

## 2 Insolvency Timing as an Agency Problem

### 2.1 Agency Theory as a Framework for Analysis

Agency theory is prevalently used in the literature to analyze the institutional features of contractual relationships between economic agents.<sup>20</sup> Frequently, it is also subsumed under the broader terms of contract theory or theory of incentives.<sup>21</sup> It forms an integral part of new institutional economics, which also encompass the concepts of property rights and transaction costs. These concepts were developed in reaction to the Neoclassical Equilibrium Theory's failure to explain the existence and structure of institutions, as it assumes homogeneous and complete information as well as no transaction costs, among other factors. In contrast, new institutional economics builds on information asymmetries, incomplete contracts, utility-maximizing behavior, (bounded) individual rationality, and the existence of transaction costs.<sup>22</sup> With these assumptions, it is possible to yield results closer to economic reality by accounting for individual utility-maximizing behavior and limitations of contractual agreements.

The objective of agency theory is to generate the optimal design of a contractual relationship between two strategically interacting parties in the presence of information asymmetries and potential conflicts of interest.<sup>23</sup> A typical agency relationship exists between shareholders and managers if ownership and control of the company are separated.<sup>24</sup> The alignment of the managerial insolvency timing decision with shareholders' interests can be conceptualized as an agency problem. Agency theory is therefore considered an appropriate framework to develop answers to the research question. It serves as a theoretical reference for the following analysis.

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20 For an overview of agency theory, see Shapiro (2005); Jost (2001a); Eisenhardt (1989).

21 For an overview of contract theory, see Brousseau/Glanchant (2002); for incentive theory, see Laffont/Martimort (2002).

22 See Homann/Suchanek (2005); Williamson (2000).

23 See Spremann (1987); Arrow (1985); Grossman/Hart (1983); Fama (1980); Haugen/Senbet (1979); Jensen/Meckling (1976).

24 See Fama/Jensen (1983), p. 301; Jensen/Meckling (1976), p. 308.

## 2.2 Basic Shareholder-Manager Setting

The agency relationship between shareholders and the manager is characterized by the shareholders (principal) delegating decision-making authority to the manager (agent) in order to perform a task on their behalf. In return, the manager receives a reward. This relationship is based on a contract that governs both parties' contributions to the cooperation and the consequent distribution of any resulting gains or losses.<sup>25</sup> With respect to agency relationships, the term contract is interpreted in a broad sense beyond the strict legal definition: It may contain all institutional elements that are able to define, influence, and coordinate the agent's decisions.<sup>26</sup>

The interaction between shareholders and the manager can be illustrated on a simplified timeline: Initially, the shareholders offer the manager a take-it-or-leave-it contract. If the manager accepts, he then makes a decision based on his personal utility function and the parameters in his decision environment. Subsequently, an output is realized that aggregates both the manager's decision and uncertain external factors. Finally, the output is distributed between shareholders and the manager in accordance with the contractual agreement. This basic principal-agent setup rests on the assumption that only the agent has an influence on the decision-making. Furthermore, the relationship is non-dynamic and focuses on only a single task or decision.<sup>27</sup>

An essential property of the described relationship is the asymmetric distribution of information between shareholders and the manager.<sup>28</sup> In this analysis, the manager is assumed to have superior information about his personal utility function, the parameters in his decision environment, and the decision itself. Moreover, the output is not a precise indicator of the agent's decision, as there is no direct relation between the decision and the realized output due to the impact of uncertain external factors.<sup>29</sup> Shareholders thus are unable to fully observe and evaluate the manager's decision-making behavior. In some cases, information might be accessible to shareholders but not verifiable, which refers to the impartial assessment of information by a third party (e.g., a court). This distinction is vital because contractual regulations are only enforceable on the grounds of verifiable information.<sup>30</sup>

Information asymmetries provide the manager with an opportunity to pursue private interests to the detriment of shareholders at his discretion. Following

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25 See Bannier (2005), p. 10f.

