



Australian Government

Department of Infrastructure and Regional Development

Bureau of Infrastructure, Transport and Regional Economics



Spending by Australian households on owning and operating vehicles

At a glance

- According to the Australian Bureau of Statistics (ABS) *Household Expenditure Survey 2009-10*, Australian households spent an average of \$209.36 per week on transport in 2009-10, of which \$165.06 was on owning and operating private vehicles. Household expenditure on owning and operating vehicles averaged \$8583 annually (or \$9081 in 2015-16 dollars) and represented 13.4 per cent of total expenditure on goods and services. This was equivalent to aggregate expenditure of \$72.1 billion in 2009-10 (or \$76.3 billion in 2015-16 dollars).
- Of household spending on owning and operating vehicles, 33 per cent was on vehicle purchases (\$54.74 per week), 28 per cent on motor vehicle fuel, lubricants and additives (\$46.68), 17 per cent on vehicle registration and insurance (\$28.57), 16 per cent on vehicle parts, servicing and crash repairs (\$26.74) and 5 per cent on other vehicle charges (\$8.33).
- Average weekly household expenditure on owning and operating vehicles was around \$91 per vehicle, with variable costs estimated to be around \$18 per 100 kilometres in 2009-10.
- In 2009-10, taxes and government charges on owning and operating vehicles averaged \$49.08 per week for Australian households. This amounted to an aggregate of \$21.4 billion of taxes and government charges and represented 29.7 per cent of household expenditure on owning and operating vehicles. Government charges averaged \$17.31 per week (principally registration and compulsory third party insurance). The most significant of the tax items was *taxes on production-motor vehicle fuels* (\$18.09 per week), which includes fuel excise.
- Each of the different region types considered (states and territories, capital cities and state balances, remoteness areas, section of state, and city sectors) have an influence on household spending on owning and operating vehicles. However, rural areas (towns of less than 1000 and those who live outside of towns) have a particularly high weekly expenditure on owning and operating vehicles (\$197) and allocate a large share of their total spending to this item (18.1 per cent). This is due to a high spend on motor vehicle fuel and on vehicle servicing and repairs. The higher spend on these variable costs may be due to rural residents facing relatively long distance commutes, relatively high prices and/or having fuel-intensive vehicles. Rural households are about 11 per cent of the Australian population.
- Other regions with a particularly high weekly expenditure on owning and operating vehicles are the Australian Capital Territory (ACT) (\$209), regional New South Wales (NSW) (\$188) and regional Tasmania (\$182). The proportion spent on owning and operating vehicles was very high for regional Tasmania (18.1 per cent), regional Victoria (16.9 per cent) and regional NSW (16.4 per cent).

- Within the capital cities, outer suburban households stand out as having relatively high weekly expenditure on owning and operating vehicles, compared to inner/middle suburban households. However, the average weekly spend of outer suburban households was marginally below the national average for Sydney and \$13 above the national average for Melbourne, suggesting that the average outer suburban household does not spend that much more than the average Australian household on owning and operating vehicles.
- Each of the demographic characteristics considered (age, lifecycle group, household size, household income, main income source and tenure) have an influence on household spending on owning and operating vehicles. The lifecycle classification most clearly distinguished particular types of households that spend a lot (or little) on this item.
- Lone persons aged 65 and over had particularly low weekly expenditure on motor vehicle fuel (\$12.22) and owning and operating vehicles (\$43.55).
- Couple households with both dependent and non-dependent children stand out with by far the highest weekly expenditure on owning and operating vehicles (\$312) and motor vehicle fuels (\$96), as well as the highest proportion of total expenditure due to these items (20.6 and 6.3 per cent, respectively). This reflects the fact that these households are relatively large (with at least four household members) and because they contain at least three persons of driving age are likely to own more vehicles than the other types of household. Note that this is not a particularly large demographic, accounting for just over 3 per cent of all households.
- More broadly, it is couples with children of driving age, along with the highest earning households and the largest households, that have the highest average weekly expenditure on owning and operating vehicles. The demographics with a particularly high proportion spent on owning and operating vehicles were couples with children of driving age, couple only households with a reference person aged 55 to 64, and lone person households aged under 35.
- About 7 per cent of Australian households reported no expenditure on owning and operating vehicles, with 10 per cent spending less than \$7.95 per week. The top 10 per cent of households spent over \$405.85 per week.
- Expenditure on owning and operating vehicles represents just 2.9 per cent of total expenditure for the lowest spending one-third of households, compared to 21.5 per cent for the highest spending one-third of households. For the low spend households, the spend was almost entirely on vehicle registration and insurance and motor vehicle fuel. By contrast, for the highest spending one-third of households, vehicle purchase costs were the major contributor to spending on owning and operating vehicles.
- The one-third of households with the highest spend on owning and operating vehicles were more likely to be larger households, high income households, have a reference person aged 15 to 24, have a mortgage, and to have wages/salaries as their main source of income.

Background

This information sheet provides a snapshot of Australian households' spending on owning and operating vehicles, based on the latest (2009–10) data from the *ABS Household Expenditure Survey (HES)*.¹ It details the composition of that expenditure, including the split between fixed and variable costs, and the contribution of taxes and government charges. It also explores variation in the incidence of these costs across different types of households, such as capital city and regional households and high income and low income households.

The results presented in this information sheet paint a picture of the household-level costs of the current charging arrangements for the Australian road system, in terms of who faces comparatively high costs, and the locations where those costs fall most heavily. Note that the focus is on household expenditure, and not on broader user costs. Thus, travel time costs and congestion costs lie beyond the scope of this project.

¹ The ABS has collected data for the 2015-16 *Household Expenditure Survey*, which it plans to release in August 2017.

This information sheet addresses the following research questions:

- 1) What does the average Australian household spend on transport, and more specifically, on owning and operating vehicles?
- 2) What is the composition of that expenditure in terms of fixed versus variable costs, and the contribution of taxes and government charges?
- 3) How does this expenditure vary by broad region type?
- 4) How does this expenditure vary across different types of households?
- 5) What are the characteristics of those households with the greatest expenditure on owning and operating vehicles?

Each of these above research questions is addressed separately using published and customised data from the Australian Bureau of Statistics (ABS) *Household Expenditure Survey* (HES).

I Average household expenditure on transport

This section presents data on Australian households' spending on transport, and more specifically, on owning and operating vehicles, based on the ABS *Household Expenditure Survey* (HES) for 2009-10.

The HES collected detailed expenditure data from 9774 households' resident in private dwellings throughout Australia, comprising 17955 persons aged 15 and over. The survey scope is representative of 97 per cent of the people living in Australia. Very remote areas are excluded from the scope of the HES. The HES estimates are subject to non-sampling and sampling error. Estimates for subgroups with a low population (e.g. the Northern Territory (NT) and the Australian Capital Territory (ACT)) and estimates for rarely acquired goods and services (e.g. caravan purchase, water transport) may have high Relative Standard Errors (RSEs) and should be treated with caution.²

The survey captures the cost of goods and services acquired during the 2009-10 financial year, irrespective of when the goods and services were paid for or consumed. It only captures the cost of goods and services used for private purposes, with the costs of goods and services used for investment and business purposes excluded. The expenditure data includes the costs to households of salary-sacrifice arrangements, such as salary-sacrificed motor vehicles. While the published HES expenditure data includes the estimated value of goods and services provided by employers to their employees free or at a reduced cost for their own private use (referred to by ABS as 'non-cash benefits'), BITRE has specifically excluded these non-cash benefits from the transport expenditure data presented in this briefing. Thus, BITRE's estimated expenditure on owning and operating vehicles excludes the value of employer-provided vehicles and parking.³ This exclusion is made because this analysis is focused on the transport expenses actually incurred by households, not on the transport costs borne by employers.⁴ Box 1 provides further information on transport-related salary-sacrificed expenditure and non-cash benefits.

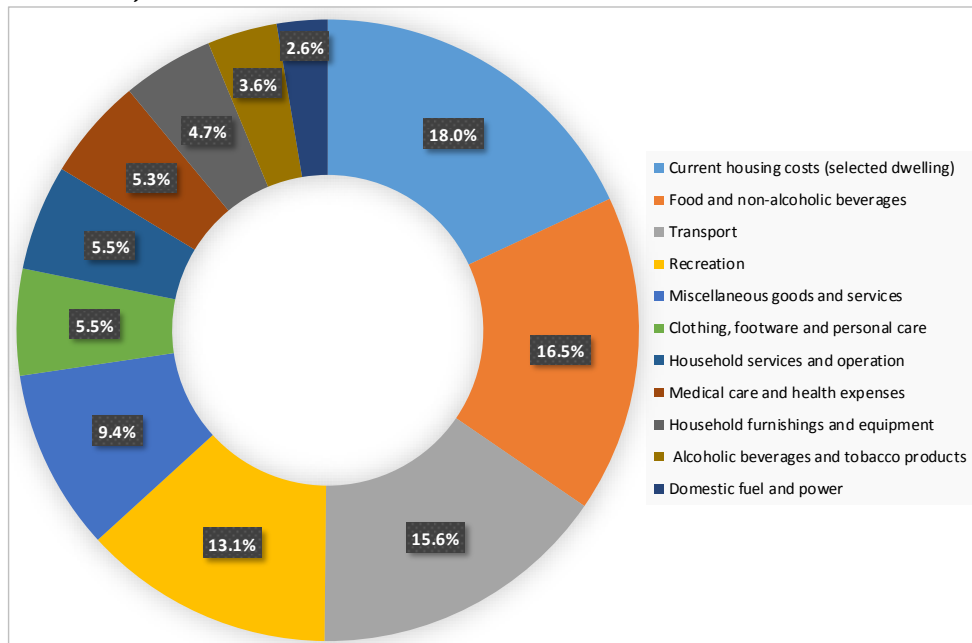
Australian households spent an average of \$1236 each week on goods and services in 2009-10. Figure 1 shows the proportion of weekly household expenditure on goods and services in Australia during 2009-10, based on the broad expenditure categories in the ABS publication. Among the various expenditure categories, 'Transport' ranked in the third position (15.6 per cent) after 'Current housing costs (selected dwelling)' (18.0 per cent) and 'Food and non-alcoholic beverages' (16.5 per cent). The next highest categories after transport costs were 'Recreation' (13.1 per cent) and 'Miscellaneous goods and services' (9.4 per cent).

² Estimates known to have RSEs of 25 per cent or more are flagged.

³ This exclusion amounts to \$21.91 per household per week, on average. Consequently, the estimates in this briefing will not match the ABS' published HES figures.

⁴ Any associated fringe benefit tax (FBT) liability would initially be borne by employers. However, employers may choose to pass the FBT cost on to employees. In 2009-10 this would have involved employees paying tax equivalent to 46.5 per cent of the value of the non-cash benefit.

Figure 1 Proportion of household expenditure on different types of goods and services, Australia, 2009-10



Source: BITRE analysis of ABS *Household Expenditure Survey, Australia: Summary of Results, 2009-10* (Cat. No. 6530.0).

The data presented in the rest of the information sheet is based on BITRE analysis of the HES confidentialised unit record file (CURF) and so will not match data in ABS HES publications. BITRE's definition of transport expenditure extends beyond the 'Transport' category in the ABS publication (see Figure 1) to include some additional items, namely holiday fares and petrol and the interest component of loans for vehicles (see Tables I and A1).

Table I presents a national overview of this average weekly household expenditure on transport for 2009-10, while Figure 1 shows how this expenditure is distributed across the different transport expenditure items. (Note that Table A1 in the Appendix presents a more detailed breakdown of the expenditure items that contribute to household transport expenditure).

In 2009-10, average weekly household expenditure on transport⁵ in Australia was \$209.36, accounting for 16.9 per cent of total goods and services expenditure (Table I). Of this amount, Australian households (on average) spent \$165.06 per week on owning and operating vehicles, accounting for 79 per cent of total transport expenditure (Figure 2). However, spending on owning and operating vehicles was 13.4 per cent of total spending on goods and services in the same year (Table I). Australian households spent \$33.27 per week on *Holiday fares and petrol*,⁶ which represented 2.7 per cent of their total spending on goods and services. On average, Australian households spent \$7.22 per week on *Public transport and taxi fares (non-holiday)*, \$2.61 on *Airfares (non-holiday)* and \$1.21 on *Other transport charges and fares* in 2009-10 (Table I). These three transport items together contributed less than one per cent of total spending on goods and services.

Table I also converts the 2009-10 expenditure figures for owning and operating vehicles into 2015-16 dollar values⁷ and converts the weekly expenditure figures to an annual basis. On average, Australian households spent \$8 583 on owning and operating vehicles during 2009-10 (\$9 081 in 2015-16 dollar values). This is equivalent to aggregate expenditure by Australian households of \$72.1 billion in 2009-10 (or \$76.3 billion in 2015-16 dollar values).

⁵ Total transport costs involve the cost items listed in this table, which differ from the overall transport costs in the ABS' 2009-10 Household Expenditure Survey (HES) publication.

⁶ The appendix (Table A1) shows that \$1.64 of this relates to fuel purchases for Australian holidays. All holiday fuel purchases are excluded from the key measure in this brief: total expenditure on owning and operating vehicles.

⁷ Data for 2009-10 were inflated to 2015-16 dollar values using four-quarters (September-June) average weighted 'Consumer Price Index' (CPI), based on all capital cities, for each of the expenditure items, including *Motor vehicles, Automotive fuel, Maintenance and repairs, Insurance, Spare parts and accessories and Other services in respect of motor vehicles*.

Table I Summary of average weekly household expenditure on transport by expenditure item, Australia, 2009-10

Expenditure items	Average weekly expenditure (\$)	Average annual expenditure (\$)	Aggregate annual expenditure (\$million)	Average weekly expenditure (\$)	Average annual expenditure (\$)	Aggregate annual expenditure (\$million)	Average weekly expenditure as percentage of total goods and services expenditure (per cent) ^b
	2009-10			2015-16 (\$ values) ^a			
Owning and operating vehicles (non-holiday)	165.06	8 583	72 083	174.63	9 081	76 263	13.4
Total vehicle purchase costs	54.74	2 847	23 906	50.40	2 621	22 009	4.4
Motor vehicle fuel, lubricants and additives (non-holiday)	46.68	2 427	20 385	46.29	2 407	20 215	3.8
Vehicle registration and insurance	28.57	1 486	12 477	37.48	1 949	16 369	2.3
Vehicle parts, servicing and crash repairs	26.74	1 391	11 679	29.19	1 518	12 748	2.2
Other vehicle charges	8.33	433	3 636	11.27	471	4 922	0.7
Public transport and taxi fares (non-holiday)	7.22	375	3 151				0.6
Airfares (non-holiday)	2.61*	136	1 140				0.2
Holiday fares and petrol ^c	33.27	1 730	14 529				2.7
Other transport charges and fares	1.21	63	528				0.1
Total transport costs (all items)**	209.36	10 887	91 431				16.9

Note: More details of the expenditure items are presented in Appendix (see Table A1). Estimates differ from those in the HES publication as BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures (see Box I for further information).

^a Data for 2009-10 were inflated to 2015-16 dollar values using four-quarters (September-June) averaged 'Consumer Price Index' (CPI) for respective items (e.g. Motor vehicles, Automotive fuel, Maintenance and repairs, Insurance, Spare parts and accessories and Other services in respect of motor vehicles).

^b Total goods and services expenditure per household in 2009-10 was \$1236.28 (ABS 2009-10 Household Expenditure Survey, Australia: Detailed Expenditure Items (Cat. No. 6535.0.55.001)).

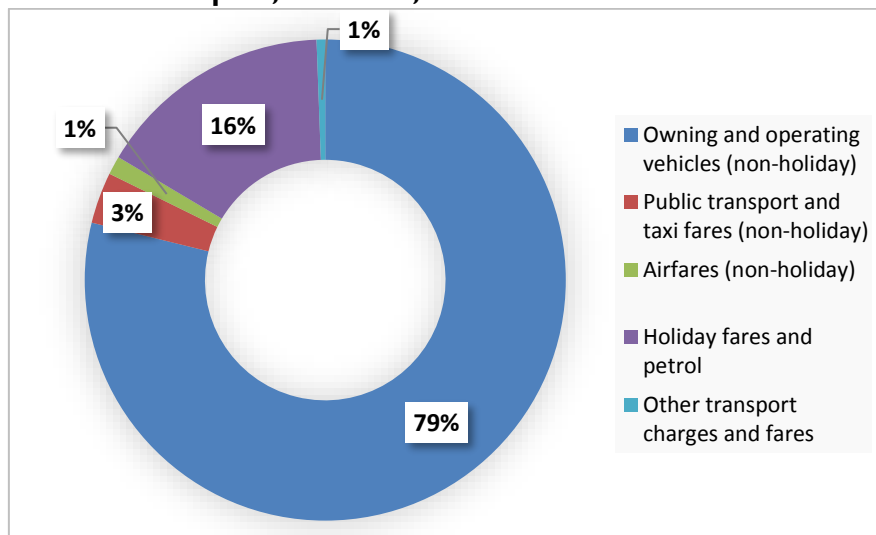
^c Will not entirely be transport, as includes 'airfare inclusive package tours' which will partly relate to accommodation.

* Estimates known to have RSEs of 25 per cent or more are flagged.

** Total transport costs involve the cost items listed in this table, which differ from the overall transport costs in the ABS' Household Expenditure Survey 2009-10 publication.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Figure 2 Contribution of major expenditure items to total household expenditure on transport, Australia, 2009-10



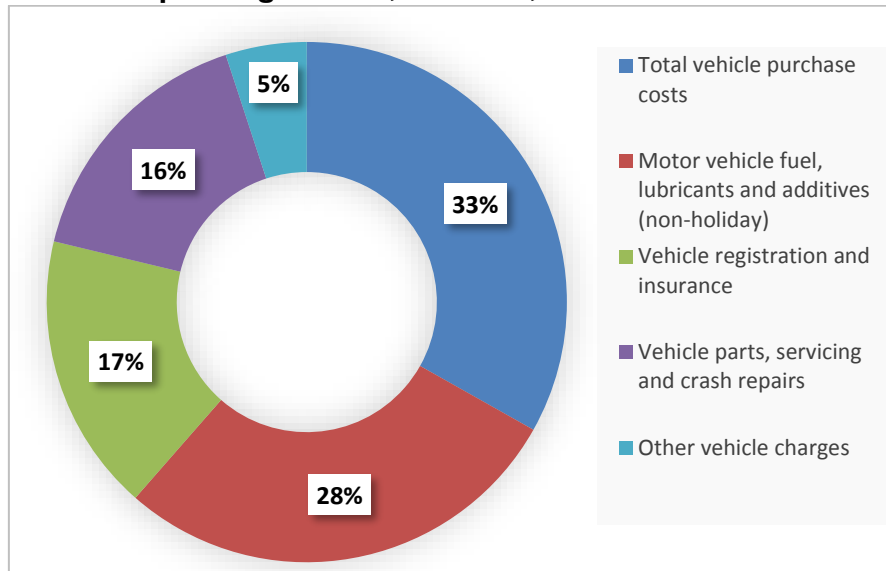
Note: BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures (see Box I for further information). Appendix Table A1 lists the detailed expenditure items which contribute to each category.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Figure 3 provides a breakdown of the \$165.06 per week that the average Australian household spent on owning and operating vehicles in 2009-10. Thirty-three per cent (or \$54.74) was spent on *Total vehicle purchase costs*, which includes motorcycle purchases, other motor vehicle purchases, caravan and trailer purchases, and the interest component of loans for vehicles. A further 28 per cent (or \$46.68 per week) was spent on *Motor vehicle fuel, lubricants and additives*, which includes petrol, diesel, LPG and other gas fuels, oil, lubricants and

additives. *Vehicle registration and insurance* and *Vehicle parts, servicing and crash repairs* accounted for 17 per cent and 16 per cent of total expenditure on owning and operating vehicles, respectively (or \$28.57 and \$26.74 per week). On average, Australian households spent 5 per cent of household expenditure on owning and operating vehicles on *Other vehicle charges*, which includes driver's licenses, parking fees, driving lessons, motor organisation subscriptions, road tolls, hire of accessories, and non-holiday vehicle hire and leasing expenses.

Figure 3 Contribution of expenditure items to total household expenditure on owning and operating vehicles, Australia, 2009-10



Note: BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures (see Box 1 for further information). Appendix Table A1 lists the detailed expenditure items which contribute to each category.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey*: Cat. No. 6535.0.55.001 and CURF data.

Box 1: Salary-sacrificed vehicles and employer-provided vehicles and parking

About 1.9 per cent of Australian households reported a salary-sacrifice vehicle arrangement in 2009-10. Salary-sacrifice vehicle expenses averaged \$6.42 per week across all Australian households. However, for the set of households with a salary-sacrifice vehicle arrangement, the expenses averaged \$334 per week. This is allocated by ABS across a range of HES expenditure items, including motor vehicle purchases, fuel, servicing and registration.

A much larger proportion of Australian households reported that they benefitted from use of a vehicle provided by an employer free or at reduced cost (8.2 per cent or 687 000 households). These non-cash benefits were valued at an average of \$254 per week for recipient households and \$20.85 per week across all Australian households. In the HES publications, the ABS allocates 80 per cent of this expenditure to 'vehicle hire and leasing expenses (non-holiday)' and 20 per cent to 'motor vehicle fuel, lubricants and additives (not further defined)'.

About 2.5 per cent of Australian households benefitted from employer-provided parking. This non-cash benefit averaged \$43 per week for recipient households and \$1.06 per week across all Australian households.

The value of employer-provided vehicles and parking are excluded from BITRE's estimates of household spending on owning and operating vehicles, as it is employers (rather than households) who incur this expenditure. This exclusion amounts to \$21.91 per week per household, on average. Note that BITRE's expenditure estimates do, however, include household expenditure on salary-sacrifice vehicle arrangements.

The majority of households with salary-sacrifice vehicles and/or employer-provided vehicles are in the top income quintile, with a gross household income of over \$2500 per week. Employer-provided vehicles are most prevalent in Western Australia, while salary-sacrifice vehicles are most prevalent in the ACT and NT.⁸

⁸ The CURF could only provide estimates for a combined ACT and NT region, not for the individual territories.

2 Composition of expenditure on owning and operating vehicles

In this section, the average weekly Australian household expenditure on owning and operating vehicles are presented as:

- fixed and variable costs, and
- government charges and taxes on motor vehicle fuels and purchases.

Fixed and variable costs

The overall costs of owning and operating vehicles can be separated into fixed costs and variable costs. The fixed costs (which are unaffected by the amount a vehicle is driven) include *Total vehicle purchase costs*, *Vehicle registration and insurance*⁹, *Driver's licence*, *Subscription to motor organisations* and *Vehicle charges (including hire of accessories) (not elsewhere classified)*. Variable costs are those which are dependent on vehicle use (tending to increase with vehicle mileage) and include *Motor vehicle fuel, lubricants and additives*, *Vehicle parts, servicing and crash repairs*, *Vehicle hire and leasing expenses (non-holiday)*, *Parking fees*, *Driving lessons* and *Road tolls*. Variable costs can differ significantly between road users depending on the extent to which the car is used and the type of vehicle.

The distinction between fixed and variable costs sometimes depends on perspective. Victoria Transport Policy Institute (2016) in Canada has given an example, as: 'depreciation is often considered a fixed cost because car owners make the same payments no matter how many miles a year they drive, but a car's operating life and resale value are affected by how much it is driven, so depreciation is partly variable over the long term'.¹⁰

As mentioned earlier, average weekly household expenditure on owning and operating vehicles was \$165.06 for 2009-10 (refer Table 1). Table 2 shows that around 53 per cent (or \$86.72) was attributable to fixed costs, while 47 per cent (or \$78.34) was attributable to variable costs.

