INSEAD EMBA Implementation Essay

THE IMPACT ON SHAREHOLDER VALUE

OF DEBT WITH PROTECTIVE COVENANTS AND SECURITY PACKAGE

Field: Corporate Finance

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INTRODUCTION

A corporate borrower seeking a loan to finance its activities may receive different loan offers which, for the same amount and repayment schedule, may provide for different interest rates as a result of differences in the protective covenants and security package requested by the lender.

After describing (**1**) the covenants and security package that a bank may request in exchange for a lower interest rate, we shall discuss (**2**) their impact on the drivers of shareholder value: WACC, ROIC, and the ability to raise additional capital to sustain growth greater than the self-sustainable rate.

1 PROTECTIVE COVENANTS AND SECURITY PACKAGE

In exchange for a lower interest rate, banks will typically ask for (**1.1**) stricter protective covenants and (**1.2**) a broader security package.

1.1 Protective covenants

Protective covenants, which may be negative or affirmative, aim at reducing the threat of (**a**) potential claims from other creditors, (**b**) a reduction of the value of the borrower's assets, or (**c**) both.

(a) Covenants protecting against potential claims from other creditors

These include:

(i) undertakings to refrain from taking debt other than so-called "junior" or "subordinated" debt (the repayment of which – and sometimes also the payment of interest in respect of which – is subordinated to the repayment of the "senior" bank debt pursuant to an inter-creditor deed);

(ii) undertakings limiting the borrower's freedom to hire employees, it being noted that a lender will prefer to lend to a company with no employees from the start, such as:

(A) a group's holding company (or "holdco") or real estate owning subsidiary (or "propco") other than the group's operating company (or "opco") having the contracts with the employees;

(B) in case of project financing, a new company formed for the very purpose of carrying this specific project (a "specific purpose vehicle" or "SPV").

(b) Covenants protecting against a reduction of the value of the borrower's assets

These include:

(i) undertakings to refrain from making distributions;

(ii) undertakings to refrain from selling assets below a certain price, to keep assets in a good state of maintenance and repair, or to properly insure assets;

(iii) undertakings to operate assets in a certain way to ensure sufficient and stable cash inflows, such as undertakings to rent real estate assets only to companies presenting a certain rating and according to leases having a given firm period (i.e., the period during which the tenant cannot break a lease);

(iv) undertakings to hedge all or part of the variable-rate interest payable under the loan;

(c) Covenants targeting both threats

These include undertakings to comply with certain ratios, backward-looking or preferably forward-looking, such as:

(i) loan-to-value ("LTV") ratios,

(ii) interest coverage ratios ("ICR"),

(iii) debt service coverage ratios ("DSCR").

1.2 Security package

The security package may consist of both (**a**) *in rem* security ("security in the asset") over the borrower's assets (or "collateral") and (**b**) security granted by a third party (e.g., a parent company), which may be either *in personam* security ("security in the person") or *in rem* security. The former

(together with subordination and excess credit spread) are also known as internal credit enhancements and the latter as external credit enhancements.

(a) *In rem* security over the assets of the borrower

This may take the form of (the terminology may slightly vary from one legal system to another):

(i) mortgage over real property, which in some countries have a very important cost[1];

(ii) pledge over tangible personal property, whether inventories or equipment;

(iii) pledge over shares, intellectual property, and other intangible personal property;

(iv) pledge over or security assignment[2] of receivables, including trade receivables and receivables in respect of the credit balance of bank accounts;

(v) pledge over cash transferred to the lender.

These security interests may take the form of either:

(i) "fixed" charges that attach only to existing collateral (not future collateral) and generally remain attached even after the collateral is sold to a third party in breach of a covenant, or

(ii) "floating" charges that attach to not only existing but also future collateral but which does not remain attached to collateral that is disposed of before "crystallisation" of the charge (following default).

In rem security over the assets of the borrower is a form of internal credit enhancement, like subordination (which is tantamount to a security interest over all the borrower's assets but effective only against the subordinated creditors bound by the relevant inter-creditor deed) and excess credit spread.

Some *in rem* security may be resilient to insolvency proceeding undergone by the relevant borrower.[3]

(b) *In personam* and *in rem* security granted by a third party

In personam security consists in an *undertaking* of a third party, including a parent company, to pay certain sums to the lender (or to pay such sums to the borrower so that the latter may honour its debt toward the lender), such as:

(i) suretyship guarantees (e.g., "*I undertake to pay you what this person owes you within such limit*");

(ii) autonomous (also called "first demand") guarantee (e.g., "*I undertake to pay you a given sum of money upon first demand by you, which shall be accompanied by certain documents*");

(iii) letters of comfort (e.g., "*I undertake to make sufficient capital contributions and/or shareholder loans to my subsidiary so that it may service its debt toward you*"),

(iv) credit insurance (including any insurance purchased in the from of a credit default swap).

