Concept of Leverage Ratios مفاهيم نسب الرافعة

Leverage ratios are used to determine the relative level of debt load that a business has incurred. These ratios compare the total debt obligation to either the assets or equity of a business. A high ratio indicates that a business may have incurred a higher level of debt than it can be reasonably expected to service with ongoing cash flows.

ستخدم نسب الرافعة لتحديد المستوى النسبي لتحميل الديون الذي تكبدته الشركة. تقارن هذه النسب بين إجمالي التزام ُت الديون إما بموجودات أو حقوق ملكية الشركة. تشير النسبة المرتفعة إلى أن الشركة ربما تكون قد تكبدت مستوى عالي من الدين اكثر مما يمكن توقعه بشكل معقول للعمل مع التدفقات النقدية الجارية .

The two main leverage ratios are:

- Debt ratio (نسبة المديونية).
  Compares assets to debt, and is calculated as total debt divided by total assets. A high ratio indicates that the bulk of asset purchases are being funded with debt.
- Debt to equity ratio (نسبة الدين الى حق الملكية).
  Compares equity to debt, and is calculated as total debt divided by total equity. A high ratio indicates that the business owners may not be providing sufficient equity to fund a business. Leverage ratios are essentially measures of risk, since a borrower that cannot pay back its debt obligations is at considerable risk of entering bankruptcy protection. However, a modest amount of leverage can be beneficial to shareholders, since it means that a business is minimizing its use of equity to fund operations, which increases the return on equity for existing shareholder

  Leverage Ratios : نسب العتلة المالية

  A leverage ratio is any one of several financial measurements that look at how much capital comes in the form of debt (loans), or assesses the ability of a company to meet its financial obligations. The leverage ratio is important given that companies rely on a mixture of equity and debt to finance their operations, and knowing the amount of debt held by a company is useful in evaluating whether it can pay its debts off as they come due. Leverage Ratios for Evaluating Solvency and Capital Structure. The most well-known financial leverage ratio is the debt-to-equity ratio. It is expressed as:

  D/E Ratio = Total Debt ÷ Total Equity

  The equity multiplier is similar, but replaces debt with assets in the numerator:

  Equity Multiplier = Total Assets ÷ Total Equity

The equity multiplier is a component of the DuPont analysis for calculating return on equity (ROE):

ROE = Net Profit Margin x Asset Turnover x Equity Multiplier

An indicator that measures the amount of debt in a company's capital structure is the debt-to-capitalization ratio, which measures a company's financial leverage. It is calculated as:

Long-term Debt to Capitalization Ratio = Long-term Debt ÷ (Long-Term Debt + minority interest + equity)

In this ratio, operating leases are capitalized and equity includes both common and preferred shares. Instead of using long-term debt, an analyst may decide to use total debt to measure the debt used in a firm's capital structure. The formula, in this case, is:

Total Debt to Capitalization Ratio = (current liabilities + Long-Term Debt) ÷(current liabilities + Long-Term Debt + minority interest + equity)

Degree of Financial Leverage درجة الرافعة المالية Degree of financial leverage (DFL) is a ratio that measures the sensitivity of a company's earnings per share (EPS) to fluctuations in its operating income, as a result of changes in its capital structure. It measures the percentage change in EPS for a unit change in earnings before interest and taxes (EBIT), and is represented as:

$$DFL = \frac{\%\ \boldsymbol{Change\ in\ EPS}}{\%\ \boldsymbol{Change\ in\ EBIT}}$$

DFL can also be represented by the equation below:

$$DFL = \frac{\boldsymbol{EBIT}}{\boldsymbol{EBIT - Interest}}$$

This ratio indicates that the higher the degree of financial leverage, the more volatile earnings will be. Since interest is usually a fixed expense, leverage magnifies returns and EPS. This is good when operating income is rising, but it can be a problem when operating income is under pressure.