Australian households, on average, spent nearly \$87 per week on the fixed costs of owning and operating vehicles. Of this amount, around \$55 was spent on *Total vehicle purchase costs* and less than \$29 on *Vehicle registration and insurance*. The remaining fixed costs together amount to \$3.41 per week (Table 2).

The main component of variable costs was *Motor vehicle fuel, lubricants and additives*, which cost \$46.68 per household per week and was responsible for 60 per cent of total variable costs. The other key component was *Vehicle parts, servicing and crash repairs* (\$26.74 per week and 34 per cent of variable costs). The remaining expenditure items together accounted for 6 per cent of the variable costs of owning and operating vehicles.

The estimates presented in Table 2 of the average weekly expenditure for each vehicle and the average variable costs of a vehicle per 100 kilometres should only be considered indicative, since these two measures are calculated by bringing together multiple data sources that have different underlying scope and methodology and relate to differing time periods.

- The average weekly expenditure was estimated to be around \$91 for each vehicle in 2009-10, of which 47 per cent was variable costs and the rest related to fixed costs.
- On average, Australian households are estimated to have incurred variable costs of around \$18 per 100 kilometres (km) to run a vehicle in 2009-10.¹¹ The major variable cost item was motor vehicle fuel, lubricants and additives (\$11 per 100 km), followed by vehicle parts, servicing and crash repairs (\$6 per 100 km) (Table 2).

⁹ All vehicle insurance costs are treated as fixed costs for the purposes of this analysis. However, it should be noted that for non-compulsory insurance, in some cases the policy price will depend on the distance travelled.

¹⁰ Note that depreciation costs are not included in this study. The HES captures the net costs of acquiring vehicles (new or second-hand) during 2009-10, not the annual decline in the vehicle's market value (and adding in estimated depreciation costs would involve double counting).

¹¹ This aligns with the average vehicle running costs cited in Inbakaran and Shin (2010) of 19 cents per kilometre, expressed in 2008 dollars.

Table 2 Average weekly fixed and variable expenditure per household on owning and operating vehicles, Australia, 2009-10

Expenditure item	Average weekly expenditure per household		Average weekly expenditure per vehicle (\$) ^a	Transport costs per vehicle per 100 km (\$) ^b
	Amount (\$)	Share (Per cent)		
Fixed costs	86.72	52.5	48.03	
Total vehicle purchase costs	54.74	33.2	30.32	
Vehicle registration and insurance ^c	28.57	17.3	15.83	
Driver's licence	0.60	0.36	0.33	
Subscription to motor organisations	1.11	0.67	0.61	
Vehicle charges (including hire of accessories) (not elsewhere classified)	1.70	1.03	0.94	
Variable costs	78.34	47.5	43.39	17.69
Motor vehicle fuel, lubricants and additives	46.68	28.3	25.86	10.54
Vehicle parts, servicing and crash repairs	26.74	16.2	14.81	6.04
Vehicle hire and leasing expenses (non-holiday)	1.63	0.99	0.90	0.37
Parking fees	2.16	1.31	1.20	0.49
Driving lessons	0.25*	0.15	0.14	0.06
Road tolls	0.88	0.53	0.49	0.20
Owning and operating vehicles (non-holiday)	165.06		91.43	

Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks.

^a These are indicative estimates derived by bringing together two different data sources and should be used with caution.

Calculations were made for an average of 1.71 motor vehicles (excluding motorcycles) per household (based on ABS 2011 Census of Population and Housing 2011 data) and 0.09 motorcycles per household (based on ABS Survey of Motor Vehicle Use 2010 ratio of motorcycles to passenger vehicles).

^b These are indicative estimates derived by bringing together multiple data sources and should be used with caution. Calculations have been made for an average of 1.81 motor vehicles per household (including motorcycles) and for an average distance per vehicle of 12 756 km. The distance figure relates to the average kilometres travelled by registered passenger vehicles and motorcycles (excluding light commercial vehicles) during the 12-month period ended 31 October 2010, sourced from the ABS Survey of Motor Vehicle Use.

^c All vehicle insurance costs are treated as fixed costs for the purposes of this analysis. However, it should be noted that for non-compulsory insurance, in some cases the policy price will depend on the distance travelled.

* Estimates known to have RSEs of 25 per cent or more are flagged.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey Cat. No. 6535.0.55.001 and CURF data; ABS Census of Population and Housing 2011 data (extracted using Tablebuilder); and ABS Survey of Motor Vehicle Use 2010 data (Cat. No. 9208.0, Table 1).

Taxes and government charges

This section examines the contribution that taxes and government charges make to household expenditure on owning and operating vehicles in Australia. Four tax measures are included: Goods and Services Tax (GST) on motor vehicle purchases; GST on motor vehicle fuel; taxes on production—motor vehicle purchases; and taxes on production—motor vehicle fuels.¹² Government charges comprise vehicle registration and compulsory third party (CTP) insurance, driver's licence fees and road tolls.^{13,14}

In 2009-10, taxes and government charges on owning and operating vehicles averaged \$49.08 per week for Australian households (Table 3). This amounted to an aggregate of \$21.4 billion of taxes and government charges for 2009-10, and represented 29.7 per cent of household expenditure on owning and operating vehicles.

¹² Taxes on production-motor vehicle purchases includes customs duty on imported passenger vehicles, the luxury car tax and stamp duties on the sale or transfer of vehicles. Taxes on production-motor vehicle fuel includes fuel excise, customs duty on imported petroleum products and crude oil, and petroleum product franchise taxes.

¹³ The HES data does not provide separate estimates of total vehicle registration costs and total CTP insurance costs.

¹⁴ The toll roads that operate in Sydney, Melbourne and Brisbane were established by state governments in partnership with private sector investors, with the tolls primarily used to finance (or recover) the capital cost of the specific road infrastructure project.

Of the weekly total of \$49.08, taxes contributed \$31.77 (or nearly 65 per cent) and government charges contributed \$17.31. The most significant of the taxes was *taxes on production-motor vehicle fuels* (\$18.09 per week), followed by *taxes on production-motor vehicle purchases* (\$7.03 per week). Average weekly household GST expenditures on motor vehicle fuels and purchases were \$4.21 and \$2.43, respectively. Australian households spent, on average, \$17.31 per week on government charges, of which the major contributor was vehicle registration and CTP insurance (\$15.84 per week).

Table 3 Taxes and government charges on owning and operating vehicles, Australia, 2009-10

Components of taxes and government charges	Average weekly expenditure per household		Aggregate annual expenditure (\$million)
	Amount (\$)	Share (per cent)	
Total selected taxes ^a	31.77	64.7	13874
Taxes on production-motor vehicle fuels ^b	18.09	36.9	7902
Taxes on production-motor vehicle purchases ^c	7.03	14.3	3071
GST on motor vehicle fuels	4.21	8.6	1837
GST on motor vehicle purchases	2.43	5.0	1063
Total government charges	17.31	35.3	7560
Vehicle registration and CTP insurance ^d	15.84	32.3	6916
Driver's licence	0.60	1.2	261
Road tolls ^e	0.88	1.8	384
Total taxes and government charges	49.08	100.0	21434

^a Does not capture all taxes on owning and operating vehicles (e.g. GST on vehicle parts, servicing and crash repairs is excluded).

^b Includes fuel excise, customs duty on imported petroleum products and crude oil, and petroleum product franchise taxes.

^c Includes customs duty on imported passenger vehicles, the luxury car tax and stamp duties on the sale or transfer of vehicles.

^d The HES data does not provide separate estimates of total vehicle registration costs and total CTP insurance costs.

^e Australia has 16 toll roads in Sydney, Melbourne and Brisbane, established by state governments in partnership with private-sector investors.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

When combined with the detailed household spending data in Appendix Table A1, the tax data in Table 3 implies that household spending on motor vehicle fuels (excluding additives, but including holiday fuel purchases) has an overall implicit tax rate of around 52 per cent. Taxes on production (and specifically fuel excise) are the main contributor to the high overall tax rate on fuel purchases (see Table 3). By comparison, household spending on motor vehicle purchases (excluding interest costs) has an implicit tax rate of around 20 per cent.

Table 4 shows the distribution of average weekly household expenditure on these taxes and government charges by gross household income quintile for 2009-10. It also shows the total average weekly household expenditure on owning and operating vehicles and total average weekly household expenditure on goods and services for each of the income quintiles.

Table 4 also shows that households in the highest income quintile (the 20 per cent of households with the highest gross household income¹⁵) paid more taxes and government charges, reflecting their higher expenditure on owning and operating vehicles. However, Figure 3 shows that these taxes represented a notably smaller proportion of total spending on owning and operating vehicles for the highest income quintile (26.8 per cent) than it did for the remaining quintiles (30.2 to 31.6 per cent). This reflects a smaller proportion of the vehicle-related spending of the high income households being directed towards the heavily-taxed motor vehicle fuels and a larger proportion going towards the less-taxed motor vehicle purchases.

Taxes and government charges on owning and operating vehicles represented a relatively low proportion of total expenditure on goods and services (3.6 per cent) for both the lowest income quintile and the highest income quintile (Figure 4). The lowest income quintile (with gross household income of \$571 or less per week) paid relatively low taxes because they did not allocate much of their total expenditure to owning and operating vehicles. In contrast, the highest income quintile paid relatively low taxes because their vehicle-related spending was skewed towards motor vehicle purchases and away from fuel purchases.

¹⁵ These are households that earned more than \$2498 per week in 2009-10 dollars.

Table 4 Taxes and government charges on owning and operating vehicles by gross household income quintiles, Australia, 2009-10

Expenditure item	Lowest quintile	Second quintile	Third quintile	Fourth quintile	Highest quintile	All quintiles
Average weekly household expenditure (\$)						
Taxes on production-motor vehicle fuels ^a	8.31	13.69	19.80	22.75	25.93	18.09
Taxes on production-motor vehicle purchases ^b	1.76	3.50	6.32	8.95	14.63	7.03
GST on motor vehicle fuels	1.95	3.22	4.61	5.27	5.98	4.21
GST on motor vehicle purchases	0.61	1.21	2.19	3.10	5.07	2.43
All selected taxes	12.63	21.62	32.92	40.07	51.61	31.77
All government charges	7.58	11.51	17.04	21.97	26.71	17.31
Total taxes and government charges	20.21	33.13	49.96	62.04	78.32	49.08
Total average weekly household expenditure on owning and operating vehicles	66.93	109.06	158.34	198.59	292.51	165.06
Total average weekly household expenditure on goods and services	559.86	810.35	1170.97	1477.41	2159.23	1235.37

Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks.

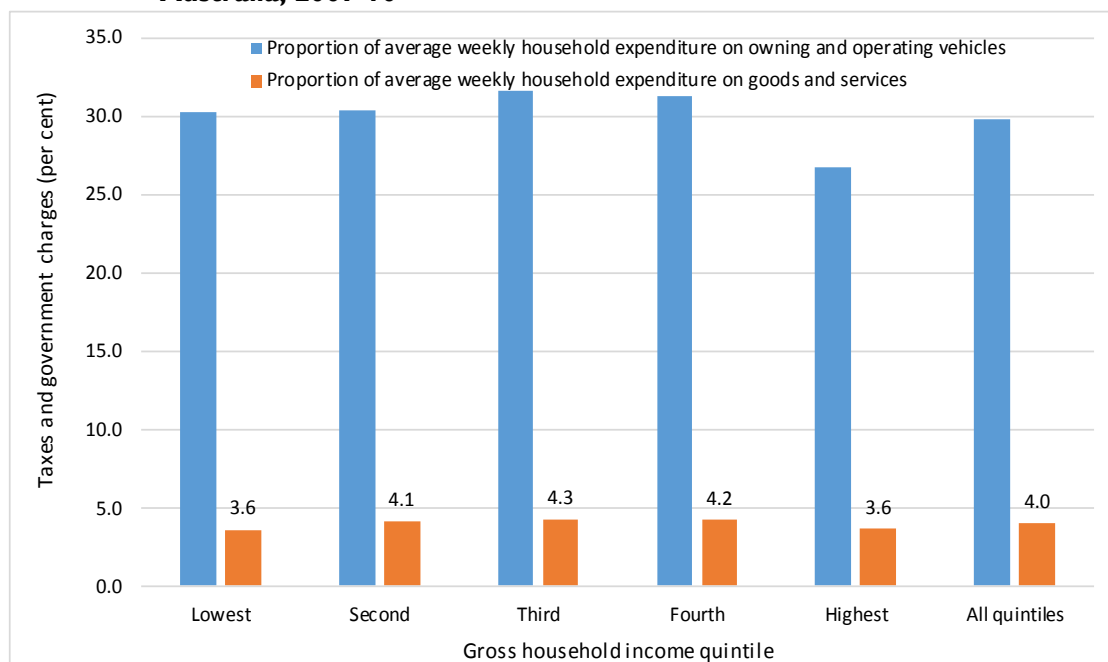
^a Includes fuel excise, customs duty on imported petroleum products and crude oil, and petroleum product franchise taxes.

^b Includes customs duty on imported passenger vehicles, the luxury car tax and stamp duties on the sale or transfer of vehicles.

^c Comprises vehicle registration and CTP insurance, driver's license fees and road tolls.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Table 5 disaggregates taxes and government charges on owning and operating vehicles by the household's place of residence. It shows that taxes and government charges on owning and operating vehicles varied across states and territories. The highest weekly expenditures on these taxes and government charges were recorded in the ACT (\$60.36), followed by Queensland (\$50.49) and New South Wales (\$50.36). The lowest expenditures on these taxes and government charges were in South Australia and Western Australia (WA) at \$43.68 and \$45.84, respectively. All five categories of taxes and government charges are relatively high for ACT households, reflecting relatively high spending (overall, and on owning and operating vehicles).

Figure 4 Taxes and government charges on owning and operating vehicles as a share of total average weekly household expenditure, by gross household income quintile, Australia, 2009-10

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Table 5 Taxes and government charges on owning and operating vehicles by state/territory, capital city and rest of state, 2009-10

Region	Average household weekly expenditure (\$)								
	Taxes on production ^a		GST on motor vehicle fuels	GST on motor vehicle purchases	Total taxes	Government charges ^b	Total taxes and government charges	Total spending on owning and operating vehicles	Total spending on goods and services
	Motor vehicle fuels	Motor vehicle purchases							
Sydney	17.50	6.25	4.02	2.16	29.93	18.82	48.75	153.87	1335.61
Rest of NSW	20.14	8.13	4.66	2.81	35.74	17.26	53.00	187.79	1146.50
New South Wales	18.50	6.96	4.26	2.41	32.13	18.23	50.36	166.73	1263.96
Melbourne	18.95	7.18	4.46	2.49	33.08	17.26	50.34	167.12	1302.08
Rest of Victoria	17.85	6.77	4.29	2.34	31.25	13.73	44.98	172.72	1022.05
Victoria	18.64	7.06	4.41	2.45	32.57	16.26	48.82	168.70	1222.77
Brisbane	17.71	6.48	4.08	2.24	30.51	19.41	49.92	165.79	1323.88
Rest of QLD	18.21	6.97	4.20	2.41	31.79	19.15	50.94	166.04	1152.59
Queensland	17.99	6.75	4.14	2.34	31.22	19.27	50.49	165.93	1229.03
Adelaide	15.82	6.09	3.69	2.11	27.71	17.77	45.48	144.54	1128.21
Rest of SA	14.59	3.65	3.42	1.26	22.92	15.94	38.86	113.65	839.43
South Australia	15.49	5.43	3.62	1.88	26.41	17.27	43.68	136.17	1049.91
Perth	16.79	7.78	3.91	2.69	31.18	13.34	44.51	160.26	1332.62
Rest of WA	20.46	9.00	4.73	3.11	37.30	13.20	50.51	170.00	1209.87
Western Australia	17.60	8.05	4.09	2.79	32.53	13.31	45.84	162.42	1305.46
Hobart	15.50	5.65	3.57	1.96	26.68	14.16	40.83	132.24	1136.65
Rest of TAS	19.68	9.29	4.52	3.22	36.71	15.75	52.45	182.30	1009.15
Tasmania	17.87	7.72	4.11	2.67	32.37	15.06	47.42	160.64	1064.32
NT ^c	17.45	8.59	4.02	2.97	33.03	15.39	48.42	201.70	1459.50
ACT ^c	19.30	11.05	4.44	3.83	38.61	21.54	60.15	230.20	1524.41
Capital cities ^d	17.71	6.84	4.11	2.37	31.02	17.59	48.61	160.01	1306.62
Rest of Australia ^d	18.78	7.34	4.37	2.54	33.03	16.75	49.79	172.48	1104.57
Australia	18.09	7.03	4.21	2.43	31.77	17.31	49.08	165.06	1235.37

Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks.

^a Taxes on production of motor vehicle purchases includes customs duty on imported passenger vehicles, the luxury car tax and stamp duties on the sale or transfer of vehicles. Taxes on production of motor vehicle fuel includes fuel excise, customs duty on imported petroleum products and crude oil, and petroleum product franchise taxes.

^b Comprises vehicle registration and CTP insurance, driver's license fees and road tolls.

^c BITRE has estimated the tax items for NT and ACT, which were only available in the CURF for a 'NT and ACT combined' region. The tax items were allocated between the ACT and NT using motor vehicle purchase and fuel expenditure estimates for the two territories.

^d Excludes Northern Territory, as Darwin could not be separated from the rest of the territory.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001, customised HES data purchase of NT and ACT data, and CURF data.

Taxes and government charges for owning and operating vehicles also varied between capital cities and the rest of Australia. Capital city households spent an average of \$48.61 per week on these taxes and government charges, compared to \$49.79 for households in the rest of Australia. While the average spend on government charges was higher for capital city households than regional households, regional households had higher average spending on each of the four types of taxes.

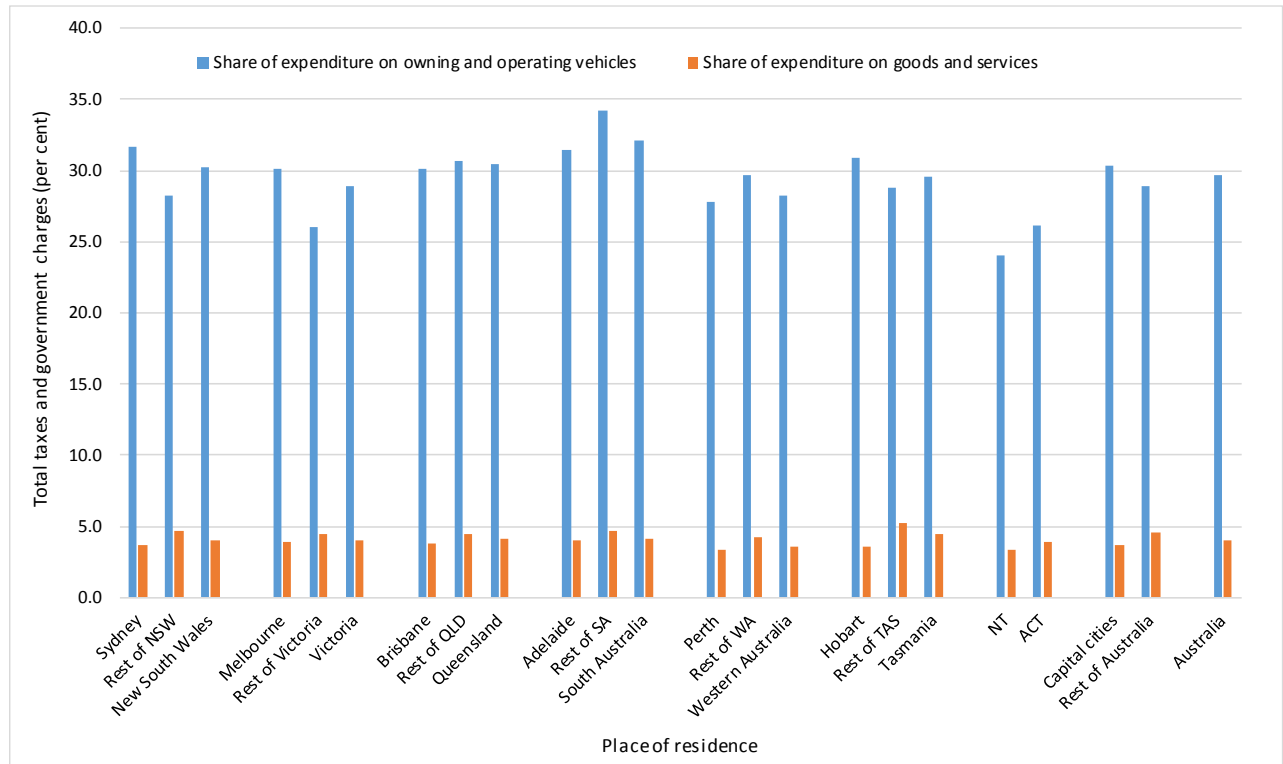
Total taxes and government charges were lower in Sydney, Brisbane, Perth and Hobart compared to their respective state balances. However, Melbourne and Adelaide recorded higher average weekly total taxes and government charges compared to the rest of Victoria and South Australia, respectively. Average weekly household expenditure on government charges was generally higher in capital cities than in the state balances (with Tasmania being the exception).

The Rest of South Australia (SA) stands out as having a particularly low average spend on taxes and government charges on owning and operating vehicles (\$38.86 per household per week). Households in the Rest of SA had low average weekly spends on all four types of taxes, but particularly on those taxes levied on motor vehicle purchases.

Figure 5 shows that at the state and territory level, taxes and government charges represented a relatively high share of spending on owning and operating vehicles for SA (32.1 per cent) and a relatively low share for the NT (24.0 per cent) and the ACT (26.1 per cent). Overall, the share of spending on owning and operating vehicles attributable to taxes and government charges was higher for capital cities (30.4 per cent) than for the

rest of Australia (28.9 per cent). However, there was no systematic pattern across the states, with the taxes and government charges share being higher for the capital city than the state balance in NSW, Victoria and Tasmania, but lower in the other states.

Figure 5 Taxes and government charges on owning and operating vehicles as share of total average weekly household expenditure by state/territory, capital city and rest of state, 2009-10



Note: The estimates for Capital cities and Rest of Australia exclude the Northern Territory, as Darwin could not be separated from the rest of the territory. BITRE has estimated the tax items for NT and ACT, which were only available in the CURF for a 'NT and ACT combined' region. The tax items were allocated between the ACT and NT using motor vehicle purchase and fuel expenditure estimates for the two territories.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001, customised HES data purchase of NT and ACT data and CURF data.

The Rest of SA had a particularly high share of spending on owning and operating vehicles attributable to taxes and government charges (34.2 per cent), despite the relatively low average weekly tax expenditures noted previously (see Table 5). This reflects a particularly low average weekly spend on owning and operating vehicles, with much of this spend being directed towards the heavily-taxed motor vehicle fuels.

Expressing these taxes and government charges as a proportion of total average weekly household expenditure on goods and services provides a guide to the overall impact of these taxes on households. Across the states and territories, the share is highest for Tasmania (4.5 per cent) and lowest for WA (3.5 per cent) and the NT (3.3 per cent). This proportion is lower for the capital cities (3.7 per cent) than for the rest of Australia (4.5 per cent). It is in fact lower in all capital cities compared to their respective state balances.

The rest of Tasmania has a particularly high proportion (5.2 per cent) of total household expenditure on goods and services attributable to taxes and government charges on owning and operating vehicles. This reflects the relatively high proportion of their household budget being spent on owning and operating vehicles (18.1 per cent, compared to 13.4 per cent nationally), rather than a high tax rate.

