Market Devices: Understanding the Underbelly of Financial Markets

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Symposium abstract (247 words)

Whether as suppliers of capital, guardians of governance or amplifiers of economic crises, financial markets play a crucial role in contemporary economies. Research in organizations has typically confronted Wall Street by extending. Isomorphism, herding, categorical discounting and social embeddedness have all been examined in the context of finance. But existing work has rarely inquired into the actual financial practices of financial actors. This neglect is problematic, for most recent developments on Wall Street -- derivatives, securitization, or responsible investment -- entail new technologies and new cognitive practices. In the spirit of the conference theme, “the questions we ask”, the proposed symposium poses new and provocative questions about the cultural and technological underpinnings of modern finance. What tools are central to the work of traders, analysts, journalists, or fund managers? How do they shape what they do? These issues are addressed in four papers united by a common concern with market devices. These devices include, first, sustainability reports such as the Global Reporting Initiative and their use in socially responsible funds. Second, analyst reports and the ways in which securities analysts make them persuasive. Third, financial news and their development process in financial media. And fourth, the Black-Scholes formula and its diffusion and use in risk management and regulation. The symposium brings these slices of Wall Street together, along with several emerging theoretical perspectives such as the social studies of finance, performativity, cultural studies and media studies, making for an original examination of the “underbelly” of global capitalism.

Divisions and Key Words:
Organization and Management Theory (capital/financial markets, markets/industries, social construction)
Managerial and Organizational Cognition (sensemaking/social construction, culture, qualitative)
Technology and Innovation Management (management of technology and innovation, interpretive/cognitive, sociology)

Search terms: Markets, Technology, Sensemaking
Orientation: Practice, International, Theme: The Questions We Ask, Research

Statement from organizers

We have received email statements from all intended participants formally agreeing to participate in the entire symposium, AND that they are not in violation of the Rule of Three + Three.

- Daniel Beunza, Daniel Gruber, Klaus Weber (organizers) – please see Table 1 for the emails
Overview

Our symposium poses new and provocative questions about the cultural and technological underpinnings of modern finance. Ever since the seminal writings of Max Weber, the norms and techniques of rational accounting have been associated with modern capitalism: “The most general presupposition,” Weber wrote, “for the existence of this present-day capitalism is that of rational capital accounting as the norm for all large industrial undertakings” (Weber, [1927] 1981: 276). To Weber, double-entry bookkeeping was illustrative of the technical infrastructure that supports and shapes business practices (Carruthers and Espeland, 1991; Hopwood, 1987). It follows that capitalism and especially the capital markets, not only amounts to its participants -- buyers and sellers, along with their greed and fear – but also includes a set of established cultural practices and technologies that organize the animal spirits of the participants. We refer to this infrastructure as market devices.

The infrastructure of finance, however, has been vastly overlooked by organizational researchers. Organizational analyses of the capital markets have extended existing models and theories to Wall Street with notable success. Zuckerman’s (1999) categorical discount, for example, extends the organizational concepts of categorization and legitimacy to the realm of financial valuation. Rao, Greve and Davis’ (2000) information cascades extended the notions of isomorphism and information cascades to securities analysts. And Baker’s (1984) analysis of networks in an options exchange offered the notion of embeddedness to the financial arena. But, like financial economists, organizational researchers have focused their efforts almost solely on aggregate variables. Whether in the form of liquidity, valuation or financial return, existing treatments have not followed up on Weber’s writings. The procedures, norms, mechanisms, devices, and artifacts of Wall Street have barely been examined.
As Callon (1998) points out, this abstractionist approach is problematic. It leaves out of the picture the day-to-day challenges of the actors. Worse, it limits the assessment of the capital markets to overgeneralizations about the psychological dispositions of the actors (are actors “rational” decision-makers? Are they “irrational”), overlooking the fact that market action is the outcome of an organized assembly of elements that includes people but also their tools.

In the spirit of the conference theme, “the questions we ask”, the proposed symposium poses new and provocative questions about the cultural and technological underpinnings of modern finance. What tools are central to the work of traders, analysts, journalists, or fund managers? How do they shape what they do? The proposed symposium addresses this neglect with a radical emphasis on the tangible and concrete.

