

TOMASZ BERENT

TEN MAJOR QUESTIONS ON LEVERAGE

Introduction

Financial leverage is a very popular topic among both practitioners and academics. It is featured in textbooks used by under and postgraduate students, including executive master business administration studies. It also plays an important role in training materials in professional qualification courses such as e.g. Chartered Financial Analysts, CFA, or Association of Chartered Certified Accountants, or ACCA. Indeed, the understanding of financial leverage, its definition and measurement, is a must for those who are active in both the financial and accounting professions. Financial leverage features not only in literature on theory of finance, but also in the materials used in financial analysis and managerial accounting alike. The interdisciplinary nature of financial leverage is on one hand, the source of its appeal, but also the source of confusion. What may be regarded as pivotal in understanding financial leverage to a finance professor may be less appealing to an accounting expert. In this paper on financial leverage, I quote two authors, one Polish, one American, who diagnose the state of our knowledge on financial leverage in surprisingly similar ways, despite the fact that their papers are published almost 50 years apart from one another. In short, the former calls the state of our understanding: “conceptual chaos”¹, the other “terminological confusion”².

The aim of this paper is to highlight areas of potential disagreement among those writing about leverage. This is achieved by stating ten questions. It is not the ambition of the author to present a fully-fledged platform at this stage for the way financial leverage should be understood. It is not so much the precision of answers but the gravity of the questions, which are at the core of this paper. The nature of the questions differ from one another. Some require normative answers with a varying level of freedom for debate; others allow the users of conceptual leverage a lot of discretion in formulating their own answers. My perspective on the topic is also provided where it is deemed beneficial. Before the questions themselves are formulated, a numerical example presenting various leverage param-

¹ A. Żwirbla: *Dźwignia finansowa – próba krytyki oraz syntezy poglądów*, „Zeszyty Teoretyczne Rachunkowości” 2007, vol. 41, p. 195.

² H. Dilbeck: *A Proposal for Precise Definitions of ‘Trading on the Equity’ and ‘Leverage’: Comment*, “Journal of Finance” 1962, vol. 17, No. 1, p. 127.

eters is shown. These parameters are subsequently referred to in the discussion section that follows the questions raised.

Numerical Example

There are two companies denoted as U and G, which are identical in all aspects except for capital structure. Invested capital at $t = 0$ and operating profit at $t = 1$ are identical for both firms and denoted as IC and EBIT respectively. In contrast to U, G is geared, with debt-to-equity at $d = D/E$ and cost of debt at i . No taxes are assumed. The perspective of an equity investor with capital of E_0 at $t = 0$ is taken. If he invests in U, his equity capital, denoted now as E_U , accounts for $1/(1 + d)$ of total equity and is expected to yield at $t = 1$ earnings of EAR_U and return on equity of R_U – identical to return on invested capital, ROIC. If he owns G, his equity, denoted now as E_G , accounts for 100% of total equity and is expected to yield at $t = 1$ earnings of EAR_G and return on equity of R_G . EAR_U and EAR_G , just like R_U and R_G , and E_U and E_G can be thought of as random variables. It can be shown that EAR_G , R_G and E_G take values, which are determined by D and i as well as EAR_U , R_U and E_U respectively:

$$EAR_G = (1 + d) \times EAR_U - i \times D \quad (1)$$

$$R_G = (1 + d) \times R_U - i \times d \quad (2)$$

$$E_{G1} = (1 + d) \times E_{U1} - D \times (1 + i) \quad (3)$$

for all values of EAR_U , R_U , and E_U ; subscript 1 refers to $t = 1$.

Let ELA_{EAR} be an elasticity measure of EAR_G with respect to EAR_U , while ELA_E be an elasticity measure of E_G with respect to E_U . Similarly, let SEN_{EAR} be a sensitivity measure of EAR_G with respect to EAR_U , while SEN_E be a sensitivity measure of E_G with respect to E_U . Then:

$$SEN_{EAR} = dEAR_G / dEAR_U = (1 + d) \quad (4)$$

$$ELA_{EAR} = [dEAR_G / dEAR_U] \times (EAR_U / EAR_G) = (1 + d) \times (EAR_U / EAR_G) \quad (5)$$

$$SEN_E = dE_{G1} / dE_{U1} = (1 + d) \quad (6)$$

$$ELA_E = [dE_{G1} / dE_{U1}] \times (E_{U1} / E_{G1}) = (1 + d) \times (E_{U1} / E_{G1}) \quad (7)$$