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[1] In France, the cost of a regular mortgage is approximately 1.25% of the secured amount. The cost is reduced to approximately 0.5% if the collateral property is acquired with the secured loan.

[2] In France, the French-law mechanism of "delegation", whereby a borrower acting as delegator delegates a person against whom it has a receivable for the payment of bank debt, is also used for rendering the borrower's receivable against a delegate "unavailable" to this borrower's other creditors.

[3] In France, there are up to 3 different kinds of insolvency proceedings in addition to pre-insolvency proceedings. Whether a creditor may enforce a given security interest, as well as the rank of the claim secured by such security interest compared to other preferred claims, will depend on both the type of proceeding, the type of security interest (e.g., collateral consisting of cash and cash receivables can *almost* always be foreclosed), and the person who requests that the collateral be disposed of (if it is the administrator or liquidator, creditors of certain security interests may invoke a right of retention enabling them to bypass otherwise preferred creditors such as employees).

Furthermore, a third party can provide *in rem* security over its assets (e.g., a parent may pledge its shares in the borrower or its subordinated loan receivables against the borrower) as security either for its own obligations under an *in personam* security or directly for the borrower's obligations under the relevant facility. When the third party is a parent, the latter form of security may be preferred in order to avoid "thin capitalisation" tax rules prevailing in the relevant country, which may limit a borrower's ability to deduct interest paid to banks where such debt is guaranteed by an affiliated company.[4]

Any security granted by a third party will be considered as an external credit enhancement and may usually be enforced even after the borrower seeks bankruptcy protection[5].

2 IMPACT ON SHAREHOLDER VALUE

Shareholder value can be measured by reference to the market value added ("MVA"), which corresponds for an unlisted company to the sum of the present value of each future period's expected economic value added ("EVA"), each EVA value being calculated as follows:

$$EVA = (ROIC - WACC) \cdot \text{invested capital}$$

where "ROIC" means the after-tax return on invested capital and "WACC" means the weighted average cost of capital.

We shall examine hereafter the impact of protective covenants and security package on these drivers of shareholder value: (**2.1**) WACC, (**2.2**) ROIC and, (**2.3**) growth through increasing invested capital.

2.1 Impact on the WACC

WACC can be calculated according to the following formula:

$$WACC = [(1- t_C)\cdot k_d \cdot D/(E+D)] + [k_e \cdot E/(E+D)]$$

where "k_d" means the before-tax cost of debt, "t_C" means the marginal tax rate, "k_d" means the cost of equity, "D" means the market value of debt, and "E" means the market value of equity.

We shall discuss hereafter (**a**) the impact of protective covenants and security package on the cost of debt, (**b**) the impact of the cost of debt on the cost of equity, and (**c**) the impact of covenants and security package on the borrower's ability to increase or maintain the current leverage ratio of D/E ("ϕ").

(a) Impact on the cost of debt

Protective covenants and security package impact the cost of debt in two ways: they tend to (i) reduce the applicable interest rate but also (ii) increase the legal and security costs that must be taken into account when calculating the cost of debt.

(i) Impact on the interest rate

A loan with protective covenants and security package will carry less default risk (which is a downside-only option-like risk unlike equity risk), which will translate into a lesser premium being added to the risk-free rate of return[6] according to the credit risk models used by the relevant bank (i.e., more likely a mix of the classical Merton model or other structural default model and a reduced-form model assuming

[4] In France, in case of bank debt guaranteed by a parent company other than a share pledge or shareholder loan receivable pledge, only the interest relating to the portion of the debt not exceeding 150% of the borrower's equity can be deducted unless other « thin cap » ratios are met.

[5] In France, for instance, guarantees granted by individuals (as opposed to corporate entities) are suspended in case of the opening of so-called safeguard proceedings, which is one of the 3 types of insolvency proceedings available. Corporate guarantors can however attempt to have safeguard proceedings extended to them, like in the famous recent *Coeur Defense* case.

