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Estimation of CAPs in real estate companies

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The purpose of this study is to construct a model combining residual income and CAP（competitive advantage period） and back-calculate it to estimate the CAPs and off-balance value of intangible assets that were previously difficult to estimate. Through these procedures, it has been possible to obtain their CAPs and intangible assets value of the sectors related to real estate and the companies included in the Development of condominiums sector. From these, the relative positioning of each sector and each company was shown. These CAPs can capture the cycle length, growth potential, and decline of each business. In addition, since it is a complex model, it turns out that simple financial indicators such as PBR can be corrected, and useful knowledge can also be obtained.

Key words: Residual Income, sustainable growth, CAP, Intangible Assets, business cycle

1. Preface

The purpose of this study is to measure the CAPs (competitive advantage periods) of each real estate companies. The measurement method is based on the difference between stock price and book value. The basic model is the Residual Income Model, and the excess profit of this model is called residual income. Data use accounting data and stock price data.

2. Residual Income Model

The calculation formula of the residual profit model is as shown in Formula (1).

$$V_0 = BV_0 + \sum_{i=1}^{\infty} \frac{E\left[NI_i - r_i BV_{i-1}\right]}{\prod_{K=1}^{i}\left(1+r_k\right)}$$

$$if \quad \lim_{n\to\infty} \frac{BV_n}{\prod_{K=1}^{n}\left(1+r_k\right)} = 0 \qquad (1)$$

This is a definition formula combining double-entry bookkeeping and finance. The cost of capital links the two disciplines.

The residual income model holds for any accounting process. Thus, R & D spending may or may not be capitalized. The book value to be “the anchor” is valid at any value. The second term of this formula is the difference between the market value and the book value.

3. Previous Research

In practical research, it has been done to calculate EVA spread with a certain CAP. These studies include the following: Nakano(2009),Frankel and Lee (1998) , Ohlson[1995],Lev (2001) ,Hulten and Hao (2008), Takizawa (2013),and so on.

These previous studies are under the strong assumption that CAP is known. That said, as long as the data cannot be observed, the estimation model needs some assumptions.

In this research, build a model of MICAP (Market Implied Competitive Advantage Period) and try to inverse calculate the CAP from market price of stock price.

4. Analysis procedure

4.1. Modeling

This study builds a model to obtain