NEWS FRAMES, INTER-MEDIA FRAME TRANSFER AND THE FINANCIAL CRISIS[1]

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ABSTRACT

News frames, inter-media frame transfer and financial crisis

This paper examines the economic coverage of German newspapers at the onset of the financial crisis with the help of framing theory. It has three basic objectives. The first, to identify the frames in the news coverage. The second, the documentation of these frames and their occurrence as well as their distribution in different media outlets. The third, the examination of inter-media influences, exerted by different media outlets upon each other. The authors introduce the concept of Inter-Media Frame Transfer and apply a multi-method-design composed of a qualitative and quantitative content analysis as well as an ARIMA-time-series analysis. Eight frames are identified. The representation of the crisis as a systemic threat can be seen as the dominant interpretation. Inter-media influences can explain some of the dynamics of media framing. Yet, media framing of the financial crisis appears to be mainly contingent on extra media influences.

Key words: framing theory, media frames, media influence, financial crisis, representation, Inter-Media Frame Transfer

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Introduction

Economics is a central and very specific field in journalistic work. Economic processes are often perceived as far more complex than other social or political issues. Accordingly, comprehending and evaluating the state of the economy is a rather difficult task for large parts of the population. At the same time, every citizen of modern states is an immediate subject to economic developments – locally as well as globally. Hence, it is plausible to assume that economic news coverage is an indispensable basis for understanding and interpreting economic processes.

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Especially during periods of economic crisis, when the economic development is perceived as unpredictable and threatening, the media should assume the tasks of reducing the complexity of economic realities and offering appropriate interpretative tools to the recipients (Doyle 2006; Gavin & Sanders 1997; Parker 1997).

Framing theory deals with one possibility to reduce complexity in a news text. *Framing* describes, simply put, the organization of information according to an organizing and interpretative frame, the "central organizing idea or story line that provides meaning" (Gamson & Modigliani 1987, p. 143). In the case of the financial crisis the question arises which organizing and interpretative frames the media provided for the public in order to interpret economic processes and the resulting political decisions. The manner in which the crisis was framed potentially had a major impact on the development of the political debate, but also on the economic development itself. Whether or not a new car will be bought, a house built, or money withdrawn from a bank, all depends on what people expect from the future. And these expectations (partially) depend on the structure of economic media coverage (Boomgaarden, Van Spanje, Vliegenthart, & De Vreese 2011; Goidel, Procopio, Terrell, & Wu 2010; Pruitt, Reilly, & Hoffer 1988; Quiring 2004; Quiring & Weber 2012).

The aim of this study therefore is an accurate analysis of the frames in the economic news coverage at the onset of the financial crisis in 2008.

- *Research question 1*. In which frames has the media coverage of the financial crisis been embedded? I.e.: How does the media evaluate the consequences of the crisis? How did the crisis even occur? How is crisis management to be carried out? How can future crises be prevented?

However, the examination of the crisis' media interpretation should not end by simply identifying the existing frames. We are also interested in the temporal dynamics of news frames.

- *Research question 2.* How did the individual frames develop over time? Which frames have become predominant? Which of them turned out to be marginal? In which parts has the debate changed?

And finally, we examine to which extent inter-media influences can be identified in the coverage.

- *Research question 3*: How do the individual media outlets influence each other in their interpretation of the crisis? I.e.: Which media outlets actively introduce frames into the media discourse, and which media outlets adapt frames from others?

Framing. Framing as a concept of production and reception of journalistic content

A frame is not only an organizational element for media conveyed information (see Gamson & Modigliani 1987). For journalists and recipients alike, frames

constitute complex cognitive constructs which connect knowledge, and thus have consequences for information transmission and reception: "Media frames are persistent patterns of cognition, interpretation, and presentation, of selection, emphasis, and exclusion […]" (Gitlin 1980, p. 7). The journalistic technique, which establishes frames as cognitive constructs, is described as follows by Entman: "Framing essentially involves selection and salience. To frame is to select some aspects of a perceived reality and make them more salient in a communicating text in such a way as to promote a particular problem definition, causal interpretation, moral evaluation and/or treatment recommendation" (Entman 1993, p. 53). However, it should not be forgotten that establishing a frame represents a process which should be considered less as a characteristic of individual articles or news items, but more as something which unfolds in the course of a journalistic discourse as a whole. The entire process uniting the separate components of framing research can be described with Pan and Kosicki: "Framing, therefore, may be studied as a strategy of constructing and processing news discourse or as a characteristic of the discourse itself " (Pan & Kosicki 1993, p. 57).

This process encompasses the media sphere as well as that of the audience. The phenomenon is usually examined on the level of media content, but media content is only a material effect. This is due to the fact that a frame not only has intra-cognitive effects on recipients, but also on journalists. In the latter case, the reception of media content as well as the production of news content is guided by the frames which journalists cognitively apply to decode events and other journalists' output. The systematic investigation of different research subjects within the framing theory has been considerably facilitated by the process model of framing research (D. Scheufele 1999).

