

The Euro Cash Changeover, Inflation Perceptions and the Media*

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Very preliminary and incomplete

Abstract

In the aftermath of the euro cash changeover, inflation perceptions rapidly rose while actual inflation figures remained almost unchanged. While several explanation have been already proposed this paper explores another important link: media reporting became unusually intensive and thereby influenced consumers' perceptions. Employing a unique dataset on media reporting for Germany, we provide evidence that the content of media reporting significantly contributed to the break of this relationship.

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1 Introduction

The introduction of the euro coins in January 2002 led to a surprisingly large upwards shift in inflation perceptions in several euro area countries. Unlike in the historical data, where inflation perceptions relatively closely tracked official inflation rates, this was not the case during the year 2002. Quantified figures of inflation perceptions for Germany rose from 3.4 percent in January to 6.1 percent in May 2002. At the same time, official inflation rates fell from 2.2 to 1.1 percent. And while economists were worried about a deflationary period, consumers' inflation perceptions remained at very high levels at least until the end of 2003.

Despite several attempts to explain this large gap between inflation perceptions and official inflation rates, there is still no sufficient explanation for it. In this paper we argue that several surveys show that people obtain their information on current economic conditions mainly through the media, especially TVs and newspapers. Hence, the media play an important role as a transmitter of information. If, however, media reports do not reflect reality, but rather exaggerate or even make up bad news, this leads to a so-called media bias. We propose a new channel that can explain this empirical fact: media reporting was unusually biased towards exaggerating the inflationary effect of the euro during this period and this bias was transmitted to consumers' perceptions. We show that inflation perceptions react strongly to media reports that deal with the topic "inflation" using a dynamic empirical model.

Understanding how inflation perceptions are formed and what influences them is very important. First, high inflation perceptions may have real effects. Higher perceived inflation rates may lead to an underestimation of the purchasing power of households and therefore to a reduction in spending.¹ Moreover, inflation perception might feed into inflation expectations. Deteriorations in inflation expectation would have consequences for

¹See [Lein and Maag \(2008\)](#), [Hofmann et al. \(2006\)](#) and [Stix \(2007\)](#).

wage claims, saving and investment decisions. Furthermore, inflation expectations may lead to higher future inflation rates as they may be self-fulfilling (Leduc et al., 2007). Evidence for a possible spillover from inflation perception to inflation expectations is provided by Fluch and Stix (2005). This finding was recently supported by the survey of the Bank of England and the study by Blanchflower and Kelly (2008) who conclude that consumers' price expectations are influenced by past experience of inflation. Given the role inflation perceptions may play for several macroeconomic dynamics, we still know remarkably little about the formation of inflation perceptions (Lein and Maag, 2008).

Canonical macroeconomic theory assumes that agents have the ability to process as much information as they need instantaneously and thus have perfect information about the current state variables. Sims (2003) relaxes this strong assumption and replaces it with the assumption that agents only have finite capacity to process information and thus cannot observe the state perfectly. Anecdotic evidence supports Sim's assumption of information processing constraints is relevant for the information consumers have about the current rate of inflation: for instance, Fullone et al. (2007) published a survey amongst Italian consumers, where they ask whether the respondents know the official inflation statistic. 66.9 percent say that they don't know the current statistic or have not even heard of it before.² When asking for the source of their information about the current rate of inflation, most consumers say they obtain it from the media, more precisely, 82 percent say that they receive their information from TVs and 52 percent from newspapers. We therefore explicitly take into account the media as a transmitter of news on inflation. We assume that media report on inflation and consumers absorb the information provided in each report probabilistically. We then highlight a second issue: what media report is not always a mirror image of reality. Especially, during the euro cash changeover, media reporting was biased. In Germany, the expression "Teuro", which is a composite of the

²See <http://www.oecd.org/dataoecd/59/53/39562145.pdf>.

words “teuer” (expensive) and euro has been present in the media for many months. The “Teuro” debate therefore provides us with an interesting natural experiment, as media reporting on the inflationary effect of the euro was unusually high, despite actual inflation figures were relatively low.

The remainder of this paper proceeds as follows:

2 Literature review

This section briefly outlines the related literature. Our empirical set up is related to two different strands of the literature. The first deals with the explanation of the observed gap between inflation perceptions and official inflation rates in the aftermath of the euro cash changeover. The second borrows also from other areas of science such as political science, media research and psychology and highlights the impact of media on peoples’ opinions and information sets.

The strong rise in inflation perception and its persistence for some euro countries gave rise to an extensive search and debate on the driving forces of inflation perception. Several explanations to rationalize the developments in inflation perceptions are presented in for instance in [Fluch and Stix \(2005\)](#) and [Del Giovane and Sabbatini \(2006\)](#) and can be summarized as follows: Price movements in frequently bought products, asymmetry in the perception of price increases relative to price decreases, a priori expected price movements, the complexity of conversion rates, and, finally, media coverage.

The explanations of movements in frequently bought products and asymmetry in the perception of price increases versus price reductions are embedded in the index of perceived inflation constructed by [Brachinger \(2006\)](#). The index is based upon two assumptions. First, that goods that are bought more frequently receive a greater attention than price changes in less frequent bought product groups ([Kahnemann and Tversky, 1979](#)). Second,

that consumers notice rather price increases than price reductions (Burgoyne et al., 1999). However, there is not much evidence, that a strong rise in the prices of frequently bought products can explain gap between perceived and actual inflation in the aftermath of the euro cash changeover. For example, Aucremanne et al. (2007) find no evidence that strong rises in prices of frequently bought products can explain the . Also Doehring and Mordonu (2007) show that the out-of-the-pocket expenditure HICP index does not perform any better as the all items containing HICP index in explaining inflation perceptions.

