



Ministry of **Transport**
TE MANATŪ WAKA

Vehicle Fleet Statistics

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QUARTERLY
REPORT



Foreword

The October-December 2009 Quarterly Fleet report is a brief quarterly review of vehicle fleet statistics. It builds on the 2008 Fleet Statistics report, and provides information on subsequent trends in vehicle buying patterns, vehicle fuel economy and fuel prices.

This report and the accompanying data are available on the Research tab of the Ministry of Transport website (www.transport.govt.nz/research/quarterlyvehiclefleetstatistics).

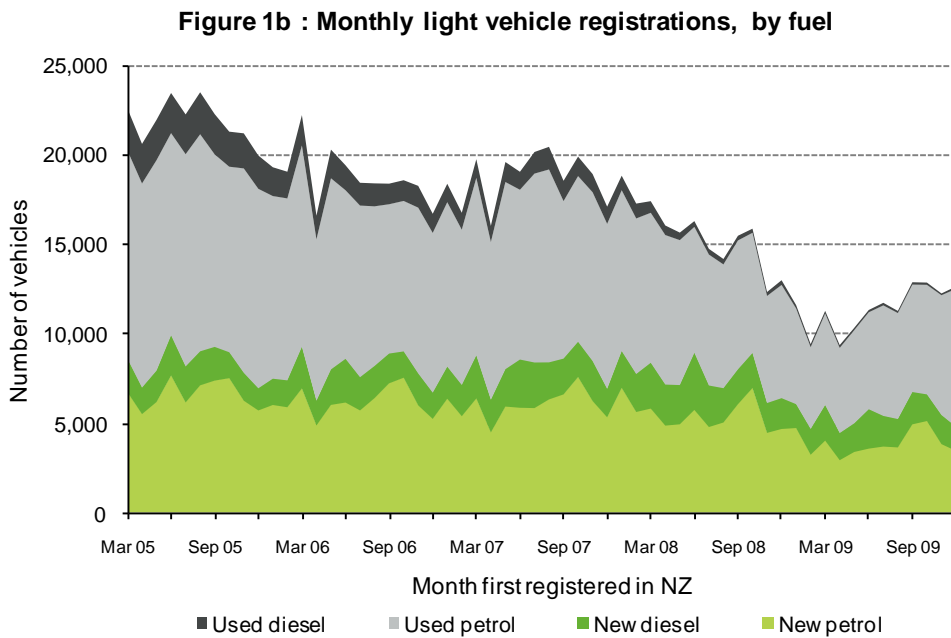
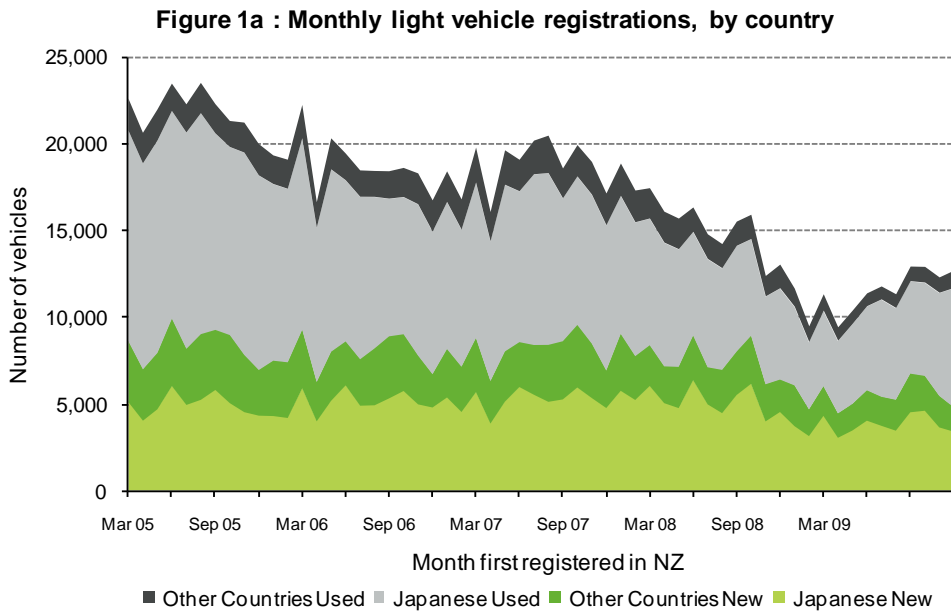
The 2008 Fleet Statistics are also available at www.transport.govt.nz/research.