3 How does the average weekly expenditure on owning and operating vehicles vary by broad region type?

This section addresses one of the key questions about Australian households spending on owning and operating vehicles: how does the average weekly expenditure on owning and operating vehicles vary across different types of regions?

To answer this question, average weekly household expenditures on owning and operating vehicles were analysed and the results are presented at a range of geographic scales, including states and territories, individual capital cities and state balances, capital cities (in aggregate) and the rest of Australia, remoteness areas (i.e. Major cities, Inner regional, Other), section of state (i.e. Major urban, Other urban, Other) and the inner, middle and outer sectors of Sydney and Melbourne. Considering the impact of a range of different regional characteristics (such as capital city status, remoteness, urban centre size and rurality), can provide insight into which regional characteristics have the greatest influence on household expenditure on owning and operating vehicles.

A study in the USA, which examined the transportation costs at a neighbourhood level for nearly 900 large and small areas—covering 89 per cent of the nation's population, showed that the transportation costs depend on neighbourhood characteristics (National Centre for Mobility Management 2014). This study found that people who lived in location-efficient neighbourhoods—compact, mixed use, and with convenient access to jobs, services, transit, and amenities—tend to have lower transportation costs, while people who lived in location inefficient places that require automobiles for most trips were more likely to have high transportation costs.

States and Territories, and individual capital cities and balance of states

Table 6 presents average weekly household expenditure on owning and operating vehicles for all states and territories as well as capital cities and state balances. In 2009-10, at the state and territory level, the highest average weekly household expenditures were recorded for the ACT (\$206), Victoria and the NT (\$169 each), while the lowest expenditure was in SA (\$136).

The average spending across all capital cities was \$160 per week, compared to \$172 per week in regional Australia. Amongst the capital cities, households in Canberra (ACT) spent the most on owning and operating vehicles (\$206 per week), followed by Melbourne (\$167 per week). Hobart households had the lowest spending (\$132 per week), while Adelaide households also had below-average spending (\$145 per week). These results align with the findings of Australian Automobile Association (2016), which found that lower income and lower density cities, such as Adelaide, Hobart and Darwin, had relatively low transport costs, because public transport, driver's licenses and vehicle registration charges were less expensive than in other cities.

Note that the below-average spending of Sydney households on owning and operating vehicles (\$154 per week), reflects Sydney's lesser reliance on private vehicles. Sydney has the highest public transport mode share for the journey to work (BITRE 2013) and the highest average weekly expenditure on public transport (\$9.73 per week, compared to \$6.71 per week for all capital city households), as well as the lowest average number of motor vehicles per dwelling of the capital cities (1.57, compared to 1.69 for all capital city dwellings¹⁶).

In terms of individual state balances, the average weekly household expenditure on owning and operating vehicles was lowest for the rest of SA (\$114). However, the other state balances all exceeded the national average spend of \$165 per week, with average weekly expenditure particularly high for households in regional NSW (\$188) and regional Tasmania (\$182).

¹⁶ Derived by BITRE from ABS *Census of Population and Housing 2011* data using Tablebuilder.

Table 6 Average weekly household expenditure on owning and operating vehicles, States and Territories, capital cities and state balances, Australia, 2009-10

Place of residence	Expenditure item (\$)					Total expenditure on owning and operating vehicles (\$)	Total expenditure on goods and services (\$)
	Vehicle purchase costs	Motor vehicle fuel, lubricants and additives	Vehicle registration and insurance	Vehicle parts, servicing and crash repairs	Other vehicle charges		
Sydney	46.40	43.65	31.80	22.41	9.60	153.87	1335.61
Rest of NSW	64.89	50.95	28.06	35.33	8.55	187.79	1146.50
New South Wales	53.41	46.42	30.38	27.31	9.21	166.73	1263.96
Melbourne	54.38	49.90	30.08	22.78	9.98	167.12	1302.08
Rest of VIC	52.69	48.52	22.01	36.95	12.55	172.72	1022.05
Victoria	53.90	49.51	27.79	26.79	10.71	168.70	1222.77
Brisbane	52.59	47.05	29.83	28.97	7.36	165.79	1323.88
Rest of QLD	59.06	46.02	28.34	28.92	3.69	166.04	1152.59
Queensland	56.17	46.48	29.00	28.95	5.33	165.93	1229.03
Adelaide	44.62	40.31	29.37	23.71	6.53	144.54	1128.21
Rest of SA	31.58	41.20	23.63	13.30	3.94	113.65	839.43
South Australia	41.09	40.55	27.82	20.89	5.82	136.17	1049.91
Perth	60.08	42.75	25.50	23.04*	8.89	160.26	1332.62
Rest of WA	67.76	50.65	22.39	25.81	3.39	170.00	1209.87
Western Australia	61.78	44.50	24.81	23.65	7.67	162.42	1305.46
Hobart	42.69	39.75	22.75	21.96*	5.08	132.24	1136.65
Rest of TAS	70.97	51.18	22.06	34.43	3.66	182.30	1009.15
Tasmania	58.73	46.24	22.36	29.03	4.27	160.64	1064.32
Northern Territory	71.60	49.05	22.14	19.15*	6.75	168.69	1459.50
ACT	84.56	53.95	36.15	17.08*	14.17	205.91	1524.41
Capital cities ^a	52.00	45.67	29.97	23.49	9.06	160.19	1306.62
Rest of Australia ^a	59.17	48.39	26.11	31.75	7.07	172.48	1104.57
Australia	54.74	46.68	28.57	26.74	8.33	165.06	1235.37

Note: Estimates differ from those in the HES publication as BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures (see Box 1 for further information).

^a Excludes Northern Territory, as Darwin could not be separated from the rest of the territory.

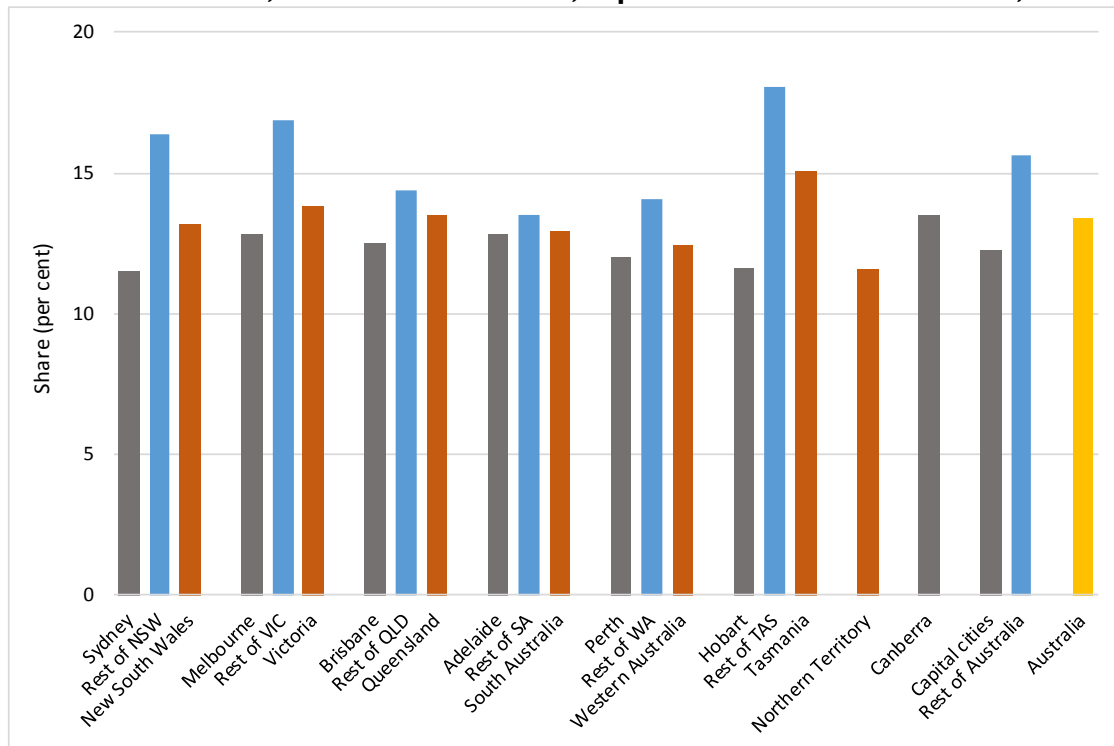
* Estimates known to have RSEs of 25 per cent or more are flagged.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001, customised HES data purchase of NT and ACT data, and CURF data.

Another way of looking at this is to consider what proportion of total expenditure on goods and services is spent on owning and operating vehicles. This proportion is presented in Figure 6 for each of the states, territories, capital cities and state balances. At the national level, expenditure on owning and operating vehicles makes up 13.4 per cent of total weekly household expenditure on goods and services. Across the states and territories, the share is highest for Tasmania (15.1 per cent) and lowest for WA (12.4 per cent) and the NT (11.6 per cent). While the average Tasmanian household spends a little less than the national average on owning and operating vehicles, their average household incomes and total spending is well below the national average (see Table 6), and thus the spend on owning and operating vehicles represents a high proportion of their total spending.

This proportion is lower for the capital cities (12.3 per cent) than for the rest of Australia (15.6 per cent). It is in fact lower in all capital cities compared to their respective state balances, with the largest difference observed for Hobart and the rest of Tasmania. Households in the rest of Tasmania spent 18.1 per cent of total expenditure on owning and operating vehicles, while the proportion was also relatively high for households in regional Victoria (16.9 per cent) and regional NSW (16.4 per cent).

Figure 6 Proportion of total weekly household expenditure due to owning and operating vehicles, states and territories, capital cities and state balances, 2009-10



Notes: The 'Capital cities' and 'Rest of Australia' figures exclude the Northern Territory, as Darwin could not be separated from the rest of the territory.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001, customised HES data purchase of NT and ACT data, and CURF data.

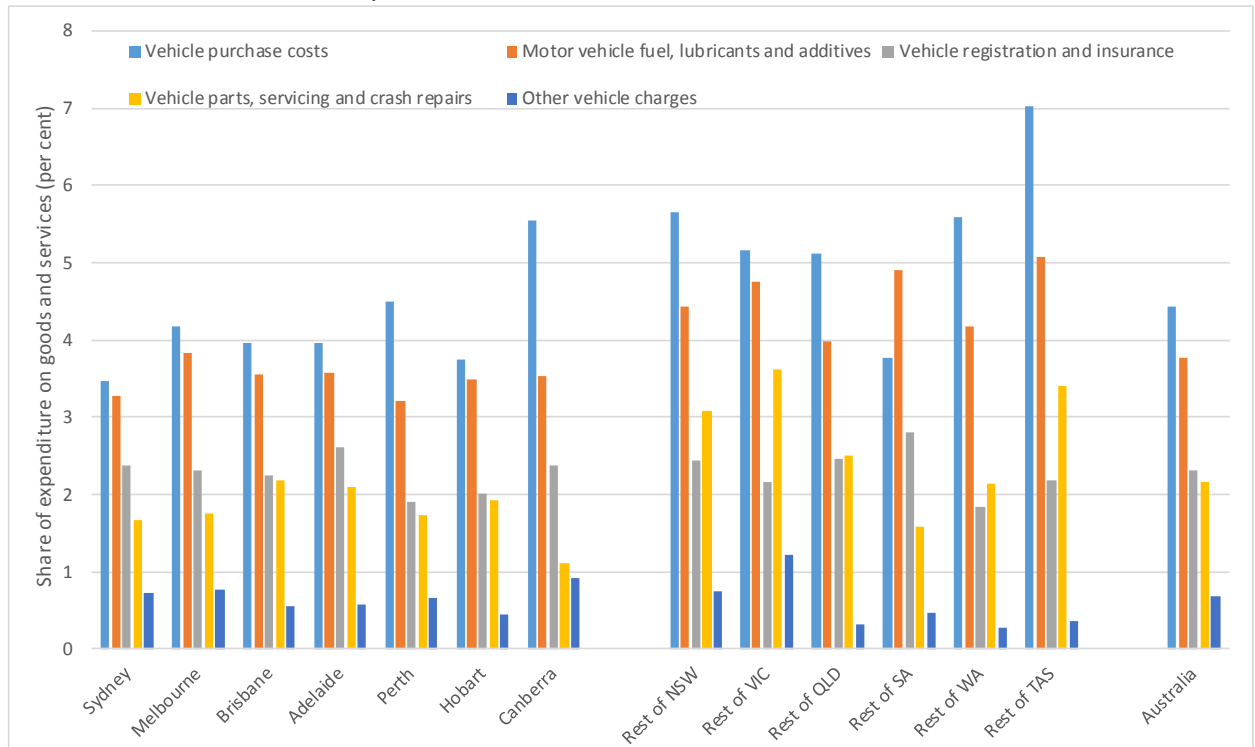
Table 6 also presents information on the different expenditure categories.

- Average weekly household expenditure on vehicle purchase costs was lower for the capital cities (\$52) than the rest of Australia (\$59). It was highest for the ACT (\$85) and lowest for Hobart (\$43) and Adelaide (\$45).
- Average weekly household expenditure on motor vehicle fuel, lubricants and additives was a little lower for the capital cities (\$46) than the rest of Australia (\$48). It was highest for the ACT (\$54), rest of Tasmania (\$51), rest of WA (\$51) and rest of NSW (\$51) and lowest for Hobart (\$40) and Adelaide (\$40).
- Average weekly expenditure on vehicle registration and insurance was a little higher in the capital cities (\$30) than in the rest of Australia (\$26), and was highest in the ACT (\$36) and Sydney (\$32).
- Average weekly expenditure on vehicle parts, servicing and repairs was considerably lower for the capital cities (\$23) than for the rest of Australia (\$32). It was particularly high for the rest of Victoria (\$37) and particularly low for the rest of SA (\$13).

Figure 7 presents average weekly expenditure for each of these expenditure categories as a proportion of total weekly expenditure on goods and services for each of the capital cities and state balances.

The proportion spent on vehicle purchases varies a great deal across the capital cities and state balances. It tends to be lower in the capital cities than in the state balances (although rest of SA is an exception with a share below the national average of 4.4 per cent). Compared to the other capital cities, ACT households spend a relatively high share of their total expenditure on vehicle purchases (5.5 per cent), while Sydney households spend a relatively low share (3.5 per cent). Compared to the other state balances, households in the rest of Tasmania spend a relatively high share of their total expenditure on vehicle purchases (7.0 per cent), while households in the rest of SA spend a relatively low share (3.8 per cent).

Figure 7 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, by capital cities and state balances, 2009-10



Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001, customised HES data purchase of NT and ACT data, and CURF data.

Motor vehicle fuel comprises about 98 per cent of expenditure within the *Motor vehicle fuel, lubricants and additives* category. Box 2 provides information on the split of motor vehicle fuel expenditure between petrol, diesel and LPG/other gas, and how this varies across different types of regions.

Figure 6 shows that *Motor vehicle fuel, lubricants and additives* represents 3.8 per cent of total weekly household expenditure on goods and services at the national scale. The share is very stable across the capital cities, which all spend between 3.2 and 3.9 per cent on motor vehicle fuel, lubricants and additives. The proportion spent on motor vehicle fuel is consistently higher for the state balances than it is for the capital cities, and ranges from 4.0 per cent for the rest of Queensland to 5.1 per cent for the rest of Tasmania. This implies that as of 2009-10 fuel excise represented a larger proportion of the total expenditure of regional households than it did for capital city households.

The higher proportion spent on motor vehicle fuel in regional areas (4.4 per cent) compared to the capital cities (3.8 per cent) reflects:

- a 6 per cent higher average weekly spend on motor vehicle fuel in the rest of Australia; and
- a 15 per cent lower average weekly expenditure on goods and services in the rest of Australia (reflecting lower average incomes).

There are several factors that could contribute to the 6 per cent higher average weekly spend on motor vehicle fuel in regional areas, including higher fuel prices, higher vehicle kilometres travelled, and more fuel intensive vehicles (e.g. older vehicles, or vehicles with larger engine capacity). A forthcoming BITRE Information Sheet will provide information on how average rates of fuel consumption differ between capital city and regional areas.

The proportion spent on vehicle registration and insurance is quite stable across the capital cities and state balances, ranging from a low of 1.9 per cent in Perth and the rest of WA to a high of 2.8 per cent in the rest of SA (Figure 6).

The proportion spent on vehicle parts, servicing and crash repairs varies more widely, particularly for the state balances (Figure 6). Compared to the other capital cities, ACT households spend a relatively low share of their total expenditure on this item (1.1 per cent), while for the other capital cities the share is equal to or below the national average share of 2.2 per cent. Households in the rest of Victoria and the rest of Tasmania spend a relatively high share of their total expenditure on vehicle parts, servicing and crash repairs (3.6 and 3.4 per cent, respectively), while households in the rest of SA spend a relatively low share (1.6 per cent).

Other vehicle charges represent just 0.7 per cent of total weekly household expenditure on goods and services. Households in the rest of Victoria spend a relatively high proportion on other vehicle charges (1.2 per cent), while households in the rest of Queensland the rest of WA spend a relatively low proportion (0.3 per cent each).

Box 2: Household expenditure on different types of motor vehicle fuel

At the national level, average weekly household expenditure was \$36.52 for petrol, \$3.62 for diesel and \$1.47 for LPG/other fuel. The sum of \$41.61 is less than the motor vehicle fuel, additives and lubricants figure in Table 1 (of \$46.68) as it excludes spending on oil, lubricants, additives and motor vehicle fuel not further defined.

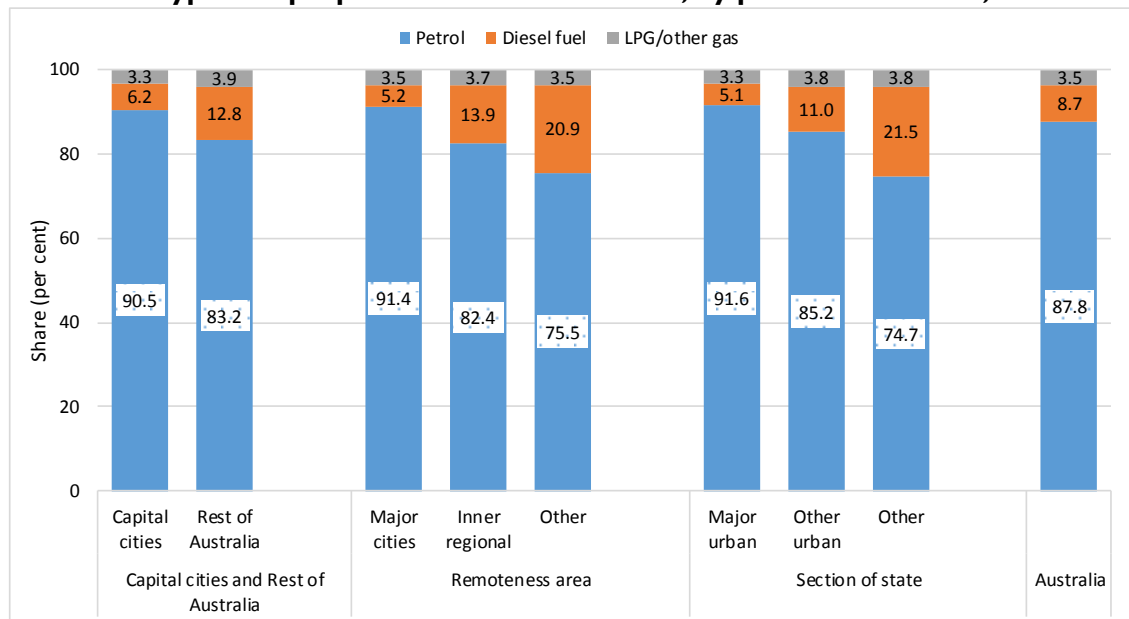
Nationally, petrol comprises 87.8 per cent of fuel expenditure, while diesel has an 8.7 per cent share and LPG/other gas a 3.5 per cent share. Figure B1 shows average weekly household fuel expenditure by fuel type as a proportion of total fuel costs for capital cities and state balances, remoteness areas and section of state.

The proportion spent on the different fuel types varies a great deal between the capital cities and the rest of Australia. For example, petrol comprises 90.5 per cent of motor vehicle fuel expenditure by households in capital cities, while this share was 83.2 per cent in state balances. The proportion spent on diesel was double in state balances compared to capital cities (12.8 per cent versus 6.2 per cent). The proportion spent on LPG/other gas also tended to be higher in state balances than in capital cities (3.9 per cent and 3.2 per cent, respectively) (Figure B1).

The proportion of motor vehicle fuel expenditure spent on petrol declined with increasing remoteness, being 91.4 per cent for the major cities, 82.4 per cent for inner regional areas and 75.5 per cent for other areas. The share of diesel followed the opposite pattern, being lowest for the major cities (5.2 per cent), and higher for inner regional areas (13.9 per cent) and other areas (20.9 per cent). The share of LPG/other fuel was fairly stable across remoteness classes. The section of state classification followed the same basic pattern as that observed for remoteness, with rural areas (i.e. the 'other' section of state category) having a very low petrol share (74.7 per cent) and a very high diesel share (21.5 per cent).

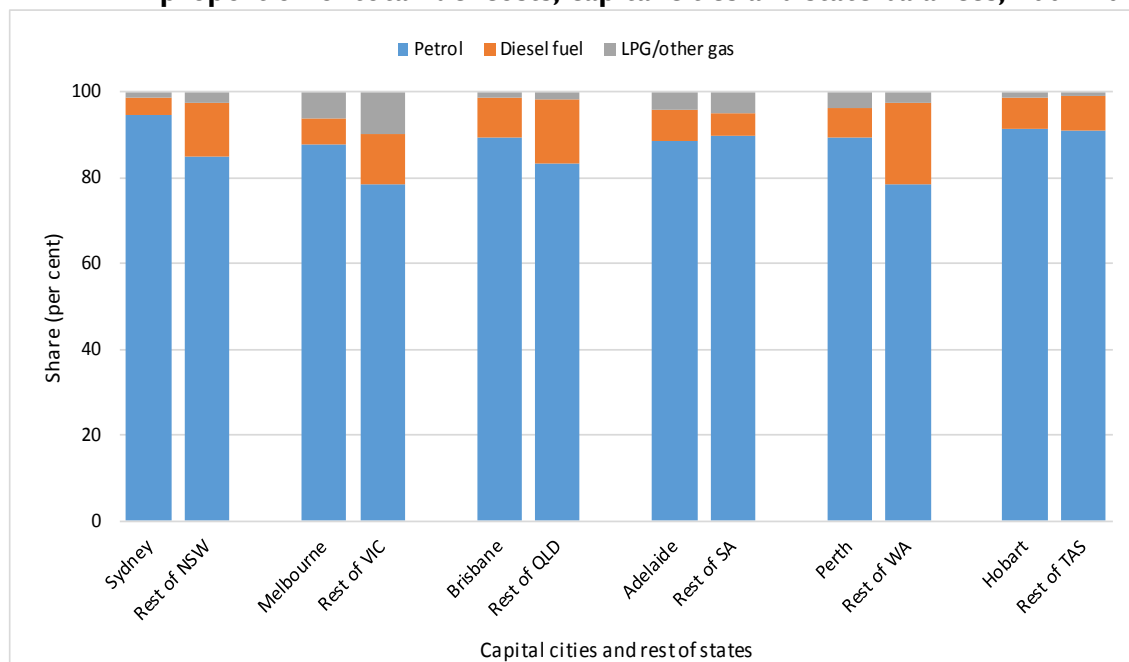
Figure B2 shows average weekly household fuel expenditure by fuel type as a proportion of total fuel costs for individual capital cities and state balances. Among the capital cities, Sydney households had the highest proportion spent on petrol (94.5 per cent) and Melbourne households the lowest (87.6 per cent). Among the state balances, the share of expenditure on petrol was highest for regional Tasmania (90.9 per cent) and lowest for regional Victoria (78.3 per cent). For diesel fuel, the capital city proportion was highest in Brisbane (9.2 per cent) and lowest in Sydney (4.3 per cent), while for the state balances, regional WA had the highest share (18.9 per cent) and regional SA had the lowest share (5.0 per cent). The proportion of fuel expenditure due to LPG/other gas was much higher in Victoria than the other states, although SA also exceeded the national proportion of 3.5 per cent. The LPG/other gas proportion was highest in Melbourne (6.2 per cent) and regional Victoria (10.0 per cent) and lowest in Sydney (1.2 per cent) and the rest of Tasmania (1.1 per cent).

