



# Personal Finance: Another Perspective

## The Transportation Decision: Making it Wisely

Updated 2020-01-28



# Objectives

- A. Understand key issues and principles of effective car ownership
- B. Understand how to buy or lease a new vehicle
- C. Understand the lease versus buy decision
- D. Understand how to develop an effective auto and adult toy strategy

Appendix:

Optional: Understand how to buy a used car



# Your Personal Financial Plan

- Section XV: Your Auto Decision Plan
  - What is your vision and goals for your Transportation/Toy Plan? (use [Auto Home Mission Strategy template](#) (LT01-15))
    - What auto(s) are you currently driving? What expenses and fees are you paying, including gas, maintenance, repair and insurance?
  - What are your auto/toy plans and strategy?
    - Strategies may include how often to get a new vehicle, new versus used, cash versus debt, negotiation strategies, warranties, etc.
  - What are your constraints and accountability?



# Transportation Case Study

## Data

- Maxine negotiated the price of a car with a dealer and now wants to decide whether she should lease or buy the car.
  - Manufacturers Suggested Price (MSRP) \$25,000
  - Negotiated cost/Capitalized cost 22,000
  - Down Payment 2,000
  - Lease Term and residual 3 Years, 55%
  - Fees: Acquisition \$500, Registration \$150, License \$35, Documentation \$200, Termination \$300
  - Rent charge and Loan rate (APR) 8.35%
  - Sales tax 6.25%
- Calculations
  - Help her decide based solely on costs. She will pay cash for the down payment, taxes on down payment, and fees but will finance the remainder (including other taxes). Assume the value at term end is the residual value (The [Lease versus Buy Analysis](#) (LT22) may be helpful to check your work)



# A. Understand Key Areas and Principles of Auto Ownership

- There are a number of important topics to understand before we discuss buying or leasing new or used vehicles. These include:

## 1. Choosing a vehicle

- a. Goals and Budget
- b. Vehicle Safety
- c. Vehicle Reliability
- d. Insurance and MPG

## 2. Before You Go Looking

- a. New/Used Vehicle Prices
- b. Holdback
- c. Warranties
- d. Service Contracts
- e. Lemon Laws

## 3. After You Have Found It

- a. Vehicle History
- b. Checked by a Mechanic
- c. Maintenance records



## 1.a. Choosing a Vehicle:

### Know Your Vision, Goals and Budget

- Know your vision, goals and budget
  - Do you know your auto vision, goals and budget?
    - Does your car fit your budget, or your budget fit your car?
      - If you are planning to finance the vehicle (not recommended), are there sufficient funds to cover the costs and still attain your other goals
      - Are you putting aside money each month to purchase another vehicle in the future



## b. Vehicle Safety

- Pick a vehicle that is safe for your family
  - Where do you find information on vehicle safety and ratings?
    - There are a number of good sites. A good place to start is the National Highway Traffic Safety Administration site at [www.nhtsa.gov](http://www.nhtsa.gov), safer cars at [www.safercar.gov](http://www.safercar.gov), and the Insurance Institute for Highway Safety at [www.iihs.org](http://www.iihs.org)





## c. Vehicle Reliability

- Pick a vehicle with a good repair record
  - If the vehicle has a reliable record, there is a better chance you will not have unforeseen expenses
- Where do you find safety and repair information?
  - You can find good information at Consumer Reports on new and used vehicles at [www.consumerreports.org](http://www.consumerreports.org).





## d. Insurance and MPG

- Pick a vehicle inexpensive to insure and drive
  - The Insurance Services Office (ISO) rates each vehicle on its loss history, with a number 3-27
    - The higher the number, the more expensive the coverage. Sports cars, high performance cars, and SUV's are expensive to insure
  - Which vehicles are more expensive to drive?
    - Check the miles per gallon in the city and highway



## 2. Before You Go Looking:

### a. New versus Used Prices

- Your choice of new versus used vehicles will depend on three areas:
  - Goals, preferences, and budget
    - New
      - Advantages: New vehicle and all that goes with it, lower maintenance costs, fewer miles
      - Disadvantages: Higher initial vehicle and insurance costs, and may limit other goals if spend too much
    - Used
      - Advantages: Lower initial vehicle and insurance costs, and may help with other goals
      - Disadvantages: Higher maintenance costs and higher miles



# New Vehicle Prices

- New: Know the dealer's invoice price
  - There are a number of automobile websites where you can get estimates of what the dealer paid new from the manufacturer, i.e., [www.edmunds.com](http://www.edmunds.com), [www.autosite.com](http://www.autosite.com), or [www.kbb.com](http://www.kbb.com).
    - Put in the manufacturer, model, and options and you can get the invoice price
  - You can generally find the same information on used cars just as you do new cars. Key sources include [www.edmunds.com](http://www.edmunds.com), [www.autosite.com](http://www.autosite.com), [www.kbb.com](http://www.kbb.com), [www.nada.com](http://www.nada.com) or [www.vehix.com](http://www.vehix.com).
    - With used cars, you must include the vehicle condition



Your friend in the business.

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New Cars Used Cars Reviews | Compare Vehicles | Tips/Advice | Search Dealer Inventory | New Car De

1 - Body Style 2 - Make 3 - Year 4 - Model & Trim 5 - Mileage

Used Values: Vehicle Report



2-Door Coupe
1995 Ford MUSTANG-V8
Convertible 2D GT

Vehicle History Report

Check the history of a vehicle
Press GO or Enter VIN
[GO]

Estimated Payment

\$217.21/Month\*\*
\*\*based on \$1,000 down,
4.69% interest rate, 8.25%
sales tax, 36 months
Apply for a loan now

Free Dealer Price Quote

New Car Dealer Quote

Trusted Partners

- Free Insurance Quote
Check Your Credit
Donate Your Vehicle
Warranty Quote
DMV Forms
Find This Car

Auto Resources Articles

- Appraising Your Car
Selling Tips
Buying a Used Car
Financing 101

February 01, 2005

print this vehicle report

Table with 4 columns: Base Price, Mileage, TOTAL PRICE and 3 sub-columns: Low Retail, Average Retail, High Retail.

Thank you for using nadaguides.com to get your used vehicle price. Come and take a look at our New Car Pricing and Information. If you plan on purchasing a new vehicle, get a Free Quote from a dealer near you.

(\*) Average retail price represents a clean vehicle in good condition with a Clean Title History.

