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A Performative Perspective on Finance

Exploring the Mechanisms through which Positivistic Financial Knowledge Frames
Investment Practices

by

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Table of Contents

Table of Contents	II
List of Figures	III
List of Abbreviations and Acronyms	IV
1 Introduction	1
2 State of Research	4
3 Methodology	6
3.1 Exploratory Research	6
3.2 Transdisciplinary Research	7
3.3 Methodological Procedure	8
4 Construction of a Basic Analytical Framework for Performativity	8
4.1 Conceptualizing Performativity of Financial Knowledge	9
4.2 Multi-level Framing-Mechanisms	13
4.3 Justification for a Mechanism-based Explanatory Approach	14
5 Application of a Basic Analytical Framework for Performativity	15
5.1 Positivistic Financial Knowledge (X)	15
5.2 Investment Practices (Y)	19
5.3 Framing-Mechanisms (→)	20
5.3.1 Formal Institutions as Multi-level Framing-Mechanisms	21
5.3.2 Institutional Arrangements as Multi-level Framing-Mechanisms	24
5.3.3 Social Norms as Multi-level Framing-Mechanisms	27
5.3.4 Material Devices as Multi-level Framing-Mechanisms	31
5.3.5 Cognitive-Linguistic Frames as Multi-level Framing-Mechanisms	33
5.4 A Guiding Frame for Investment Practices	35
6 Conclusion	36
References	VI
Ehrenwörtliche Erklärung	XII

List of Figures

Figure 5.1 Formal institutions as multi-level framing-mechanisms	21
Figure 5.2 Institutional arrangements as multi-level framing-mechanisms	24
Figure 5.3 Social norms as multi-level framing-mechanisms	27
Figure 5.4 Material devices as multi-level framing-mechanisms	31
Figure 5.5 Cognitive-linguistic frames as multi-level framing mechanisms.....	33

List of Abbreviations and Acronyms

e.g.	<u>e</u> x <u>em</u> pli <u>g</u> ratia (“for example”)
etc.	<u>e</u> t <u>c</u> etera (“and other things”)
EMH	<u>E</u> fficient <u>M</u> arket <u>H</u> ypothesis
FED	U.S. <u>F</u> ederal <u>R</u> eserve
GFC	<u>G</u> lobal <u>F</u> inancial <u>C</u> risis (Financial Crisis of 2007-2008)
i.a.	<u>i</u> nter <u>a</u> lios (“among other persons”)
i.e.	<u>i</u> d <u>e</u> st (“in other words”)
PF	<u>P</u> ositivistic <u>F</u> inance
PFK	<u>P</u> ositivistic <u>F</u> inancial <u>K</u> nowledge
SEC	U.S. <u>S</u> ecurities and <u>E</u> xchange <u>C</u> ommission
SSF	<u>S</u> ocial <u>S</u> tudy of <u>F</u> inance
SVM	<u>S</u> hareholder <u>V</u> alue <u>M</u> aximization

1 Introduction

Since the late 1970s, the trajectory of most global northern societies was characterized by a morphological process of change, namely financialization.¹ The term financialization² refers not only to “...the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies.” (Epstein 2005, 3), but, moreover to a “colonization” of financial as well as non-financial activities by a financialized valuation³ (Chiapello 2015, 15). Social spaces and social interaction are impacted by the transformation, even those that were previously untouched⁴. Activities and decisions in every social sphere are increasingly framed in terms of their financial implications (Vollmer 2012, 87-88). The proceeding financialization has been linked closely to transformed practices in the financial sector in general and a shift in investment practices in particular (Krippner 2005).⁵ Capital’s function as a private good (instead of a common good), with the sole purpose of its accumulation rather than facilitating economic transaction, has been increasingly emphasized (Musil 2003, 262) and manifests in the primacy of shareholder value and a commercialization of risk (which I further on refer to as financialized investment practices). Investment practices have the potential to influence the basic structure of a society and are pivotal for distributive justice. For example, Marti and Scherer (2016) show that income inequality, specifically the increase of top incomes, is mediated by financial firms through performance-based pay (28). Thus, investment practices can be regarded as a form of governance⁶ that could foster systemic change (Marti 2013,

¹ Most pronounced in the United States of America and the United Kingdom.

² Among the most prominently featured characteristics of financialization in academic literature, are the expansion of financial markets, formation and growth of a specialized financial service industry sector, and increased capital accumulation through various financial channels (Krippner 2005; Chiapello 2015).

³ Chiapello (2015) defines financialized valuations as quantitative assessments, especially such assessments that are informed by types of analysis and calculations specific to finance (13-14).

⁴ Several scholars cover the impact of financialization on different areas of social life amongst them labor markets and working conditions (Fligstein and Shin 2007; Vollmer 2012), policy-making (Jacobs and Mazzucatto 2016), household, family, and leisure (Vollmer 2012), housing (Fields 2017), art (Taylor 2011), nature (Keucheyan 2018), water (Bayliss 2014; Schmidt and Matthews 2018), and education (Afonso and Devitt 2016).

⁵ The term “financial practices” alludes to all practices related to the finance realm; on financial markets, in financial organizations, as well as political practices such as financial legislation and supervision. Investment practices are understood as the ways actors commonly invest. A more detailed elaboration can be found in section 4.2.

⁶ In a globalized world that is characterized by retractive governments, other forms of governance gain importance in directing and regulating the economy. Governance is a form of authority that is constituted of a “system of rules”. Governance without governments works, if the regulatory mechanisms that are in place function effectively without formal authority. That requires a form of legitimization and the voluntary compliance of the majority (Sinclair 1994, 134-135).

220). However, investment practices are disenfranchised from democratic control mechanisms which posits a conflict with basic democratic principles.

The global financial crisis (GFC) that started unraveling in 2008, revealed many challenging and socially unbeneficial effects that are associated with the transformed⁷ practices: polarized labor markets⁸ and increased financial distress of the lower classes (Jacobs and Mazzucato 2016, 7-10), increasing inequality in wealth and income⁹ (Piketty 2013), fraudulent and unethical behavior in the financial sector (FCIC 2011, 61-64), ecological destruction and exploitation of natural resources (Sassen 2005), an instable financial sector that prompts reoccurring “bubbles” and crises, and a misallocation of resources towards the financial sector¹⁰ (Epstein and Montecino 2016, 15; FCIC 2011, 64-66). In the years following the GFC, investment practices that disagree with the neoliberal premise of achieving maximum social welfare by profit maximization, gained traction.¹¹ Such practices aim to advance the common good by deploying financial tools that generate long-term competitive financial returns alongside a positive social impact¹² (Bugg-Levine and Emerson 2011, 11). However, sustainable and socially beneficial investment practices have progressed only slowly and remain with limited clout. This urges the question: How can sustainable and socially beneficial investment practices be fostered? As a first step to answering this question, it may be fruitful to deepen the understanding of *how* investment practices became increasingly financialized in the first place. Developing greater sensitivity for the processes that took place may offer important insights on key factors that could enable change towards more sustainable, just, and socially beneficial investment practices. Therefore, I to turn to the link between prevalent financialized investment practices and the theoretical ground in which they are anchored, found in the academic field of finance. Since the 1950s, academic finance has transformed into an increasingly specialized and formalized research discipline, experiencing a spectacular growth in prestige and influence (MacKenzie 2006, 7-8). A potential role academic finance may play in the process of a financialization of investment practices and the implications of such does not find much consideration within

⁷ Marti (2013) points out that the change of investment practices indicates that investment practices are subject to change over time rather than being a product of an unchangeable market structure that cannot be altered, replaced or reshaped (223).

⁸ Here, polarized labor markets refer to both, globally competing labor markets in the course of globalization and increasing polarization of national labor markets.

⁹ The increasing inequality is characterized by an upward redistribution of wealth on one hand and a downward pressure spiral on wages on the other (Marti 2013, 223).

¹⁰ Epstein and Montecino (2016) estimated an “overcharge” of the financial sector between \$12.9 trillion and \$22.7 trillion. The recent GFC caused the typical American family losses between \$105,000 and \$184,000 (2).

¹¹ Some examples are Social Responsible Investing, Triple-Bottom Line Investing and Impact Investing.

¹² The term social impact entails also environmental and governance aspects.

academic finance research. The self-understanding as an objective and ethically neutral science (Kolb 2010, 23; Dobson 2010, 58-59), merely describing “what is” instead of “what should be”, creates a blind spot within the field, namely the potential constructive forces of finance’s body of knowledge¹³. The question if academic science of finance is involved in the creation of precisely the social phenomena which it aims to explain (MacKenzie 2006, 16-19) remains inevitably hidden. When expanding the perspective beyond the mainstream finance discipline, a strain of scholars, many of them placing themselves in the recently emerged field of the Social Study of Finance¹⁴, aim to open this “black box”. The explanatory gap is approximated under the umbrella of *performativity of finance*. Since the research on performativity is in its early stages, there are still many unanswered and unaddressed questions. The focus of most performativity of finance research is on the notion of self-fulfilling theory, according to which economic and financial theories create conditions that propel the convergence of behavior of agents in the real world towards the behavior predicted by theory. This paper hypothesizes a link between dominant financial knowledge produced in academia and investment practices. This paper aims to highlight *how* academic financial knowledge materializes in investment practices. Particular attention is paid to the processes through which knowledge produced in academic finance is transmitted into social systems. Attempting to answer this question proves challenging due to a lack of a suitable analytical framework. Therefore, a basic framework that can be regarded as a starting point to analyzing performativity of knowledge produced in academic finance, is proposed.

The remainder of this paper is split into two parts: the first part is dedicated to the theoretical portion of performativity of finance. First, I present briefly the current state of research, followed by an elaboration on the methodology employed in this paper. Then, the basic analytical framework is introduced. The second part aims to schematically apply the framework in order to explore the mechanisms through which financial knowledge produced in academia may impact investment practices. I conclude with a brief discussion and future research recommendations.

¹³ I understand knowledge as ideas that are accepted and recognized as truths. This conception leans on Foucault, who treats knowledge as a negotiated norm. Thus, knowledge is inevitably coupled with power (Kajetzke 2008, 34).

¹⁴ The field of Social Studies of Finance is the application of social science disciplines such as sociology, anthropology, human geography, gender studies, socio-legal studies, and science and technology studies to the study of financial markets. This multidisciplinary area is one of increasing research interest, particularly in the wake of recent financial crises.

2 State of Research

The research on performativity consists of a set of ideas characterized by conceptual ambiguity, rather than of a homogenous theory. The notion of performativity arises in various scientific areas with differing focal points according to the subject it aims to explain. However, most research on performativity acknowledges blurry lines between research and its objects, and is concerned with the interplay of knowledge, institutions, and individuals as well as a reflexive relationship between academia, politics and wider society (Boldyrev and Svetlova 2016, 6-9). The roots of the idea of performativity are found in linguist John L. Austins' lecture series *Doing something with words* (1962), in which he claims that language can have a creational force. For example, by saying "I do" when marrying someone, speaking is a performative act spurring real-life consequences for the future (6). Another cornerstone for the notion of performativity is Robert K. Merton's concept of self-fulfilling prophecy. That is, that a prediction or description that circulates in the social sphere reinforces itself. Thereby it gains validity and ultimately becomes true (as cited in MacKenzie, Muniesa, and Siu 2007, 3). Judith Butler (1988) contributed to the performativity paradigm by focusing on the reenactment of theories regarding the political philosophy of gender. Butler views social reality as constituted by agents through the repetition of language and symbolic signs (519).

