. But compared to the general economic news coverage the Index of Production shows a clearly weaker effect. For the labor market coverage and the changes in the unemployment rate the same pattern as before can be detected. Again for the expectations there is a significant synchronous correlation between the time series of labor market news and the one of public's expectations, which is displaced by the first lag of the monthly change in the unemployment rate. This again indicates that the public receives the latest labor market statistics from the economic news but is not dependent upon additional interpretations by the mass media. Once again consumer prices are not associated with the national state of economy.

As a result, H1a is supported regarding the expectations of the state of the national economy. Although own observations of the economic development play a certain role, the mass media's influence is clearly dominant. Once more an important function of the mass media is publishing the recent labor market statistics.

H1b predicts that news coverage affects expectations more strongly than evaluations. To test H1b first the variance additionally explained by model 2 in contrast to model 1 are compared. In addition, the unstandardized regression coefficients of the general news coverage time series in model 3 can be contrasted (cp. Table 8 & Table 10). The mass media time series explain only 1 percentage point of variance of the evaluations in addition to the lagged dependent variable. In contrast, they additionally explain 4 percentage points of variance of the expectations. The difference mainly occurs due to the strong autoregressive process of the evaluations. The lagged dependent variable already explains 97 percent of variance. So the public's evaluations can be considered as very stable over time. External influences as the economic news coverage only have a relatively weak effect. The comparison of the unstandardized regression coefficients of the general news cov-

erage time series in model 3, controlled for the influence of the business cycle indicators, also implies stronger media effects on the expectations. Thus, the comparison supports H1b.

Evaluations of the Financial Situation of the Private Households

Please insert Table 11 & Table 12 here

H2a assumes that the perception of the personal financial situation is only weakly dependent upon economic news. And in fact, the analyses including the evaluations of the private households' own situation show no clear signs supporting media effects. The general economic coverage does not correlate at all with the dependent variable. The media's publication on the development of the consumer prices one month ago relates with the evaluations in the bivariate analysis. But this correlation is eliminated by the annual change of the CPI (lag 0). It seems as if the public learns about changes in prices from their own experience before these changes are officially reported by the federal statistical office. In contrast to this, it is hard to explain, why the labor market coverage lagged by four months affects the evaluation of the personal financial situation (even in the multivariate regression. Taking the pattern of the other results into account, I assume this finding to be a spurious correlation. Finally it is striking, that all business cycle indicators, most of them with rather long lags, enter the regression model significantly. Of course one cannot totally negate that people may consider developments dating back half a year or even longer. But it seems more plausible that those correlations appear due to the missing indicator for the private households' income. Especially changes in the performance of the national economy (measured here by the Index of Production) show effects in higher wages only slowly. Altogether, the results indicate that the evaluation of the personal financial situation is based on first-hand information on the earnings and spendings of each household. That means, despite the limitations due to missing data, the findings can be interpreted in consistence with H2a.

Expectations of the Financial Situation of the Private Households

Please insert Table 13 & Table 14 here

People's expectations of their own financial situation are related to the general economic news. Both time series cross-correlate significantly at the lags 0, 1 and 3. The relation remains significant for the lags 0 and 3 of the news coverage time series in the multivariate analysis and eliminates the effect of the change in the Index of Production. Further the recent change in the CPI influences the way the people see their own financial future. Interestingly, neither the unemployment rate nor the labor market coverage affects the personal expectations. The people obviously resist transferring the national labor market situation on their own job future. As an adequate indicator for the private incomes is missing, the following conclusion is not perfectly backed up by the data. But it seems plausible that people form their personal expectations based on change in prices and (supposably) in their income. Additionally they consider the general trends described in the economic news coverage. Again, although the lack of data limits the test of H2a, the most plausible interpretation of the findings is in-line with the hypothesis. Furthermore, the additional effect of the general economic news coverage supports H2b. While the analyses of the retrospective evaluations reveal no signs of media effects, the coverage plays a complementary role for the prognostic expectations.

Evaluations of the development in consumer prices

In H3a it is hypothesized that the perception of consumer prices is rather weakly related to the economic news coverage, while people's own observations should play an important role.

Please insert Table 15 & Table 16 here

The change in consumer prices is obviously perceived as a distinct issue which is not related to any other aspect of the state of the economy. Only the real development of the CPI and the reports on that aspect play a role. That supports the assumption that consumer prices are rather seen as a personal issue and are hardly associated with the national economy. The statistical results

indicate that people use both first-hand information (especially the changes in prices compared to the last month) and information from the news coverage. The mass media fulfill a double function: on the one hand they deliver the CPI to the people. This is indicated by the result that the annual change in the CPI (on which the media focuses as the inflation rate) is eliminated by the news coverage lagged by one month. On the other hand the media's presentation itself has an effect. According to these findings, H3a is rejected for the public's evaluations of change in consumer prices. Although people use their own experiences as assumed in H3a, the economic news coverage is more important as hypothesized in H3a.

Expectations of the development in consumer prices

Please insert Table 17 here

Expectations of the change in consumer prices seem to be independent from both business cycle indicators and economic news coverage. A significant correlation, synchronously with the general economic news, can be identified. Taking into account the other findings (with no notable outcomes) it is unlikely that this correlation indicates a meaningful relation between both time series. As Figure 2 shows, the expectations of the change in prices during the investigation period were affected by a few events: the introduction of the Euro; the rise in value added taxes; and the start of the subprime crisis.