[6] Of course, offered interest rates may also vary as a result of the different models used by the banks for assessing the various risks: (1) the default risk, which depends on the assessment of all of the so-called "four Cs of credit analysis" - character, covenants, collateral, and capacity – and not just the second and third; (2) the interest rate risk; (3) the prepayment risk, which is the risk that the borrower exercises the prepayment option imbedded in the loan (the present value of the option being calculated and then spread, at a certain compounding rate, over the term of the loan); (4) the liquidity risk, which is the risk that the lender cannot dispose of its loan receivable at its market value.

an exogenous default rate or intensity). It goes beyond the scope of this paper to discuss these models but it can be safely said that:

(A) protective covenants reduce the expected probability of a default occurring (the "probability of default" or "PD" variable), inasmuch they put limits on the company's business and/or financial risks, and in doing so they also reduce the expected fraction of debt that will not be recovered should a default occurs (the "loss given default" or "LGD" variable),

(B) the security package primarily impacts on LGD, given that security interests essentially enable their beneficiary to be paid either in priority to other creditors (in case of *in rem* security granted by the borrower) or by someone else who will be stuck with an unpaid indemnity claim against the debtor (in case of third party security).

(ii) Calculation of the cost of debt

The before-tax cost of debt (k_d) corresponds to the absolute (i.e., non negative) value of the internal rate of return ("IRR") of the various expected cash flows from the borrower's perspective, namely:

(A) the initial inflow corresponding to the net loan proceeds after having deducted all arrangement (and assimilated) fees, lawyers' fees, and costs of taking security, but ignoring premiums paid by the borrower for buying an interest hedging cap or damage or professional liability insurance required by the lender (in order to reduce the borrower's financial and business risks respectively) inasmuch as they have an intrinsic value[7] for the borrower;

(B) the forecasted outflows corresponding to the interest payments at the relevant fixed rate or variable rate, it being noted that any future variable rate could be estimated by using interest swap rates as proxies;

(C) the forecasted outflows corresponding to the principal repayment(s).

Loans with greater protective covenants and security package will therefore entail the following additional cash outflows that must be considered when calculating k_d:

(A) the additional legal fees for preparing and negotiating a more complex loan documentation;

(B) the costs of registering certain *in rem* security such as mortgage costs;

(C) the cost of not being able to use cash sitting in a required "cash reserve" pledged in favour the lender: the constitution of such cash reserve should be treated as a cash outflow and its release (plus any interest generated by it) as a cash inflow when computing the above-described IRR calculation;

(D) commissions paid to third party guarantors, it being noted that when no commission is paid to a parent guarantor, one should nevertheless take into account the cost of such guarantee for the group[8]; the cost of such guarantee should be equal to its value for the lender but ignoring the risk of the guarantor itself defaulting (because of this risk, the guarantee has less value for the lender than it costs the guarantor, so we must ignore it); this guarantee could be valued the same way as an option using the binominal option pricing model, the underlying asset being the dollar (or other currency) value of the LGD given the amount of the guaranteed debt (the "$LGD").

(b) Impact on the cost of equity

According to the capital asset pricing model, cost of equity (k_e) corresponds to the expected rate of return of equity ($E(r_E)$) given the following equation:

[7] In fact, if it can be easily calculated or estimated, the cost corresponding to the difference between the premium and the true value of the hedging option or insurance could be considered.

[8] The borrowing subsidiary is generally a limited liability type of company, whose shareholders are not liable beyond the capital they injected… unless they issued a parent guarantee.

$$E(r_E) = r_F + ß_E(r_M - r_F)$$

where $ß_E$, the levered beta of equity, corresponds to the covariance between the returns of borrower's equity - given both its business and financial risk - and the returns of *all* assets (using stock market as proxy), divided by the variance of the returns of *all* assets (again using stock market as proxy), and "$(r_M - r_F)$" is the market premium.

Hamada's equation, which combines the capital asset pricing model with the Modigliani-Miller theorem, calculates the levered beta of equity as follows:

$$ß_E = ß_A[1+(1-t_C)\cdot\phi]$$

where $ß_A$, the unlevered beta of equity or beta of assets, corresponds to the covariance between the returns of borrower's equity given its business risk (but excluding its financial risk) – which correspond to the returns of the borrower's assets – and the returns of *all* assets (using stock market as proxy), divided again by the variance of the returns of *all* assets (again using stock market as proxy).

Accordingly to Hamada's equation, two loans with different cost of debt but with the same market value (because the greater default risk in one is compensated by greater premium) should have the same effect on $ß_E$. Hamada's equation therefore not only assumes that financial risk depends only on ϕ whatever the cost of debt but it also underestimates the financial risk by assuming that cost of debt is always equal to the risk-free rate of return[9]. A constant ϕ over time is also assumed.