Traut-Mattausch et al. (2004) argue that people like to see their ex ante expectations confirmed. The authors present experimental evidence that links high inflation perceptions in 2002 to the existence of a priori expectations of high price increases before the cash changeover. In their line of argumentation people selectively update only the share of information that complements their own expectations. Thus, if they expect prices to rise, they will most likely focus and react to upward price changes. However, a priori expectations, although significant, have not been sufficiently high to explain the large gap between perceived and actual inflation (Doehring and Mordonu, 2007).

Other explanations look at the process of converting the old currencies into euro prices. Ehrmann (2006) compares several euro area countries and finds that the gap is larger in countries with simpler conversion rates, where people are more aware of price increases. Dziuda and Mastrobuoni (2006) find that the longer people stick to converting the euro prices into their old currency the more likely it is that they will overestimate current inflation. The obvious explanation for this phenomenon is that they neglect price increases that would have had happen if they had stick to their old currency.

In addition to all mentioned effects, the style and tone of media reporting might induce distorting effects. Lamla and Lein (2008) analyse what impact media reporting has on consumers' inflation expectations. They find that media reporting may bias expectations of consumers. These findings are in line with a large body of the literature in political economy

and media science. For example, [DellaVigna and Kaplan \(2007\)](#) find that media can influence voting decisions. Similarly, [Hetherington \(1996\)](#) puts forward that media consumption and attention through the mass media negatively shaped voters' retrospective economic assessments in the 1992 election. Other studies find that media tend to bias economic news in general, see for instance [Gentzkow and Shapiro \(2006\)](#) and [Mullainathan and Shleifer \(2005\)](#) for theoretical models and [Shah et al. \(1999\)](#) and [Groeling and Kernell \(1998\)](#) for empirical evidence. Hence, such a media bias may exist and it may also be an explanation for the observed gap between actual and perceived inflation.

3 Data

For the media reports we rely on data kindly provided by the media research institute Mediatenor.³ The data comprises articles and media releases on a monthly frequency for the time span 01/1998 to 09/2007 in Germany covering statements dealing with inflation which are at least five lines long in the case of printed media and last at least five seconds for television broadcasts.⁴ The coding is based on the standards of the media content analysis and the data contain different specifications. We are provided with the overall number of reports in that given period, the amount of reports dealing with rising or falling inflation, whether the focus of the report was mainly the present, the past or the future, if it was distributed via TV or newspaper and whether it is located on the title page or not. We follow [Lamla and Lein \(2008\)](#) and generate the following measures of media reporting about inflation.

³See www.mediatenor.de for details on media content analysis.

⁴In detail following news sources are analyzed: Daily press: Frankfurter Allgemeine Zeitung, Welt, Süddeutsche Zeitung, Frankfurter Rundschau, Tageszeitung, Bild, Neue Zürcher Zeitung, Berliner, Volksstimmer, Sächsische, Westdeutsche Allgemeine Zeitung, Kölner Stadt-Anzeiger, Rheinischer Merkur; daily TV-News: ARD Tagesschau, Tagesthemen, ZDF Heute, Heute Journal, RTL Aktuell, SAT.1 18:30, ProSieben Nachrichten; Weekly Press: Spiegel, Focus, Die Woche, Wochenpost, Welt am Sonntag, Bild am Sonntag, Die Zeit.

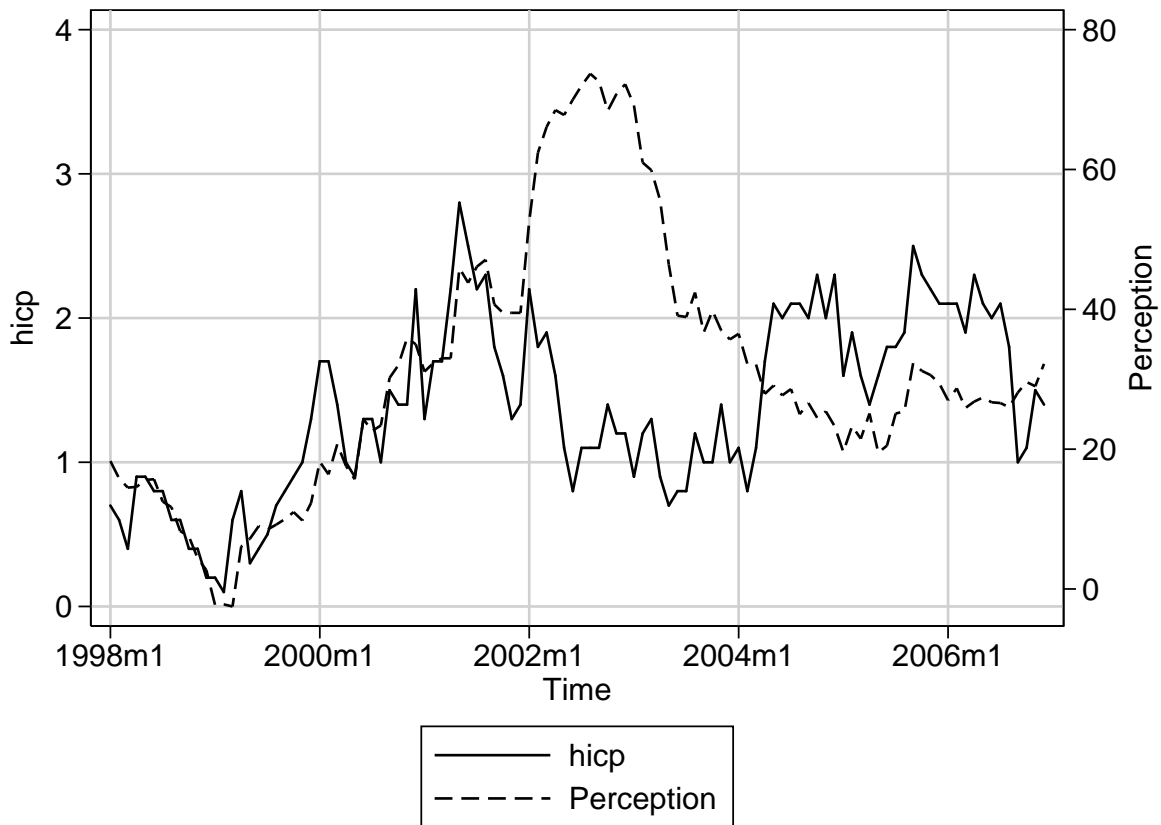
To capture the content of the news stories, we construct a variable summarising the number of reports on rising inflation (*News Rising Inflation.*). In a similar fashion *News Falling Inflation* denotes reports containing news on falling inflation.