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Box 2: (continued)**Figure B1 Components of average weekly household motor vehicle fuel expenditure by fuel type as a proportion of total fuel costs, by place of residence, 2009-10****Notes:**

1. The 'Capital cities' and 'Rest of Australia' figures exclude the NT, as Darwin could not be separated from the rest of the NT.
2. 'Other' Remoteness Areas include 'Outer regional' and 'Remote' Australia.
3. 'Other' Section of State includes 'Bounded locality' and 'Rural balance'.
4. Oils, lubricants and additives and Motor vehicle fuel, lubricants and additives (not further defined) are excluded from total expenditure.

Source: BITRE analysis of ABS HES 2009-10 confidentialised unit record file data and customised HES data purchase.

Figure B2 Components of average weekly household fuel expenditure by fuel type as a proportion of total fuel costs, capital cities and state balances, 2009-10

Note: Oils, lubricants and additives and Motor vehicle fuel, lubricants and additives (not further defined) are excluded from the total expenditure.

Source: BITRE analysis of ABS HES 2009-10 confidentialised unit record file data.

Remoteness areas

This classification contains three categories based on the ABS Remoteness Structure: Major cities, Inner regional areas and Other areas (which include Outer regional and Remote areas). Very remote areas lie outside the scope of the HES.

Table 7 shows that while average weekly expenditure on owning and operating vehicles tends to be higher for inner regional households (\$170), the expenditure did not differ much between households in major cities and in other remoteness areas (\$163 and \$160, respectively). On the other hand, average weekly household expenditure on goods and services was highest in major cities (\$1288), followed by inner regional areas (\$1069) and lowest in other areas (\$1022). Figure 8 shows that expenditure on owning and operating vehicles represented 12.7 per cent of total expenditure on goods and services in the major cities (due to higher incomes and higher total expenditure), compared to 15.9 per cent in inner regional areas and 15.7 per cent in other remoteness areas.

Table 7 Average weekly household expenditure on owning and operating vehicles by expenditure type, remoteness areas, Australia, 2009-10

Expenditure item	Remoteness area			Australia
	Major cities	Inner regional	Other ^a	
Average weekly expenditure (\$)				
Total vehicle purchase costs	55.79	51.78	53.78	54.75
Motor vehicle fuel, lubricants and additives (non-holiday)	45.81	50.27	47.46	46.91
Vehicle registration and insurance	29.18	24.26	22.53	27.47
Vehicle parts, servicing and crash repairs	23.13	35.84*	32.15	26.74
Other vehicle charges	9.38	7.51	4.15	8.44
Average weekly household expenditure on owning and operating vehicles ^b	163.29	169.66	160.07	164.31
Average weekly household expenditure on goods and services ^b	1288.38	1069.36	1021.74	1214.48

Note: Average weekly household expenditure on owning and operating vehicles for Australia (\$164.31) is slightly different than the expenditure used earlier (\$165.06), which was based on confidentialised unit record file data (rather than a customised data purchase from ABS).

^a Other Remoteness Areas include 'Outer regional' and 'Remote' Australia.

^b Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

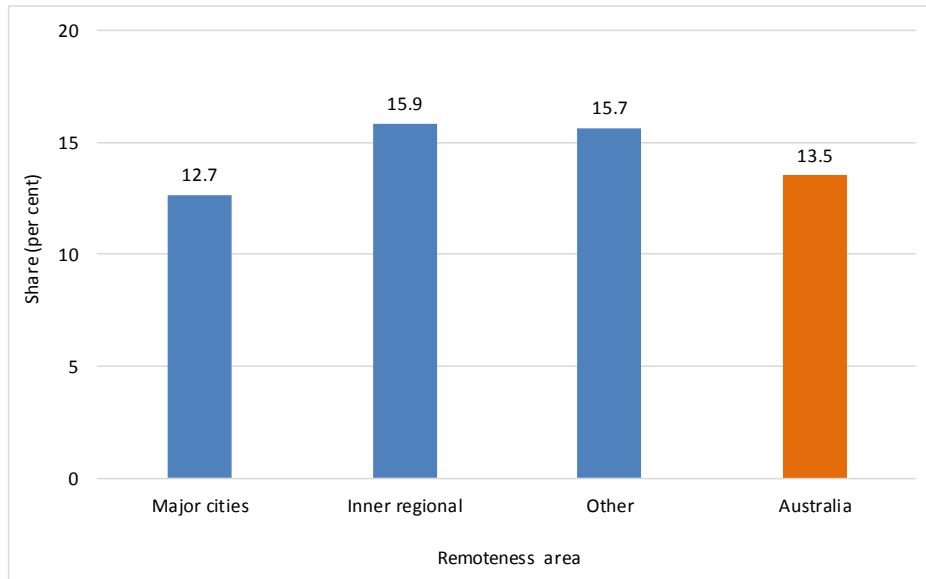
* Estimates known to have RSEs of 25 per cent or more are flagged.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

Table 7 also shows the split of average weekly household expenditure on owning and operating vehicles by expenditure type for remoteness areas. The levels of average weekly household expenditure on total vehicle purchase costs, and motor vehicle fuel, lubricants and additives (non-holiday) were similar across the three remoteness areas, while average weekly household expenditure on *vehicle registration and insurance* and *other vehicle charges* decreased gradually from major cities to other remoteness areas. On the other hand, average weekly household expenditure on vehicle parts, servicing and crash repairs was lowest in the major cities, and higher in inner regional and other remoteness areas (which had similar average expenditure on this item).

Figure 9 expresses average weekly household expenditure on each of these expenditure items as a proportion of total weekly expenditure on goods and services. Vehicle purchase costs represent a relatively low proportion of total expenditure in the major cities (4.3 per cent), but this proportion rises across the remoteness classes, reaching 4.8 per cent for inner regional areas and 5.3 per cent for other remoteness areas. Motor vehicle fuel, lubricants and additives also represent a low proportion of total expenditure in the major cities (3.6 per cent) and a higher proportion of total expenditure in inner regional areas (4.7 per cent) and other remoteness areas (4.6 per cent). Vehicle parts, servicing and crash repairs follows a similar pattern, representing a much lower proportion of expenditure for the major cities (1.8 per cent), and a higher share for inner regional (3.4 per cent) and other remoteness areas (3.1 per cent). In contrast, vehicle registration and insurance is very stable across the remoteness classes.

Figure 8 Average weekly household expenditure on owning and operating vehicles as a share of total expenditure on goods and services, remoteness areas, Australia, 2009-10

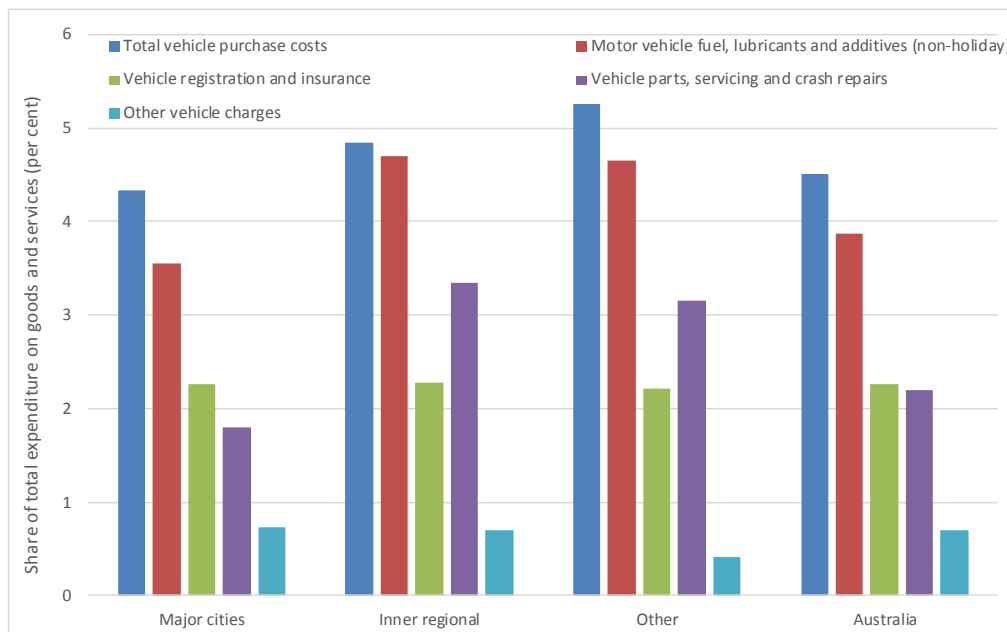


Notes:

1. Average weekly household expenditure on owning and operating vehicles for Australia (\$164.31) is slightly different than the expenditure used earlier (\$165.06), which was based on confidentialised unit record file data (rather than a customised data purchase from ABS).
2. 'Other' Remoteness Areas include 'Outer regional' and 'Remote' Australia.
3. Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

Figure 9 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, by remoteness area, 2009-10



Notes:

1. Average weekly household expenditure on owning and operating vehicles for Australia (\$164.31) is slightly different than the expenditure used earlier (\$165.06), which was based on confidentialised unit record file data (rather than a customised data purchase from ABS).
2. 'Other' Remoteness Areas include 'Outer regional' and 'Remote' Australia.
3. Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

Section of state¹⁷

Household expenditure on owning and operating vehicles was also analysed to find out whether rural and urban characteristics of households are responsible for any variation in expenditure patterns. The classification used here consists of three categories: Major urban (population of 100 000 or more), Other urban (population of 1000 to 99 999) and Other areas (rural areas and towns of less than 1000 population). The 'other areas' can provide insight into whether expenditure patterns differ for rural parts of Australia, compared to the cities.

Table 8 shows that in 2009-10, average weekly household expenditure on owning and operating vehicles was much higher in other areas (\$197) compared to major urban (\$160) and other urban (\$162). Average weekly household expenditure on goods and services was higher in major urban areas (\$1284) than in either other urban (\$1067) or other areas (\$1088). Consequently, a higher proportion of total expenditure was spent on owning and operating vehicles in other areas (18.1 per cent) than in other urban (15.1 per cent) and major urban areas (12.4 per cent) (Figure 10).

This means that households living in rural Australia spend considerably more on owning and operating vehicles than do households living in urban centres, and a much higher proportion of their total expenditure goes to owning and operating vehicles. There is very little difference in expenditure on owning and operating vehicles between the major urban centres and smaller urban centres. The rurality of a location has a much greater impact than remoteness or urban centre size when it comes to expenditure on owning and operating vehicles.

Table 8 Average weekly household expenditure on owning and operating vehicles by expenditure type, Section of State, 2009-10

Expenditure item	Section of State			Australia
	Major urban	Other urban	Other ^a	
Average weekly expenditure (\$)				
Total vehicle purchase costs	54.03	54.83	59.11	54.75
Motor vehicle fuel, lubricants and additives (non-holiday)	44.51	45.56	65.18	46.91
Vehicle registration and insurance	29.02	23.63	25.73	27.47
Vehicle parts, servicing and crash repairs	23.13	31.69*	39.14	26.74
Other vehicle charges	9.10	6.75	7.77	8.44
Average weekly household expenditure on owning and operating vehicles ^b	159.79	162.46	196.93	164.31
Average weekly household expenditure on goods and services ^b	1284.27	1066.59	1087.51	1214.48

Note: Average weekly household expenditure on owning and operating vehicles for Australia (\$164.31) is slightly different than the expenditure used earlier (\$165.06), which was based on confidentialised unit record file data (rather than a customised data purchase from ABS).

^a Other Section of State includes 'Bounded locality' and 'Rural balance'.

^b Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

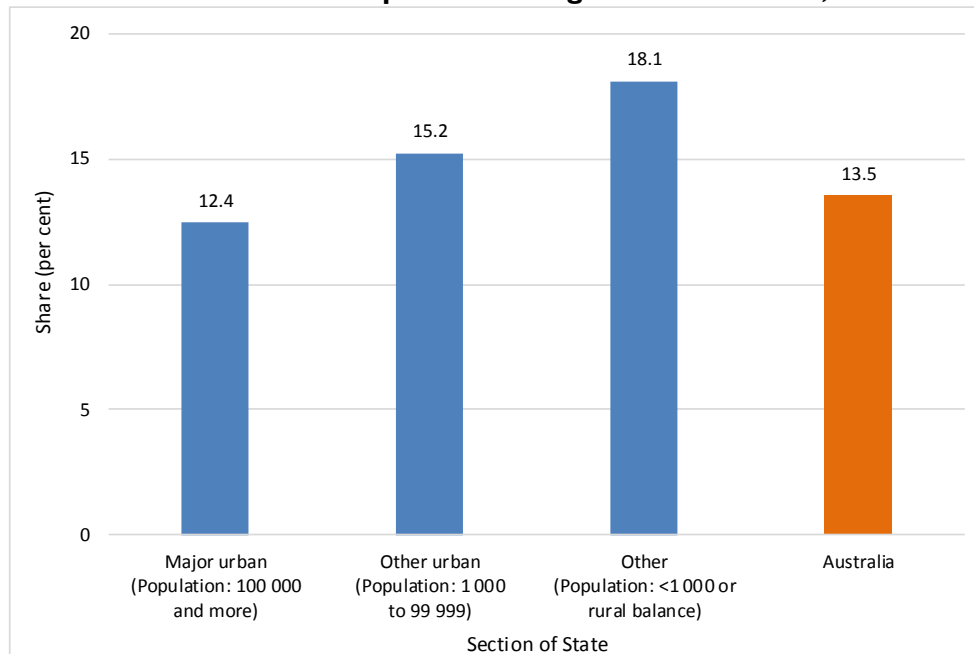
* Estimates known to have RSEs of 25 per cent or more are flagged.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

Siminski and Saunders (2004) used the ABS's *Household Expenditure Survey* (1998-99) and found that average weekly household expenditure on travel was higher in major urban areas than in the balance of Australia (i.e. other urban and rural). Further, they also found that rural households spent the most on transport, while households in the other urban areas spent least.

¹⁷ According to Australian Bureau of Statistics (ABS), *Section of State* represents an aggregation of non-contiguous geographical areas of a particular urban/rural type. These categories comprise Major Urban (where population clusters of 100 000 or more), Other Urban (population clusters of 1 000 to 99 999), Bounded Locality (200 to 999), Rural Balance (remainder of state/territory) and Migratory, and in aggregate cover the whole of Australia (ABS 2001, *Census Dictionary, 2011*, Cat. No. 2901.0).

Figure 10 Average weekly household expenditure on owning and operating vehicles as a share of total expenditure on goods and services, Section of State, 2009-10



Notes:

1. 'Other' Section of State includes 'Bounded locality' and 'Rural balance'.
2. Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

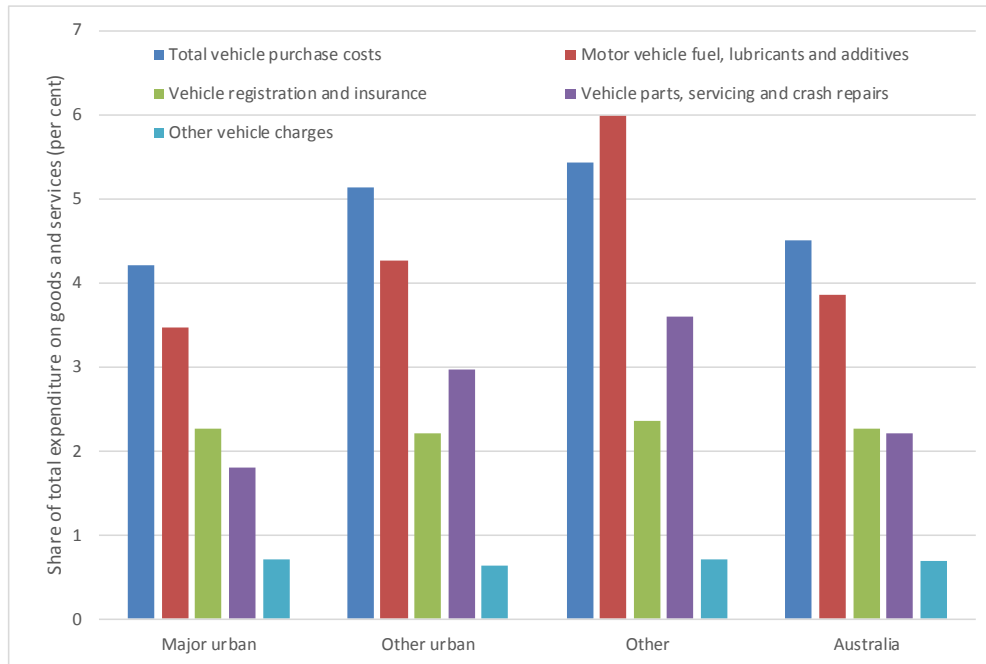
Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

The higher expenditure of rural households is largely due to higher expenditure on the variable costs of motor vehicle fuel and vehicle parts, servicing and repairs (see Table 8). It is likely that this reflects a combination of higher vehicle kilometres travelled, more fuel-intensive vehicles, and higher prices in rural locations.¹⁸ Siminski and Saunders (2004) suggest the higher expenditure of rural households is likely to be a result of higher prices rather than a higher quantity of travel consumption, possibly due to the higher fuel prices and/or higher costs of travel per unit of time on the open road compared to travel in more densely populated areas.

Figure 11 shows the different expenditure items as a proportion of total weekly household expenditure on goods and services for major urban, other urban and other areas. Vehicle purchase costs represent a relatively low proportion of total expenditure in the major urban areas (4.2 per cent), and a higher proportion of total expenditure in other urban areas (5.1 per cent) and other locations (5.4 per cent). Motor vehicle fuel, lubricants and additives represent a relatively low share of total expenditure for major urban areas (3.5 per cent), a higher share for other urban areas (4.3 per cent), and a much higher share for other areas (6.0 per cent). Vehicle parts, servicing and crash repairs follow a similar pattern, ranging from 1.8 per cent for the major urban areas to 3.6 per cent for other areas. However, vehicle registration and insurance and other vehicle charges represents a fixed share of expenditure across the section of state categories.

¹⁸ BITRE (2014) provides evidence that fuel prices are relatively stable for urban centres of more than 10 000 population, but tend to rise strongly as town size declines for towns of less than 5 000 population.

Figure 11 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, by Section of State, 2009-10



Notes:

1. 'Other' Section of State includes 'Bounded locality' and 'Rural balance'.
2. Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

Sectors of Sydney and Melbourne

In terms of population size and the contribution to Australia's economy, Sydney and Melbourne are the two major cities. In addition, these two cities exhibit substantial internal differences in the pattern of resources and social characteristics of their populations (Morris and Lane 1978). This section presents average weekly household expenditure on owning and operating vehicles for the inner, middle and outer suburbs of Sydney and Melbourne by expenditure type using ABS 2009-10 *Household Expenditure Survey* customised data.

The inner/middle/outer suburban classification is the same as that used in BITRE's series of cities reports (BITRE 2011, 2012). It is based on groupings of Statistical Local Areas (SLAs) from the 2006 ASGC (Australian Standard Geographic Classification). Map 1 illustrates the inner, middle and outer sectors of the two cities.

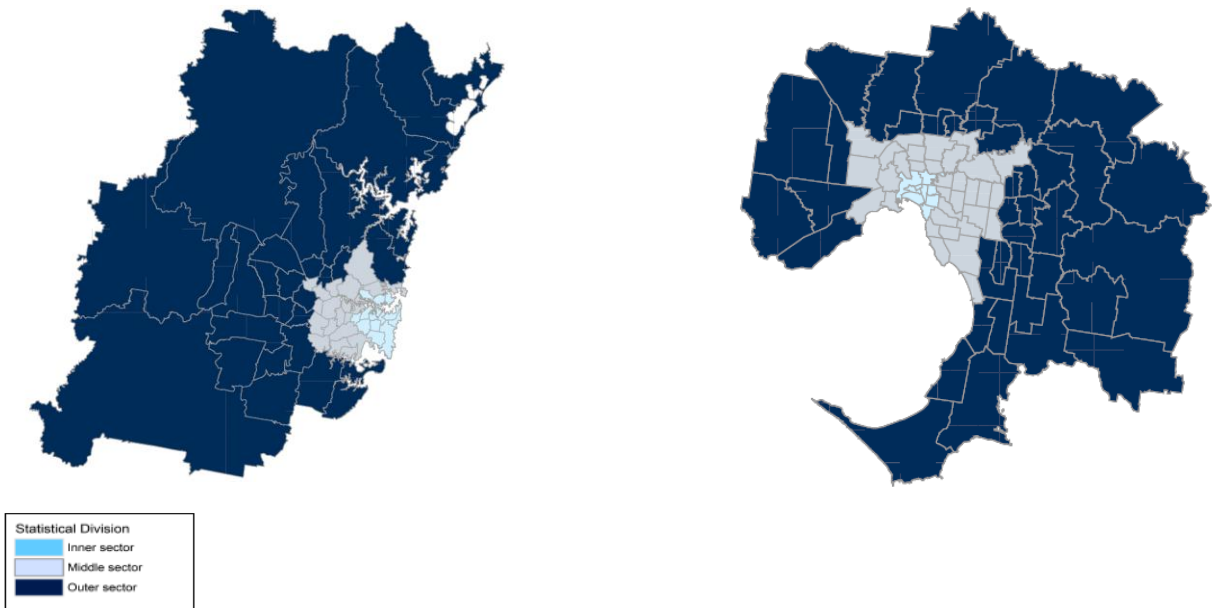
The level of average weekly household expenditure on owning and operating vehicles varied across sectors of both Sydney and Melbourne in 2009-10. Average weekly household expenditure on owning and operating vehicles was lower in Sydney (\$153.52) (Table 9) than in Melbourne (\$166.94) (Table 10), but average weekly household expenditure on goods and services showed the opposite pattern (\$1311.76 in Sydney and \$1283.57 in Melbourne), giving a lower share of total expenditure due to owning and operating vehicles in Sydney (11.7 per cent) than in Melbourne (13.0 per cent).

In Sydney, inner and middle suburban households have very similar average weekly expenditure on owning and operating vehicles (both \$142). However, outer suburban households had much higher average weekly expenditure of \$164. This accounted for 12.8 per cent of total expenditure on goods and services by outer suburban households (see Figure 12). Middle suburban households spent a smaller proportion (11.4 per cent), while inner suburban households spent the lowest proportion on owning and operating vehicles (9.6 per cent).

Map I Classification of Melbourne and Sydney into inner, middle and outer sectors

Sydney SD

Melbourne SD



Source: BITRE (2013).