**Presentations in our symposium**

The first presentation, by Fabrizio Ferraro and Daniel Beunza, examines the ways in which socially responsible funds use a recently-developed reporting convention, the *Global Reporting Initiative (GRI)*. Socially responsible funds have grown in the past decade from $639 billion to $2.29 trillion in the US. Organizational researchers have examined in detail the profitability of these new investment strategies (Schroder, 2007, and Edmans, 2007), but they have overlooked a more fundamental problem, namely, the lack of financial instruments available to responsible investing. This presentation examines the practical problems faced by responsible fund managers in making use of the GRI. How do they obtain the information they need to make investment decisions? How do they aggregate it? Based on ethnographic research gathered in two investment funds, Ferraro and Beunza suggest that the GRI is not a neutral tool. The guidelines of the GRI, based on the concept “triple bottom line,” insist on alluding to a wide variety of stakeholders – as opposed to the firm’s financial shareholders. Responsible
investment, the presenters conclude, appears to be performing a “stakeholder” theory of the firm that differs from the “agency view” implicit in financial accounting.

The second presentation, by Klaus Weber and Simona Giorgi, also focuses on a market device, namely, analyst reports and their style. Securities analysts have been mainly portrayed as information brokers or product critics, with an emphasis on their conflicts of interest and biases. Building on work that looks at the cultural/discursive practices that provide infrastructure for markets (Beunza & Stark, 2004; Knorr-Cetina & Bruegger, 2002; White, 2000, 2002), the presenters propose that analysts should also be seen as discourse makers. The presenters examine whether the rhetorical and presentational choices of the analysts affect the valuation of the stocks through a systematic text analysis of 10,000 reports of a sample of 35 security analysts that covered 250 biotechnology companies between 1986 and 2005. They find that rhetorical moves in reports pertaining to a company that are novel, unusual or heterogeneous can spark investor attention and engagement. The function of analysts, the presenters conclude, is to stimulate and keep market conversations going by creating novelty, attention and ongoing work for other market participants.

The third presentation, by Daniel Gruber, examines the producers of a device as quintessentially financial as the Wall Street Journal -- financial media companies. The collapse of Enron and other corporate scandals of the early 2000s made the crucial importance of financial media amply clear: as observers pointed out, it was the financial press, not the analysts or rating agencies, who first uncovered the corporate misdemeanors. Unsurprisingly, existing organizational research on the financial media has emphasized its informational role. For instance, research has examined how the media constructs corporate leadership or corporate agendas. But creating meaning for the public, that is, sensegiving, is not the only activity that the
media accomplishes. Even before a media company can release its own view on an event, it needs to interpret and give meaning to it, in short, engage in sensemaking. Gruber’s presentation examines the ongoing process of sensemaking and sensegiving as it unfolds within media companies. His presentation draws from ethnographic field research on MoneyWire, a financial news and information service. It compares the articles written in it with observations and interviews with the reporters, editors, and the producers responsible for putting them together. His findings emphasize the behind-the-scenes negotiated nature of this process.

The fourth and final presentation, by Yuval Millo, traces the applications of the Black-Scholes model in risk management and financial regulation. The success of the options pricing theoretical model has been presented as a textbook case for the performativity of an economic theory (MacKenzie and Millo 2003): in other words, the celebrated financial economic model was not accurate when it was presented, but it became so because market participants decided to use it. Yet a question remains about the drivers of this process of “performativity”: why would market participants adopt an unproven and, indeed, an inaccurate mathematical model? What were the mechanisms of performativity? Drawing on interviews, archival research and other methods of historical sociology, the paper reveals an additional major reason for the adoption of Black-Scholes: its effectiveness as a tool for risk management and regulation. As the consensus around model-based risk management grew, the communicative and the coordinative aspects of the methodology increased in importance. In sum, the Millo attributes the almost unanimous adoption of Black-Scholes to its effective communicative and organizational characteristics.
Beyond the symposium

A number of events before and after the symposium promise to lend additional intellectual impact. This symposium is part of a broader effort to promote a better understanding of the role of material artifacts and cultural practices in the capital markets. This ongoing initiative began with the publication of the book *Market Devices* by Michel Callon, Yuval Millo and Fabian Muniesa (see Callon, Millo and Muniesa 2007). The book is, according to the editors, “an analysis of the various sorts of technical instruments that intervene in the shaping and reshaping of markets.” It was launched at the London School of Economics in December 2007, and served as a noted meeting point for European academics in the social studies of finance, social studies of science, international political economy and critical accounting. The proposed symposium at the Academy of Management connects the management and organizational studies community with these other scholars, and helps establish an intellectual bridge across the Atlantic. Similarly, the symposium will not be the last event in these long-running efforts: we expect additional initiatives in other venues that will build on the success of the symposium.

Symposium format

We have chosen a unique format for the symposium that includes two discussants to both anchor the symposium at the beginning, analyze the presentations at the end and to collaborate in leading a rich discussion with the presenters and the audience. Bruce Kogut will start by discussing how the study of practices and technologies relates to existing research on financial markets, and why these practices are of increased interest. The sequence of papers then moves from practices performed by actors at the core of financial markets (investment and risk management) to the discursive and interpretational practices performed by analysts and the financial media that supply important infrastructure for market activity.
Ferraro and Beunza start by asking, how do fund managers introduce the Global Reporting Initiative in their calculations on value? Their presentation contributes to the symposium by showcasing the potential of market devices for performativity.

