

# Are Consumers Myopic? Evidence from New and Used Car Purchases

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## ONLINE APPENDIX

Table A1: New car fuel economy quartile cutoffs

Modelyear	MPG Q1 Mean	25th Pctile	MPG Q2 Mean	50th Pctile	MPG Q3 Mean	75th Pctile	MPG Q4 Mean
1997	16.3	18.6	20.1	21.3	23.0	24.7	27.7
1998	16.1	17.9	19.6	21.3	22.6	24.3	27.2
1999	15.8	17.9	19.6	21.6	22.7	24.3	27.2
2000	15.9	17.9	19.4	20.9	22.5	24.0	27.2
2001	15.7	17.2	18.9	20.6	22.1	23.7	27.2
2002	15.6	17.2	18.9	20.6	22.0	23.3	27.1
2003	15.5	17.2	19.0	20.6	22.2	23.5	27.5
2004	16.0	17.6	19.1	20.6	22.2	24.0	27.9
2005	15.9	17.9	19.3	20.9	22.2	24.0	27.8
2006	16.1	17.6	18.9	20.6	22.0	23.8	27.7
2007	16.8	18.3	19.9	21.3	22.8	25.0	28.8
2008	16.6	18.9	20.0	21.6	23.2	25.4	29.5

Table A2: New Cars: Price results<sup>†</sup>

Variable	Coefficient/SE
GasPrice*MGP Quart 1	-250** (72)
GasPrice*MGP Quart 2	-96** (37)
GasPrice*MGP Quart 3	-11 (26)
GasPrice*MGP Quart 4	104* (47)
PctLessHighSchool	163+ (83)
PctCollege	-51 (58)
Income	.0015** (.00044)
MedianHHSIZE	43** (16)
MedianHouseValue	.00012 (.000084)
VehiclePerHH	402** (120)
TravelTime	-.82 (1.1)
Weekend	-13* (6)
EndOfMonth	-135** (4.3)
EndOfYear	-78** (17)
Constant	27246** (79)
Observations	1,863,403
R-squared	0.053

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Not reported: Region  $\times$  year, region  $\times$  month-of-year, car type, and car age fixed effects. We also don't report house ownership, occupation, English proficiency, and race of buyers.

Table A3: Used Cars: Price results<sup>†</sup>

Variable	(1) Coefficient/SE	(2) Coefficient/SE
GasPrice*MGP Quart 1	-1182** (42)	-783** (49)
GasPrice*MGP Quart 2	-101 (62)	118* (54)
GasPrice*MGP Quart 3	468** (36)	369** (33)
GasPrice*MGP Quart 4	763** (44)	360** (36)
PctLessHighSchool	239** (69)	266** (70)
PctCollege	-4.5 (50)	-.046 (49)
Income	.0017** (.0005)	.0019** (.0005)
MedianHHSIZE	26 (22)	25 (23)
MedianHouseValue	.000056 (.00014)	.00011 (.00014)
VehiclePerHH	162 (157)	123 (148)
TravelTime	.27 (.72)	.15 (.73)
Weekend	120** (10)	121** (11)
EndOfMonth	-71** (6.3)	-71** (6.5)
EndOfYear	-18 (23)	-29 (23)
Constant	24010** (252)	23125** (260)
Odometer spline interaction	Segment × PADD	MPG Quartile × PADD
Observations	1,096,874	1,096,874
R-squared	0.718	0.717

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Not reported: Region × year and PADD × segment × year fixed effects, car type fixed effects, and odometer spline. We also don't report house ownership, occupation, English proficiency, and race of buyers.