Finally, we employ simple count variables that capture how often a specific terminology is mentioned in the media. These variables are mainly used as a test for robustness of our main results. The count measures are obtained by searching through LexisNexis, an online database of media articles. We use two popular terms to back up our line of argumentation. First, we count the articles using the term “Teuro” (*Teuro*). “Teuro” is a concatenation of the words “teuer”, the German equivalent for expensive, and the word euro. Analogously, we count the expression “euro introduction” (*euro*). The latter *per se* does not contain a particular tone as it just reminds the public of a particular event related to their currency. The word “Teuro”, however, clearly presumes that inflation has been and/or will be rising. Given that there is no evidence that the euro introduction has affected prices in Germany significantly, the Teuro-discussion is an example for a media exaggeration.

As measure for perceived inflation we employ survey data collected by the EU Consumer Survey. Inflation perceptions are captured by asking households: “How do you think that consumer prices have developed over the last 12 months? They have...”. Respondents express their beliefs on a five-option ordinal scale: “risen a lot, risen moderately, risen slightly, stayed about the same, fallen”. We used the balance figures as calculated by Eurostat. Furthermore, we also applied quantified inflation perception data kindly provided by the Bundesbank. We illustrate the developments of the actual and perceived inflation rate in Figure 1. The quantified series of inflation perceptions tracks relatively closely the actual HICP inflation rate prior to 2002. After the euro cash changeover, a gap between the two series emerges, which gap continues to grow until early 2003 and thereafter starts to decrease until the beginning of 2004. Interestingly, inflation perceptions remain low and relatively stable from 2004 onwards while actual inflation rises slightly above perceived

inflation rates.

