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THE SUBORDINATION OF
SHAREHOLDER LOANS
IN BANKRUPTCY

Martin Gelter

Discussion Paper No. 4

01/2005

Harvard Law School
Cambridge, MA 02138

The Subordination of Shareholder Loans in Bankruptcy

MARTIN GELTER[*]

January 2005

*In several European countries and in the US, doctrines of corporate or insolvency law allow courts to subordinate loans given by shareholders to companies under certain circumstances. An important example is the German equity substitution doctrine (*Eigenkapitalersatzrecht*), which covers shareholder loans given in times of crisis. Similarly, but under a somewhat different set of circumstances, the equitable subordination doctrine in the US allows courts to subordinate corporate debt to shareholders. This paper, which is motivated by the German and Austrian discussion, uses an economic model to analyze incentive effects in a typical situation, where, in a closely-held corporation, a shareholder attempts to save the company from almost certain liquidation by informally extending a personal loan. It is shown that, even though subordination deters some inefficient rescue attempts, it will also destroy the incentives for some efficient ones, which suggests that its scope of application should be understood narrowly. Furthermore, it will not deter all inefficient rescue attempts, which may mean that in such cases, more severe penalties should be imposed.*

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1. Introduction

In closely-held corporations, the owners of a significant amount of shares (and sometimes managers) sometimes try to avert an impending bankruptcy by informally extending a loan, in the hope of financing a successful rescue attempt. However, for creditors, the continued operations of the company may result in a dissipation of even more liquidation value due to perpetuated and increased risk. Courts are therefore sometimes inclined to penalize shareholders by subordinating such loans in bankruptcy. This paper analyzes the effects of the subordination of such loans on social welfare by using a formal economic model. Even though its motivation comes mainly from the German and Austrian discussion on the doctrine of equity substitution (*Eigenkapitalersatzrecht*), subordination is an issue also in the law several other countries, including the US, which face similar or the same policy issues.

The paper proceeds as follows: After a brief comparative overview on the law in section 2, and a summary of previous literature in section 3, I set up a simple model in section 4 in order to explore the underlying incentive structure and its effects on desirable and undesirable rescue attempts under the circumstances described above. Section 5 interprets the results of the model and discusses ex ante effects on interest rates. Section 6 discusses the effects of particular risk preferences. In section 7, I try do identify criteria for the limits of subordination and find that an alternative approach may be preferable. Section 8 concludes.

2. Comparative overview

In German and Austrian legal literature, there is an extensive discussion on the so-called "law of equity substitution", which is considered an important building block of creditor protection in corporations. The development of this doctrine in Germany began in the late 1930s in a number of decisions by the then *Reichsgericht* ("imperial court") concerning both stock corporations (*Ak-*

tiengesellschaften) and private limited companies (*Gesellschaften mit beschränkter Haftung*)[1] and was continued after World War II by the *Bundesgerichtshof* (BGH; Supreme Federal Court)[2], which developed the doctrine over the decades. In 1980, the doctrine, as far as it applied to limited liability companies (*GmbH*), was codified in a statute.[3] However, the courts continued to apply the principles developed by the Supreme Federal Court parallel to the statutory rules.[4] A long line of case law and academic legal literature has developed since then. The Slovenian corporate law of 1993 largely copied the German provisions.[5] The Austrian Supreme Court (*Oberster Gerichtshof*; OGH) adopted the German rules in 1991.[6] Only in 2003, the Austrian parliament passed an act[7], intending to clarify uncertainties in case law by regulating more precisely under which circumstances the doctrine should apply.

The crucial consequence of "equity substitution law" is the requalification of shareholder loans as equity. If a corporation is not deemed "creditworthy"[8] or considered to have been in a "crisis"[9] at the time when the loan is taken out, the loan may not be repaid until stated capital is fully paid up.[10] In insolvency, such loans are subordinated to other debt.[11] Thus, the shareholder giving the loan is not entitled to receive a quota in liquidation. Normally, subordination presupposes that the shareholder holds a significant amount of stock, namely 10% or 25% respectively under the

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[1] RG 16.11.1937, JW 1938, 862; RG 3.12.1938, JW 1939, 355; RG 22.10.1938, RGZ 158, 302; RG 13.1.1941, RGZ 166, 51. Even before the cases, legal scholars and some legislative drafts had already considered the issue. For a historical overview, see Koppensteiner (1998), p. 308-9; Schummer (1998), p. 7 et seq.

[2] The earliest case is the „Lufttaxi" decision, BGH 14.12.1959, II ZR 187/57, BGHZ 31, 258.

[3] Gesetz zur Änderungen des Gesetzes betreffend die Gesellschaften mit beschränkter Haftung und anderer handelsrechtlicher Vorschriften vom 4.7. 1980, BGBl. I, S. 836 et seq. (introducing provisions §§ 32a, 32b GmbHG).

[4] Most importantly, see the "Nutzfahrzeug" opinion, BGH 26.3.1984, II ZR 14/84, BGHZ 90, 370. Cf. Koppensteiner (1998), p. 309; Hommelhoff (2002), note 1.2.

[5] Zakon o gospodarskih družbah, §§ 433, 434. See Bruckmüller (2004).

[6] OGH 8.5.1991, 8 Ob 9/91, SZ 64/53.

[7] Bundesgesetz über Eigenkapital ersetzende Gesellschafterleistungen (Eigenkapitalersatz-Gesetz – EKEG), Art. I Gesellschafts- und Insolvenzrechtsänderungsgesetz 2003 – GIRÄG 2003, BGBl I 2003/92.

[8] Cf. Hommelhoff (2002), note 1.8.

[9] The latter term is used by § 32a Abs 1 (German) GmbHG and § 2 (Austrian) EKEG.

[10] See Hommelhoff (2002), note 1.9. § 14 (Austrian) EKEG mandates a stay on repaid as long as the company has not been reorganized or is insolvent or overindebted.

[11] § 32a Abs. 1 (German) GmbHG.

German[12] and Austrian[13] statutes, unless he is also a manager of the company. Under German law, a loan is only considered to be "substituting equity" when the company is not creditworthy, i.e. a third party would not give a loan such as the one actually given in an arm's length transaction.[14]

The doctrinal basis for the subordination given by courts and legal scholars usually is a "responsibility for consequences of financing decisions" (*Finanzierungsfolgenverantwortung*)[15] forcing a person holding a significant proportion of the company – if she decides to allow the company to continue operations by granting a loan – also to take the ensuing risk on herself, which otherwise would be borne largely by creditors. In recent years, some criticism by legal academics has emerged,[16] some of whom have argued against the doctrinal basis, which was purely a construct of case law and academic discussion, but originally lacked a clear statutory basis and a sound policy rationale.[17] It is sometimes suggested that the doctrine prevents desirable rescue attempts.[18] This argument prevailed in Switzerland, where shareholder loans were also occasionally found to substitute equity and thus subordinated in bankruptcy by courts.[19] However, the plan to

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[12] § 32a Abs. 3 Satz 2 GmbHG. Also cf. Lutter and Hommelhoff (2000), § 32a/b, note 66 (pointing out that this threshold mandated by statute only in 1998 is also applicable to loans subordinated under the "BGH rules")

[13] § 5 Abs. 1 EKEG. Even when the threshold is not surpassed, a dominating or controlling influence of the shareholder on the company can also result in the requalification.

[14] Cf. e.g. Lutter and Hommelhoff, §§ 32a/b, notes 18 et seq. Logically, even a company where the chance of repayment of the loan is very small should be able to obtain credit on the market, but only with an appropriately adjusted interest rate. The creditworthiness criterion can thus only be understood to mean that the firm would not have received the particular loan at the stipulated interest rate by a third party.
The Austrian § 2 EKEG has replaced this requirement with the concept of "crisis", which depends on specific accounting numbers set out by statute. Infra, section 6.

[15] See e.g. Hommelhoff (2002a), notes 2.21 et seq.

[16] Cf. Claussen (2003), p. 494 (finding that legal scholars have become more critical towards the doctrine compared to the 70s and 80s).

[17] Koppensteiner (1998), p. 316 (summary); Schummer (1998); Schummer (2000), p. 246 (2000); also see Claussen (1992), p. 154; Claussen (1994), p. 9; Claussen (1996), p. 321 Grunewald (1996), p. 7

[18] Claussen (1992), p. 144 et seq.; Claussen (1996), p. 320.

[19] Obergericht Zürich, II. Zivilkammer, 19.1.1993, Schweizerische Zeitschrift für Wirtschaftsrecht, 65, p. 299 (1993).

codify the doctrine[20] was abandoned, most of all because of the argument that the doctrine prevents desirable rescues.[21]

The Italian approach is different from the German one, but the result is similar. On the basis of a 1980 decision by the *Corte di Cassazione,* where funds provided by shareholders were recognized in the accounts as funds put aside for a future increase in capital, a presumption was created that shareholders had the intention to treat the funds as equity.[22] Lower courts thus sometimes "requalified" debt finance provided by shareholders depending on its perceived functional character.[23] Since the corporate law reform of 2003, there is an explicit provision applicable to *società a responsabilità limitata* and *società per azioni* (the latter only when belonging to a corporate group).[24] It states that financial means provided by shareholders, in whatever form, can be subordinated to those given by third-party creditors and have to be returned to the company if they were repaid to shareholders within a year before the company declared bankruptcy. This applies only to finance provided to the company at a time when (also considering the type of the company's activity) it would "result in an excessive disequilibrium with respect to the company's net worth", or when it would have been "reasonable to add more equity."

