The Use of IRR and NPV in Agribusiness Investments Outline

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Abstract. Following this discussion of the inferences that can be formed from using IRR and NPV comes a description of the further steps that should be done as a direct result of those inferences. These additional steps should be taken since they are directly related to the premises. It is strongly recommended that these actions be carried out directly from the conclusions that have been formed. As a direct result, it will guide the decision of whether or not to invest in the agricultural sector. On the other hand, the action might be considered if there is sufficient evidence to support its need. In this particular instance, the word "need for it" is the element that serves as the decisive factor.

Keywords: Internal Rate of Return, Net Present Value, Agribusiness Investment.

1. Introduction

1.1 Background

Undoubtedly, agricultural practices and the generated income for the produced commodities serve as a vital primary backbone for economic development for many countries globally. No country is not dependent on agricultural products, which makes agribusiness doubtlessly a critical activity. However, there is a current increase in the prices of farm products. The recent rise in prices of commodities resulting from agricultural practices has seen a surge in private investments in agribusiness and farming. With appropriate large-scale investments, the result can have rather transformative and positive impacts on development from an economic perspective nationally. However, economic indicators also show a negative potential. Therefore, the situation has created the need to analyze and assess agribusiness investment practices using financial metrics. As informed by Kiropoulos et al., NPV (net present value) and IRR (internal rate of return) are the financial metrics considered adequate for conducting investment analysis of agribusiness activities [1]. Net cash flows of investments within the agribusiness sector often vary significantly due to the inherent high risks linked with the expected effects being greatly dependent on the environmental conditions over which the investors might not have control or influence. The NPV and IRR financial models have been modified to incorporate the value of strategic management of investments into the initial evaluation of a given asset and associated economic benefits in net returns. Considering the high possibilities of these decisions being modeled as put or call options, the related mathematics of the financial options has been applied to the agribusiness investment to evaluate these investments' potential profit and losses.

1.2 Objectives

Using the IRR and NPV metrics, this paper analyzes the financial potential and associated risks (losses) of carrying out agribusiness investments. Therefore, the primary objectives are to establish the suitability of using NPV as a financial technique for evaluating the risk associated with agribusiness investments. The other purpose is to determine the effectiveness of using IRR as a financial metric in analyzing the returns associated with agribusiness investment.

2. Related Research

According to Wielewska, investments in agribusiness have low volatility but the potential for high yields [2]. However, as several macroeconomic indicators show, this is not always the case, which means that negative or positive implications can be derived. In this regard, using NPV for analyzing agribusiness investments becomes a preferred evaluation model. Since the accounting procedures used in various countries often differ, the use of NPV to evaluate agribusiness would have country-specific computation impacts. Some countries allow investments to be deducted from the taxable incomes in the year for making the investments.

In contrast, others require that assets be deducted against the taxable gains over a specified duration or number of years. However, in all these cases, the investment costs are usually included as cash flows in the NPV in the first year of investments. The only difference is in the net taxes from when the assets are written off as costs. The net return thus implies the cash outflow and inflow resulting from the investments annually, which can be included as incomes or deducted as expenses.

Furthermore, Baucells and Bodily suggested that when using the NPV model for evaluating agribusiness investments, the net returns for any of the years are not always known with absolute certainty as there are factors beyond the investors' control in the agricultural sector, the model is effective as it considers how this uncertainty ought to be handled [3]. Therefore, NPV allows for incorporating the uncertainty in net returns into the agribusiness investment evaluation by adjusting the discount rate upwards. The upward adjusting of the discount rate enables the consideration of the risk-free rate plus the risk premium, which in most countries reflects the interest rate on short-term government bills. Therefore, using NPV in the analysis of agribusiness investments allows for the discount rate to be evaluated based on the weighted average of the costs of debt and equity for the investors. Still, these costs are usually inclusive of the risk premium. The cost of equity is determined through the use of the capital asset pricing model, while the cost of debt for the investor refers to the interest rates that the investors must pay for the debt used in the investment. As a result, NPV considers that what is essential in evaluating the assets is the variability of the prices of the stocks about the market portfolio variabilities. The technique thus allows the market to assess the riskiness of any agribusiness investment guided by the analysis of past investments.

Valach posited that IRR is an alternative evaluation technique for agribusiness investment in situations where it becomes challenging to determine the cost of capital for a discounted rate [4]. The computation of IRR is conducted by setting the NPV equal to zero and the carried out a solution for the discount rate in such a way that the discounted net return sums to the investment's initial cost. The principal reason behind this computation technique is that should the initial investment be made. There is an increased possibility for it generating net returns annually based on the computed (geometric mean) interest rate, which gives the rate of return that the investment generates. Additionally, Tauer deliberated that for agribusinesses whose cost of capital is not known or where there is a likelihood of its variance by year, the IRR procedure for agribusiness investments is considered attractive [5]. However, the researchers informed that the use of the IRR technique in the financial analysis of agribusiness investments is usually not explicitly favored in situations where there is the use of borrowed funds, as it does not often necessarily lead to the maximization of profit. The use of IRR is thus explicitly supported in cases where there are capital market inefficiencies or adverse selected problems for a suitable investment portfolio. As a result, the use of IRR for evaluating agribusiness investments is considered appropriate in situations where investors use equity funding to finance their investments. Applying the NPV criteria often results in investment amounts at the points where the marginal returns from the agribusiness investment equal the capital prices divided by the prices of the agricultural products produced. NPV thus represents a case scenario where maximum profits for the assets are attained but discounted to the initial time from the usage of optimal capital amounts owned or borrowed. On the contrary, the IRR capital amount for use usually considers the net returns (profits) to be zero because it is computed by considering the NPV zero. Therefore, only if investors own the capital used can IRR generate the highest returns for the investments.