Weber and Giorgi re-examine the role of securities analysts in market processes, arguing that they play a neglected role as discourse-makers. Their presentation reveals the aesthetic and stylistic element of market devices.

Gruber asks how do sensemaking and sensegiving co-evolve in a financial news organization. He finds that the market devices consumed by investors and other Wall Street actors are an elaborate result of behind-the-scenes negotiation.

Millo returns to the Black-Scholes model and the reasons for the diffusion of this device. He finds that part of the reasons for the success of a valuation device lie outside valuation per se, and in the political and bureaucratic processes of risk management and regulation that surround Wall Street.

Finally, Jerry Davis, as discussant, will explore how the findings from the four papers contribute to our understanding of financial markets and how this understanding is similar and different to existing research. The session will conclude with a question and answer session.

**Symposium Timeline:**
We propose a 120-minute session with the following sequence:
1. Introduction and framing (15 minutes: Kogut)
2. Presentations (20 minutes each)
   - Sustainability Reports and the Material Construction of Socially Responsible Investment. Ferraro and Beunza.
   - Worthy Rhetorics: Analyst discourse and the valuation of biotech stocks, Weber and Giorgi
   - Dollars and sense: An investigation of one financial news organization’s sensemaking and sensegiving, Gruber.
3. Comments and facilitated discussion (25 minutes: Davis)
Relevance to the Academy Theme: The questions we ask

We believe this symposium will speak directly to the 2008 conference theme, "The Questions We Ask." Research on financial markets in the Academy has focused on a set of canonical questions, mainly at the level of aggregate patterns of market behavior and concerned with the behaviors of a limited range of actors. The papers in this symposium explore a different set of seemingly obvious questions: How do participants in financial markets actually perform their work? What tools do they use and what implications do these technologies have? Given the substantial amount of research that considers various financial service professionals as well as the huge population of students we teach who go into these fields, it is imperative from both a research and practice lens to understand more about what they do and how they do it.

Relevance to Organization and Management Theory

The symposium assembles an intellectual toolkit for researchers in Organization and Management Theory. Substantially, it offers a new and original understanding of the capital markets and various actors within the markets. OMT provides an infrastructure for intellectual engagement across disciplines and our symposium helps to fill this mandate by drawing from research in accounting and sociology to broaden the traditional disciplinary horizons. Methodologically, our symposium introduces unconventional research methodologies such as ethnography, media studies, and historical sociology to OMT’s aims of methodological pluralism. Additionally, this symposium aligns with OMT’s encouragement of international research collaborations as we draw upon scholars from Spain, Scotland (Millo is presenting work with colleague Donald MacKenzie from the University of Edinburgh), and London, in addition to three different universities in the United States.
Relevance to Managerial and Organizational Cognition

This symposium includes several issues critical to the Managerial and Organizational Cognition division. The symposium contributes to MOC’s interests in sensemaking and meaning making as they occur in work contexts. Theoretically, it offers a new philosophical approach to agency and a view on how practice, materiality and cognition are intertwined. Finally, perceptual and interpretive processes are examined in the various contexts explored in the symposium to understand how the different actors model reality and how their realities shape their behaviors and actions.

Relevance to Technology and Innovation Management

Our symposium builds on one of the main topics in the TIM division, the organizational processes by which technically-oriented service activities are integrated into organizations. One of the themes in the presentations is an underlying influence of technology on each of the different market devices. Additionally, the symposium aligns with TIM’s dual foci on the management of technology and organizational innovation as they play out in the different contexts we study. Finally, the symposium adds to TIM’s call for interdisciplinary scholarship.
Sustainability Reports and the Material Construction of Socially Responsible Investment

Fabrizio Ferraro and Daniel Beunza

In the past decade, while the observers of Wall Street were focused on the emergence of hedge funds and private equity, a revolution has quietly taken place. Socially Responsible Investing has risen from $639 billion in 1995 to $2.29 trillion in 2005 in the United States. Indeed, almost ten percent of the funds under professional management undergo some form of “social screening.” Researchers in finance and accounting have examined in detail the profitability of these new investment strategies (Schroder, 2007; Edmans, 2007). But researchers have overlooked the more fundamental problem involved in reconciling the regimes of “the market” and “the social,” namely, what screens do fund managers use for their social screening?