Finally, let M_{EAR} be a ratio of EAR_G / EAR_U , while M_E be a ratio of E_{G1} / E_{U1} . Table 1 summarizes the results of the calculation of leverage parameters defined above for the following set of input data: IC = 100, ROIC = 20%, $i = 10\%$ and $d = 1$. The parameters presented in table 1 have their simple leverage interpretation:

- a 1% change in ungeared earnings results in a 1.33% (levered) reaction of geared earnings ($ELA_{EAR} = 1.33$);
- one dollar change in ungeared earnings results in a two-dollar (levered) reaction of geared earnings ($SEN_{EAR} = 2.00$);

- a 1% change in the value of ungeared equity at $t = 1$ results in a 1.85% (levered) reaction of geared equity ($ELA_E = 1.85$);
- one dollar change in the value of ungeared equity at $t = 1$ results in a two-dollar (levered) reaction of geared equity ($SEN_E = 2.00$);
- earnings of geared equity are 1.5 higher than that for ungeared equity ($M_{EAR} = 1.5$);
- value of geared equity is 1.08 higher than that for ungeared equity ($M_E = 1.08$).³

Table 1

Leverage parameters for $IC = 100$, $EAR_U = 20$ and $d = 1.0$

	ELA_{EAR}	SEN_{EAR}	M_{EAR}	ELA_E	SEN_E	M_E
Leverage parameter	1.33	2.00	1.50	1.85	2.00	1.08

It is the sheer multitude of leverage parameters, of which only a small sample is presented in table 1, which justifies reexamination of leverage concept. As shown below, this is by no means the only source of concern and confusion surrounding leverage.

Ten questions on leverage

QUESTION No. 1: Is financial leverage value neutral or not?

Taking debt affects the whole enterprise and it does so in many various ways. There are many facets of debt, which make it attractive from the perspective of value creation: lower tax burden means more cash left with the company, disciplining function of debt makes the scope for cash waste less acute, while informational content of debt helps the markets reflect better earnings and the cash generating power of companies in the share price.

However, many aspects of debt are value neutral. Although geared companies tend to end up with higher rates of return on equity, taking debt means also higher equity risk. Consequently, as Modigliani and Miller prove, no value effect should be expected. When debt is viewed as value neutral, it can be seen merely as a strategy that rescales both risk and return without adding extra value to the geared company. It is therefore legitimate to ask whether leverage concept should embrace all consequences of taking debt or concentrate only on those, which are value neutral. The former stance would associate leverage with debt taking as a whole while the latter would limit it to only a subset of effects debt actually ignites. The advocates of the latter stance would argue that leverage is precisely about risk and that average returns are magnified, which does not require value enhancement at all.

³ Whenever “ungeared earnings” and “ungeared equity” are referred to, it always refers to earnings and equity owned by the ungeared investor introduced in section 2 rather than to total earnings and equity of U.

I believe this approach deserves careful attention. It encourages the thorough study of the effects leverage induces before value changes are introduced. Only then can a full analysis of all debt effects be successfully performed.

QUESTION No. 2. Is leverage about capital structure only?

Even a short review of leverage definitions from academic textbooks and professional materials shows that leverage and capital structure are very similar if not identical concepts.⁴ If leverage and capital structure are one thing, which of many capital structure ratios, if any, is the leverage ratio: debt-to-equity D/E , total capital-to-equity $(D + E)/E$, debt-to-total capital $D/(D + E)$, or maybe equity-to-total capital $E/(D + E)$. Although all these ratios are equivalent in the sense that they are one-to-one functions of each other, i.e. they preserve ordering (companies proclaimed most levered by D/E are also most levered using $(D + E)/E$ etc), they are certainly not the same. Their mathematical structure is different, as well as the range of values they take on: $D/(D + E)$ is bounded by 0 and 1, D/E – by 0 and $+\infty$, while $(D + E)/E$ by 1 and $+\infty$. One cannot easily switch between various capital structure ratios in econometric models either: if for example the model studied is linear in D/E , it cannot be linear in $(D + E)/E$.