If you're purchasing a used vehicle, get used car financing rates as low as 4.69% APR for 24-36 months. Find out if you can lower your insurance premium; click here for a free Insurance Quote or get a FREE Credit Report.

Selling your vehicle? Sell your vehicle through AutoTrader.com and get the most for your money. Print a checklist and the required DMV Title & Registration forms.

print this vehicle report

email a friend

Other Vehicle Information
Model Number: 45
Weight: 3451

Back to Top

The free consumer values on nadaguides.com are based on the



ADVERTISING

Advertisement for Ford Five Hundred sedan with text: ELEVATING THE SEDAN, FIVE HUNDRED Built for the road ahead. LEARN MORE >



## b. Holdback

- Know the dealer Holdback
  - What is a holdback?
    - The holdback is a rebate to the dealer to compensate the dealer for holding the vehicle on his lot. Information on holdback is found at many different sources, including:  
<http://www.edmunds.com/advice/incentives/holdback/>
  - Why is this important?
    - It is important for you to realize that even when the dealer sells a vehicle at this cost, he is still making money



## c. Warranties

- Know the warranty and period
  - What are warranties?
    - Warranties are assurances that goods are as promised and that any problems will be resolved
  - What are full warranties?
    - Full warranties are contracts that require:
      - 1. Product will be fixed at no cost to the buyer within a specified time
      - 2. Owner will not have to undertake unreasonable tasks to return the product
      - 3. Defective product will be replaced or money returned if it cannot be fixed





## d. Service Contracts

- Know available service contracts and providers
  - What are service contracts?
    - Agreements between the contract seller (dealer, manufacturer, etc.) to provide free (or with a deductible) repair services to covered components specified length of time or mileage after the original warranties are over.

What should you be concerned about?

- Contract terms: Items covered (power-train), length of coverage (i.e., 5 years), and mileage
- Contract seller: Who stands behind it. Generally service contracts from the manufacturer are better as you can get service nation-wide





## e. Lemon Laws (Consumer Protection)

- Know your rights as a consumer
  - What are lemon laws?
    - Laws established to protect the consumer in case the vehicle purchased is a “lemon”
  - How do you know if you have a lemon?
    - You are still having problems, and you have made:
      - 4 attempts to fix the problem, and
      - The car was out of service at least 30 days during the first 12 months or 12,000 miles
    - Take the car back and either get another car or your money back



## 3. After You Have Found It:

### a. Vehicle History

- Get a vehicle history report
  - What is a vehicle history report?
    - It is a record of each and every time the vehicle was registered with a different owner in the records of the state
  - How can you get a copy of a vehicle history?
    - You can go to [www.carfax.com](http://www.carfax.com). By putting in the Vehicle Identification Number (VIN), you can get a report as to the ownership and location of a vehicle's history.



## b. Inspection by a Good Mechanic

- Get the vehicle checked by a qualified mechanic
  - How do you get it checked?
    - Take it to a qualified mechanic, preferably from a dealer for a major checkup
      - While it may cost between \$80-250, it will be worth it if they find problems





## c. Service Records

- Review the service records of the vehicle
  - How do you check service records?
    - Sellers should have a copy of all service performed on the vehicle
      - Consumers should keep a record of all service performed
      - Dealers, oil change places, etc., often have records of when service was performed
  - Vehicles which have good service records were likely better taken care of than those without, and as such, command a higher premium



# Principles of Effective Auto Ownership

- Why is the auto decision so difficult?
  - The reality is that this is an extremely complex (not just dollars and sense) decision as it:
    - Has lots of options for potential vehicles
    - Has much uncertainty over future costs
    - Reflects our self-image
    - Signals to others how successful we are
    - Makes a statement about our lifestyle
  - The ideal is a safe and reliable means of transportation that you have saved for and can afford



## Areas and Principles (continued)

- What happens when the self-image, signals, or statements becomes more important than our personal vision and goals
  - We spend more than we should
  - The costs get in the way of our more important vision and goals, reducing our chances of achieving them
  - It relegates more important goals to a lesser position





# Principles of Auto Ownership (continued)

- What are the principles of effective ownership?
  1. Understand yourself, your vision and goals
  2. Seek, receive and act on the Spirit's guidance
  3. Understand the key areas and costs of vehicle ownership
  4. Make your vehicle fit your budget, not your budget fit your vehicle
  5. Understand and minimize all costs, for purchase, fuel, repair, taxes, insurance, depreciation, and resale value over the car's effective life—keep it running
  6. Be a wise steward over your vehicle





# Areas and Principles (continued)

- Finding balance

Guiding Principles

Doctrines

Understand yourself, vision and goals

Identity

Seek, receive and act on Spirit’s guidance

Obedience

Understand key areas & costs of ownership

Stewardship

Make vehicle fit budget, not vice versa

Agency

Minimize all costs over the car’s useful life

Stewardship

Be a wise steward over your vehicle

Stewardship



## Areas and Principles (continued)

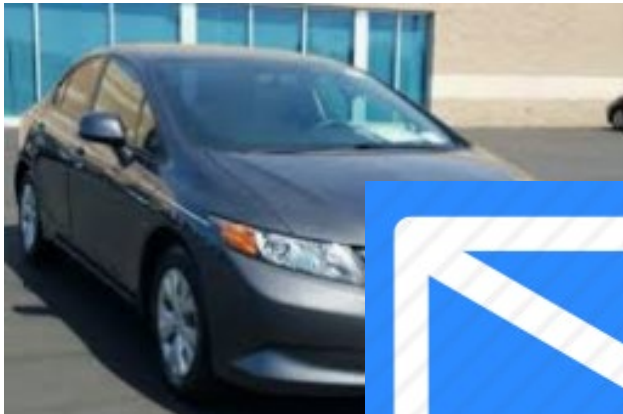
### *From obedience to consecration*

- I am a child of a loving Father in Heaven (identity), striving to live worthy of the Spirit (obedience), learning to be a wiser steward over the things God has blessed me with (stewardship). I am striving to understand the costs and benefits of my different transportation options (agency), choose good vehicles, minimize costs, maintain them well, and keep them my predetermined amount of time so I can accomplish my personal mission and my individual and family vision and goals.