2.1 Application of IRR in agribusiness investments

The concepts of "net present value" and "internal rate of return" are ways of thinking that are pretty similar and share many similarities. The value that is "presented" in the here and now may be measured in the same way by both the "net present value" and the "internal rate of return," both of which are phrases that are shortened as "net present value." This is because "net present value" is an abbreviation for both terms. When discussing the internal rate of return, which is a notion that is analogous to the concept of "net present value," the rate of return is expressed as a percentage. This is because the internal rate of return is equivalent to the idea of net present value. One of the many ways in which these two ideas might be compared to one another is the one that will be discussed in this paragraph [6]. This metric also goes by the label "internal rate of return," which is another name for it. It is one of the names that it is known by. This metric is also referred to as "return on investment" in some circles. This idea also goes by the "rate of return on investment," another name for it. IRR is an abbreviation that can be used in place of the phrase "internal rate of return," which is a common practice. IRR is an acronym that stands for "internal rate of return." Another word that may be used to represent this idea is "internal rate of return," which is also a phrase that can be utilized. It is of the utmost importance to differentiate between the two terminologies in this expression.

The phrase "internal rate of return" is sometimes abbreviated to "IRR," which is an acronym that stands for the full name of the concept. This phrase, which also functions as a word, is sometimes abbreviated to "IRR," also a comment. When someone refers to the "internal rate of return," which is commonly abbreviated as "IRR," they are most likely alluding to the "profit made on an investment." Because it is the most frequent, the full name of the phrase is typically spelled down using this format when the acronym is not abbreviated. This is because it is the most common. It is feasible to calculate one's return on investment (ROI) for a defined time in advance before the evaluation. This is something that can be done in advance of the review [7]. To carry out this responsibility effectively, it is essential to consider the amount of time that has elapsed since the evaluation was initially begun. There is no other way to do what needs to be done. Before we can move on to the actual review, we must ensure that this stage is completed successfully.

If it is required to do so, this is work that can be finished before the beginning of the evaluation [4]. When comparing the initial values at the beginning of an agribusiness enterprise with its present value, which is the value of the venture's expected future, a rough estimate of the investment that ought to be made can be obtained. This can be accomplished by using the term "present value." The results of this comparison can be interpreted as an indicator of the total amount of capital that should be invested Utilizing the concept of "present value" is one technique to reach this goal [7]. This is something that can be done, and it is something that should be done to establish the appropriate level of financial investment. It is something that can be done. Through the utilization of this comparison, one can arrive at an evaluation of the size of the investment that would be suitable.

The total disparity between these two values is equal to the value that is predicted to be the company's worth in the future. This value is similar to the real difference between these two values. With the aid of this estimate, one can choose the level of financial involvement in the project that is most appropriate for them and fits their needs the best. Based on the predictions and estimations that have been created, it has been determined that the company will bring in this amount of value over the next several years [6]. This is the amount of value that has been determined to be brought in by the company. With the help of this estimate, you can calculate how much of your own money you should put into the investment opportunity that has been presented to you to achieve the highest possible return on that investment opportunity. Those considering investing will want to seize this opportunity when it presents itself to them. To determine the significance of the difference, take the current number and subtract it from the value that was used at the beginning of the computation. This will give you an idea of how significant the difference is. You will better understand the significance of the difference after you have this information. This will provide you with a rough idea of how much of a gap there is between the two values.

Calculations will need to be done to determine the magnitude of the gap between these two figures. After accumulating all of this information, one may try to estimate the size of the chasm using the information they have obtained to do so utilizing the information they have compiled. After that point, you will have the option of decreasing the quantity of each thing that you own by the same beginning quantity, and the item that you acquire as a result of doing so will have the possibility of having its value doubled by one hundred [6]. When you are through, you will have a solution to your problem that is not only comprehensive, but it also cannot be disproved in any way, and this will be the case regardless of the circumstances.

2.2 Application of NPV in Agribusiness Investments

Net present value is a method that can be utilized to estimate the value, in terms of today's currency, of a stream of payments that will be received in the future as a result of an investment, project, or business. This can be accomplished by dividing the total amount of payments received in the future by the total amount of payments received today. To calculate this, divide the entire amount of payments that will be received in the future by the total amount of payments that will be received today [6]. This will give you the answer you need. Depending on the situation's specifics, these payments might be made as interest, dividends, or royalties.