Various capital structure ratios seem to have different economic meaning too. My own interpretation is that $D/(D + E)$, which merely measures the share of debt in the total capital, which is simply a debt ratio, $(D + E)/E$ is a leverage ratio measuring the scale of leverage force unleashed by debt⁵, while D/E is an elasticity between the two, i.e. it measures how much leverage (ratio) changes when debt (ratio) changes by 1%.⁶

One should also note that capital structure ratios say little about the cost of debt. Yet the leverage position of a firm is arguably affected by both the size of debt as well as its cost. Consequently, the advocates of DFL, for example, as it depends on both the size and cost of

⁴ Below are just few examples of leverage definitions: “The proportion of debt capital in the overall capital structure” (G. Arnold: *Corporate Financial Management*, Prentice Hall, London 2002, p. 1046); “Extent to which a firm relies on debt. Financial leverage is measured by the ratio of long-term debt to long-term debt plus equity” (S.A. Ross, R.W. Westerfield, B.D. Jaffe: *Corporate Finance*, McGraw-Hill, Boston 1999, p. 859); “Financial leverage is measured by the ratio of debt to debt plus equity” (R.A. Brealey, S.C. Myers: *Principles of Corporate Finance*, Irwin McGraw-Hill, Boston 2000, p. 1065); “The use of debt financing to complement equity financing” (G. Hawawini, C. Viallet: *Finance for Executives, Managing for Value Creation*, Thompson, South-Western, 2011, p. 621); “The amount of debt held in a portfolio or issued by a firm” (J. Berk, P. DeMarzo: *Corporate Finance*, Pearson, Boston 2007, p. G-5).

⁵ It is this ratio, where $(D + E)/E > 1$ for a geared firm, which determines the scale of the increase in beta (see R.S. Hamada: *The Effect of the Firm's Capital Structure on the Systematic Risk of Common Stock*, “Journal of Finance” 1972, vol. 27, No. 2). It can be shown that this ratio captures also the scale of the increase in variance of returns etc.

⁶ To see this, let x be a debt ratio $D/(D + E)$, and y – a leverage ratio $(D + E)/E$. Then it follows that $y = 1/(1 - x)$. Hence the elasticity of leverage ratio with respect to debt ratio is $(dy/dx) \times (x/y) = D/E$. In our numerical example, if debt ratio changes by 1% from its current level of 1/2, leverage (ratio) of 2.0 changes by 1% too as $D/E = 1.0$. However, if debt ratio was, say, $D/(D + E) = 2/3$, which implies $D/E = 2.0$, a 1% increase in debt (ratio) would turn into a 2% increase in leverage (ratio). For $D/(D + E) > 1/2$, a 1% change in debt results in more than proportional change in leverage – an interesting case of leverage being leveraged (sic!).

debt, would probably strongly protest against the notion that leverage and capital structure are the same concepts.

QUESTION No. 3. Is leverage about risk or return?

The fact that debt adds (financial) risk to equity, pushing average returns up in the process, spurs little controversy. It is however not obvious at all which of the two effects is more pivotal to a leverage concept. Some may argue that leverage is nothing but an increase in risk: debt implies higher beta (covariance), higher variance of returns, higher probability of financial distress and higher chances of bankruptcy. With this approach, the increase in average returns is not regarded as leverage but as the reward for leverage.

However, others explicitly associate leverage with this increase in average returns. Then, leverage can be measured as the ratio of returns on geared to ungeared equity. In our numerical example, such a leverage ratio amounts to $30\% / 20\% = 1.5$, i.e. geared company G is expected to generate 50% more than U. However, for another set of data, the leverage parameters do not look like leverage parameters at all. What if U generates a return of, say, 8%, which in turn implies the return for G of only 6% (see 2). The leverage ratio is then 0.75, i.e. less than one. What about ungeared returns of, say, 4% or -10% , which translate respectively into -2% and -30% for G, in which case the ratio of the two is -0.5 and 3.0 respectively. Do these results identify leverage or not? Based on these examples alone, it is clear that looking at leverage from the perspective of only returns without also looking at risk may prove to be risky.