Whereas existing accounting regulations -- evolved and refined during centuries -- provide an established apparatus to assess economic performance, no similar mechanism exists for social performance. This has changed during the past decade, however, as companies have begun to report on their social and environmental performance.

The evolution of sustainability reporting

Sustainability reports have become one of the most critical sources of information on the social, environmental and economic performance of a firm, for a wide variety of stakeholders, and among them professional investors. Sustainability reporting did not develop from scratch, and most firms in one way or another have been reporting information on their social and environmental actions since the 1970s (Mathews, 1997). More recently, harmonization of the practices followed by corporations in preparing these reports, has been spearheaded and facilitated by the work of the Global Reporting Initiative, an Amsterdam-based NGO founded by
CERES (Coalition for Responsible Investors), with the goal of improving the standards of non-financial reporting. Already in 2003, practitioners in SRI, suggested that “GRI Guidelines can become a valuable tool for SRI managers to obtain the information they need for optimal investment decisions” (Willis, 2003) and recent surveys show that they have become the de-facto standard for sustainability reporting, and are heralded as “the only game in town” (AccountAbility, 2004: 20).

The emergence of this new investment tool, the GRI, provides a unique opportunity to observe how markets are constructed by assemblages of practitioners, academics and machines (Callon, 1998; MacKenzie and Millo, 2003; Callon et. al., 2007). The presentation examines the significance of market devices by examining the ways in which responsible funds use the Global Reporting Initiative. How do fund managers obtain the information they need to make investment decisions? How do they aggregate it? How do they manage to overcome their own social preferences?

**Early findings and discussion**

Our analysis is based on ethnographic research gathered in two investment funds following Socially Responsible Investing practices. Preliminary findings suggest that the GRI, as any other accounting practices, is not neutral. The guidelines of the GRI, based on the concept “triple bottom line”, continuously refers to a wide variety of stakeholders rather than the firm’s shareholders. As such, responsible investment appears to be performing a “stakeholder” theory of the firm that differs from the “agency view” implicit in financial accounting.
Worthy rhetorics: Analyst discourse and the valuation of biotech stocks

Klaus Weber & Simona Giorgi

Even though sell side analysts are often portrayed as playing an influential role in financial markets, their function and the basis of this influence is poorly understood in academic research. Analysts do not participate directly in market exchange and hence can be depicted as “intermediaries” that facilitate market processes. The role of analysts has been mainly cast as that of information broker, product critic or frame makers. Building on work that has looked at the cultural/discursive practices that provide infrastructure for markets (Beunza & Stark, 2004; Knorr-Cetina & Bruegger, 2002; White, 2000, 2002), we propose that analysts should also be seen as discourse makers. Their function is to stimulate and keep market conversations going, by creating novelty, attention and ongoing work for market participants. We test this idea by examining whether and how one tool for analysts’ discursive role, their rhetorical and presentational choices, affect price setting and the valuation of stocks. Specifically, we examine analysts’ rhetorical choices in presenting their analyses and opinions in research reports. We observe these choices through a systematic text analysis of 10,000 reports of a sample of 35 security analysts that covered 250 biotechnology companies between 1986 and 2005. Rhetorical moves in reports pertaining to a company that are novel, unusual or heterogeneous can spark investor attention and engagement, and can be expected to be associated with the valuation of the stock, over and above a baseline of the company’s financial performance, stock market fundamentals and more established sources of analyst influence, such as coverage, earnings estimates and investment recommendations.
Analysts as information brokers.

While orthodox neo-classical models would deny a need for analyst work, as information is readily available to market participants, a burgeoning literature on security analysts in financial economics shares the perspective that analysts play a role of information broker and processor who mitigates information asymmetries between companies and investors. Analysts turn raw information into earnings forecasts and investment recommendations that are relevant for investors (for seminal papers, see for example Schipper 1991 and Brown 1993). Investors use these outputs from analyst research to make trading decisions that affect market prices (Mikhail, Walther, & Willis, 2006; Balog 1991). This literature has examined the quality of analysts role performance mainly in terms of their predictive accuracy (e.g., sources of the information used, general accuracy of forecasts and advice, and factors that explain variations in them). Consistent with this view of analysts as processors of information, research has primarily examined market reactions to changes in analysts’ recommendations (e.g., Asquith, Mikhail, and Au, 2005; Hirst, Koonce and Simko, 1995; Jegadeesh, Kim, Krische, and Lee, 2004; Womack, 1996).

Analysts as critics and frame makers.

