Can Small Business Owners Invest in Canadian Apartment Rental Industry

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Abstract. The Canadian economy has been damaged a lot by Covid-19 outbreak since 2020. Now in 2022, the pandemic is almost end, the Canadian economy is recovering and investment opportunities are coming for investors. Some investors may look forward to invest in Canada. This paper selects Canadian apartment rental Industry as the target industry and evaluates whether or not to invest this industry. In this article, the data will be explained by Net Present Value (NPV), Internal Rate and Return (IRR) and Payback Period (PP) approach. The results will be explained under both certainty and uncertainty: under certainty means the evaluation of the investment will only consider the costs and benefits for the project itself, while uncertainty will include some potential risks which will lead to a decrease in profit or revenue. Based on the analysis done in this article, if results are under certainty, investors should accept the investment; if results are under uncertainty, investors should reject the investment. This article can provide an idea about how to evaluate an investment project for investors. This article maybe useful for investors who are interested at Canadian apartment rental industry or those who want to invest into this industry.

Keywords-Net Present Value (NPV); Internal Rate of Return (IRR); Payback Period (PP); Canada; Apartment Rental Industry.

1 INTRODUCTION

Since the Covid-19 outbreak in April 2020, Canadian apartment rental industry was influenced a lot. During the pandemic, Hayes [1] introduced the rental housing crisis which led to a price increase of housing in Canada. And the province moved to a rental flourish. Now move to 2022, is Apartment Rental Industry still worth for investors to invest with? In the previous studies done by Hayes [1], it introduced the investment opportunities in Canadian rental market by analysis the geographic information including population movement and personal income. In this article, investment opportunities will be evaluated through different approach including Net Present Value (NPV), Internal Rate of Return (IRR) and Payback Period (PP).

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Hayes [1] introduced the rental housing crisis caused by Covid-19. The article stated Covid bring both opportunity and thread to Canadian rental market. Buchko [2] wrote a report tointroduce the outlook of apartment rental industry in Canada such as its industry structure, growth trend and cost structure. It provides a clear overview and some investment opportunities of the industry for investors. Uctu et al. [3] clearly introduced the investors should whether invest or not invest the project in Gaziantep Footwear Industry by using NPV and IRR approach. This article provided a clear idea about how to use NPV and IRR approach into real world application. Militaru [4] introduced NPV and IRR method and example were provided to explain those two methods. Then this article clearly discussed about the differences between NPV and IRR when making decisions for mutually exclusive projects. Prodanov [5] introduced the idea of evaluate the investment projects under certainty and how it will influence investors decision and he also provided an overview about rate of return and opportunity cost of capital. A text book wrote by Berk et al. [6] introduced corporate finance to readers. This book provided a clear understand about how to make financial decisions under different financial theory and financial tools. Another text book wrote by Brealey et al. [7] also introduced the theory and practice of corporate finance. Ori [8] introduced how to determine the capitalization rate and discount rate. And how to use those rates to make financial decisions. Tang and Tang [9] introduced the differences between NPV and IRR. It stated that IRR is a financial indicator, and NPV is an economic indicator. Irwanto [10] introduced when IRR is a good method to use to evaluate an investment and when it is not a good way to use. It also stated some advantages and potential limitations that IRR may have. Liang et al. [11] conducted data mining related to rental and explained how vacation rentals is influenced by Covid-19 pandemic.

The analysis in this article will be considered under both certainty and uncertainty. Based on the research done by this article, it suggests that investors should invest in Canadian Apartment Rental Industry under certainty, which means the results will only consider the costs and benefits for the project itself. And it suggests that investors should not invest in Canadian Apartment Rental Industry under uncertainty, which means the results will consider risk of the investment such as any cash inflows and cash outflows which will lead to a decrease in revenue and profit.

2 DATA

In order to evaluate whether small investors can invest in Canadian Apartment Rental Industry or not, investment analysis is needed. To do the analysis, this article selected a firm called Property Management INC. (PMI) from Apartment Rental Industry. PMI was funded in 2008 by Steve Hart. The company provides services across residential, commercial, association and vacation rental management so that they could help investors to gain profit. The economic life of the project is expected to be 10 years.