Although existent in other disciplines for considerable time, the research on performativity of economics and finance only gained traction in the last two decades, attempting to examine in more detail performative channels, mechanisms, and levels of effects. The books *Do economists make markets?* (2007), edited by MacKenzie, Muniesa, and Siu, and *Enacting Dismal Science* (2016), edited by Boldyrev and Svetlova, are the two most prominent books, controversially discussing whether or not economic science is performative. Jacobs and Mazzucato (2016) edited a collection of papers, including prominent economists such as Joseph Stiglitz, on the link between economic theory and policies in their book *Rethinking Capitalism*. Yet, it is striking that most of the critical literature stems from outside (or the margins) of the finance or economics discipline. The science-sociologist Michel Callon is one of the most active advocates of the performativity idea in regard to economics. He highlights the entanglement of the representation of and intervention in markets, arriving at the claim that economists produce the economy (as cited in MacKenzie 2006, 16). Furthermore, Callon and Muniesa (2005) invoke the notion of calculations. Agents reach agreements on the evaluation of goods by the means of

calculations and calculative devices on markets (calculative collective devices). The authors highlight the political dimension of markets, their power to in-and exclude groups of people by raising concerns about its governing hegemonic logic: "... calculation as the only possibility for action?" (1245). In the book *Market Devices* Callon, Millo, and Muniesa (2007) emphasize the role of market devices that configure "... economic calculative capacities ..." and help "... qualifying market objects." (5). The organizational and managerial scholars Ferraro, Pfeffer and Sutton (2005; 2009) focus on "false" neoclassical economic theory becoming "true", in that it adversely shapes management practices and prompts anti-social behavior of agents through language, institutional arrangements, and social norms (2005, 8). One of the most prominent pioneers of the performativity of finance research is Donald MacKenzie. The author devotes, among many other works, the book *An Engine, Not a Camera* (2006) to presenting evidence for the active transformational forces of financial theory and associated models. MacKenzie analyzed the convergence of behavior of agents towards previously predicted behavior by theory in the case of the Black-Scholes-Merton option pricing model¹⁵ and advanced the performativity research further by distinguishing between four categories of performativity:

- (1) Generic performativity is when some aspect of economic science (theory, model, concept, procedure, data set, etc.) is used by decision-makers in an economic process.
- (2) Effective performativity is when the practical use of an aspect of economics affects economic processes in an observable way.
- (3) Barnesian performativity¹⁶ is when the application of an aspect of economics molds economic processes to converge towards their depiction by economics.
- (4) Counterperformativity is when an aspect of economics is applied in practice and has an advert effect, making the process less like the descriptions in economic science.

Building on MacKenzie's categorization, Marti and Gond (2017) captured the dynamics of Barnesian performativity of theories by developing a three-step process model. The two managerial scholars identified six boundary conditions under which theories can become self-fulfilling and use the example of theories on a linkage between Corporate Social

¹⁵ This model, developed by Black, Scholes, and Merton in 1973 is a mathematical model that is used to determine the theoretical estimate of the value (price) of an option (McKenzie 2006).

¹⁶ Named after the sociologist Barry Barnes who highlighted the central importance of self-enforcing feedback loops for social interaction (MacKenzie 2006, 19).

Responsibility and financial performance as an example. Vollmer (2012) traces the percolation of finance from financial markets to financial organizations and from there to every other social sphere. The author identifies two micro-signatures of financialization: first, the deployment of financial indicators for the coordination of behavior of populations; and, secondly, financial framing presents itself without alternatives and as given (unquestionable) and is as such accepted as true reality (98-102). Deutschmann (2012) emphasizes that all social systems (financial science, being a refined subset of economics, only one of them) are constituted performative. Not only scientists but social actors in general produce social reality. The author directs the focus to the limits of observability of performativity. The scholar outlines that, in contrast to Barnesian performativity (or in his words: manifest performativity), which is somewhat traceable, Generic and Effective performativity (latent performativity) is hardly observable (146-148). Concluding, even though the notion of performativity of finance moved a little closer to the spotlight, the field remains 'under construction' (MacKenzie 2006, 7).

3 Methodology

In order to approach the performativity of academic financial knowledge in regard to investment practices, I chose to employ a transdisciplinary, theory-based exploratory research strategy. In the following, a brief overview of theory-based exploratory research and transdisciplinary research is given, since these strategies are not usually employed in the economics discipline.

3.1 Exploratory Research

Theory-based exploratory research relies on the analysis of existing theoretical considerations, with the objective to develop new explanations through synthesis and integration of available theoretical fragments. Reiter (2017) remarks that exploratory strategies are employed when research on a topic is still in its early stages and ideas may have not yet developed into full-fledged, comprehensive theories, models, or methods. The objective lies in defining the problem and subjects of study, concretizing methods, establishing priorities, and developing concepts and operational definitions. In contrast to confirmatory research, exploratory research neither intends to test hypotheses (since they cannot be proved) nor deliver conclusive evidence. Rather, explorative research aims to offer new ways of perceiving and explaining a particular part of reality. By applying new words,

concepts, theories, and hypotheses, an alternative way to make sense of the world emerges. Thereby, hegemonic and one-sided explanatory approaches can be counteracted, which may lead to unveiling previously hidden aspect, and workings of reality. Reiter (2017) asserts that enriching and diversifying the toolbox of knowledge producers by expanding mental models can lead to better, more relevant and accurate research. The author emphasizes the importance of a clear formulation of the researcher's epistemological stance (136-144).¹⁷ Furthermore, research methodologies of discovery are specifically suitable for integrative transdisciplinary research projects, because they have the potential to narrow the gap between qualitative and quantitative research approaches, thereby bridging different disciplines (Kleining and Witt 2001, 23).

3.2 Transdisciplinary Research

Understanding performativity requires the consideration of macro-structural and micro-processual elements (Lounsbury and Boxenbaum 2013, 4), and entails a temporal dimension that urges the involvement of a historical perspective (Ferraro, Pfeffer, and Sutton 2005, 13; MacKenzie 2006, 21). For this reason and due to the scattered nature of performativity research across various disciplines, a transdisciplinary literature research strategy is employed. The revision of available literature sprawls managerial and organizational research, anthropology, psychology, philosophy, and financial sociology, and the field of SSF, among others. In order to identify the most active performativity researchers and the most relevant literature, I used the "snowball method"¹⁸. The "snowball method" may suffer from selection bias, since it lacks systematics. However, the field of SSF and the research on performativity of finance is still manageable in its number of publications and active scholars; therefore, a more systematic research approach did not seem necessary at this point.

Transdisciplinary approaches potentially yield innovation (della Porta and Keating 2008, 316-320); however, they have some pitfalls. Each discipline approaches social phenomena in very different, and not seldom antagonistic, ways. Hence, such an approach is demanding for researchers, since they need the openness, willingness, and cognitive skills to integrate different perspectives as well as forms of knowledges and synthesize them in a senseful manner. Additionally, a lexical diversity complicates communication and comprehension (Serido and Joseph 2014, 54). Terms and concepts have multiple meanings

¹⁷ Following the performativity premise implies a constructivist perspective, which is characterized by the assumption that the social world and all that is in it is the outcome of human action and interaction; i.e. human-made (Reiter 2017, 140).

¹⁸ That means, first reviewing the most cited paper and using its bibliography for further publications.

in different disciplines and are often vague at the abstract level. To ensure unambiguous communication (Beach and Pedersen 2013, 46) central concepts and used terminology need to be clearly defined in a disciplinary de-contextualization, followed by a transdisciplinary reconstitution (Bergmann et al. 2012, 63). The upside is that such an approach urges transparency by being explicit and clear about underlying philosophical positions, political affiliations, and methodological assumptions (Serido and Joseph 2014, 72).

3.3 Methodological Procedure

The research on performativity of finance exhibits conceptual ambiguity and a lack of theoretical precision not only in theorizing about performativity but, moreover, about how to analyze performativity best. Leaning on Bergmann et al.'s (2012) *Methods for Transdisciplinary Research* I conducted an implicit comparison of available theoretical considerations on the analysis of performativity in order to develop a suitable analytical framework (69). A theoretical comparison may suffer from favoritism of one theory over another by that, setting reference standards. Therefore, I distilled theoretical fragments that are targeted at, necessary and useful for analyzing performativity, and I integrated them horizontally. This was possible, since the chosen theoretical fragments focus on explaining different subject matters and rather complemented than competed with each other. From that, a cohesive basic framework on how to analyze performativity was synthesized which can lay the groundwork for future research but acknowledges that further specification and concretization is necessary. The developed framework is applied to illustrate how the impact of academic finance on prevalent investment practices can be explored.

4 Construction of a Basic Analytical Framework for Performativity

In this section, the aim is to depict the construction of a basic analytical framework for the performativity of finance. Therefore, first, the way performativity of finance is conceptualized in this paper is presented. Second, theoretical fragments, developed by scholars from disciplines other than economics that are used in the construction of the basic analytical framework will be briefly introduced. Included are, the notion of a practice-guiding frame and social mechanisms as explanatory approach.

4.1 Conceptualizing Performativity of Financial Knowledge

Performativity of financial knowledge is conceptualized in this paper in the following way: knowledge produced in academia enters social systems through various channels and, thereby restrains the ‘space’ in which practices can form and take place.¹⁹ From the interplay of the restraints, a practice-guiding frame emerges. Rather than individual action, following Marti and Gond (2017), who argued “...that practices are the ‘material’ that...” is transformed in case of performativity (34), practices are the chosen level of analysis. Practices, often contrasted to theory, are the “...accepted ways of doing things...” (i.e. how things are commonly done), which “...are shared between actors...” and become “...routinized over time...” (Vaara and Whittington 2012, 2). Practices involve material devices, social norms, and a shared language (Marti and Gond 2017, 26) and exhibit characteristic patterns of interaction of the actors involved. Practices are embedded in a web of social structures that can be thought of as the foundational architecture of society. On one hand, practices contribute to forming social structures, on the other hand, practices take place in and thus are determined by social structures. The established practice affects who can make claims, which tasks are performed on which terms and affects which rewards and sanctions are expected (Bowles 2004, 381). The understanding of behavioral patterns of large groups of actors as aggregated individual action derives from rooting explanatory approaches for the social solely in the individual. Choosing supra-individual units, such as practices, as level for analysis allows to account for the social embeddedness of actors (Vromen 2011, 183). Considering “...the actual doing of a whole spectrum of actors...” may facilitate discerning and clarifying the impact social structures and institutions have on individual behavior (Cabantous and Gond 2011, 12). Practices direct, enable and limit individual action, thereby the form practice takes sets a frame for the individual scope of action.²⁰ At the same time practices are embedded in a social context which restricts practices. The following five restraints have been frequently mentioned in the academic literature as pivotal for ordaining practices: social norms (i.a. Bicchieri 2016), institutional

¹⁹ From this perspective, the impact of academic knowledge on practice does not necessarily have to lead to a convergence of behavioral patterns of actors in the direction of the predictions of a specific theory. As Felin and Foss (2009) outline, not every part of social reality may be malleable. For example, a performative theory that prescribes rationality may not lead to increased rational behavior of actors, because rationality may be determined biologically by the cognitive capacity. Cognitive capacity is not socially constructed and thus may not be malleable. However, a rationality postulate may still affect the actor’s behavior. Actors that *think* they are supposed to act rational and *expect* that others will act rational may have a grave impact on social interaction merely in a different way than predicted in the theory.

²⁰ Although practices are performed by acting individuals, the workings of and impact on the individual are only marginally considered.

arrangements (i.a. Ferraro, Pfeffer, and Sutton 2005), cognitive-linguistic frames²¹ (i.a. Herrmann-Pillath 2010, Goffmann 1974), material devices (i.a. Callon, Millo, and Muniesa 2007; Cabantous and Gond 2011), and formal institutions (i.a. Marti and Scherer 2016).²² The nature of the restraints and the way in which they are instituted is decisive for the form practices can take. From the interplay of the restraints, an overall frame of action within which practice takes place²³ emerges. Thus, the practice-guiding frame is directive for the way practices materialize. Proceeding, the five identified restraints are briefly presented.