Risk associated with leverage is also identified by many with an increased probability of bankruptcy. Shouldn't the increase in this risk be included in study of leverage as well? I personally believe that although conceptually, bankruptcy risk is a vital part of the leverage story even in the value neutral world, it is sometimes advisable, due to severe difficulties in modeling this effect, to proceed with the assumption of debt being risk free. In my papers on leverage, I use a separate phrase – “financial leverage risk” – to describe the risk aspect of leverage (which sometimes does not include bankruptcy risk), and let the more general term “financial leverage” embrace both risk and return aspects of leverage.⁷

QUESTION No. 4. Is leverage about elasticity or sensitivity?

Both the sensitivity and elasticity approaches seem attractive in tracking leverage (see 4–7). In our numerical example, a one dollar change in earnings in U results in a two dollar change in earnings in G, while a 1% change in earnings in U results in a 1.33% change in

⁷ It is also recommended to view leverage from the perspective of the whole distribution of returns in which any shift in expected return and variance induced by debt could be interpreted as leverage affecting return and risk respectively. Studying the increase in the probability of getting losses or getting negative cash flows is another way to use distributions in the examination of leverage (see T. Berent: *Financial Leverage Risk Revisited – Theory, Definitions and Determinants*, “Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu” 2010, No. 99; T. Berent: *Dźwignia finansowa i jej składowe: nowa koncepcja metodologiczna*, „Zeszyty Teoretyczne Rachunkowości” 2008, vol. 46, No. 102).

earnings in G. Both methods correctly spot leverage, understood here as higher earnings volatility, although the size of leverage force spotted by them is different. However, for different sets of numbers, the methods may generate different results. For example, if R_U equals, say, 40% or 12%, sensitivity analysis continues to generate leverage measure of 2.0. Yet elasticity is no longer constant: it decreases now from the previous level of 1.33 for $R_U = 20\%$ to 1.14 and 1.71 respectively. Some authors identify these changes with the shift in risk, however those looking at the sensitivity measure would claim risk did not change. The matter gets even more tricky when elasticity ratio becomes a fraction (for negative R_U), less than zero (for $0 < R_U < i \times [d / (1 + d)]$), or does not exist at all for $R_U = i \times [d / (1 + d)]$ – the cases where sensitivity fares pretty well. In my opinion, for this reason alone, sensitivity approach has an upper hand: it simply produces a single constant leverage parameter in a single beta context. After all, the cost of capital does not change for different levels of ungeared returns.

In my previous papers, I describe DFL as a financial analysis tool, which may be of some (limited) benefit if properly used.⁸ Note, that elasticity methodology may become very attractive if a perspective of wealth rather than earnings is adopted (see next section).

QUESTION No. 5. Is leverage about wealth or its changes?

A standard approach to leverage is to study the impact debt has on the volatility of earnings, e.g. a frequently used approach to leverage called EBIT-EPS focuses specifically on the impact of EBIT changes on company's EPS. DFL is another example of earnings rather than wealth being at the center.⁹ The attractiveness of this approach for both academics and professionals using financial analysis and/or managerial accounting tools is clear. However it may not be as useful to finance people and investors who tend to be preoccupied with wealth and its risks. In our numerical example, earnings for an equity investor in G is 1.5 times higher than in U – a perfect leverage ratio some may argue. However from the perspective of the entire wealth, the ratio is merely 1.08. True, one ratio can easily be translated into the other using properly chosen weights. However, focusing on the increase in wealth may sometimes prove confusing. For example, as mentioned before, earnings-driven DFL cannot be meaningfully calculated for some value of R_U . Many authors ignore this disturbing fact by simply not mentioning it as they probably fail to recognize that the problem evaporates when the perspective of the whole wealth is taken into account. In our numerical example, for R_U of 4%, 1%, and -10% DFL amounts to -4, -1/4, and 2/3 respectively. If the elasticity is calculated from the wealth perspective it amounts to 2.1; 2.2; and 2.6 respectively. This implies that a 1% change in wealth of an ungeared equity results in

⁸ I argue that DFL ratio may be interpreted as a linguistic convention in which its user chooses a base against which the percentage changes are calculated. This base provides a set of rules, which explain the language used. Being a subjective tool, unrelated to the valuation and cost of capital, such an elasticity analysis should be used with caution.