In order to invest with PMI, the first thing need to do is to determine the cost of the investment. According to Statistic Canada, Starter Story and PMI, depends on investors' budget, they will have different investment cost. In this article, I will focus on small business investors, therefore, the estimate budget level will be low. Table 1 shows the information about investing with Property Management INC. in 2021. According to Panel A from Table 1, the estimate investment cost is about $59,576, in terms of Canadian Dollars. Panel B estimates the annual earnings which is equal $10,067.

Table 1. Investing with Property Management INC. (2021)

PANNEL A:

Features	Costs ($)
Equipment & Supply Expenses	1,200
Retail Business Expenses	11,650
a) Software Expenses	325
b) Inventory Expenses	14,750
Advertising & Marketing Costs	9,636
Website Costs	215
Insurance Costs	1,800
Franchise Fee	20,000
Total Cost	59,576

PANNEL B:

Features	Total ($)
Total Revenue	40,967
Operating cost	(30,900) *
Earnings before Tax	10,067

Source: Statistic Canada, Starter Story and PMI [12-14]
*Note: Numbers in brackets mean negative number.

3 MODEL

This article will use NPV, IRR and PP as a standard to evaluate the investment of the apartment rental industry in Canada. By analysis those data under NPV, IRR and PP approach, investors will have a better understand of whether to invest in Canadian Apartment Rental Industry or not.

3.1 Net Present value Rule

In reality, most of the time, investors prefer to measure values of a project based on their present value, in other words, today's cash. Therefore, in order to analysis the investments, Net Present Value approach (NPV) will be used. Net present value can be used to define the NPV rule, which is the "golden rule in finance". Net present value refers to the present value of a project or investment's benefits and the present value of its costs. NPV is one of the basic rules to evaluate a project. Under NPV approach, the time value of money, one of the most important concepts in finance, is considered. The formula (1) below shows how NPV is calculated:

$$NPV = C + \sum_{t=0}^{\infty}(CF_t \frac{1}{(1+r_t)^t}) \quad (1)$$

where C refers the initial cost of the projects or investments, usually, this number is a negative number; t refers to the time or life of the projects; CF_t refers to cash flows for each period. And r_t means discount rate of the project.

Under the NPV rule, if there is only one project, investors should undertake if its NPV is greater than zero. If there are many independent projects, investors should choose all of those with NPV greater than zero. If there are some mutually exclusive projects, investors should pick one which has the highest positive NPV.

3.2 Internal Rate of Return

IRR rule is a very popular way used by investors to choose among different projects. IRR rule and NPV rule are very similar. Under IRR rule, if there is only one project, investors should undertake it if its IRR is greater than the hurdle rate. If there are many independent projects, investors should choose all of those with IRR greater than hurdle rate. If there are some mutually exclusive projects, investors should pick one which has the highest IRR greater than the hurdle rate.

The formula (2) below allows investors to find IRR. IRR refers to the discount rate which will make the NPV becomes zero.

$$CF_0 + \frac{CF_1}{(1+IRR)} + \frac{CF_2}{(1+IRR)^2} + \cdots + \frac{CF_T}{(1+IRR)^T} = 0 \quad (2)$$

If all of the following conditions below are met, NPV rule and IRR rule can come up with the same conclusion. First, cash flows should only have one change of sign. Second, consider only one single project. Third, hurdle rate is equal to the opportunity cost of capital.

3.3 Payback Period

However, the simplest way that can be used by investors is called payback investment rule. The payback period emphasizes the turnover periods and liquidity. It measures the length of time it takes to recover the initial investment or break even.

Under the payback investment rule, investors should only undertake a project if its cash flows can recover its initial cost, or breakeven within its life. In order to apply payback rule, firstly, the amount of time for the project to break even should be calculated, the result that this process come up with is called the payback period. Under a payback rule, investors should pick the project if the payback period is less than its life time. Investors should reject the project if the payback period is greater than its life time.

4 RESULT

In this section, the investment will be evaluated by using NPV, IRR and Payback Period. Through systematic evaluation, investors will have a clear understand of whether to invest or not invest in this industry. This section will include two parts. In the first part, results will be considered under certainty. In the second part, the results will be considered under uncertainty.