US bankruptcy law also shows a parallel in one aspect of the *equitable subordination* doctrine, which was also developed by the courts at the same time as the German doctrine[25] and recog-

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[20] Böckli et al. (1999), p. 24; but see the critical assessment of Trindade (2000).

[21] Botschaft zur Revision des Obligationenrechts (GmbH-Recht sowie Anpassungen im Aktien-, Genossenschafts-, Handelsregister- und Firmenrecht), BBl. 2001, p. 3148, 3158.

[22] Cass., 3 dec. 1980, n. 6315, Giurisprudenza Commerciale II *8*, p. 895 (1981).

[23] For overviews, see Parrella (2000), p. 17 et seq.; Tantini (2004), p. 795 et seq.; see Trib. Milano, 5 dec. 1988, Rivesta del diritto commerciale, 88, II, p. 75 (1990); Trib. Milano, 25 marzo1993, Società 534 (1993); Trib. Treviso, 18 dec. 2001, Banco, Borsa, Titoli di Credito, 55, II, 723 (2002); Trib. Milano, 28 giugno 2001, Banco, Borsa, Titoli di Credito, 55, II, 723 (2002); also cf. Cass. 19 marzo 1996, n. 2314, Società 1267 (1996).

[24] C. c. art. 2467, 2497quinquies, introduced by the law of January 17, 2003, Gazz. Uff. n 17, Supplemento Ordinario.

[25] Taylor v. Standard Gas and Electric Co. (Deep Rock), 306 U.S. 307 (1939); Pepper v. Litton, 308 U.S. 295 (1939).

nized in the Bankruptcy Code of 1978.[26] Loans may be subordinated to third-party claims, among other things, when they are held by persons controlling an insolvent corporation, or more generally insiders.[27] While in some important cases, outright fraud provided a clear case for subordination,[28] one of the issues discussed in the case law is undercapitalization. Somewhat reminiscent of the German creditworthiness criterion, undercapitalization, among other cases, is assumed when, "at the time when the advances were made, the bankrupt could not have borrowed a similar amount of money from an informed outside source."[29] As under the German-style equity substitution doctrine, the basis of equitable subordination cases is sometimes the fact that only nominal equity, which in view of size and operations of the business clearly does not suffice, was supplemented by debt provided by shareholders.[30] However, equitable subordination in the US usually requires an element of specific inequitable conduct beyond mere undercapitalization,[31] which need not be necessarily related to the claim brought forward.[32] But as in the German discussion, the idea that parties most interested in the company's continued existence should not be unnecessarily precluded from attempting to save it.[33] Thus, policymakers in the countries discussed here

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[26] 11 U.S.C. § 510(c).

[27] Cf. Clark (1986), p. 52 et seq.

[28] See Taylor v. Standard Gas and Electric Co. (Deep Rock), 306 U.S. 307 (1939). The fact pattern is described by Clark (1986), p. 54. Most of the acts considered fraudulent by the court here would clearly be considered a violation of capital maintenance under German or Austrian corporate law as hidden distributions (*verdeckte Gewinnausschüttungen*) to shareholders.

[29] In re Mobile Steel Corp., 563 F.2d 692, 703 (5th Cir. 1977).

[30] Pepper v. Litton, 308 U.S. 295, 309 f (1939) (where, however, commingling of assets also appears to have been a factor); cf. Herzog and Zweibel (1961), p. 93 et seq. (arguing that the issue in such cases often is whether a contribution should be functionally classified as equity or debt).

[31] See e.g. In re Lifschultz Fast Freight, 132 F.3d 339, 345 (7th Cir. 1997); Sender v. Bronze Group, Ltd. 380 F.3d. 1292, 1302 (10th Cir. 2004); cf. In re Fabricators, 926 F.2d 1458, 1469 (5th Circ. 1991) (dicta). Cf. Clark (1986), p. 67 (noting that "inadequate capitalization by itself has rarely been a sufficient condition to lead to subordination of the controlling creditor's claim").

[32] In re Kansas City Journal-Post Co., 144 F.2d. 791, 804 (8th Cir. 1944).

[33] In re Mobile Steel Corp., 563 F.2d 692, 701 (5th Cir. 1977).

and elsewhere[34] have to face the tradeoff between creditor protection and the desirability of potentially successful rescue attempts in firms on a trajectory towards insolvency.

3.   Previous economic literature

In view of the extensive legal discussion on the equity substitution doctrine in German-speaking countries and its importance in practice[35], economically oriented studies of shareholder debt are surprisingly rare.[36] While some recent legal writing has discussed economic rationales and problems of subordination,[37] a number of papers analyze the effects of the doctrine mostly on the basis of numerical examples.[38] Their recommendations differ, depending on the choice of numbers. The probably most interesting contribution so far is the one by Drukarczyk (1995), who uses a model to show potential shifts in risk from shareholders to creditors. He argues that lawyers and judges have overlooked the possibility that creditors may sometimes benefit from attempts to save companies from insolvency by means of shareholder loans.[39] The equity substitution doctrine makes a higher probability of success necessary to avoid the destruction of incentives to pursue them. The dampening effect on shareholders' incentives to initiate rescue attempts leads him to the conclusion that the doctrine is excessive.[40]

The US equitable subordination doctrine seems to have been mostly neglected in the English-language economics and law and economics literature. The apparently only paper discussing it addresses an aspect of the doctrine outside the scope of this paper, namely the liability risk of a

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[34] Cf. Parrella (2000), p. 35 et seq. (finding cases of subordination in bankruptcy in Portugal and Belgium, but not in Greece, Spain and France).
[35] Cf. Claussen (1996), p. 317 (describing a massive increase in the number of cases since 1985).
[36] Cf. Claussen (1992), p. 148 (criticizing that the finance literature does not discuss the issue).
[37] Kalss and Eckert (2004), p. 232 et seq. (discussing mostly shareholder opportunism to the detriment of creditors); Engert (2004) (generally finding that, while the law does not offer optimal incentives, it has been moved to a more economically sound structure recently).
[38] Klaus (1994); Klaus (1994a); Fischer (1996); Götz (2001).
[39] Drukarczyk (1995), p. 193, 199.
[40] Drukarczyk (1995), p. 201 ("überzogene Rechtsregel").

large creditor taking factual control.[41] By contrast, there is quite an extensive literature on the related issue of secured debt, which, on one hand, in some situations allows efficient projects to go forward which otherwise would not receive finance, but also enables transfers of value from original unsecured creditors to a coalition of shareholders and new, secured creditors.[42] While there is no consensus in the literature whether the priority of secured debt is beneficial, it is interesting to note that, while secured debt is generally permitted,[43] courts in several jurisdictions assert[44] that shareholder loans should be deterred, even though the possible benefits and risks are quite similar.

Assuming that subordination is beneficial, one could make a case for why it should be mandatory law.[45] However, what is missing in the literature is a formal analysis of how, why and when subordination of shareholder loan creates the desirable incentive structure and when it fails to do so. The existing literature hardly allows general conclusions on efficiency effects. Furthermore, some of the German literature seems to be focused rather on creditor protection and liquidation quotas than on the maximization of total social welfare, which is normally the objective of economic analysis.[46] Creditor protection cannot be an absolute imperative, but has to be weighed against other interests and possible disadvantages. For example, it is conceivable that there are cases where the incentives created by subordination may prevent rescue attempts which would, from an ex ante perspective, maximize the "total pie" to be distributed between all corporate constituencies.

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[41] Berlin and Mester (2001).

[42] See e.g. White (1980); Stulz and Johnson (1985); Harris and Mooney (1994); LoPucki (1994); Bebchuk and Fried (1994), p. 917 et seq.; Schwarcz (1997).

[43] This may not necessarily be the case when shareholder loans are securitized, where shareholders both gain on the upside, while at the same time not sharing the risks of creditors on the downside. See Engert (2004), p. 830-831.

[44] In all jurisdictions described in section 2 except Slovenia the subordination originally developed in case law.

[45] An important argument would probably be that firms are unable to legally commit to enter into subordination agreements with future creditors.

[46] On the Kaldor-Hicks criterion see e.g. Posner (2003), p. 13. For a broader discussion of the aims of welfare economics see Kaplow and Shavell (2001), p. 985.

4. The model

4.1. Intuition and structure

Assume a company having one shareholder and one creditor; the original equity and debt were paid into the company in period t=0, when the existing capital structure was put into place. The amounts of their respective contributions are not discussed here for the moment.[47] The company is to repay an amount of *P* to the creditor.

At time t=1, the company enters into an unforeseen crisis, so that bankruptcy has become nearly inevitable. The shareholder, who is in control of the company, has to decide whether to grant a loan to it. The amount required for the last-minute rescue attempt is *D*. Hence, the shareholder can either decide to liquidate or to give the loan and attempt the rescue of the firm.

In case of liquidation, the firm is sold piecemeal yielding proceeds of *L,* which are used to cover the debt, while the shareholder receives the remainder (if there is any). The extension of a loan can be seen as an investment by the shareholder, which he will only make it where his personal exceed his cost, i.e. the expected value he receives after the rescue attempt (considering the possibilities of success and failure) needs to be greater than the shareholder loan.

If the shareholder gives the loan and the corporation thus continues its operations, an amount of $\tilde{A}$ will ultimately be realized in period t=2. $\tilde{A}$ is a random variable, the value of which is unknown at time t=1, as it is only realized later. It can take all possible the company's total assets can take after the rescue attempt

Figure 1 shows the chorological structure:

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[47] Infra section 5.3.

t=0	t=1	t=2
Company is created with its present capital structure.	In case of liquidation, L is realized. In the case of a rescue attempt, the shareholder gives a loan amounting to D.	In the case of a rescue attempt, the total value of the company is $\tilde{A}$.