The different stages of the study at hand are situated at different points in the model (Figure 1). At first, the qualitative frame-identification examines the respective frames on the level of journalistic output. Second, the quantitative part of the content analysis delivers insights in the frame building process within the media system. Part of this is the observation in which media these frames have occurred and how their occurrence has changed over time. The third part of the study can be placed in the process model at the stage, which Scheufele vaguely describes as "*journalists as audiences*" (D. Scheufele 1999). Within the process model, this describes the stage of inter-media feedback. The focus of interest is thus directed at effects which occur when journalists (as recipients of media content) include the intra-cognitive effects of this reception into the media production process (i.e. their own journalistic work), be it deliberately or unintentionally. Thus, it is a process of transferring media frames via cognitive processing of news content by journalists into new media content. We propose to call this mechanism *inter-media frame transfer*. Despite the rather sizeable amount of research on different aspects of framing, the inter-media frame transfer has hardly been examined at all. The relevant data and the only study exclusively and directly focused

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Figure 1. Process model of framing research
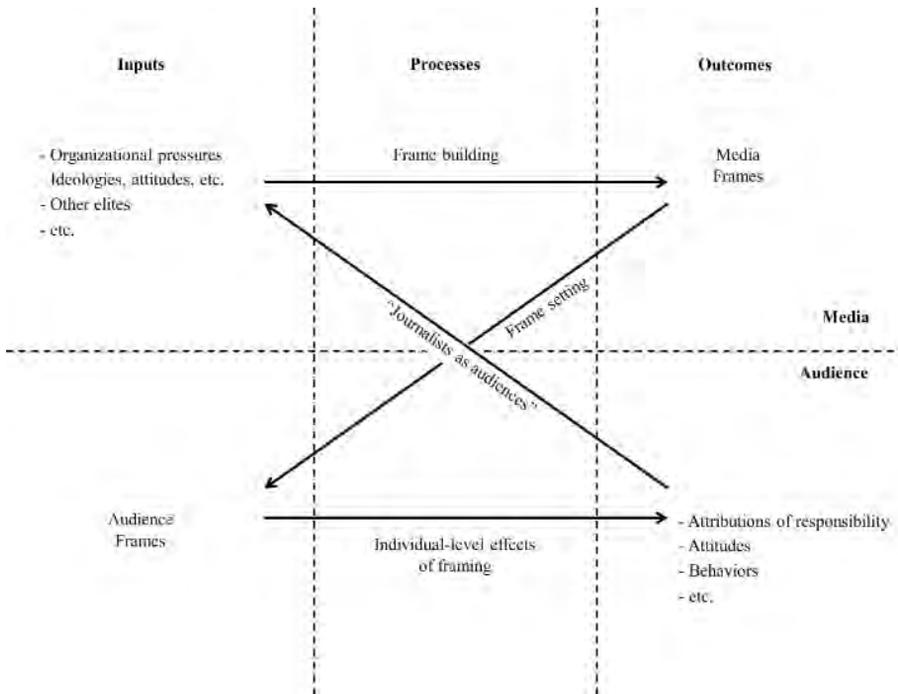
Source: D. Scheufele 1999.

on the inter-media frame transfer (Hong & Choi 2010) will be presented in the following.

The enormous potential effects of framing processes on recipients have been presented quite impressively in experiments by Kahneman and Tversky (1984). However, the process-related character of the formation and transmission of frames during the journalistic discourse cannot be detected merely with the help of cross-section analyses. The variability of media frames over the course of time is clearly pointed out by, for example, Kepplinger and Habermeier (1995) and Brosius and Eps (1995). Specifically, key events may severely alter journalistic selection criteria and interpretative patterns (Brosius & Eps 1995). This occurs especially in the orientation period immediately following a key event. Orientation periods are characterized by uncertainty on the part of journalists and audiences alike (Brosius & Eps 1995). The dynamic transfer of frames across different media outlets as inter-media framing has been examined by Choi and Hong (2010), using the example of a debate on the import of U.S. beef to South Korea, in the course of which anti-and pro-American positions played an important role. The focus of analysis was on the coverage of three daily newspapers, which are clas-

sified by the authors in their editorial directions as "liberal", "conservative" and "neutral". After initially identifying thematic frames, Hong and Choi sum them up in two generalized frames, namely "Conservative" and "Liberal". The subsequent evaluation based on graphical interpretation suggests a mutual influence between the examined newspapers, which actually does not answer the question of frame exchange, but is rather an indication for inter-media agenda setting. The interpretation of this change in terms of a mutual influence of the media remains vague without further statistical analysis of the data. The present study would like to include the ideas of Hong and Choi and implement them stringently with the help of a more profound data analysis.

Journalists' reliance on other media

The fact that the creative process of journalists is not only influenced by inputs such as individual research or news agency messages, but also by other journalists' output, has been well-established (Breed 1955; Noelle-Neumann & Mathes 1987; Reinemann 2004) and seems quite plausible in the face of daily work routines. In newsrooms, it would almost be perceived as a violation of professional norms if a journalist were to permanently ignore the contributions of colleagues from other news media (Reinemann 2004).

In the daily journalistic practice, an editorial meeting is simply inconceivable without at least some of the participants being familiar with the content of other media outlets (Marcinkowski 1993). An observation of journalistic competition in this case represents a common form of environmental control and quality control (Noelle-Neumann & Mathes 1987). Quite frequently, the corresponding findings are discussed in meetings and thus find their way into the internal editorial discourse – especially regarding opinion leading media (Noelle-Neumann 1979). Mast and Spachmann note with reference to German economic and business journalists: "Thus the focus of their coverage is geared more towards their colleagues and less towards their audience. This also means that inquiry is often limited to turning reports and comments made by other business journalists into the basis of their own coverage" (Mast & Spachmann 1999, pp. 79–80).