Table 9 Average weekly household expenditure on owning and operating vehicles by expenditure type by sector, Sydney, 2009-10

Expenditure item	Sub-regions ^a			Sydney
	Inner	Middle	Outer	
Average weekly expenditure (\$)				
Total vehicle purchase costs	48.29	39.46	49.42	46.46
Motor vehicle fuel, lubricants and additives (non-holiday)	32.88	37.89	51.89	44.14
Vehicle registration and insurance	25.10	33.49	31.87	30.90
Vehicle parts, servicing and crash repairs	21.99	24.11	21.48	22.31
Other vehicle charges	13.60	7.31	9.43	9.71
Average weekly household expenditure on owning and operating vehicles ^b	141.86	142.26	164.09	153.52
Average weekly household expenditure on goods and services ^b	1471.99	1248.69	1281.11	1311.76

^a Sectors have been built from 2006 Statistical Local Areas (SLA) boundaries. Details of classification available from BITRE (2012).

^b Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey customised data.

Table 10 Average weekly household expenditure on owning and operating vehicles by expenditure type by sector, Melbourne, 2009-10

Expenditure item	Sub-regions ^a			Melbourne
	Inner	Middle	Outer	
Average weekly expenditure (\$)				
Total vehicle purchase costs	74.81*	48.10	58.42	54.33
Motor vehicle fuel, lubricants and additives (non-holiday)	24.40	45.75	59.63	50.30
Vehicle registration and insurance	24.66	28.65	30.73	29.28
Vehicle parts, servicing and crash repairs	9.56*	26.70	20.72	22.98
Other vehicle charges	7.11	11.68	8.58	10.05
Average weekly household expenditure on owning and operating vehicles ^b	140.54	160.88	178.08	166.94
Average weekly household expenditure on goods and services ^b	1726.05	1333.36	1157.08	1283.57

^a Sectors have been built from 2006 Statistical Local Areas (SLA) boundaries. Details of classification available from BITRE (2011).

^b Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

* Estimates known to have RSEs of 25 per cent or more are flagged.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey customised data.

In Melbourne, inner suburban households had the lowest average weekly expenditure on owning and operating vehicles (\$141), with expenditure higher in the middle sector (\$161) and higher again in the outer sector (\$178). The proportion of total expenditure due to owning and operating vehicles increased strongly across the sectors, standing at 8.1 per cent for the inner sector, 12.1 per cent for the middle sector and 15.4 per cent for the outer sector (Figure 12).

Thus, outer suburban households stand out in both Sydney and Melbourne as having high expenditure on owning and operating vehicles and a high proportion of total expenditure on owning and operating vehicles, compared to the city-wide average. However, while middle suburban households spend considerably more than inner suburban households in Melbourne, the difference is negligible in Sydney. Overall, Melbourne shows greater spatial variation in the proportion spent on owning and operating vehicles, than does Sydney.

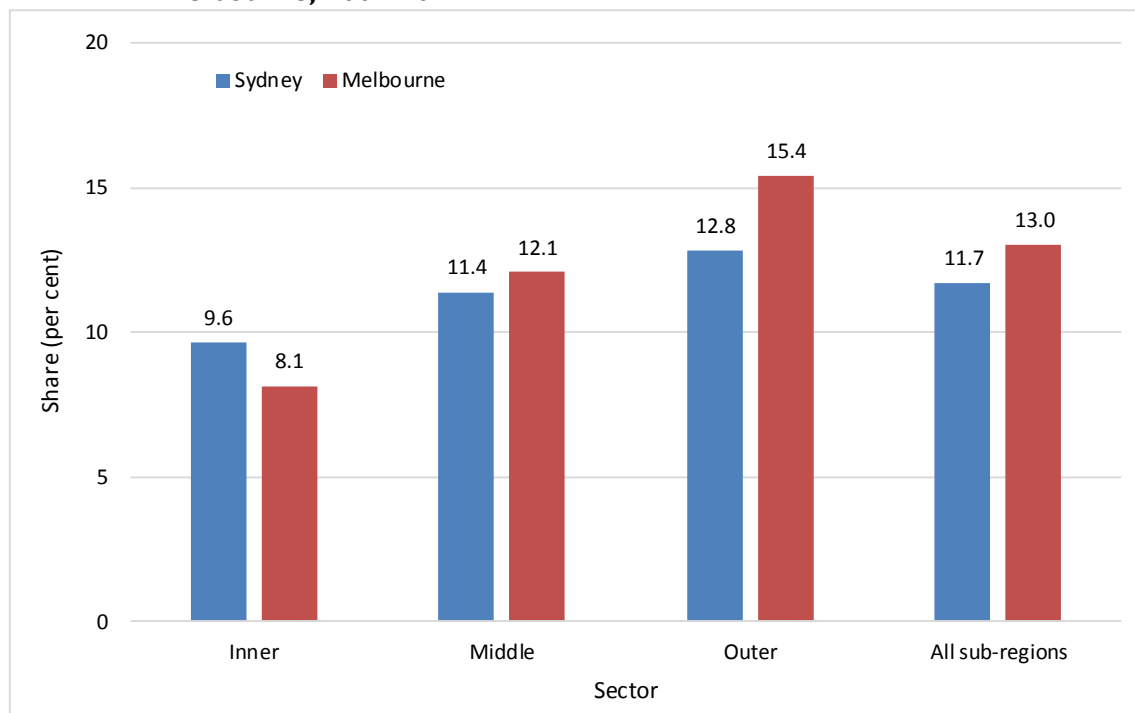
Tables 9 and 10 also provide information on how average weekly household spending on the different expenditure items varies across Sydney and Melbourne's sectors. The key results include:

- Vehicle purchase costs were below the city-wide average for middle sector households in Sydney (\$39) and Melbourne (\$48). Households in Melbourne's inner sector had very high expenditure on vehicle purchases (\$75), while in Sydney, the inner and outer sectors had similar average expenditure (\$48 and \$49, respectively).
- Outer suburban households spent much more on motor vehicle fuel, lubricants and additives (\$52 in Sydney and \$60 in Melbourne) compared to inner and middle suburban households in each city. In Sydney, middle suburban households spent a little more than inner suburban households (\$38 and \$33, respectively), while for Melbourne, middle suburban households spent considerably more than inner suburban households (\$46 and \$24, respectively). The higher spending on motor vehicle fuel by outer suburban residents is likely to reflect the longer average commuting distances of outer suburban residents. BITRE (2013) reports that in Australia's four largest cities the average commuting distances range between 5 and 7 kilometres for the Inner sector, between 8 and 10 kilometres for the middle sector and between 13 and 15 kilometres for outer sector residents. While outer sector residents commute longer distances, they also have higher average commuting speeds (BITRE 2013) which is likely to involve a lower rate of fuel consumption, and so it is expected that average fuel expenditure would vary less across the sectors than does average commuting distance.
- Average weekly expenditure on vehicle registration and insurance did not vary a great deal across the subregions, but the inner sector had the lowest spending on this item in both Sydney and Melbourne.
- There was very little variation across Sydney's sectors in average weekly expenditure on vehicle parts, servicing and crash repairs. However, inner sector residents of Melbourne had very low spending on this item.
- For Sydney, average weekly expenditure on other vehicle charges was highest in the inner sector, while for Melbourne, spending on this item was highest for the middle sector.

Using VISTA 07 (the Victorian Integrated Survey of Travel and Activity, 2007)¹⁹, Inbakaran and Shin (2010) modelled travel expenditure of Melbourne households by sector of residence. They found that average weekly expenditure on car running costs (which included fuel, tyres, servicing and repairs) increased from inner to outer areas, from \$60.41 to \$107.95. The average weekly expenditure on car running costs was \$72.14 in middle areas. Their expenditures were higher than the results presented here, due to a different methodology. For example, Inbakaran and Shin used selected areas within each sector and they used data derived from VISTA, combined with RACV estimates of vehicle running costs, while this study has used data directly from the ABS *Household Expenditure Survey* data for all of Melbourne.

¹⁹ The Victorian Integrated Survey of Travel and Activity is a one-day travel survey that records how, where and for what purposes people travel. Households across Melbourne, Geelong, Ballarat, Bendigo, Latrobe and Shepparton completed a travel diary on a single specified day as part of the survey, which is conducted over the financial year.

Figure 12 Comparison of share of average weekly household expenditure spent on costs associated with owning and operating vehicles, by sector of Sydney and Melbourne, 2009-10



Notes:

1. Sectors have been built from 2006 Statistical Local Areas (SLA) boundaries. Map 1 illustrates the classification.
2. Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

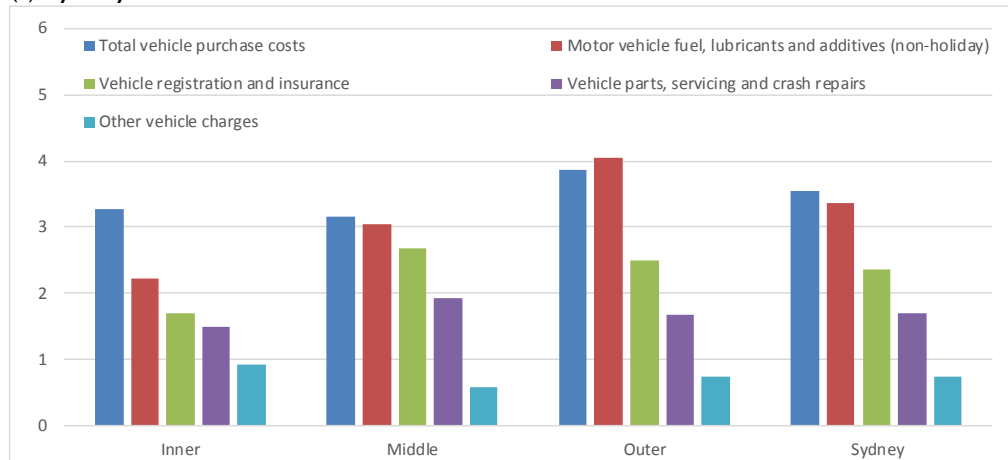
Figure 13 illustrates average weekly household expenditure on each of these expenditure categories as a proportion of total expenditure at the sectoral scale for Sydney and Melbourne. The proportion of total expenditure due to vehicle purchase costs in the outer sector exceeds the city-wide average for both Sydney and Melbourne, but the sectoral variation is greater in Melbourne than it is in Sydney. For both cities, the proportion of spending on motor vehicle fuel, lubricants and additives is lowest in the inner sector and rises strongly across the sectors. Again, there is greater sectoral variation in Melbourne than in Sydney. The proportion spent on vehicle registration and insurance is lowest for the inner sector in each city, but peaks for the middle sector in Sydney and the outer sector in Melbourne. The proportion spent on vehicle parts, servicing and crash repairs is lowest for the inner sector and highest for the middle sector in each city, but again displays much greater sectoral variation in Melbourne.

In a previous study which examined regional variations in expenditure on transport within the broader context of overall household expenditure, Morris and Lane (1978) note that 'the highest incidence of transport expenditure often occurs in outer areas, already noted for their relatively high levels of financial commitments to home purchase and/or operation' (ibid, p.19). They found the share of total expenditure due to transport expenditure (excluding vehicle purchase costs) was highest in the outer eastern suburbs of Melbourne, and lowest in Central and Inner Eastern Melbourne.

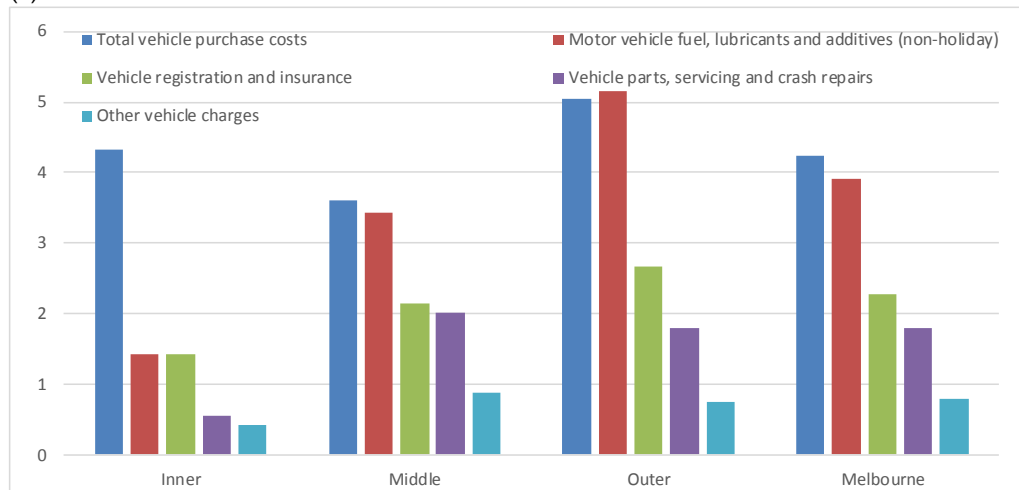
Overall, a key message from this analysis is that outer suburban households have high average weekly expenditure on owning and operating vehicles, compared to the average Sydney or Melbourne household. Outer suburban households also spend a relatively high proportion of their total expenditure on owning and operating vehicles. This is principally due to higher expenditure on motor vehicle fuel by outer suburban residents. The most likely explanation for this higher fuel expenditure is higher vehicle kilometres travelled per household, due to a combination of factors, such as longer average commuting distances, greater reliance on private vehicles (as reflected in lower public transport mode shares) and larger average household size (reflected in a higher number of vehicles per household).

Figure 13 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, by sector, Sydney and Melbourne, 2009-10

(a) Sydney



(b) Melbourne



Notes:

1. Sectors have been built from Statistical Subdivisions (SSD) and Statistical Local Areas (SLA).
 2. Excludes expenditure derived from non-cash benefits from employer provided vehicles and car parks.
- Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

While the HES sectoral breakdown was only available for Melbourne and Sydney, it is likely that outer suburban residents of other major Australian cities also have relatively high expenditure on owning and operating vehicles compared to the relevant city-wide average. This is likely because the broad patterns of cross-sectoral variation that exist in Sydney and Melbourne with respect to average commuting distances and the public transport mode share, also occur in Perth and Brisbane (BITRE 2013). However, the extent of cross-sectoral variation will not be constant across cities, with some cities (i.e. Melbourne) having much greater sectoral variation in expenditure than others (i.e. Sydney).

Summary of spatial differences

Each of the different regional classifications considered in this section (states and territories, capital cities and state balances, remoteness areas, section of state, and city sectors) have an influence on household spending on owning and operating vehicles. However, there is one broad type of region which has a particularly high average weekly expenditure on owning and operating vehicles and allocates a high proportion of total spending to this item, namely rural areas (including towns of less than 1000 population). Rural areas have average weekly expenditure of \$197 on owning and operating vehicles, which represents 18.1 per cent of their total expenditure. This compares to the national average weekly spend of \$165, which represents 13.4 per cent of total expenditure.

The high spending of rural households on owning and operating vehicles is largely due to a high spend on motor vehicle fuel and vehicle servicing and repairs. The higher spend on these variable costs may be because residents of rural locations tend to have relatively high commuting distances (BITRE 2015),²⁰ face relatively high prices (BITRE 2014) and have fuel-intensive vehicles. Rural households represent about 11 per cent of the Australian population (based on 2011 Census of Population and Housing data).

Other regions with a particularly high weekly expenditure on owning and operating vehicles are the ACT (\$209), regional NSW (\$188) and regional Tasmania (\$182). The proportion spent on owning and operating vehicles was very high for regional Tasmania (18.1 per cent), regional Victoria (16.9 per cent) and regional NSW (16.4 per cent).

Within the capital cities, outer suburban residents stand out as having relatively high weekly expenditure on owning and operating vehicles. However, the average spend of outer suburban Melbourne residents (\$178) is much less than that of rural residents (\$197), and the spending on owning and operating vehicles represents a much lower proportion of total expenditure (15.4 per cent in outer suburban Melbourne, compared to 18.1 per cent in rural areas). The average weekly spend of outer suburban households was marginally below the national average for Sydney and \$13 above the national average for Melbourne, suggesting that the average outer suburban household does not spend that much more than the average Australian household on owning and operating vehicles.

Average weekly household expenditure on motor vehicle fuel is highest in rural areas (\$65) and outer suburban Melbourne (\$60). Motor vehicle fuel represents a particularly high proportion of total expenditure in rural areas (6.0 per cent), regional Tasmania (5.1 per cent) and regional SA (4.9 per cent). Average weekly household expenditure on motor vehicle fuel was lowest in Inner Melbourne (\$24.40), Inner Sydney (\$32.88), Middle Sydney (\$37.89) and Hobart (\$39.75). It represented just 1.4 per cent of total expenditure on goods and services for Inner Melbourne households.

4 How does average weekly expenditure on owning and operating vehicles vary across different types of households?

The level and composition of household income and expenditure is highly associated with the social and demographic characteristics of household members. This section examines how average weekly expenditure on owning and operating vehicles varies across different types of households. The specific demographic characteristics considered are age, lifecycle group, household size, household income, main income source and housing tenure.

Age of the reference person

Table 11 presents average weekly household expenditure on owning and operating vehicles by the age of the reference person. The reference person for each household is selected from household members aged 15 and over based on a range of criteria (including parental status, couple status, housing tenure, income and age). For the 2009-10 HES, the average age of the reference person was 50. Some points emerging from the information presented in Table 11 include:

- Households in which the reference person was aged 45 to 54 years spent the highest weekly amount (\$214) on owning and operating vehicles, while households with a reference person aged 65 and over spent the least (\$86).
- Households with a reference person aged 65 and over had the lowest weekly spend across all expenditure items.
- The weekly spend on *Total vehicle purchase costs* was higher than that on *Motor vehicle fuel, lubricants and additives (non-holiday)* for all age groups, except for households with a reference person aged 65 and over.

²⁰ Inland country and coastal country areas (defined as SA2s located outside significant urban areas of 10000 or more population) and remote areas had average commuting distances well above 20 kilometres in 2011, while the average commuting distances of the capital cities ranged between 11 and 15 kilometres.

- Households in which the reference person was aged 55 to 64 years spent the most (\$35 per week) on *Vehicle parts, servicing and crash repairs*.
- Expenditure on owning and operating vehicles was a relatively low proportion of total expenditure for households with reference persons aged 35 to 44 (11.6 per cent) or 65 and over (11.8 per cent). It was a larger proportion of expenditure for households with reference persons aged 55 to 64 (14.8 per cent).

Table 11 Average weekly household expenditure on owning and operating vehicles by age of reference person, Australia, 2009-10

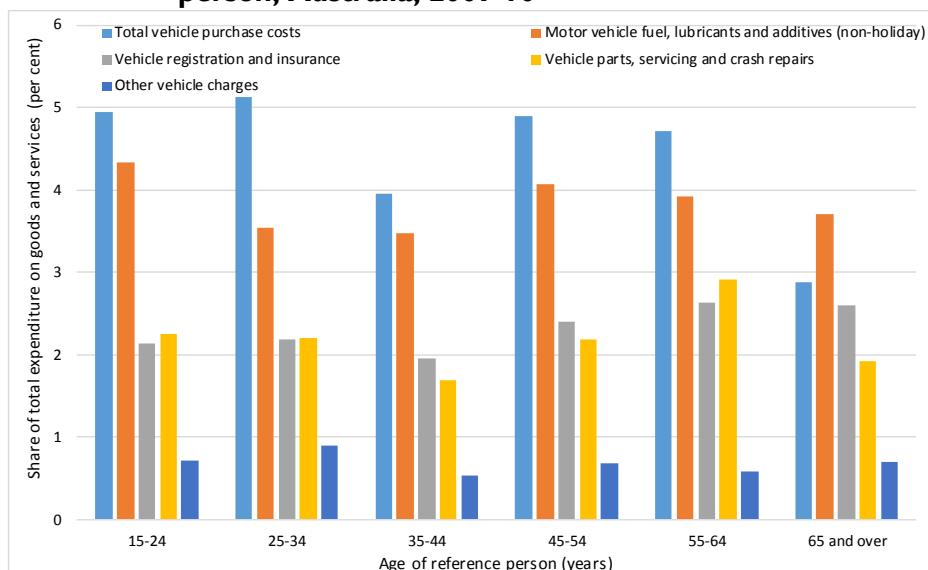
Age groups	Expenditure item (\$)					Total expenditure on owning and operating vehicles (\$)	Total expenditure on goods and services (\$)	Proportion of total expenditure due to owning and operating vehicles (per cent)
	Total vehicle purchase costs	Motor vehicle fuel, lubricants and additives (non-holiday)	Vehicle registration and insurance	Vehicle parts, servicing and crash repairs	Other vehicle charges			
15-24	60.29	52.76	26.11	27.38	8.67	175.21	1218.92	14.37
25-34	67.25	46.57	28.61	28.90	11.75	183.09	1311.98	13.96
35-44	57.78	50.96	28.72	24.86	7.78	170.11	1463.10	11.63
45-54	73.42	61.13	36.12	32.74	10.33	213.73	1498.92	14.26
55-64	56.73	47.27	31.75	35.00	7.08	177.83	1202.73	14.79
65 and over	20.88	26.95	18.86	13.97	5.12	85.78	726.12	11.81
All age groups	54.74	46.68	28.57	26.74	8.33	165.06	1235.37	13.36

Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks. Households with reference persons aged 65 and over were oversampled in the 2009-10 HES, but this issue is corrected for by the population-based weighting.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Figure 14 presents household expenditure on each of the expenditure items as a proportion of total household expenditure on goods and services. It shows that the proportion spent on vehicle purchase costs varies considerably across the age groups. Households in which the reference person was aged 25 to 34 years had the highest share spent on *Total vehicle purchase costs* (5.1 per cent), followed by households in which the reference person was aged 15 to 24 years (4.9 per cent) or 45 to 54 years (4.9 per cent). Households in which the reference person was aged 35 to 44 years spent less than 4 per cent on vehicle purchase costs, while households where the reference person was aged 65 and over allocated just 2.9 per cent of their total spending to vehicle purchase costs.

Figure 14 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, by age of reference person, Australia, 2009-10



Note: Households with reference persons aged 65 and over were oversampled in the 2009-10 HES, but this issue is corrected for by the population-based weighting.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

In contrast, the average weekly household expenditure share of *Motor vehicle fuel, lubricants and additives (non-holiday)* was highest for households in which the reference person was aged 15 to 24 years (4.3 per cent), followed by households with a reference person aged 45 to 54 (4.1 per cent). *Vehicle registration and insurance* represents a slightly larger proportion of total expenditure for the older age groups (45 to 54, 55 to 64, and 65 and over) than it does for the younger age groups. *Vehicle parts, servicing and crash repairs* represents a larger proportion of total expenditure for households with a reference person aged 55 to 64, compared to the other age groups (2.9 per cent, compared to 2.2 per cent across all households).

Overall, there are two age groups that stand out from this analysis:

- Households with a reference person aged 65 and over spend roughly half as much as the average Australian household on owning and operating vehicles. This reflects the lower incomes of this group, but also a relatively small proportion of their total spend being allocated to owning and operating vehicles.²¹ Spending on vehicle purchases is particularly low for these households.
- Households with a reference person aged between 35 and 44 allocated a low proportion of their total expenditure to owning and operating vehicles. In particular, they spent a relatively small proportion on vehicle purchase costs. Many households in this age group are families with dependent children, which may impact on the composition of expenditure. These influences are considered further in the next section on lifecycle groups.

Lifecycle groups

In terms of lifecycle groups, the average weekly expenditure on owning and operating vehicles was highest for households consisting of a *Couple with dependent and non-dependent children only* (\$312), followed by households consisting of a *Couple with dependent children only - Eldest child 15 to 24* (\$281) (Table 12). Couples with dependent and non-dependent children had the highest proportion of goods and services expenditure on owning and operating vehicles (nearly 21 per cent).