Figure 1
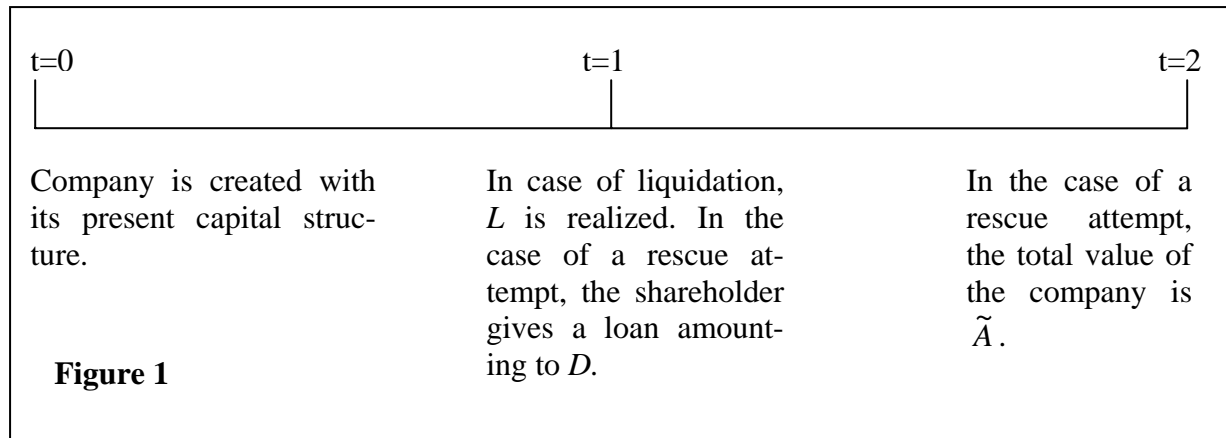
For simplicity, interest and discount rates are assumed to be zero. Both parties are assumed to be risk neutral.[48] The model in the following sections discusses the incentive effects of subordinating shareholder loans in bankruptcy under the assumption that the doctrine, if it exists, is applicable to the loan D. Possible criteria to delineate the doctrine's sphere of application will be discussed in section 6.

As the model will show, the shareholder's private incentives are sometimes at odds with the social optimum, as he does not internalize all social costs and benefits. In order to discuss the desirability of subordination, one needs to analyze the degree of alignment between private and social objectives.

4.2. The desirable outcome and actual incentives

If a benevolent social planner aiming at the maximization of the firm's "total pie" decided whether the shareholder should give the loan to attempt a rescue, he would only do so if the total expected value minus the investment D exceeds liquidation value L. Thus, the socially optimal decision in period t=1 would be that a rescue attempt should only be initiated if

$$E(\tilde{A}) - D > L \qquad\qquad (1)$$

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[48] This assumption and its consequences are discussed in section 6.

In reality, the shareholder is in control, and will maximize his own stake when deciding on whether to attempt a rescue. In case of liquidation, he will receive the liquidation value L minus the amount of debt P. His minimum outcome is zero, i.e. it is assumed that he is not required to put in more funds following bankruptcy, i.e. there is no veil piercing. In the case of a rescue attempt he receives the actually realized value of total assets A minus the amount of debt P. Naturally, the shareholder loan D he has to give will affect his incentives. If, following a failed rescue attempt, the company will be unable to cover debt, his payoff depends on whether his loan is subordinated. If it is not, he receives an insolvency quota of $\frac{D}{P+D} \cdot A$, i.e. he will receive this amount if it is smaller than $A - P$. If a subordination doctrine applies, the shareholder's claim to any quota will be rejected in bankruptcy. In that case, he will receive $A - P$ in a successful attempt and 0 in an unsuccessful one.

Thus, if <u>no subordination is to be expected</u> at t=1, the shareholder will give the loan and initiate the rescue attempt if:

$$E\left[Max\left(\tilde{A} - P, \frac{D}{P+D} \cdot \tilde{A}\right)\right] - D > Max(L - P, 0) \qquad (2)$$

The expected value of his shareholder's payoff needs to exceed his liquidation payoff.

By contrast, if <u>subordination applies</u>, he will receive no quota for the loan, and thus attempt the rescue only if

$$E\left[Max\left(\tilde{A} - P, 0\right)\right] - D > Max(L - P, 0) \qquad (3)$$

The efficiency effects of subordination will be addressed in view of these incentives. As a matter of theory, there are two large groups of cases, which will be discussed in the following two sub-sections, namely those where the liquidation value still covers debt when the rescue decision is made ($L > P$), and those cases where it does not ($L < P$).

With respect to the effects of subordination, two issues are of primary interest, namely

   (1) whether the equity substitution doctrine prevents undesirable rescue attempts; and

   (2) whether it prevents socially desirable attempts.

From the perspective of time t=1, it is clear that subordination will only prevent rescue attempts and does not enable any, the reason being that the controlling shareholder has a lower payoff, all other things being equal. Primarily, subordination is supposed to destroy the incentives leading to "Type I errors", where inefficient firms continue to operate. In the following section it will be shown that subordination will prevent some of those, but not all. Furthermore, it will be seen that subordination may sometimes result in "Type II errors", where efficient firms are liquidated, which would otherwise not occur.[49]

4.3. Company is not overindebted

First, I analyze the situation where $L > P$, i.e. the proceeds from an immediate liquidation would be enough to cover original debt completely when the shareholder loan is given.

It follows from (2) that, if shareholder loans are not subordinated, the shareholder will initiate a rescue attempt only if

$$L - P < E\left[Max\left(\tilde{A} - P, \frac{D}{P + D} \cdot \tilde{A} \right) \right] - D$$

By adding D and P on both sides we get

$$L + D < E\left[Max\left(\tilde{A}, P + \frac{D}{P + D} \cdot \tilde{A} \right) \right] \qquad (4)$$

By contrast, following from (3), subordination will prevent a rescue attempt where

$$L - P > E[Max(\tilde{A} - P, 0)] - D$$

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[49] I adopt this terminology from White (1994).

which can be rewritten as

$$L + D > E[Max(\tilde{A}, P)] \qquad\qquad (5)$$

Following from (1), a rescue attempt is efficient if

$$E(\tilde{A}) > L + D \qquad\qquad (6)$$

Thus, subordination only prevents desirable rescue attempts, following from (5) and (6), when

$$E(\tilde{A}) > L + D > E[Max(\tilde{A}, P)]$$

However, $E(\tilde{A})$ cannot be larger than $E[Max(\tilde{A}, P)]$, since all possible realizations of the random variable $\tilde{A}$ smaller than P do not affect the value of $E[Max(\tilde{A}, P)]$, which P increases for all those states of the world. $E(\tilde{A})$ can at most be equal to $E[Max(\tilde{A}, P)]$, namely where P is smaller than the lowest possible value of $\tilde{A}$. It follows that subordination will not create a disincentive against efficient rescue attempts where a loan is given when liquidation value still covers debt.

Conversely, one needs to ask whether subordination can also prevent undesirable rescue attempts. Following from (1), a rescue attempt is inefficient where

$$E(\tilde{A}) < L + D$$

applies. Other than in the previous case, this condition contradicts neither of the incentive conditions (4) and (5). Since $E(\tilde{A})$ is smaller than $E[Max(\tilde{A}, P)]$, it follows from (4) und (5) that

$$E(\tilde{A}) < E[Max(\tilde{A}, P)] < L + D < E\left[Max\left(\tilde{A}, P + \frac{D}{P+D} \cdot \tilde{A}\right)\right]$$

This shows that subordination of shareholder loans raises the threshold above which the shareholder has an incentive to initiate inefficient rescue attempts. Such attempts are prevented when $L + D$ lies between $E[Max(\tilde{A}, P)]$ and $E\left[Max\left(\tilde{A}, P + \frac{D}{P+D} \cdot \tilde{A}\right)\right]$ (see Figure 2). If $L + D$ is

larger, shareholders would not have an incentive to try the rescue even without subordination (which would also be inefficient). If $L+D$ is between $E(\tilde{A})$ and $E[Max(\tilde{A},P)]$, the rescue attempt is inefficient, but it will still take place. It is only efficient where $L+D$ is smaller than $E(\tilde{A})$.