Table A4: New Cars: Market share results<sup>†</sup>

	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
GasPrice	-.057** (.0048)	-.014** (.004)	.0002 (.0027)	.071** (.0058)
PctLessHighSchool	.044** (.015)	.031** (.0089)	-.027* (.013)	-.047* (.02)
PctCollege	-.061** (.013)	.0079 (.011)	.0033 (.013)	.05** (.018)
Income	-5.9e-08 (8.7e-08)	3.4e-07** (9.4e-08)	3.0e-07** (1.1e-07)	-5.8e-07** (1.2e-07)
MedianHHSIZE	.01** (.0029)	.0048+ (.0025)	-.0067 (.0048)	-.0083+ (.0047)
MedianHouseValue	7.2e-08* (2.9e-08)	3.3e-08+ (1.7e-08)	1.3e-08 (8.7e-09)	-1.2e-07** (3.7e-08)
VehiclePerHH	.016 (.022)	-.015 (.022)	.042 (.026)	-.043 (.033)
TravelTime	-.0002 (.00019)	-.00037** (.000098)	-.00025* (.00013)	.00082** (.00022)
Weekend	-.02** (.0019)	-.0046** (.0016)	-.0022 (.0016)	.027** (.0022)
EndOfMonth	.0058** (.00099)	.0033** (.0011)	.0048** (.001)	-.014** (.0012)
EndOfYear	-.0043 (.0027)	-.0058** (.0022)	-.0013 (.0028)	.011** (.004)
Constant	.33** (.017)	.23** (.013)	.27** (.01)	.18** (.018)
Observations	1,863,403	1,863,403	1,863,403	1,863,403
R-squared	0.034	0.011	0.009	0.040

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Not reported: Region  $\times$  year, region  $\times$  month-of-year, and car age fixed effects. We also don't report house ownership, occupation, English proficiency, and race of buyers.

Table A5: Used Cars: Transaction share results<sup>†</sup>

	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
GasPrice	.00018 (.0069)	-.0077 (.0058)	.017 (.011)	-.009 (.0074)
PctLessHighSchool	.006 (.01)	.023+ (.012)	-.018 (.024)	-.011 (.02)
PctCollege	-.016 (.01)	-.02 (.014)	-.022 (.015)	.058** (.014)
Income	-2.0e-07* (8.7e-08)	2.6e-07** (8.2e-08)	2.7e-07* (1.1e-07)	-3.3e-07** (9.7e-08)
MedianHHSIZE	.0018 (.0024)	-.0042+ (.0024)	.0041 (.0034)	-.0018 (.0027)
MedianHouseValue	2.0e-08 (1.3e-08)	2.0e-08+ (1.1e-08)	-7.6e-08** (1.6e-08)	3.6e-08** (1.3e-08)
VehiclePerHH	.0037 (.026)	.03 (.031)	-.11* (.055)	.08 (.053)
TravelTime	.000029 (.00013)	-.00016 (.00013)	-.00011 (.00018)	.00023 (.00019)
Weekend	-.0076** (.0014)	-.0042* (.0019)	.0056* (.0022)	.0062** (.0019)
EndOfMonth	.0038+ (.0021)	-.0051** (.0018)	.0019 (.0021)	-.00061 (.0019)
EndOfYear	-.011** (.0028)	.0042 (.0036)	.00083 (.0036)	.0059* (.0029)
Constant	.014 (.02)	.027 (.018)	-.031 (.026)	.99** (.017)
Observations	1,096,874	1,096,874	1,096,874	1,096,874
R-squared	0.485	0.224	0.235	0.531

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Not reported: Region  $\times$  year, region  $\times$  month-of-year, and car age fixed effects. We also don't report house ownership, occupation, English proficiency, and race of buyers.

Table A6: Effect of predicted gasoline price expectations in price regression<sup>†</sup>

New Cars				
Gas Price Variable	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
Current Price (original specification)	-250** (72)	-96** (37)	-11 (26)	104* (47)
Gasoline Price Future Delivery in 6 months	-456** (96)	-167** (48)	-56+ (32)	113+ (63)
Gasoline Price Future Delivery in 12 months	-536** (102)	-222** (53)	-92* (36)	86 (66)
Gasoline Price Future Delivery in 24 months	-583** (106)	-251** (56)	-108** (38)	80 (68)
Used Cars				
Gas Price Variable	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
Current Price (original specification)	-1182** (42)	-101 (62)	468** (36)	763** (44)
Gasoline Price Future Delivery in 6 months	-1365** (58)	-168* (66)	520** (40)	905** (47)
Gasoline Price Future Delivery in 12 months	-1414** (60)	-204** (66)	505** (42)	905** (50)
Gasoline Price Future Delivery in 24 months	-1495** (63)	-269** (66)	455** (44)	867** (52)