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Registrations

Figures 1a and 1b show that sales of light used imports dropped significantly throughout 2008 and the first quarter of 2009, but the sales are now increasing. Sales of new light vehicles have also declined, but proportionality by far less.



Registrations of used buses and trucks have dropped to very low levels since July 2008. This reflects the effects of the 2007 Vehicle Exhaust Emissions Rule which precluded the entry of diesel vehicles built to older standards. Although registrations are usually an indication of sales, registration can take place months or even years before a vehicle is sold. In addition, many imported vehicles were registered at particular times of the year to avoid having to comply with vehicle rules (eg many older vehicles were registered in June 2008 prior to the Heavy Vehicle Brakes Rule coming into force in July 2008). It is likely that sales, as opposed to registrations, were much more uniform since January 2008 than the registrations data suggests.

The 2008 Fleet Statistics report (www.transport.govt.nz/research) provides more information on truck and bus fleets.

Figure 1c : Monthly bus registrations

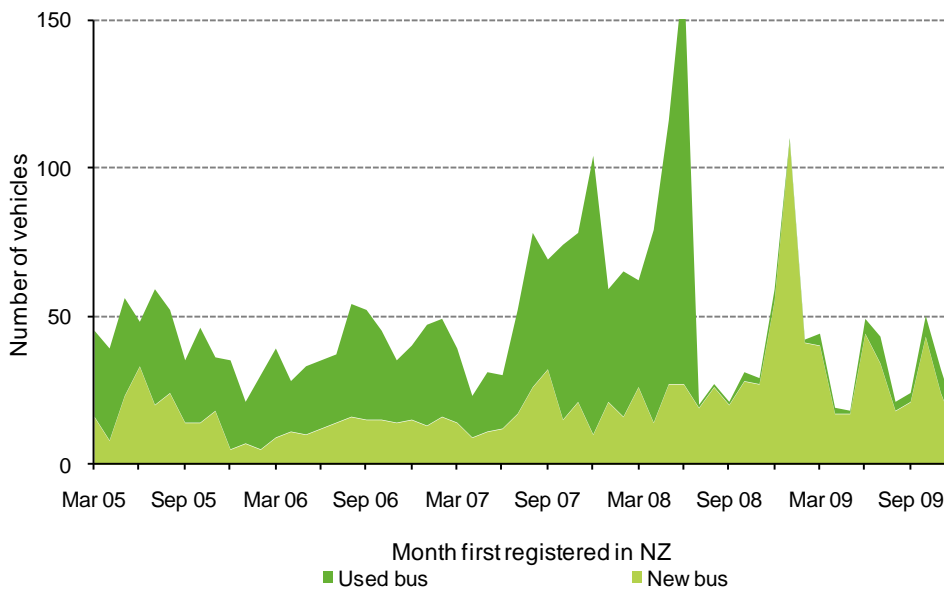
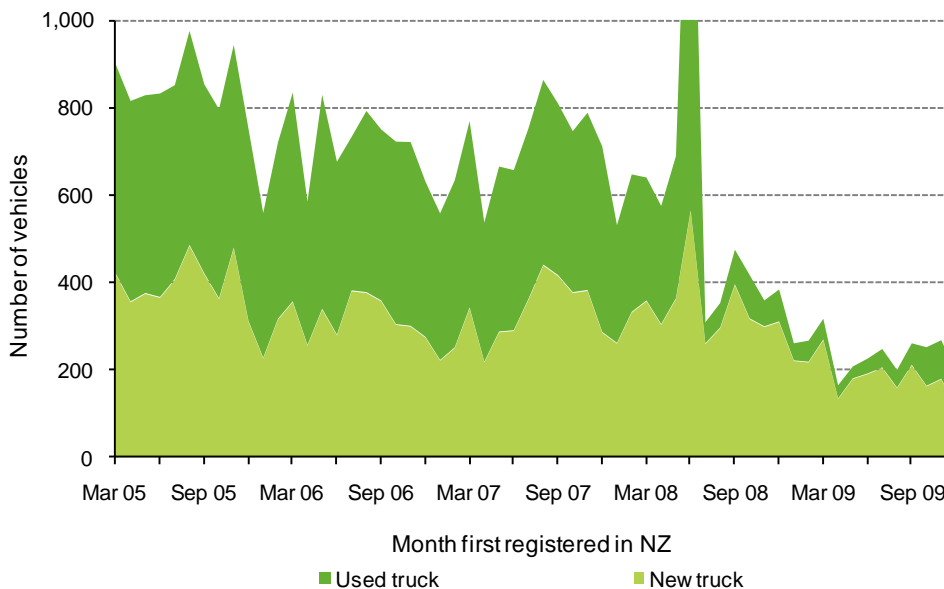
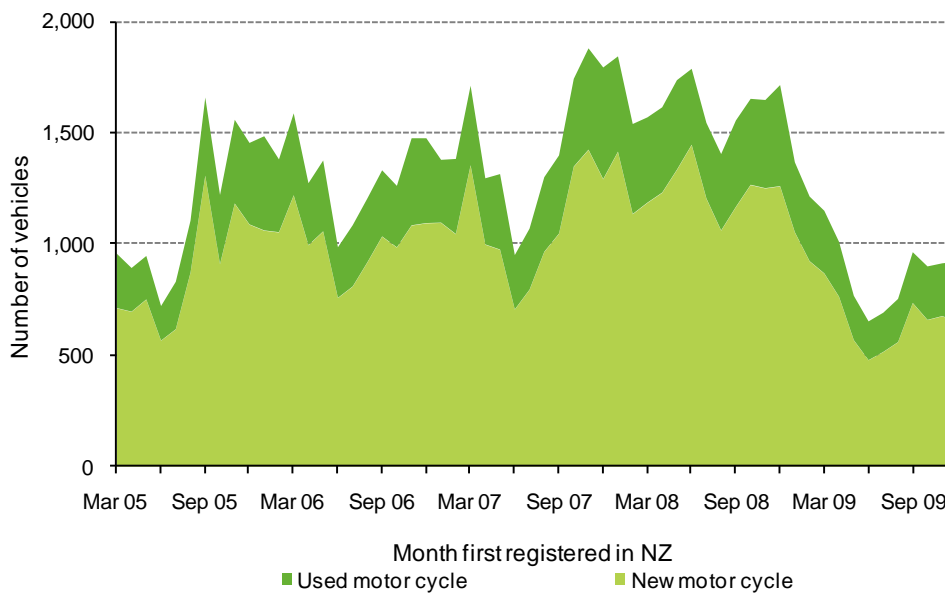