Figure 2
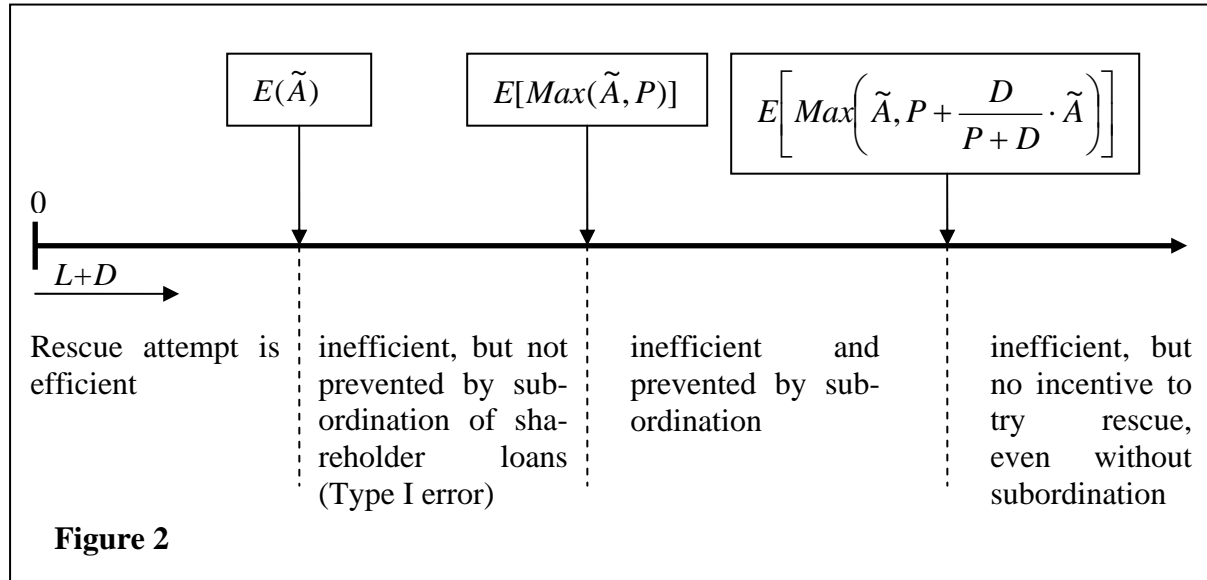
Subordination will thus reduce the number of inefficient rescue attempts by reducing the shareholder's incentives. As a provisional result, it can be stated that in this group of cases, subordination of shareholder loans has only positive consequences, since at least some inefficient rescue attempts will be prevented, while there are no negative consequences. However, some undesirable rescue attempts (Type I errors) will still occur.

Intuitively, this result is not surprising: The creditor would receive full value in an immediate liquidation, whereas the rescue attempt increases his risk. Since he has a fixed claim, he can only lose from risk enhancement in bad states of the world, but he cannot win in good states, since all social benefits are captured by the shareholder.

To explain the results more intuitively, consider table 1, where the actual maximum individual costs and benefits (to shareholders) and maximum social costs and benefits from rescue attempts are shown, where $\overline{A}$ is the maximum value $\tilde{A}$ can reach:

	Shareholder	Social	Not internalized
Benefits	$\overline{A} - L$	$\overline{A} - L$	0
Investment Costs	(D)	(D)	0
Costs from liquidation value	(L – P)	(L)	(P)
Possible cost savings (liquidation quota) without subordination	$\dfrac{D}{P+D} \cdot A$	0	$\left(\dfrac{D}{P+D} \cdot A \right)$

Table 1: Maximum costs and benefits when the firm is not overindebted

There is no difference between individual and social gains on the benefits side. Starting from a liquidation value of *L,* a maximum benefit of $\overline{A} - L$ can be obtained, all of which goes to the shareholder. However, on the cost side, while the basic investment costs *D* are borne by the shareholder, the maximum capital loss he can incur is the difference between assets and debt before he starts the rescue attempt (*L – P*), while socially, all of *L* is at risk. Thus, social costs of up to *P* are not internalized. (The actual difference, of course, depends on the distribution of the possible outcomes of $\tilde{A}$ and their weighted probabilities.)

In addition to that, without subordination, the shareholder does not bear an additional social cost – the potential liquidation quota – of up to $\dfrac{D}{P+D} \cdot A$, which will also be borne by creditors.

Thus, if there is no subordination, the amount of social cost the shareholder does not internalize is a maximum of $P + \dfrac{D}{P+D} \cdot A$. Subordination reduces this amount to *P*. Since the shareholder internalizes all social benefits, the result proven above – that subordination will only prevent socially detrimental rescue attempts – is corroborated. However, since internalization of costs is by no means complete, subordination is not a sufficient deterrent for some undesirable attempts, which will still take place (Type I error).

4.4. Company is already overindebted

Other than in the previous section, $L < P$ applies here, meaning that liquidation value would not suffice to cover debt at time t=1, when the shareholder decides about the rescue attempt; the latter will receive nothing in a liquidation. As we shall see, this considerably changes the outcome reached in the previous section with respect to the prevention of socially desirable and undesirable rescue attempts.

Following from (2), if there is no subordination, the shareholder will have an incentive to attempt a rescue when

$$D < E\left[Max\left(\tilde{A} - P, \frac{D}{P+D} \cdot \tilde{A}\right)\right] \qquad (7)$$

applies. Subordination destroys this incentive if

$$D > E\left[Max\left(\tilde{A} - P, 0\right)\right] \qquad (8)$$

is fulfilled. As before, the rescue attempt is efficient if $D < E(\tilde{A}) - L$ and inefficient if $D > E(\tilde{A}) - L$, which follows from (1).

Other than in the previous section, <u>a general statement about whether effects will be beneficial or detrimental is impossible</u>, as there is no theoretical relation between the liquidation amount L and the amount P owed to the creditor. The "efficiency cutoff" point can be below both "incentive cutoffs", above both of them or between them.
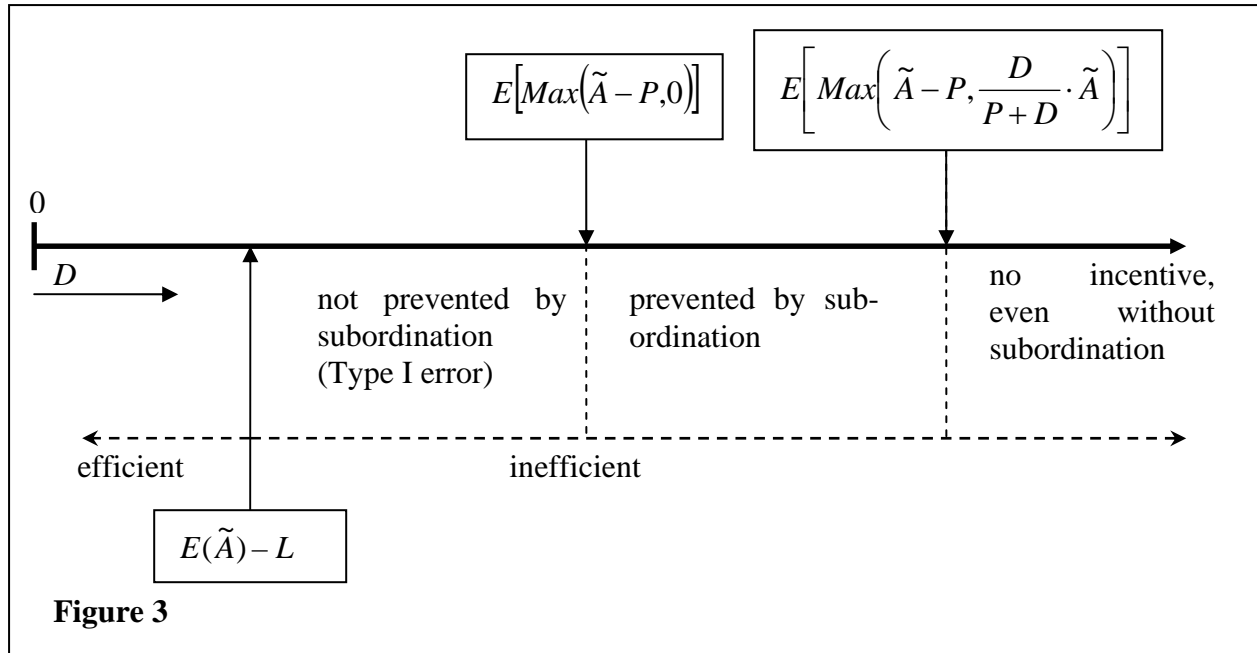
Figure 3

In the <u>first case</u>, which is shown in Figure 3, $E(\tilde{A}) - L$ is relatively small. Only those rescue attempts to the left of it are efficient, as D is smaller than $E(\tilde{A}) - L$. Among inefficient rescue attempts to the right of the efficiency cutoff, only those are prevented where D also exceeds $E\left[Max\left(\tilde{A} - P, 0\right)\right]$. Inefficient attempts in between, where $E(\tilde{A}) - L < D < E\left[Max\left(\tilde{A} - P, 0\right)\right]$ applies, will still occur. <u>As in the previous section, subordination here has only the positive consequence of preventing some inefficient attempts, without destroying the incentives for efficient attempts. But some inefficient "Type I error" rescue attempts will not be deterred.</u>