Please insert Figure 2 here

It is possible that the way the media presented those events had an effect on the public's expectations. But with the longitudinal study design applied in this study this assumption cannot be tested. H2a is rejected for the expectations of consumer prices, and consequently H2b, too.

Expectations of the Development in Unemployment

Please insert Table 18 & Table 19 here

H4 assumes that the labor market is mainly perceived via the mass media and that first-hand information is less important. The results again show an effect of the general economic news. The time series Media: General/GDP correlates synchronously with the unemployment expectations. In the multivariate analysis the effect eliminates the one of the monthly change in the Index of Production. Naturally, the public's perception of the labor market is closely related to a change in the unemployment rate and the labor market news coverage. Once more, the main function of the mass media seems to be the distribution of the recent unemployment figures. Although the synchronous correlation between the labor market news and the public's expectations is very strong for an ARIMA-adjusted time series ($r = .44$), its effect is displaced by the first lag of the monthly change in unemployment in the regression model. But the news reports on the labor market still have an independent influence. This means that the media's own interpretations have an additional effect that goes beyond the mere publication of the labor market statistics. Thus H4a is partly supported by the data. Media effects on the public's expectations of unemployment can be shown. But there is no clear evidence that first-hand information play a large role for the aggregate expectations.

Discussion

This paper addresses the question whether the public's perceptions of the state of the economy are affected by the economic news coverage. The results of the time series analysis show media effects on the public's perception in Germany 1998-2007. Concretely, both evaluations and expectations of the national economic situation, expectations of the personal financial situation, evaluations of consumer price development and expectations of the labor market development are influenced by the economic news. Only the results regarding the evaluations of the situation of the private households and the expectations of consumer prices reveal no evidence of media influence.

The theoretical framework is mainly supported by the empirical findings. It can be demonstrated that the public is dependent upon the mass media's information and orientation function. This especially applies to the perception of the economic productivity. While the general and GDP-related coverage shows an independent influence on the public's perception for most aspects, there is almost no sign that the same is valid for direct observations of the economic productivity. In addition, the media provide statistics on the general economic development. A different variation of media dependency can be observed in regard to the labor market news coverage. Although the mass media report intensely on that issue, the coverage has no additional effect on the public's perception of the personal or national economic situation. The main function of the labor market news seems to be the distribution of the recent unemployment figures. Finally, the dependency of the public seems to be even stronger than hypothesized. For the public's perception of change in consumer prices, the coverage on prices is just as important as first-hand information. Also, no clear signs for the effect of people's own observations on the public's labor market judgment can be identified. In conclusion, the media dependency model (Ball-Rokeach, 1985; Ball-Rokeach & DeFleur, 1976) appropriately explicates the relationship between economy, economic news coverage, and public's perception.

It is not easy to finally judge whether the news media construct a biased reality perception among the public (Kepplinger, 1988, 1990; Kepplinger & Roth, 1978). On the one hand, the independent effects of the mass media time series in the multivariate analyses imply that the mass media create impressions that differ from the real economic development. On the other hand, the differences remain limited according to the bivariate analyses. Further, there is evidence that the mass media construct false ideas on how economic indicators interrelate. Among the public, recent changes in the unemployment rate are highly associated with the state of the national economy. In contrast to that, scholars of economics agree that unemployment can be considered as a lagging business cycle indicator. The labor market reacts only slowly to changes in national economic productivity (Winker, 2007). Consequently, if people form their perception of the national econom-

ic situation based on the developments in unemployment, their judgments do not respond to the recent situation but to changes in the past. In all likelihood, the public's association of labor market and national economy is a consequence of the intense labor market coverage.

On the individual level, the framework is built on heuristic information processing strategies (Hagen, 2005; Kahneman, 2003; van Raaij, 1989; Tversky & Kahneman, 1973, 1974). They explain the likeliness of media effects contingent on the question whether information from the news coverage is more easily available than first-hand information. Of course, those individual processes cannot be directly tested using aggregated data. But considering that the effects in large are situated at very short lags, the assumption of judgments based on availability heuristics is supported. The recently received information is top of the head and so most easily recalled.

Finally, the concept of impersonal influence (Mutz, 1998) leads to the assumption that people intentionally use first-hand information if they judge their own environment, while the mass media act as a main tool to observe societal issues. This conjecture is supported by the data, mainly by the differences between the perception of the personal and the national economic situation. The state of the national economy, which is without a doubt an aspect of the societal sphere, is at large perceived via the mass media. Due to missing data on the private incomes, the perception of the personal financial situation could not be explained perfectly. But the findings strongly suggest that first-hand information is the main source for judgments of that aspect.

Generally speaking, the result that media effects occur despite directly available information is remarkable from a communication scholar's point of view. Although people observe economy as active market participants, they do not generalize from their own experiences. According to my findings, and contrary to Haller and Norpoth's (1997) often quoted conclusion, in economic life, reality only bites regarding the perception of private economic matters. Beyond the personal environment, mass media serve as an important source for information and orientation.