Extending the financial economics’ view of analysts as information processors, some economic sociologists have taken the evaluative role of analysts more broadly and looked at cognitive limitations and biases that lead analysts to unwittingly influence markets (Zuckerman, 1999). Analysts are seen as critics and interpreters that reproduce a cognitive order. For example, an analyst’s job includes cognitive simplification through classification as much as forecasting and investment advice (Zuckerman, 1999). Recent work from this general perspective has emphasized a more active role of analysts as meaning makers and framers (Beunza & Garud, 2006): Under conditions of uncertainty, analysts cannot draw on existing classifications and
“make up for their partial knowledge of the world by becoming active builders of interpretive devices that bracket, give meaning and let investors transform their information into a single, clear-cut, quantitative measure of value (p.39).” For this task, analysts rely on analogies that allow them to justify frames of analysis and categorization, and the quality criteria for analysts’ frames and classifications is their cognitive utility.

**Analysts as discourse-makers.**

The turn from frames to discourse involves three moves: First, a focus on field level dynamics of differentiation and variation over the sharedness of frames across a community; second, a focus on dynamics and flow of discourse over synchronous analyses; and third a focus on repertoires and selectivity over the creation of particular devices and frames. As many analysts continuously deploy alternative framings, they become discourse-makers, and producers in a dynamic cultural market. Reports, as the output of analysts’ activities, can then be seen as “literary” products (Bourdieu, 1993) that carry discursive resources from producers (the analysts) to consumers (the investors). The quality criteria also changes when analysts are seen as discourse makers. Rather than accuracy and cognitive utility, good market discourse is evocative and interesting and makes the listener want to join the conversation (Austin, 1975; Taylor & Van Every, 2000; Velthuis, 2005). Hence, we expect the novelty, unusualness and heterogeneity of analysts’ rhetorical choices in discussing particular companies to be related to the attention and nature of investors’ active engagement with a stock, and through that, to their valuation of the company.

**Research Method**

We performed an inductive analysis of the genre conventions of investment reports and confirmed categories of rhetorical choices that emerged from this exercise in interviews with
security analysts and investors. We identified four rhetorical devices that analysts use to make a report interesting and evocative to investors: the report’s topical focus (e.g., a company, technology or sector), its charge (the stated occasion for producing the report), its goal (the declared benefit for the reader), and its format (e.g., an informational update or an in-depth analysis of company fundamentals). Each of these rhetorical devices contained a set of categories commonly used by analysts in this industry.

We then used these categories to systematically code a text corpus of about 10,000 investment reports created by a sample 35 security analysts that covered 250 biotechnology companies between 1986 and 2005. The analysts include high- and low-status individuals at prestigious and lesser known employers. We assessed the reliability for the coding categories in this text corpus using Krippendorff’s alpha (Krippendorff, 2003). The alpha coefficient was 0.88 for the categories describing a report’s focus, 0.71 for those describing its goal, 0.66 for those regarding its charge, and 0.65 for its type.

We then linked these rhetorical choices to the companies to which each report referred. Our main analyses use spatial and temporal variations in stock price and trading volume as dependent variables, and patterns of analysts’ rhetorical choices as the substantive independent variable. We control for company performance, stock market fundamentals and analysts’ coverage, earnings forecasts and investment recommendations.

Implications

The study contributes to research on financial markets in organization theory and economic sociology. Recent work has paid increasing attention to cultural dynamics in markets, by calling attention to the performative practices and the phenomenological infrastructure that underlies market behavior and allows market functioning (Beunza et al., 2004; Callon &
Muniesa, 2005; Fourcade-Gourinchas, 2007; Knorr-Cetina et al., 2002). However, this school of research has concentrated on how collectively shared tools and resources shape and enable the workings of a market community. We suggest that these tools are produced in a dynamic field of discourse and that because they are applied differentially, they can be linked to systematic variation as much as to shared understandings of stock valuation.
Dollars and sense: An investigation of one financial news organization’s sensemaking and sensegiving

Daniel Gruber

The significance of the financial media has been articulated as scholars examine the collapse of Enron and other corporate scandals. In an influential article dissecting Enron, Macey (2003) asserts the “stunning” fact that the financial press uncovered what was happening before the financial intermediaries. Given that the financial media can have a large impact on many aspects of an organization it is surprising that management scholars have not examined how they interact with firms. Research on the institutionalization of business news as a type of knowledge has concluded that more research is needed on the way firms organize in relation to the news media (Kjaer and Langer, 2005). Thus, it is imperative to learn more about how the financial news media operate – their ongoing interpretation and transmission of information.

This study will examine the construction of financial news stories. This has been described as “negotiated knowledge,” referring to the engagement between the financial news media and their sources (Grafstrom, 2006). Financial news media not only needs to make sense of new information as it comes into the newsroom, but also make sense of where it should fit within its own organizational structure. As Klinenberg (2002: 207) wrote in his study of the Chicago heat wave, “the organizational structure of the news companies orients their attention and resources.”