To address this flaw, many authors have proposed modifications to Hamada's equation. T.E. Conine (*"Debt capacity and the capital budgeting decision: a comment"*, financial Management 1, Spring issue, 1980, p. 20) proposed the following modified version, adding the underlined to the original equation:

$$ß_E = ß_A[1+(1-t_C)\cdot\phi] \underline{- ß_D\cdot(1-t_C)\cdot\phi} \quad , \quad \text{where } ß_D = (k_d - r_F)/(r_M - r_F)$$

It must however be acknowledged that this revised formula is criticised not only because the concept of "debt beta"($ß_D$) does not fit extremely well with the CAPM (credit risk is a downside-only option-like risk unlike equity risk) but also, and more especially, because it causes WACC to decrease as leverage increases, whereas there is consensus that the optimal WACC resides where the marginal increase in the tax shield that would be obtained by increasing leverage further is offset by the additional marginal distress costs.

R.D. Cohen (*"Incorporating default risk into Hamada's equation for application to capital structure"*, Wilmott Magazine, 2007, p. 67) recently proposed the following modified version, replacing D by D*:

$$ß_E = ß_A[1+(1-t_C)\cdot D^*/E]$$

where $D^* = (k_d/r_F)\cdot D$ (i.e., the present value of the interest payments $(k_d \cdot D)$ discounted at r_F)

Although it goes beyond the scope of this implementation essay to discuss in greater detail the metrics of such formula, one thing is sure: the higher the cost of debt resulting from the greater risk of debt with less protective covenants and security, the greater the financial burden, and therefore the greater the cost of equity.

(c) Impact on the ability to optimise the proportions of equity and debt

WACC depends on the borrower's ability to optimise ϕ, which ideally should be such the marginal increase in the interest tax shield that would be obtained by increasing debt further would be offset by the additional (progressive) distress costs.

[9] In practice, for a corporate borrower, cost of debt can approach the risk-free rate of return only if secured by a pledge over cash or over a non-contingent receivable owed by the U.S. (or other similar) government (e.g., a tax refund). Other collateral carry risk (of liquidity, of collateral receivables not being collected, of insolvency proceedings delaying enforcement or granting priority to another creditor…). Debt guaranteed by the U.S. (or other similar) government would also carry an interest rate close to the risk-free rate of return but, in our view, the value of such guarantee should be taken into account (by deducting it from the loan proceeds in the calculation of the IRR) in calculating the true cost of debt.

Protective covenants – especially those limiting borrowings and distributions – can therefore negatively affect the WACC by preventing the borrower from either:

(i) maintaining the initial ϕ after the company's greater than expected earnings (causing E to increase but D to remain the same);

(ii) increasing ϕ further to an increase of the optimal ϕ resulting from either:

(A) an increase in the applicable t_C (which is not an unlikely event given the accumulating social security deficits of most governments of the developed word);

(B) a decrease in financial distress costs, because of changes in the borrower's business (albeit unlikely to be permitted for a loan already preventing changes in the leverage ratio) or, one could argue, financial innovation (recourse to hedging).

2.2 Impact on the ROIC

After acknowledging that (**a**) protective covenants and security package can have a positive impact on ROIC because of the lesser financial distress costs associated with a lesser cost of debt, we shall identify (**b**) their negative effects on ROIC.

(a) Positive impact on the ROIC resulting from lesser financial distress costs

A loan with a higher cost of debt can result in greater financial distress costs in the form of suppliers being less willing to extend credit to the relevant borrower, or customers being less willing to pay in advance for goods and services to be delivered.[10] The following increase in the borrower's WCR/ operating earnings would mathematically hurt the ROIC of the borrower.

Consequently, because loans with stricter protective covenants and a greater security package tend to have a lesser cost of debt, they also tend to have a less negative impact on ROIC because of lesser financial distress costs.

(b) Negative impact on the ROIC

Security interests and protective covenants requiring one (i) to maintain certain assets or (ii) to abide by certain ratios or invest only in certain projects can however have a negative impact on ROIC.

(i) Covenants to maintain certain assets

One should be wary of requests by banks for collateral over, or covenants not to dispose of, either non-operating assets (e.g., cash) or operating assets that the borrower may want to dispose of in the future because they are not generating good enough a return in light with evolutions in its business strategy. In this respect, clauses providing for the borrower's right to replace collateral by new collateral should be negotiated whenever possible.