The findings also bear societal and economic relevance. The way the public evaluates the national economic development has an impact on the evaluation of the government and thereby on

the voting decisions (Lewis-Beck & Paldam, 2000). The public's evaluations of the national economic situation are affected by the economic news coverage. Hence, an indirect effect on political attitudes and, consequently, on voting decisions can be assumed. Moreover, what the private households expect of their personal and the national economic future influences their consuming behavior (Katona, 1968). Thus, the media effects that could be demonstrated on the expectations of both aspects may in turn affect the economic decisions of the households and thereby indirectly impact the macro-economic situation.

Considering the indirect consequences that can possibly derive from the economic news coverage, it is quite comforting to see that the media effects do not lead to totally biased perceptions among the public. In the long run the public's judgments seem to be connected to the real economic development, also because the mass media orientate themselves on the business cycle indicators. But that does not exclude short-term impacts of biased economic reporting. If, for example, in the run-up of an election the economy is presented in a negative way, the people may vote the government out of office for the wrong reasons. Or, if the media overemphasize negative economic developments or even predict a recession in an economically critical situation, private households may reduce their spending and thus amplify the economic downwards process. The longitudinal study design applied here is not suitable to investigate such short-term effects. But taking into account the findings that media effects on the public's economic perceptions generally exist, such scenarios seem possible.

However, there are not only dangers that derive from economic news coverage. The results show that the mass media fulfill their function as a supplier of information and orientation quite well. They provide the public with information that cannot be directly observed and especially distribute the business cycle indicators. Without this orientation function of the economic news coverage the public would not be able to make well-informed economic judgments.

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Notes

[1] In Germany the survey is conducted by the market research institute GfK Marktforschung GmbH. The survey is conducted monthly from the 1st to the 15th with a quoted sample of 2,000 respondents. Interviews are conducted as computer-assisted in-home interviews. The results are representative for the population of Germany over the age of 14 at a confidence level of 95 percent and a share of 10 percent with an error interval of 1.3 percentage points (European Commission, 2007b).

[2] Concretly, the sample includes the national newspaper Frankfurter Allgemeine Zeitung (FAZ), Frankfurter Rundschau (FR), Süddeutsche Zeitung (SZ) and Welt, the news magazines Focus and Der Spiegel, and the TV newscasts Heute, Heute Journal, RTL aktuell, Sat.1 Nachrichten, Tagesschau and Tagesthemen.

[3] N=155; KMO=.80; Principal component analysis with Varimax-Rotation (Kaiser-Normalization); Rotation converged after 5 iterations; 48.94% explained variance; extraction of 4 factors (pre-set)

[4] The unadjusted time series of the Index of Production and of the CPI are provided by the German Federal Statistical Office (www.destatis.de; Statistisches Bundesamt, 2007, 2008). The unadjusted time series of the unemployment rate is provided by the German Federal Employment

Office (http://www.pub.arbeitsamt.de/hst/services/statistik/detail/z.html; Bundesagentur für Arbeit, n.D.) All seasonal adjusted time series are provided by the German Federal Bank. The unemployment rate series is adjusted by a modified version of Census-Method II, Version X-11. The Index of Production and the CPI series are adjusted by Census-Method X-12-ARIMA, Version 0.2.8 (Deutsche Bundesbank, 2008).

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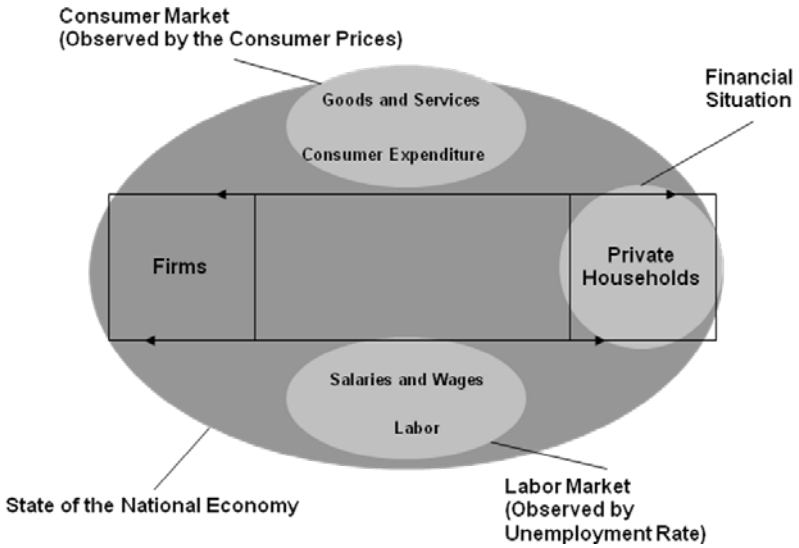
Figure 1: *A Simple Business Cycle*



Adapted from Lachmann, 2006, p. 14.

Table 1: *Questions from the Consumer Survey*

Question Wording
1. How has the financial situation of your household changed over the last 12 months?
2. How do you expect the financial position of your household to change over the next 12 months?
3. How do you think the general economic situation in the country has changed over the past 12 months?
4. How do you expect the general economic situation in this country to develop over the next 12 months?
5. How do you think that consumer prices have developed over the last 12 months?
6. By comparison with the past 12 months, how do you expect that consumer prices will develop in the next 12 months?
7. How do you expect the number of people unemployed in this country to change over the next 12 months?