26 See Schweizer (1999), p. 6.

27 For an overview of the implicit assumptions in the basic agency model, see Jost (2001b), p. 18.

28 See Pratt/Zeckhauser (1985), p. 4.

29 In this context, *Spremann* comments that bad decisions and good luck can lead to the same result as good decisions and bad luck. See *Spremann* (1996), p. 708.

30 See *Hart/Holmström* (1987), p. 75.

the assumption of individual rationality, the manager aims to maximize his personal utility.<sup>31</sup> In the likely case of incongruence between the shareholders' and the manager's utility functions, a conflict of interest arises.

## 2.3 Moral Hazard Problem

The potential conflict of interest between shareholders and the manager in terms of the insolvency timing decision can be related a moral hazard problem.<sup>32</sup> It is caused by information asymmetry accruing *ex post*, as the manager acquires private information concerning his decision-making after the time of contracting. In this perspective, the exercise of managerial effort, being at the center of the standard moral hazard model, is equated with the manager taking the insolvency timing decision in line with shareholders' interest. In case of pre-contractual information asymmetries, for example regarding the manager's abilities, an adverse selection problem arises.<sup>33</sup> Adverse selection is not of relevance here, as the analysis covers only contracting outside financial distress, with the possibility of a future insolvency being only an abstract problem.<sup>34</sup> It can therefore be reasonably assumed that there is symmetric distribution of information on the subject of insolvency timing between shareholders and the manager at the time of contracting.

Two dimensions of moral hazard are observed: hidden action and hidden information.<sup>35</sup> Hidden action refers to the fact that the shareholders cannot directly observe a managerial decision. In any case, the decision is usually not verifiable and thus not contractible. The hidden action problem is endogenous because it is created by the manager's unobservable behavior.<sup>36</sup> Hidden information describes an exogenous information deficit on the part of the shareholders, as they do not know all relevant parameters of the manager's decision environment and are therefore not in a position to assess the quality of a decision even though it might be observable. Both phenomena, hidden action and hidden information, are relevant in the context of the managerial insolvency timing decision potentially deviating from shareholders' interests.

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31 See Milgrom/Roberts (1992), p. 126. The concept of *individual rationality* roots in the work of von Neumann/Morgenstern (1944).

32 For a general description of the moral hazard problem, see Fudenberg/Tirole (1990); Arrow (1985); Holmström (1979).

33 For a general description of the adverse selection problem, see Grossman (1979); Rothschild/Stiglitz (1976); Spence (1973); Akerlof (1970).

34 Yet, the insolvency timing decision could theoretically be part of the manager's contract. However, as will be shown, such a contractual regulation would not be enforceable due to information asymmetries.

35 See Bannier (2005), p. 5.

36 See Laffont/Martimort (2002), p. 146.

In terms of hidden action, for instance, the manager could delay an insolvency filing that can objectively be expected to be the shareholder value-maximizing course of action due to private interests. In this case, he can benefit from his informational advantage and hide his actions by not truthfully reporting the company's situation to shareholders.<sup>37</sup> Additionally, the manager can apply business measures that stabilize the company's financial conditions in the short term (e.g., asset sales) but that destroy shareholder value in the longer term.<sup>38</sup> These examples illustrate that, even though the insolvency filing itself is observable, the manager can make use of various instruments to influence the insolvency timing in accordance with his personal preferences and thus hide his true underlying actions.

In terms of hidden information, shareholders do not have enough information to judge whether or not an observable insolvency decision was made in their interest. In particular, they lack full information on the company's true financial situation.<sup>39</sup> Neither do they possess sufficient knowledge about the specific conditions of the company and the business environment to fully assess the likelihood of success of insolvency in comparison to other possible courses of action at a certain point in time. Finally, although shareholders will be able to measure the value of their shares in the aftermath of financial distress, they cannot determine the exact effect of the manager's decision on the value development, as it is also driven by external factors.