Figure 1d : Monthly truck registrations



Motorcycle and moped sales have been increasing, probably in response to the higher fuel prices in early 2008. Sales dropped earlier in 2009, but as with light vehicle sales they are now picking up again. The 2008 Fleet Statistics report (www.transport.govt.nz/research) provides more information on the motorcycle fleet.

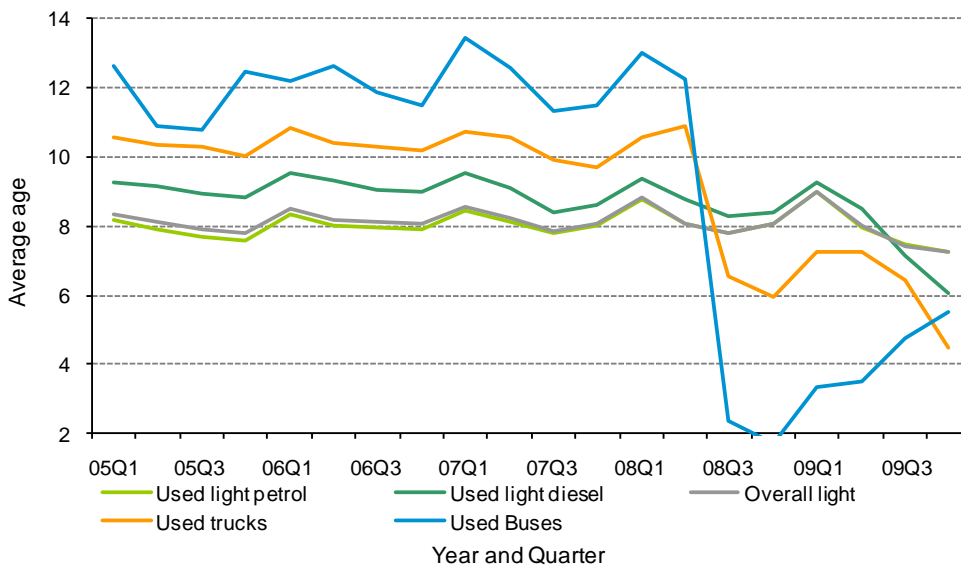
Figure 1e : Monthly motorcycle/moped registrations



Used import ages

The increased age of used truck and bus imports registered earlier in 2008 may have been an early effect of the Vehicle Exhaust Emissions Rule and the Heavy Vehicle Brakes Rule. The Emissions Rule precludes the registration of vehicles that do not meet the latest emission standards, and the older vehicles being sold were probably imported before the Emissions and the Brakes Rules took effect. Figures 1c and 1d show that registrations of used import trucks and buses have dropped substantially.