Note:
Source: European Commission, 2007a, p. 47-49.

Table 2: *Time Series of Public's Economic Perceptions*

	Time-Reference	*N*	*M (SD)*	*Min*	*Max*
State of the National Economy	Evaluations	115	-33.98 (31.58)	-81.1	38.9
	Expectations	115	-16.80 (18.09)	-48.3	32.3
Financial Situation of the Private Households	Evaluations	115	-18.42 (10.59)	-48.1	-2.7
	Expectations	115	-4.55 (6.00)	-20.9	8.1
Development in Consumer Prices	Evaluations	115	-39.15 (21.24)	-85.6	8.0
	Expectations	115	-38.65 (18.47)	-74.4	-9.6
Development in Unemployment	Expectations	115	-29.64 (25.55)	-67.5	36.7

Table 3: *Categories of the Content Analysis*

Category	Examples
General / GDP	State of the economy in general, business cycle in general, economic growth in general, general economic prognoses, GDP growth rate, Index of Production
Labor Market	Unemployment pay, "Arbeitslosengeld II", unemployment, labor market situation, number of jobs lost/created, labor market policy
Private Incomes	Private Income, debt of the private households, per capita income, saving ratio
Prices	Inflation, Prices, Consumer Price Index, commodity prices, price policy, gasoline prices

Note:
Source: M. Vollbracht, personal communication, 2008, April, 7th.

Table 4: *Factor Analysis: Consonance of the Media's Economic Ratings*

	Component		
	1	2	3
SZ - General/GDP	.89	.28	
Welt - General/GDP	.88	.27	
FR - General/GDP	.86	.25	
FAZ - General/GDP	.85	.33	
Tagesthemen - General/GDP	.84		
Tagesschau - General/GDP	.81		
Heute - General/GDP	.79		
Heute Journal - General/GDP	.77	.26	
RTL - General/GDP	.73		
SAT.1 - General/GDP	.67	.21	
Spiegel - General/GDP	.66		
Focus - General/GDP	.60		
Focus - Prices	.28		
Tagesthemen - Labor Market		.87	
SZ - Labor Market	.23	.82	
FR - Labor Market		.81	
SAT.1 - Labor Market		.81	
Tagesschau - Labor Market	.25	.79	
Heute - Labor Market	.30	.78	
RTL - Labor Market		.78	
Heute Journal - Labor Market	.25	.78	
Welt - Labor Market	.38	.76	
FAZ - Labor Market	.32	.74	
Spiegel - Labor Market		.66	
Focus - Labor Market		.60	
Welt - Prices			.75
SZ - Prices			.72
Heute - Prices			.71
Tagesschau - Prices			.71
FR - Prices			.66
RTL Aktuell - Prices			.66
FAZ - Prices			.66
Tagesthemen - Prices			.63
Heute Journal - Prices			.62
SAT.1 - Prices			.59
Spiegel - Prices			.30

Note:
N = 155; *KMO* = .87; Principal Component Analysis with Varimax-Rotation (Kaiser-Normalization); Rotation converged after 5 iterations; 57.38% explained variance; extraction of 3 factors (pre-set); only factor loadings above .2 are presented.

Table 5: *Time Series of Media's Economic Ratings*

	N	*M (SD)*	*Min*	*Max*
General / GDP	115	-18.37 (68.42)	-186	142
Labor Market	115	-49.90 (51.16)	-260	32
Prices	115	-2.03 (9.73)	-39	26
Private Incomes	115	-0.70 (1.64)	-8	3

Table 6: *Time Series of Business Cycle Indicators*

		N	*M (SD)*	*Min*	*Max*
Index of Production	GR1	115	0.19 (0.74)	-1.4	2.2
	GR12	115	2.47 (4.70)	-9.0	17.5
Unemployment Rate	D1	115	-0.02 (0.14)	-0.5	0.7
	D12	115	-0.21 (0.87)	-2.1	1.8
Consumer Price Index	GR1	115	0.01 (0.27)	-0.8	0.7
	GR12	115	1.40 (0.53)	0.2	2.7

Note:
GR1: monthly growth rate; GR12: annual growth rate; D1: monthly difference; D12: annual difference; all changes in percent.

Table 7: *Cross-Correlations: Lag: Evaluations of the State of the National Economy*

Lag: Evaluations of the State of the national Economy									
Lead:	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
Consumer Price Index GR1	.15	-.12	.01	.00	-.04	.08	-.07	.02	.02
Consumer Price Index GR12	.08	-.03	-.09	.04	-.05	.10	-.07	-.02	-.02
Unemployment Rate D1	-.09	-.13	.01	-.07	.03	**-.23**	-.09	-.06	-.11
Unemployment Rate D12	-.06	-.01	-.11	-.01	**-.33**	-.14	-.05	-.16	-.04
Index of Production GR1	.09	.16	.13	-.07	.17	.04	.05	.00	.16
Index of Production GR12	**.24**	.00	.14	-.05	.06	-.06	**.22**	.14	.18
Media: General/GDP	.02	.11	.00	.07	.18	**.19**	.07	.10	.17
Media: Labor Market	-.09	.11	.12	-.14	**.34**	.13	-.08	-.04	.09
Media: Prices	-.07	.02	-.07	-.02	.00	.11	-.01	.09	-.07

Note:
N = 155 (Lag 0);
GR1: monthly growth rate; GR12: annual growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0); Unemployment Rate D1: (1,0,0);
Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0); Index of Production GR12: (3,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0); Media: Prices: (1,0,2);
Evaluations of the State of the National Economy: (1,0,0).
Coefficients printed in black exceed the double standard error.