Formal institutions lay the legal ground structures for practices. They are characterized by their codified nature, i.e. the written rules of society, such as constitutions and laws that are communicated via official channels (Helmke and Levistky 2003, 6). Formal institutions are designed and imposed by an authority and deviants are legally and officially sanctioned. Thus, formal institutions determine which action can be legally taken in a society and therefore frame the form practices can legally take. Often the actual practice diverges significantly from the formally stipulated one. This phenomenon can be found in judicial politics, executive-legislative relations, and political regimes and is often explained with the influence of informal institutions (Helmke and Levistky 2003, 6), first and foremost social norms. Essentially, social norms²⁴ are shared normative and descriptive expectations about behavior of others within a group (understood as a number of individuals interacting with each other over a period of time). Put differently, norms are expectations, which are beliefs about social interaction that provide guidance for appropriate behavior in uncertain or ambiguous social situations (Bicchieri 2006). The unwritten rules are created, enforced, and communicated by the group (Helmke and Levistky 2003, 6). Which expectations about other people's behavior people hold, are big factors in shaping the behavior of individuals and hence affect how things are done.²⁵ For example, Soule (2010) argues that the norms guiding behavior of leaders trump compliance to formal or rules of conduct (194). When deviant behavior is not sanctioned or stopped by internal controls or gate-keepers, formalized rules

²¹ Panther and Thornburg suggest the use of Cognitive Linguistics (CL) as different cognitive and functionalist approaches that share basic theoretical aspects (2017).

²² Practices are furthermore restricted by several natural elements such as geography. However, I am concerned with performativity which narrows the attention to the restraints that are socially constructed.

²³ Although mechanisms may overlap, interdepend, and interrelate, for the purpose of theoretical clarity, they will be presented individually.

²⁴ Cialdini et al. (1990) distinguish between descriptive norms, which refer to what people regularly or normally do (actors infer the applicable norm from other people's behavior), and injunctive norms, which state what people should do (imply normative expectations either with or without sanctions for deviation or approval for compliance of social networks).

²⁵ Research indicates that formal and informal institutions, such as social norms, affect each other in a reflexive fashion. Social norms become law, and the law validates norms (Kshetri 2017, 43).

do not take full effect (188). The author finds that even if the SEC formally had the authority to regulate shadow banking and Over The Counter derivative trading in the years leading up to the crises, they did not use the power granted to them to the full extent (179).²⁶ Michel Callon states that practices are furthermore framed by specific structural configurations of socio-economic institutions, i.e. the institutional arrangements (as cited in Santos and Rodrigues 2009, 987). Institutional arrangements are macro-level governance frameworks that emerge from an interplay of written and unwritten social rules. Institutional arrangements entail overarching processes, systems, and networks that practices are anchored in. Institutional arrangements span markets, routines, evaluation and measurement practices, selection processes, reward and incentive systems, and pay structures as well as organizational arrangements (Ferraro, Pfeffer, and Sutton 2005, 9, 12; Helmke and Levistky 2003, 2). Furthermore, practices are materially shared and mediated (Vaara and Whittington 2012, 1; Erturk et al. 2013, 336). Material devices, the means by which practice is formed and performed (Friedland 2013, 37), articulate action in that they frame and format actors in a decision-making process (Callon, Millo, and Muniesa 2007, 2).²⁷ They encompass a wide array of (physical)²⁸ objects, their properties, and the details of their use (Jones, Boxenbaum and Anthony 2013, 64). Practical examples range from a pen and paper to complex algorithms, from purchase settings to merchandise tools, from technical and operational devices to analytical techniques (Callon, Millo, and Muniesa 2007, 1). Callon uses the imagery of devices as prostheses that enable actors on markets to act in the first place.²⁹ Thus, material devices have an immanent directive function for practices (as cited in Santos and Rodrigues 2009, 989). The extent to which and the way in which material devices frame practice is determined by the existence, the nature, and the usage of material devices. Furthermore, practices are framed by cognitive³⁰ procedures, that actors involved apply. Humans comprehend social situations through cognitive interpretational procedures which assign meanings to external cues and embed experiences into a wider social context.

²⁶ Soule (2010) advocates assessing culture systemically, just like any other performance indicator, by placing organizational culture next to operational and financial metrics in regulation (194).

²⁷ Thinking about the example of two people being asked to give form to an imaginary banana. One person is handed clay, the other person a red pen and a paper. The outcomes both people produce will look and feel vastly different, even though both may have had the same imaginary banana in mind.

²⁸ “Physical” is put in parenthesis because algorithms, for instance, are abstract entities. However, in order to do something in the world, they need to be implemented into physical objects.

²⁹ The theories of academic finance do not include the deployment of material devices. Rather, it is assumed that actors act without devices.

³⁰ The term cognition summarizes a variety of brain activities and capabilities such as reasoning, inferring and categorizing, blending a number of different concepts and thus forming new ones, and constructing cognitive models (Panther and Thornburg 2017, 274).

Goffman (1974) defines frames as "... principles of organization which govern subjective meanings we assign to social events." (11). Tversky and Kahneman (1981) state that each decision that an actor faces is assessed through a specific frame that includes a "... conception of the acts, outcomes, and contingencies associated with a particular choice." (453). The scholars furthermore argue that preferences of individuals change according to the formulation and presentation of the problem. Such a cognitive frame helps to sort, evaluate, and categorize social facts, thereby structuring and limiting what people perceive and how actors make sense of the world. Ideas are linked and organized into a coherent narrative that extends across time and political spaces. A frame is an intersubjective group construct, created through ongoing interaction, that functions as a means to arrive at a group consensus on the character of external stimuli (Fligstein, Brundage, and Schultz 2017, 883). Herrmann-Pillath (2016) provides the imagery of a chain of inputs in the form of external cues that are mediated through cognitive processes of many individuals and result in a specific behavior as output that itself again serves as an external cue (58). Hence, ideation of external cues mediates the ways in which practices are performed (Beach and Pedersen 2013, 53). According to cognitive-linguists such as Panther and Thornburg (2017), language plays a central role in helping to form as well as activate cognitive frames. The exact process is, due to its complexity, out of the scope of this paper. But generally, it is arguable that linguistic tropes form or at the very least help form the categories in which the world is perceived. Panther and Thornburg note that metaphors may have an impact on cognition by framing the way people think. Moreover, the authors argue that metonomies are not only figures of language but moreover also figures of thought (278). The use of specific linguistic tropes activate corresponding frames and evoke an incorporation of associated norms, feelings, and motives in the thought process. Once a frame is adopted, external cues are evaluated through the filter of the adopted frame (Fligstein, Brundage, and Schultz 2017, 880). Thus, language plays a crucial role in determining perception and categorization of external stimuli and is essential in framing which meaning is assigned to an observed phenomenon (Ferraro, Pfeffer, and Sutton 2005, 9). Summarizing, the basic idea pursued in this paper is that dominant knowledge produced in academia becomes performative by constituting an overarching practice-guiding frame.³¹

³¹ One important addition is in place at this point: Academic knowledge is not the sole constructor of a practice-guiding frame. Rather, a practice-guiding frame is influenced by several other factors. However, this work only intends to provide a generalized and simplified conceptualization of performativity.

4.2 Multi-level Framing-Mechanisms

A practice-guiding frame may be instituted through a process of transmission of knowledge produced in academia into social systems. A transmissive process of knowledge can be conceptualized as a social mechanism. Mechanisms are defined by Hedström and Yiloski (2010) as complex, structured, causal and hierarchal processes that produce an observable outcome (59).³² According to Machamer, Darden, and Craver (2000), mechanisms encompass activities, which are the producers of change, and entities, which engage in activities. It is important to note that in a social context, mechanisms are not always straight forward but often rather reflexive and multidimensional. However, for theoretical precision, a causal relationship can schematically be depicted as $X \rightarrow Y$. The independent variable (X) is transmitted (\rightarrow) via a mechanism comprised of different entities and activities which contributes to generate the outcome, the dependent variable (Y) (Breach and Pedersen 2013, 30). Y may be conceptualized as the outcome, in case of the social world, an observed regularity. X may be understood as some defined input.

Hedström and Yiloski (2010) specify macro-structural transformations (such as the financialization of investment practices) in terms of causal macro and micro-processual mechanisms that generate an observable effect. Hence, mechanisms are hierarchal in that, the parts, that a mechanism is composed of, can often be understood as mechanisms themselves. Hence, a social mechanism is in most cases a multi-level mechanism, comprising a higher-level mechanism and many lower-level mechanisms (Vromen 2011, 183). Furthermore, Hedström and Yiloski (2010) differentiate between macro-micro-level, micro-level, and micro-macro-level mechanisms. Macro-micro-level mechanisms (situational) shape social systems and cultural environments that constrain individuals' action and thereby shape their desires and beliefs. Micro-level mechanisms (action formation) connect desires, beliefs, etc. of individuals to their actions. Micro-macro-level mechanisms (transformational) are those, through which individuals generate intended and unintended social outcomes by acting and interacting (59). Summarizing, the process of the incorporation of knowledge produced in academia into the restraints that contribute to a practice-guiding frame can be conceptualized as hierarchal social mechanisms that are further on be referred to as multi-level framing mechanisms.

³² In order to qualify for a mechanism, the observed regularity must show some durability or invariance over time (Vromen 2011, 183).

4.3 Justification for a Mechanism-based Explanatory Approach

In econometrics, presumed cause-effect relations are mostly investigated by deploying a *ceteris paribus* approach. A major issue with this application is that causal relations vanish and the “how” fades into the background. When the examined cause-effect relation is contextualized, however putative universal regularities often cannot be plausibly sustained (Hermann-Pillath 2010, 54). The performativity hypothesis presupposes that observed regularities of social behavior do not follow naturalistic laws but rather are phenomena that came into existence by hidden causal processes (Reiter 2017, 139). The processes can be conceived of as social mechanisms that can be analyzed by the method of process-tracing. The employment of mechanism-based explanatory approaches, as elaborately proposed by Hermann-Pillath (2016), allows to establish a cause-effect relationship and account for the dynamic nature of a process and the context in which a causal relationship takes place (Beach and Pedersen 2013, 45). The individuals, their relationships as well as social properties that are associated with causes and consequences of individual action find consideration (Hedström and Yiloski 2010, 59).

Tracing a process entails not only conceptualizing the independent variable (X) and the dependent variable (Y) but, moreover a contextualization of the variables and an identification of the mechanisms connecting both (Beach and Pedersen 2013, 49). As processes are contingent upon the elements involved (Hedström and Ylikoski 2010, 57), process tracing involves a decomposition of the mechanism into its constituent parts, and a depiction of how the parts are arranged and relate to each other (Vromen 2011, 182-183). Beach and Pedersen (2013) state that process-tracing that focuses on constructing a theorized causal mechanism is aimed at inferring the existence and nature of social mechanisms from an in-depth analysis of evidence (69-72). When theorizing mechanisms, it is important to consider that they exhibit different degrees of specificity of context and space, as well as specific scope conditions to function, and thus they may have bounded applicability (54). In this paper, rather than universal regularities, the mechanisms identified are tied to the specificity of time, space, and elements involved (Herrmann-Pillath 2016, 57).³³ Some scholars have argued that mechanisms themselves are unobservable and are, rather than existing in the real world, only analytical constructs. Only the traces they leave in the empirical world can be captured. The criticized lack of robustness can be counteracted by

³³ Mechanism-based approaches generalize and abstract not based on results or outcomes but rather on (partial) presence and/or shared causal mechanisms. It is out of the scope of this paper to conduct and examine the potential abstraction and generalization of the mechanisms (Reiter 2017, 141).

describing mechanisms as detailed and close as possible (Beach and Pedersen 2013, 43). This paper can only sketch the identified mechanisms schematically and hence merely attempts to deliver a canvas that shall be filled with a more detailed and evident drawing in the future.