Inter-Media Frame Transfer

In light of the literature presented we propose the assumption that the observation of the output of other journalists and media outlets may serve as a potential transmission mechanism for an inter-media transfer. Apart from the already implied role of opinion-leading media, which serve as an orientation for other media outlets, it can be said that the opinion-leader status can change depending on competence level and coverage situations. These effects have been theorized

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numerous times and demonstrated empirically (Breed 1995; Katz & Lazarsfeld 1964; Mathes & Pfetsch 1991). It can thus be assumed that, in times of heightened professional uncertainty on a specific topic, even corresponding "special interest" media, in this case economic business media, can become opinion-leading media, if only for a limited time.

Inter-Media Frame Transfer During the Financial Crisis

The economic coverage of the financial crisis serves as a well suited example for the analysis of inter-media frame transfers based on the following considerations:

1. Due to the (publicly perceived as) sudden onset and escalation of the financial crisis, current journalism has seen a surge of very time-critical production environments. Time constraints in obtaining information favor the use of readily available, updated information (Brosius & Eps 1995; Reinemann 2004). It can be assumed that especially articles by journalists in the economic and business press could be used as orientation in the case of the financial crisis.

2. The thematic treatment of the financial sector is likely to have posed a significant challenge to the editors in charge. It cannot be expected that the editorial rooms of all news media outlets had enough personnel to ensure that the coverage of the topic at the height of the crisis was composed only by trained economic and business journalists. It may therefore rather be assumed that many more or less "unqualified" journalists were forced to familiarize themselves under severe time constraints with the complex interrelationships of the crisis (Köcher 1990; Reinemann 2004).

3. Both, economic and other journalists had to be aware of the particular potential effects of their coverage. Thus, misleading coverage implying the possibility of the impending insolvency of a particular financial institution, for example resulting in a surge of money withdrawals by customers or a restriction of interbank trade, might ultimately cause the actual insolvency or accelerate the process. Contributions thus had to be checked even more intensively. Uncertainty, as a contributing factor for a strong orientation towards the output of other journalists and media outlets, can be classified as presumably high under these conditions (Reinemann 2004). Professionally sound and readily available technical guidance presumably was offered in this situation by the daily business publications. Thus, for the news publication process in Germany, the *Handelsblatt* and the *Financial Times Deutschland* can be included in the circle of potential opinion leaders.

4. Furthermore, the events surrounding impending bankruptcies of financial institutions took place during the initial period of the coverage-cycle in which the development, modification or acquisition of frames occurs easier

than in periods of routine (Brosius & Eps 1995; Kepplinger & Habermeier 1995).

In addition to the already presented research-questions, two hypotheses can be derived from the aforementioned considerations:

– *Hypothesis 1*: In the wake of the coverage of the financial crisis inter-media frame transfers (a delayed transmission of a frame from one medium to another) play a more important role than orientation on external factors (identified by simultaneous correlations between the media outlets).

– *Hypothesis 2*: These transfers occurred to a higher degree emanating from the economic daily newspapers (*Handelsblatt* and *Financial Times Deutschland)* in the direction of the political newspapers (*Frankfurter Allgemeine Zeitung*, *Süddeutsche Zeitung*, *Frankfurter Rundschau*, *Die Welt*) than vice versa.

Method. Media sample and period of investigation

The qualitative study (identification of the frames) and the quantitative study (quantification of the frames) are based on the same media sample and the same investigation period. We selected six national newspapers for the analysis due to several reasons. Firstly, daily media is best suited for analyzing the rapid development of the financial crisis. Secondly, national newspapers form an important indicator for the overall structure of news coverage in Germany. The *Frankfurter Rundschau* (FR, left), the *Süddeutsche Zeitung* (SZ, center-left), the *Frankfurter Allgemeine Zeitung* (FAZ, center-right) and the daily newspaper *Die Welt* (WELT, conservative) were chosen as they roughly represent the political spectrum in Germany. In addition to that, because of the economic subject, we also included the two leading economic and business publications *Handelsblatt* (HB) and *Financial Times Deutschland* (FTD) in the analysis. The investigation period was chosen to include two crucial key events in the thematic range of the "banking crisis". In the wake of the bankruptcy of the U.S. investment bank Lehman Brothers on September 15th 2008 the financial crisis became increasingly more prominent in the perception of the media. About two weeks later, the Hypo Real Estate, a large German financial institution, was threatened by insolvency, triggering corresponding state activities and policy discussions which, in turn, were met with extensive media attention. Therefore, our analysis incorporates the media coverage starting two weeks before the Lehman bankruptcy on September 15th 2008 and ending four weeks after the government bailout of the HRE on September 29th 2008.

Qualitative content analysis

Identification of the frames

To address the different research objectives of the study, we applied a combination of qualitative and subsequent quantitative content analysis and an ARIMA-time series analysis. The qualitative identification of the frames is the basis for the categories of the quantitative method, which in turn provides the underlying data for the time series analysis.