Table 8: *OLS-Regression on Evaluations of the State of the National Economy*

	DV: Evaluations of the State of the National Economy					
	Model1		Model 2		Model 3	
	B *(SE)*	*β*	*B* *(SE)*	*β*	*B* *(SE)*	*β*
Lagged Dependent Variable	1.00 (0.02)	.98***	0.98 (0.02)	.97***	0.98 (0.02)	.96***
Unemployment Rate D1 (Lag 1)					-12.05 (4.70)	-.05*
Unemployment Rate D12 (Lag 0)					--	--
Index of Production GR12 (Lag 2)					0.43 (0.14)	.05**
Media: General/GDP (Lag 1)			0.06 (0.02)	.05**	0.05 (0.02)	.05**
Media: Labor Market (Lag 0)			0.04 (0.02)	.04*	--	--
adj. R^2		.97***		.97***		.97***
F(df)	3166.93 (1,111)		1164.70 (3,109)		682.63 (6,106)	
ΔR^2 (compared to Model 1)				.01**		.01***
Change in F(df)				6.51 (2,109)		7.26 (5,106)

Note:
N = 113;
GR12: annual growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Unemployment Rate D1: (1,0,0); Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR12: (3,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0).
Only coefficients that exceed the probability level of $p < .1$ are presented.
(*) $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; -- n.s.

Table 9: *Cross-Correlations: Lag: Expectations of the State of the National Economy*

Lag: Expectations of the State of the National Economy									
Lead:	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
Consumer Price Index GR1	.07	-.16	.03	.09	-.03	.08	-.08	.01	.00
Consumer Price Index GR12	.08	-.04	-.09	.15	-.14	.14	-.04	.01	-.02
Unemployment Rate D1	.06	**-.20**	.05	-.09	.06	**-.27**	-.05	.00	-.17
Unemployment Rate D12	.05	-.14	.01	-.02	**-.22**	**-.19**	-.02	-.10	-.06
Index of Production GR1	.11	.17	-.01	-.06	**.24**	-.04	-.03	.06	.08
Index of Production GR12	.10	.00	.17	-.04	.03	-.08	.16	.11	-.05
Media: General/GDP	.03	.00	.01	.00	**.35**	**.23**	.07	.07	.16
Media: Labor Market	-.01	.18	.08	-.18	**.33**	.08	-.07	-.02	.15
Media: Prices	-.02	-.03	-.02	.04	.03	-.02	.07	.01	-.05

Note:
N = 155 (Lag 0);
GR1: monthly growth rate; GR12: annual growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0); Unemployment Rate D1: (1,0,0);
Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0); Index of Production GR12: (3,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0); Media: Prices: (1,0,2);
Expectations of the State of the National Economy: (1,0,0).
Coefficients printed in black exceed the double standard error.

Table 10: *OLS-Regression on Expectations of the State of the National Economy*

	DV: Expectations of the State of the National Economy					
	Model 1		Model 2		Model 3	
	B *(SE)*	*β*	*B* *(SE)*	*β*	*B* *(SE)*	*β*
Lagged Dependent Variable	0.93 (0.04)	.92***	0.91 (0.03)	.90***	0.90 (0.03)	.89***
Unemployment Rate D1 (Lag 1)					-13.05 (6.80)	-.09(*)
Unemployment Rate D12 (Lag 0)					--	--
Unemployment Rate D12 (Lag 1)					--	--
Index of Production GR1 (Lag 0)					2.10 (1.13)	.06(*)
Media: General/GDP (Lag 0)			0.09 (0.02)	.14***	0.08 (0.02)	.13***
Media: General/GDP (Lag 1)			0.07 (0.02)	.11***	0.06 (0.02)	.09**
Media: Labor Market (Lag 0)			0.03 (0.02)	.07*	--	--
adj. R^2		.85***		.89***		.90***
F(df)	657.69 (1,112)		232.80 (4,109)		123.94 (8,105)	
ΔR^2 (compared to Model 1)				.04***		.05***
Change in F(df)			14.12 (3,109)		7.80 (7,105)	

Note:
N = 114;
GR1: monthly growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Unemployment Rate D1: (1,0,0); Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0); Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0).
Only coefficients that exceed the probability level of $p < .1$ are presented.
(*) $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; -- n.s.