5 Application of a Basic Analytical Framework for Performativity

What follows is an attempt to illustratively apply the proposed framework in order to explore the crucial framing-mechanisms that may connect academic financial knowledge and prevalent financialized investment practices. First, the academic financial knowledge (X) this paper is concerned with is defined. Second, prevalent financialized investment practices (Y) are introduced. Third, the framing mechanisms (\rightarrow) linking both are schematically sketched, and forth, a concluding remark on the contributions of the framing-mechanisms to an investment practice-guiding frame is made.

5.1 Positivistic Financial Knowledge (X)

The umbrella term finance, as used in colloquial speech, covers a body of ideas, empirical knowledge and data sets, a methodology with specific procedures and techniques, operational tools, as well as people and skills. In this paper, finance is divided into an academic sphere that produces mostly theoretical knowledge and a practical sphere which applies knowledge.³⁴ As an academic discipline, finance emerged as a subset of economics (also named financial economics) in the 1950s and was mainly a descriptive science. By today, the discipline rather found its academic home in business schools (MacKenzie 2006, 5). An advancement of technology coupled with a paradigm shift initiated the replacement of the reigning conventions and propelled an institutionalization of the new and sophisticated, mathematized field (MacKenzie 2006, 70-80). The main areas of focus are financial markets (the functioning of credit markets and the pricing of assets (Boatright 2010, 5) and the behavior of agents in financial markets. Considered are the perspective of capital providers (investor theory), capital users (corporate finance), and public finance (government revenue and expenditures).

³⁴ The distinction between a theoretical sphere located mostly in academia that produces knowledge and a practical sphere that applies knowledge in a clear-cut manner is merely a theoretical construction, intended to facilitate the analysis.

To reify what exactly becomes performative is one of the main challenges in performativity research. In the case of Barnesian performativity, such as with the example of the Black-Scholes-Merton option pricing model put forth by MacKenzie, the researcher was able to narrow down the “beginning” to a specific theory that facilitates examining the effect it may have. However, when it is not a specific theory or a particular model that becomes performative but rather prescriptions deriving from a philosophical position that underpins a variety of models, theories, and methodology, it may be fruitful to first carve out the conceptual foundation of the body of knowledge in question and identify shared ontological and philosophical underpinnings as well as implicit and explicit prescriptions.

A clear demarcation of the body of knowledge in question and other bodies of knowledge is necessary. Scherer and Marti (2011) provide an enunciated epistemological categorization of different academic finance branches according to their normative foundations (their worldviews, means, and ends).³⁵ The positivistic finance branch (further on abbreviated to PF) produces the most influential knowledge in academia and thus endues dominance, if not orthodoxy, in the theoretical finance sphere.³⁶ Weir (2013) finds that in academic journals of the finance field, articles that are not in alignment with the positivist approach, are rarely found (8). Additionally, most theoretical conceptions that find widespread application in practice, either in their original form, some variation thereof or advanced version, originated in the PF branch. Hence, PF holds a hegemonic position within the field of academic finance and the influence of its body of knowledge (further on abbreviated to PFK) reaches far beyond academia. Knowledge produced in PF impacts politics, business and practitioners, and public discourse (Fine 2017, 375). As Deutschmann (2012) notes, all sciences and social actors contribute to construction of social reality. What distinguishes PF from other sciences (except other branches of economics) is precisely its dominance.

Even though there is a huge variety of theoretical constructs, they are unified by sharing the same conceptual ground and deploying associated econometric methodologies (Weir 2013, 8). Theoretical constructs include, but are not limited to, the Capital Asset Pricing

³⁵ By providing an epistemological classification, Scherer and Marti (2011) clearly emphasize the normative nature of the PF branch, refuting the claim of neutrality. The authors distinguish between positivistic finance, postmodern finance, and constructivist finance. They furthermore subdivide the positivistic finance branch into positive finance, normative finance, and aesthetic/foundational finance. Although, these three subdivisions of positivistic finance differ in some respect they share most ends and means as well as other features and thus they will be treated as one.

³⁶ Despite recently growing attention towards heterodox finance branches (evolutionary finance, institutional finance, experimental finance, behavioral finance, the social study of finance, and sociology of finance), PF retains the upper hand as main and most influential branch.

Model, the Efficient Markets Hypothesis (EMH) (Weir 2013), Modern Portfolio Theory, Black-Scholes-Merton option pricing model (MacKenzie 2006), Miller-Modigliani hypothesis (Boatright 2010, 5), and the principal-agent framework (Heath 2010). The shared conceptual foundation implies specific prescriptions of how people *should* behave and how firms should be governed, organized, and operated (Boatright 2010, 5). Proceeding, I briefly unpack the key epistemological and methodological³⁷ pillars of PF.

PF deploys a positivist research approach that aims to produce technical knowledge which has a presumed practical use and helps to enhance the efficiency of financial markets (Weir 2013, 8). Due to the practical orientation of PF, there is a close connection between the academic sphere and the practical sphere. Models, developed in academia, are broadly applied by practitioners. A prominent example is the Black-Scholes-Merton model, a mathematical model of financial derivative markets, which estimates prices of call and put options and the Capital Asset Pricing Model (MacKenzie 2006, 245). Abstract and formalized theorizing of micro-economic ideas is extended to practical managerial and business problems (Lounsbury 2002, 257-258). Social phenomena are regarded as given rather than constructed which implies a conception of truth as objective “facts” that can be observed by the researcher. This allows for the deployment of theories as tools to predict and control behavior of financial markets and behavior of agents in financial markets (Scherer and Marti 2011, 8, 11), by yielding testable hypotheses against empirical data (MacKenzie 2006, 9-10). Most models derived from theories are quantitative; thus, generalizations and abstractions about the subject as well as the conditions the subject operates in have to be made (MacKenzie 2009, 14). Not only is the context presupposed to produce numbers (Barth and Rommel 2017, 5; von Mises 2014, 10) but, moreover, social phenomena are explained from a reductionist perspective of methodological individualism³⁸. The individual is constructed as a representative, average agent who pursues utility

³⁷ Scherer and Marti (2011) note: “The epistemological assumptions determine how knowledge about human actions can be obtained.” (13). Furthermore, the authors explain methodological assumptions as referring to “... the question whether social sciences should use the quantitative and experimental methods of the natural sciences (nomothetic theory) or whether they should rely on a qualitative and interpretive analysis of the humanities (ideo- graphic theory).” (13).

³⁸ Methodological individualism is an approach that starts its explanatory attempts of human behavior in the internal workings of individuals, disregarding influence of social structures and social interaction. A consequence of methodological individualism is that collective behavioral patterns are merely seen as aggregated individual decisions neglecting institutional components as well as other people (Dobson 2010, 49).

maximization in a self-interested (narrowly defined) and rational³⁹ manner. The preferences of agents are treated as a given (Heath 2010, 128). Choices are not evaluated in terms of their acts or motives but their outcomes (Hsieh 2010, 64-65). Kahneman, Knetsch and Thaler (1986) claim that economic models of agents operate with a simplified set of assumptions which make agents behavior predictable "... from an objective description of the environment ..." and as a "... specification of its circumstances ..." (S298) which creates an external bias towards incentive-based explanations rather than motive-based explanations.⁴⁰ The mathematical and instrumental understanding of rational behavior allows for formal descriptions of situations of interdependent decision-making (Murphy and Ackermann 2014, 14; Dobson 2010, 48). As the notion of utility is vague, PF theory presupposes that "... self-interested ends of humans can be expressed in terms of money alone." (Kolb 2010, 25). Therefore, utility is often specified in terms of monetary wealth. Expressing utility in wealth allows for a quantitative methodological approach consisting of various mathematical descriptions in which financial gain of an investor is regarded as an increase in utility and the risk of financial loss a diminishing factor (Kolb 2010, 25). Additionally, it is assumed that individuals always prefer more wealth to less (Dobson 2010, 48). Due to these two premises, individuals are perceived to be in "... the opportunistic and pursuit of material gain *ad infinitum*." (Dobson 2010, 48). Thus, agents are regarded as rationally maximizing "... utility by capturing high monetary returns while avoiding financial risk." (Kolb 2010, 25), which transforms money into an end, instead of a mean

³⁹ Rationality forms the baseline for evaluation of agents' choices in theory building and empirical analysis (Hsieh 2010, 63). The concept of rationality refers to the ability to rank possible alternatives in a specific order (Dobson 2010, 47) and thus form preferences. The narrow definition of rationality can be found in the *Five Axioms of Rationality* (Dobson 2010, 47-49): 1. Comparability: the individual can make comparisons between preferences. 2. Consistency: these comparisons are consistent over an array of alternatives. 3. Independence: original preference orderings are independent of new preference alternatives. 4. Measurability: preferences are measurable. 5. Ranking: preferences can be consistently and ordinally ranked (Dobson 2010, 47). Those rankings are of subjective nature as different agents can rank the same alternatives in a different order. A preference is rational if it is complete and transitive and can be represented as an ordinal function (also referred to as utility function). By assigning a number to the preferences, the order of the preferences can be preserved in a utility function. The magnitude of the number has no meaning beyond the preservation of the order. That number is, in economic theory, referred to as utility of an alternative. An agent chooses rationally if the chosen alternative shows the highest utility among all other available alternatives. If an agent chooses rationally, she maximizes her utility (Hsieh 2010, 64-65).

⁴⁰ In fact, the assumptions have been falsified in many cases. McKenzie writes that when looking through a lens of strict falsification all of the models, such as the Capital Asset Pricing Model and Black-Scholes model, described in his books would be rejected as they do not yield accurate predictions (McKenzie 2006, 11). Results are often at odds with reality. The replication and reproduction of results proves to be challenging as outcomes often contradict earlier results (McKenzie 2009, 21). Within and outside economics and finance, it is recognized, that following assumptions about individual preferences are more accurate: 1. Social preferences 2. Adaptive, conditional preferences 3. Situational preferences (Bicchieri 2006; Bowles 2009). However, the instrumentalist approach remains justified by the claim that factuality is not important, as long as models yield sufficient accurate predictions (Barth and Rommel 2017, 4; Dobson 2010, 49).

(Appadurai 2016, 11), and allows for a putative expression and measurability of risk with numbers (de Goede 2004). The micro-economic assumptions about individuals have been directly transferred onto the behavior of firms and financial markets. For example, the rationality assumption posits the foundation of the EMH. The EMH depicts the operation of financial markets. The EMH claims that all relevant information for the value of publicly traded companies are reflected in their stock prices. Further analysis of information will not enable the investor to systematically earn more than the market rate of return by picking out individual stocks (Hsieh 2010, 69). The efficient market hypothesis persistently prevails in mainstream finance as a pivotal point and is treated “... as an exact representation of reality.” (MacKenzie 2006, 248). The assumption of self-interest (and the deriving notion of the invisible hand⁴¹) is reflected in the Shareholder Value Maximization principle⁴² (Boatright 2010, 5; Dobson 2010, 49). That is the claim that maximizing return on equity yields the socially most efficient allocation of capital. Thereby, the ultimate purpose of a firm equals its operating goal (Windsor 2010, 437). Another pillar of finance is the foundational concept of time value of money. By investing and receiving interest rates, a dollar a person receives today can be converted into more dollars in the future. The idea that money alters its value over time is based in the assumption that an economy has an interest rate above zero. In that case, the future value exceeds the present value of a dollar (Kolb 2010, 27).⁴³

5.2 Investment Practices (Y)

Generally, investment practices can be defined as the widely accepted ways of investing, entailing strategies and security routines. In the course of financialization of the economy, investment practices have been subject to financialization. They are underpinned by a distinct ontology; that is, how economic value is defined and created (MacKenzie 2011, 15). The ontology determines which selected objects are accentuated, qualifies what is regarded as valuable, suggests from which perspective the worth of the object is valued, and

⁴¹ That is, that the self-interested and rational pursuit of utility maximization by individuals results in benefits for society as a whole.

