Opportunity cost is the benefit foregone by selecting an alternative instead of the one that provides the greater benefit. To evaluate the opportunity cost, you need to perform a cost-benefit analysis or, what amounts to an incremental cost analysis by analyzing two alternatives. For example, if b yields an after-tax ROR = 19% and d yields an after-tax ROR = 12%, then the opportunity cost of selecting d over b is 7%. In other words, by selecting option d, you forgo the opportunity of earning an additional 7% by not selecting b. Opportunity cost can also be measured in monetary terms. If the benefit of b is 1500 and that of e is 800, then the opportunity cost of choosing e over b is 700 as the 700 reflects a lost opportunity or a 700 benefit that is forgone. By selecting b, you're better off to the tune of 700.

Given the two alternatives in the lease v. buy decision, you need to determine which one yields the most benefit with minimal risk. The best way to do this is by doing an incremental cost analysis and assess opportunity cost. The first thing to do is to collect and organize all the data (Table A) and then create a table that compares the decision to purchase with the decision to lease (Table B). We'll use a planning horizon of 36 months, the lesser of the two terms.

TABLE A

PURCHASE	LEASE
Sell Price = 37852 Sales Tax Rate = 8.25% Doc/Title/Reg. Fee = 460 Down Payment = 5727 (similar to CCR for a lease) Amount Borrowed = 37852 x 1.0825 +460 – 5727 = 35708 Term = 48 months Interest Rate = 2.25% Monthly Payment = 778.59 Balance Owed after 36 months = 9250 Includes $52 loan cancellation fee.	Sell Price = 37852 Sales Tax Rate = 8.25% Doc/Acq Fee = 85 + 650 = 735 Sales Tax = (85 + 650 + 500) x 8.25% = 102 Gov. Fee/Tax/1st. Payment = 400 + 102 +440 = 942 MSD = 9 x 450 = 4050 Total DAS = 735 + 942 + 4050 = 5727 CCR = 500 (taxable) Adjusted Cap = 37852 - 500 = 37352 Term = 36 months Money Factor = 0.00043 Residual Value = 23661 Base Payment = 406.54 Sales Tax = 33.64 Monthly Lease Payment = 440.18 Buyout after 36 months: (23661 + 350) x 1.0825 + 60 – 4050 = 22002 Includes $60 Admin Fee, $350 PO Fee. Assumes PO Fee is the same amount as the disposition fee.

TABLE B

Time End of Period (months)	Purchase A	Lease B	Difference A - B
0	5727.00	5727.00	0.00
1	778.59	440.18	338.41
2	778.59	440.18	338.41
3	778.59	440.18	338.41
BALANCE OWED			
36	9250	22002	-12752

There is no requirement or need to purchase the vehicle at the end of the planning horizon. However, for leasing to be the right choice, you must be able to accumulate enough cash, or some equivalent thereof, over 36 months by investing the monthly savings (338.41) to cover the 12752 deficit at the end of 36 months (Table B) even though you may or may not purchase after 36 months. This deficit is the difference between the amount owed by purchasing (payoff after 36 months = 9250) and the amount owed by leasing (buyout = 22002). As it turns out, if you have the opportunity to invest 338.41 @3.11%, compounded monthly, after taxes for 36 months, you will just cover the 12752 deficit. This is the break-even point where one would be indifferent between buying and leasing <u>from a pure financial perspective</u>. In this case, the opportunity cost is 3.11%. If the lessee chooses not to invest those cash flows (338.41) in an investment instrument yielding 3.11% annually or needed durable goods yielding the equivalent of 3.11% in the eyes of the lessee, then the lessee loses the opportunity to earn 3.11% or the equivalent thereof. In other words, the lessee loses the opportunity to break-even. In some financial parlance circles, the 3.11% is called the "hurdle" rate which equals 12 x RATE(36, 338.41, 0, -12752) where RATE is an Excel function. Hurdle rate is also the internal rate of return which forces the net present value (NPV) to equal zero reinforcing the idea that it is the break-even rate. If we use an investment rate that exceeds the hurdle rate (IRR), then the NPV will always be > 0 which translates to a benefit making leasing the preferred option from a financial perspective**.**

If you have the opportunity to invest the monthly savings at an after-tax rate <u>exceeding</u> 3.11%, then the best alternative is to lease; otherwise, purchase. Clearly, one can always solve for the break-even or hurdle rate at any point in time over the planning horizon. The question is whether one can find an investment opportunity with a sustainable after-tax ROR exceeding the hurdle rate. This may be difficult if terminating a lease early due to the possibility of early termination charges and risk of damage or excess wear/tear charges if the vehicle is not purchased. Early termination triggers higher lease balances (balances decline throughout the term of the lease) and a lower number of invested cash flow differentials (e.g., 15 cash flows of 338.41 each). Higher lease balances coupled with fewer cash flows can cause a substantial increase in the hurdle rate depending upon the corresponding loan balance.

Now suppose the best investment opportunity available is a money market account yielding an after-tax ROR = 5.50%. What is the opportunity cost triggered by selecting buying over leasing? This investment accumulates 13217 which more than covers the 12752 deficit by 465. Therefore, if you select the purchase alternative, you will forgo the opportunity to earn an additional 465 had you decided to lease. As such, the opportunity cost of selecting purchasing over leasing is 465. Sidebar comment: The difference between economic profit and accounting profit is that economic profit recognizes and captures opportunity cost.

Granted, there are intangibles and personal preferences to consider. If the value one places on the monthly savings of 338.41 by purchasing preferred durable goods exceeds the terminal value of 12752, then those preferences signal one to choose leasing. Anyone making blanket statements as to whether one option (buying) is better than the alternative (leasing) or vice versa without analyzing the numbers (lease v. purchase analysis) or considering preferences and intangibles, could be in for a surprise. As far as selling the vehicle after M months for $X, it will likely be the same whether you lease or buy and so, it is a wash. What matters is the difference between the amount owed under each alternative at the back end of the planning horizon and the mitigating invested cash flow differential as well as the front-end cost differential.

NOTE: All ROR's referenced herein, assume that the ROR is compounded monthly. For example, 5.50% compounded monthly is equivalent to an annual effective ROR of 5.64 % compounded annually. Banks refer to this rate as the Annual Percentage Yield (APY). Other, often overlooked, investment opportunities include paying off hefty debt on 22% APR credit cards that translates to an after-tax ROR of 22%!

CAVEAT: If you do not intend on buying out your lease, remember that terminating the lease early may trigger hefty early termination charges that would serve to effectively increase the lease balance at the time of termination. This could knock the snot out of the hurdle rate meaning that this rate could increase

to the extent that it would be unattainable. Also, it's assumed that there is no damage or excess wear/tear charges; otherwise, this will increase the amount owed as well. If you own the vehicle, you don't necessarily have to repair damage or wear/tear. Therefore, you may very well be better off by purchasing instead of leasing if terminating early is a distinct possibility.

RISK: There is always the risk of damage and/or wear/tear. Another concern is whether the investment rate can be sustained over the planning horizon. The question is whether you can get a 3-year fixed interest that exceeds the hurdle rate. A high return coupled with high risk can be a deal killer for those that are risk averse. So, there are intangibles that are difficult to quantify but must be considered, nonetheless.