The discussed moral hazard problem can be summarized by the illustration in figure 2.1.

Shareholders face a significant risk in the outlined moral hazard situations where the manager does not act in their interest when deciding on the insolvency timing. Consequently, they must find suitable instruments to align managerial behavior with their interests.

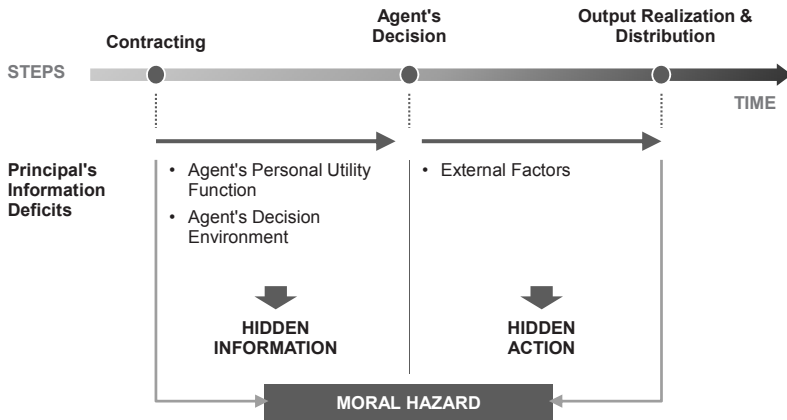
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37 See Evans III et al. (2001).

38 See LoPucki/Doherty (2007); Brown et al. (1994).

39 See Wruck (1990), p. 422.

Figure 2.1: Timeline Agency Interaction



Source: Own illustration based on Fischer (1999), p. 34.

## 2.4 Contract Design and Incentive Constraints

### 2.4.1 Risk-Insurance Trade-Off

Managerial decision-making is geared to incentives, defined as any factor motivating a particular course of action.<sup>40</sup> The contract between shareholders and managers is the central source of managerial incentives. Shareholders must therefore design the contract in a way that provides the manager with adequate incentives in line with their interests. The manager's responsiveness to incentives presumes that he is to a certain extent extrinsically motivated, implying that his decision behavior can be influenced by external factors such as rewards or sanctions.<sup>41</sup>

In the presence of the described information asymmetries, shareholders cannot directly contract the manager's insolvency timing decision itself, as it is not fully verifiable due to hidden action and hidden information. Instead, they have to contract on verifiable information measures that allow an indirect inference on the decision. These can be output-related measures, for example the change in shareholder value over a specified time interval, or other informational

40 See Prendergast (1999), p. 7.

41 See Friedl (2007), p. 2. For a discussion of intrinsic and extrinsic motivation, see Bénabou/Tirole (2003). An analysis of incentives in the presence of only intrinsic motivation is provided by Prendergast (2008).

measures enabling the shareholders to better evaluate the manager's decision.<sup>42</sup> Incentives are set by linking rewards or sanctions for the manager to performance measures in the contract. As those performance measures are subject to the influence of external factors beyond the manager's control, such a contract carries some level of risk for the manager.<sup>43</sup>

Standard agency theory assumes the manager to be risk-averse, while shareholders are risk-neutral. This can be reasonably assumed, as the shareholders can diversify their risk through alternative investments, whereas the manager's wealth is tied primarily to the proceeds from his job.<sup>44</sup> Due to the different risk attitudes, optimal incentive instruments represent a trade-off in incentive setting and risk sharing between shareholders and managers.<sup>45</sup> In an isolated incentive setting perspective, shareholders could theoretically reach full interest alignment by selling the output rights to the manager, who then bears the full risk. But this transfer is not feasible when taking into consideration the risk sharing view, as the risk-averse manager requires a certain level of insurance as compensation for his risk acceptance. Any fixed reward not linked to performance measures, however, gives the manager an incentive to pursue private interests.<sup>46</sup>

#### 2.4.2 Agency Costs

Incentive setting in the context of information asymmetries and risk sharing leads to efficiency losses for the shareholders, which are generally referred to as agency costs.<sup>47</sup> They appear in two basic forms. First, due to the required minimum insurance level for the manager, full interest alignment cannot be achieved with certainty, so that the potential resulting loss in output (as compared to the Pareto-optimal outcome)<sup>48</sup> has to be seen as a cost to shareholders. Second, shareholders incur costs by designing and implementing incentive instruments, as well as by monitoring the manager's compliance with his contractual obligations.