However, this is different in the <u>second case</u>, shown in Figure 4. Here, $E\left[Max\left(\tilde{A} - P, 0\right)\right] < E(\tilde{A}) - L < E\left[Max\left(\tilde{A} - P, \frac{D}{P+D} \cdot \tilde{A}\right)\right]$ applies. The efficiency cutoff is just between the two incentive cutoffs (with and without subordination). The set of efficient rescue attempts thus overlaps with the set of attempts where subordination destroys the shareholder's incentives.
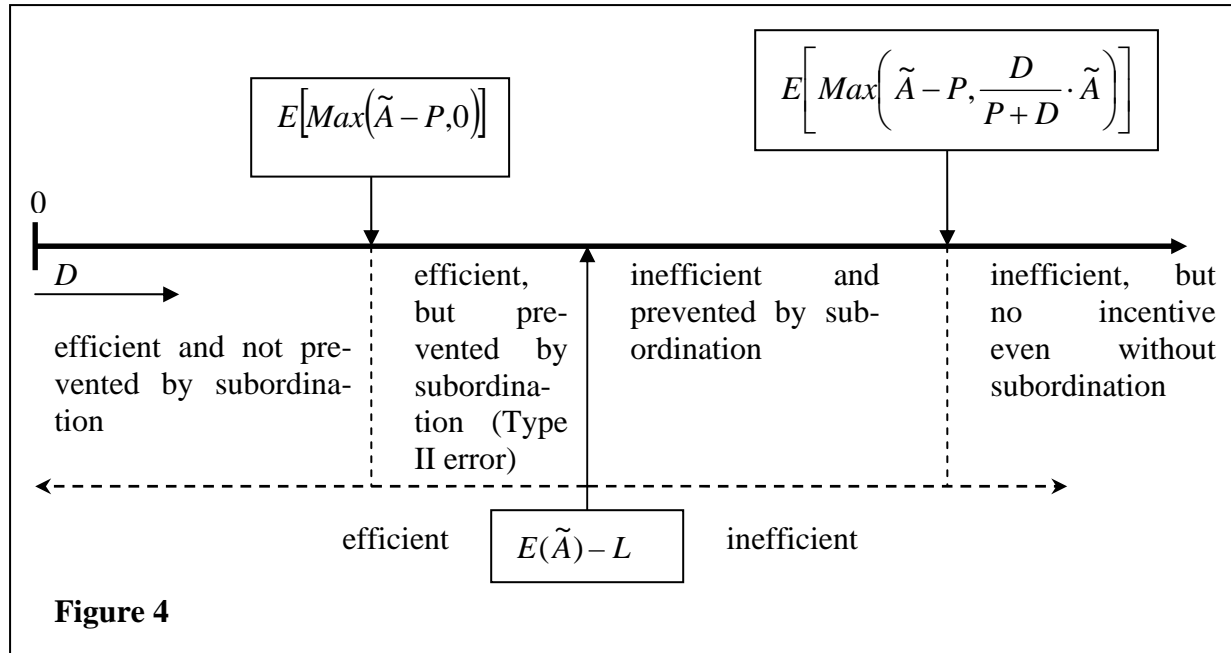
Figure 4

We have a group of cases on the left side the figure, where $D < E[Max(\tilde{A} - P, 0)]$ applies. Those rescue attempts are efficient and will always occur, with or without subordination. Adjacent to the right, there is a group of cases where D is slightly higher, so that $E[Max(\tilde{A} - P, 0)] < D < E(\tilde{A}) - L$ applies. Desirable rescue attempts are prevented by subordination. The next groups of cases to the right covers inefficient rescue attempts prevented by subordination, as $E(\tilde{A}) - L < D < E\left[Max\left(\tilde{A} - P, \frac{D}{P+D} \cdot \tilde{A}\right)\right]$ applies. The efficiency cutoff here is in the middle of the range of cases where subordination destroys incentives to try a rescue. In part, this is beneficial, but in part, it is detrimental. Finally, in the group of cases shown on the utmost right of Figure 4, D is too high for the shareholder to have any incentive, with or without subordination. $D > E\left[Max\left(\tilde{A} - P, \frac{D}{P+D} \cdot \tilde{A}\right)\right]$ applies. <u>In summary, subordination will prevent some socially undesirable, but also some desirable rescue attempts (Type II error).</u>

In the <u>third case</u>, shown in Figure 5, $E(\tilde{A}) - L > E\left[Max\left(\tilde{A} - P, \dfrac{D}{P+D} \cdot \tilde{A}\right)\right]$ applies, meaning

that the efficiency cutoff is higher than both incentive cutoffs:

Figure 5
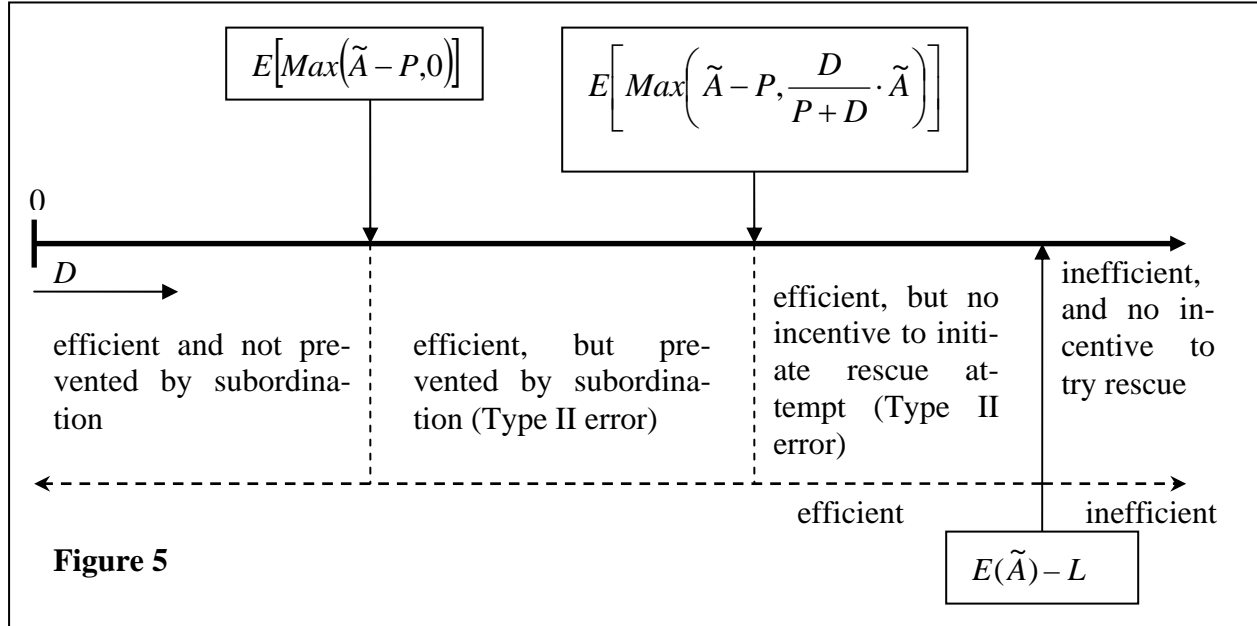
Here, there are even efficient rescue attempts for which there is no incentive to initiate them (with

or without subordination) namely where $E\left[Max\left(\tilde{A} - P, \dfrac{D}{P+D} \cdot \tilde{A}\right)\right] < D < E(\tilde{A}) - L$ applies (sec-

ond group from the right). Subordination disincentivizes the shareholder against even more desir-

able rescue attempts, namely where $E\left[Max\left(\tilde{A} - P, 0\right)\right] < D < E\left[Max\left(\tilde{A} - P, \dfrac{D}{P+D} \cdot \tilde{A}\right)\right]$ applies.

<u>Thus, in the cases shown in Figure 5, subordination has only negative incentive effects, as it will</u>

<u>cause more Type II errors without preventing any Type I ones.</u>

<u>Overall, the effects of subordination are ambiguous in the cases discussed in this subsection.</u>

Again, to make results more intuitive, consider table 2, where <u>maximum</u> private and social costs

and benefits are shown:

	Shareholder	Social	Not internal-ized
Benefits	$\overline{A} - P$	$\overline{A} - L$	$P - L$
Investment Costs	D	D	*0*
Costs from liquidation value	*0*	*(L)*	*(L)*
Cost savings without subordination (liqui-dation quota)	$\dfrac{D}{P+D} \cdot A$	*0*	$\left(\dfrac{D}{P+D} \cdot A \right)$

Table 2: Maximum costs and benefits when the firm is overindebted

The crucial difference to the case where the company is not yet overindebted is that benefits from rescue attempts are shared between shareholders and creditors: Since the creditor would not obtain his full entitlement *P* in an immediate liquidation (yielding only *L*), he could gain from the rescue attempt if it is successful. Thus, there is a potential social gain of *P* – *L* which the shareholder does not internalize. (Again, what amount is realized depends on the possible values of $\tilde{A}$, which will ex ante be considered with their weighted probabilities).

As before, there are social costs the shareholder does not internalize: First, there is a potential loss of the liquidation value *L*, which creditors would expect to capture. As in the previous section, there is a possible cost saving for the shareholder (i.e. social costs he does not internalize) when there is no subordination, namely his share in bankruptcy.

Other than in the case described in the previous section, the misalignment of the shareholder's with the social interest depends on two factors, one of which lies on the cost, the other on the benefits side. The two effects work into opposite directions, and there are no theoretical grounds to say that either of the two effects is more important.

Subordination takes away a third misaligning factor from the shareholder, but it is theoretically indeterminate whether this is beneficial or detrimental. On the one hand, if the misalignment is greater on cost side (meaning that the shareholder insufficiently considers social cost), burdening him with the subordination will be beneficial. On the other hand, if the misalignment is greater on

the benefits side (meaning that the shareholder considers social benefits too little), taking away the benefit of participation in bankruptcy increases that gap.

5. Interpretation

5.1. Benefits of subordination before overindebtment

At first, it seems remarkable that subordination shows no negative consequences where liquidation (at the time when the shareholder loan is made) would result in a complete coverage of outstanding third-party debt. This result is intuitively appealing: If his claim is covered at time t=1, the creditor can only lose because of the rescue attempt, as it generates additional risk for her. This corresponds to the well-known issue of risk-enhancement by shareholders to the detriment of creditors, which may generally result in inefficiencies.[50] While only the shareholder can benefit from a positive development, creditors bear part of the risk of a negative result. Subordination partly internalizes this risk, which sometimes may prevent inefficient rescue attempts (Type I errors). The difference in the case where company's debt already exceeds the liquidation value at time t=1 is the fact that here, creditors may also sometimes benefit from rescue attempts. A successful rescue in such cases may allow the creditor to obtain the full claim or a larger share than liquidation.[51]

This result rests on the assumption that liquidation is the only alternative to a shareholder loan. It will be different where the continued operation of a company financed by a shareholder loan reduces risk instead of increasing it.