Figure 1: Inflation and Inflation Perceptions

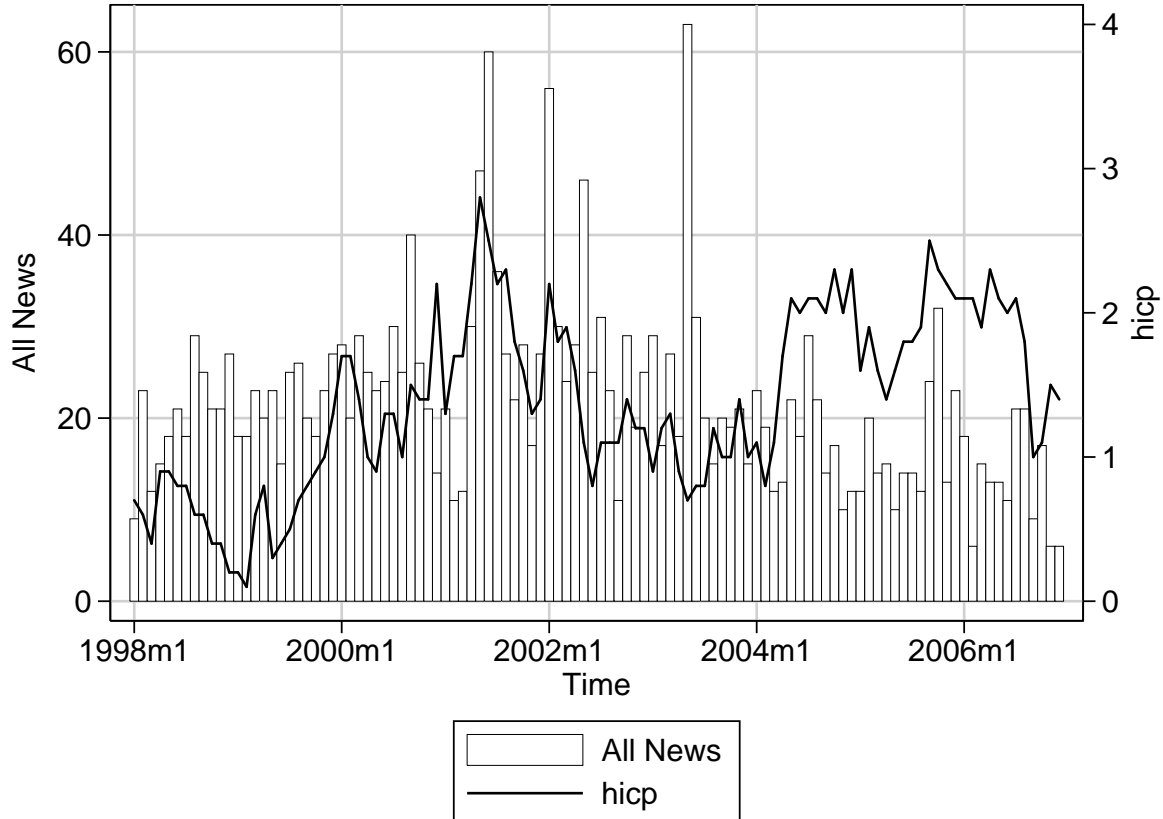


Dashed line: Perceived inflation rate of German consumers; solid line: Actual inflation rate (HICP) Germany.

Figures 2-4 provide an overview on the dynamics of our variables in focus. An important issue is how media coverage is related to current inflation. Figure 2 depicts the HICP together with amount on reporting on the topic inflation (descriptor = All News). We can observe that in times where inflation was high the coverage intensity in the media was high. See for instance mid 2001 where due to bad weather prices of vegetables substantially increased, inflation jumped up and media coverage followed. Another example is the introduction of the euro in January 2002. Interestingly, we can simultaneously observe that there can be high media coverage without high inflation being present. Examples for

this phenomenon can be found in mid 2002 as well as in the beginning of 2003. Thus, media coverage does not necessarily comove with inflation.

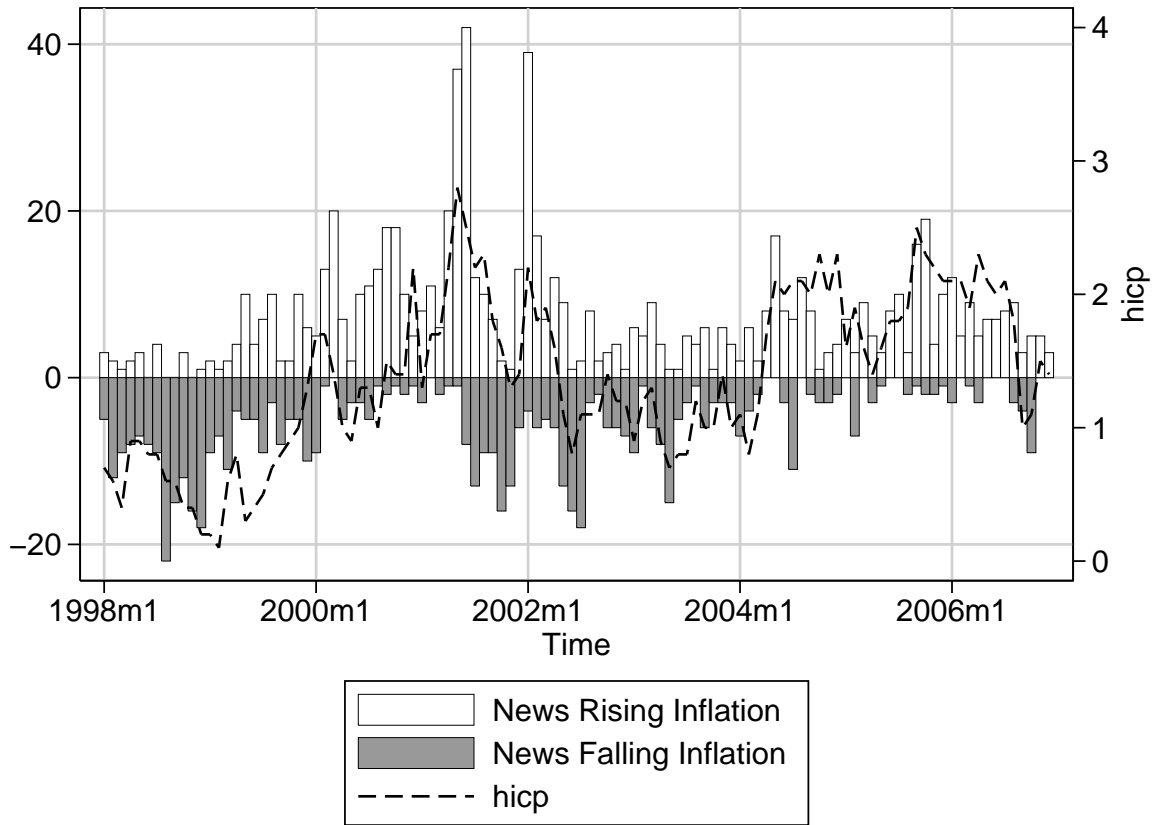
Figure 2: Inflation and Media



Solid line: HICP inflation, Germany (lhs); bars: all reports on inflation.