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42 See Jost (2001b), p. 27.

43 See Wiseman/Gomez-Mejia (1998), p. 136.

44 See Fama (1980), p. 291f.

45 See Bolton et al. (2006), p. 577.

46 See Core et al. (2003), p. 31.

47 See Pratt/Zeckhauser (1985); p. 3; Jensen/Meckling (1976), p. 308.

48 The *Pareto condition* defines an efficiency optimum as a situation in which no involved agent can improve his own utility without reducing another agent's utility; see Osborne/Rubinstein (1994), p. 7f.

### 2.4.3 Incentive Constraints

To mitigate the potential moral hazard problem associated with the insolvency timing, shareholders face the task of creating an incentive system for the manager, defined as the sum of individual incentive instruments, which balances the trade-off between incentive setting and risk sharing by simultaneously taking agency costs into consideration. Such an incentive system is highly contingent on the specific context and the characteristics of the involved parties.<sup>49</sup> The creation of a feasible, effective, and cost-efficient incentive system requires adherence to some generic constraints as described in the literature:<sup>50</sup>

- *Participation constraint*: This indicates the prerequisite that, in order to accept the contract, the manager has to derive a minimum utility level from the relationship with the shareholders which is at least as high as his next best alternative.
- *Incentive compatibility constraint*: This core constraint refers to the effectiveness of incentive setting by demanding that the employed incentives should induce managerial behavior as closely aligned with shareholders' interests as possible. According to *Milgrom/Roberts (1992)*, incentive compatibility can be further broken down into four sub-principles:<sup>51</sup>

First, the *informativeness principle* states that every performance measure containing additional information about the manager's decision-making should be integrated into the incentive system in order to reduce the potential errors in the evaluation of managerial behavior.<sup>52</sup> The resulting higher precision of performance assessments reduces the efficiency loss associated with risk-sharing.

Second, the *incentive intensity principle* provides guidelines on how sensitively incentives should be linked to performance measures. The optimal sensitivity level should be proportional to the profitability of incremental efforts by the manager. Risk aversion must also be reflected, so that the more risk-averse the manager is, the less powerful incentives he should be given. Likewise, the precision of the applied performance measures plays a role, with more precise measures leading to more powerful incentives. Incentive intensity should increase, finally, with the responsiveness of the manager to incentives, whereby responsiveness is deemed to grow with higher degrees of discretion in his decision-making.

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49 See Bloom/Milkovich (1998), p. 293f.

50 See Jost (2001b), p. 19f.; Laffont/Martimort (2002), p. 147.

51 See Milgrom/Roberts (1992), pp. 214–241.

52 See Holmström (1979), p. 83f.

Third, the *monitoring intensity principle* postulates that the level of monitoring by way of performance measures should increase with the targeted incentive intensity. Hence, the monitoring intensity is complementary to the incentive intensity, as more precise performance measures enhance incentive intensity.

Fourth, the *equal compensation principle* acknowledges that managers usually perform several tasks at the same time. To avoid distortions in the manager's allocation of effort to his different tasks, incentives should ensure that the marginal return of effort is equal for all tasks.

- *Cost constraint:* In an efficiency view, shareholders must weigh the expected gains in output from an incentive system against its implementation costs. These costs mainly stem from the creation of the incentive system as well as from monitoring and enforcing the manager's compliance with contractual agreements; the actual rewards potentially transferred to the manager in the incentive system must also be taken into account.<sup>53</sup>

Shareholders have to carefully select and design instruments to create an incentive system that balances the various constraints.