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[50] Cf. Smith and Warner (1979), p. 118; Brealey and Myers (2003), p. 503.
[51] This is also pointed out by Drukarczyk (1995), p. 193.

5.2. Debt, liquidation value and the efficiency of subordination

We have seen that subordination of shareholder loans can prevent either socially undesirable or desirable rescue attempts. One could conclude that costs and benefits from subordination of shareholder loans should be summed up in order to conclude whether it is generally beneficial or detrimental.[52] However, as actual effects depend largely on idiosyncratic variables within the particular firm, one should focus on identifying criteria under what circumstances a rescue attempt should be rewarded or penalized. This depends on the values of the exogenous variables of the model, most of all the two variables which probably can probably be most easily verified by a court, namely the outstanding debt (P) and the potential ex ante liquidation value (L), and also the distribution of $\widetilde{A}$.

First, consider the case where the firm is not overindebted yet ($P < L;$ above section 4.3). As we have seen in table 1, an amount of up to P is not internalized, i.e. the portion of liquidation value going to creditors. Only its absolute value is relevant, but not what proportion of liquidation proceeds $L,$ as long as L still exceeds $P.$ As stated above, beneficial rescue attempts will happen in any case, along with some detrimental ones, some of the latter being prevented by subordination. There will still be some Type I errors, since internalization is incomplete.

The situation is more complicated when the shareholder loan is the firm's debt is already under water ($P > L$; above section 4.4). As shown by table 2, shareholders do not capture benefits used to cover debt, i.e. when the outcome is between P and $L.$ A larger debt of P (relative to L) thus aggravates the problem of non-internalization of benefits: When more of the rescue benefits go to creditors, the risk of the shareholder foregoing beneficial rescues increases. This may result in Type II errors, where beneficial rescue attempts do not take place.

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[52] For such an approach see e.g. Bebchuk (1994) (discussing whether parties acquiring control of a listed company should be required to make a mandatory bid to minority shareholders).

On the cost side, the shareholder does not internalize the risk of dissipation of liquidation value *L,* since he would normally not get any of it. A change of *L* relative to *P* is not directly relevant here, but a larger *L* generally increases the problem of the shareholder not internalizing cost. Again, this may result in detrimental rescue attempts taking place (i.e. Type I errors).

Thus, the effect of an increase or decrease in *L,* or the specific ratio to *P,* actually tells us little about the benefits of subordination in the second group of cases. Effects are indeterminate: Although changes in *L* work in opposite directions on the benefit and cost sides, their actual impact depends on the distribution of $\tilde{A}$, which determines which amount of *L* may be lost.

5.3. Ex ante effects on interest

One issue that his been avoided so far is how subordination of shareholder loans affects the interest rate demanded by external creditors at t=0, and what effects it has on efficiency. The model describes the incentives of shareholders to attempt a rescue under the assumption of an exogenous amount of debt *P,* i.e. only the situation ex post in period t=1. However, creditors may anticipate the lower probability of being harmed by risk enhancement (which may include both ex post efficient and inefficient rescue attempts). Subordination of shareholder loans to some degree prevents an increase in risk and thus reduces agency costs of debt.[53]

Hence, one would expect the creditor to reduce his risk premium and content herself with a lower interest rate if there is subordination. The formal analysis in section 4 would be affected by a lower repayment amount *P.* While this does not affect the ex-post efficiency calculus analyzed above, which does not depend on *P* (see (1)), a lower *P* (because of subordination) will affect the shareholder's incentives to engage in risk-enhanced rescue attempts, which, however, again depends on whether the firm is already overindebted or not: If it is not, there will be a reduced in-

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[53] See generally Jensen and Meckling (1976), p. 333 et seq.

centive (compared to a situation where subordination does not affect the interest rate) to engage in inefficient rescue attempts, as (5) shows. As can be seen in table 1, the reason for this is that the shareholder does not internalize social costs of a maximum of *P* (depending on the distribution of outcomes). In those cases, the interest effect enhances the deterrent effect for rescue attempts and reduces the number of Type I errors.[54]

However, if the firm is already overindebted, the interest effect goes the other way: As shown by (8), a lower *P* (because of a lower interest rate) will increase the incentive to attempt a rescue. The reason here can be seen in table 2: As the shareholder does not internalize a benefit of up to *P* – *L*, a decrease in interest rate will reduce non-internalized benefits: Thus, the incentive to engage in rescue attempts will be higher. The interest effect will counter the deterrent effect of subordination to some degree. In the cases shown in Figures 3 to 5, the incentive threshold would be a bit farther to the right than if interest rates were unchanged.

As a general matter, it seems safe to assume that the effects on interest will typically be very low. First, some groups of creditors will typically not adjust their interest rates, such as tort creditors, the government, creditors with small claims (where the cost of investigating the risk structure will exceed benefits), and even others, if they fail to foresee the potential risk.[55] From an ex ante perspective, rescue attempts financed by shareholder loans are likely to be a relatively small issue, about which it may be individually beneficial to remain rationally ignorant. One rationale sometimes brought forward for the German equity substitution doctrine is the information asymmetry

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[54] Also, the shareholder's loss of insolvency quote will be a bit greater.
[55] Cf. Bebchuk and Fried (1996), p. 882 et seq.

between controlling shareholders and creditors:[56] the argument could be understood in this context.

Assuming that such a situation as described in the model for time t=1 occurs only with probability q (where $0<q<1$) – in all other cases the development of the company is good enough not to require additional contributions in the first place – the marginal change in interest will be reduced from –*P'* (which would be expected if t=1 would be reached with <u>certainty</u>) to $-P' \cdot q$. This will suffice to compensate the creditor for her risk; good states of the world will cross-subsidize bad ones, but the value of *P* will be identical in all of them in the ex post calculus. Generally, one cannot presume that this adjustment would lead to an ex ante efficient solution in either case: the general underinvestment problem in the presence of risky dept[57] persists.

6. Risk preferences and the interests of other stakeholders

So far, risk preferences of shareholders and creditors have not been addressed. One would expect the shareholder of a closed corporation to be more risk-averse than e.g. a bank giving a loan, since his share will often make up a large proportion of his wealth. This might indicate that a shareholder will frequently act too cautiously when deciding whether to continue operations by granting a shareholder loan. However, if shareholders are subject to loss aversion – meaning that they seek risk when making choices to avoid losses[58] – this effect would be balanced or even reversed. By contrast, this will be different if the shareholder making a loan, other than in the model here, holds only a small minority or is the firm's bank which is also holding some shares.

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[56] E.g. Hommelhoff (2002), note 1.1.; but see In re Lifschultz Fast Freight, 132 F.3d 339, 346 (7th Cir. 1997) (US subordination case assuming that third-party creditors will, except in cases of outright fraud, be able to inform themselves by inspecting the company's records).
[57] See generally Myers (1977).
[58] See generally Kahneman and Tversky (1979).

It suffices to say, that, ideally one should want courts to have the latitude and capability to consider these effects.

Conceivably, constituencies other than shareholders and creditors could have an impact on the analysis, e.g. employees who made human capital investments in the past,[59] which they stand to lose if the company is wound up. Similar arguments can be made for other stakeholders.[60] If those factors are not neglected, an inefficiently low number of rescue attempts will ensue, because shareholders will not internalize other constituencies' (quasi-)rents. This is another factor making the creditworthiness criterion, which is discussed in more detail below, problematic. The presence of such quasi-rents would suggest a relatively more tolerant approach to rescue attempts.

7.   Delineating the optimal scope of subordination

7.1. The merits of the "creditworthiness" criterion

Since subordination cannot generally be described as beneficial or detrimental, one possible approach would be to subordinate shareholder loans only, in order to destroy incentives, where a rescue attempt would be economically inefficient. As the model shows, subordination cannot prevent all undesirable attempts, and they are even efficient attempts which the shareholder will not initiate, even without any risk of subordination. Some desirable rescue attempts can at least be encouraged by limiting the scope of application, which would be one possibility for legal reform.

Following Figure 4, a subordination doctrine should thus only apply in cases to the right of the efficiency threshold of $E(\widetilde{A}) - L$ to create the right incentives. According to (6), a rescue attempt

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[59] See generally Williamson (1985), p. 242.
[60] On specific investments in corporations by other constituencies see e.g. Williamson (1985), p. 307 et seq.

is efficient where $E(\tilde{A}) > L + D$ applies. The resulting solution is trivial from a theoretical per-

spective: A court deciding ex post in a case of insolvency should make subordination dependent

on whether the rescue attempt, from the perspective of the time when the shareholder loan was

given, resulted in an expected value of the company's total assets $E(\tilde{A})$ which was higher than

liquidation value L plus the necessary investment of D.

Obviously, this does not correspond to the "creditworthiness" criterion applied under German

law. It requires the court, which observes the loan actually given by the shareholder, to assess

whether a hypothetical third party creditor would have given it under the observed terms and

conditions (including the interest rate). In other words, the court needs to ask whether the interest

rate was appropriate to actual risk.