Once the new information has been made sense of and published, the news organization becomes a “sense-giver” to its audience. Sensegiving has been defined as the “process of attempting to influence the sensemaking and meaning construction of meaning of others toward a preferred redefinition of organizational reality,” (Gioia and Chittipeddi, 1991: 442). The
subsequent transitioning between sensemaking and sensegiving on a given story continues as long as the information is considered relevant and in need of additional updating as perceived by the focal firm and/or the financial news media.

**Prior research on the financial news media**

Existing research has emphasized the information, reputational and constructivist role of financial media. Scholarship in finance and economics has pointed out the theoretically and statistically significant role of financial news as a distributor of information. For example, Busse and Green (2002) showed that acting within 15 seconds of the initial mention of information on CNBC led to profits for viewers who were able to execute a trade. Meanwhile, organizational scholars have shown media reputation, the overall reputation of a firm presented in the media, to be a strategic resource that leads to a competitive advantage (Deephouse, 2000). Organizational research has also examined the role of the media in constructing views of corporate leadership (Hayward et. al. 2004), corporate agendas (Carroll and McCombs, 2003), and the circulation of management knowledge (Abrahamson, 1996). Finally, Rindova et. al.’s (2006) framework illustrates how the media constructs firm celebrity and point out the need to directly consider the theoretical implications of the financial news media as “producers of culture” for firms and markets. Specifically they argue for greater understanding at the intersections of “objective reality” and “constructed reality” in the media’s coverage of firms (Rindova et al, 2006, page 68).

Thus, financial media provides a ripe setting to study sensemaking and sensegiving. Weick, Sutcliffe and Obstfeld have suggested that “sensemaking involves the ongoing retrospective development of plausible images that rationalize what people are doing” (2005: 409). The financial media lie at the intersection of the firms and the media’s own audiences.
Information constantly pours into the newsrooms of media firms. Some of the information is transmitted directly to the consumers of financial news and requires little or no interpretation. An example of this direct transmission would be numerical data from earnings reports. However, much of the firm-specific information requires a varying amount of interpretation by the reporters and editors in the financial news firms. Hence, variation exists in the content of the story and the amount of subsequent interpretation and additional gathering of information which is needed. Additionally, financial news organizations need to balance an imperative to interpret and transmit information quickly (speed) with getting things correct (accuracy). Millions of dollars are at stake when new market-moving news stories about firms are reported to the public.

Recent research has articulated some of the enablers and triggers of sensegiving by leaders and stakeholders in organizations (Maitlis and Lawrence, 2007). Additionally, scholars have shown how the structural determinants of a firm (e.g. stakeholder exposure) affect the framing of strategic change initiatives (Fiss and Zajac, 2007). This work suggests that the actual sensegiving process from an organization is a “negotiated outcome” which emerges from a hypothetical tug of war between different stakeholders (Fiss and Zajac, 2007). However, they fall short in examining what the ongoing process actually looks like which is why I have chosen a setting to study which makes the sensemaking and sensegiving even more salient.

**Data and methods**

This paper examines the process by which organizations transition from sensemaking to sensegiving. Prior research has suggested an iterative process as organizations and their leaders interpret new information and convey that information to their members. However, much of the research has overlooked how organizations actually do so, and at what point do they have enough information and or reason to do so. This study will help to fill this theoretical gap by
examining an empirical setting which provides a ripe context from which to learn more about this process, the financial news media.

The choice of the financial news media for this research echoes the notion of theoretical sampling detailed by Eisenhardt and Graebner (2007). They explain, “[C]ases are selected because they are particularly suitable for illuminating and extending relationships and logic among constructs,” (Eisenhardt and Graebner, 2007, page 27). I will be conducting this research in MoneyWire, a financial news and information service. One financial reporter recounted in his memoir, “The great thing about working in journalism, particularly for a wire service where every second counts, is that you are forced to figure it all out while you’re writing a story,” (Leopold, 2006, page 167). The goal of this study will be to look at the organizing and behind-the-scenes interpretation process in one financial news organization. I will utilize Goffman’s (1959) ideas of backstage and front stage to compare the preparation of the news reports with the actual reports themselves. I will compare the articles written with observations and interviews with the reporters, editors, and producers responsible for putting them together and interpreting the information that comes into the newsroom.

**Preliminary findings**

It is important to note that I had a chance to spend a couple of days at Money Wire to conduct interviews with several different reporters and editors. These interviews provided a strong foundational pilot study. One of the editors explained the way that they deal with breaking news stories as a three step process: snap (send a headline); confirm (call the company in focus); and organize (call people for comments). That same editor added that there is a focus on making “instant judgments” about stories and that many are preceded by “alerts” which tell the readers that something more will be coming. Timed to the hundredth of the second, a
department was charged with monitoring the performance (timing) of the newsroom on stories. In order to compete at this level, some stories have pre-written components to facilitate the process. From these illustrations, one can see the ongoing updating and making sense of stories as well as the importance of speed in delivering that sense.