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Table A7: Effect of predicted gasoline price expectations in new car market share regression<sup>†</sup>

New Cars				
Gas Price Variable	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
Current Price (original specification)	-.057** (.0048)	-.014** (.004)	.0002 (.0027)	.071** (.0058)
Gasoline Price Future Delivery in 6 months	-.065** (.006)	-.0024 (.008)	.0014 (.0041)	.066** (.009)
Gasoline Price Future Delivery in 12 months	-.067** (.0066)	-.0046 (.0096)	.00035 (.0047)	.071** (.01)
Gasoline Price Future Delivery in 24 months	-.062** (.0071)	-.0061 (.011)	-.003 (.0051)	.071** (.012)

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Table A8: Effect of gasoline price aggregation in new car market share regression<sup>†</sup>

New Cars				
Gas Price Aggregation	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
4-digit ZIP	-.044** (.0076)	-.016** (.0039)	.00065 (.0026)	.06** (.0078)
DMA (original specification)	-.057** (.0048)	-.014** (.004)	.0002 (.0027)	.071** (.0058)
PADD	-.059** (.005)	-.013** (.0049)	.00033 (.0032)	.072** (.0058)
National	-.057** (.0055)	-.012* (.0054)	-.0019 (.0031)	.07** (.007)

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Table A9: Effect of gasoline price aggregation in price regression<sup>†</sup>

<b>New Cars</b>				
Gas Price Aggregation	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
4-digit ZIP	-220** (68)	-84** (31)	-7 (28)	110* (49)
DMA (Base Case)	-250** (72)	-96** (37)	-11 (26)	104* (47)
PADD	-358** (74)	-88* (38)	34 (30)	150** (37)
National	-682** (35)	-250** (35)	36 (25)	387** (14)
<b>Used Cars</b>				
Gas Price Aggregation	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
4-digit ZIP	-1156** (46)	-95 (65)	454** (40)	735** (46)
DMA (Base Case)	-1182** (42)	-101 (62)	468** (36)	763** (44)
PADD	-1266** (49)	-121* (58)	524** (32)	859** (36)
National	-1364** (57)	-134* (61)	569** (31)	918** (35)

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Table A10: OLS and IV results in market share specification<sup>†</sup>

	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
<b>New Cars</b>				
DMA-level gas prices OLS (original)	-.057** (.0048)	-.014** (.004)	.0002 (.0027)	.071** (.0058)
PADD-level gas prices OLS	-.059** (.005)	-.013** (.0049)	.00033 (.0032)	.072** (.0058)
PADD-level gas prices IV	-.065** (.0067)	.0024 (.0088)	.0011 (.0045)	.061** (.011)

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Table A11: OLS and IV results in price specification<sup>†</sup>

	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3	MPG Quartile 4
<b>New Cars</b>				
DMA-level gas prices OLS (original specif.)	-250** (72)	-96** (37)	-11 (26)	104* (47)
PADD-level gas prices OLS	-358** (74)	-88* (38)	34 (30)	150** (37)
PADD-level gas prices IV	-484** (24)	-85** (24)	58** (22)	226** (20)
<b>Used Cars</b>				
DMA-level gas prices OLS (original specif.)	-1182** (42)	-101 (62)	468** (36)	763** (44)
PADD-level gas prices OLS	-1266** (49)	-121* (58)	524** (32)	859** (36)
PADD-level gas prices IV	-1751** (23)	-394** (22)	519** (21)	1055** (22)

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (robust and clustered at the DMA level) in parentheses.