To compare the validity of creditworthiness with a criterion basing subordination on the

(in)efficiency of the rescue attempt, assume that the court observes a stipulated amount of repay-

ment of D, a portion of which is interest i; originally the shareholder gave an amount of $D - i$ to

the corporation. To compensate, a hypothetical creditor would have expected to receive either a

liquidation quota or a repayment of D. He would have given that amount only if his expected

repayment (left side of the condition below) exceeded the amount originally given (right side):

$$E\left[Min\left(D, \tilde{A} \cdot \frac{D}{P + D} \right) \right] > D - i$$

This can be rewritten as

$$D < E\left[Min\left(D, \tilde{A} \cdot \frac{D}{P + D} \right) \right] + i \qquad (9)$$

However, under (6) a rescue attempt is efficient if

$$D < E(\tilde{A}) - L \qquad (10)$$

By subtracting the right side of (9) from the right side of (10), we can see by which amount the creditworthiness criterion is too restrictive:

$$E\left(\tilde{A}-D \mid \tilde{A} \geq P+D\right)\cdot prob\left(\tilde{A} \geq P+D\right)+E\left(\frac{P}{P+D}\cdot \tilde{A} \mid A < P+D\right)\cdot prob\left(\tilde{A} < P+D\right)-L-i \quad (11)$$

The differences are summarized in table 3:

Criterion	"Creditworthiness"	"Efficiency"	Difference
Upside (weighed by probability)	D	$\tilde{A}$	$\tilde{A}-D$
Downside (weighed by probability)	$\tilde{A}\cdot\dfrac{D}{P+D}$	$\tilde{A}$	$\tilde{A}\cdot\dfrac{P}{P+D}$
Liquidation value	0	L	(L)
Interest	i	0	(i)

Table 3: Comparison of the "creditworthiness" criterion to an "efficiency" criterion

Obviously, there are a number of divergences. First, it can be seen that in the most positive states of the world, where the realized amount $\tilde{A}$ exceeds debt (including the new loan), social gains of $\tilde{A}-D$ (weighed by their probability) are ignored. While a hypothetical third-party creditor would base her analysis on her own repayment amount D, $\tilde{A}$ is crucial for the efficiency threshold. A creditor is only interested in her own risk resulting from the rescue attempt, but socially, advantages accruing to the shareholder should also be taken into consideration.[61] Under the creditworthiness criterion, positive states of the world are thus inadequately considered, as a third-party creditor would not share in the gains.

Second, as shown by the difference of $\tilde{A}\cdot\dfrac{P}{P+D}$, even on the downside (or, for the matter, not-quite-"upside" states where something is gained for creditors, but not enough to leave a profit for shareholders), the criterion considers only the bankruptcy quota assigned to the hypothetical

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[61] On this classical conflict of interest resulting from risky debt, see Myers (1977), p. 57.

third-party creditor, but not the amount accruing to old creditors, even though it will also be determined by the success of the rescue attempt.

Third, the creditworthiness analysis completely fails to assess what a rescue attempt has to compare to, namely the liquidation value *L,* which determines whether it is desirable or not. In that respect, the creditworthiness criterion is not too restrictive, but too liberal. This comes to bear most strongly when *L* is high in relation to the potential advantages: In such cases, the creditworthiness criterion will cause the subordination doctrine to be applied too rarely, even though the danger of the destruction of value to the detriment of creditors is highest. Fourth, the creditworthiness criterion looks at the interest rate actually charged, which does not bear a relation to efficiency.

Overall, a creditworthiness analysis, even if properly conducted, misses efficiency on multiple counts. However, whether it will generate rather "Type I" or "Type II" errors is indeterminate, as the factors point in different directions. Also, as has been pointed out above, quasi-rents of other constituencies are also ignored.

7.2. Financial ratios

The criteria set out in the Austrian Equity Substitution Act of 2003 are equally problematic. Shareholder loans will be subordinated where the corporation is either insolvent or overindebted under insolvency law[62], or, alternatively, where the equity ratio is less than 8%, and the time it would hypothetically take to repay all debt is more than 15 years.[63] Usually, that criterion will be fulfilled even before a company becomes insolvent. Even though the presumption of a crisis can

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[62] § 66 and § 67 of the Austrian Insolvency Act (*Konkursordnung*).
[63] (§ 2 Abs 1 EKEG). Those ratios are precisely set out in §§ 23, 24 of the Business Reorganization Act (*Unternehmensreorganisationsgesetz*, öBGBl I 1997/114), which refers to the balance sheet layout under the Commercial Code (§ 224 öHGB, corresponding to § 266 dHGB). In the latter case, the shareholder giving the loan must, in addition to this, know that the criteria are fulfilled, or it must be obvious to him (§ 2 Abs 2 Z 3 EKEG).

be rebutted where those ratios are met,[64] schematic criteria such as this can only provide a very crude approximation to reality.

Of course, accounting ratios can provide important insights on a company's financial status, but as legal thresholds, they are too inflexible to be able to take account of what would create efficient incentives in particular firms. There are also arguments in favor of schematic criteria, such as the problem of a lack of knowledge about case law among owners and managers – which could distort economic incentives –[65], and the danger of judicial mistakes in assessment in the case of an abstract standard ex post.[66]

However, even if financial ratios could, as a general matter, tell us something about the incentives created for shareholders under the circumstances of the model described here, there would be the additional complication that the actual ratios would be influenced by what proportion of the company the shareholder owns. The reason for this is the fact that a small shareholder giving a loan overproportionally shares in the costs of the rescue attempt (*D*), but not in the potential gains. While loans given by small shareholders are therefor more likely to be efficient than others,[67] financial ratios could only tell as something about the shareholder's incentives if made dependent also on the firm's share ownership structure.

7.3. Subordination of inefficient shareholder loans only?

Given this assessment, new seem desirable. A rather radical approach would be to potentially subject every shareholder loan to subordination and require courts to examine them under the ex

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[64] Shareholder loans are not subordinated when the company did not require „reorganization" within the meaning of the Business Reorganization Act.
[65] Cf. Kaplow (1992), p. 572 (pointing out that informing oneself on abstract standards is more expensive than on bright-line rules). With respect to subordination of shareholder loans, this issue is discussed by Claussen (1992), p. 152 et seq.; Schummer (2000), p. 3 (both pointing out that businessmen frequently are unaware of the possibility of the subordination of shareholder loans).
[66] Cf. Hommelhoff (2002), note 1.1 (stating that even many German lawyers find the case law on *Eigenkapitalersatz* hard to comprehend).
[67] Engert (2004), p. 836.

ante efficiency criterion proposed here. Most likely, one would have to make subordination dependent on two cumulative criteria: First, in spite of the finding that subordination is beneficial for loans given when liquidation value still covers debt, there is probably some necessity for restriction, also in view of the fact that it rests on the assumption that the only alternative to a rescue attempts is a certain liquidation value. In that context, limiting subordination to loans given in circumstances where the firm would have been legally required to file for bankruptcy. This is also linked to the observation that courts are often reluctant to ex post second-guess managerial business judgment.[68] That problem is somewhat mitigated when there are few alternatives left.

Second, and more importantly, a loan given under such circumstances should be subject to an "ex ante efficiency test." A shareholder loan would fail the test when the excepted value of total assets after a rescue attempt results in a reduction vis-à-vis the hypothetical liquidation value at the time when the loan was made. If an increase in the going concern value after the rescue was to be expected, the shareholder-creditor should be treated like a third-party creditor in bankruptcy. Otherwise, if the creditor is punished in bad states of the world, even where the rescue attempt was desirable, an inefficient disincentive is the result.

Effectively, this would mean that rescues financed by shareholder loans should not be penalized where the benefits to shareholders exceed the costs to creditors. Such an approach might equally apply to loans given by shareholders before the onset of a crisis and not withdrawn in time (which are also subject to *Eigenkapitalersatz* under German law[69]). If shareholders can withdraw

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[68] *Cf.* the US business judgment rule. *See e.g.* Gagliardi v Trifoods International Inc., 682 A.2d 1049 (Del. Ch. 1996) (stating that excessive second guessing would cause overcautious behavior among risk-averse managers). The German Supreme Federal Court has shown sympathy for this approach in the ARAG/Garmenbeck decision, BGH 21.4.1997, II ZR 175/95, BGHZ 135, 244.

[69] Cf. Lutter and Hommelhoff (2000), § 32a/b, notes 45 et seq. By contrast, § 3 Abs 1 Z 3 of the Austrian EKEG explicitly excludes debt taken out before a crises from subordination.

loans at time t=1 (which is assumed by the law), the formal analysis would be identical to the one in this paper.

7.4. Penalties for inefficient rescue attempts

However, one is left to ask whether subordination of loans as such is really a sound strategy to prevent socially undesirable rescue attempts. The approach described in the previous section would eliminate the problem of "Type II errors", i.e. the deterrence of desirable rescue attempts, while preserving the deterrence of some, but not all "Type I errors". As the formal discussion has shown, some undesirable rescue attempts will still take place, because shareholders, whether there is subordination or not, will not internalize all social costs, the deterrent effect of subordination being too small.

The obvious solution is that, assuming that courts can identify rescue attempts that were inefficient ex ante, there is no reason why one should not employ stiffer penalties to deter them. For example, inefficient risk-enhancing conduct of that kind could be held to give rise to veil piercing, which would result in shareholder liability going beyond the mere loss of an insolvency quota for the loan. As a matter of theory, this approach seems preferable.

The decisive question both for the approach discussed in the previous section and this one is whether courts can verify efficiency. There are good reasons to believe that it would not be more difficult to ascertain than the creditworthiness criterion of German law. In both cases, the court, or a court-appointed expert, needs to assess the possible payoffs and their probabilities resulting from a rescue attempt as they appeared ex ante. The significant difference is only that, with respect to creditworthiness, it only needs to assess in what states of the world debt would be cov-

ered. In the alternative approach, one would also have to estimate what the potential upside pay-offs would have been.[70] However, in terms of required data, both approaches seem very similar. Moreover, courts in several common law jurisdictions have begun to recognize fiduciary duties towards creditors when a company is approaching bankruptcy.[71] Generally, where a company's insolvency is inevitable, the assessment of business judgments is probably less complex. More specifically, one could understand shareholders giving loans to the company and putting creditors at risk as subjects of such fiduciary duties, and hence made liable for damages, which would go beyond the mere subordination of loans.