Additional Theoretical implications

Finally, I believe that this paper will have some interesting insights for the literature on high-reliability organizations (Weick, Sutcliffe and Obstfeld, 1999; Weick and Sutcliffe, 2001; Weick and Sutcliffe, 2007). Financial news organizations need to be committed to resilience, reluctant to simplify, preoccupied with failure, sensitive to operations, and deferring to expertise (Weick and Sutcliffe, 2001) in order to constantly manage the unexpected news stories. Although financial news organizations do not have life-and-death consequences of their actions as many high reliability organizations, there are millions of dollars at stake with any mistake.

For example, a reporter at a financial newswire could be waiting for General Motors to release its earnings. In her urgency to get the information out to the customers of the newswire, she accidentally types in General Electric’s ticker symbol. Millions of dollars are trading hands and the reporter needs to post a correction ASAP.
Mechanisms of performativity: The evolution of financial risk management

Yuval Millo

The markets for financial derivatives are the largest marketplace on the planet and their effect on the global economy is immense. Yet, these markets are relative newcomers. The first organized exchange for the trading of stock options, a popular type of derivative contract, started operating in April 1973. At the same time, a financial economic formula for the prediction of options prices was published. That formula, the Black-Scholes-Merton mathematical model, had grown to become the crowning achievement of modern financial economics and the most widely used formula in financial markets, executed literally millions of times every day. Myron Scholes and Fisher Black went on to win a Nobel Prize in economics in 1997 for their work on the model.

In previous work, Millo and MacKenzie (2003) and MacKenzie (2006) examined the explosive success of financial risk management, focusing specifically on the Black-Scholes-Merton options pricing model. Unlike the common view, which holds that the model was accurate because it unlocked the underlying principles that govern price movements, MacKenzie and Millo revealed that the model actually ‘performed’ the market. That is, the fact that market participants used the model regularly in their trading affected the market in such a way that increased the similarity between the model predictions and market behavior. In other words, the Black-Scholes-Merton had not produced accurate results to begin with, but instead it became more accurate as individual traders and trading organizations relied on the model. MacKenzie and Millo labeled this phenomenon performativity.

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1 This paper is a collaboration with Donald MacKenzie from the University of Edinburgh.
Motivation of the study

The current paper builds on the findings of their previous work and explores the organizational and social mechanisms that fuelled the process of performativity. The paper examines the process that underpinned performativity in financial markets: what were the reasons that motivated a variety of market participants to adopt the Black-Scholes-Merton model? The paper shows that traders, exchange staff and regulators did not adopt the model for its accuracy (as it was not very accurate), but because it provided a simple way to coordinate and control market activity. These model-based modes of communication and coordination, once established and institutionalized, became an integral part of modern financial markets.

The derivative market this paper is focused on, the first organized exchange for the trading of financial derivatives was also the focal point around which one of today’s leading financial risk management methodologies developed. The American stock options exchange, the Chicago Board Options Exchange (CBOE), was a ‘natural laboratory’ where the options pricing model of Fisher Black, Myron Scholes and Robert Merton was tested.

If financial risk management and financial derivatives both developed in the derivatives exchanges, what should account for their spectacular growth? The common answer is that the Black-Scholes-Merton model is a triumph of financial economics. That is, the model captured the underlying movement of prices and offered an accurate and reliable way for measuring and predicting these trends. The analysis in the paper reveals quite a different picture. Notwithstanding the theoretical rigor and the mathematical elegance of the model, the success of financial risk management should be attributed largely to its communicative and coordinative properties. In fact, as risk management turned into an integral part of everyday organizational market practices, this communicative and coordinative dimension of risk assessment had become
critically important and marginalized the actual content of the risk predictions themselves: as the consensus evolving around management systems established, the accuracy and validity of the predictions produced by them became less important.

**Background**

Between 1973 and 1977, volumes in the Chicago options exchange grew by more than 500% and large trading firms entered the market. In these larger trading firms, coordination among the traders became increasingly important so that the different positions’ trading orders would not undermine each other. Such coordination and communication were gradually based on the practices based on the Black-Scholes-Merton mathematical option pricing model. These practices and applications enabled trading firms to construct clear risk pictures of potential market situations and devise possible reactions.