To explore this issue further we disentangle all reports into coverage dealing with rising prices (descriptor = News Rising Inflation) and falling prices (descriptor = News Falling Inflation) and plot them together with HICP in Figure 3. We can observe that if inflation is rising, media reports that inflation is rising and the same vice versa. Thus, media agencies capture the overall dynamics rightly. However, the amount of reporting does not necessary match the magnitude of price changes. Comparing the spikes in 2002 and 2004 visualizes that although inflation was as high, the coverage in the media was very different. Moreover,

Figure 3: Inflation and Media



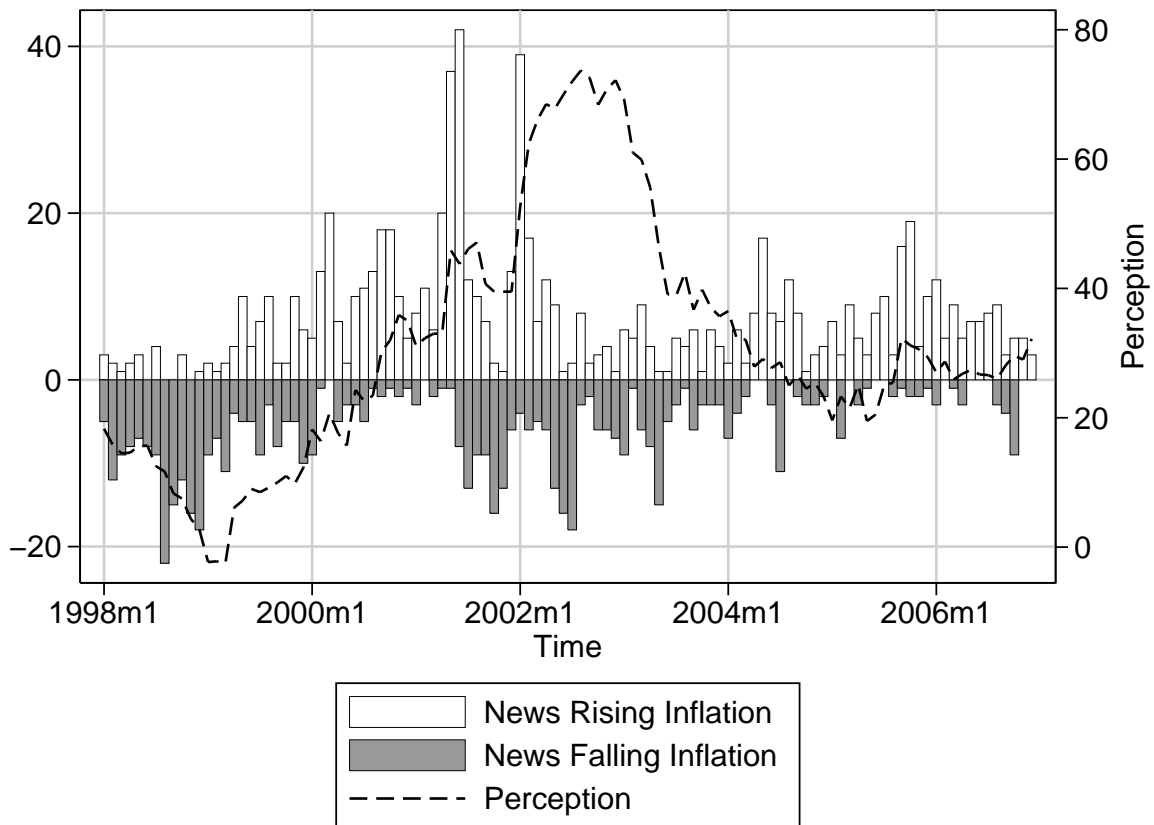
Solid line: HICP inflation, Germany (lhs); bars: amount of reports on rising and falling inflation, respectively (rhs).

it seems that there is a higher propensity to report more on rising inflation than on falling inflation. The latter result, that there is more reporting on "bad news" than on good news, is a common finding in the media literature (Hamilton, 2004).

We turn back to our main variable in focus. We also disentangle the amount of reporting into news on rising (descriptor = Rising Inflation) and falling inflation (descriptor = Falling Inflation) and plot this together with perceived inflation in Figure 4. While the increases in 2001 and 2002 are driven by reporting on rising inflation indeed the fall in 2003 is triggered by news on falling inflation. As the impact on inflation perceptions seems to be rather asymmetrically distributed, we decided to include the media variables into our

regression setup separately.