# Questions

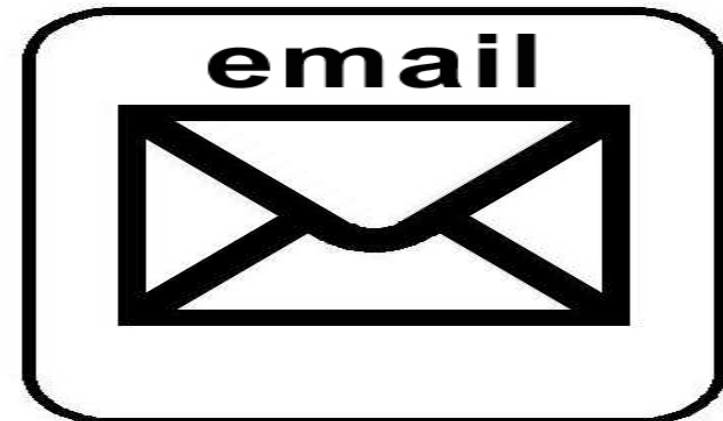
- Any questions on the key areas and principles of auto ownership?
  - Are there better ways to buy a vehicle?



2012 Honda Civic



Wasarut's Kia



Matt's email



## B. Understand how to Buy/Lease a Vehicle

- General Guidelines (the process):
  1. Know the terminology
  2. Narrow your choices and pick your vehicle
  3. Determine your total price and negotiate for it
  4. Determine how to finance the purchase (lease or buy)
  5. Enjoy your purchase and keep it well maintained



# 1. Know the Terminology

- MSRP
  - Manufacturers hoped for price
- Capitalized cost
  - Your agreed to or negotiated cost
- Capitalized cost reduction
  - Any reductions in cap. cost, such as rebates, down payment, dealer incentives, trade-in, etc.
- Net capitalized cost (also called adjusted capitalized cost)
  - Capitalized cost less capitalized cost reduction
- Residual value
  - Expected value of the vehicle at term end
- Lease term
  - The number of months the vehicle is leased



## 2. Narrow Your Choices and Pick your Vehicle

- Comparison shop by price, product features, and quality
  - Be informed. Check library and Web sources
- Look at the alternatives
  - Fit your car to your budget—Include all maintenance, insurance and repair costs
  - Calculate your payments if you must finance it



Determine what is available in your price range.

- Test-drive the exact vehicle you are considering.





### 3. Determine your Total Price and Negotiate

- Before you begin negotiations, determine how much you can spend
  - Identify the car(s) you are interested in
    - Do your homework and find the dealer's cost (including all your options) plus:
      - Rebates
      - Holdback from manufacturer
      - Dealer invoice
    - Send out notices to all your dealerships in your area, with their best “out the door” price (have your financing, if needed, secured)





# Negotiating Recommendations (continued)

- Start negotiations at below dealer's invoice
  - See what they say they paid for the vehicle (invoice) and what price they want "out the door"
    - Dealer inventory often impacts difference between invoice and MSRP (demand & supply)
    - Date often affects dealers willingness to deal. End of month and end of year are good times
  - If their deal is the best, then take it
    - If not, show them your best deal from your emails and ask your local dealership to beat it by \$100-300. Most of the time they will



# Your Purchase (continued)

- If financing the vehicle:
  - Ideally, get approved for the financing before you go shopping for the vehicle
  - Determine the term of the loan and find the most attractive rate
  - Go with dealership financing only if they can beat the best rate other places and you are approved on the spot.

• Generally, credit unions have lower rates than banks

The National Association of Credit Unions found

Term and Interest rate	Credit Unions	Banks
Used car loan 36 months	3.64%	5.43%
Used car loan 48 months	3.51	5.37
New car loan 48 months	3.57	5.04
New car loan 60 months	3.44	4.93

Source: National Credit Union Administration,

<https://www.ncua.gov/files/publications/analysis/credit-union-bank-interest-rates-dec-2018.pdf>, December 2018



## 5. Maintain Your Purchase

- Read the owner's manual and perform regular maintenance
  - Particularly do oil changes every 3-5,000 miles
  - Don't ignore warning signals.
    - You do at your peril!
  - Choose a good garage; check training and experience



# Questions

- Any questions on general guidelines on buying a new vehicle?



## C. Understand the Leasing versus Buy and How to Calculate Lease Costs

- Leasing Challenges

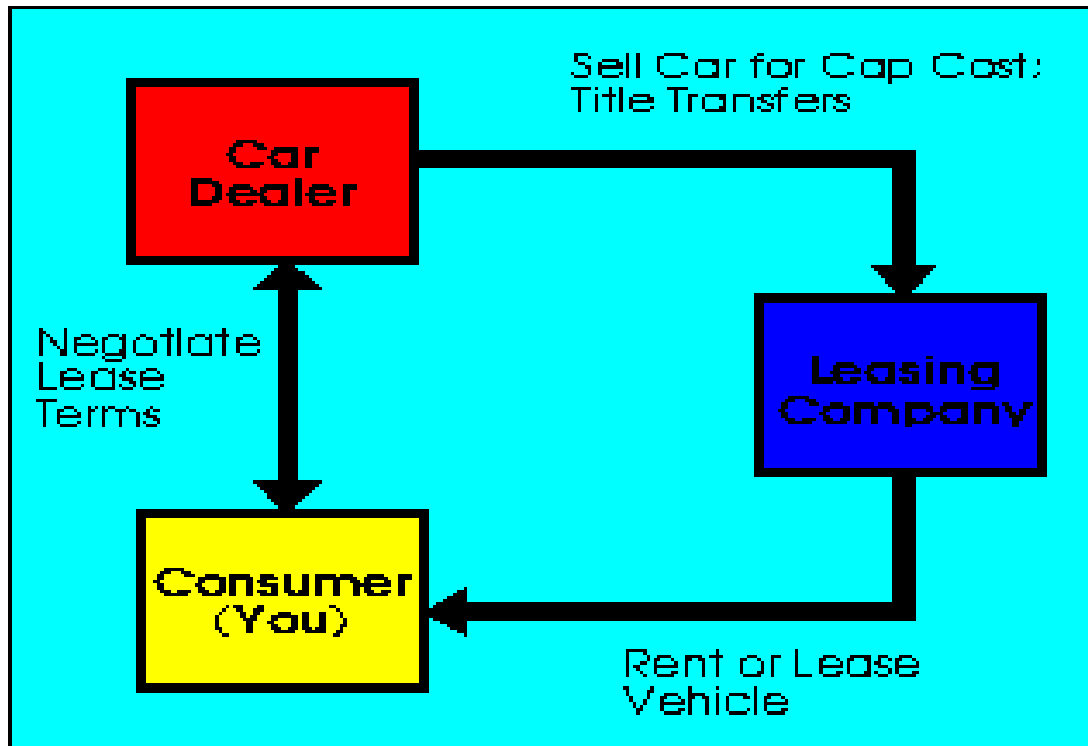
- There may be a place for leasing, particularly if your business can expense your lease costs. Monthly costs are cheaper; however, for most people:
  - It generally costs more due to higher interest costs
  - Once in the leasing habit, payments go on forever
  - You have fixed mileage, with high costs if go over
  - You must maintain vehicle in good condition
  - At the end of contract you do not own the car
  - There are extra fees and leasing profits are hidden
  - There are high early termination penalties and fees if you return it early