8. Conclusion

The analysis of the incentive effects of the subordination of shareholder loans shows that there is a potential danger of preventing either efficient and inefficient rescue attempts by subordination of shareholder loans. In order to prevent "Type II errors", i.e. to avoid deterring desirable rescues, the doctrine should not apply to ex ante inefficient attempts, which would require an assessment whether a rescue attempt resulted in an ex ante expected total value of the company larger than its liquidation value at that time. The "creditworthiness" criterion currently applied under German law appears too broad under this analysis, and specific financial ratios as prerequisites for subor-dination also seem problematic.

In some cases, subordination creates insufficient deterrence against "Type I errors", meaning that undesirable rescue attempts will still take place. Policymakers should consider stiffer penalties (e.g. in the form of veil piercing) in such instances.

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[70] Furthermore, as can be seen in section 7.1, the liquidation value would have to be estimated.
[71] Walker v. Wimborne, (1976) 50 A.L.J.R. 446 (Australia); Nicholson v. Permakraft (NZ) Ltd., [1985] 1 N.Z.L.R. 242 (New Zealand); West Mercia Safetywear Ltd v Dodd and Another, [1988] B.C.L.C. 250; Brady v. Brady, (1987) 3 BCC 535 (both England); Credit Lyonnais Bank Netherlands, N.V. v. Pathe Communications Corporation, 1991 Del. Ch. LEXIS 215 at n. 55 (Dec. 30, 1991) (Delaware).

References

Bebchuk L.A. & Fried J.M. (1996). The Uneasy Case for the Priority of Secured Claims in Bankruptcy, *Yale Law Journal, 105*, 857-934.

Bebchuk L.A. (1994). Efficient and Inefficient Sales of Control, *Quarterly Journal of Economics, 109,* 957-993.

Berlin M. & Mester L.J. (2001). Lender Liability and Large Investors, *Journal of Financial Intermediation,* 10, 108-137.

Böckli P., Forstmoser P. & Rapp J.-M. (1999). Expertenbericht zum Vorentwurf für eine Reform des Rechts der Gesellschaft mit beschränkter Haftung (Vernehmungsunterlage vom April 1999), available at http://www.ofj.admin.ch/themen/gmbh/vn-ber-d.pdf).

Brealey R.A. & Myers S.C. (2003). *Principles of Corporate Finance,* 7th ed., Boston, McGraw-Hill.

Bruckmüller M. (2004). Eigenkapitalersatz in Slowenien, in: Kalss S. & Rüffler F., *Eigenkapitalersatz im österreichischen, italienischen und slowenischen Recht,* Vienna, Linde, *69-85.*

Clark R.C. (1986). *Corporate Law,* Boston, Little Brown.

Claussen C. P. (1992). Betriebswirtschaft und Kapitalersatzrecht, in: Moxter A., Müller H.-P.. Windmöller R. & v. Wysocki K., *Rechnungslegung. Entwicklungen bei der Bilanzierung und Prüfung von Kapitalgesellschaften, Festschrift zum 65. Geburtstag von Professor Dr. Dr. h.c. Karl-Heinz Forster,* Düsseldorf, IDW-Verlag, 139-154.

Claussen C.P. (1994). Zeitwende im Kapitalersatzrecht, *GmbH-Rundschau 85,* 9-15.

Claussen C.P. (1996). Die GmbH braucht eine Deregulierung des Kapitalersatzrechts, *GmbH-Rundschau, 87,* 316-327.

Claussen C.P. (2003). Book Review, *Zeitschrift für das gesamte Handels- und Wirtschaftsrecht 167,* 494-499.

Drukarczyk J. (1995). Gesellschafterdarlehen, Rechtsprechungsgrundsätze des BGH und § 32a GmbHG – Einige kritische Anmerkungen, in: Elschen R., Siegel T. & Wagner F.W., *Unternehmenstheorie und Besteuerung, Festschrift zum 60. Geburtstag von Dieter Schneider,* Wiesbaden, Gabler, 171-202.

Engert A. (2004). Die ökonomische Begründung der Grundsätze ordungsgemäßer Unternehmensfinanzierung, *Zeitschrift für Unternehmens- und Gesellschaftsrecht, 33,* 813-841.

Fischer T.R. (1996). Gläubigerschutz durch eigenkapitalersetzende Gesellschafterdarlehen? in: Sadowski D., Czap H. & Wächter H., *Regulierung und Unternehmenspolitik. Methoden und Ergebnisse der betriebswirtschaftlichen Rechtsanalyse,* Wiesbaden, Gabler, 179-195.

Götz A. (2001). *Juristische und ökonomische Analyse des Eigenkapitalersatzrechts,* Nomos, Baden-Baden.

Grunewald B. (1996). Plädoyer für einen Abschaffung der Rechtsregeln für eigenkapitalersetzende Gesellschafterdarlehen, *GmbH-Rundschau, 88*, 7-10.

Harris S.L. & Mooney C.W. (1994). A Property-Based Theory of Security Interests: Taking Debtors' Choice Seriously, *Virginia Law Review, 80,* 2021-2072.

Herzog A.S. & Zweibel J.B. (1961). The Equitable Subordination of Claims in Bankruptcy, *Vanderbilt Law Review, 15,* 83-113.

Hommelhoff P. (2002). Grundstrukturen im Recht des Eigenkapitalersatzes, in: von Gerkan H. & Hommelhoff P.: *Handbuch des Kapitalersatzes,* Cologne, RWS-Verlag, 1-17.

Hommelhoff P. (2002a). Eigenkapitalersatz und Unternehmensfinanzierung, in: von Gerkan H. & Hommelhoff P.: *Handbuch des Kapitalersatzes,* Cologne, RWS-Verlag, 19-37.

Jensen M.C. & Meckling W.H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics, 3,* 305-360.

Kahneman D. & Tversky A. (1979). Prospect Theory: An Analysis of Decision under Risk, *Econometrica, 47,* 263-292.

Kalss S. & Eckert G. (2004). *Zentrale Fragen des GmbH-Rechts,* Vienna, Linde.

Kaplow L. & Shavell S. (2001). Fairness versus Welfare, *Harvard Law Review, 114,* 961-1388.

Kaplow L. (1992). Rules versus Standards: An Economic Analysis, *Duke Law Journal, 42,* 557-629.

Klaus H. (1994). *Gesellschafterfinanzierung und Eigenkapitalersatzrecht bei der Aktiengesellschaft und der GmbH,* Peter Lang, Frankfurt.

Klaus H. (1994a). Gesellschafterdarlehen, Eigenkapitalersatzrecht und Fortführung einer nicht mehr fortführungswürdigen GmbH, *Zeitschrift für Bankrecht und Bankwirtschaft, 6,* 247-257.

Koppensteiner H. (1998). Kritik des „Eigenkapitalersatzrechts", *Die Aktiengesellschaft, 43,* 308-317.

LoPucki L.M. (1994). The Unsecured Creditor's Bargain, *Virginia Law Review, 80,* 1887-1965.

Lutter, M. & Hommelhoff, P. (2000). *GmbH-Gesetz*, 15th ed., Cologne, Dr. Otto Schmidt.

Myers S.C. (1977). Determinants of Corporate Borrowing, *Journal of Financial Economics, 5,* 147-175.

Parrella L. (2000). *Versamenti in denaro dei soci e conferimenti nelle società di capitali,* Milano, Giuffrè Editore .

Posner R.A. (2003). *Economic Analysis of Law,* 6th ed, Boston, Little Brown.

Schummer G. (1998). *Das Eigenkapitalersatzrecht. Notwendiges Rechtsinstitut oder Irrweg?*, Vienna, Orac.

Schummer G. (2000). Die Gegenwart und ungewisse Zukunft des Eigenkapitalersatzrechts, *Der Gesellschafter, 29,* 246-252.

Schwarcz S.L. (1997). The Easy Case for the Priority of Secured Claims in Bankruptcy, *Duke Law Journal, 47,* 427-489.

Smith C.W. & Warner J.B. (1979). On Financial Contracting. An Analysis of Bond Covenants, *Journal of Financial Economics, 7,* 117-161.

Stulz R.M. & Johnson H. (1985). An Analysis of Secured Debt, *Journal of Financial Economics, 14,* 501-521.

Tantini G. (2004). I versamenti dei soci alla società, in Colombo G.E. & Portale G. B., *Trattato delle Società per Azioni,* Torini, UTET, Vol. 1/3, 743-800.

Trindade R.T. (2000). Les prêts remplaçant les fonds propres, in: Foëx B. & Thévenoz L., *Insolvence, désendettement et redressement. Etudes réunies en l'honneur de Louis Dallèves* Bâle, Helbing & Lichtenhahn, 371-386.

White M. J. (1980). Public Policy toward Bankruptcy: Me-First and Other Priority Rules, *Bell Journal of Economics, 11,* 550-564.

White M. J. (1994). Corporate Bankruptcy as a Filtering Device: Chapter 11 Reorganizations and Out-of-Court Debt Restructurings, *Journal of Law, Economics and Organization, 10,* 268-295.

Williamson O.E. (1985). *The Economic Institutions of Capitalism,* New York, Free Press.