⁴² Kolb argues that in the finance view, investors who bear the risk of making investments is often regarded (or regard themselves) as entitled to be compensated for that risk as it is perceived to be a service to society. As a consequence, the higher the risk, the higher the compensation. People who already face economic hardships (often minorities and marginalized people) are charged higher interest rates (Kolb 2010, 29).

⁴³ The concept of usury considers either the mere demand or the excessive demand of interest on a loan as unethical. In various religious traditions, for example in Islamic banking or among the Jewish-orthodox community, usury applies. In efficient capital markets, every participant has all available information and interest rates emerge from a free interaction of supply and demand. Therefore, charging or demanding interest rates does not posit amoral conflict. With the time value of money, as one of the cornerstones of finance, one must regard finance as inherently unethical when considering usury as unethical (Kolb 2010, 27).

estimates how much the object is worth (Chiapello 2015, 16). The ontology is grounded in financialized reasoning and are characterized by financialized valuation.⁴⁴ The sole purpose of investments is perceived to be: yielding monetary gain. Financialized investment practices are associated with an evaluation culture that prioritizes, if not solely focuses on making financial profit. From that follows, that the evaluation criteria are largely dominated by measurable and quantifiable indicators, namely financial ones (Vollmer 2012, 87–88). The investment impact is perceived as detached from the investment which allows for a definition of risk in monetary terms. The putative mathematical calculation of risk is precisely what enabled the commercialization of risk (de Goede 2002). The underlying ontology of financialized investment practices manifests mainly as a strong emphasis on shareholder value maximization (which Marti (2013) termed *Shareholder Value Investing*), and the commercialization of risk, mainly in form of the technological innovation of derivatives⁴⁵ (de Goede 2004, 197; Appadurai 2016, 4). Derivatives are tradable time-bound contracts that *derive* their value from future prices of underlying assets or other derivatives (Maurer 2002, 15). Examples are: Credit Default Swaps, Collateralized Debt Obligations, Options, and Futures (Kalthoff and Maeße 2012, 206). These financial instruments enable the accumulation of money detached from the actual price of the underlying asset (Appadurai 2016, 12).

5.3 Framing-Mechanisms (→)

In this section, five mechanisms through which PFK may frame investment practices are presented. The schematic depiction of mechanisms neither aspires to be complete nor comprehensive. Rather, the aim is to coarsely trace the framing process and to deliver a basic framework for further research. To illustrate, I included figures that schematically represent each mechanism. The mechanisms are constructed as a vertical process consisting of entities (in boxes) and activities (writings between the boxes). There may be other vertical mechanisms such as the medial transmission through which knowledge is transmitted into practice. Additionally, there may also be ‘horizontal’ mechanisms that influence the forms practice takes such as movements of employees between organizations. However, the following analysis is confined to the processes through which knowledge produced in the academic PF discipline may impact practice.

⁴⁴ The expressions “financialized reasoning” and “financialized valuation” are borrowed from Chiapello (2015, 15).

⁴⁵ An impressive amount of research has been dealing with the role of derivatives in the economy and wider society, see for example Appadurai (2016), Maurer (2002), de Goede (2004), and the FCIC (2011).

5.3.1 Formal Institutions as Multi-level Framing-Mechanisms

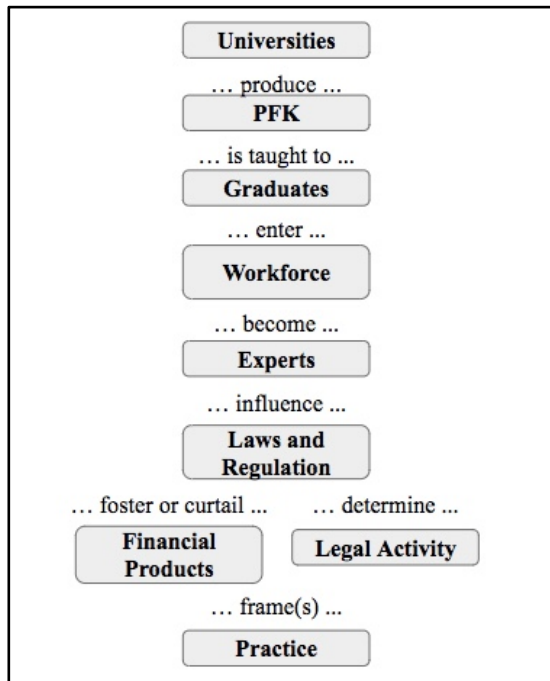


Figure 5.1 Formal institutions as multi-level framing-mechanisms

Formal institutions determine which forms practices can legally take. When formal institutions are designed or configured on the basis of PFK, they may contribute to forming a practice-guiding frame. Figure 5.1 depicts schematically how the process of transmission of PFK into formal institutions, which subsequently frame practice, may occur, including entities and activities such a process may involve. PFK is produced in research institutions such as universities and other higher educational institutions. In a process of, what Bowles (2004) calls, cultural inheritance⁴⁶ (371), PFK is transmitted to young students of finance and finance-related

programs in social arenas such as universities and other higher educational institutions. Students are familiarized with concepts, theories, methodology, and underpinning political as well as philosophical assumptions of PF. Thereby, particular beliefs about investors, the role of investments, financial markets, and the purpose of corporations are nurtured. Bowles (2004) defines beliefs⁴⁷ as the "... understandings of the relationship between an action and an outcome." (99) and outlines the importance of religious and political indoctrination for preference and belief formation (372). PF's orthodox approach and homogenic body of knowledge is reflected in the reproduction of knowledge in the form of uniform textbook-oriented teaching, that does not leave room for alternatives (Chiapello 2015, 17; Rommel and Barth 2017, 3; Vollmer 2012). Dobson remarks that business schools have a moral agenda. Thus, PFK taught in business schools is seldom a subject of questioning but rather presented as prescriptively neutral and therefore value-neutral (Dobson 2010, 58). Due to

⁴⁶ Bowles (2004) notes that group level institutions and individual preferences develop in a co-evolutionary process part of a unified dynamical system. The distribution of preferences among a population is affected by the institutional environments. At the same time, preferences of members of the population influence institutional change (371). Endogenous preferences are acquired through genetic inheritance and cultural learning. A process of institutional change may in turn induce changes in preferences. Individuals change their preferences through a process of cultural inheritance (372).

⁴⁷ Beliefs inform preferences and subsequent decisions (Bowles 2004, 367). How beliefs translate into action in detail, encompassing psychological and neurophysiological processes, is out of the scope of this paper.

the lack (or absence) of contextualization, and frequent (re-)emphasis of the underpinning assumptions in educational institutions⁴⁸, assumptions and prescriptions are internalized and accepted as truths by the student body. With those beliefs, the graduates enter the workforce.

Through work experience and further specialization, the graduates turn into highly-specialized finance experts. Scott (2008) outlines that many professions “...create and warrant knowledge...” thus, they “...exercise control by defining reality ...” through their ideas (224). Professionals actively participate in the construction of institutions by specifying what “should be done”. Lounsbury (2002) attests that finance has developed since the 1950s into a “high status intellectual pursuit” (258). The close connection to an expert body of knowledge confers the finance experts and their statements about the world its legitimacy and credibility (258). Ho (2009) states that the hegemonic expert knowledge of financial markets partly explains the vast influence the PF sector has (40). The experts move into positions in the finance realm that take part in and thereby affect policy decisions (Marti and Scherer 2016, 14). Experts hold positions in government departments and agencies such as the US-American SEC, or central banks such as the FED (Marti and Scherer 2016, 14). For example, Fligstein, Brundage, and Schultz (2017) found that between 2000 and 2008, 13-to 14 percent of the professional body of the Federal Open Market Committee⁴⁹ had a finance and banking background (884). Furthermore, experts are found in financial firms, trade associations, and industry groups (lobbies)⁵⁰, as well as in institutions devoted to research such as think tanks, and educational institutions (Marti and Scherer 2016, 14).

In technocratic legislative processes⁵¹ that are organized hierarchal and exclusive, experts are generally highly influential. The design process of financial regulation relies heavily on experts due to the complexity of financial legislature and less on politicians or other interest groups (Marti and Scherer 2016, 18). Financial regulation entails formalized rules, controls, and sanctions that restrict and enable behavior of financial organizations⁵² and behavior of individuals in financial markets (Marti and Scherer 2016, 16). Hence,

⁴⁸ Von Aufschnaiter (2011) outlines that in order to be able to fully grasp concepts and apply them, extended personal learning activities and repeated exposure are necessary (16).

⁴⁹ The FOMC is the FED’s principal law-making body responsible for setting interest rates and deciding on the money supply of the US.

⁵⁰ Technocratic legislative processes are as well influenced by experts through a disproportional impact of finance industry groups that aim to advocate their agenda (Marti and Scherer 2016, 37)

⁵¹ According to Marti and Scherer (2016), technocratic processes are prevalent in most global northern countries.

⁵² In the absence of a better expression, I use “behavior of financial organizations”. However, I want to point out that a financial organization is no autonomous organism. To the contrary, financial organizations are made-up of humans who make decisions. The entirety of all actions within an organization can be summarized as the behavior of a firm.

financial regulation constitutes a crucial element in framing practices. The established financial regulation can foster specific investment practices by formally promoting particular financial innovations, processes, and procedures, and curtailing others (Marti and Scherer 2016, 3). One such example are the policy changes that aimed at deregulating the financial sector, foremost the repeal of the 1933-installed Glass-Steagall Act in the U.S. that separated commercial banking and investment banking in 1999 (Marti 2013, 222).⁵³ The argumentation for such changes relies on the logic of the EMH. Critics have argued that these policy-changes paved the way for the rise of derivatives and securities trading, thereby prompting the GFC (Marti and Scherer 2016, 3). Furthermore, precisely the changes in policies enabled the rise of *Shareholder Value Investing* since 1980s (Krippner 2005, 189). Through a shift in ownership of corporations from individual investors to institutional investors the general position of investors was strengthened. Four decades ago mainly individual investors were investing whereas now more than half of the equities in global northern countries are managed by institutional investors such as large financial organizations (e.g. insurers, mutual funds and pension funds) (Fine 2017). Investors are enabled to exert much more influence on corporations, forcing them to act in the shareholders interest by maximizing shareholder value (Marti 2013). For example, shareholders have the sole voting rights on corporate boards (Smith and Rønnegard 2016). Furthermore, formal institutions frame practices by specifying which actions are within a legal range, in that either particular requirements or allowances are determined. This is well exhibited in the ways risks were assessed in the years leading up to the GFC.

Concluding, PFK may be transmitted into policy cycles through experts who have been educated in the finance field. In shaping financial legislature, experts are informed by and draw their inferences about the ends a law should pursue as well as the means through which they should be pursued, in addition to the dominant body of knowledge produced in academia, from their prior experiences, their acquired knowledge, and their beliefs (Fligstein, Brundage, and Schultz 2017, 885). Hence, which kind of knowledge informs the design and configuration of formal institutions is decisive for practice, on one hand by

⁵³ The shift in financial legislation towards emphasizing stability and sustainability of financial markets goes hand in hand with a paradigmatic shift in finance research towards stability. Since the GFC, a general paradigm change, towards a development of emphasizing stability, weakening the influence of industry groups on the law-making process, and greater consideration of Non-Governmental Organizations and consumer protection groups, is noticeable. However, the fundamental principles of financial indicators and the binary perception has not yet been transformed. The questions of just and justified financial markets is left untouched. The pivotal point remain means, ends (distributive justice) are largely ignored or solely addressed in terms of redistribution through taxes. The technocratic approach fails to account for an optimization in social welfare and economic welfare (Marti and Scherer 2016, 18).

fostering particular financial innovations and, on the other hand, by stipulating which actions can be legally taken or are legally required.