Table 12 Average weekly household expenditure on owning and operating vehicles by lifecycle groups, Australia, 2009-10

Life cycle group	Expenditure item (\$)					Total expenditure on owning and operating vehicles (\$)	Average weekly expenditure on goods and services (\$)	Proportion of total expenditure due to owning and operating vehicles (per cent)
	Total vehicle purchase costs	Motor vehicle fuel, lubricants and additives (non-holiday)	Vehicle registration and insurance	Vehicle parts, servicing and crash repairs	Other vehicle charges			
Lone person aged under 35	52.30	28.11	16.53	20.11	12.26	129.31	869.03	14.88
Couple only, reference person aged under 35	93.20	48.49	31.16	20.35	13.90	207.10	1428.78	14.49
Couple with dependent children only - Eldest child under 5	66.87	48.63	30.98	23.03	8.06	177.57	1482.77	11.98
Couple with dependent children only - Eldest child 5 to 14	71.55	59.58	31.80	28.49	12.69	204.12	1669.03	12.23
Couple with dependent children only - Eldest child 15 to 24	105.25	71.03	44.70	48.59	11.69	281.28	1900.48	14.80
One parent with dependent children	40.87	38.78	17.15	20.09	3.84	120.73	1002.18	12.05
Couple with dependent and non-dependent children only	104.36	96.11	58.64	34.85	18.31	312.28	1519.13	20.56
Couple with non-dependent children only	61.32	76.25	46.98	30.69	11.23	226.47	2052.45	11.03
Couple only, reference person aged 55 to 64	74.81	45.02	30.81	46.46	6.42	203.52	1259.13	16.16
Couple only, reference person aged 65 and over	25.72	32.21	22.32	19.16	4.67	104.08	854.92	12.17
Lone person aged 65 and over	10.30	12.22	10.93	7.58	2.52	43.55	445.41	9.78
Total	54.74	46.68	28.57	26.74	8.33	165.06	1235.37	13.36

Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks. 'Not applicable' category excluded from the analysis, but included in the total row.

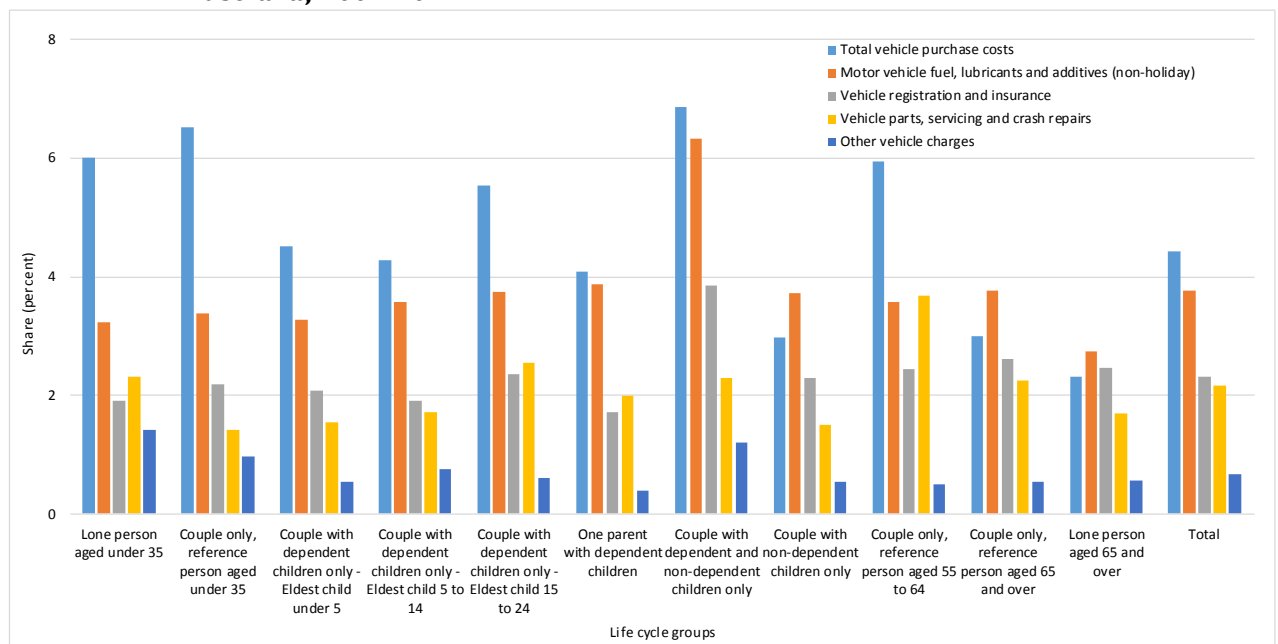
Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

²¹ The low labour force participation of this age group is a key factor behind both the lower incomes and the reduced spend on the variable costs of owning and operating vehicles (due to reduced commuter travel).

In contrast, lone persons aged 65 years and over had a much lower average weekly expenditure on owning and operating vehicles (\$44) than other lifecycle groups, and their average weekly expenditure on goods and services was also lower (\$445). Lone persons aged 65 years and over spent slightly less than 10 per cent of their weekly goods and services expenditure on owning and operating vehicles. Other household types with relatively low expenditure on owning and operating vehicles includes couple only households with a reference person aged 65 and over, lone persons aged under 35, and lone parent households.

In terms of the different expenditure items as a proportion of total goods and services expenditure, households consisting of a *Couple with dependent and non-dependent children only* had the highest share spent on both *Total vehicle purchase costs* and *Motor vehicle fuel, lubricants and additives (non-holiday)* (6.9 per cent and 6.3 per cent, respectively) (Figure 15). While their vehicle purchases expenditure share was only marginally higher than couple only households with a reference person aged under 35, their fuel expenditure share was markedly higher than any other lifecycle group (as was their weekly fuel expenditure of \$96.11). Couple only households with dependent and non-dependent children also had a relatively high proportion spent on registration and insurance, which is likely to be due to a larger number of vehicles owned by these households (reflecting a larger number of individuals of driving age within the household). Lone persons aged 65 and over had the lowest share spent on vehicle purchases and fuel, while couple only households with a reference person aged 55 to 64 had a relatively high share spent on vehicle servicing and repairs.

Figure 15 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, by lifecycle group, Australia, 2009-10



Note: 'Not applicable' category excluded from the analysis.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Household size

Table 13 presents average weekly household expenditure on owning and operating vehicles by household size in Australia during 2009-10, while Figure 15 shows this expenditure as a proportion of total weekly expenditure on goods and services for the different household size categories.

Weekly expenditure on owning and operating vehicles is lowest for one person households (\$79.65) and rises systematically with household size, peaking for households containing five or more persons (at \$263.34). Households containing five persons or more had the highest weekly expenditure across all expenditure items compared to other categories, except for *Other vehicle charges*, where four person households had the highest weekly expenditure (Table 13). Households consisting of five or more persons also had the highest weekly expenditure on goods and services.

This expenditure on owning and operating vehicles ranged from 12.3 per cent of the total expenditure on goods and services of lone person households to 14.1 per cent of the total expenditure by households of five or more persons. Households of two to four persons each spent a similar proportion on owning and operating vehicles (13.1 to 13.6 per cent).

The share of average weekly expenditure on *Total vehicle purchase costs* was highest for households consisting of five or more persons, followed by households consisting of two persons and four persons (Figure 16). On the other hand, the share of average weekly expenditure on *Motor vehicle fuel, lubricants and additives (non-holiday)* increased gradually from single person households to households consisting of three persons and then remained very similar.

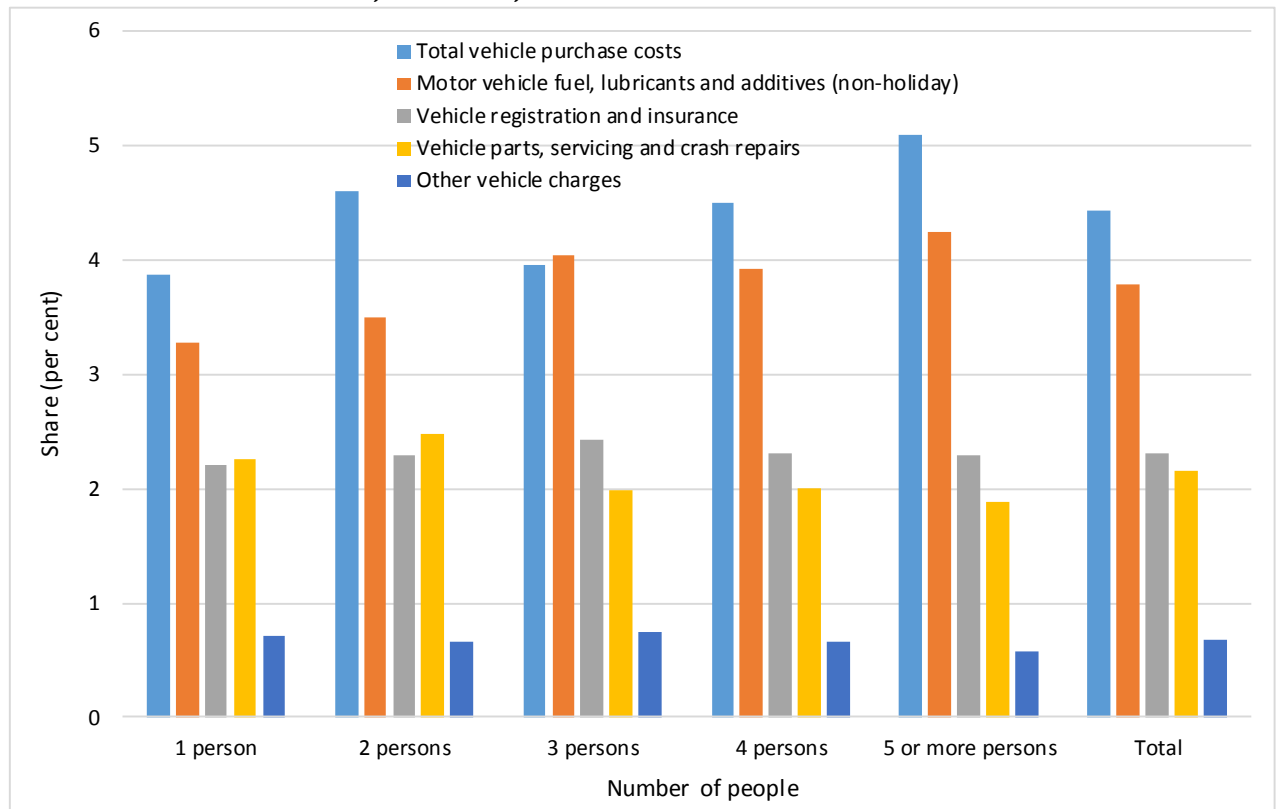
Table 13 Average weekly household expenditure on owning and operating vehicles by number of people in the household, Australia, 2009-10

Household size	Expenditure item (\$)					Total expenditure on owning and operating vehicles (\$)	Average weekly expenditure on goods and services (\$)	Proportion of total expenditure due to owning and operating vehicles (per cent)
	Total vehicle purchase costs	Motor vehicle fuel, lubricants and additives (non-holiday)	Vehicle registration and insurance	Vehicle parts, servicing and crash repairs	Other vehicle charges			
1 person	25.03	21.21	14.20	14.58	4.63	79.65	645.83	12.33
2 persons	53.32	40.63	26.58	28.77	7.71	157.01	1159.33	13.54
3 persons	57.40	58.58	35.16	28.78	10.84	190.76	1450.66	13.15
4 persons	76.35	66.65	39.35	33.96	11.25	227.57	1698.17	13.40
5 or more persons	95.15	79.25	42.98	35.21	10.75	263.34	1868.48	14.09
Total	54.74	46.68	28.57	26.74	8.33	165.06	1235.37	13.36

Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Figure 16 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, by number of people in the household, Australia, 2009-10



Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Household income

All households were ranked by their incomes from the lowest to the highest, and the households were then put into five groups (quintiles). Each income quintile had an equal number of households.

This section provides itemised average weekly household expenditure on owning and operating vehicles as well as total expenditure on goods and services by both gross income quintile and equivalised disposable income quintile.

In 2009-10, households in the lowest gross household income quintile (the lowest 20 per cent of households when ranked according to gross income, earning \$571 or less per week) spent on average nearly \$67 per week, or 12.0 per cent of their total expenditure on goods and services, on owning and operating vehicles. For the highest quintile (with gross household income of more than \$2498 per week), the average spend on owning and operating vehicles was \$293 (or 13.5 per cent of goods and services expenditure). This pattern of expenditure increasing across the income quintiles is evident for all expenditure items.

According to ABS (2011), the difference in total income and expenditure is 'partly a consequence of household size: households in the lowest quintile contain on average 1.5 persons, compared to 3.4 persons in households in the highest quintile, lone person households make up 63 per cent of households in the lowest quintile' (ibid. p.4). Later in this section we present analysis of equivalised disposable household income, which 'provides an indicator of the income estimates with respect to household size and composition, while taking into account the economies of scale that arise from the sharing of dwellings' (ABS 2011, p.5).

Table 14 Average weekly household expenditure on owning and operating vehicles by gross household income quintile, Australia, 2009-10

Gross income quintile	Expenditure item (\$)					Total expenditure on owning and operating vehicles (\$)	Average weekly expenditure on goods and services (\$)	Proportion of total expenditure due to owning and operating vehicles (per cent)	Weekly household income from all sources (\$)
	Total vehicle purchase costs	Motor vehicle fuel, lubricants and additives (non-holiday)	Vehicle registration and insurance	Vehicle parts, servicing and crash repairs	Other vehicle charges				
Lowest	14.24	20.72	12.87	15.56	3.54	66.93	559.86	12.0	390.43
Second	26.56	34.38	19.09	24.98	4.05	109.06	810.35	13.5	756.53
Third	48.74	49.93	27.65	23.57	8.45	158.34	1170.97	13.5	1316.73
Fourth	68.26	58.81	35.85	26.55	9.13	198.59	1477.41	13.4	2020.88
Highest	115.97	69.58	47.42	43.08	16.46	292.51	2159.23	13.5	3907.75
Total	54.74	46.68	28.57	26.74	8.33	165.06	1235.37	13.4	1678.46

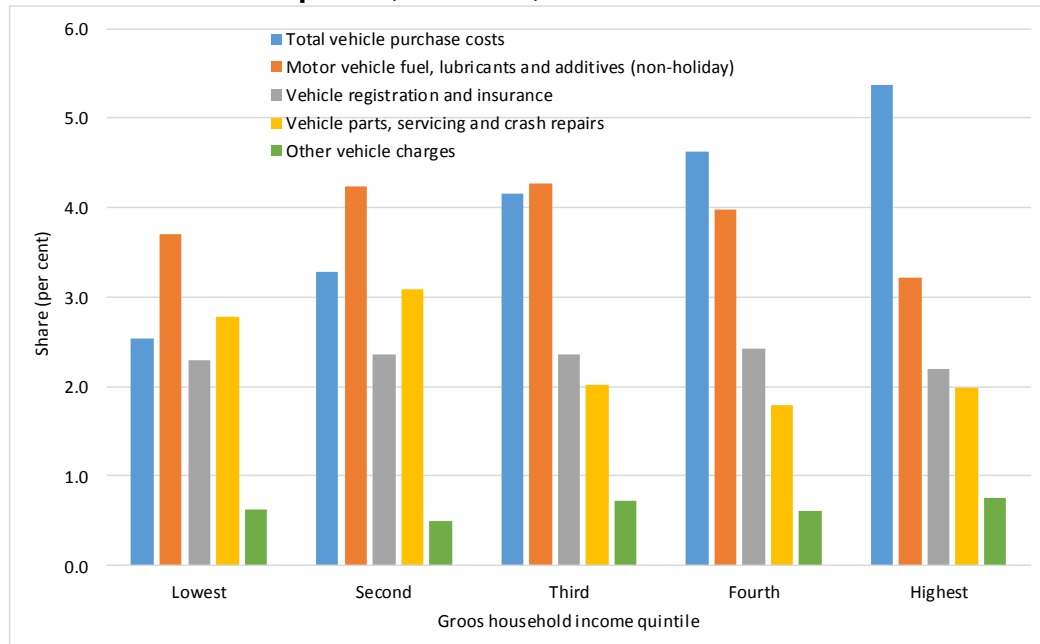
Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks.
Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Figure 17 shows itemised average weekly household expenditure on owning and operating private vehicles as a proportion of total expenditure on goods and services by gross income quintile. It can be seen that the vehicle purchase costs proportion increased gradually from 2.5 per cent (lowest quintile) to 5.4 per cent (highest quintile). For people in households whose weekly income fell into the lowest quintile, the share of total expenditure on *Motor vehicle fuel, lubricants and additives* was 3.7 per cent, gradually increasing up to 4.3 per cent (third quintile) and then decreasing to 3.2 per cent in the top quintile. The proportion of total expenditure spent on *Vehicle registration and insurance* was quite stable across the quintiles, as was the proportion spent on *Other vehicle charges*. The proportion of total expenditure spent on *Vehicle parts, servicing and crash repairs* was highest for the bottom two quintiles, and lower for the top three income quintiles.

Table 15 presents itemised average weekly household expenditure on owning and operating vehicles by equivalised household disposable income quintile, while Figure 17 shows these expenditure items as a proportion of total expenditure on goods and services for equivalised disposable household income quintiles.

In 2009-10, households in the lowest equivalised disposable income quintile spent on average \$82 per week (or 12.4 per cent of their total expenditure on goods and services) on owning and operating vehicles, and it increased to \$252 (or 13.5 per cent of goods and services) for households in the highest equivalised disposable income quintile (Table 15). This pattern is evident for all expenditure types.

Figure 17 Composition of household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, by gross household income quintile, Australia, 2009-10



Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Table 15 Average weekly household expenditure on owning and operating vehicles by equivalised disposable household income quintile, Australia, 2009-10

Equivalised disposable household income quintile	Expenditure item (\$)					Total expenditure on owning and operating vehicles (\$)	Average weekly expenditure on gross and services (\$)	Proportion of total expenditure due to owning and operating vehicles (per cent)
	Total vehicle purchase costs	Motor vehicle fuel, lubricants and additives (non-holiday)	Vehicle registration and insurance	Vehicle parts, servicing and crash repairs	Other vehicle charges			
First	16.39	26.86	14.67	19.76	3.93	81.61	657.16	12.4
Second	33.75	45.26	23.05	27.05	5.42	134.53	977.33	13.8
Third	53.87	51.79	29.78	23.15	5.46	164.05	1201.49	13.7
Fourth	73.99	58.26	34.18	25.84	10.28	202.55	1453.48	13.9
Highest	101.28	57.33	38.19	38.40*	17.20	252.40	1866.92	13.5
All	54.75	46.91	27.47	26.74	8.44	164.31	1214.48	13.5

Notes:

1. Expenditure derived from non-cash benefits from employer provided vehicles and car parks were excluded from total expenditure on owning and operating vehicles and average weekly expenditure on goods and services.
2. Average weekly household expenditure on owning and operating vehicles for Australia (\$164.31) is slightly different than the expenditure used earlier (\$165.06), which was based on confidentialised unit record file data (rather than customised data purchase from ABS).

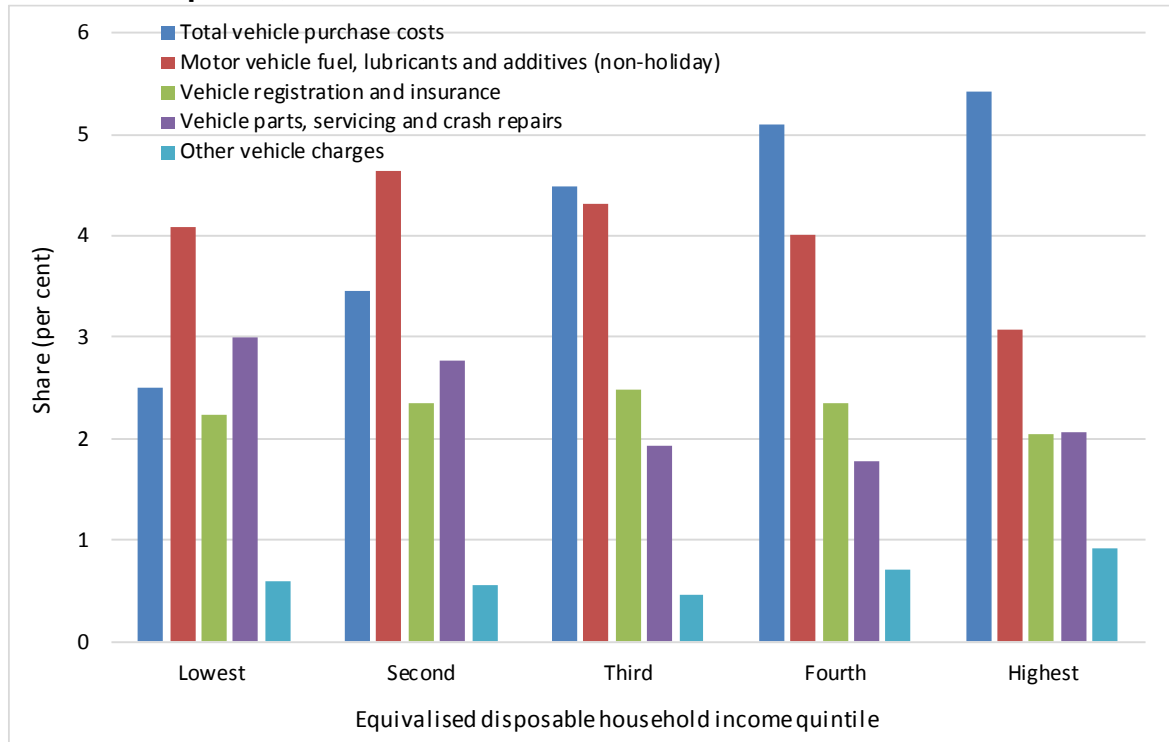
Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey customised data.

Figure 18 shows itemised expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services for the equivalised disposable income quintiles.

- The proportion spent on *Vehicle purchase costs* increased from the lowest to the highest income quintile, indicating the discretionary nature of this expenditure, with more affluent households choosing to purchase more expensive vehicles.
- The proportion spent on *Motor vehicle fuel, lubricants and additives* increased from the lowest quintile to the second quintile and then decreased. Households in the top income quintile spent a considerably lower proportion of their total spending on this item than did households in the other quintiles.
- The share spent on *Vehicle registration and insurance* was stable across the quintiles.

- The share spent on *Vehicle parts, servicing and crash repairs* decreased from the lowest quintile to the third quintile and then remained relatively stable.
- The share spent on *Other vehicle charges* is relatively stable for the lower three quintiles, and then increases gradually.

Figure 18 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure by equivalised disposable household income quintile, Australia, 2009-10



Notes:

1. Expenditure derived from non-cash benefits from employer provided vehicles and car parks were excluded from total expenditure on owning and operating vehicles and average weekly expenditure on goods and services.
2. Shares were calculated using the average weekly household expenditure on owning and operating vehicles for Australia in Table 15 (\$164.31) which is slightly different than the expenditure used earlier (\$165.06), which was based on confidentialised unit record file data (rather than a customised data purchase from ABS).

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* customised data.

While average weekly household expenditure on owning and operating vehicles rises strongly across the income quintiles (whichever household income measure is used), the proportion of total expenditure spent on owning and operating vehicles is quite similar for the top four quintiles. The twenty per cent of households with the lowest incomes spend a smaller proportion of their total expenditure on owning and operating vehicles than do higher earning households. This occurs because the low income households spend a considerably lower proportion of their total expenditure on vehicle purchase costs.