Figure 4: Perceptions and Media

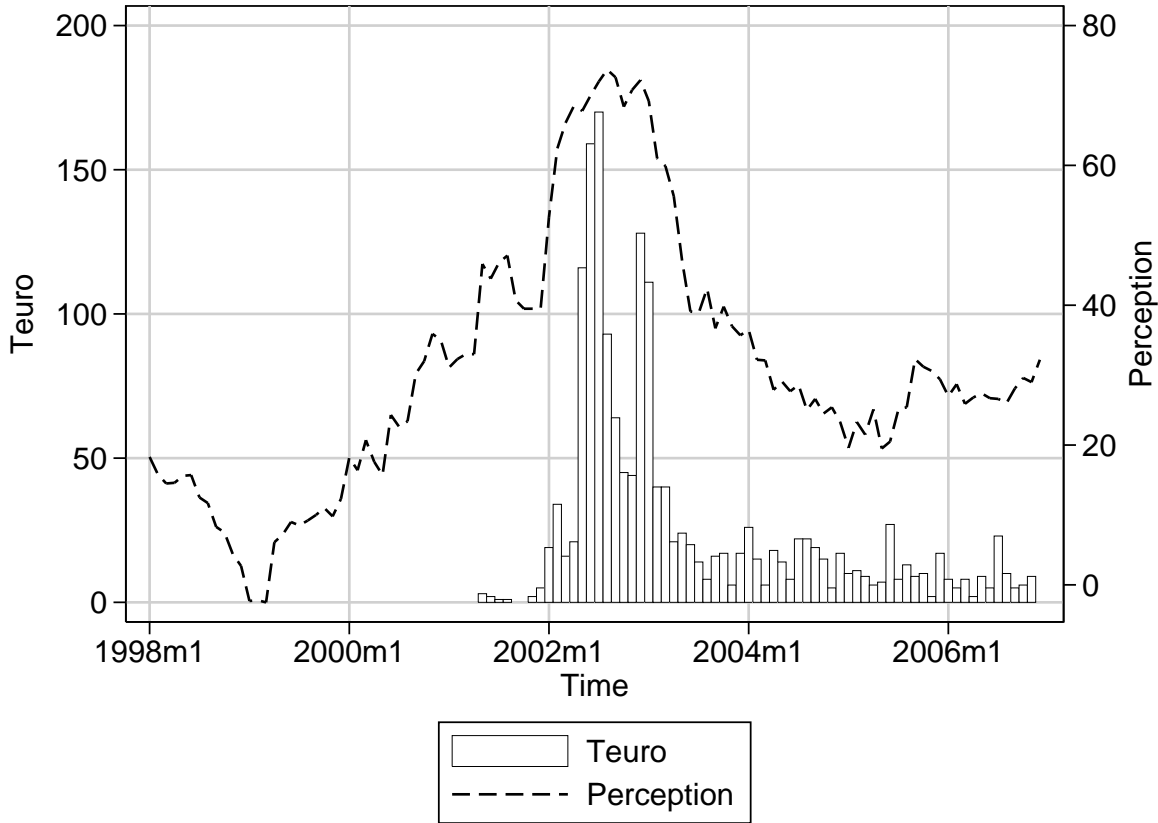


Solid line: HICP inflation, Germany (lhs); bars: number of media reports that claim inflation is rising or falling (rhs).

Finally, we employ the measure extracted from the LexisNexis database and counting the articles containing the wording “teuro” and “euro changeover”. Figure 5 shows the relationship between teuro and inflation perceptions. The sharp rise in inflation perception corresponds with the repeatedly wording of “teuro”.

Given the fact that the word “Teuro” was chosen as “the word of the year 2002”, it is not surprising that the euro introduction was one of the main topics in these year reviews. During the year 2003 both media reports and perceived inflation fall back to a relatively low level. It should be mentioned here, that the appearance of the word Teuro itself captures

Figure 5: Perceptions and the “Teuro”



Solid line: gap perceived inflation and actual inflation, Germany (rhs); bars: amount of reports containing the word “Teuro” in German print media (lhs).

the topic of a report, but not the content. Arguably, some reports claim that the euro is a “Teuro, whereas others say that it is not. Therefore, we look at the data that explicitly captures the content of reports related to inflation and prices.

4 Results

Table 1 contains our main findings. In column (1) we add both count variables. While the regressors from the entry regressions remain stable, the variable accounting for the Teuro debate has a significant positive impact on inflation perceptions. This is reasonable as

Table 1: Inflation Perceptions and Media

	(1)	(2)	(3)	(4)	(5)
			< 2002	> 2002	3SLS
L.Perception	0.891*** (0.032)	0.925*** (0.025)	0.775*** (0.069)	0.939*** (0.036)	0.927*** (0.024)
L6.Expectation	0.161*** (0.050)	0.162*** (0.039)	0.002 (0.082)	0.166*** (0.038)	0.171*** (0.050)
hicp	2.494*** (0.716)	0.547 (0.570)	4.969*** (1.547)	1.005 (0.983)	0.002 (1.050)
Teuro	0.036*** (0.013)				
Euro	0.002 (0.025)				
Rising Inflation		0.169** (0.082)	0.058 (0.108)	0.190*** (0.068)	0.251** (0.122)
Falling Inflation		-0.054 (0.081)	-0.083 (0.100)	0.078 (0.131)	-0.182 (0.203)
changeoverdummy	1.646 (1.575)	2.888** (1.104)			2.950** (1.184)
Constant	-5.293*** (1.738)	-4.770*** (1.423)	-0.725 (2.403)	-3.854 (2.409)	-4.255** (1.764)
Observations	101	102	42	60	102

there the main message of those articles was indeed to “warn the public of rising prices with respect to the introduction of the euro. Notably the discussion on the euro introduction itself reveals no such impact. As the HICP becomes insignificant, this implies that people get their information from the media and the figure itself does not have significant additional value.

In column (2) we introduce media variables that capture, how much articles report rising inflation and how much report falling inflation. Notably, only news on rising inflation seems to matter for the public as it increases the perceptions - there is a clear asymmetry. Furthermore, HICP does not add any explanatory power if media variables are included. Thus, all necessary information is provided by media agencies which explain the figure and draw implications. Note, that this result is not influenced by multicollinearity among the

regressors issues as the correlation between the regressors is well below 0.6. In columns (3) and (4) we split the sample again. Interestingly, media had no explanatory power before the introduction of the euro. Obviously there was no additional information provided by media companies that could not also be referred by looking at the index figure of the HICP. In harsh contrast, after the introduction of the euro, consumers heavily relied on their past expectations as well as on the information provided by the media. This is in line with “agenda-setting approaches which would imply a threshold effect - once the reporting on a certain topic achieves a certain intensity, it is perceived as an “issue and remains visible for a longer time.