# Leasing Costs (continued)

- 1. Negotiate the price and the lease type first!
  - MSRP: \$22,000
  - Negotiated Price: 20,000

Closed-end (or walk away) lease: As long as vehicle is clean and taken care of, you owe nothing at lease end.  
Open-end lease: If lender cannot get the amount estimated, borrower must pay the difference

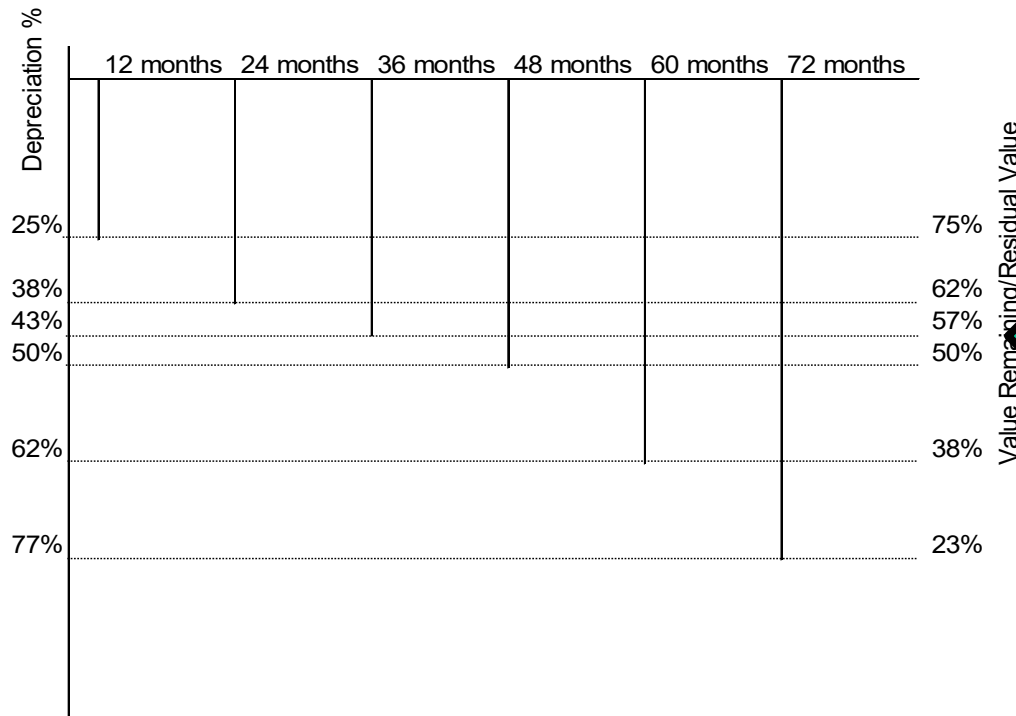




# Leasing Costs (continued)

- 2. Select the Lease Term (the schedule)
  - Select 3 years with 57% residual value

Depreciation Schedule of a Typical Vehicle







## Leasing Costs (continued)

- 3. Calculate Residual Value
    - Auto Residual Guides
      - [Kelly Blue Book](http://kbb.com) (kbb.com) and [Edmunds](http://edmunds.com) (edmunds.com)
    - Important parameters
      - Year, make, model and options of auto
      - Term of lease (3 years) and MSRP
      - Apply residual % to MSRP for residual value
- \$22,000 MSRP
- x .57 Residual ratio (3 year lease)
- \$12,540 Residual value



## Leasing Costs (continued)

### 4. Calculate Lease Costs (4 major costs)

- MSRP: \$22,000, Negotiated cost (Net. Cap. Cost) \$20,000, Residual Value: 57%, 3 Year Term, Rent Charge 6.0%, Taxes 6.25%, Taxes, tags and license: \$250, Acquisition fee: \$300, Termination fee: \$300
- 1. Fees: There are both front- and back-end fees
  - Front-end: Taxes and tags: \$250  
Acquisition: \$300
  - Back-end: Termination fee: \$300
  - These are added to get your Net Capitalized Cost



MSRP: \$22,000, Negotiated cost (Net. Cap. Cost) \$20,000, Residual Value: 57%, 3 Year Term, Rent Charge 6.0%, Taxes 6.25%, Taxes, tags and license: \$250, Acquisition fee: \$300, Termination fee: \$300

- 2. Usage (or depreciation)
  - Usage is the amount of the value of the vehicle that is used over the lease life. It is calculated by taking the net cap cost (NCC) less the residual value (RV)
    - $\$20,000 - \$12,540 = \$7,460$  total
    - $\$7,460 / 36 \text{ months} = \$207.22$  per month



MSRP: \$22,000, Negotiated cost (Net. Cap. Cost) \$20,000, Residual Value: 57%, 3 Year Term, Rent Charge 6.0%, Taxes 6.25%, Taxes, tags and license: \$250, Acquisition fee: \$300, Termination fee: \$300

- 3. Interest (or finance costs)
  - (Net capitalized cost+residual)\*money factor (APR/24)
    - It is the average amount borrowed times the monthly interest rate: (Net cap. cost + residual) / 2 times average interest rates: APR / 12
    - $(\$20,000 + \$12,540) / 2 * .06 / 12 = \$81.35$  per month
    - $\$81.35 * 36 \text{ months} = \$2,928.60$  total
  - 4. Taxes (or government costs)
    - Taxes are (Usage + Interest) \* tax rate
      - $(\$7,460 + \$2,928.60) * .0625 = \$649.29$  total
      - $\$649.29 / 36 = \$18.04$  per month

# Questions

- Any questions on the challenges of leasing and calculating lease costs? (Use [LT22](#) to check your work)