4.1 Results under certainty

Firstly, the investment will be evaluated under certainty, according to Prodanov [5], under certainty means the evaluation of the investment will only consider the costs and benefits for the project itself, excluding any risks it may have. In order to find the NPV for the project, we need to find present value for each years' cash flows. Based on the data from Table 1, the initial investment C for this project is -$59,576, and earnings CF for each year is about $10,067. The economic life for the project expects to be 10 years. According to Ori [7], the discount rate r for the project is expect to be 8.5%. The formula used was the NPV formula (1) which is mentioned in the Model sector.

Table 2. Financial Analysis Results Using NPV and IRR

Year	Cash flows ($)	Present Value ($)
2021	-59,576	-59,576
2022	10,067	9,278.34
2023	10,067	8,551.47
2024	10,067	7,881.54
2025	10,067	7,264.09
2026	10,067	6,695.01
2027	10,067	6,170.52
2028	10,067	5,687.11
2029	10,067	5,241.58
2030	10,067	4,830.95
2031	10,067	4,452.49
Total discounted cash flows ($)		66,053.1
Total Investment costs ($)		59,576
Net Present Value (NPV) ($)		6,477.1
Internal Rate of Return (IRR) (%)		11

Source: Statistic Canada, Starter Story and PMI [12-14]

According to Table 2 above, the total discounted cash flows are $66,053.1, the total investment costs are $59,576, the difference between those two numbers, which is the NPV, is equal to $6,477.1. Based on NPV rule, investors should invest this project since the NPV for this investment since the NPV for this project is positive.

IRR (2) is calculated by Excel, which is 11%. According to IRR rule, investors should invest this project since the IRR for this investment is greater than the hurdle rate 8.5%. However, there are some limitations for IRR. In this article, only one project is considered. If there are more than one project need to be evaluated, then IRR cannot be used. In addition, IRR requires only one change of sign. Furthermore, sometimes a project may have more than one IRR, and IRR rule cannot be used in this scenario.

Table 3. Financial Analysis Results Using Payback Period

Cash Flows ($)	10,067
Total Investment Costs ($)	59,576
Payback Period (Years)	6

Source: Statistic Canada, Starter Story and PMI [12-14]

According to Table 3 above, the payback period is calculated by using total investment cost divided by cash flows, the results is about 6 years, which means the project will break even after 6 years. Under payback period rule, investors should invest this project since the payback period is smaller than its economic life time.

There are some advantages for payback period. First, payback period rule is it biased toward short-term projects and liquidity. In other words, a payback rule tends to favor investments which can free up cash for other uses quickly. Second, payback period rule is often used by large companies when they are making relatively minor decisions. The primary reason for this is that many small decisions do not need detailed analysis because the cost of the analysis would exceed the possible loss from a mistake.

4.2 Results under uncertainty

However, in reality, investors have to face many risks which will influence the investment decisions. Under this assumption, we need to measures potential decreases in revenue due to risks. According to Uctu et al [3], the risk factor is used in risky investment to measure any possible reasons which will decrease cash flows.

Table 4. Financial Analysis Results Using NPV and IRR with 10% Risk Factor

Year	**Cash flows ($)**	**Present Value ($)**	**Risk Factor (α)***	**Adjusted cash flows CF*(1-α)**	**Present Value of risky investment**
2021	-59,576	-59,576		-59,576	-59,576
2022	10,067	9,278.34	0.1	9,060.3	8,350.51
2023	10,067	8,551.47	0.1	9,060.3	7,696.32
2024	10,067	7,881.54	0.1	9,060.3	7,093.38
2025	10,067	7,264.09	0.1	9,060.3	6,537.68
2026	10,067	6,695.01	0.1	9,060.3	6,025.51
2027	10,067	6,170.52	0.1	9,060.3	5,553.47
2028	10,067	5,687.11	0.1	9,060.3	5,118.40
2029	10,067	5,241.58	0.1	9,060.3	4,717.42
2030	10,067	4,830.95	0.1	9,060.3	4,347.24
2031	10,067	4,452.49	0.1	9,060.3	4,007.24
Total discounted cash flows ($)		66,053.1			59,447.8
Total Investment costs ($)		59,576			59,576
Net Present Value (NPV) ($)		6,477.1			-128.2
Internal Rate of Return (IRR) (%)					8

Source: Statistic Canada, Starter Story and PMI [12-14]
*Note: risk factor (a) is assumed to be 0.1 or 10%.