Leverage Degree Analysis تحليل درجة الرافعة

A lever is defined as the extent to which profits can be increased in an enterprise as a result of increased reliance on fixed costs or borrowed funds or together. Thus, the concept of crane covers three main areas:

1. Operational leverage: It is linked to the cost structure.

2. Financial leverage: It is linked to the financing structure.

3. Common leverage: A combined result of the operational and financial leverage.

تعرف الرافعة بأنها عبارة عن المدى الذي يمكن به زيادة الأرباح في المنشأة نتيجة زيادة الاعتماد على التكاليف الثابتة أو الأموال المقترضة أو الاثنين معا . وبذلك فان مفهوم الرافعة يغطي ثلاثة مجالات أساسية :

1. .الرفع التشغيلي : يرتبط بهيكل التكاليف .
2. الرفع المالي : يرتبط بهيكل التمويل .
3. الرفع المشترك : محصلة مشتركة للرفعين التشغيلي والمالي.

$$\text{Operational leverage} = \frac{\textbf{Contribution Return}}{\textbf{Net operating Profit before Interests and taxes}}$$

This means that any change in the number of units sold will result in a positive (or negative) change in the net profit, so that the operational leverage is a key indicator of what is known as business risk or operational risks.

Another method to calculate the operating leverage by using profit as a percentage of sales is to what extent the change in the operating profit of the change in sales is accounted for by the following equation:

$$= \frac{\textbf{Operating Profit Change Ratio}}{\textbf{Sales Change Ratio}}$$

Financial leverage الرافعة المالية

A financial leverage is defined as the extent or proportion of the increase in profits as a result of the use of the money of others in the business of the firm

$$\text{Financial leverage} = \frac{\textbf{Net Profit before Interests and taxes}}{\textbf{Net Profit before taxes}}$$

تعرف الرافعة المالية بأنها مدى أو نسبة الزيادة في الأرباح نتيجة استخدام أموال الغير في أعمال المنشأة . ويكون تأثير الرفع المالي إيجابا على العائد أذا نجحت إدارة المنشأة في استثمار الأموال المقترضة بمعدل عائد يزيد عن

الفائدة المدفوعة عليها , أي أن الرفع المالي يكون لصالح الشركة اذا كان معدل العائد على الاستثمار أكبر من معدل الفائدة والعكس بالعكس

Common leverage (Total) **الرافعة المشتركة(الكلية)**

A common leverage is defined as the extent or proportion of the increase in profits due to the optimal use of fixed costs and the use of borrowed funds in operations.

The common leverage is measured by the following equation:

common leverage = Operational Leverage Degree× Financial Leverage Degree

$$= \frac{\textbf{Contribution Return}}{\textbf{Net Profit before Interests and taxes}} \; X \; \frac{\textbf{Net operating Profit before Interests and taxes}}{\textbf{Net Profit before taxes}}$$

Example :

The sales of the Company (x) were (400,000) IQD. The variable costs of these sales amounted to (150,000) IQD. The fixed costs were (50,000) IQD and the interest was 10,000 IQD.

Required : Prepare an Interpretation and analysis of:

1. Operational Leverage Degree.

2. Financial leverage Degree.

3. Common leverage Degree .

solution :

1. Operational Leverage Degree = **Contribution Return/ Net operating Profit before Interests and taxes**

DOL= (400,000 – 150,000) ÷ 400,000 – (50,000 + 150,000)

DOL = (250,000) ÷ (200,000) = 1.25 times

This means that each change in the number of units sold by one unit will result in a positive net change in net profits of 1.25 times.

2. Financial leverage (DFL)= **Net Profit before Interests and taxes /Net Profit before taxes**

$$DFL = \frac{400{,}000 - (50{,}000 + 150{,}000)}{400{,}000 - (10{,}000 + 50{,}000 + 150{,}000)}$$

$$= 200{,}000 / 190{,}000 = 1.05 \text{ مرة}$$

Since the degree of leverage is positive and greater than the right one, it means that the decision of the firm to invest in borrowed money was a sound and feasible decision, it was able to achieve a profit that covers the interests of debts and achieve a net profit.

وبما أن درجة الرافعة المالية إيجابية وأكبر من الدرجة الصحيحة، فهذا يعني أن قرار الشركة بالاستثمار في الأموال المقترضة كان قراراً سليماً وممكناً، فقد تمكنت من تحقيق ربح يغطي مصالح الديون ويحقق أرباحاً صافية

3.common leverage = Operational Leverage Degree× Financial Leverage Degree .
DCL = 1.25 × 1,05 = 1.31 times

In this case the company has achieved a degree of operational leverage positive as well as the degree of financial leverage positive, the degree of common leverage will be affected by both grades, which led to a positive degree of common leverage also.

في هذه الحالة حققت الشركة درجة من الرافعة المالية التشغيلية الإيجابية وكذلك درجة الرافعة المالية الإيجابية، ودرجة الرافعة المالية المشتركة سوف تتأثر بكلتا الصفين، مما أدى إلى درجة إيجابية من الرافعة المالية المشتركة أيضا .