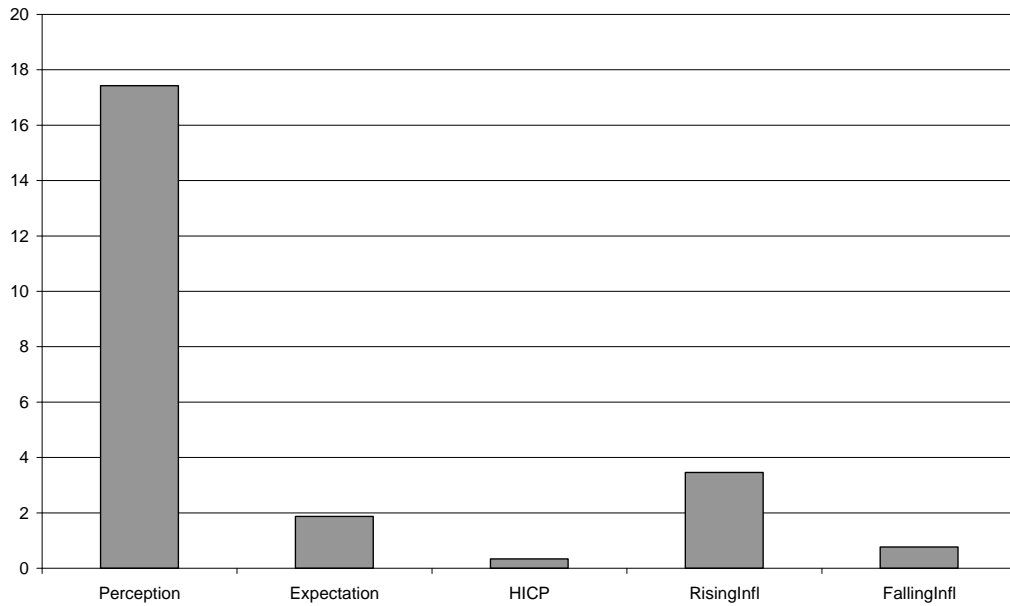
In column (5) we address the endogeneity issue between perceptions and media reporting. People might argue that agencies might cater to the prejudice of their readers and therefore react to inflation perceptions. For this purpose we employ three stage least squares (3SLS) techniques, instrumenting the media variables with their own lags.⁵ Notably the results are unaffected and the coefficient estimate even increases in its magnitude.

Similar to the exercise performed for the entry regression, we report the impact of each variable on inflation perceptions based on the impulse of a shock of one unit standard deviation. This figure contains an interesting feature. The response to the “rising inflation variable is found to be much higher compared to the remaining explanatory variables. Thus, not only are media reports statistically significant but also economically important as the outreach any other variable put into this regression.

To fully account for the dynamics between the different variables, especially perceived inflation and media, we employ a vector autoregression (VAR) setup. As variables that are endogen in the system we define perceived inflation and the media variables. Exogen

⁵The method 3SLS is similar to two-stage least squares (2SLS/TSLS) but involves an estimation of the variance-covariance matrix. Similar as in seemingly unrelated regression (SUR) models, the 3SLS makes use of the cross-equations correlation of the disturbances. Thus, in comparison to 2SLS, 3SLS is more efficient, a relative advantage that increases with the strength of the interrelations among the error terms. 3SLS is equivalent to a GMM approach if the errors are homoscedastic.

Figure 6: Response to a one standard deviation shock.



variables are the six-month lag of expectations, HICP and the changeover dummy. We also tested monthly as well as yearly dummies. Notably, monthly dummies have no effect. We used four lags since the common lag selection criteria were inconclusive. Table 2 the Granger causality tests are presented. From Table 2 we can extract that lagged media significantly affects perceptions but the reverse causality link is not statistically significant. This implies that although reverse causality might be rational and present it does not drive our results as the main channel is the link from media to inflation perceptions.

Finally, one could put forth that media hints into the right direction leading always to an improvement of inflation perceptions and bringing them closer to the real inflation. In this final paragraph we want to address this issue. Using quantified inflation perceptions data which was kindly provided by the Bundesbank, we calculate the absolute gap between

Table 2: Granger Causality

Equation	Excluded	F	df	dfr	Prob > F
Perception	RisingInflation	2.5130129	4	86	0.04742569
Perception	FallingInflation	0.972532	4	86	0.42689236
Perception	ALL	2.2133115	8	86	0.03398656
RisingInflation	Perception	1.5282531	4	86	0.20114295
RisingInflation	FallingInflation	0.97134935	4	86	0.42753571
RisingInflation	ALL	1.1748409	8	86	0.32364854
FallingInflation	Perception	0.89341582	4	86	0.47155867
FallingInflation	RisingInflation	2.59415	4	86	0.04198934
FallingInflation	ALL	1.684462	8	86	0.11372139

consumers' perceptions and the official HICP figures.⁶ Then we regress this absolute gap on the media variables used before. As Table 3 shows, especially news on rising inflation and the Teuro debate have led to a divergence of inflation perceptions. Either the media has exaggerate certain developments or people overreacted to the incoming news.

5 Conclusion

Several reasons have been proposed to drive inflation perceptions especially in the aftermath of the euro cash changeover. In this paper we test whether the media may be held responsible for the dynamics. Employing a detailed data set on media coverage for Germany 01/1998–09/2007 we are able to confirm that media has a strong impact on the perceptions of consumers as measured by the EU commission consumer tendency survey.

First we analyze the pattern of reporting in the aftermath of the cash changeover and can show that despite inflation rates were very moderate and even closer to deflation the media kept discussing the rise in inflation rates and thereby pushing inflation perceptions further.

Second we test the impact of media econometrically and can confirm that media is

⁶The quantification follows Carlson and Parkin(1975) and is described in more detail in the Bundesbank Monthly Report November 2007.