## 2.5 Interest Alignment Instruments

### 2.5.1 Corporate Governance as an Interest Alignment Framework

Instruments to align managerial decision-making with the aim of shareholder value maximization in the presence of agency problems are a central topic in the literature on corporate governance.<sup>54</sup> Corporate governance is defined here as “a set of [instruments]—both institutional and market-based—that induce self-interested [managers] of a company [...] to make decisions that maximize the value of the company to its owners (the suppliers of capital).”<sup>55</sup> Some of these instruments are predefined by national laws and regulations, which leads to the formation of different corporate governance systems around the world.<sup>56</sup> The (contractual) interest alignment system to be created by shareholders must therefore adhere to the relevant corporate governance system, which sets some mandatory parameters and controls the scope for designing other parameters. This

53 See Bloom/Milkovich (1998), p. 284.

54 See Becht et al. (2003); Zingales (2000); Shleifer/Vishny (1997); Hart (1995).

55 Denis/McConnell (2003), p. 1f. A similar definition is given by Shleifer/Vishny (1997), p. 737. Gillan/Starks (1998) define corporate governance in broader terms as the system of laws, rules, and factors that control operations at a company.

56 See Denis/McConnell (2003), p. 7.



analysis focuses exclusively on interest alignment within the framework of the German corporate governance system.<sup>57</sup>

### 2.5.2 Available Instruments

The literature traditionally distinguishes between incentive and monitoring instruments with regard to interest alignment.<sup>58</sup> As previously outlined, an incentive reflects a factor that directly influences an agent's behavior.<sup>59</sup> Monitoring instruments can serve to ensure the agent's compliance with agreed incentives. Monitoring then has an indirect effect on the agent's behavior by rendering incentives enforceable.<sup>60</sup> However, monitoring in itself can also influence an agent's behavior, for instance through the potential threat of sanctions if monitoring should reveal unsatisfactory performance on the part of an agent.<sup>61</sup> It can also be argued that there is a trade-off between incentives and monitoring; that is, the stronger incentives an agent is provided with, the less monitoring of his activities is required—and vice versa.<sup>62</sup> A distinction between incentive and monitoring instruments is therefore not always clear-cut in reality.<sup>63</sup> For the following analysis, an incentive property is assumed for instruments with a predominantly direct effect on managerial behavior, while monitoring instruments are associated with an only indirect impact.

The general categories from which specific incentive and monitoring instruments are designed can be of an external or internal nature for the company.<sup>64</sup> External categories incorporate legal constraints, market-based forces, and influence exercised by external stakeholders such as the government, competitors, or capital providers.<sup>65</sup> Internal categories are organization-based and refer primarily to the influence of shareholders as the most powerful internal stakeholders.<sup>66</sup> In general, individual instruments can interact, whereby their interest alignment properties can be complementary, substitutable, or contradictory.<sup>67</sup> A suitable

57 For an overview on the German corporate governance system, see von Rosen (2007); Goergen et al. (2005).

58 See Rutherford et al. (2007); Demougin/Fluet (2001); Prendergast (2000); Holmström/Milgrom (1994).

59 See Chapter 2.4.3.

60 See Holmström/Milgrom (1994), p. 972; Milgrom/Roberts (1992), p. 214ff.

61 See Rutherford et al. (2007), p. 414.

62 See Demougin/Fluet (2001), p. 1760; Zajac/Westphal (1994), p. 121

63 See Rutherford et al. (2007), p. 415; Tosi et al. (1997), p. 597.

64 See Gillan (2006), p. 382.

65 See Walsh/Seward (1990), p. 421.

66 See Gillan/Starks (2000); Gillan/Starks (1998).

67 See Ward et al. (2009).

interest alignment system must therefore be tailored to the requirements of the specific case.<sup>68</sup> The following overview shows the most relevant external and internal interest alignment categories discussed in the literature:

*Figure 2.2:* External and Internal Categories of Interest Alignment Instruments

EXTERNAL CATEGORIES	INTERNAL CATEGORIES
<ul style="list-style-type: none"> <li>• Laws and Regulations</li> <li>• (Financial) Disclosures and Auditing</li> <li>• Product Market Competition</li> <li>• Market for Corporate Control</li> <li>• Managerial Labor Market</li> <li>• Capital Markets</li> <li>• Public and Media</li> </ul>	<ul style="list-style-type: none"> <li>• Control Systems</li> <li>• Balance of Power and Decision Rights</li> <li>• Compensation</li> <li>• Ownership Structure</li> <li>• Capital Structure</li> </ul>

Source: Own illustration.

In the following, the presented categories are briefly introduced.

### 2.5.2.1 External Categories

- *Laws and regulations* form the basis of each interest alignment between shareholders and managers by determining the constraints of possible contractual agreements and by protecting each party's rights, thus ensuring enforceability.<sup>69</sup> Managerial behavior is kept in check through obligations as well as restrictions to decision-making power stipulated by laws and regulations. Incentives to management in this respect derive primarily from the threat of sanctions in case of non-compliance. Laws and regulations can also have incentive value by impacting the attractiveness of different courses

<sup>68</sup> Dey (2008) provides empirical proof that the governance instruments applied in a company are a function of the level of agency conflicts.

<sup>69</sup> See La Porta et al. (1998); La Porta et al. (1997).

of action.<sup>70</sup> With respect to insolvency timing, the Insolvency Code is the dominant reference for managerial incentives.

- *(Financial) disclosures and auditing* discipline managerial behavior by forcing managers to report on company performance at regular intervals, thereby enabling external control of the company.<sup>71</sup> Although disclosures can be manipulated by management to a certain extent,<sup>72</sup> the associated threat of a discovery of poor management represents an effective incentive.
- *Product market competition* implies the need for company performance in line with peers in order to achieve or sustain competitive advantage.<sup>73</sup> Below-benchmark performance would be attributed to management, potentially leading to negative personal consequences. Competitive forces thus provide management with an incentive to concentrate resources on company performance instead of pursuing private interests. Several studies substantiate that increased competition enhances managerial behavior in line with shareholder interests.<sup>74</sup>
- The *market for corporate control* puts performance pressure on management, as outside investors or competitors would seek control of companies they deem to be poorly managed and replace the management.<sup>75</sup> The threat of a change in control presents an incentive for management to keep the gap between the potential and the actual shareholder value of the company as small as possible.<sup>76</sup>
- The *managerial labor market* refers to the future career opportunities of managers outside their current employment. As the market value of a manager will be measured mainly based on his past achievements, he has an incentive to build his reputation by delivering good performance in his current job.<sup>77</sup>
- *Capital markets* exercise influence on managerial behavior, as they relate the provision of capital to current and expected company performance. Share price valuations, for instance, reflect the expectations of market participants regarding the company's future shareholder value development and can thus be interpreted as feedback for managerial decisions.<sup>78</sup> Moreover, providers of debt capital adjust lending conditions according to the perceived riskiness of

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70 See Easterbrook/Fischel (1996), p. 37.

71 See Eng/Mak (2003).

72 See Stocken/Verrecchia (2004).

73 See Allen/Gale (2000).

74 See De Bettignies/Baggs (2005); Aggarwal/Samwick (1999); De Fond/Park (1999); Scharfstein (1988).

75 See Holmström/Kaplan (2001).

76 See Scharfstein (1988).

77 See Gibbons (1998).

78 See Warner et al. (1988).

the company.<sup>79</sup> Frequently, they also integrate debt covenants into the financing contracts which grant special rights such as cancellations in the event that the company misses predefined performance goals.<sup>80</sup>

- The *public and media* equally act as external controls by permanently inquiring about business measures taken by management. Managerial incentive value mainly arises from the fact that other stakeholders' relations with the company and the perception of the manager's abilities are geared to the opinions expressed in the public and media.<sup>81</sup> In particular the aspects of reputational concerns<sup>82</sup> and adherence to social expectations<sup>83</sup> have been empirically proven to affect managerial behavior.

