Diapositive 1 : Titre

Le Bêta d'une Entreprise : Théorie et Estimation

Diapositive 2 : Introduction

Définition du bêta

Importance dans la finance et la gestion du risque

Objectif de l’exposé : expliquer le rôle du bêta et l'estimer avec un exemple

Diapositive 3 : Définition et Rôle du Bêta

Mesure de la sensibilité d’une action aux fluctuations du marché

Indicateur clé du risque systématique

Relation avec la rentabilité attendue (CAPM)

Diapositive 4 : Risque de Marché et Risque Idiosyncratique

Risque de marché : non diversifiable, lié à l'économie globale

Risque idiosyncratique : propre à l’entreprise, peut être réduit par diversification

Le bêta ne mesure que le risque systématique

Diapositive 5 : La Formule du CAPM et le Bêta

Formule :

Explication des variables :

: Rentabilité attendue

: Taux sans risque

: Rentabilité du marché

: Sensibilité au marché

Diapositive 6 : Estimation du Modèle de Marché

Régression entre le rendement de l’action NVIDIA et celui du NASDAQ

Formule du modèle de marché :

Explication des coefficients et

Diapositive 7 : Données et Méthodologie

Données utilisées : prix de clôture de NVIDIA et NASDAQ

Fréquence : quotidienne sur une période donnée

Estimation du bêta via régression linéaire

Diapositive 8 : Résultats de l'Estimation

Valeur estimée du bêta de NVIDIA

Interprétation : volatilité par rapport au marché

Comparaison avec un bêta de référence (ex : 1)

Diapositive 9 : Interprétation et Implications

Si : NVIDIA est plus risqué que le marché

Si : NVIDIA est moins risqué que le marché

Impact pour les investisseurs et gestionnaires de portefeuille

Diapositive 10 : Limites du Bêta

Dépendance aux données historiques

Variation dans le temps

Influence d’événements exceptionnels

Diapositive 11 : Conclusion

Synthèse des points clés

Importance du bêta dans l’analyse financière

Perspectives d’amélioration et d’autres modèles (ex : modèles multifactoriels)

Diapositive 12 : Questions et Discussion

Espace ouvert pour des échanges

Propositions d'approfondissement

bibliographie :

William F. Sharpe (1964) : "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk" publié dans le Journal of Finance.

John Lintner (1965) : "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets" dans la Review of Economics and Statistics.

Jan Mossin (1966) : "Equilibrium in a Capital Asset Market" dans Econometrica.

Slide 1: Title

Estimating a Company's Beta: An Application of the Capital Asset Pricing Model to Measure Different Types of Risk

Slide 2: Introduction \begin

The Capital Asset Pricing Model (CAPM) is widely used in finance to estimate the expected return of an asset given its risk level.

The Beta coefficient is a key parameter in this model, measuring an asset's sensitivity to market movements. \end \begin

This presentation aims to estimate the beta of NVIDIA using the NASDAQ index as a benchmark.

We will distinguish between systematic (market) risk and idiosyncratic (specific) risk. \end

Notes: "Good morning everyone. Today, I am going to talk about an important financial concept: Beta. Specifically, we will look at how we can estimate the beta of a company, in this case, NVIDIA, using the Capital Asset Pricing Model, or CAPM.

First, we will define what beta is and why it matters. Then, we will see how beta helps differentiate between systematic risk and idiosyncratic risk. Next, I will explain how we can estimate beta using real-world data. Finally, we will analyze the results and discuss their implications.

The goal of this presentation is to understand how beta helps investors measure risk and make informed financial decisions."

Slide 3: Literature Review \begin

Sharpe (1964), Lintner (1965), and Mossin (1966) formalized CAPM.

Fama and French (2004) evaluated CAPM's empirical validity and proposed multi-factor models. \end \begin

CAPM assumes markets are efficient, and investors are rational.

Beta is widely used but has been criticized for its instability over time. \end

Notes: "Before we move on to the estimation of beta, let's take a look at some key studies that have shaped our understanding of this concept.

The Capital Asset Pricing Model, or CAPM, was developed in the 1960s by economists William Sharpe, John Lintner, and Jan Mossin. Their work established the relationship between an asset's risk and its expected return.

Later, Fama and French in 2004 critically evaluated the CAPM and introduced a multi-factor model to account for additional risk factors. While CAPM remains widely used, one of its main criticisms is that beta is not always stable over time. This means that the risk measurement for an asset can change depending on market conditions."

Slide 4: Theoretical Framework \begin

\end \begin

: Expected return of asset .

: Risk-free rate.

: Market return.

: Beta of the asset. \end

Notes: "Now, let's discuss the theoretical framework behind beta estimation. The main formula we use is the Capital Asset Pricing Model equation. It is written as follows:

$E(R_i) = R_f + \beta_i (R_m - R_f)$

This equation tells us that the expected return of an asset depends on the risk-free rate, the market return, and the beta of the asset.

The risk-free rate represents the return of an investment with zero risk, typically government bonds. The market return is the return of a broad stock market index, like the NASDAQ. Finally, beta measures how much the asset moves in relation to the market. If beta is greater than 1, the asset is more volatile than the market. If beta is less than 1, the asset is less volatile."

Slide 5: Methodology \begin

Stock prices of NVIDIA and NASDAQ index.

Frequency: 5-minute vs. daily returns.

Sample period: [Specify timeframe]. \end \begin

Ordinary Least Squares (OLS) regression:

\end

Notes: "To estimate beta, we need real-world data. For this analysis, we use the stock prices of NVIDIA and the NASDAQ index as our benchmark. We consider different data frequencies: daily returns and high-frequency 5-minute returns.

We then apply a statistical technique called Ordinary Least Squares regression, or OLS. This technique allows us to estimate the relationship between NVIDIA's returns and the NASDAQ's returns. The resulting beta coefficient tells us how sensitive NVIDIA is to market movements."

Slide 6: Results \begin

Beta estimate for NVIDIA: [Insert value].

Statistical significance: [Insert results]. \end \begin

NASDAQ beta = 1 (market benchmark).

Semiconductor industry average beta: [Insert reference]. \end

Notes: "Here are our estimation results. The estimated beta for NVIDIA is [insert beta value]. This means that NVIDIA is [more/less] volatile compared to the NASDAQ index.

We can compare this value to the industry average for semiconductor companies, which is around [insert reference]. If NVIDIA's beta is higher than this value, it means the stock carries more risk compared to its industry peers."

Slide 7: Discussion \begin

High beta (>1): Higher risk and higher expected returns.

Low beta (<1): Lower risk but lower expected returns. \end \begin

Beta is time-dependent and can change.

CAPM assumes constant risk preferences. \end

Notes: "Understanding beta is important for investors. A high beta means the stock is riskier but could offer higher returns. A low beta means lower risk but lower potential returns.

However, beta is not perfect. It changes over time, and the CAPM assumes investors have constant risk preferences, which is not always true. Alternative models may better capture real-world risk factors."

Slide 8: Conclusion \begin

Beta helps measure systematic risk but does not capture idiosyncratic risk.

CAPM provides a useful framework for estimating expected returns. \end

Notes: "To conclude, beta is a useful tool to measure market risk, but it does not capture all types of risks. CAPM remains a popular model, but it has limitations. Future research should explore more advanced methods to estimate risk."

Slide 9: Questions and Discussion \begin

Feedback and questions are welcome. \end

Notes: "Thank you for your attention! If you have any questions, feel free to ask."