A qualitative content analysis was conducted (Mayring 2004) in order to identify the relevant news-frames. In the first step, sixty articles from the coverage of the six newspapers published within the investigation period were randomly selected. From these articles we extracted all passages that included relevant frame elements following the operational definition of news frames (Entman 1993). All these identified passages were extracted from the corresponding contributions and initially coded with regard to their individual frame elements, i.e. their problem definition, causal attribution, moral evaluation, or treatment recommendation. In a second step, the material was structured into "media packages", based on the frame elements assigned (Gamson & Modigliani 1989, p. 3). This means that text passages which have the same or similar combinations of frame elements, are grouped, whereby these groups form initial frame candidates. The five basic frames, economics, progress, conflict, personalization and morality/ethics, which were first isolated by Dahinden in a meta-analysis of various framing-studies, served as a basic structure in this procedure (Dahinden 2006). In a third step the different groups of frame-candidates were subjected to empirical corroboration. It was examined whether or not these initial frames could also be found in other articles. In order to do so, another 60 articles were randomly selected and examined. All previously identified frame-candidates were confirmed and further differentiated regarding their respective frame elements. A final list of eight frames was created. In the final stage, these were in turn empirically tested on 60 other randomly selected articles. All eight frames could be consistently identified within the material. Also, there were no indications of hitherto unidentified frames. Overall, in the course of qualitative analysis, 180 articles were analyzed. The subsequently developed eight frames are presented below in the form of short profiles.

The frames of the financial crisis

In the following, the frames will be presented according to the characteristics described by Entman in his definition of news frames: problem definition, causal attribution, moral evaluation and/or treatment recommendation. Each frame contains at least one problem definition and causal attribution, and either an evaluation or recommendation for action (in some cases both) (Entman 1993, Matthes & Kohring 2008).

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Complexity-Risk-Frame. This frame focuses on aspects of modern economy which are characterized by a high degree of complexity. Especially the diverse forms of financial products (i.e. derivatives) are addressed (*problem definition*). The frame implies that these products, even if they were originally designed to minimize risks, did in fact not reduce but increase the systemic risk as a whole (*causal attribution*). Similar interpretations are often mentioned when describing the consequences of communication technology in the capital market. One example of this is the description of automated day trading in the stock exchange. According to the complexity-risk-frame, the staggering complexity of these novel products and automated mechanisms causes people to lose control of the risks by "blindly" trusting in the mechanisms. The interpretative core therefore consists of a certain degree of skepticism about technology (*evaluation*).

Globalization-Frame. This frame stresses aspects of the financial crisis that are mostly due to the global interconnectedness of financial markets (*problem definition*). Due to the free and rapid movement of "giant" capital flows, crisis development has become rather uncontrollable, be it on a regional or a national level (*causal attribution*). The increased risk of "infection" between financial institutes, even globally speaking, is the leading topic here (*evaluation*). The global aspect points to globalization-frames already established in social discourses regarding a variety of issues. Thus, it can be assumed that the presentation of this particular frame triggers already existing cognitive schemes for many recipients.

Solidarity-Frame. This frame focuses on the fact that the state is using tax-payers' money in order to avoid or alleviate economic damage. Thereby, reference is made to a social conflict (*problem definition*). Since the economic damage results from a crisis within the financial sector (*causal attribution*), managers and stockbrokers are implicitly blamed for having acted recklessly and for being responsible for the damage. Furthermore, the above-average level of wages paid to people employed in the financial sector is stressed. A rather pointed rhetorical question is asked: why should "poorer" and "innocent" tax-payers have to take responsibility for damages caused by "richer" and "culpable" bankers (*evaluation*)?

Greed-Frame. This frame is focusing on moral aspects of the crisis (*problem definition*). In different phrasings it suggests that human greed, especially the "greed of bankers, managers or speculators", was the main causal factor of the financial crisis (*causal attribution*). The keyword "greed" does not necessarily have to occur explicitly in the text in order to evoke the impression that a certain described behavior can be viewed as "greedy" (*evaluation*).

Regulation-Frame. In the regulation-frame, the crisis as a whole is the center of attention, rather than focusing on specific aspects of the crisis (*problem definition*). Here, while discussing the reasons for the crisis, it is pointed out that only a restrictive regulation of the financial markets could prevent similar crises in the future. A ban of certain financial transactions, limiting them or taxing them is also being proposed (*recommendation for action*). The regulation-frame implies the origin of the crisis as within "the nature of the financial system". Missing or

"weak" regulation in the past is identified as the dominant causal factor (*causal attribution*). Hence prior economic policy is qualified as a "failed policy of deregulation" (*evaluation*).

Self-Regulation-Frame. This frame focuses on the risk of "overregulation" as a reaction to the current crisis (*problem definition*). The self-regulation-frame considers the reasons for the crisis to be the individual misbehavior of certain segments of society as well as inadequate forms of regulation – often while pointing out that there was a lack of expertise on the side of the government (*causal attribution*). Questions of how to "correctly" regulate the financial markets are also treated here. In this context, the necessity of more effective regulatory action is stressed. However, a number of concerns against too rigid regulations are pointed out as well. Frequently, warnings of a "stifling of creativity" in the financial sector and potentially resulting damage to the economic development as a whole are addressed. Accordingly, "adequate" forms of regulation are proposed, while at the same time warning against blocking the "constructive" forces within the financial system with regulations that are too extensive (*recommendation for action*). At times, the crisis is described as a "natural and normal process" in accordance with market forces, often in connection with a positive long-term prognosis for the future economic development (*evaluation*).