Although such covenants would theoretically have an impact on ROIC, it may be easier to measure their impact on shareholder value by integrating them in the calculation of the cost of debt as we suggested for cash reserves. For instance, covenants to maintain non-operating assets other than cash (such as art objects) could be integrated in the cost of debt by considering an outflow equivalent to their current market value at the beginning of the loan and an inflow equivalent to their future

[10] Most legal systems attempt to reduce these financial distress costs by creating in favour of suppliers certain liens and preferred claims that may rank ahead of those of the lending bank but these financial distress costs can never be totally eliminated. For instance, suppliers of (at least movable) goods can usually protect themselves by inserting in their general terms and conditions a reserve-of-ownership clause conditioning the transfer of ownership of the sold goods to the payment of their price. Legal "tracing" rules may even allow for the restitution of these assets even if incorporated to other assets by the purchaser (provided that, at least in France, the separation of these assets can be done without damage) and even if mixed with other assets of the same nature. Yet, these legal protections do not completely remove the risk of not being able to obtain the restitution of assets delivered pursuant to such a conditional sale because they could be damaged, firmly incorporated to another asset, or mixed with assets belonging to other conditional sellers.

market value at the end of the loan. The technique however becomes more difficult to apply for operating assets for which there is only a risk that they start producing less return than the WACC as one would have to estimate the present value of the expected resulting loss given the probability of this event occurring.

(ii) Covenants to maintain certain ratios or invest only in certain projects

Covenants requiring a minimum WCR (or a minimum WCR/Sales or WCR/earnings ratio) may obviously have a negative effect on the ROIC. More subtly, ICRs and DSCRs that may remedied by constituting a cash reserve the amount of which is taken into account in the numerator of such ratios can also have a negative impact on the ROIC. The more borrower runs into difficulties translating in a lesser ICR or DSCR, the more it gets into difficulties by having to constitute such cash reserves!

Covenants limiting the projects that the borrower may invest in (e.g., renting real estate property only to tenants who have issued investment-grade bonds) may also have a negative impact on ROIC, it being reminded that whereas a shareholder will approve projects with a greater spread between their return on new invested capital ("RONIC") and their underlying WACC, lenders will always prefer lower but sufficient stable returns.

2.3 Impact on new invested capital

Because EVA is the result of the multiplication of the return spread (ROIC – WACC) by invested capital, provided that the return spread is positive, one may create value by raising external capital so as to increase new invested capital more than one could by simply reinvesting retained earnings (i.e., achieving a growth rate greater than the company's self-sustainable rate of growth).

Although a borrower may achieve a greater return spread by picking the loan offer with the lowest interest rate but also the most comprehensive protective covenants, this may turn out to be a bad decision if the loan's covenants severely limit the borrower's ability to raise additional capital through debt issues and, as a result, the borrower misses the opportunity of massively investing in a high-return growing industry (assuming the borrower cannot easily raise equity capital because of its specific context). Such borrower should rather pick a loan offer with a slightly higher interest rate, resulting in a slightly lesser return spread, but with covenants that do not prevent it from maximising shareholder value by growth, through investing massively in this booming industry with additional debt financing.

CONCLUSION

Loans with protective covenants and extensive security package tend to increase shareholder value because:

(a) they carry a lesser risk of default, hence come with a lesser interest rate, which generally translates into a lesser cost of debt, hence a lesser WACC;

(b) moreover, a lesser cost of debt will entail lesser financial distress costs, translating into:

  (i) a lesser cost of equity (through a decreased leveraged beta), hence a lesser WACC,

  (ii) a greater ROIC (suppliers being more willing to extend credit and customers being more willing to pay in advance).

One must however not forget to:

(a) look beyond the differences in interest rate and calculate the true cost of debt transpiring from two competing loan offers, given that loans with protective covenants and security package tend to come with greater legal fees and security costs, it being noted that the cost of allowing cash to sit idle in a cash reserve and the group cost associated with the delivery of a parent guarantee should be calculated in determining the cots of debt;

(b) ensure that the covenants do not unduly prevent the borrower from:

  (i) maintaining an optimal ϕ in order to minimise its WACC;

  (ii) maximising its ROIC by (1) disposing of assets not generating enough return and substituting them by others, (2) reducing its WCR when possible and avoiding constituting cash reserves, and (3) investing in projects with an higher expected return albeit with a greater risk;

  (iii) raising additional debt to sustain growth greater than the self-sustainable growth rate.