Table A12: mlogit estimates (baseline is MPG Quartile 4)<sup>†</sup>

	<b>New Cars</b>		
	MPG Quartile 1	MPG Quartile 2	MPG Quartile 3
GasPrice	-.55** (.038)	-.3** (.033)	-.22** (.023)
PctLessHighSchool	.31* (.12)	.27** (.089)	-.034 (.093)
PctCollege	-.52** (.11)	-.15 (.1)	-.19* (.078)
Income	2.3e-06** (7.9e-07)	3.8e-06** (6.7e-07)	3.7e-06** (5.9e-07)
MedianHHSIZE	.086** (.021)	.044* (.02)	-.01 (.03)
MedianHouseValue	7.4e-07** (2.8e-07)	5.3e-07** (1.9e-07)	4.2e-07** (1.4e-07)
VehiclePerHH	.15 (.18)	.05 (.18)	.31 (.19)
TravelTime	-.004** (.0014)	-.0042** (.00099)	-.0033** (.0009)
Weekend	-.18** (.015)	-.1** (.012)	-.088** (.0092)
EndOfMonth	.054** (.0072)	.045** (.0083)	.056** (.0055)
EndOfYear	-.058** (.021)	-.061** (.02)	-.039+ (.021)
Observations	1,863,403		
Log pseudolikelihood	-2,483,741.3		

<sup>†</sup> \*\* significant at 1%; \* significant at 5%; + significant at 10% level. SEs (clustered at the DMA level) in parentheses.

Not reported: Region  $\times$  year and region  $\times$  month-of-year fixed effects. We also don't report house ownership, occupation, English proficiency, and race of buyers.