Systemic Threat-Frame. This frame stresses events which evidently suggest the danger of a systemic failure of the financial market and the (national) economy as a whole (i.e. a "breakdown" and an economic depression). The frame includes historic comparisons, dramatic descriptions of the current economic situation as well as speculations about far-reaching and threatening scenarios for future developments (*problem definition*). These depictions lay ground for a discussion of different governmental intervention measures and their expected effectiveness (*recommendation for action*). As the economic situation is described as a state of emergency, proportionately massive interventions on the part of the state are asked for. When "bailouts" of financial institutions are addressed, their "systemic relevance" is usually hinted at. The characterization of state intervention as "absolutely necessary" is a typical component of the systemic threat-frame (*evaluation*).

Moral-Hazard-Frame. This frame emphasizes a phenomenon known in the financial sector as "moral hazard". The phenomenon does not actually address a moral issue, but rather an economic effect-assessment in the context of the expected efficiency of state interventions: "Moral hazard in financial markets occurs […] when the lender is subjected to the hazard that the borrower might engage in activities that are undesirable (immoral) from the lender's point of view, because they increase the probability of default" (Mishkin 1992, pp. 117).

If transferred to the actual situation of the financial crisis with the state as the "lender of last resort" (*problem definition*) this means: if the state saves those financial institutions threatened by insolvency because of their own mismanagement (for example the willingness to take incalculable risks), other financial in-

stitution may likewise be inclined to take incalculable risks (*future causal attri-bution*). Thus, the state contributes to the aggravation of the crisis by indirectly encouraging incautious risk assessment (*evaluation*).

Quantitative Method

For the quantitative part of the content analysis a sample of 721 articles was iden-tified using the keywords "banks" and "crisis". The keywords were selected from several keyword-combinations with the help of a pretest. The aim was to keep the number of relevant but unidentified articles to a minimum, just as the number of identified but not relevant contributions. The previously identified frames were used as holistic categories for the analysis. This means that the occurrence of each frame was coded with 0 ("non-existent") or 1 ("existent") in each article; several frames per article could thus be identified. This way we tried to reconstruct the interrelation of several frames in the creation of journalistic contributions. How-ever, the disadvantage of this procedure is that peripheral frames are given the same importance as those which make up the central structure of an article. In any case, it was mandatory for the coding of a frame that not only the problem defini-tion of a frame (in a way, the sub-topic inherent to each frame), but also a causal attribution and at least one moral evaluation or treatment recommendation were identifiable in the article. A total of 1,209 frames were identified as the basis for the following analysis. As the analysis was undertaken by only one coder, only the *intra-coder-reliability* can be provided. For this purpose, 20 already coded articles were coded again by the same coder approximately four weeks after the original coding. The reliability coefficient of 0.95 indicates a high degree of reli-ability (Holsti 1969).

The rational of ARIMA-Time Series Analysis

A transfer of individual frames from one media outlet to another can be analyti-cally characterized as a correlation between the time series of the same frames in different media outlets. 48 time series were created which depict the temporal de-velopment of the eight previously identified news frames in each of the six news-papers. In order to assume causality, several conditions have to be met. Firstly, the time series of the same news frames in (at least) two different newspapers have to correlate. Secondly, one time series has to precede the other. Thirdly, any potential third variable having influence on the causal relation between the two time series has to be controlled for (Cook & Campbell 1979).

The methodical realization of these demands could be approached using an ARIMA-time series analysis. It has to be noted that the ARIMA procedure is very conservative. Correlations of residual time series derived from an ARIMA model

are likely to massively underestimate the real effects (Box, Jenkins, & Reinsel 2008). If however, significant interrelations are identified in the course of the analysis, these can be interpreted as indications for an inter-media frame transfer with a high degree of certainty. The residual time series are subjected to cross-correlation analysis. Two time series are correlated to each other on a parallel timeline with a maximum time-lag of three days.

Quantitative Results

Frequency of the Frames and Frame-Profile

The systemic threat-frame clearly dominated the coverage at the onset of the financial crisis (37% of all news frames). The regulation-frame held second place (17%). The interpretations focused on globalization, greed, solidarity, and self-regulation almost occurred at the same rate (9–10%). The complexity-risk-frame and the moral-hazard-frame were only of marginal importance (4–5%).

Table 1. The newspapers' frame-profiles

	FAZ	SZ	FR	WELT	FTD	HB	Total
Complexity-Risk--Frame	4%	5%	4%	10%	5%	4%	5%
Globalization--Frame	4%	10%	11%	14%	10%	15%	9%
Solidarity-Frame	7%	12%	11%	9%	9%	7%	9%
Greed-Frame	7%	11%	28%	17%	7%	7%	10%
Regulation--Frame	15%	17%	19%	9%	17%	23%	17%
Self-Regulation--Frame	13%	8%	2%	13%	7%	4%	9%
Systemic Threat--Frame	44%	34%	26%	28%	42%	36%	37%
Moral-Hazard--Frame	6%	3%	0%	1%	3%	4%	4%
Sum	100%	100%	101%*	101%*	100%	100%	100%
Total Number of Frames	388	376	54	91	110	190	1209

Note: $p < 0.05$; *rounding error.