⁹ It is no so much an accounting nature of earnings that is debated here but the focus on earnings as the change in wealth rather than wealth itself.

more than 2% change in the value of wealth for a geared one – a perfectly interpretable leverage number.¹⁰

QUESTION No. 6. Is leverage about book or market values?

It is rather typical that financial analysis and managerial accounting books tend to adopt a book value approach when writing about leverage. Finance texts focus on book values only in chapters devoted to ratio analysis and then switch to market values in chapters devoted to cost of capital and beta. Using market values happens to be more troublesome and could be less accurate due to the high volatility of market valuations. The pros and cons of using either method for companies with a different mix of tangible and intangible assets or high and low bankruptcy costs etc. are widely known.

In our numerical example, it is never mentioned if the data is book or market value. If they are book values, market values could easily be very different, hence presenting a completely different leverage picture: debt ratio of $\frac{1}{2}$ in book values could turn out to be only $\frac{1}{10}$ of market values if the company's worth was concentrated in off-balance sheet assets such as innovative workforce or R&D. A leverage ratio $(D + E) / E$ would no longer be 2.0 but nearly 1.0.

If the analysis of leverage is performed in book values, there is a danger that Modigliani-Miller legacy can be forgotten or/and misunderstood. This always happens, for example, when the fact that the returns for a geared company are higher than those for an ungeared counterpart and are hailed as a success. I believe a skilled transition of book value methods in studying leverage, e.g. DFL, into market value setting may yet prove to be very rewarding.

QUESTION No. 7. Is leverage about ex post or ex ante?

Whenever leverage is studied with historic data as input, an ex post perspective is taken. For example, high historic values of DFL indicate – according to some authors – high leverage and consequently high financial risk. Another example of ex post treatment of leverage is the study of the direction in which returns move after taking debt. Leverage is then “good” when ex post rates of return on geared equity were higher and “bad” when they were lower than those for an all equity firm.

No matter how appealing this approach may seem, one should ask, how much information is actually offered by leverage analysis based on a single historical outcome? Does a historical DFL of 100 say much about the financial risk and leverage or is it merely the recognition of minuscule earnings for that period? It goes without saying that historical outcomes are historic and as such tell us little about the future. It is through the ex ante study of

¹⁰ The results of the analysis taking wealth and wealth change approach would also differ if “normal” values are considered, e.g. a 1% change in earnings for U results in a 1.33% change in earnings for G, while a 1% change in wealth for U results in a 1.85% change in wealth for G in our numerical example. Is the risk in the latter case larger?

the whole distribution of returns rather than through the inspection of individual historical outcomes, that a true insight into leverage can be gained.

QUESTION No. 8. Are financial and operating leverages identical?

The relationship between operating and financial leverage tends to be described almost exclusively by tools used in (managerial) accounting rather than finance. Financial leverage is often identified with fixed financial costs just like operating leverage is all about fixed operating costs. Degree of financial leverage, DFL, is a “twin brother” of degree of operating leverage, DOL, and together they sum up to what is known as the degree of total leverage, DTL. Not surprisingly elasticity methodology, book values and earnings perspective dominate the analysis. Unfortunately, this approach seems to be blind to cases, where leverage exists when DFL does not spot it, or to cases, where DFL spots “leverage”, where its presence is at least questionable.¹¹ By focusing on fixed costs, one can easily miss the role played by variable costs in decreasing asset beta. It is the substitution of variable costs with fixed costs, not the existence of the latter, which is more relevant to understanding leverage.

There is also some scope for new insights into the trade-off between operating and financial leverage to be gained if only the nature of fixed vs. variable costs is better understood. This probably requires the topic to be freed from “an accounting harnesses” and to be let it into the field of finance theory, where the notions such as beta, market risk, and cost of capital rule freely.

QUESTION No. 9. How should leverage be estimated in practice?

Companies do not hold their capital structure intact through time. Even if they did, the volatility of earnings and market valuations, coupled with a firm’s inability to adjust instantaneously to those shifts, makes this targeted level difficult to observe. Interest rates and subsequently cost of debt, are not constant either (even if risk premiums were assumed to be stable through time). As leverage is probably affected by both the size of debt and its cost, the permanent change in both makes their intertwined effects difficult to disentangle. To make it worse, in the real world, capital structure decisions and cost of debt changes affect valuation and this in turn affects capital structure. All these make the empirical estimation of leverage a troublesome area.