One method that can be utilized to accomplish this goal is to calculate the "present value" of the payments that will be received in the future. This is one way that this goal can be accomplished. Think about the worth of the investment, the project, or the company about the value you anticipate it will provide you in the future. Consider the value of the acquisition, the project, or the firm as it stands right now in comparison to the value that may be reasonably predicted to be generated by it in the future. This fundamental approach can be utilized to progress toward achieving this objective. It is possible to compare the current value of the investment, project, or business and the value generated by the acquisition, project, or business in the not-too-distant future to accomplish this goal [6]. This comparison can be made by looking at the current value of the investment, project, or business. You can make this comparison by contrasting the present value of the investment, project, or interaction with the value generated by the future acquisition, project, or business. This comparison can be made by looking at the current worth of either the investment, the project, or the company that is being compared.

Calculating the value of the investment, project, or business based on its net present value is one way to arrive at the desired result. This will bring about the outcome that you have been working toward. You will finally get the response you've been looking for as a result of reading this. A project or investment's net present value (NPV) can be defined as the sum of all future cash flows anticipated to result from the project or investment minus the amount of money required to get the project or investment off the ground. Another way to say this is that NPV equals future cash flows multiplied by the money needed to get the project or investment off the ground [8]. A project or acquisition's net present value (NPV) can be calculated by multiplying the expected future cash flows by the total start-up capital required for the endeavor.

A project or investment's net present value (NPV) can also be determined by multiplying the predicted future cash flows by the total start-up capital required for the venture. This method is known as the discounted cash flow method [6]. The net present value (NPV) of an endeavor, whether it be a project or investment, can also be calculated by multiplying the expected cash flows by the future by the entire amount of start-up capital that is required for the business. The discounted cash flow method is the name given to this particular approach.

A different way of putting this is to say that the NPV is the sum of all the cash flows predicted to be the result of the project or investment in the not-too-distant future. This is another method of expressing the same idea. This is the third and last way this information can be presented [4]. This is just another possible interpretation of the same idea that might be stated. When it comes time to make judgments, the net present value will be one of the factors that are considered as one of the ways that an activity, such as an acquisition, is evaluated to determine whether or not it should be done at all.

This is because the net present value is one of the ways that an activity can be evaluated to determine whether or not it should be done at all. When evaluating a task, one of the questions that might be asked is whether or not the activity should even be attempted. Consider using this option as it is one of the means by which you can reach your goal [8]. The following are some other choices that can be taken into consideration.

The process carried out to get at this value could be significantly different from one application to the next depending on the kind of use being assessed in each case. This value is derived from a number that is between 0 and 1. Adjustments of a considerable nature would have to be made for this method to be successfully implemented in a context such as a school. Utilizing a discounted cash flow model is one of the possible strategies that could be put into action to reach this target most efficiently and beneficially as it is practically possible to do so [6]. This is one of the potential methods that might be put into action. This is one of the prospective techniques that could be put into action, which you should consider. This is just one of many other possible courses of action that one could follow in dealing with the current predicament; there are many different options.

Constructing a scenario model using discounted cash flows and running the simulation is an additional tactic that can be effective in this situation. This model can be used to design the simulation. There are many other potential courses of action in addition to the various systems of action that have already been studied. There are even more that could be investigated in the future. Before it can be computed, estimating the total amount and a timetable indicating when the projected future cash flows will occur is crucial. This is required for it to be possible to sum it. This is important because if we don't have it, we won't be able to do the computation [4]. This is a significant action that must be carried out before the calculation can be completed successfully. Selecting discount rates comparable to the required bare minimum return rates is the next step that needs to be taken. This next step needs to be completed after the previous one.

The asset's value will rise as a direct and immediate result of this circumstance due to the factors described earlier in the phrase. This will be the case since the asset's value will increase as a direct and immediate consequence of this condition [3]. If the NPV is positive, then the weight should also be positive in this scenario since logic says this should be the case. If the NPV is positive, the value ought to likewise be positive. If the NPV is negative, it is reasonable to assume that the matter should also be harmful to maintain logical consistency. This is because negative values are consistent with negative NPVs. If the asset's value is viewed in its entirety to be positive, then the value of the asset when it is considered in terms of its net present worth must also be positive for the argument to make any sense at all [4]. Because a number that is not zero suggests that the value is positive, it is plausible to deduce that the net present value (NPV) will be positive given the conditions. This is because a positive value is implied by a figure that is not zero. This is because a value that is not zero must be represented by a number that is not zero to avoid confusion. The fact that the matter is non-negative and positive reveals that it is more than zero, which is the explanation that lies at the base of this occurrence. In other words, the phenomenon may be explained by the value being more significant than zero. The fact that this is the case is the root cause and primary reason for this.

3. Conclusion

Following this discussion of the inferences that can be formed from using IRR and NPV comes a description of the further steps that should be done as a direct result of those inferences. These additional steps should be taken since they are directly related to the premises. It is strongly recommended that these actions be carried out directly from the conclusions that have been formed. As a direct result, it will guide the decision of whether or not to invest in the agricultural sector. On the other hand, the action might be considered if there is sufficient evidence to support its need. In this particular instance, the word "need for it" is the element that serves as the decisive factor.

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