## Lease versus Buy Analysis (LT22)

Actual and Negotiated Costs:		Finance Charges and Residual:	
Manuf. Sillly Retail Price (MSRP)	22,000.00	Interest Rate (rent charge)	6.00%
Capitalized/Negotiated Cost	20,000.00	Sales Tax	6.25%
Other Taxable Fees/Options	-	Lease Period (months)	36
Gross Capitalized Cost	20,000.00	Residual Value in %	57.0%
Cap. Cost Reduction. (Down Payment)		Residual Value in \$	12,540.00
Cap. Cost Reduction. (Rebates/Other)		Taxable Fees	
Trade In Allowance		Acquisition/Termination	600.00
Balance Owed on Trade In (-\$)		Document Fee	
Remaining Amount (Net Cap. Cost)	20,000.00	License & Registration	250.00

### Lease Analysis (DP & Fees paid outside the lease)

### Buy Analysis (DP, Tax on DP & fees paid outside the loan)

	Overall Costs	Monthly Payments		Overall Costs	Monthly Payments
<b>Costs:</b>			<b>Costs:</b>		
Gross Capitalized Cost	\$ 20,000.00		Negotiated Cost with Fees/Option	\$ 20,000.00	
Cap. Cost Reductions (CCRs)	-		Cap. Cost Reductions (CCR)	-	
Net Capitalized Cost	20,000.00		Net Capitalized Cost	20,000.00	
Taxable Fees/Options	-		Taxable Fees/Options	-	
Tax on Down Payment	-		Tax on Down Payment	-	
<b>Fees:</b>			<b>Fees:</b>		
Acquisition/Termination	600.00		Acquisition & Termination	N/A	
Document Fee	-		Document Fee	-	
License & Registration	250.00		License & Registration	250.00	
Total Paid Outside Lease:	850.00		Total Paid Outside Loan:	250.00	
<b>Total Amount to Finance (NCC):</b>	20,000.00		<b>Total Amount to Finance:</b>	20,000.00	
Note: Residual Value	12,540.00		Taxes on Net Amount	1,250.00	
			Total Amount to Finance	21,250.00	
<b>Lease Payments:</b>			<b>Loan Payments:</b>		
Depreciation: (NCC-RV)	7,460.00	207.22	PV = \$21,250, I = 6.00%, N = 36, P/Yr = 12, PMT = ?	23,272.78	\$646.47
Interest (NCC+RV)*MF*LP	2,928.60	81.35	Note: Loan Interest Paid	2,022.78	905.82
Taxes	649.29	18.04	Note: Taxes Paid	1,250.00	(600.71)
Total Lease Costs	11,037.89	306.61	Total Loan Costs	23,272.78	
Fees Paid outside the Lease	850.00		Fees Paid outside the Lease	250.00	
Total Lease Costs	11,887.89		Total Buy Costs	23,522.78	
			Less Residual Value	(12,540.00)	
<b>Total Payments (inc. Trade in):</b>	\$ 11,887.89	306.61	<b>Total Payments:</b>	\$ 10,982.78	646.47

Savings of buy over lease: Buy beats Lease by \$ 905



## E. How to Develop a Transportation/Toy Plan

- What happens if you don't think through the auto decision and have a strategy?
  - You borrow, and pay interest instead of earn it
  - You get in the habit of buying/leasing a car on credit, so you pay interest and find it difficult to fund your other important goals
  - It's not in your budget or is more than you planned, so it relegates important goals to a lesser position
  - You buy a new car too often, and so you pay too much for expensive depreciation, insurance and other costs which limits your other goals





# Transportation/Toy Plan (continued)

- Vision
  - Likely from your Plan for Life
- Goals
  - Budget: Ensure the auto fits the budget, not the budget fits the auto
  - Vehicle age: Keep your cars for 10 years or 200,000 miles whichever comes first
  - Maintenance: Be diligent in oil changes every 3-5,000 miles and do the recommended maintenance
  - Financing: Pay cash for all vehicles
  - New car purchases. We will buy used vehicles until our net worth is  $> \$750,000$



# Transportation/Toy Plan (continued)

- Plans and Strategies
  - Before you buy a vehicle, check out the vehicle thoroughly
  - Budget for all costs, including purchase, fuel, maintenance, and insurance
  - Purchase new vehicles 1-2 years old with less than 24,000 miles, then buy the 100,000 extended warranty at \$150 over invoice
  - Spouse gets the newer vehicle
  - Once you have a vehicle, save a specific amount each month for purchase of your next vehicle when this vehicle dies



# Transportation/Toy Plan (continued)

- **Constraints**
  - We buy a new vehicle only after we have a \$500k in net worth; and spouse gets the newer and safer car.
  - The value of all toys and vehicles will not exceed 50% of annual income (Dave Ramsey)
- **Accountability**
  - From your Plan for life



## Transportation/Toy Plan (continued)

- What are toys?
  - Toys are adult vehicles that are not necessary for transportation yet still may be important for individual and family recreation and goals
    - These include boats, motorcycles, ATVs, SxSs, jet skis, bikes, trailers, RVs, etc.
- What happens without a Toy Plan?
  - You can spend significant amounts of resources on things that are not consistent with your personal and family goals and at the wrong time in your financial life



# Transportation/Toy Plan (continued)

- Vision
  - From your Plan for Life
  - Other ideas include:
    - Toys give experiences to bring family together
- Goals
  - We will pay cash for all toys only after saving 20%
  - Our first toys will be bikes, then tents, camping equipment, then perhaps a small ATV for the kids.
  - As net worth increases, we may purchase a trailer and larger ATVs consistent with our budget and savings
  - We will purchase good toys with available spare parts



# Transportation/Toy Plan (continued)

- Plans and Strategies
  - We will buy good equipment with available parts so we can keep toys running more than 20 years
  - We will keep all toys 20 years, and do all recommended maintenance so they will last
  - We will stay within annual budgeted amounts for toys, including fuel, maintenance and insurance
  - We will not allow others to use toys unless they take good care of them so they will last our required 20 years





# Transportation/Toy Plan (continued)

- Constraints
  - We will keep close to the Spirit so we are not enticed by the trappings of the world to spend more
  - We will buy toys only if we are reaching our savings and budget goals.

## Accountability

- From your Plan for Life



# Review of Objectives

- A. Do you understand how a car fits into your financial plan and principles?
- B. Do you understand the process of how to buy or lease a vehicle?
- C. Do you know how to make the lease versus buy decision?
- D. Do you know how to put together your auto/toy strategy?