Main sources of gross household income

This section presents average weekly expenditure on owning and operating vehicles by the main source of household income. The income source categories are wages and salaries, own incorporated businesses, government pensions and allowances (separated into age pensions and other government pensions and allowances²²) and other sources²³. Table 16 presents average weekly household expenditure on owning and

²² Includes *Disability support pension, Veteran affairs pension, Family tax benefit, Parenting payment, and Unemployment and student allowances*.

²³ Income other than wages and salaries, own unincorporated business income and government pensions and allowances. This includes income received as a result of ownership of financial assets (interest, dividends), and of non-financial assets (rent,

operating vehicles by the main sources of gross household income, while Figure 18 shows this expenditure as a proportion of total expenditure on goods and services for each income source category.

Households whose gross weekly income was mainly from *Wage and salary* spent around \$201 on owning and operating vehicles, much higher than for any other income source. This is followed by households which mainly received income from their *Own unincorporated business* (\$171) or *Other income* sources (\$160). It is obvious that households which receive income from government pensions and allowances are likely to spend much less on owning and operating vehicles than the other income groups (only \$79). At a slightly finer degree of disaggregation, households whose main source of income was *Age pension* spent, on average, less on owning and operating vehicles (\$63) than the households which received *Other government pensions and allowances* (\$95).

While those relying on government pensions and allowances have much lower average weekly household expenditure on owning and operating vehicles than those relying on other sources of income, a fairly similar proportion of their total expenditure is devoted to owning and operating vehicles (12.9 per cent, compared to 13.4 per cent nationally).

Table 16 Average weekly household expenditure on owning and operating vehicles by main source of gross household income, Australia, 2009-10

Income sources	Expenditure item (\$)					Total expenditure on owning and operating vehicles ^a (\$)	Average weekly expenditure on goods and services (\$)	Proportion of total expenditure due to owning and operating vehicles (per cent)
	Total vehicle purchase costs	Motor vehicle fuel, lubricants and additives (non-holiday)	Vehicle registration and insurance	Vehicle parts, servicing and crash repairs	Other vehicle charges			
Wage and salary	69.54	56.44	34.72	30.09	10.43	201.22	1473.81	13.65
Own unincorporated business income	62.54	56.79	27.81	16.48	7.23	170.85	1406.14	12.15
Government pensions and allowances	14.89	24.85	13.73	22.01	3.35	78.83	611.78	12.89
Age pension	11.96	21.29	14.20	12.06	3.43	62.94	546.80	11.51
Other government pensions and allowances ^b	17.80	28.41	13.27	31.89	3.44	94.80	676.29	14.02
Other income	65.82	36.16	29.30	20.19	8.70	160.17	1290.24	12.41
All income sources	55.04	46.78	28.63	26.58	8.34	165.37	1236.91	13.37

Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks.

^a Total expenditure on owning and operating vehicles is different to the data presented elsewhere, due to the exclusion of households with zero or negative income.

^b Other government pensions and allowances include Disability support pension, Veteran affairs pension, Family tax benefit, Parenting payment, and Unemployment and student allowances.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

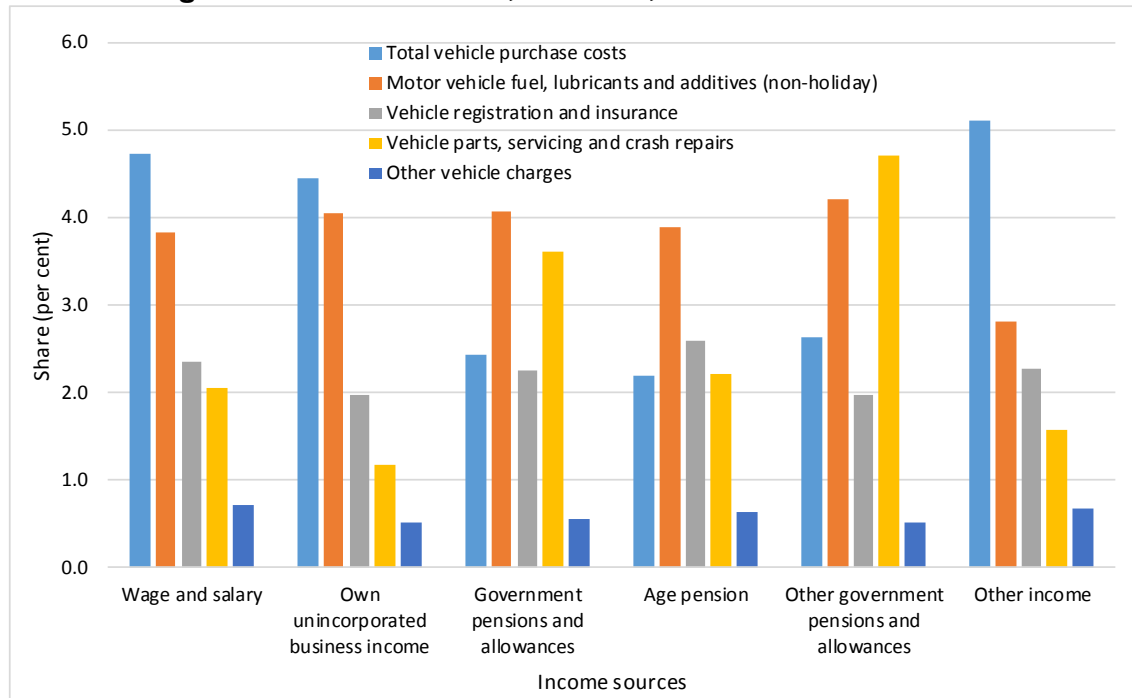
In terms of itemised average weekly household expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services, households with a main source of *Other income* had the highest share (5.1 per cent) on *Total vehicle purchase costs*, followed by *Wage and salary* (4.7 per cent) households (Figure 19). Households whose main source of income was government pensions and allowances spent a much lower proportion on vehicle purchases, particularly those relying on *Age pensions* (2.2 per cent).

The proportion spent on *Motor vehicle fuel, lubricants and additives* was considerably lower for households with a main source of *Other income* (2.8 per cent) than it was for the remaining income source categories (ranging from 3.8 to 4.2 per cent). The proportion of total expenditure spent on *Vehicle parts, servicing and crash repairs* varies widely across the income source categories. It is lowest for those who rely on *Own incorporated business income* (1.2 per cent) and highest for those who rely on *Other government pensions and allowances* (4.7 per cent).

The proportion spent on *Vehicle registration and insurance* did not vary a great deal across the income source categories but was highest for those relying on *Age pensions* (2.6 per cent). The share of expenditure on *Other vehicle charges* is also quite stable across the income source categories.

royalties) and other current receipts from sources such as superannuation, child support, workers' compensation and scholarships (ABS 2011, p.93).

Figure 19 Components of average weekly household expenditure on owning and operating private vehicles as proportion of total expenditure, by main source of gross household income, Australia, 2009-10



^a Total expenditure on owning and operating vehicles is different to that presented elsewhere, due to exclusion of households with zero or negative income.

^b Other government pensions and allowances include Disability support pension, Veteran affairs pension, Family tax benefit, Parenting payment, and Unemployment and student allowances.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Tenure type

Table 17 presents average weekly household expenditure on owning and operating vehicles by tenure type in Australia during 2009-10, while Figure 19 shows this expenditure as a proportion of total weekly expenditure on goods and services for the different types of tenure.

Households where the owner had a mortgage spent, on average, \$213 on owning and operating vehicles each week, much higher than the other tenure type categories. However, households where owners did not have a mortgage and all renters spent a very similar amount on owning and operating vehicles (\$138.68 and \$139.11, respectively). Households that rented their dwelling from a state or territory housing authority spent an average of just \$60 weekly on owning and operating vehicles, much less than other rental households (\$152). Further, this spend represented a smaller proportion of total weekly expenditure on goods and services for households which rented their dwelling from a state or territory housing authority compared to other rental households (10.5 per cent versus 12.9 per cent). The proportion of total spending attributable to owning and operating vehicles was higher for households where the owner did not have a mortgage (13.9 per cent) and households with other tenure (14.0 per cent) (Table 17).

Among the three main tenure types (i.e. owner without a mortgage, owner with a mortgage and all renters), renters had the highest share spent on *Total vehicle purchase costs* as a proportion of total weekly expenditure on goods and services, followed by owners with a mortgage and owners without a mortgage. The reverse trend is evident for *Motor vehicle fuel, lubricants and additives (non-holiday)* (Figure 19).

Rental households which did not rent their dwelling from a state or territory authority had a higher share of expenditure on *Total vehicle purchase costs* than those which rented their dwelling from a state or territory authority. However, there was no difference between these two household types for *Motor vehicle fuel, lubricants and additives* (Figure 20).

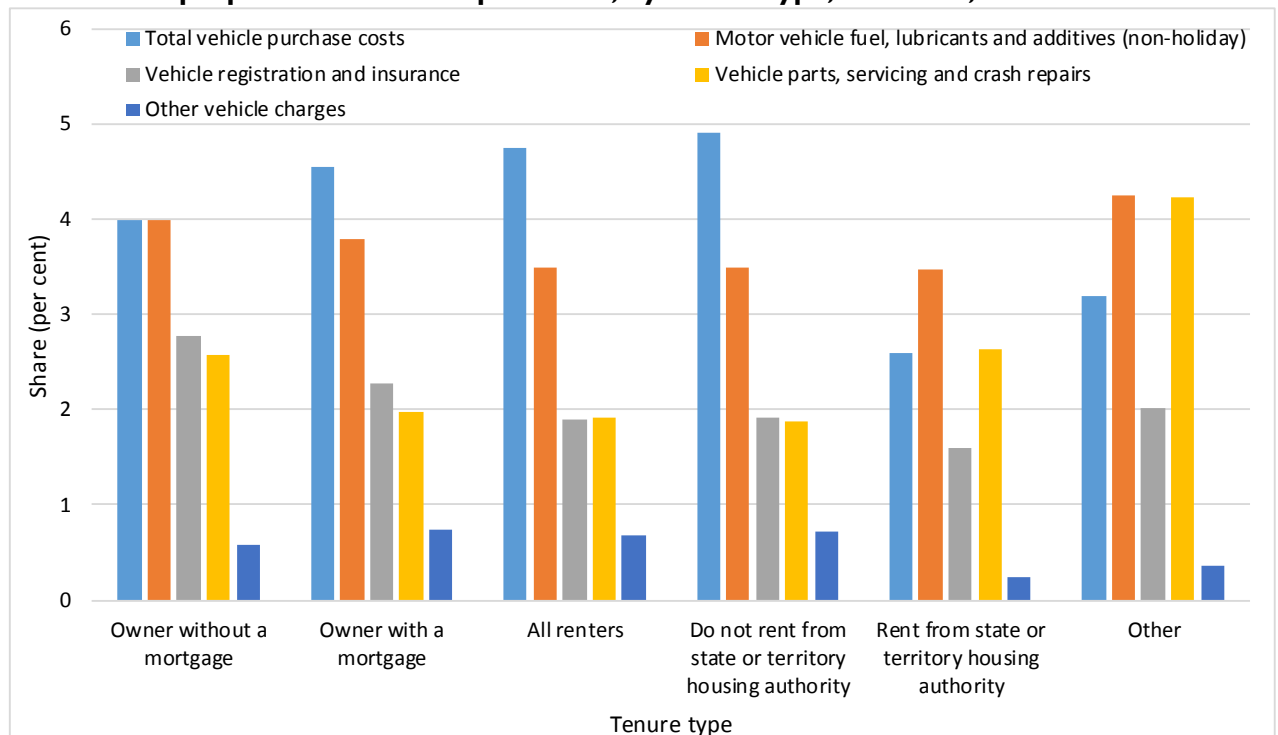
Table 17 Average weekly household expenditure on owning and operating vehicles by tenure type, Australia, 2009-10

Tenure type	Expenditure item (\$)					Total expenditure on owning and operating vehicles	Average weekly expenditure on goods and services	Proportion of total expenditure due to owning and operating vehicles (per cent)
	Total vehicle purchase costs	Motor vehicle fuel, lubricants and additives (non-holiday)	Vehicle registration and insurance	Vehicle parts, servicing and crash	Other vehicle charges			
Owner without a mortgage	39.87	39.80	27.71	25.61	5.69	138.68	996.88	13.91
Owner with a mortgage	72.61	60.37	36.35	31.51	11.83	212.69	1592.10	13.36
All renters	51.81	38.12	20.78	21.02	7.39	139.11	1091.76	12.74
Do not rent from state or territory housing authority	57.60	41.02	22.61	21.99	8.32	151.54	1174.16	12.91
Rent from state or territory housing authority	14.68	19.54	9.04	14.83	1.41	59.50	564.03	10.55
Other ^a	27.24	36.45	17.16	36.20	3.12	120.18	855.52	14.05
All tenure types	54.74	46.68	28.57	26.74	8.33	165.06	1235.37	13.36

Note: Expenditure on owning and operating vehicles excludes non-cash benefits from employer provided vehicles and car parks.

^a 'Other' includes rent free and excludes households which are not owners (with or without a mortgage) or renters (ABS 2011).

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Figure 20 Components of household expenditure on owning and operating vehicles as a proportion of total expenditure, by tenure type, Australia, 2009-10

Note: 'Other' includes rent free and excludes households which are not owners (with or without a mortgage) or renters (ABS 2011).

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey: Cat. No. 6535.0.55.001 and CURF data.

Overall, households who rent from a state/territory housing authority stand out from the other tenure categories as having a particularly low average weekly household expenditure on owning and operating vehicles and a low proportion of total spending on owning and operating vehicles. The lower proportion spent on owning and operating vehicles was principally due to these households allocating a lower proportion of their total expenditure to vehicle purchases.

Summary of demographic differences

Each of the different demographic classifications considered in this section (age, lifecycle group, household size, household income, main income source and housing tenure) have an influence on household spending on owning and operating vehicles. Average weekly expenditure on owning and operating vehicles varies widely according to household demographic characteristics. The demographic groups with a particularly high average weekly spend were:

- Couples with dependent and non-dependent children (\$312)
- Couples with dependent children only: eldest child aged 15 to 24 (\$281)
- Couples with non-dependent children only (\$226)
- Households containing 4 persons (\$228) or 5 persons or more (\$263)
- The twenty per cent of highest earning households in terms of gross household income (\$293) or equivalised disposable household income (\$252).

Thus, it is the lifecycle categories containing couples with children, along with the highest earning households and the largest households, that stand out as having the highest average weekly expenditure on owning and operating vehicles. However, some of these demographic groups have relatively high average incomes and total expenditures. Expressing expenditure on owning and operating vehicles as a proportion of total expenditure on goods and services provides a guide to the types of households where this expenditure has the greatest impact on the household budget. The demographic groups with a particularly high proportion spent on owning and operating vehicles were:

- Couples with dependent and non-dependent children (20.6 per cent)
- Couple only households, with a reference person aged 55 to 64 (16.2 per cent)
- Lone person households aged under 35 (14.9 per cent)
- Couples with dependent children only: eldest child aged 15 to 24 (14.8 per cent), and
- Households with a reference person aged 55 to 64 (14.8 per cent).

Lone persons aged 65 and over had particularly low weekly expenditure on owning and operating vehicles (\$43.55), as did households who rented from a state or territory housing authority (\$59.50) and those reliant on the age pension as their main income source (\$62.94).

Average weekly expenditure on motor vehicle fuel was highest for couples with dependent and non-dependent children (\$96), couples with non-dependent children only (\$76), couples with dependent children only: eldest child aged 15 to 24 (\$71), households containing 5 or more persons (\$79) and households in the highest gross household income quintile (\$70). Motor vehicle fuel was a particularly high share of total expenditure for couples with dependent and non-dependent children (6.3 per cent), households in the second lowest equivalised disposable household income quintile (4.6 per cent), households with other housing tenure (4.3 per cent), households with a reference person aged 15 to 24 (4.3 per cent) and households containing five or more persons (4.2 per cent).

Average weekly expenditure on motor vehicle fuel was particularly low for lone persons aged 65 and over (\$12.22), those renting from a state or territory housing authority (\$14.68), the lowest gross household income quintile (\$20.72), one person households (\$21.21) and those reliant on the age pension (\$21.29). It was a particularly low share of total expenditure for lone persons aged 65 and over (2.7 per cent) and households reliant on 'other income' sources (2.8 per cent).

Clearly, the lifecycle classification is the most useful of the demographic classifications considered for distinguishing which types of households spend a lot (or little) on motor vehicle fuels and, more broadly, on owning and operating vehicles. Couple households with both dependent and non-dependent children stand out with by far the highest weekly expenditure on these items, as well as the highest proportion of total expenditure due to these items. This reflects the fact that these households are relatively large (with at least four household members) and because they contain at least three persons of driving age are likely to own more vehicles than the other types of household. Note that this is not a particularly large demographic, as it contained 277 000 households in 2009-10 (3.3 per cent of all households).

5 Characteristics of high and low spending households

Identifying high and low spend households

The preceding analysis of household expenditure on owning and operating vehicles is focused on the average expenditure of particular groups. This section considers the distribution of this expenditure. Table 18 summarises the distribution of weekly household expenditure on owning and operating vehicles and on motor vehicle fuel for 2009-10.

- About 7 per cent of households reported no expenditure on owning and operating vehicles. This aligns with ABS (2012) which shows that 8 per cent of households had no registered motor vehicles, while 37 per cent had one, 35 per cent had two and 20 per cent had three or more registered motor vehicles. There were also a small proportion of households (about 0.5 per cent) who reported negative expenditure as the value of vehicle sales exceeded the value of vehicle purchases. The median weekly expenditure on owning and operating vehicles was \$85.90. The bottom ten per cent of households spent less than \$7.95 per week on owning and operating vehicles, while the top ten per cent spent over \$405.85 per week. The top one per cent of households spent \$1262 or more per week on owning and operating vehicles, with many of the households in this group recording very high expenditures due to a vehicle purchase or costly vehicle service during the survey recall period.
- About 21 per cent of households reported no expenditure on motor vehicle fuel. This reflects the fuel data being collected via an expenditure diary which collected information on purchases during a particular fortnight, and if the household did not fill up during that period a zero value was recorded. Consequently, many households would have reported zero expenditure on motor vehicle fuel due to survey timing, even though they owned and operated a motor vehicle, and would regularly (if not frequently) purchase motor vehicle fuel. The median weekly expenditure on motor vehicle fuel was \$34.01, while the top ten per cent of households spent over \$103.94. The top one per cent of households spent \$210 or more per week on motor vehicle fuel.

Table 18 Distribution of weekly household expenditure on owning and operating vehicles and motor vehicle fuel, Australia, 2009-10

Percentile	Average weekly household expenditure on owning and operating vehicles (\$)	Average weekly household expenditure on motor vehicle fuel (\$)
p1	0.00	0.00
p5	0.00	0.00
p10	7.95	0.00
p20	30.66	0.00
p30	46.55	17.20
p40	64.05	25.00
p50	85.90	34.01
p60	112.11	45.01
p70	152.19	58.00
p80	216.29	76.07
p90	405.85	103.94
p95	617.74	136.99
p99	1261.89	210.04

Note: BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures. Expenditure on motor vehicle fuel excludes expenditure on oil, lubricants and additives and on holiday fuel. Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* confidentialised unit record file (CURF) data.

In the remainder of this section, households are divided into three equally-sized classes (low spend, medium spend, high spend) based on their weekly household expenditure on owning and operating vehicles. Each of the three spend classes contains 2.8 million households. The lowest spending one-third of households spent less than \$51.67 per week on owning and operating vehicles, while the highest spending one-third of households spent more than \$137.15 per week. While BITRE undertook a similar analysis based on motor vehicle fuel

spending, it is not reported here, as it offered few additional insights, and was less useful because the collection of fuel expenditure over a fortnight-long period²⁴ introduced considerable randomness (i.e. non-systematic variation) into the data when the survey timing did not coincide with a fuel purchase.

Expenditure profile of high and low spend households

Table 19 summarises the differences in average weekly household expenditure on owning and operating vehicles across the low, medium and high spend classes. The low spend class averages just \$21.44 per week on owning and operating vehicles, compared to \$88.28 for the medium spend class, and \$385.44 for the high spend class. Expenditure on owning and operating vehicles represents just 2.9 per cent of total expenditure for the low spend class, compared to 7.5 per cent for the medium spend class and 21.5 per cent for the high spend class.

There are notable differences in the composition of this expenditure across the three spend classes. For the low spend class, expenditure is fairly evenly split between vehicle registration and insurance and motor vehicle, fuel, lubricants and additives, with the remaining expenditure components making only minor contributions. Interestingly, the low spend households record a small net negative expenditure on vehicle purchases, reflecting the value of vehicle sales exceeding the value of vehicle purchases. About half of the expenditure on owning and operating vehicles of the medium spend households is due to motor vehicle fuel, lubricants and additives, while registration and insurances also makes a major contribution, with the remaining expenditure components making only minor contributions. By contrast, vehicle purchase costs are the single largest contributor to the expenditure on owning and operating vehicles of high spend households, followed by motor vehicle fuel and vehicle parts, servicing and crash repairs. The high spend households spent a higher proportion of their fuel spend on diesel fuel (11 per cent), compared to the medium spend (6 per cent) and low spend (4 per cent) households, and a correspondingly lower proportion on petrol.

Table 19 Average weekly household expenditure on owning and operating vehicles for low, medium and high spend households, Australia, 2009-10

Expenditure components	Average weekly household expenditure (\$)		
	Low spend households	Medium spend households	High spend households
Total vehicle purchase costs	-1.90	3.99	162.14
Motor vehicle fuel, lubricants and additives	9.97	44.45	85.60
Vehicle registration and insurance	11.10	27.40	47.21
Vehicle parts, servicing and crash repairs	1.49	7.42	71.31
Other vehicle charges	0.78	5.01	19.19
Total expenditure on owning and operating vehicles	21.44	88.28	385.44
Total expenditure on goods and services	738.50	1172.90	1794.55
Expenditure on owning and operating vehicles as a share of total expenditure (per cent)	2.9	7.5	21.5

Note: Low spend households spent less than \$51.67 per week on owning and operating vehicles, while high spend households spent more than \$137.15 per week on owning and operating vehicles. BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures.

Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey CURF data.

Those households who purchased a vehicle during the survey reference period (defined as those with net positive vehicle purchase costs) were more likely to belong to the high spend class. Forty one per cent of the high spend class purchased a vehicle, compared to 4 per cent of medium spend households and 1 per cent of low spend households.