5.3.2 Institutional Arrangements as Multi-level Framing-Mechanisms

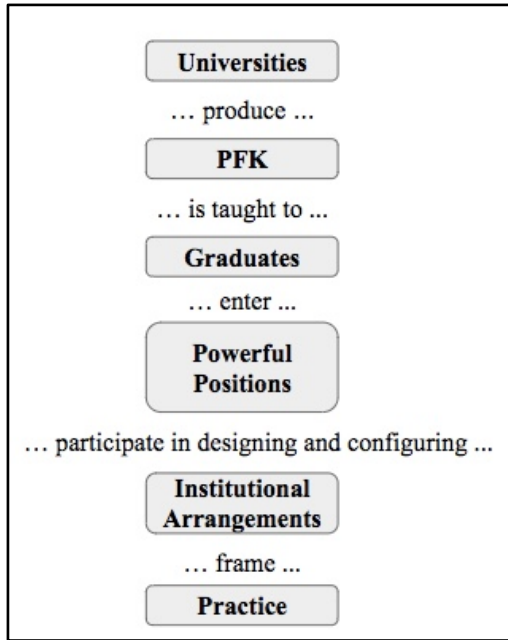


Figure 5.2 Institutional arrangements as multi-level framing-mechanisms

The term institutional arrangements refers to a variety of different macro-level governance frameworks, each characterized by a high degree of specificity. While the mechanism shown in figure 5.2 is kept abstract, I refer mainly to the incentive structures in the explanation of this mechanism. Ho (2009) attests that the compensational structures of financial institutions are at the core of the engine that keeps Wall Street running and a crucial factor in exploring the financialization of investment practices (258). PFK knowledge is produced and reproduced in

universities. The students of finance and finance-related programs undergo a process of socialization in PF’s culture of evaluation (learning about which ends should be pursued) and practices (how people go about achieving the ends) (MacKenzie 2011, 18). For example, the prevalent methodological bias towards external incentives rather than motives and the strong commitment to a self-interest assumption leads to the presentation of monetary incentives as a potential solution that helps to overcome “principal-agent problems” (Larkin, Pierce, and Gino 2012, 1194). The principal-agent framework as used in PF rests on self-interest as a central motive for human action. Organizations consist of heterogeneous entities (not only different personalities but also different types of employee groups, and various organizational subunits). Each group or person may have differing, if not opposing, goals, which they pursue relentlessly without cooperation or consideration for others. That leads to conflicts of interest (owners vs. managers, managers vs. employees, or employees vs. employees). Thus, a self-interested agent will only be motivated to behave in a desired way by extrinsic incentives. The induced increase in “motivation” is presupposed to lead to more

productivity in terms of profitability⁵⁴ (Ferraro, Pfeffer, and Sutton 2005, 11-12). An internalization of such an approach and deriving prescriptions prompts psychological framing effects among the students (Heath 2010, 136).

After graduating, the former students enter the financial realm as young professionals. After some time in the workforce, the professionals move into positions in financial and finance-related organizations in which they have the power and authority to participate in designing institutional arrangements. One such example is incentive schemes for executives. Incentive schemes are formal programs implemented to encourage employees to behave in a desired way. When the designers of such systems expect opportunistic and self-interested behavior, they may create the incentive system in accordance with their expectation (Ferraro, Pfeffer, and Sutton 2005, 12). Despite the uniqueness of each company, many of the compensation packages for finance CEO's were designed in a similar way regarding the distribution of salary and incentive pay (Cai, Cherny, and Milbourn 2010). During the years leading up to the GFC, for example, incentive schemes in financial organizations were comprised mostly of monetary rewards. They exhibited a stronger tendency on tying a part of the pay to firm performance (e.g. by tying bonuses to reported earnings, return on equity, or stock price)⁵⁵ (FCIC 2011, 122). In 2005, executives in finance made more than twice their base salary in some form of bonuses⁵⁶ (Cai, Cherny, and Milbourn 2010). That may be indicative for the reliance on a similar body of knowledge, i.e. incentive-based approaches that are grounded in micro-economic assumptions, in order to configure and design compensation schemes.

When a compensation structure focuses on short-term gain by tying bonuses to recent performance (such as quarterly earnings), managers are compelled to produce short-term performance and neglect future risk. A high turnover rate of human capital in financial organizations further contributes to prioritizing short-term gain over sustainability. A pay structure that aligns managers optimally with shareholder goals may lead to losing

⁵⁴ The principal-agent framework is an application of standard game theory that mainly analyzes the incentive structures that characterize situations of interdependence. Interactive and communicative components as well as motives are neglected. In the models, players do not communicate with each other nor can they influence each other's preferences through their actions (Heath 2010, 127). Even though game theoretic approaches might imply variations in perception and evaluation of a particular incentive structure (Murphy and Ackermann 2014, 13), there are no generally accepted theories of dynamic processes of endogenous aspects of preference formation and change. Thus, internal incentives simply end up being ignored in game theory and agency frameworks (Heath 2010, 127).

⁵⁵ The pay structures experienced a massive shift after the GFC partly due to legal changes.

⁵⁶ In 2005, executives in the finance sector generally earned more than in other sectors. Among five groups of financial institutions, commodity brokers and dealers as well as non-depository lenders paid their executives the highest amount, \$7.1 million and \$5.8 million per executive (Cai, Cherny, and Milbourn 2010).

debtholders, stakeholders as well as basic morale out of sight in the attempt to maximize the shareholders' pay-off alongside with their own (O'Sullivan, Zolotoy, and Martin 2018). In turn, the way executives are incentivized has an overall effect on firm strategy and broader decisions such as technology, diversification, human capital, market position, and firm performance (Larkin, Pierce, and Gino 2012, 1194). Further on, the type of executive compensation influences not only the behavior of the executive and her peers. Moreover, it creates pressure on their employees (Larkin, Pierce, and Gino 2012, 1194). Bosworth, Singer, and Snower (2015) remark that a social environment has the immanent power to foster anti-social behavior, such as self-interested gain, by activating the "finance scheme" through a particular choice architecture (27). When pecuniary motives are emphasized by an according incentive scheme, people tend to prioritize them. At the same time, such an incentive structure may legitimize them by serving as a signal that indicates a relatively high share of self-interestedly motivated workers and which actions are regarded as desirable by the designers. Even observed cooperative behavior may be assigned to an ultimately self-interested motive, once self-interested motives are expected (Herrmann-Pillath 2016, 68). Employees subsequently may adjust their own motives and actions accordingly. That may lead to crowding out existing pro-social motives and can create real collective action problems where previously were only potential ones (Heath 2010; FCIC 2011, 180; Soule 2010, 188). Ho (2009) asserts that incentives schemes of investment banks helped contribute to the creation of both unstable, unsustainable markets and jobs (235). In the aftermath of the GFC, the report of the U.S. Financial Crisis Inquiry Commission (2011) found a link between an incentive structure in form of performance-based pay in financial organizations and self-interested, opportunistic behavior. The effect a monetary, incentive-based pay structure can have was impressively portrayed by the erosion of standards of responsibility and ethics, and manifested as articulated in risky decisions, short-term thinking and shortsightedness (XIX). Thus, institutional arrangements such as incentive schemes, which rely on theoretical notions of PFK, can translate theoretical concepts of PFK into the real economy, and thereby frame practice.

5.3.3 Social Norms as Multi-level Framing-Mechanisms

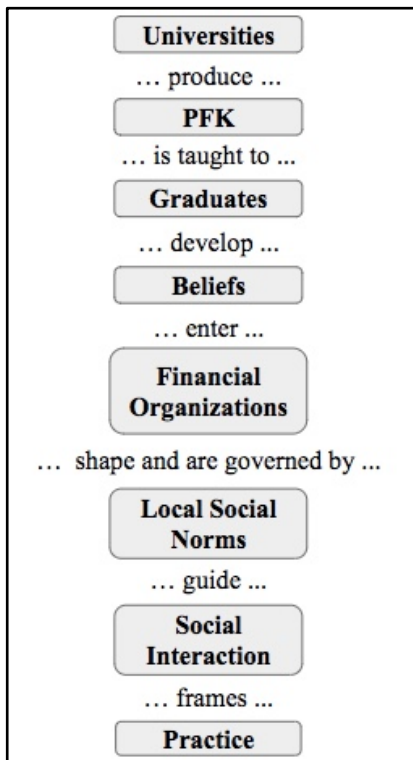


Figure 5.3 Social norms as multi-level framing-mechanisms

In order to contribute to a practice-guiding frame for investment practices, PFK has to be incorporated into local social norms prevalent in finance. A possible framing-process is shown in figure 5.3. As mentioned above, universities produce PFK. In universities and business schools, finance and finance-related students are familiarized with social norms prevalent among the investment community. Over time, the behavioral assumptions that underpin PF theories become accepted as truths (Dobson 2010, 56) and are not seldom integrated as personal values. Official educational institutions play an important role in the process of transformation of behavioral assumptions into internalized beliefs, in that they confer legitimacy to the assumptions taught. Rozuel (2009) notes that every social sphere has distinct role structures and is governed by specific norms that might not apply in any other social sphere (15). As long as the

individual acts in accordance with the prevalent social norms, it does not have to feel responsible for the consequences of its actions (16). Individuals that face a moral issue are enabled to overlook the moral problem if they act in accordance with a social norm (19). At times, the norms adopted in one social sphere reflect compliance to a public opinion without actual private acceptance (Bicchieri 2006). For example, norms applied when doing business might diverge from norms that apply in the private sphere (Rozuel 2009, 21).

In order for an actor to identify that a specific norm applies to a situation, cues in a given situation have to be interpreted in a way that identifies the situation as one in which the norm applies. The categorization of external stimuli is an act of interpretation, which activates schemata and scripts that induce or prevent subsequent behavior. Hence, norms have to be made salient as well as have to be activated. As long as a norm is not salient, it might exist but will not be applied (Bicchieri 2006). Therefore, the familiarization of students with prevalent finance and professional norms (including allowances and obligations they entail) makes them frequently salient and easily accessible. There are several scholars who find that the behavioral assumptions of PFK hardened into

prescriptions. Their research indicates that during the educational years, economics students accept self-interest as *the* central motivator for human behavior. A powerful norm is created that prompts people to act in a self-interested way, simply because they think they ought to. A study by Frank, Gilovich, and Regan (1993) suggests that repeated exposure to the neoclassical economic model (which assumes self-interested actors) influences economics majors to act in accordance with the models. Their research exhibits a difference in cooperative behavior between economic majors and non-economic majors, the former cooperated less in prisoner's dilemma games. Gandal et al. (2005) highlight that third-year economic students rated universal values such as helpfulness, honesty, loyalty, and responsibility as less important than first-year economic students on a significant scale. Wang, Malhotra, and Murnighan (2011) found that business school education contributes to a culture of greed. Economic majors and those who had taken several economic courses had more positive attitudes toward greed and were more prone to act greedy themselves. Economics students were more likely than students of other fields to rate greed as “moral”, “generally good” and “correct”.⁵⁷ Although these studies were conducted with economics students, the findings may be transferable to finance students, since the assumptions underpinning most models originate from micro-economic theory.

Not only general norms for all individuals but, moreover, particular norms that are attached to managerial roles in finance are emphasized in schools. The excessive emphasis on rationality and logic, and the condemning of “soft aspects” of the personality as well as subjectivity (Rozuel 2009, 21) leads to the construction of executives as hardheaded and ruthless economic actors, not as “moral managers” (Hendry 2001, 537). In the decision-making assessment, rational and analytical aspects are emphasized, emotions are not part of the script (Rozuel 2009, 20). As a consequence, compassionate behavior and empathy will be seen as unprofessional and inappropriate by others. Klimecki et al. (2016) state, that empathy, being a strong motivator for altruistic action, is situational. The degree of empathy experienced towards a specific person changes as a function of the situation.⁵⁸ Hence, when

⁵⁷ These findings may be challenged by a potential self-selection bias of the students. However, experiments such as the one conducted by Gandal et al. (2005), who compared first-year students and third year students, deliver evidence that dispels this concern.