By 1977, four other exchanges were also trading options. Hence, to construct and maintain a diversified portfolio, trading firms had to execute trades simultaneously in exchanges across the country. The organizational challenge facing market participants in such an environment was two-fold. First, the highly complex information contained in the large portfolios had to be simplified so that efficient decision-making could take place. Second, an agreed-upon communicative medium describing portfolio risks was necessary so that the various people involved in executing trading orders and operating in different cities could coordinate their actions. Facing these organizational challenges, trading firms developed a new model-based financial risk management methodology. Using the Black-Scholes-Merton model, the methodology simulated a market movement of a certain size, say of 10%, then calculated the impact that the market movement would have on the portfolio.
Transforming the nature of options trading

The Black-Scholes-Merton-based risk management methodologies transformed the communicative nature of options trading. With the scenario simulating risk management systems, it became possible, even likely, to receive the initial idea about possible trading opportunity by examining the application’s output. For example, after the proliferation of scenario simulating applications traders started to talk about ‘buying volatility’ or ‘selling volatility’, when increasing the relative share of options in their portfolios. That is, model-based applications indicated that risky assets of various degrees should be bought or sold in order to balance the portfolio. By representing the current market picture in simple terms and by adding potential future scenarios the methodologies provided the organization that evolved around derivatives trading with a highly efficient operative language.

As options markets grew more popular, the options clearinghouse, responsible for the overall liquidity of the market, also faced technological and organizational challenges. To protect against trading parties defaulting on their future obligations, the clearinghouse collected collateral representing the risks embedded in the traders’ positions. That size of those payments, known as margins, was determined nightly and was to be paid every morning before trading commenced. The growing trading volumes and the increasing sophistication of trading strategies complicated the calculation process and placed an enormous pressure on the clearinghouse’s computing system. A solution was found in using an option pricing model-based risk management methodology for calculating the required margins. The main advantage of the model-based methodology was its superior calculative efficiency in comparison with the previous method.
By early 1987, model-based applications had developed into a *de facto* standard language for the description, analysis and coordination of organizational actions regarding risk. Both the trading community and the clearinghouse, in spite of having widely different worldviews about risk agreed on the method in which risk was measured and represented. With most of the market using it, the only thing missing was a regulatory approval by the Securities and Exchange Commission (SEC) that model-based risk management was safe. Yet, during the market crash of October 1987, the Black-Scholes-Merton proved to be incorrect. That is, the mathematical engine behind the universally accepted risk management methodology was proved invalid. This event shook options traders and the clearinghouse, some changes were made, but the overall belief in the Black-Scholes-Merton model, and the reliance on model-based risk management remained strong. Furthermore, a few years after the crash the SEC approved model-based risk management, thereby granting it a final seal of legitimacy.

**Discussion and analysis**

So, how is it that a risk management methodology that proved to be inaccurate during a market crash continued to be the universally accepted methodology? The answer, as it emerges from the historical case is that financial risk management is not aimed primarily at measuring risk accurately and validly, but at providing a simple and boundary-spanning communication platform that allows organizations plan and to coordinate their actions. Moreover, by 1987, and even more so in the following decades, Black-Scholes-Merton-based risk management was no longer merely language describing and predicting market behavior but converged with the market itself. Hence, as the risk management methodology gained prominence and becomes part of the techno-social communicative infrastructure of the market, it reached a status whereby it virtually *could not* be wrong.
References


Table 1: Emails from participants

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Daniel,

I agree to participate in the symposium, "Market Devices: Understanding the Underbelly of Financial Markets" and I have not violated the Rule of 3 by submitting more than three presentations for the 2008 Academy of Management Meeting.

Thanks!
Simona

Dear Daniel,

By this email, I am indicating my consent.

Bruce Kogut

I agree to participate in the symposium, "Market Devices: Understanding the Underbelly of Financial Markets" and I have not violated the Rule of 3 by submitting more than three presentations for the 2008 Academy of Management Meeting.

Jerry Davis
From: Y.Millo@lse.ac.uk [Y.Millo@lse.ac.uk]          Sent: Tue 1/15/2008 4:16 AM  
To: Gruber, Daniel  
Cc: 
Subject: RE: Email Statements for Academy symposium  
Attachments:  
I agree to participate in the symposium, "Market Devices: Understanding the Underbelly of Financial Markets" and I have not violated the Rule of 3 by submitting more than three presentations for the 2008 Academy of Management Meeting.

Kind regards,  
Yuval Millo

From: "Ferraro, Fabrizio"<fferraro@iese.edu>          Sent: Fri 12/28/2007 12:57 PM 
To: Daniel Beunza <db2417@columbia.edu>  
Cc: 
Subject: RE: symposium draft 
Attachments: 

Hello Daniel,  

I agree to participate in the symposium.  

Fabrizio Ferraro