Figure 2 : Average age of used imports entering the fleet



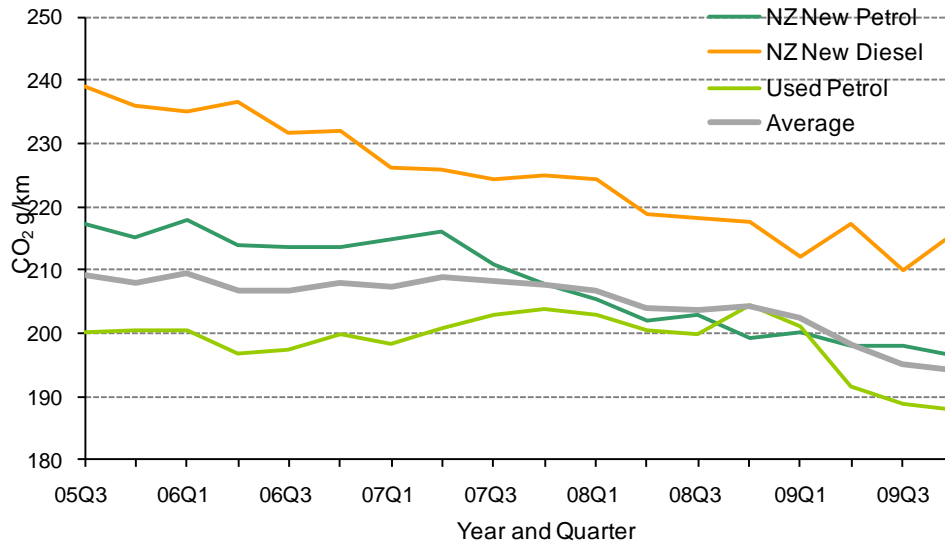
Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

Average CO₂ emissions of the light fleet registrations

It is not possible to analyse the CO₂ emissions of used diesel vehicles as only about four percent of them have a fuel consumption test value recorded on the Motor Vehicle Register. The Vehicle Exhaust Emissions Rule means fewer used diesel vehicles have been imported, but their absence does not affect the average figure.

Figure 3 shows that CO₂ emissions of New Zealand-new and used imported light petrol vehicles have reduced since mid-2007. The decrease in used petrol CO₂ emissions has been noticeable in recent quarters.

**Figure 3 : Light vehicle registrations
Average CO₂ emissions**

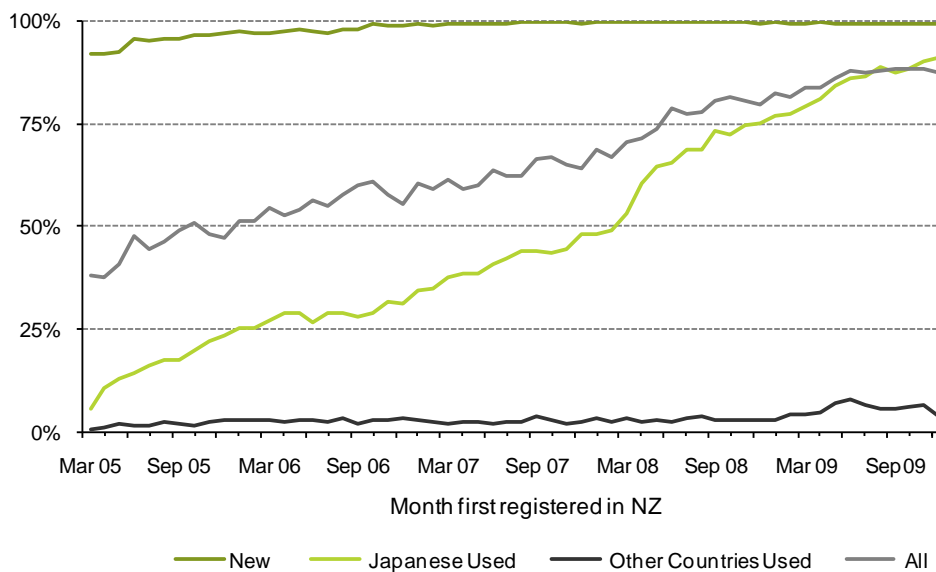


Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

Whether the fuel consumption of the light fleet registrations is known

Figure 4 shows that 90 percent of used Japanese imports entering the fleet now have known fuel consumption values. However, the number of used diesels with a value is far lower at about four percent. This precludes fuel consumption analysis of used diesels.