# Case Study #1

## Data

- Maxine negotiated the price of a car with a dealer and now wants to decide whether she should lease or buy the car.
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- **Solution: Cost of Leasing**

• Down Payment and fees	\$2,000
• Taxes on Down Payment (2,000*.0625)	125
• Fees (Acq + Reg + Lic + Doc+ Term)	1,185
• Total Paid Outside the Lease	\$3,310
• Total Lease Payments:	
1. Usage: [20,000 – 13,750 (55% of MSRP)]	\$6,250
2. Interest: (Average outstanding * average rate)	
[(Net Cap. Cost + Residual) * Money Factor]	
(20,000 + 13,750) / 2 * .0835/12 * 36 months)	4,227
3. Taxes: (6,250 + 4,227)*.0625	655
Total lease payments of	\$11,132
• Total Cost of Leasing (DPF+LP)	\$14,442
• Monthly lease cost: 11,132 / 36 =	\$309.22



MSRP 25,000, Negotiated/Capitalized Cost 22,000, Down Payment 2,000, Lease Term and residual 3 Years and 55%, Fees: Acquisition \$500, Registration \$150, License \$35, Documentation \$200, Termination \$300, Rent charge and Loan rate 8.35%, and Sales tax 6.25%.

- **Solution: Cost of Buying**
  - Down Payment and fees \$2,000
    - Taxes on down payment 125
    - Upfront Fees (Reg. + License + Doc.) 385
      - Total Paid Outside the Loan \$2,510
  - Remaining Amount \$20,000
    - Remaining taxes (20,000)\*.0625 1,250
    - Total Amount to Finance including taxes \$21,250
    - Total Payments over holding period 24,096
      - 21,250 PV, 8.35%, 36 N, PMT=669.33\*36
    - Total Cost of Vehicle (Financed + DP + fees) \$26,606
    - Market value of car at end of the loan (residual) (13,750)
    - Total Cost of Buying DP+UF+TP+T-MV \$12,856
    - Monthly Purchase Payment \$669.33



MSRP 25,000, Negotiated/C...  
 and residual 3 Years and  
 \$35, Documentation \$200  
 Sales tax 6.25%.

Buy versus Lease Evaluation: Buy beats Lease by \$1,586				
Item	Lease	Buy	Difference	Reasoning
Additional Fees	800.00	0	800.00	There are no acquisition/termination fees for buying a vehicle
Interest	4,227.19	2,846.03	1,381.16	Purchasing amount is amortized, so you pay less interest
Taxes	654.82	1,250.00	(595.18)	Leasing taxes are less as it is only on the amount borrowed
	\$5,682.01	\$4,096.03	\$1,585.98	Buying has a \$1,586 advantage

**Notes:**

1. Interest charges are calculated by adding the capitalized cost plus residual value times the money factor, which is the interest rate in decimal form divided by 24.

It can also be thought of as the average amount outstanding, or (remaining amount + residual value) / 2 times the average interest rate of APR / 12. Multiplied out, it is the remaining amount plus residual value \* APR / 24 or the Money Factor.

- Maxine makes this decision based solely on costs:
  - They are:
 

	Lease	Buy
• Total Cost	\$14,442	\$12,856
• Monthly Cost	309	669
• Buy versus Lease Savings		\$1,586**

**\*\*Why the Differences**

Acquisition/Term.	\$800 <sup>(1)</sup>	\$0
Taxes	\$654 <sup>(2)</sup>	1,250
Interest	4,227	2,846 <sup>(3)</sup>
<b>Total</b>	<b>\$5,682</b>	<b>\$4,096 (\$1,586)</b>

(1) Some fees for leasing but not buying, so the advantage is for buying

(2) Taxes are paid on borrowed amount, and leases you borrow less, so advantage leasing

(3) Interest is paid only on unamortized amount, and buying amortizes faster, so advantage buying



**Lease versus Buy Analysis (LT22)**

Updated 2019-02-26

This tool helps to compare leasing versus buying as a potential method of acquiring a vehicle. The lease interest charge is a close approximation. This example assumes that down payment, taxes on down payment, and fees are paid outside of the monthly lease payments. Below it gives the reason why either lease or buy is cheaper.

MSRP  
Year  
Term

Residual 3  
200,

**Actual and Negotiated Costs:**

**Finance Charges and Residual :**

Manuf. Sillly Retail Price (MSRP)	25,000.00	Interest Rate (rent charge)	8.35%
Capitalized/Negotiated Cost	22,000.00	Sales Tax	6.25%
Other Taxable Fees/Options	-	Lease Period (months)	36
Gross Capitalized Cost	22,000.00	Residual Value in %	55.0%
Cap. Cost Reduction. (Down Paym	2,000.00	Residual Value in \$	13,750.00
Cap. Cost Reduction. (Rebates/Other)		Taxable Fees	
Trade In Allowance		Acquisition/Termination	800.00
Balance Owed on Trade In (-\$)		Document Fee	200.00
Remaining Amount (Net Cap. Cost)	20,000.00	License & Registration	185.00

**Lease Analysis (DP & Fees paid outside the lease)**

**Buy Analysis (DP, Tax on DP & fees paid outside the loan)**

	Overall Costs	Monthly Payments		Overall Costs	Monthly Payments
<b>Costs:</b>			<b>Costs:</b>		
Gross Capitalized Cost	\$ 22,000.00		Negotiated Cost with Fees/Op	\$ 22,000.00	
Cap. Cost Reductions (CCRs)	2,000.00		Cap. Cost Reductions (CC	2,000.00	
Net Capitalized Cost	20,000.00		Net Capitalized Cost	20,000.00	
Taxable Fees/Options	-		Taxable Fees/Options	-	
Tax on Down Payment	125.00		Tax on Down Payment	125.00	
<b>Fees:</b>			<b>Fees:</b>		
Acquisition/Termination	800.00		Document Fee	200.00	
Document Fee	200.00		License & Registration	185.00	
License & Registration	185.00		Total Paid Outside Loan:	2,510.00	
Total Paid Outside Lease:	3,310.00		<b>Total Amount to Finance:</b>	20,000.00	
<b>Total Amount to Finance (NCC):</b>	20,000.00		Taxes on Net Amount	1,250.00	
Note: Residual Value	13,750.00		Total Amount to Finance	21,250.00	
<b>Lease Payments:</b>			<b>Loan Payments:</b>		
Depreciation: (NCC-RV)	6,250.00	173.61	PV = \$21,250, I = 8.35%,	24,096.03	\$669.33
Interest (NCC+RV)*MF*LP	4,227.19	117.42	N = 36, P/Yr = 12, PMT = ?		
Taxes	654.82	18.19	Note: Loan Interest Paid	2,846.03	1,381.16
Total Lease Costs	11,132.01	309.22	Note: Taxes Paid	1,250.00	(595.18)
Fees Paid outside the Lease	3,310.00		Total Loan Costs	24,096.03	
Total Lease Costs	14,442.01		Fees Paid outside the Lease	2,510.00	
			Total Buy Costs	26,606.03	
			Less Residual Value	(13,750.00)	
<b>Total Payments (inc. Trade in):</b>	\$ 14,442.01	309.22	<b>Total Payments:</b>	\$ 12,856.03	669.33