The frame-profile indicated in Table 1 shows statistically significant differences in the interpretative emphases of the six newspapers. The interpretation

of the financial crisis as a systemic threat made up the biggest portion in almost all newspapers. Only the *Frankfurter Rundschau* (FR) places extra emphasis on depictions focusing on the protagonists' greed. The globalization-frame resonated most prominently in the coverage of the newspapers *Welt* (WELT) and *Handelsblatt* (HB). The solidarity-frame had its highest percentage rating in the *Süddeutsche Zeitung* (SZ) as well as the FR. The interpretation of the financial crisis from the perspective of the complexity of financial markets only occurred at a relevant rate in the *Welt*. The moral-hazard pattern only occurred prominently in the *Frankfurter Allgemeine Zeitung* (FAZ).

The media debate regarding the financial crisis was far from one-dimensional. Several frames appeared quite often in distinctive combinations with other frames. Table 2 shows that especially the complexity-risk-frame and the globalization-frame were combined with other interpretative patterns (recognizable in the percentage in the second-to-last row of the table). Only the systemic threat-frame served as a "killer frame". Interpreting the crisis in the light of a system-wide threat apparently left very little room for alternative or supplementing interpretations.

Four combinations of frames occurred remarkably often within individual articles. This is true for the self-regulation-frame and the moral-hazard-frame. The fact that they frequently co-occurred is indicated by an overrepresentation of the moral-hazard-frame in articles featuring the self-regulation-frame. At the same time, the self-regulation-frame is overrepresented in contributions which featured a moral-hazard-frame. The combination of these particular frames can be explained with the fact that both frames focus on the risks of far-reaching state interventions in economic processes. The complexity-risk-frame was combined rather frequently with greed- and regulation-frames. This may be explained with the fact that the complexity of economic events – according to the articles in question – enabled abusive behavior in the first place, which has to be prevented by stricter regulation in future. The same can be said about the globalization-frame which focuses on the complexity of global interconnectedness and which, likewise, was frequently combined with the regulation-frame. Finally, the greed-frame occurred rather often in combination with the solidarity-frame. Financial aid for economic institutions apparently became all the more displeasing the more clearly bankers and stockbrokers were accused of having caused the crisis.

Table 2. Co-occurrence of the frames[2]

Co-occurrence of the frames	Complexity-Risk-Frame	Globalization-Frame	Solidarity-Frame	Greed-Frame	Regulation-Frame	Self-Regulation-Frame	Systemic Threat-Frame	Moral-Hazard-Frame
Complexity-Risk-Frame		10%	6%	12%	13%	6%	5%	11%
Globalization-Frame	18%		10%	10%	20%	12%	14%	11%
Solidarity-Frame	12%	10%		16%	18%	7%	11%	14%
Greed-Frame	23%	11%	17%		16%	9%	9%	9%
Regulation-Frame	43%	36%	34%	28%		17%	20%	25%
Self-Regulation-Frame	12%	12%	7%	8%	9%		10%	**25%**
Systemic Threat-Frame	35%	58%	45%	34%	46%	39%		39%
Moral-Hazard-Frame	8%	4%	5%	3%	5%	10%	4%	
Sum	151%*	141%*	124%*	111%*	127%*	100%*	73%	73%*
Total Number of Contributions with this Frame	60	113	110	119	201	110	450	450

Note: $p < 0.05$[1]; *As several frames per contribution could be coded, the percentages do not add up to 100. Reading aid for the first row: the complexity-risk-frame is rather frequently combined with the greed- and regulation-frames. 12% of contributions which featured the greed-frame also featured the complexity-risk-frame; 13% of the contributions which contained a regulation-frame also contained a complexity-risk-frame.

In the following, the temporal development of the frames during the months of September and October 2008 shall be examined. For this purpose, only four of the eight news frames provided a reliable data-basis. For each frame, a residual time series had to be calculated for at least two of the six newspapers in order to perform a cross-correlation analysis. Under the strict conditions of ARIMA models, this was only possible for the solidarity-frame, the regulation-frame, the greed-frame and the systemic threat-frame.

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[2] For the calculation of the Chi-Square-Test, empty cells (co-occurrence of a frame with itself) were considered with their expected frequency.
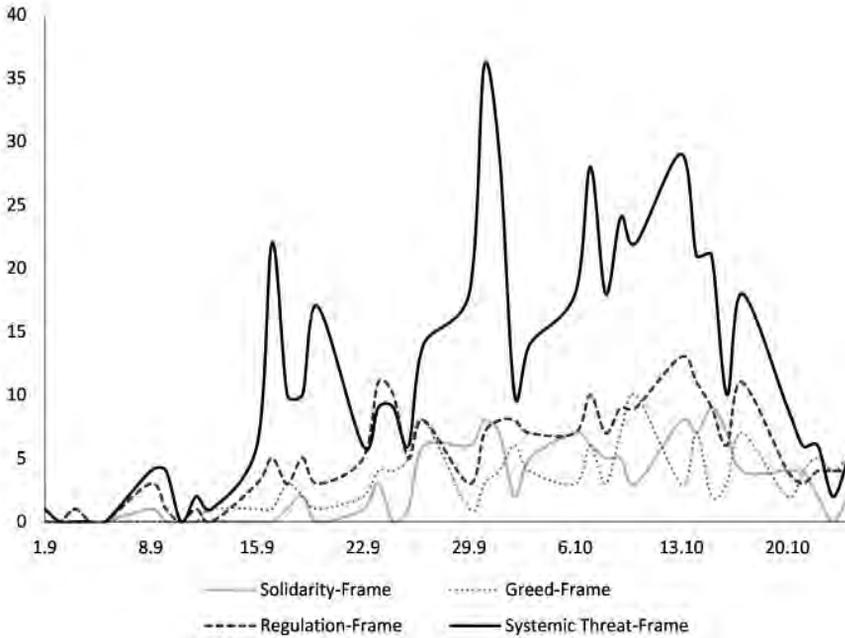
The systemic threat-frame dramatically gained in frequency on Sep 16th 2008 as well as on Sep 30th 2008, seemingly as a direct result of the Lehman Brothers-insolvency and the first bailout of the Hypo Real Estate. Additionally, on Sep 29th 2008, the House of Representatives first declined the bailout-plan proposed by the Secretary of the Treasury, Henry Paulson. On the weekend of Oct 6th 2008 the Hypo Real Estate had to be bailed out once again. On Oct 10th 2008 Chancellor Angela Merkel and Finance Minister Peer Steinbrück announced a government guarantee for all private savings accounts in order to prevent mass-withdrawals from German banks by savers. These two dates obviously initialized a new high for the systemic threat-frame. However, the temporal pattern shows a remarkable differentiation of interpretative patterns as early as one week after Lehman Brothers' insolvency – despite the dominance of the systemic threat frame. Solidarity-frame, greed-frame, and regulation-frame gain a considerable share of the news coverage from Sep 22nd on.