Table 11: *Cross-Correlations: Lag: Evaluations of the Financial Situation of the Private Households*

Lag: Evaluations of the Financial Situation of the Private Households																	
Lead:	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Consumer Price Index GR1	.11	-.03	-.03	.06	-.13	-.03	-.07	.05	.09	.13	.08	-.07	-.03	-.08	.06	-.27	.01
Consumer Price Index GR12	.16	-.10	.02	.15	-.19	-.06	-.10	.08	.04	.09	.01	-.13	-.04	-.12	-.01	-.14	-.09
Unemployment Rate D1	-.13	-.01	-.07	-.18	.07	-.13	.02	-.17	-.06	-.02	.00	-.18	.09	-.09	.07	-.13	.01
Unemployment Rate D12	-.15	.05	-.17	-.07	-.09	-.10	.02	-.22	.08	-.06	.02	-.22	.15	-.05	-.06	-.07	-.01
Index of Production GR1	.11	-.01	.10	-.03	.12	.04	-.05	-.10	.19	.08	.04	-.05	-.21	.24	.17	-.06	.07
Index of Production GR12	.12	-.17	-.07	-.04	.16	-.20	.19	.11	.11	.14	.04	.01	.09	.13	.02	.27	-.05
Media: General/GDP	.04	.04	.10	-.04	-.01	.12	.04	.16	.03	.02	.12	.00	-.03	.00	.10	-.07	.13
Media: Labor Market	-.03	.04	.11	.02	.04	.01	-.01	-.03	.22	-.10	.03	.06	-.11	-.03	.02	-.07	-.08
Media: Prices	-.09	.01	-.18	-.03	.12	.20	-.14	.05	.01	-.16	-.14	.05	.10	-.09	.04	.22	.13

Note:
N = 155 (Lag 0);
GR1: monthly growth rate; GR12: annual growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0); Unemployment Rate D1: (1,0,0);
Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0); Index of Production GR12: (3,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0); Media: Prices: (1,0,2);
Evaluations of the Financial Situation of the Private Households: (1,0,0).
Coefficients printed in black exceed the double standard error.

Table 12: *OLS-Regression on Evaluations of the Financial Situation of the Private Households*

	DV: of the Financial Situation of the Private Households					
	Model 1		Model 2		Model 3	
	B (SE)	*β*	*B (SE)*	*β*	*B (SE)*	*β*
Lagged Dependent Variable	0.96 (0.03)	.96***			0.93 (0.03)	.93
Consumer Price Index GR1 (Lag 11)					-2.43 (1.36)	-.05(*)
Consumer Price Index GR 12 (Lag 0)					-2.51 (1.11)	-.06*
Unemployment Rate D12 (Lag 3)					-3.41 (1.96)	-.04(*)
Unemployment Rate D12 (Lag 7)					-4.03 (1.95)	-.05*
Index of Production GR1 (Lag 4)					--	--
Index of Production GR1 (Lag 9)					1.09 (0.53)	.05*
Index of Production GR12 (Lag 11)					0.17 (0.07)	.06*
Media: Labor Market (Lag 4)			0.02 (0.01)	.06*	0.01 (0.01)	.05(*)
Media: Prices (Lag 1)			0.08 (0.04)	.05(*)	--	--
Media: Prices (Lag 11)			0.09 (0.04)	.06*	--	--
adj. R^2		.92***		.92***		.94***
F(df)	1122.38 (1,102)		313.354 (4,99)		149.18 (11,92)	
ΔR^2 (compared to Model 1)				.01**		.03***
Change in F(df)			4.56 (3,99)		5.24 (10,92)	

Note:
N = 103;
GR1: monthly growth rate; GR12: annual growth rate; D12: annual difference;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0);
Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0);
Index of Production GR12: (3,0,0); Media: Labor Market: (1,0,0); Media: Prices: (1,0,2).
Only coefficients that exceed the probability level of $p < .1$ are presented.
(*) $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; -- n.s.

Table 13: *Cross-Correlations: Lag: Expectations of the Financial Situation of the Private Households*

Lag: Expectations of the Financial Situation of the Private Households									
Lead:	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
Consumer Price Index GR1	-.08	-.04	.03	.03	-.08	.14	-.16	.05	.00
Consumer Price Index GR12	-.06	.09	-.07	.13	-.19	.10	-.12	.09	.01
Unemployment Rate D1	.01	-.11	-.08	-.04	.12	-.09	-.04	-.06	-.13
Unemployment Rate D12	-.06	-.06	-.15	.10	.00	-.11	.00	-.13	-.12
Index of Production GR1	.04	.03	.06	-.06	.22	-.09	-.02	-.02	.08
Index of Production GR12	.05	-.12	.03	-.10	.12	-.16	.22	.02	-.01
Media: General/GDP	.01	.01	.00	-.21	.23	.20	.08	.21	-.04
Media: Labor Market	-.01	.18	.10	-.15	.17	-.05	.08	.13	.19
Media: Prices	.05	-.10	-.05	.09	-.01	.07	.04	.09	-.14

Note:
N = 155 (Lag 0);
GR1: monthly growth rate; GR12: annual growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0); Unemployment Rate D1: (1,0,0);
Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0); Index of Production GR12: (3,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0); Media: Prices: (1,0,2);
Expectations of the Financial Situation of the Private Households: (1,0,0).
Coefficients printed in black exceed the double standard error.

