

The Discussion about the NPV and the Valuation

Jing bo Gai^{1,a,*}

¹New Channel School, Shandong, 266000, China

a. 2760541613@qq.com

*corresponding author

Abstract: This essay is about the importance, the accuracy and the application of investment valuation, along with the necessary evaluation and analysis. This article mainly writes about how to use valuation method to evaluate some investment projects, different risks different profits, different profits different returns. And what we need to do is we need to invest a certain amount of assets in different projects, and we need to use a limited formula or method to figure out how to allocate the money in order to maximize the returns. Although the valuation method is an inaccurate algorithm, it can give a relatively accurate value, which is convenient to compare the different benefits brought by different choices, so as to choose the better one. Different projects have different valuation methods, such as bond, stock. In addition, inflation is an important problem for earnings, so we need to use these calculations to figure out its net present value. After all, the same amount of property has different values at different stages. Sometimes the quantity of property goes up, but its value does not necessarily go up all the time.

Keywords: investment valuation, NPV, PV, absolute valuation, relative valuation

1. Introduction

There are investments in anywhere in our daily life, such as stock, antique collection and even some investments on the talents. The goal for investment for us is having more benefits in the future, but if you want to make sure that your investment has more possibilities to be successful, the valuation before the investment is a necessary step for you. The reason why I want to study about it is that it's an essential and necessary way to evaluate the future values or returns of the property we invested. There are many factors and aspects that can effect the value of the property, such as inflation, compound interests, even demand of goods, so it's difficult to revalue the NPV of projects, but some wrong choice can lead to family broken up, because many investors will use show-hand to invest, so if they are failed, maybe all of their property will go away. Only in 2022, there are 460 thousand businesses went bankrupt in China, this is not a little number ,since this only includes business in China. So revaluation is a necessary process we have to do when we invest.

2. The Importance of Valuation

First of all, it is necessary to know the importance of the valuation. On the one aspect, enterprises are required to conduct investment valuation, since it is also a basic and necessary factor, and they must use valuation to determine which investment or share they will exchange. At the same time, for the capital side, enterprise valuation is to compare and judge the internal value of enterprises

with their current stock price, so as to determine the safety margin of investment (Abel and Eberly, 2012). Secondly, it is also a useful way to evaluate the development strategy planning in the future. Doing a good job in enterprise valuation planning can not only enhance the value of enterprises in the capital market, but also comprehensively enhance the ability of enterprises in the process of development and management [2].

There are two main sorts of the valuation formulas, which are perpetuity and annuity [3]. Furthermore, each of them has the growing on, for instance growing perpetuity and growing annuity. For the perpetuity one, its formula is $PV = C/r$, and growing perpetuity is that $PV = C/(r-g)$. What's more, for the annuity is that $(C/r)(1-(1/(1+r)^t))$ and growing one is that $(C/(r-g))(1-((1+g)^t/(1+r)^t))$. These four formulas are essential for estimating the approximate value we will get in the future. When we choose which project is better for investment, we can choose the one which has higher rates of interests, since there is the opportunity cost when we give up another project. Use the formula to make sure that we can have the profits in the future as much as possible.

Some people also classify them into two kinds, which are absolute valuation method and the relative valuation methods [4]. Relatively, there are less data and assumptions will be needed for the relative valuation methods, so it can result that the investors can consider the choices more directly and easily, because this way is easy to calculate. The usage of it is comparing the companies and finding the business which may be underestimated. That is the reason why it is widely used by the investors.

The other kind is the absolute valuation method. It is also a method that uses the discounted cash flow analysis to measure the company's financial worth [5], but the difference between these two methods is that check what properties does a business have compared to its competitors.

Overall, there is a vital theory which is "higher risks, higher returns" [6], so that means investors need to consider properly about the risks and how many returns they will get, even whether they can avoid the risks or not. They have to combine them together.

Furthermore, everyone is the investor in the daily life, such as disposals or saving money in the banks for interest, and that is the reason why people need to combine the different bonds, for instance the premium bonds and [7-8].

There is an example about bonds, since when the companies need the money, they will issue the bonds which will result in that more individuals give the borrow the money to the business. For the premium bonds, there are three steps used to value this kind of bonds. Firstly, solve out the present value of face value, then calculate the present value of coupons payment. Finally, add these two values together, and the sum is the premium bonds. For the second sort of the bond is named discount bond which have the higher risks than the premium bond, but there are more returns for discount bonds. When the honesty of the company is low, company must issue the discount bonds. Overall, the sum of the present values of coupons and the face value is higher than the face value for the premium bonds, but for the discount value, the same is smaller than the face value.