Inter-Media Frame Transfer Analysis

In the course of the ARIMA-adjustment it became obvious that only 16 of the 48 identified time-series showed sufficient frequencies to enable the calculation of a residual time series. One necessary condition for the subsequent analysis

was the creation of at least two residual time series per frame. Hence, only the cross-correlations based on these 16 time series will be depicted for the analysis of the inter-media frame transfer. Time-lags of up to three days were examined. An inter-media influence with a delay of three days was chosen as the maximum value enabling a plausible interpretation (if one newspaper adopts the interpretative pattern from another newspapers' coverage it is unlikely that this occurs with a delay of more than three days). However, an influence exceeding this time period cannot not be completely ruled out. Nonetheless, including longer time-lags into the analysis would have increased the risk that third factors (e.g. that journalists accumulated media consumption) influenced the correlations.

A total of 22 cross-correlations with lags of no more than three days were conducted. Within each of these cross-correlations the lag with the strongest correlation was identified and significance values were subsequently calculated for each of them. The significant correlations are shown in Table 3. As a total of 22 statistical examinations were conducted, one or two false positive results are to be expected when applying a significance level of 0.05 for each individual test. Accordingly, a correction of the significance following the Bonferroni-Holm-Procedure (Holm 1979) was conducted. In Table 3, correlations which proved to be significant after the adjustment are marked with (**), correlations which were only significant prior to the adjustment are marked with (*).

The occurrence of the solidarity-frame in the SZ correlates with the occurrence of the same frame in the FAZ with a value of .349. However, the SZ was one day ahead of the FAZ (the lag can be seen in brackets behind the correlation value). The solidarity-frame in the coverage of FAZ can thus be explained at about 12% by the occurrence of the solidarity-frame in the SZ one day before. The same can be said about the regulation-frame. The occurrence of the regulation-frame in the FAZ can be explained at about 19% with the occurrence of that frame in the SZ on the previous day. The regulation-frame in the FAZ on the other hand precedes the occurrence of this frame in the FR three days later (.439). In the case of the greed-frame the time series of the FAZ is two days ahead of the frame's occurrence in the SZ. Yet, it follows the corresponding time series of the FR. The greed-frame was most prominent in the FR throughout the investigation period. Apparently, the FR managed to introduce "its" main interpretative pattern successfully into the media debate.

The results imply that inter-media influences are present. Yet, they vary remarkably in speed. Especially the FAZ seems to adapt the interpretative patterns of the SZ rather quickly (with a delay of only one day). This is especially true for those frames directed at how to deal with economic actors (solidarity and regulation). The crisis-interpretation of the FR does not find resonance in the FAZ's and SZ's coverage until much later. A possible reason for this could be seen in the fact that the greed-frame, which seems to originate mostly from the FR, is not so much prevalent in the immediate, more descriptive coverage of key events than in the subsequent commentarial coverage of the quality newspapers.

Table 3. Cross-correlations of the ARIMA-adjusted time series

Solidarity-Frame				
	SZ		WELT	
FAZ	.349(-1)*		.436(0)**	
Regulation-Frame				
	SZ	FR		
FAZ	.435(-1)**	.439(3)**		
Greed-Frame				
	SZ	FR	WELT	
FAZ	.365(2)*	.477(-3)**	.430(0)**	
Systemic Threat-Frame				
	SZ	WELT	FTD	HB
FAZ	.610(0)**	.369(0)*	.453(0)**	.340(1)*

Note: ** p<0.05 (after adjustment with the Bonferroni-Holm-Procedure); * p<0.05 only without adjustment; Reading aid: The occurrence of the solidarity-frame in the FAZ correlates to a value of .349 with the occurrence of the solidarity-frame in the SZ. The value in brackets indicates the time-connection of the medium in the column (SZ) with the medium in the row (FAZ). A value of -1 thus means, that the SZ is one day ahead of the FAZ.