Table 14: *OLS-Regression on Expectations of the Financial Situation of the Private Households*

	DV: Expectations of the Financial Situation of Private Households					
	Model 1		Model 2		Model 3	
	B *(SE)*	*β*	*B* *(SE)*	*β*	*B* *(SE)*	*β*
Lagged Dependent Variable	0.91 (0.04)	.91***	0.91 (0.04)	.91***	0.92 (0.04)	.92***
Consumer Price Index GR12 (Lag 0)					-2.61 (1.03)	-.09*
Index of Production GR1 (Lag 0)					--	--
Index of Production GR12 (Lag 2)					--	--
Media: General/GDP (Lag 0)			0.02 (0.01)	.10**	0.02 (0.01)	.09*
Media: General/GDP (Lag 1)			0.02 (0.01)	.07(*)	--	--
Media: General/GDP (Lag 3)			0.02 (0.01)	.07*	0.02 (0.01)	.07*
Media: Labor Market (Lag 4)			0.01 (0.01)	.08*	--	--
adj. R^2		.83***		.86***		.87***
F(df)	549.03 (1,109)		132.33 (5,105)		89.90 (8,102)	
ΔR^2 (compared to Model 1)				.03***		.04***
Change in F(df)			5.50 (4,105)		4.86 (7,102)	

Note:
N = 111;
GR1: monthly growth rate; GR12: annual growth rate;
(S)ARIMA adjustments:
Consumer Price Index GR12: (1,0,0)(1,0,0); Index of Production GR1: (3,0,0)(2,0,0);
Index of Production GR12: (3,0,0); : General/GDP: (2,0,0); Media: Labor Market: (1,0,0).
Only coefficients that exceed the probability level of $p < .1$ are presented.
(*) $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; -- n.s.

Table 15: *Cross-Correlations: Lag: Evaluations of the Development in Consumer Prices*

Lag: Evaluations of the Development in Consumer Prices									
Lead:	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
Consumer Price Index GR1	.21	-.06	.02	.02	-.39	-.10	-.08	.06	.07
Consumer Price Index GR12	.09	-.12	.05	.02	-.36	-.12	-.10	.00	.01
Unemployment Rate D1	-.19	.12	-.08	.07	.03	.01	.14	-.07	-.08
Unemployment Rate D12	-.11	.07	-.10	.08	.06	.01	.01	-.11	.02
Index of Production GR1	.07	-.01	-.06	-.03	.04	-.12	.03	-.09	.03
Index of Production GR12	-.08	-.13	-.16	.10	.05	-.13	.16	.06	.03
Media: General/GDP	-.01	.03	-.03	-.03	.05	-.13	.10	.00	-.03
Media: Labor Market	-.05	.01	-.11	-.06	-.03	-.07	-.05	-.06	-.01
Media: Prices	-.09	-.04	-.10	.12	.31	.28	.01	-.01	-.01

Note:
N = 155 (Lag 0);
GR1: monthly growth rate; GR12: annual growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0); Unemployment Rate D1: (1,0,0);
Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0); Index of Production GR12: (3,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0); Media: Prices: (1,0,2);
Evaluations of the Development in Consumer Prices: (1,0,0).
Coefficients printed in black exceed the double standard error.

Table 16: *OLS-Regression on Evaluations of the Development in Consumer Prices*

	DV: Evaluations of the Development in Consumer Prices					
	Model 1		Model 2		Model 3	
	B (SE)	*β*	*B (SE)*	*β*	*B (SE)*	*β*
Lagged Dependent Variable	0.97 (0.02)	.97***	0.98 (0.02)	.98***	0.98 (0.02)	.97***
Consumer Price Index GR1 (Lag 0)					-5.51 (2.83)	-.05(*)
Consumer Price Index GR12 (Lag 0)					--	--
Media: Prices (Lag 0)			0.22 (0.07)	.07***	0.13 (0.07)	.04*
Media: Prices (Lag 1)			0.21 (0.07)	.07***	0.18 (0.06)	.06**
korr. R^2		.94***		.95***		.95***
F(df)	1667,17 (1/112)		661,21 (3/110)		440,65 (5/108)	
ΔR^2 (compared to Model 1)				.01***		.02***
Change in *F*(df)			10,90 (2/110)		9,37 (4/108)	

Note:
N = 114;
GR1: monthly growth rate; GR12: annual growth rate;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0); Media: Prices: (1,0,2);
Index of Production GR12: (3,0,0); : General/GDP: (2,0,0); Media: Labor Market: (1,0,0).
Only coefficients that exceed the probability level of $p < .1$ are presented.
$^{(*)}p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; -- n.s.

Table 17: *Cross-Correlations: Lag: Expectations of the Development in Consumer Prices*

Lag: Expectations of the Development in Consumer Prices									
Lead:	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
Consumer Price Index GR1	.00	.00	.06	.13	-.15	-.07	-.07	.03	.04
Consumer Price Index GR12	.00	.01	-.04	.11	-.16	-.02	-.04	.12	-.03
Unemployment Rate D1	.07	.11	.06	.06	.01	.11	.08	-.04	-.06
Unemployment Rate D12	.08	.11	.11	.11	-.08	.00	.00	.03	-.04
Index of Production GR1	-.05	.00	.03	.03	.02	-.06	-.13	-.08	.01
Index of Production GR12	.02	-.02	.02	.01	-.04	-.18	.10	.01	-.05
Media: General/GDP	-.14	-.08	.06	.01	**.19**	.07	.04	.02	.01
Media: Labor Market	-.14	-.07	.07	-.06	.05	-.01	-.04	-.08	-.04
Media: Prices	-.02	.06	-.02	.06	.13	.10	-.02	.04	.06

Note:
N = 155 (Lag 0);
GR1: monthly growth rate; GR12: annual growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0); Unemployment Rate D1: (1,0,0);
Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0); Index of Production GR12: (3,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0); Media: Prices: (1,0,2);
Expectations of the Development in Consumer Prices: (1,0,0).
Coefficients printed in black exceed the double standard error.