Measuring leverage via elasticity approach presents another challenge. Selecting a benchmark against which the potential changes are measured is one problem, observing those elasticities in practice is another. If, for example, an expected value of earnings is chosen to be the benchmark in the calculation of DFL, one should remember that, as DFL

¹¹ See T. Berent: *Duality in Financial Leverage – Controversy Surrounding Merton Miller’s Argument*, “Zeszyty Naukowe Uniwersytetu Szczecińskiego” 2010, No. 587, in which I analyse a controversial comment made by Merton Miller in his 1990 Nobel Memorial Prize Lecture in which he wrongly uses a DFL type of argument to explain risk measures proposed by Markowitz and Sharpe.

is not a linear function of earnings, it cannot be estimated as the average of annual sample DFLs calculated with the help of P&L data. DFL for the expected value is not the same as the expected value of DFLs.¹²

The lack of a universally agreed definition of leverage results in making easy jumps between various leverage parameters as if they were equivalent.¹³ As shown above, there are numerous “leverage parameters” and they are certainly not identical.

QUESTION No 10. Can leverage be “good” or “bad”?

Last but not least is the question: whether leverage can be “good” or “bad”. The answer to this question depends critically on how “goodness” is defined. If the size of the increase in wealth from $t = 0$ to $t = 1$ is deemed ultimate then leverage is good every time return on equity for G is higher than for U. This is the case, when return on ungeared firm, or the return on assets, is greater than cost of debt. In our numerical example, the leverage is “good” as $R_U = 20\% > i = 10\%$, which implies that $R_G = 30\% > R_U = 20\%$. If R_U was 8%, leverage would be “bad” as $R_G = 6\% < R_U = 8\%$. However, it is not obvious at all why higher equity valuation (even in market value terms) for the geared firm at $t = 1$ compared to the ungeared counterpart was to detect “good” leverage. Indeed, in the world where the enterprise value can and is enhanced by taking debt, leverage must be branded “good” if it creates value instantaneously at $t = 0$. The same cannot be said when the difference in valuation is “accumulated” through time as this increase is usually accompanied by an increase in risk. In our numerical example, geared equity of 65 at $t = 1$ is certainly larger than ungeared equity of 60 at $t = 1$, but the risk is also higher. All investors would prefer to get more at $t = 0$, not all would choose to get more at $t = 1$.

What about a world where debt is irrelevant? One can simply state that in such a case leverage can by definition be neither “good” nor “bad”. However, the question Modigliani and Miller ask is somewhat different from the one we ask now. They ask if capital structure can enhance the value of the company and their answer is “NO”. We ask if taking debt rather than inviting more co-owners makes sense? The answer is “YES”. The question whether to prepare or not is not only about creating “new” value but also about sharing the existing or expected value with others. For example, if a company contemplates launching new projects with high prospects of value creation, which is yet to be discounted in its share price, leverage is certainly “good” even without prospects for enhancing the enterprise’s value. It is sheer wish not to share the benefits of the projects, which makes leverage “good”. In con-

¹² Estimating DFL as a slope coefficient in a logarithmic regression, as done e.g. in G.N. Mandelker, S.G. Rhee: *The Impact of the Degree of Operating and Financial Leverage on Systematic Risk of Common Stock*, “Journal of Financial and Quantitative Analysis” 1984, vol. 19, No. 1, is not a good option either. Logarithmic transformation of variables allows elasticity interpretation of regression parameters; however it is only possible if this elasticity is constant for all levels of independent variable. This is not the case with DFL.

¹³ As an example see M.J. Barclay, C.W. Smith: *The Capital Structure Puzzle: The Evidence Revisited*, “Journal of Applied Corporate Finance” 2005, vol. 17, No. 1, p. 13.

trary, the company, which is likely to destroy value and this is yet to be in the share price, would be better off, from the perspective of its existing shareholders, to issue equity. If the company took leverage instead, it would be “bad” leverage, even if the value of the company increased more at $t = 1$ than for the ungeared firm.¹⁴

Conclusions

This paper attempts to uncover the most important sources of terminological confusion surrounding the concept of financial leverage. To do this, ten major questions on leverage are formulated. The answers to these questions are critically important if the concept of leverage is to be properly understood in both theoretical debates and practical applications. The paper focuses on the questions, e.g. should leverage be conceived as a value neutral concept or not, phrased in market or book values, focused on risk or return, viewed ex post or ex ante, taking into account total wealth or merely its increases, calculated with the help of elasticity or sensitivity analysis etc. The definitive answers to these questions deserves a separate review and is only possible if one first appreciates the different stand-points leverage can be studied from.