The next project is stock which has more risks than the bond because if the company goes broken, the entrepreneurs don't need to compensate the investors. We can use cash flow to measure value of business's stocks [9]: $NPV = V = (D1/(1+r)^1) + (D2/(1+r)^2) + (D3/(1+r)^3) + \dots$. This is the formula to measure the value of the stocks. In this formula, number of the terms is $(n+1)$, when we measure the stocks for period n . Furthermore, D =dividends and r =required returns. Of the growing is constant, we can use $Period0 = \text{dividends} / (\text{required returns} - \text{growings})$. On the other hand, there is a question: we have the formula, but why can't we keep profiting stably in every day. There are answers, the required returns and growing are not stable and they are just assumed by us, since some people are not rational. It results the turmoil in the stocks market.

When we talk about the accuracy of the valuation, I have to say that appraisers even could believe themselves that they can estimate the market value wonderfully, because their predictive

ability is similar to that of other participants in the market. When promised expectations fail to materialize, not only do appraisers themselves raise questions, but regulators and clients also become confused. The true value of an appraisal lies in its independence, diligence, or accuracy in the process from its preparation to its completion. The accuracy of the valuation results is limited by the accuracy of the data obtained, the reliability of the model, and the market volatility. Clients seek advice from professional appraisers to find a reasonable range of market prices in the face of market uncertainty. As the 19th century English logician Carveth. "It is better to be vaguely right than explicitly wrong [10,]" says Mr Reid. At the same time, appraisers should not use the inherent deviation of valuation results as an excuse for not being diligent, and should try their best to control the valuation deviation at an acceptable level and reduce the valuation error as much as possible to avoid misleading.

We have to try these ways in many investments in many ways, and the calculation won't be accurate for all time.

3. Conclusion

In conclusion, these are only the basic formulas used to estimate the companies' value in some aspects, for instance, bonds and stocks. For the truth, there are many unstable factors which will influence the value of the business, and you need to determine by yourself. That's all I want to say about the valuation and the NPV. Actually we can't get an exact, but we can just evaluate and it can prevent that there are less losses if we are failed in investment. Overall, my article talks about some formulas which can be used on revaluation and measure the NPV, and how can they be used properly. Finally, not only investment needs to be evaluated, all the things in life are all needed to be evaluated. Before we doing anything we need to consider that what evaluation with it bring to you.

References

- [1] ABEL, A. B. & EBERLY, J. C. 2012. *Investment, Valuation, and Growth Options. The Quarterly Journal of Finance*, 02, 1250001.
- [2] IMAM, S., BARKER, R. & CLUBB, C. 2008. *The Use of Valuation Models by UK Investment Analysts. European Accounting Review*, 17, 503-535.
- [3] BECKER, D. M. 2022. *Getting the valuation formulas right when it comes to annuities. Managerial Finance*, 48, 470-499.
- [4] PODVIEZKO, A. & PODVEZKO, V. 2014. *Absolute and relative evaluation of socio-economic objects based on multiple criteria decision making methods. Engineering Economics*, 25, 522-529.
- [5] KECK, T., LEVENGOOD, E. & LONGFIELD, A. 1998. *Using discounted cash flow analysis in an international setting: a survey of issues in modeling the cost of capital. Journal of Applied Corporate Finance*, 11, 82-99.
- [6] DICHEV, I. D. & YU, G. 2011. *Higher risk, lower returns: What hedge fund investors really earn. Journal of Financial Economics*, 100, 248-263.
- [7] SMITH, W. 2016. *Taming Premium Bonds. The Bond Buyer*.
- [8] VAN HORNE, J. C. 1982. *Implied tax rates and the valuation of discount bonds. Journal of Banking & Finance*, 6, 145-159.
- [9] MILLS, J. & YAMAMURA, J. H. 1998. *The power of cash flow ratios. Journal of Accountancy*, 186, 53.
- [10] HÖFLMAYER, F. "It is better to be vaguely right than exactly wrong." (C. Read) *Radiocarbon dating and Bronze Age chronologies in the eastern Mediterranean*.