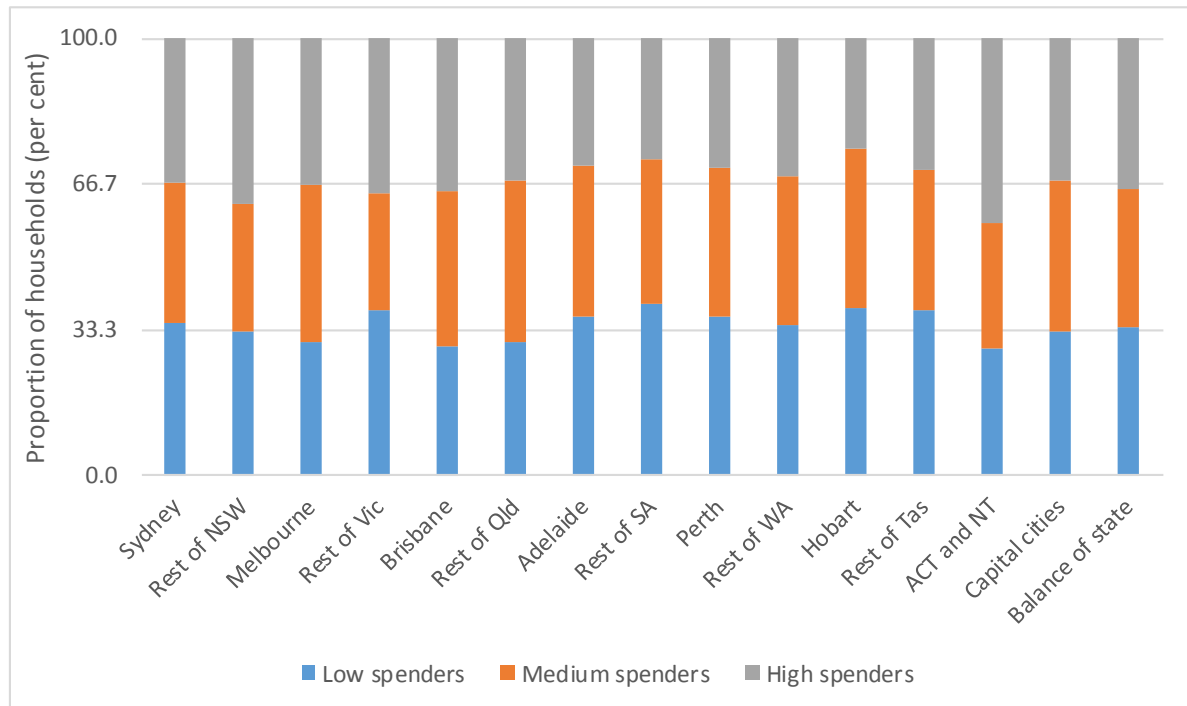
Characteristics of high and low spend households

Figure 1 presents the proportion of households in each of the low, medium and high spend classes by place of residence. If households from different locations were randomly distributed across the low/medium/high spend classes, each class would have a share of around 33 per cent for each location. However, Figure 21 shows that

²⁴ Note that many of the expenditures on owning and operating vehicles were collected over a much longer recall period (12 months for motor vehicle registration and insurance, vehicle purchases, crash repairs, driving lessons).

households from some regions are more likely to belong to particular spend classes. For example, 42 per cent of ACT and NT households belong to the high-spend class, while just 28 per cent belong to the low spend class. In contrast, only 25 per cent of Hobart households, 28 per cent of regional SA households and 29 per cent of Adelaide and Perth households belong to the high spend class.

Figure 21 Low, medium and high spend households by place of residence, Australia, 2009-10



Note: Low spend households spent less than \$51.67 per week on owning and operating vehicles, while high spend households spent more than \$137.15 per week on owning and operating vehicles. BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures. ACT and NT residents cannot be separately identified in the CURF.

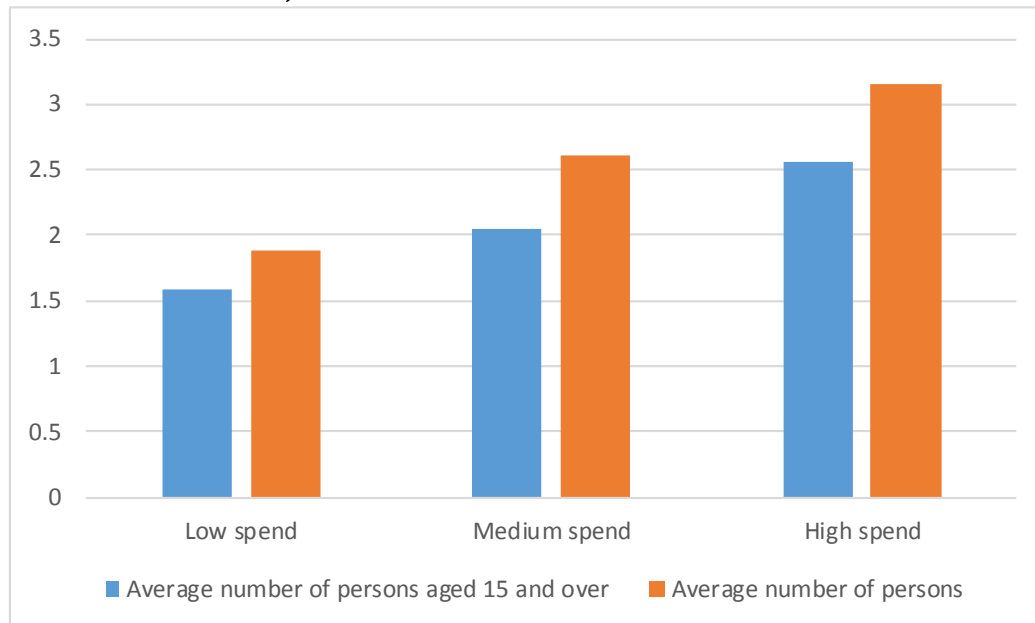
Source: BITRE analysis of ABS 2009-10 Household Expenditure Survey CURF data.

Figure 22 provides information on household size for each of the low spend, medium spend and high spend classes. The average household size is lowest for the low spend class (1.89) and rises across the classes, reaching 3.16 persons for the high spend class. A similar pattern is evident for the number of persons aged 15 years and over in a household.

Figure 23 presents the proportion of households in each of the low, medium and high spend classes by the age of the household reference person. If households in different age categories were randomly distributed across the low/medium/high spend classes, each class would have a share of around 33 per cent of each age group. Figure 3 shows that certain age groups are very over-represented in one class and under-represented in other classes. For example, 56 per cent of households with a reference person aged 65 and over belong to the low spend class, with only 15 per cent in the high spend class. In contrast, 45 per cent of households with a reference person aged 45 to 54 are in the high spend class, and just 23 per cent are in the low spend class.

Figure 24 presents the proportion of households in each of the low, medium and high spend classes by lifecycle categories. The great majority of lone person households aged 65 and over are in the low spend class (79 per cent), with just 5 per cent in the high spend class. Other lifecycle categories that are over-represented in the low spend class include lone person households aged under 35, sole parent households and couple only households with a reference person aged 65 and over. The great majority of couple households with both dependent and non-dependent children are in the high spend class (75 per cent), with just 7 per cent in the low spend class. Other lifecycle categories which are over-represented in the high spend class include all the remaining couple with children lifecycle categories, as well as couple only households with a reference person aged under 35.

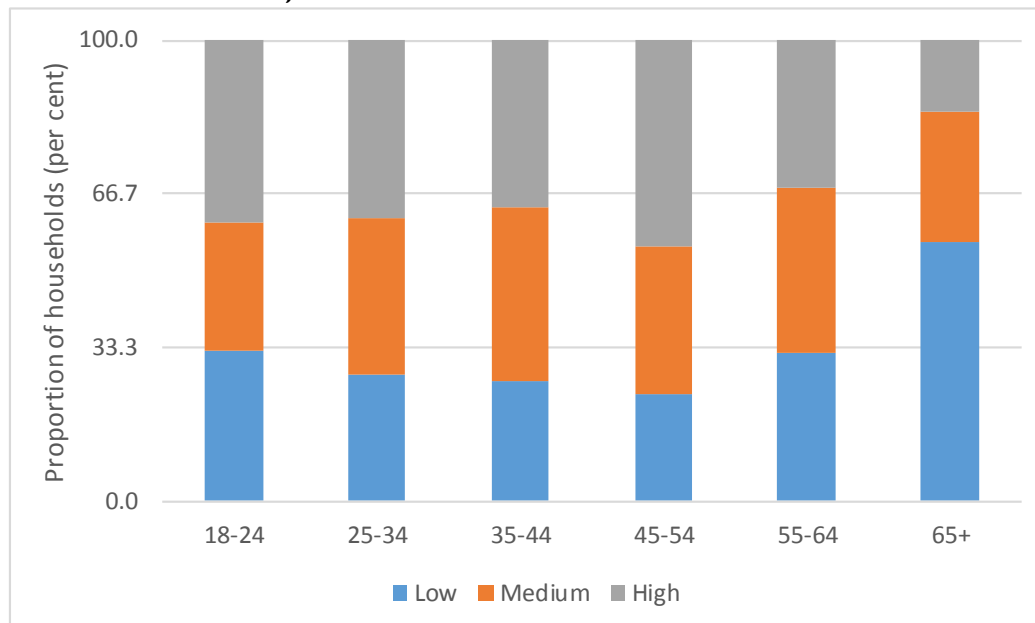
Figure 22 Average number of persons in low, medium and high spend households, Australia, 2009-10



Note: Low spend households spent less than \$51.67 per week on owning and operating vehicles, while high spend households spent more than \$137.15 per week on owning and operating vehicles. BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* CURF data.

Figure 23 Low, medium and high spend households by age of household reference person, Australia, 2009-10

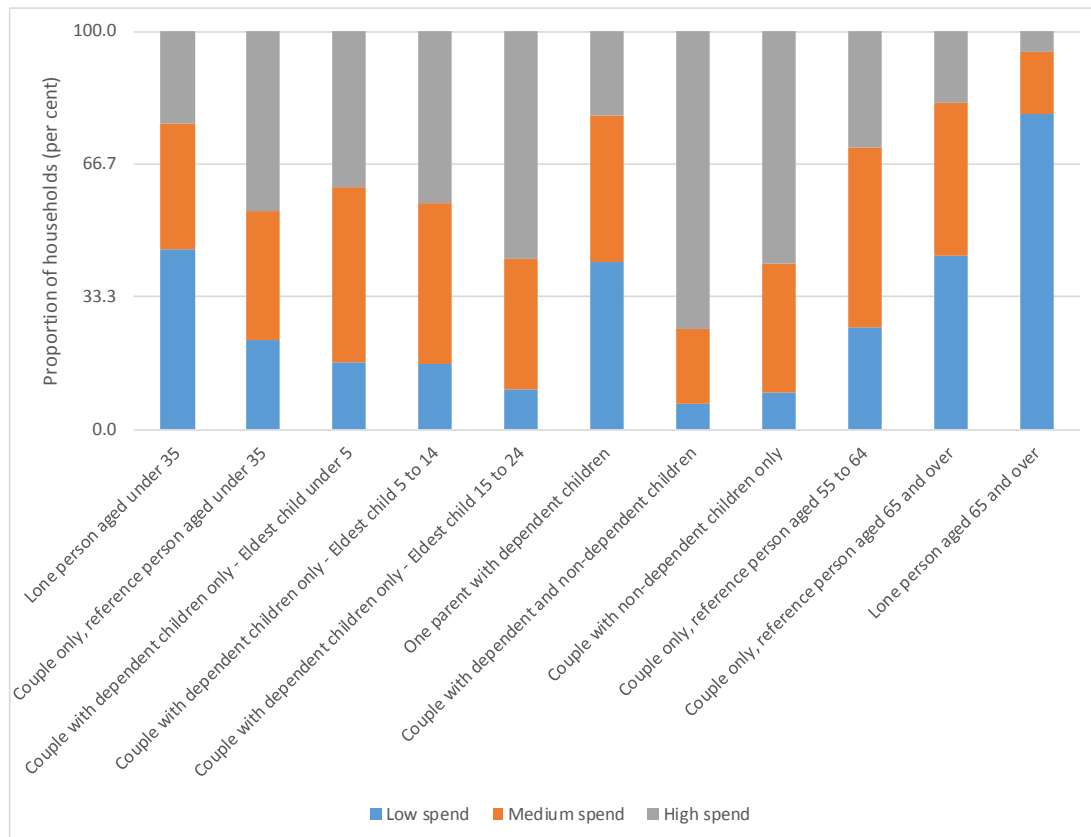


Note: Low spend households spent less than \$51.67 per week on owning and operating vehicles, while high spend households spent more than \$137.15 per week on owning and operating vehicles. BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* CURF data.

Figure 25 presents the proportion of households in each of the low, medium and high spend classes by housing tenure. The great majority (72 per cent) of households who rent from a state or territory housing authority are in the low spend class, with only 11 per cent in the high spend class. In contrast, 45 per cent of home owning households with a mortgage are in the high spend class, with only 19 per cent in the low spend class.

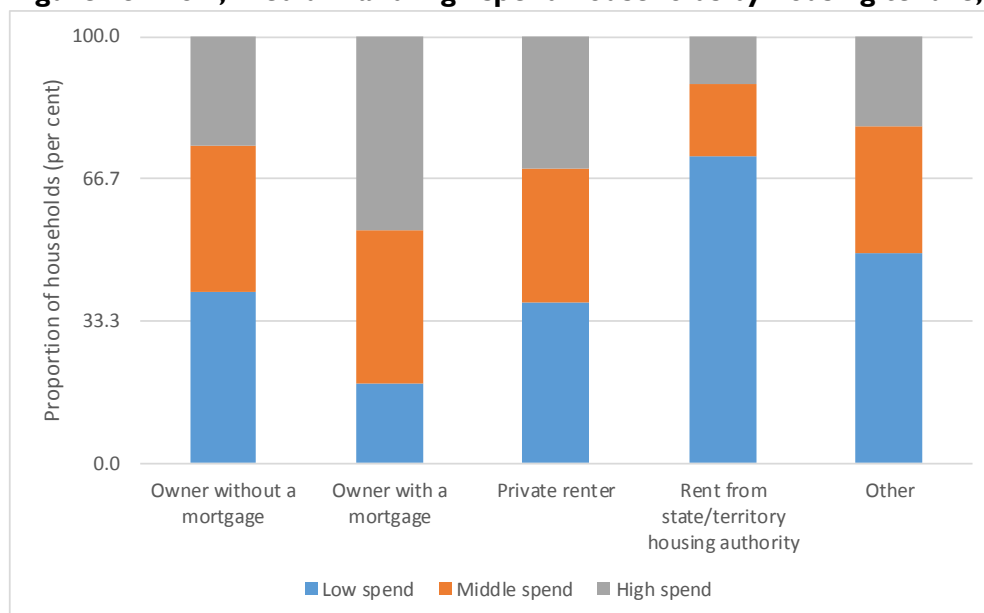
Figure 24 Low, medium and high spend households by lifecycle categories, Australia, 2009-10



Note: Low spend households spent less than \$51.67 per week on owning and operating vehicles, while high spend households spent more than \$137.15 per week on owning and operating vehicles. BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures. Not all households belong to one of the above lifecycle groups.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* CURF data.

Figure 25 Low, medium and high spend households by housing tenure, Australia, 2009-10

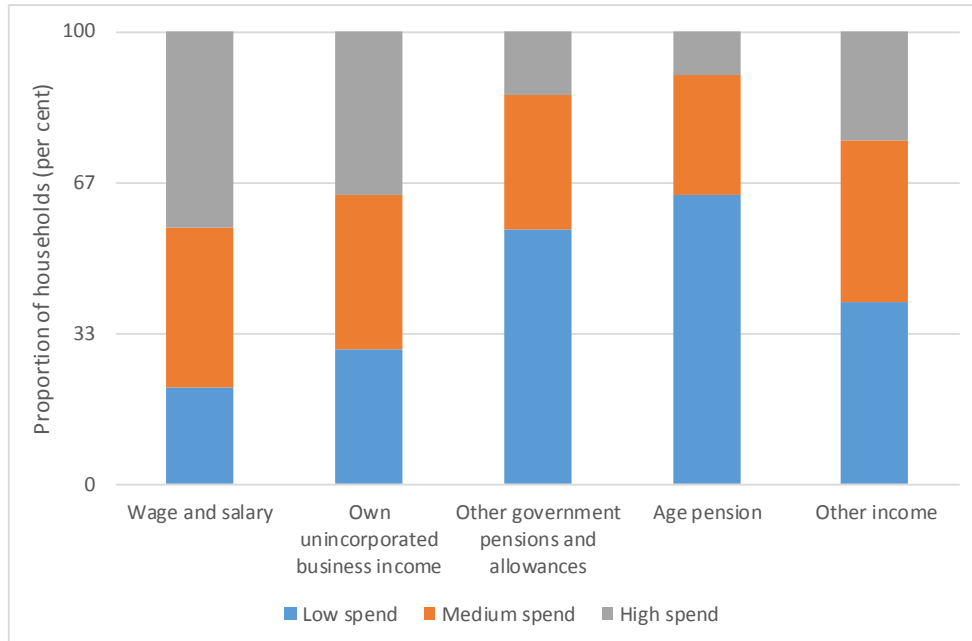


Note: Low spend households spent less than \$51.67 per week on owning and operating vehicles, while high spend households spent more than \$137.15 per week on owning and operating vehicles. BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* CURF data.

Average weekly gross household income from all sources was \$1068 for the low spend class, rising to \$1625 for the medium spend class and \$2396 for the high spend class. Figure 26 presents the proportion of households in each of the low, medium and high spend classes by the household's main source of income. The majority of households whose main source of income was the age pension (64 per cent) or other government pensions and allowances (56 per cent) belonged to the low spend class. Only 10 per cent of age pension households and 14 per cent of other government pension and allowance households belonged to the high spend class. Households whose main source of income was wage or salary were over-represented in the high spend class (43 per cent) and under-represented in the low spend class (22 per cent).

Figure 26 Low, medium and high spend households by main income source, Australia, 2009-10



Note: Low spend households spent less than \$51.67 per week on owning and operating vehicles, while high spend households spent more than \$137.15 per week on owning and operating vehicles. BITRE has specifically excluded the value of employer-provided vehicles and parking from the household transport expenditure figures.

Source: BITRE analysis of ABS 2009-10 *Household Expenditure Survey* CURF data.

Conclusion

This study uses the latest (2009–10) data from the ABS *Household Expenditure Survey* to summarise what the average Australian household spends on owning and operating vehicles. Several elements of spending are examined, including the composition of that expenditure, the contribution of taxes and government charges, how the expenditure varies by broad region type and by key demographic characteristics, as well as the characteristics of those households with the greatest expenditure on owning and operating vehicles.

The results presented in this information sheet provide an evidence base on the household-level costs of the current charging arrangements for the Australian road system, in terms of who faces comparatively high costs, and the locations where those costs fall most heavily.

In particular, expenditure on motor vehicle fuel is of particular interest in this study and provides a guide to the amount of fuel excise paid by households in different locations. BITRE has also undertaken some related work on the average rates of fuel consumption of household vehicles, which will be published in a forthcoming Information Sheet.

ABS has recently conducted the 2015-16 HES, with the summary results expected to be released in August 2017. When the latest data is released, BITRE plans to revisit this analysis of household expenditure, to identify whether any significant shifts have occurred in household spending on owning and operating vehicles between 2009-10 and 2015-16.

Appendix Table A1 Total household expenditure on owning and operating vehicles and other items, Australia, 2009-10

Expenditure item	Average weekly expenditure per household		Average annual expenditure per household (\$)	Aggregate annual expenditure by households (\$million) ^b
	Amount (\$)	Share of total goods and services expenditure (Per cent) ^a		
Total owning and operating vehicles (non-holiday)	165.06	13.4	8 583	72 083
Total vehicle purchase costs	54.74	4.4	2 847	23 906
Motor vehicle purchase	47.16	3.8	2 452	20 594
Purchase of motor vehicle (other than motor cycle)	45.39	3.7	2 360	19 822
Purchase of motor cycle	1.77	0.1	92	771
Other vehicle purchase	2.20*	0.2	114	960
Loans for vehicle - interest component	5.39	0.4	280	2 353
Motor vehicle fuel, lubricants and additives (non-holiday)	46.68	3.8	2 427	20 385
Petrol	36.52	3.0	1 899	15 951
Diesel fuel	3.62	0.3	188	1 582
LPG and other gas fuels	1.47	0.1	76	642
Oils, lubricants and additives	0.67	0.1	35	292
Motor vehicle fuel, lubricants and additives (not further defined) ^c	4.39	0.4	228	1 918
Vehicle registration and insurance	28.57	2.3	1 486	12 477
Combined compulsory registration and insurance of motor vehicle (other than motor cycle)	15.15	1.2	788	6 618
Other insurance of motor vehicle (other than motor cycle)	12.31	1.0	640	5 375
Combined compulsory registration and insurance of motor cycle, caravan and trailer	0.68	0.1	35	298
Other insurance of motor cycle, caravan and trailer	0.43	0.0	22	187
Vehicle parts, servicing and crash repairs	26.74	2.2	1 391	11 679
Motor vehicle parts and accessories purchased separately ^c	10.48	0.8	545	4 576
Crash repairs	1.21	0.1	63	527
Vehicle servicing (including parts and labour)	15.06	1.2	783	6 575
Other vehicle charges	8.33	0.7	433	3 636
Vehicle hire and leasing expenses (non-Driver's licence	1.63	0.1	85	713
Driver's licence	0.60	0.0	31	261
Parking fees	2.16	0.2	112	944
Driving lessons	0.25*	0.0	13	107
Subscription to motor organisations	1.11	0.1	58	484
Road tolls	0.88	0.1	46	384
Vehicle charges (including hire of accessories) (not elsewhere classified)	1.70	0.1	88	742

(continued)

Appendix Table A1 Total household expenditure on owning and operating vehicles and other items, Australia, 2009-10 (continued)

Expenditure item	Average weekly expenditure per household		Average annual expenditure per household (\$)	Aggregate annual expenditure by households (\$million) ^b
	Amount (\$)	Share of total goods and services expenditure (Per cent) ^a		
Public transport and taxi fares (non-holiday)	7.22	0.6	375	3 151
Public transport fares ^e	4.93	0.4	256	2 151
Taxi fares	2.29	0.2	119	1 000
Airfares (non-holiday)	2.61*	0.2	136	1 140
Holiday fares and petrol	33.27	2.7	1 730	14 529
Holiday air fares - Australia	7.00	0.6	364	3 059
Other holiday fares - Australia (including vehicle hire, rail and bus fares)	1.33	0.1	69	580
Holiday petrol - Australia	1.64	0.1	85	716
Airfare inclusive package tours - Australia ^f	3.51	0.3	183	1 534
Holiday air fares - overseas	10.61	0.9	551	4 632
Other holiday fares - overseas	0.54	0.0	28	236
Airfare inclusive package tours - overseas ^f	8.64	0.7	449	3 772
Other transport charges and fares	1.21	0.1	63	528
Removalists charges	1.11	0.1	58	484
Fare and freight charges (excluding holidays and public transport) (not elsewhere classified)	0.10*	0.0	5	42
Total household expenditure on transport	209.36	16.9	10 887	91 431

^a Total goods and services averaged expenditure per household in 2009-10 was \$1236.28 (ABS's 2009-10 Household Expenditure Survey, Australia: Detailed Expenditure Items (Cat. No. 6535.0.55.001)).

^b Calculated using total number of households in both capital cities and balance of states.

^c Excluding benefit from employer provided car park (non-salary sacrifice) and employer provided vehicles (non-salary sacrifice). This impacts on the following HES expenditure items: Parking, Motor vehicle fuel, lubricants and additives (not further defined) and Vehicle hire and leasing expenses (non-holiday), which consequently differ from the ABS published estimates for these items.

^d Includes motor vehicle batteries, tyres and tubes, motor vehicle electrical accessories (purchased separately), vehicle parts purchased separately (not elsewhere classified) and vehicle accessories purchased separately (not elsewhere classified).

^e Includes Public transport fares (not further defined), Rail fares, Bus and tram fares, Water transport fares, Combined bus/tram/rail/water transport fares, and Public transport fares (not elsewhere classified).

^f Will not entirely be transport (e.g. will include some accommodation costs).

* Estimate has a relative standard error of over 25 per cent and should be used with caution.

Source: BITRE analysis of ABS's 2009-10 Household Expenditure Survey, Australia: Detailed Expenditure Items (ABS cat. no. 6535.0.55.001).

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