Literature

- Arnold G.: *Corporate Financial Management*, Prentice Hall, London 2002.
- Barclay M.J., Smith C.W.: *The Capital Structure Puzzle: The Evidence Revisited*, “Journal of Applied Corporate Finance” 2005, vol. 17, no. 1.
- Berent T.: *Financial Leverage Risk Revisited – Theory, Definitions and Determinants*, „Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu” 2010, no. 99.
- Berent T.: *Duality in Financial Leverage – Controversy Surrounding Merton Miller’s Argument*, “Zeszyty Naukowe Uniwersytetu Szczecińskiego” 2010, no. 587.
- Berent T.: *Dźwignia finansowa i jej składowe: nowa koncepcja metodologiczna*, „Zeszyty Teoretyczne Rachunkowości” 2008, vol. 46, no. 102.
- Berk J., DeMarzo P.: *Corporate Finance*, Pearson, Boston 2007.
- Dilbeck, H.: *A Proposal for Precise Definitions of ‘Trading on the Equity’ and ‘Leverage’: Comment*, “Journal of Finance” 1962, vol. 17, no. 1.
- Hamada R.S.: *The Effect of the Firm’s Capital Structure on the Systematic Risk of Common Stock*, “Journal of Finance” 1972, vol. 27, no. 2.
- Hawawini G., Viallet C.: *Finance for Executives, Managing for Value Creation*, Thompson, South-Western, 2011.

¹⁴ It is possible that the value of the geared equity increases more than for the ungeared equivalent but leverage is not “good”. The necessary condition for the former is that the return on ungeared company is greater than the cost of debt, while for the latter: that it is greater than the equity cost.

Mandelker G.N., Rhee S.G.: *The Impact of the Degree of Operating and Financial Leverage on Systematic Risk of Common Stock*, "Journal of Financial and Quantitative Analysis" 1984, vol. 19, no. 1.

Ross S.A., Westerfield R.W., Jaffe B.D.: *Corporate Finance*, McGraw-Hill, Boston 1999.

Żwirbla, A.: *Dźwignia finansowa – próba krytyki oraz syntezy poglądów*, „Zeszyty Teoretyczne Rachunkowości” 2007, vol. 41, no. 97.

dr Tomasz Berent
Szkoła Główna Handlowa
Katedra Rynków Kapitałowych

Summary

The paper lists several fundamental questions on financial leverage and claims that only when they are properly answered, the confusion, which surrounds the concept of leverage for nearly half a century, can finally end. The questions tackle the issues such as: value neutrality vs. value enhancement, market vs. book value, elasticity vs. sensitivity, wealth vs. change in wealth, ex post vs. ex ante, risk vs. return etc. Although the emphasis of the article is on the questions asked, rather than answers given, the author provides some of his own insights and recommendations on the direction that further study on leverage should follow.

DZIESIĘĆ GŁÓWNYCH PYTAŃ NA TEMAT DŹWIGNI

Streszczenie

Artykuł stawia dziesięć fundamentalnych pytań z zakresu dźwigni finansowej, pytań, które wymagają precyzyjnych odpowiedzi. Tylko wtedy można mieć nadzieję, iż zamieszanie terminologiczne, jakie panuje w tej dziedzinie od niemal półwiecza wreszcie się zakończy. W pytaniach poruszono m.in. następujące kwestie: dźwignia a wartość firmy, wartość rynkowa a księgową, elastyczność a wrażliwość, stan majątku a jego zmiany, ex post a ex ante, ryzyko a zwrot itp. Chociaż główny nacisk w artykule położono nie tyle na odpowiedzi, ile na sformułowanie pytań, autor przedstawia pokrótce swoje przemyślenia na temat pożądanych kierunków badań.