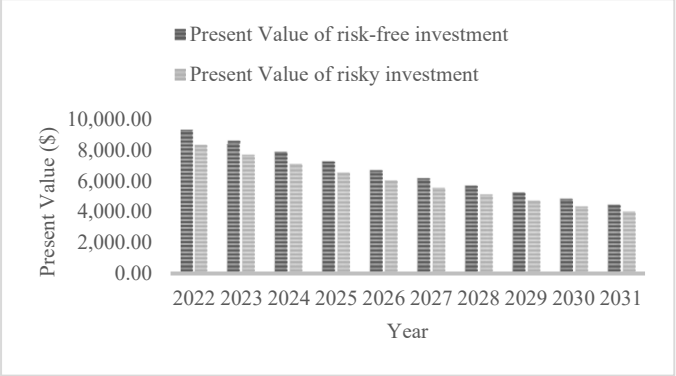

Figure 1. Present value of risk-free investment and risky investment

As shown in fig.1, the present value of both risk-free investment and risky investment is decreasing each year. The risk-free investment has a higher present value than risky investment.

According to Table 4 above, however, after a 10% deduction in cash flows, the total discounted cash flows will decrease from $66,053.1 to $59,447.8. In this scenario, the difference between total discounted cash flows and total investment will be -$128.2, which means NPV for this project will become negative. Under net present value rule, investors should not invest this project since the NPV for this project is negative.

In terms of Internal Rate of Return, after a 10% deduction in cash flows, now IRR decrease from 11% to 8%, which is less than the hurdle rate 8.5%. According to IRR rule, investors should not invest this project since the IRR is smaller than its hurdle rate.

Table 5. Financial Analysis Results Using Payback Period with 10% Risk Factor

Cash Flows ($)	10,067
Risk Factor (α) *	0.1
Adjusted Cash Flows ($) (1-α)*CF	9,060.3
Total Investment Costs ($)	59,576
Payback Period (Years)	6.6

Source: Statistic Canada, Starter Story and PMI [12-14]
*Note: risk factor (a) is assumed to be 0.1 or 10%.

However, according to Table 5 above, the payback period is 6.6 years, which is still less than the project's economic life. In this scenario, payback period rule suggests investors to accept this project even though the project will make investors losing money. Sometimes, payback period is not reliable, because no discounting process is involved in the payback period rule, it means payback period rule ignores the time value of money, which is a very important concept in finance. Furthermore, investors' profit maximization is totally ignored by payback period approach. Profit maximization is the true nature of finance. In addition, the payback period rule is lacking decision criterion, for example, what is a right number to evaluate the result. And it also ignores the cash flows after the cutoff date.

Results under certainty and uncertainty will lead to different outcomes. If results are under certainty, it means the evaluation of the investment will only consider the costs and benefits for the project itself. In other words, risks of the investment will not be considered. If results are under uncertainty, some potential risks which will lead to a decrease in profit or revenue will be considered. Based on the previous analysis, investors should accept the investment under certainty. However, in reality, risks always exist, which means results need to be considered under uncertainty. Based on the previous analysis, investors should reject the investment under uncertainty.

5 CONCLUSION

In conclusion, this article answered the question of whether to invest or not invest in Canadian apartment rental industry during post-pandemic. The purpose for this article to bring financial analysis tools into applications. Data collected in this article is explained under NPV, IRR and PP approach, the aim is to evaluate the investment project in Canadian apartment rental industry.

The results are evaluated under certainty and uncertainty. If the investors only consider the costs and benefits for the project itself, then they should accept this investment. However, if risks are considered, then investors should reject this project. This article will make a great contribution about implementing NPV, IRR and PP into financial analysis and make investment decisions. Moreover, this article can be used as a suggestion for those investors who want to invest in Canadian apartment rental industry after the economy recovery. As a result, this article can help investors to make investment decision. This article can also provide an idea about how to evaluate an industry.

However, this article only evaluated 10-year life project, the result may not be accurate or accurate enough. For future researches, researcher can evaluate 20-year life project or more than 20-year life project into the evaluation. Also, there are many different ways can be used to evaluate the project such as modified internal rate of return (MIRR) and discounted payback period. MIRR could be a better way to make investment decision than IRR since MIRR will only get one result, which means only one IRR will exist. Then discounted payback period is better payback period since discounted payback period includes time value of money which can help the investors to make better decision. And those different methods may produce different results.

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