⁵⁸ Klimecki et al. (2016) compared behavioral choices of participants that had either received an empathy induction or no empathy induction in dictator games. Participants with preceded empathy induction gave over 70% of their endowments to suffering others, whereas participants only gave 42.6% in the standard dictator game. The researchers traced an increase in empathic feelings among the group that received empathy induction, which was responsible for an increase in giving. Empathy was even able to dominate over norms of fairness when specifically linked to a suffering individual. The researchers found that empathy is situational. Situational empathy is a strong motivator for altruistic behavior in an economics context. In conclusion, the

finance norms are activated, empathy may be experienced as inappropriate and is stifled. Furthermore, Smith and Rönnegard (2016) found that business schools and law schools are dominated by a norm that prescribes managers to maximize shareholder value.

The orthodoxy and vehemence with which assumptions and prescriptions are reinforced in programs of finance play a key role in making finance norms salient, and subsequently, activating them. The local and professional norms that are internalized by students during their educational years are kept when moving into the practical finance world. The young professionals enter financial organizations with their internalized norms and are confronted with specific local norms prevalent in the financial organization. On the one hand, they bring in a set of norms that they internalized in school and which they carry into their subsequent social interactions. On the other hand, they undergo another process of socialization, learning the specific local norms that have been established in an organization, and hence which behavior is regarded as appropriate or desired (Gächter, Nosenzo, and Sefton 2013, 549). New employees infer information about appropriate behavior in a given situation from the behavior of others and adjust their behavior according to the inferred information (Bicchieri 2006, 182). Actors with conditional preferences⁵⁹, prefer to comply to a norm when (1) they believe that a sufficient number of others act in accordance with the rule (empirical expectation) or (2) a sufficient number of others are believed to expect the actor to follow a social rule, either with following social sanctions when deviating or without (normative expectation) (Bicchieri 2006, 11). Hence, the more frequent a behavioral trait is in the population, the more likely it is that an individual will adopt that behavior (Bowles 2013, 373). As an example, for the crucial role beliefs play in determining subsequent behavior, Carter and Irons show that economists behaved more in accordance with the promoted assumptions of rationality and self-interest and presented less concern for fairness (Carter and Irons 1991, 176-177). Molinsky, Grant, and Margolis (2012) suggest that activating the economic scheme in executives dampens feelings of empathy and decreases compassion and concern for others in need. From an economic mindset, individuals feel concerned about "... 'looking bad by doing good' ..." (36). Compassionate behavior and

authors state that pro-social behavior is more strongly related to situational empathy than to empathic personality traits.

⁵⁹ Research made strong cases on humans as conditional reciprocators or defectors. Fehr, Fischbacher, and Gächter (2002) found evidence that the interaction of strong reciprocators and selfish individuals induces people to cheat. When an individual expects increased opportunistic behavior from others, the individual might feel justified in preempting "'defective behavior'" for protection. Combined effects of strong positive reciprocity (doing the right thing) and negative reciprocity (anticipation of punishment of an unfair behavior and forming own behavior accordingly to escape punishment) are beneficial for both parties. Strong reciprocal behavior has the potential to limit non-cooperative behavior and might hinder cheaters from cheating.

empathy are deemed unprofessional and inappropriate hence, exhibiting pro-social behavior is associated with perceived “... potential costs ...” (36).

Bicchieri (2006) highlights that pluralistic ignorance (ignoring that the public compliance does not imply private compliance to a norm) leads individuals to ignore the fact that others may as well adjust their action to false beliefs about the expectations of others. Rational agents may ignore own information because they infer that other people’s choices are based on information (or preferences) that dominate their own (181). From that follows that individual choices are influenced by the preferences of others or the belief that others hold certain preferences (177). In plain language, that means that actors imagine a pressure to conform – individual action derives from false beliefs about others, which guides social interaction (180). As behavioral traits are flexible far into adulthood, the social environment in organizations has the potential to foster or hinder self-interested behavior. In this regard, the leadership of an organization is of particular importance. It shapes the type of governance of investment practices by establishing and cultivating local social norms, which in turn frames the behavior of the employees (Cai, Cherny, and Milbourn 2010; Soule 2010; FCIC 2011, 180). The leaders of investment-related financial firms, such as top executives and managers, are mostly highly educated business, economics, or finance graduates recruited from orthodox business and finance degree programs of elite universities (Ho 2009). Thus, they rely on mutual norms in determining their behavior. Smith and Rönnegard (2016) suggest that a shareholder primacy norm generally guides managers’ behaviors in financial organizations. The shareholder value norm can alter (reinforce or weaken) the beliefs of new employees entering a firm as well as affect compliance to legal norms. O’Sullivan, Zolotoy, and Martin (2018) found that social norms influence the responsiveness to incentives. In an environment that has a dysfunctional incentives structure, social norms can curtail negative consequences by discouraging risk-taking and unethical behavior (Smith and Rönnegard 2016). Adversely, social norms can also contribute to cultivating a corporate culture of short-termism and personal gain. Hence, the interaction between individuals is guided by the beliefs people hold about expected behavior. Precisely these beliefs may prompt an actualization of the expected behavior. Thus, beliefs about others as well as about what is expected frames practice.

5.3.4 Material Devices as Multi-level Framing-Mechanisms

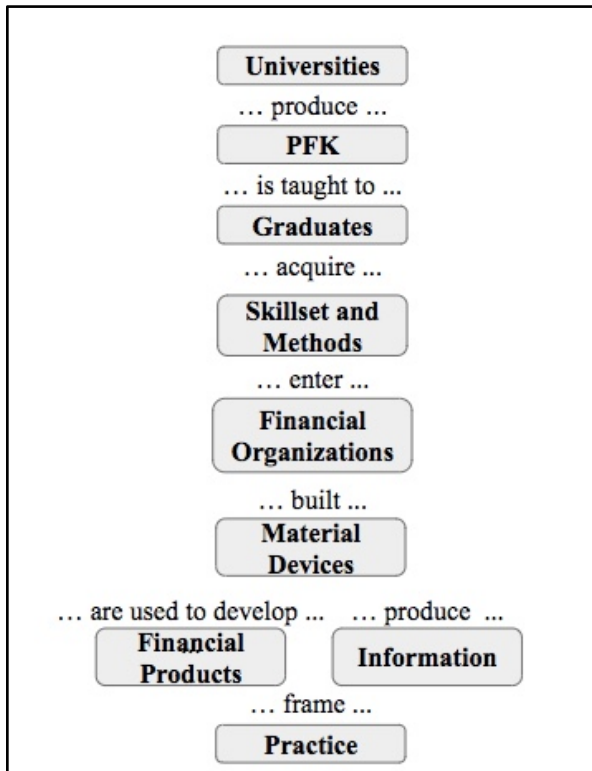


Figure 5.4 Material devices as multi-level framing-mechanisms

A material frame for investment practices may be set by the incorporation of PFK in the devices that are deployed to produce information and to construct financial products and instruments. Figure 5.4 shows coarsely how the transmission of PFK could occur. According to Weir (2013), research in the PF discipline specifically aims to produce technical knowledge that is applicable in practice (8). During the years of study, students of finance are introduced and trained in applying PFK methodology. Hence, the Graduates that transition from educational institutions to financial organizations are not only equipped with theoretical PFK but, moreover, with a particular methodological skillset,

encompassing econometric methods as well as technological applications thereof. The young professionals move into financial organizations that built or refine specific material devices in order to be employed in practice.

Callon, Millo, and Muniesa (2007) argue that most devices that contribute to the construction of financial markets or are involved in professional financial decision-making are developed by financial economists (2). Thus, they may imply the disciplines' theoretical assumptions (Cabantous and Gond 2011, 11). A straightforward example are algorithms⁶⁰, which are widely applied as material devices deployed for decision-making processes of investing that form an integral part of daily routines. A grand variety of algorithms is put into use in the financial industry with varying purposes. Non-executing algorithms help to process a large quantity of information by organizing, sorting and framing information for

⁶⁰ Mittelstadt et al. (2016) view algorithms as a conjunction of mathematical constructs, implementations (technologies, programs), and configurations (applications) (2). In the data-driven financial world, algorithms are rapidly growing in scale and scope, since more and more operations and decisions previously undertaken by humans are now assigned to algorithms. Hence, algorithms function increasingly as mediators of how humans perceive, understand, and interact with their environment. The interpretation of big amounts of data as well as which action should follow from the interpretation is delegated from human to machine (1).

human actors. Executing algorithms (Robots) trade automatically without involving human action (Arnoldi 2016, 30-33). Kalthoff and Maeße (2012) conducted an ethnographic study of financial mathematician that created algorithms for price-setting of Collateral Debt Obligations in Germany, before the GFC took place. The authors summarized the steps of developments of algorithms as follows (211): At first a specific product (algorithm) is ordered (either by an external financial firm or in-house). That means, that the algorithm is developed with an objective in mind. In a second step, financial mathematicians develop the algorithm based on the skills and knowledge they acquired in their education and previous working experience. The development of algorithms requires the translation of the world into numbers. In order to translate the social world into numerical data, assumptions about the subject as well as the conditions the subject operates in have to be made. Thus, the translation itself is already loaded with theory (Barth and Rommel 2017, 5). Algorithms produce specific information. The type of information produced depends on the theoretical constructs they emerge from and the objective they are developed for (Callon 2005, 4; Kalthoff and Maeße 2012). In other words, every algorithm is “inescapably value-laden” (Mittelstadt et al. 2016, 1). The developers define and specify operational parameters intending to achieve a particular outcome. According to the desired result, values and interests are prioritized (Mittelstadt et al. 2016, 1). In a third step, the algorithms are implemented in a software followed by the technical and social implementation of the algorithm in the financial organization that ordered the algorithm. The last step is the application in operational business by employees of the financial organization. Hence, many actors employing these devices may not be aware of the devices’ origins or ethical underpinnings and are therefore unable to contextualize and categorize the information produced. Concluding, by being developed by finance specialists who were educated in academic finance, algorithms imply PF assumptions. The assumptions may become realized actuality via material devices (Kalthoff and Maeße 2012, 230). Therefore, devices enable, direct, or force actors to apply directly or indirectly PFK (Callon, Millo, and Muniesa 2007, 2).