Table A13: Regions and DMAs

<p><b><u>Baltimore/Washington</u></b>                  Baltimore                  Harrisonburg                  Richmond-Petersburg                  Salisbury                  Washington, Dc, Hagerstown  <b><u>Charlotte</u></b>                  Bluefield-Beckley-Oak Hill                  Charleston, SC                  Charlotte                  Columbia, SC                  Florence-Myrtle Beach                  Greensboro-H.Point-W.Salem                  Greenville-N.Bern-Washngtn                  Greenville-Spart-Ashevl-And                  Raleigh-Durham                  Tri-Cities, TN-VA                  Wilmington  <b><u>Cincinnati</u></b>                  Charleston-Huntington                  Cincinnati                  Lexington  <b><u>Cleveland</u></b>                  Cleveland                  Parkersburg                  Wheeling-Steubenville                  Youngstown  <b><u>Colorado</u></b>                  Cheyenne-Scottsbluf-Strlng                  Colorado Springs-Pueblo                  Denver                  Grand Junction-Montrose  <b><u>Columbus</u></b>                  Columbus, OH                  Dayton                  Lima                  Toledo                  Zanesville  <b><u>Dakotas</u></b>                  Billings                  Butte-Bozeman                  Casper-Riverton                  Fargo-Valley City                  Glendive                  Great Falls                  Helena                  Minot-Bismarck-Dickinson                  Missoula                  Rapid City                  Sioux City                  Sioux Falls(Mitchell)  <b><u>Detroit</u></b>                  Alpena                  Detroit                  Flint-Saginaw-Bay City                  Grand Rapids-Kalmzoo-B.Crk                  Lansing                  Traverse City-Cadillac  <b><u>Georgia</u></b>                  Albany, GA                  Atlanta                  Augusta                  Columbus, GA                  Macon                  Savannah</p>	<p><b><u>Gulf</u></b>                  Alexandria, LA                  Anniston                  Baton Rouge                  Biloxi-Gulfport                  Birmingham                  Dothan                  Hattiesburg-Laurel                  Jackson, MS                  Lafayette, LA                  Lake Charles                  Meridian                  Mobile-Pensacola                  Monroe-El Dorado                  Montgomery                  New Orleans                  Panama City                  Tallahassee-Thomasville                  Tuscaloosa  <b><u>Hawaii</u></b>                  Honolulu  <b><u>Illinois/Indiana</u></b>                  Champaign&amp;Sprngfld-Decatur                  Chicago                  Davenport-R.Island-Moline                  Peoria-Bloomington                  Rockford  <b><u>Indianapolis</u></b>                  Evansville                  Ft. Wayne                  Indianapolis                  Lafayette, IN                  Louisville                  South Bend-Elkhart                  Terre Haute  <b><u>Kansas City</u></b>                  Kansas City                  Lincoln &amp; Hstngs-Krny Plus                  North Platte                  Omaha                  Springfield, MO                  St. Joseph                  Topeka                  Wichita-Hutchinson Plus  <b><u>Miami</u></b>                  Miami-Ft. Lauderdale                  West Palm Beach-Ft. Pierce  <b><u>Minneapolis</u></b>                  Duluth-Superior                  Green Bay-Appleton                  La Crosse-Eau Claire                  Madison                  Mankato                  Marquette                  Milwaukee                  Minneapolis-St. Paul                  Rochestr-Mason City-Austin                  Wausau-Rhineland  <b><u>Missouri</u></b>                  Cedar Rapids-Waterloo&amp;Dubq                  Columbia-Jefferson City                  Des Moines-Ames                  Ottumwa-Kirksville                  Paducah-C.Gird-Harbg-Mt VN                  Quincy-Hannibal-Keokuk                  St. Louis</p>	<p><b><u>Nevada</u></b>                  Boise                  Idaho Falls-Pocatello                  Las Vegas                  Reno                  Salt Lake City                  Twin Falls  <b><u>New England</u></b>                  Bangor                  Boston                  Burlington-Plattsburgh                  Portland-Auburn                  Presque Isle                  Providence-New Bedford                  Springfield-Holyoke  <b><u>New York</u></b>                  Albany-Schenectady-Troy                  Binghamton                  Elmira                  Hartford &amp; New Haven                  New York                  Rochester, NY                  Syracuse                  Utica                  Watertown  <b><u>Norfolk/Virginia Beach</u></b>                  Charlottesville                  Norfolk-Portsmth-Newpt Nws                  Roanoke-Lynchburg  <b><u>Northern California</u></b>                  Chico-Redding                  Eureka                  Fresno-Visalia                  Monterey-Salinas                  Sacramnto-Stkton-Modesto                  San Francisco-Oak-San Jose  <b><u>Oklahoma</u></b>                  Amarillo                  Ft. Smith-Fay-Sprngdl-Rgrs                  Joplin-Pittsburg                  Oklahoma City                  Tulsa                  Wichita Falls &amp; Lawton  <b><u>Orlando</u></b>                  Gainesville                  Jacksonville, Brunswick                  Orlando-Daytona Bch-Melbrn  <b><u>Pennsylvania</u></b>                  Harrisburg-Lncstr-Leb-York                  Philadelphia                  Wilkes Barre-Scranton  <b><u>Phoenix</u></b>                  Albuquerque-Santa Fe                  Phoenix                  Tucson(Nogales)  <b><u>Pittsburgh</u></b>                  Buffalo                  Clarksburg-Weston                  Erie                  Johnstown-Altoona                  Pittsburgh  <b><u>San Antonio</u></b>                  Harlingen-Wslco-Brnsvl-Mca                  Laredo                  San Angelo                  San Antonio</p>	<p><b><u>Seattle/Portland</u></b>                  Bend, OR                  Eugene                  Medford-Klamath Falls                  Portland, OR                  Seattle-Tacoma                  Spokane                  Yakima-Pasco-Rchlnd-Knnwck  <b><u>South Texas</u></b>                  Austin                  Beaumont-Port Arthur                  Corpus Christi                  Houston                  Victoria  <b><u>Southern California</u></b>                  Bakersfield                  Los Angeles                  Palm Springs                  San Diego                  SantaBarbra-SanMar-SanLuOb                  Yuma-El Centro  <b><u>Tampa</u></b>                  Ft. Myers-Naples                  Tampa-St. Pete,Sarasota  <b><u>Tennessee</u></b>                  Bowling Green                  Chattanooga                  Columbus-Tupelo-West Point                  Greenwood-Greenville                  Huntsville-Decatur,Flor                  Jackson, TN                  Jonesboro                  Knoxville                  Memphis                  Nashville  <b><u>Texas</u></b>                  Abilene-Sweetwater                  Dallas-Ft. Worth                  El Paso                  Little Rock-Pine Bluff                  Lubbock                  Odessa-Midland                  Sherman-Ada                  Shreveport                  Tyler-Longview(Lfkn&amp;Ncgd)                  Waco-Temple-Bryan</p>
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