**Savings of buy over lease: Buy beats Lease by \$1,586**



## Case Study #2

### Data

- Andrea is considering the costs of owning a vehicle valued and sold for \$30,000. Auto Loan Amount: \$30,000, Duration: 4 years, APR: 8.65%
  - Property taxes: 2% of the vehicle value per year
  - Sales Taxes: 3% of the sales price
  - Title and Tags: \$40 per year
  - Maintenance and Usage Costs: \$1,500 per year
  - Insurance: \$2,000 per year

### Calculations

- Calculate the total first year cost of ownership.



## Case Study #2 Answer

- \$30,000 4 years APR 8.65% will have payments of \$741.58 x 12 =
  - \$8,898.91 payments in year 1
  - \$600 Property Tax
  - \$900 Sales Tax
  - \$40 Title/tags
  - \$1,500 Maintenance/usage
  - \$2,000 Insurance

\$13,938.91 for the total cost for the first year

Note: If you include your sales tax in the loan, the payment is  $\$30,000 * (1.03) = PV = \$30,900$ ,  $N = 48$ ,  $I = 8.65$ ,  $PMT ? = \$763.82 * 12 = \$9,165.87$



# Case Study #3. How to you Buy A Used Auto?

- Note: This section was originally in my slides, but I never had time to get to them. I include them here, as a problem for those who are interested. Please talk with me if you have any questions
- Key questions to ask on buying a used car:
  - 1. Can I afford this car?
    - Will it fit into my monthly budget? Is it a need?
  - 2. Does it meet my current driving needs?
    - What type of driving you do? Shop for a car that meets your needs and driving patterns
  - 3. Will it meet my future needs?
    - Consider how you will feel about this car a year or two from now? Will your family be growing?
  - 4. Does it meet my preferences?
    - Gas mileage, sedan/SUV/truck, 2-door/4-door, safety?



# Getting the Best Deal

- The cost of a vehicle is based on its reliability, performance and popularity
  - Of course you want a car that is reliable and performs well. But do you want the same used car everyone else wants?
    - If so, you will pay a premium for it. In some cases, the only difference is the nameplate
    - Check reliability at [www.consumerreports.com](http://www.consumerreports.com)



# If You Must Finance the Car

- I do not recommend financing a vehicle!
  - This is not a preferred method—don't borrow
  - But if you must:
    - Get your financing approved beforehand from a credit union or other financial institution
      - Do not use in-house financing unless you get special deals (0% financing) or unless it is very competitive
        - Make sure you read the fine print completely!





# Getting Used Car Financing

- If you must borrow, there are several different lenders available for funding a dealership used car loan
  - Banks and credit unions
    - This is generally the cheapest form of borrowing (after parents)
    - Banks will typically only finance a car that is less than five years old
  - Auto Dealerships.
    - Dealerships will consistently have the worst interest rates because they are selling you their services



## Financing a Used Car (continued)

- When looking for a lender, it is also important to consider the maximum length of the loan
  - The good news is that most banks have 60-month programs for late used models
  - However, the older the vehicle, the less likely it will sustain for a full 60 months
    - In general, the older the vehicle, the shorter the loan length. An older vehicle is not good collateral for a loan.
    - I recommend loans of 36 months or less



# Sources of Used Cars

- The three most common places from which you can buy used cars are the following:
  - 1. Private parties
    - Generally the most reasonable prices, but no warranty
  - 2. New car dealerships
    - Some may be backed by warranties
  - 3. Used car lots
    - May be run by rental car agencies.
    - Sometimes no haggle buying, competitive prices, and perhaps the factory warranty may still be in effect



# Locating Good Used Cars

- Do your research -- leave no stone unturned
  - Ask friends, relatives (you will know more about history of vehicle)
    - Watch for cars with “For Sale” signs
  - Watch newspaper classifieds, bulletin boards, etc.
    - Generally, closer is better
  - Use Internet sites:
    - [KSLclassified.com](http://KSLclassified.com)
    - [AutoTrader.com](http://AutoTrader.com)
    - [Classifieds2000.com](http://Classifieds2000.com)
    - [Usedcars.com](http://Usedcars.com)



# 1. Call Before You Go See a Car

- Create and use a form when calling-- ask key questions. Verify the:
  - The price in the ad (ask again as they may have lowered the price since the date published)
  - Number of miles, number of owners
  - How often oil was changed (ask for receipts)
  - What is the blue book or recommended price
- If it doesn't fit your criteria or the seller seems uneasy answering questions, skip the visit and keep looking!



# Ask and Verify Key Information

- To verify previous owners
  - Use [www.Carfax.com](http://www.Carfax.com)
    - \$20 for a two month subscription
    - Check out every potential vehicle as to previous owners and locations via its VIN.
- To verify current value
  - Use [Edmunds.com](http://Edmunds.com), [KBB.com](http://KBB.com) (Kelley Blue Book), or [superpages.com](http://superpages.com)
  - Agree as to the quality of the vehicle, i.e. excellent, good, etc. before you come to visit so you can verify a fair price





## 2. Go see “The Car”

- Note your first impressions
  - Does the car appear to be well cared for? Examine for rust. Beware of newly painted cars, as this may be a cover-up for more serious damage
  - Are there considerable dents, mismatched paint areas, or poorly fitting parts? Make sure there are no ripples in door panels, as this indicates previous accidents
  - Check for body filler. Use a refrigerator magnet on suspicious spots to test for auto-body filler
  - Look inside the car for wear and tear on the seats and pedals. Make sure it is consistent with the mileage on the odometer