Table 3: Media and the Precision of Inflation Perceptions.

	(1)	(2)	(3)
L.absGapPerc	0.776*** (0.079)	0.716*** (0.082)	0.440** (0.175)
Volume	0.004 (0.003)		
ToneRisInfl		0.010* (0.006)	
ToneFallInfl		0.031 (0.020)	
VolumeNeut		0.000 (0.004)	
Teuro			0.012* (0.007)
EuroIntro			0.001 (0.002)
Deuro	0.082 (0.073)	0.219 (0.135)	-0.066 (0.101)
Constant	0.044 (0.115)	-0.115 (0.184)	0.330*** (0.122)
Observations	116	116	116
adj-Rsquared	0.613	0.624	0.682

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

significantly and robustly related to inflation perceptions. Especially in the post euro are media outperforms the HICP in terms of a response to a standard shock of the respective variable. However, the impact of media is twofold. While neutral reports generally add to the understanding of inflation and improve the assessment of consumers relative of official figures, intensive reporting on rising inflation rates and bad assessment deteriorates consumer inflation perceptions.

This paper has important implications. First, it highlights that media is an important driver of inflation perceptions. Second, we show that media may have the power to disturb

the precision of perceptions. Therefore, it is necessary that the authorities engage actively in countermeasures to avoid such unfavorable developments. The latter implication is especially relevant as subsample regressions show that inflation perceptions have become more persistent in the aftermath of the cash changeover.

References

- Aucremanne, L., Collin, M., and Stragier, T. (2007). Assessing the gap between observed and perceived inflation in the euro area: is the credibility of the HICP at stake? Working papers series 122, National Bank of Belgium.
- Blanchflower, D. G. and Kelly, R. (2008). Macroeconomic literacy, numeracy and the implications for monetary policy. Speech, Bank of England.
- Brachinger, H. W. (2006). Euro or ‘Teuro’? The euro-induced perceived inflation in Germany. Department of Quantitative Economics Working Paper 5, University of Fribourg.
- Burgoyne, C. B., Routh, D. A., and Ellis, A.-M. (1999). The transition to the euro: Some perspectives from economic psychology. *Journal of Consumer Policy*, 22.
- Del Giovane, P. and Sabbatini, R. (2006). Perceived and measured inflation after the launch of the euro: Explaining the gap in Italy. *Giornale degli economisti e annali di economia*, Bank of Italy.
- DellaVigna, S. and Kaplan, E. (2007). The Fox News effect: Media bias and voting. *The Quarterly Journal of Economics*. forthcoming.
- Doehring, B. and Mordonu, A. (2007). What drives inflation perceptions? A dynamic panel data analysis. Economic Papers 284, European Commission.
- Dziuda, W. and Mastrobuoni, G. (2006). The euro changeover and its effects on price transparency and inflation. Working paper, Collegio Carlo Alberto.
- Ehrmann, M. (2006). Rational inattention, inflation developments and perceptions after the Euro cash changeover. Working Paper Series 588, European Central Bank.

- Fluch, M. and Stix, H. (2005). Perceived inflation in Austria - extent, explanations, effects, monetary policy and the economy. Report 3, National Bank of Austria.
- Fullone, F., Gamba, M., Giovannini, E., and Malgarini, M. (2007). What do citizens know about statistics? The results of an OECD/ ISAE survey on Italian consumers. Report, OECD.
- Gentzkow, M. and Shapiro, J. M. (2006). What drives media slant? Evidence from U.S. daily newspapers. NBER Working Papers 12707, National Bureau of Economic Research, Inc.
- Groeling, T. and Kernell, S. (1998). Is network news coverage of the president biased? *Journal of Politics*, 60:1063–1087.
- Hetherington, M. J. (1996). The media's role in forming voters' national economic evaluations in 1992. *American Journal of Political Science*, 40:372–395.
- Hofmann, E., Kamleitner, B., Kirchler, E., and Schulz-Hardt, S. (2006). Kaufkraftschwund nach der Währungs­umstellung: Zur erwartungs­geleiteten Wahrnehmung des (t)euro. *Wirtschaftspsychologie*, 1.
- Kahneman, D. and Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2):263–91.
- Lamla, M. J. and Lein, S. M. (2008). The role of media for consumers' inflation expectation formation. KOF Working Paper 201, KOF Swiss Economic Institute.
- Leduc, S., Sill, K., and Stark, T. (2007). Self-fulfilling expectations and the inflation of the 1970s: Evidence from the livingston survey. *Journal of Monetary Economics*, 54(2):433–459.

- Lein, S. M. and Maag, T. (2008). The formation of inflation perceptions—some empirical facts for European countries. Working Paper 204, KOF Swiss Economic Institute.
- Mullainathan, S. and Shleifer, A. (2005). The market for news. *American Economic Review*, 95(4):1031–1053.
- Shah, D. V., Watts, M. D., Domke, D., Fan, D., and Fibison, M. (1999). News coverage, economic cues, and the publics presidential performance, 1984-1996. *Journal of Politics*, 61:914–943.
- Sims, C. (2003). Implications of rational inattention. *Journal of Monetary Economics*, 50(3):665–690.
- Stix, H. (2007). Inflation perceptions and the euro: Why high? Why persistent? Report, Austrian National Bank.
- Traut-Mattausch, E., Schulz-Hardt, S., Greitemayer, T., and Frey, D. (2004). Expectancy confirmation in spite of disconfirming evidence: The case of price increases due to the introduction of the euro. *European Journal of Social Psychology*, 34:739–760.