### 2.5.2.2 Internal Categories

- *Control systems* reflect that shareholders must be informed about managerial behavior to be able to take corrective action if they see their interests neglected.<sup>84</sup> The information systems in place and their usage intensity by shareholders determine how closely the manager is observed by shareholders. With higher degrees of control and the resulting higher threat of sanctions, the manager's incentive to comply with shareholders' interests increases. A vital factor of the control level is the precision of the employed information system.<sup>85</sup>
- *Balance of power and decision rights* describes mechanisms that restrict the degree of managerial discretion. Commonly, managerial authority is split and allocated to different individuals or institutions within the company, thus reducing individual decision-making power.<sup>86</sup> In addition, the establishment of hierarchical approval procedures requires managers to share information about intended decisions.<sup>87</sup> These mechanisms are closely intertwined with control systems and reinforce their incentive properties.
- *Compensation* creates incentives for the management by (partially) linking monetary rewards or other benefits to predefined performance measures.<sup>88</sup>

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79 See Chu et al. (2009).

80 See Garleanu/Zwiebel (2009).

81 See Deephouse (2000).

82 See Malmendier/Tate (2009).

83 See Dyck/Zingales (2002).

84 See Jensen (1993).

85 See Lowenstein (1996).

86 See Westphal/Zajac (1995); Finkelstein (1992).

87 See Liberti/Mian (2009).

88 See Bebchuk/Fried (2003); Core et al. (2003); Murphy (1999).

A direct link to the share price development is, for example, created by granting stock options to management.<sup>89</sup>

- *Ownership structure* is concerned with the concentration and type of shareholders on the one hand, and with managerial ownership participation on the other. Higher ownership concentration enables majority shareholders to exercise closer monitoring and control over management.<sup>90</sup> In terms of the types of shareholders, more professional investors are usually more active and effective in controlling managerial decision-making.<sup>91</sup> Managerial ownership participation provides an incentive, as the manager's compensation is (partially) connected to the development of shareholder value, which represents a direct alignment with shareholder interests.<sup>92</sup>
- *Capital structure* relates to the proportion of a company's debt financing. It is argued that the associated interest payments reduce the free cash flow and thus the manager's incentive to divert company resources to his private benefit.<sup>93</sup>

For the purposes of this analysis, the external interest alignment categories are considered as given. The focus is on deriving and testing incentive and monitoring instruments within the outlined internal categories in order to achieve interest alignment between shareholders and the manager in terms of insolvency timing.

## 2.6 Summary and Implications for Further Analysis

This chapter has shown that the managerial insolvency timing decision is related to a moral hazard problem between shareholders and the manager. Due to information asymmetries, the manager can potentially pursue private interests to the detriment of shareholders. Such behavior can be mitigated through suitable interest alignment instruments. General conditions for such instruments have been outlined. Additionally, external as well as internal categories in which specific interest alignment instruments can be designed have been presented, and a limitation of the following analysis to the presented internal categories for the proposal of suitable interest alignment instruments in terms of managerial insolvency timing has been stated.

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89 See Yermack (1995).

90 See Burkart et al. (1997).

91 See Smith (1996).

92 See Grossman/Hart (1983).

93 See Bebchuk/Grinstein (2005); Core et al. (2003).

The design of suitable internal interest alignment instruments requires an understanding of the expected deviations of managerial decision-making on insolvency timing from shareholders' interests. Accordingly, the next chapter covers shareholders' interests with regard to insolvency timing as a reference point.

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Drescher, F.

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