The strongest correlations could be identified for the time series of the systemic threat-frame. At time lag zero the time series of the FAZ and the SZ were strongly interrelated. The time series of the WELT and the *Financial Times Deutschland* (FTD) also correlate significantly with the FAZ time series. For the systemic threat-frame this indicates strong external influences on the media coverage rather than an inter-media frame transfer. The effect of key events surrounding the Lehman Brothers insolvency and the bailing out of the Hypo Real Estate appear to dictate the dynamics of news coverage at least regarding the dominant systemic threat-frame.

Conclusion and Discussion

Hypothesis 1 has to be rejected. We could identify lagged correlations indicating that individual media outlets exert some influence on the media coverage of other media outlets. Yet, these lagged correlations occur at about the same rate as simultaneous correlations (time lag 0) which suggest the common orientation of different media outlets on external influences (i.e. the development of events). The assumption that external influences on the six newspapers were less relevant than inter-media influences could therefore not be substantiated.

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Hypothesis 2 cannot be confirmed either. Inter-media influences, if given, apparently do not originate from the economic and business media. Instead, it appears as if the traditional quality newspapers (especially the FAZ and the SZ) were following each other's lead in interpreting the crisis.

Thus, it can be stated that the orientation on other journalists' output is not as strong as expected in the early stages of a potentially threatening economic crisis. Especially the supposed reference to the thematic experts of the economic and business press did not occur. This result can be interpreted in at least two ways: on one hand it is plausible to assume that the media is unable to interpret crisis developments in early periods completely decoupled from the actual chain of events. It may even be possible that the leeway for interpreting one's own coverage is especially limited during phases in which events change quite rapidly (for example as a direct result of the Lehman Brothers insolvency). Another explanation may be that actors from outside the media, especially politicians and economic actors, succeeded in actively introducing their interpretations of the crisis into the media discourse. Especially considering that journalists are assumed to be aware of the potential effects of their initial coverage during periods of insecurity, relying on the statements of non-media actors may serve as a protective strategy. The finding that the economic and business press could not exert any detectable influence on the coverage of other media outlets furthermore suggests that the crisis was considered to be a policy topic rather than a strictly economic topic.

Future research should – similar to agenda-setting research – directly contrast the inter-media influences in the establishment of news frames with indicators of the course of economic events as well as with the interpretative patterns proposed by politicians and economic actors (oriented on public appearances, such as press conferences, parliamentary meetings or press releases). That way it may be possible to provide a sound impression of the origins and development of news frames, exceeding isolated observations of isolated mechanisms. Such a research should furthermore be embedded in an analytic framework that exceeds the initial period of a crisis and allows for a direct comparison with periods of professional routine.

Finally, it has to be pointed out that lagged correlations identified in a longitudinal study are not necessarily a proof of a causal relation. If, for example, the FAZ introduces a frame into its coverage one day after the SZ, this may be interpreted as an influence of the SZ on the frame-selection of the FAZ. Yet, the influence of third variables cannot be ruled out. Quite possibly, the SZ as well as the FAZ are only reacting to non-medial influences, with the SZ adapting a little faster to these influences. This may even be attributed to technical circumstances such as an early or late editorial deadline of a newspaper. Such alternative explanations have to be considered when interpreting the results of this study.

However, the concept of an inter-media frame transfer, as developed in this study, proved to be a fruitful access to the analysis of temporal dynamics in the selection of frames. Indications for a mutual influence of individual media outlets on each other's media coverage were detectable, even if only as an addition to

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dominant external factors influencing the media coverage. The analysis has retraced the real-world development of the crisis quite well and thus substantially contributed to the explanation of coverage-dynamics with the aid of the inter-media frame transfer. At the same time our study offers a pragmatic methodological approach to illuminate the process of inter-media frame transfers. The indications for inter-media influences found in the work at hand encourage a further pursuit of this research strategy. Apart from extending the investigation period, the chances for identifying frame-transfers could be heightened substantially by extending the media sample. Especially the inclusion of television news may help to further deepen our understanding of inter-media influences.

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STRESZCZENIE

Oprawy medialne, ich transfer między mediami i kryzys finansowy

Autorzy artykułu, wykorzystując teorię oprawy, analizują publikacje poświęcone ekonomii w niemieckich gazetach na początku kryzysu finansowego. Celem badania było: po pierwsze, wskazanie ram, w jakich prezentowane są wiadomości ekonomiczne. Po drugie: dokumentacja tych sposobów medialnej oprawy, ich występowania oraz rozpowszechniania w różnych mediach. Po trzecie: badanie wzajemnego oddziaływania mediów. Autorzy artykułu wprowadzają pojęcie Transferu Ram Między Mediami, stosują stworzoną na potrzeby badań multi-metodologię, wykorzystującą jakościową i ilościową analizę zawartości prasy, jak również model szeregu czasowego ARIMA. Badacze wskazali osiem sposobów oprawy wiadomości dotyczących gospodarki. Przedstawianie kryzysu jako ciągłego zagrożenia jest dominującą interpretacją. Wzajemne oddziaływanie mediów może wytłumaczyć w pewnym stopniu dynamikę zmiany opraw medialnych. Niemniej jednak, medialna oprawa kryzysu finansowego wydaje się zależna głównie od dodatkowych czynników zewnętrznych.

Słowa kluczowe: teoria oprawy, oprawy medialne, oddziaływanie mediów, kryzys finansowy, obraz w mediach, transfer oprawy medialnej

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