# Check Out the Car in Person

- Check the underside and tires
  - Look underneath for evidence of fluid leaks such as coolant (greenish), oil (black), transmission fluid (pink), or gasoline (identified by smell)
  - Take a look at the tires. A tread that's uneven to one side is a sign of poor alignment or balance
  - Check CV joint boots on either end of front axles. These are expensive to replace
  - With 4-wheel drive vehicles, make sure all 4 tires are the same brand, size, and type
  - Tires must be same size (and same brand if 4 wheel drive). Insist on a spare, jack, and lug wrench with the deal



## Check Out the Car (continued)

- Check under the hood
  - Look for mismatched bolts or offset paint. This may mean a front-end accident
  - Look at the underside of the hood. A sprayed black film on the underside usually means oil leaks
  - Examine the engine belt for wear. Use judgment as if it breaks, you will have to pay to repair it
  - Look for leaks and other things out of place



## Check Out the Car (continued)

- Perform gauge and listening tests
  - Make sure no emergency gauge lights are on when the engine is running
  - Does the car start right away? Listen for unusual noises
  - Wipe the inner surface of the tailpipe with a rag: white or gray dust is normal. Thick, greasy soot means the car burns a lot of oil—this can be serious
  - Most of you are not mechanics, but look for potential problems anyway



## Check Out the Car (continued)

- Check the oil, brake, and transmission fluid
  - Are levels ok?
  - Take out the transmission dip stick. Does the fluid smell burned?
  - Does it look like they just changed all the fluids? It may indicate that there is a problem
  - Check the oil level. A low level may indicate either a leak or an owner who didn't care much or know much about the car



## Check Out the Car (continued)

- Check the shock absorbers and lights
  - Bounce the car up and down at each corner. (when you release it, you should not feel it bounce back more than twice)
  - Test all lights: brake lights, headlights, reverse lights, turn signals, etc.





## Check Out the Car (continued)

- Check for play (the amount that a part can move before it engages)
  - Check for play in the steering wheel, clutch, and brakes
  - Hold brake pedal down as far as possible for 45 seconds. If they don't hold firm, there may be a leak
  - Push the top of one rear tire toward the car. If it moves too much, there may be bearing problems



## 3. Go for a Test Ride

- Take it for a drive personally
  - How does it feel? How does it fit?
  - Evaluate the acceleration from a stop. Does it hesitate or accelerate as it should?
  - Check engine noise, passing acceleration, hill-climbing power, braking, cornering, suspension, seat comfort
  - Check for rattles and squeaks, interior controls, and the audio system. Play the radio, tape deck, CD player, etc.



## 4. Take the Car to a Qualified Mechanic

- Get a more complete inspection
  - Choose a mechanic who regularly works on these cars, generally from the dealer. Other mechanics may be only guessing as to problems
    - Dealers may also have the car history on their computers
  - Have mechanic do a compression check and check for oil and fluid leaks
  - For automatic transmissions, take the car to a transmission specialists to check out the transmission



## 5. Negotiate the Deal

- Notes on negotiating for a used car
  - 1. Let the sellers know you have the cash in hand. Cash does wonders for an agreement
  - 2. Know the fair value for the car beforehand from KBB.com or other website
  - 3. Negotiate politely!
    - If the price is too high, have a persuasive argument to support it, KBB.com says \_\_\_\_\_
      - a. It needs some work from \_\_\_\_\_
      - b. The body or paint doesn't justify the price of \_\_\_\_\_
      - c. You have seen lower prices elsewhere in the market (and show screen shots)



## Negotiate the Deal (continued)

- If you just want to test their price:
  - a. The car isn't exactly what you are looking for, but for a lower price you might be interested
  - b. The car is worth the price, but you can only afford a lower price (budgetary constraints)
- Make an opening offer that is low, but in the ballpark
  - Expect to spend an hour negotiating
    - Don't be afraid to walk out if you are not getting anywhere
    - You don't have to buy this car!



# Tips for Negotiating

- Important Tips
  1. Pray for guidance and listen to the spirit
  2. Only enter into negotiations with a salesperson you feel comfortable with and who can deal
  3. Negotiate the “out the door” price if at dealerships
  4. Decide ahead of time how high you will go and walk out when you reach this price
  5. Leave if you get tired or hungry or feel pressured -- don't be hurried into a decision
  6. Don't be distracted by pitches for related items
  7. Expect a “closer” to try to sell you more things before you reach a final price—don't succumb





# Closing the Deal: At a Dealership

- The financing and insurance person will probably try to sell you a number of additional items.
  - Most (if not all) of these you don't need!
- Review the contract thoroughly:
  - Ask questions about anything that dramatically increases the price. You will also be asked to provide proof of insurance before you drive away in your used car.
- Finally, you should inspect the car before you take possession of it
  - If any work is required or promised by the dealer, get it in writing in a "Due Bill."



# Closing the Deal: Private Sale

- Before money changes hands, make sure you will be able to register the car in your name
  - No registration means no deal
- Request the title (sometimes called the "pink slip") and have it signed over to you.
  - No title means no deal
  - One way to deal with the seller still owing money on the car is to conclude the sale at the bank where the title is held
- Once all of the paperwork is complete
  - Relax and begin enjoying your new purchase: a good used car



## 6. Finance the Used Car (not recommended)

- If necessary, finalize the financing from your bank or credit union
  - Make sure you understand exactly what you are getting into before you sign
    - Once you sign, you have committed yourself
  - Try not to get into the habit of buying cars on credit



## 7. Take Care of Your Car

- Change the oil every 3-5,000 miles
  - Wash and clean it often
  - Get the recommended tune ups and care
  - Rotate the tires every 5,000 miles
  - Drive it and take care of it like you want your car to last 200,000 miles—it may!



## Addendum

- Note: even if you do all the above listed things in buying a used car, there is still the chance that you will have more expenses than you had considered.
  - That is one of the risks of buying a used car
- However, the closer you adhere to the process explained, the *less likely* you will have major problems in the future



# Useful Auto Websites

Carfax

[Carfax.com](http://Carfax.com)

Intellichoice

[IntelliChoice.com](http://IntelliChoice.com)

Edmunds

[Edmunds.com](http://Edmunds.com)

Kelly Blue Book

[kbb.com](http://kbb.com)

Consumer Reports

[Consumerreports.org](http://Consumerreports.org)