5.3.5 Cognitive-Linguistic Frames as Multi-level Framing-Mechanisms

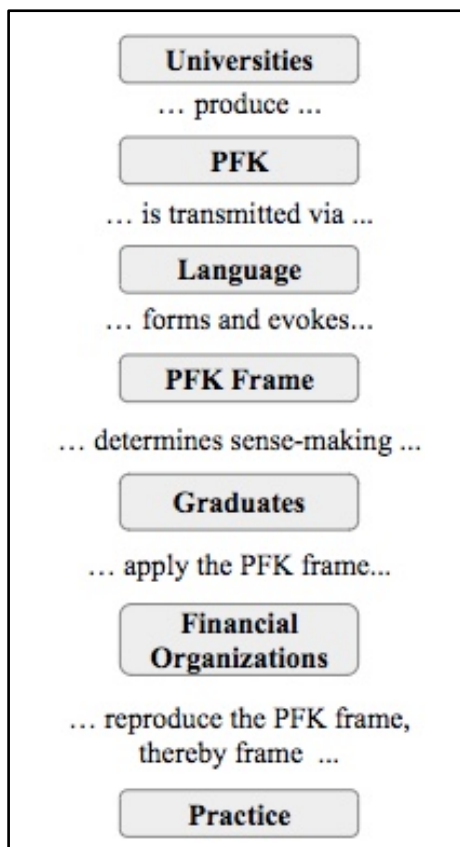


Figure 5.5 Cognitive-linguistic frames as multi-level framing mechanisms

Figure 5.5 illustrates a potential multi-level mechanism through which PFK contributes to the creation of a particular cognitive-linguistic frame that subsequently frames practice.⁶¹ Material devices, behavior of others, laws, rewards and incentive-systems as well as other external cues are all subject to ideational processes by which meaning is assigned (Hermann-Pillath 2016, 56). Goffman (1974) suggests that ideational processes are mediated by particular cognitive frames. Research indicates that the content of a cognitive frame as well as its configuration may be produced by history and setting (Fligstein, Brundage, and Schultz 2017, 883). In Universities, students adopt a specific PFK frame which entails assumptions and prescriptions inherent in PFK. In forming a particular frame, language plays a crucial rule. As a communicational vehicle through which people share meanings about cues in the world (Hermann-Pillath 2012, 244), particular scientific

language indicates the angle from which the discipline looks at a phenomenon (Sutton 2005, 16). The use of specific linguistic tropes evokes corresponding cognitive frames that prompt a particular interpretation of external cues and events (Hermmann-Pillath 2012, 244; Bielenia-Grajewska 2009, 144). Particular values, expectations, contingencies, norms etc. that are attached to a cognitive frame and are subsequently incorporated in the thought process. Thereby, individual attention is focused on highlighted facts while others end up neglected (Ferraro, Pfeffer, and Sutton, 2005, 9). As a consequence, an information-selection bias emerges. Information that fits into and reinforces the frame is highlighted; other information that may be in conflict with the frame is marginalize. That means that once a frame is employed, new cues (information) are evaluated in consistency with that frame,

⁶¹ Cognitive-linguistic framing processes are highly complex and involve neurophysiological as well as cultural elements. For this reason, this topic can only be presented in a simplified manner.

which impedes the absorption of facts that are not in line with prior beliefs (Fligstein, Brundage, and Schultz 2017, 880, 886).

Ferraro, Pfeffer, and Sutton (2005) argue that social facts are created by validating and reinforcing the narrative of a discipline by a broad usage of its terminology. The frequent use of particular linguistic tropes activates corresponding frames frequently. Subsequently, its associated norms, prescriptions, values, expectations and beliefs are incorporated in the thought process in a frequent fashion. Thereby, the mental frame from which a problem is assessed is narrowed (Barth and Rommel 2017). As a consequence, assumptions underpinning language are perceived and treated as true and behavior may be altered accordingly (15). An example for the strong effects linguistic framing can have is shown by Wang, Malhotra, and Murnighan (2011). The researchers found that a short statement about the benefits of self-interest for society increased the positive ratings of greed's moral acceptability for economic and noneconomic students. The adoption of a PF frame by the student body has far reaching consequences, considering. In respect thereof, Hewstone and Martin (2012) emphasize Sherif's autokinetic effect. People have personal frames of references. However, when confronted with other peoples' judgements, they quickly abandon their personal frame of reference to adjust it to others. The joint frame of reference (started with a group and then individual) endures even when the source of influence is no longer present over considerable time and can be transferred to new settings (242).

The homogenic PFK teachings in universities construct such a shared frame of reference, which endures when entering the professional world. The former students employ the adopted PF frame when entering financial organizations. For example, Fligstein, Brundage, and Schultz (2017) found evidence that regulators at the Federal Open Market Committee, with a background in private banking, were significantly more likely to include words that pointed to finance and banking when talking about the GFC (885, 897). Ferraro, Pfeffer and Sutton (2005) argue that widely spread scientific language, used in-and outside of the discipline to refer to some phenomenon of the 'real world', paves the way for an actualization and reproduction of its associated assumptions and prescriptions on a broad scale (15).

Bielenia-Grajewska (2009) pointed out that throughout the last decades, despite some local particularities, a more or less unified language became part of the daily routines among globally investment practitioners (Bielenia-Grajewska 2009, 143-149). When speaking a shared language, the speakers adopt the same frame and thus agree on common beliefs and expectations, which enables coordinated action (Bicchieri 2006, 176). Arguments are

focused around a cohesive narrative through which the group of finance professionals makes sense of the world. Scott (2008) notes that members of the same profession mostly rely on a “... shared conception of the problems to be solved and the approaches to be employed ...” in order to solve these problems (225). Hence, the linguistic framing process contributes to the imaginary through which actors on financial markets value, assess, and shape the world (Appadurai 2016, 47). A unified narrative facilitates communication and a subsequent formation of collective practices. In Karen Ho’s (2009) ethnographic research on Wall Street, she found that investment bankers she interviewed made sense of the world and found purpose in their work through the concept of shareholder value (123). The ideation of the social world determines what decisions and actions follow. Hence, which frame is adopted is pivotal for the formation of preferences and subsequent action.

5.4 A Guiding Frame for Investment Practices

According to the proposed conceptualization of performativity, the interplay of the previously described framing-mechanisms results in an overall practice-guiding frame. Each of the framing-mechanisms depicts the process through which PFK shapes a constraint that restricts the “space” in which investment practices can take place. The analysis indicates, that the epistemological and methodological assumptions underpinning PFK hereby serve as governing principals for the framing process and thus contribute to an overarching frame that guides practice. Consequentially, the knowledge produced in the PF discipline takes on a directive function and hence may play a central role in shaping investment practices. For example, the purpose of firms in PFK transforms into the “actual” purpose of firms in society. SVM provides an unambiguous standard to aspire to (Vollmer 2012) and guides practice by: (1) being embedded in the material devices that enable market actors to assess investments, (2) serving as reasoning for the formulation of formal institutions that restrict the legal scope of action, (3) governing social interaction as a normative reference and an informational reference, (4) providing the logic, institutional arrangements follow, (5) instituting a more or less coherent belief-system through which actors understand and evaluate their investments. As a result, investment practices are increasingly oriented towards and framed in terms of the SVM principle which can have socially unbeneficial effects. Hence, the vast dominance of PFK in various areas in public life, may lead to an incorporation of its homogenic, canonical body of knowledge into social systems and prompt an acceptance and internalization of normative prescriptions as truths.

6 Conclusion

The analysis of performativity proves to be a challenging endeavor due to its complexity, reflexivity, and endogeneity. Economic processes are influenced by numerous interwoven factors which complicate the isolation of cause-effect relations. I proposed to conceptualize performativity of finance as a process of transmission, in which multi-level framing mechanisms shape the constraints that ordain investment practices. I identified and coarsely sketched five mechanisms. Thereby, I found indications that the homogenous body of knowledge produced in PFK may set a practice-guiding frame for investing that is socially unbeneficial. Based on this line of reasoning, I claim that the PF discipline should reevaluate its body of knowledge as well as the production and reproduction thereof in order to foster alternative investment practices that aim to integrate a wealth seeking logic with a social justice logic. By applying a critical lens, taken-for-granted scientific practices could be uncovered and understood as negotiable; unacknowledged reflexive effects could be exposed and taken into consideration.

First, the discipline should acknowledge the need for plurality and heterogeneity in research and teaching. An incorporation of qualitative and institutional approaches that take social preferences, conditional preferences, and situational preferences into account may allow to provide more accurate and precise descriptions of actors in the financial realm and financial markets.

Second, the notion of non-involvement in forming patterns of behavior and structures in the social world fails to recognize the impact PF's body of knowledge may have on practices. PF's performativity blind-spot is a consequence from its scientific approach, which would negate itself through critical reflection. From that follows that the scientific approach constantly reproduces itself with its flaws. In line with Hermann-Pillath (2016), I argue that an approach that leaves room for discussion and contextualization, for example, by incorporating the notion of performativity of finance, could address the fundamental methodological issue of contextuality. Maintaining a narrative of being located "outside" rather than a part of the studied phenomena restricts the discipline's horizon and impedes the scope of problem solving.

Third, assuming a performative perspective and following Scherer and Marti (2011), leads to the demand of a reevaluation of the responsibility of finance scholars and educational institutions of finance as they promote particular value-sets and dismiss others. The dominance of a particular value-set over others in the public sphere harbors the danger

of prompting the creation of a one-dimensional world. By repudiating that PF's body of knowledge takes its form due to a particular philosophical position that is assumed, its normative nature is veiled and the door for an open public discourse about values remains closed. The proclaimed neutrality of the status quo paves the way for an uncritical internalization of PF ideology and the reproduction of the mechanisms in place. Following the Foucaudian tradition, I argue that a discourse about knowledge and values can only happen in conjunction with a discourse of power and power relations.⁶² Ruling power structures determine which topics are taken into the public sphere and under which terms those are discussed (Kajetzke 2008, 34-37). I side with Nickel and Eikenberry (2009), who note that a power relationship is established between the people who present the world as unauthored and those that internalize the world as unauthored. This power relationship is effective and powerful precisely due the hidden nature of the author. The one who internalizes, does so without being able to identify or understand the source of authorship. Without recognition of authorship and the prevalent power structures, it seems as if the system is not revisable or alterable. "Authorless texts exclude the public from the discourse that governs their lives because they cannot participate in discourse with a thing that is not authored." (978). Discourse has the potential to act in a disciplinary capacity by treating the status quo as inevitable and unchangeable or can hold transformative potential that recognizes the temporality of current condition and possibilities to transform (974). Hence, a call for a frank and open acknowledgment of the normative nature and an active engagement in a public discourse that aims to (re)negotiate the normative elements underpinning PFK, is in order.

Exploring the practice-framing mechanisms outlined that the belief-systems finance provides, the beliefs people hold, and the process of belief-conversion are pivotal for the research on performativity of finance. Due to a, in itself mostly logically cohesive and unambiguous knowledge structure, prescriptions of PFK, such as defining money as an end that is worth accumulating and the deriving understanding of the purpose of investments, turn into doctrines. The employment of instrumental and math-based methodology, which suggests proximity or similarity with the natural sciences, further enforces the claim of being an ethically neutral science (Kolb 2010, 23; Dobson 2010). Its methodological clarity may contribute to strengthen the credibility of its doctrines. Thereby an image of unassailability

⁶² In this regard, Vollmer (2012) argues, that the financialization project has a political character as it did not emerge out of a competition of paradigms but was rather implemented in institutions and thereby into practice in a top down approach, initiated by global political, economic and academic elites.

of the science of PF is constructed which helps to maintain its supreme position. Such a closed system reaches its limit when confronted with questions of ethics and justice. In order to grasp the full weight of beliefs and their role in regard to the performativity of finance, I advocate for an employment of approaches from religious studies as done by Loy (1997).⁶³ The author argues that economic systems have come to fulfill religious functions, in that they provide belief- and value-systems on what is right and just which guide people in their purpose and place in this world. Thereby, Loy regards the academic discipline “...less a science than the theology of that religion...” (275).

Furthermore, I emphasize that the analytical framework proposed in this paper remains schematic and is by no means exhaustive. In order to establish cohesive cause-effect relations through a mechanism-based approach, detailed case-by-case studies on each framing mechanism and its lower-level mechanisms are necessary. Precise definitions of subject and object as well as expansive descriptions of entities and activities drawn from field studies, are necessary to deliver reliable and more conclusive evidence. As a last remark, I assume a future-oriented perspective. In order to achieve systemic change, following Marti’s (2013) proposal, I advocate for a combination of utopian ideal-theory and non-ideal theory. In the course of the former, which provides long-term goals, values that *should* underpin and govern investment practices could be negotiated in an inclusive public discourse. The latter could outline concrete gradual steps for the transformation of existing practices (220). In respect thereof, in-depth case-by case studies of the proposed framing-mechanisms could provide important insights that could be harvested to influence the creation of social mechanisms that lead to the wide adoption of socially beneficial investment practices.

⁶³ See also Friedland (2013).

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