Figure 2: *Expectations of the Development in Consumer Prices over Time*

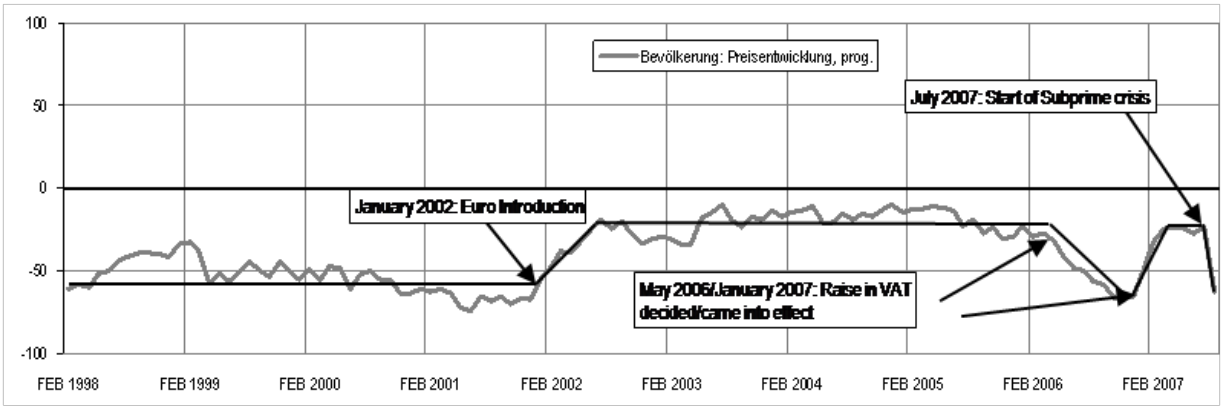


Table 18: *Cross-Correlations: Lag: Expectations of the Development in Unemployment*

Lag: Expectations of the Development in Unemployment									
Lead:	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
Consumer Price Index GR1	.06	-.15	-.03	.09	.05	.10	.02	-.01	-.13
Consumer Price Index GR12	-.01	.00	-.11	.12	-.07	.18	-.05	-.04	-.08
Unemployment Rate D1	.12	-.18	.09	-.09	.03	-.35	-.01	.01	.00
Unemployment Rate D12	.13	-.13	.02	-.05	-.24	-.23	.04	-.03	-.04
Index of Production GR1	.10	.14	.02	-.09	.19	.01	.04	-.01	.16
Index of Production GR12	.22	.01	.18	-.05	.02	-.10	.09	.12	.05
Media: General/GDP	-.01	.08	.03	.02	.22	.14	.06	.10	.16
Media: Labor Market	-.06	.12	.11	-.13	.44	.03	-.12	-.12	.20
Media: Prices	-.04	.03	-.07	.06	-.07	-.05	.05	.06	.01

Note:
N = 155 (Lag 0);
GR1: monthly growth rate; GR12: annual growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Consumer Price Index GR1: (0,0,0); Consumer Price Index GR12: (1,0,0)(1,0,0); Unemployment Rate D1: (1,0,0);
Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0); Index of Production GR12: (3,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0); Media: Prices: (1,0,2);
Expectations of the Development in Unemployment: (1,0,0).
Coefficients printed in black exceed the double standard error.

Table 19: *OLS-Regression on Expectations of the Development in Unemployment*

	DV: Expectations of the Development in Unemployment					
	Model 1		Model 2		Model 3	
	B (SE)	*β*	*B (SE)*	*β*	*B (SE)*	*β*
Lagged Dependet Variable	0.95 (0.03)	.94***	0.91 (0.03)	.90***	0.90 (0.03)	.89***
Unemployment Rate D1 (Lag 1)					-19.82 (8.84)	-.09*
Unemployment Rate D12 (Lag 0)					--	--
Unemployment Rate D12 (Lag 1)					--	--
Index of Production W1 (Lag 0)					--	--
Media: General/GDP (Lag 0)			0.07 (0.03)	.08**	0.05 (0.02)	.06*
Media: Labor Market (Lag 0)			0.07 (0.02)	.10**	--	--
Media: Labor Market (Lag 4)			0.07 (0.02)	.10***	0.06 (0.02)	.09***
adj. R^2		.89***		.91***		.92***
F(df)	854.70 (1,109)		289.98 (4,106)		164.36 (8,102)	
ΔR^2 (compared to Model 1)				.03***		.04***
Change in *F*(df)			12.39 (3,106)		8.32 (7,102)	

Note:
N = 111;
GR1: monthly growth rate; D1: monthly difference; D12: annual difference;
(S)ARIMA adjustments:
Unemployment Rate D1: (1,0,0); Unemployment Rate D12: (1,0,2)(0,0,1); Index of Production GR1: (3,0,0)(2,0,0);
Media: General/GDP: (2,0,0); Media: Labor Market: (1,0,0).
Only coefficients that exceed the probability level of $p < .1$ are presented.
(*) $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; -- n.s.