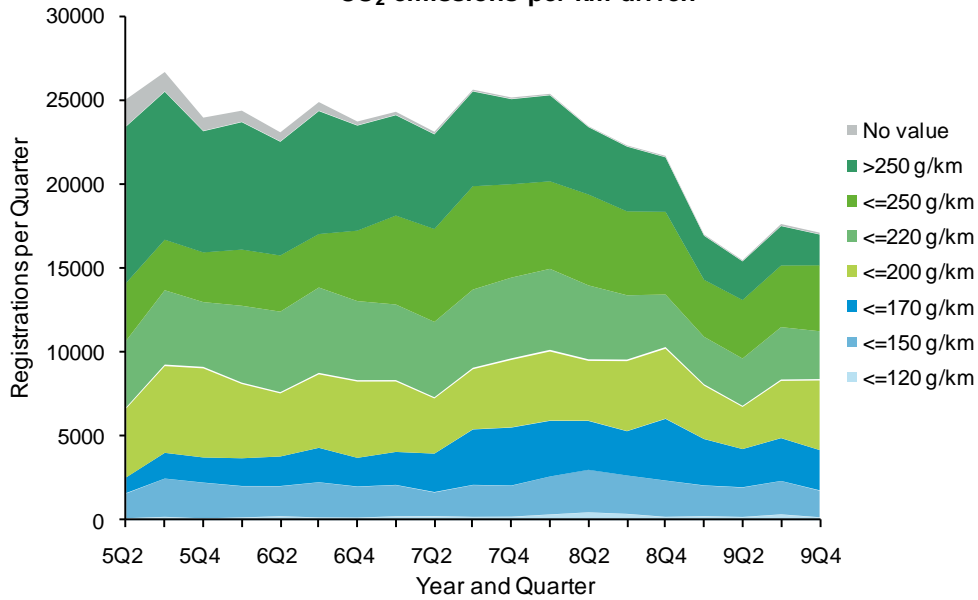
Figure 4 : Percentage of vehicles with fuel test cycle values



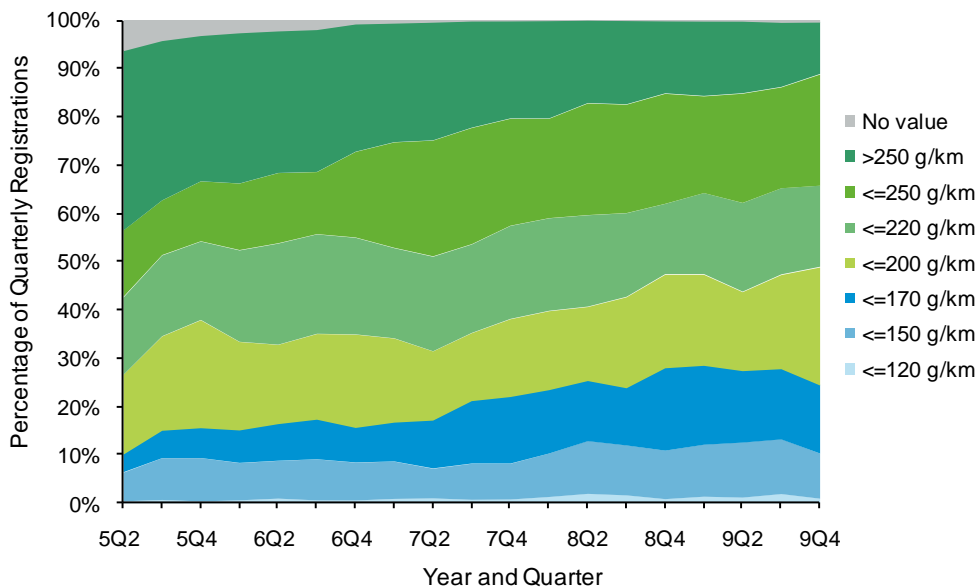
The CO₂ emissions of the New Zealand-new light fleet registrations

Registrations in the segment of the fleet with lower CO₂ emissions (under 200 g CO₂/km) now make up a larger share of new registrations than they used to. The least efficient segment (over 250 g CO₂/km) has shrunk. The average results can be seen in Figure 3.

**Figure 5a : NZ new light vehicle registrations
CO₂ emissions per km driven**



**Figure 5b : Percentage of NZ new light vehicle registrations
CO₂ emissions per km driven**



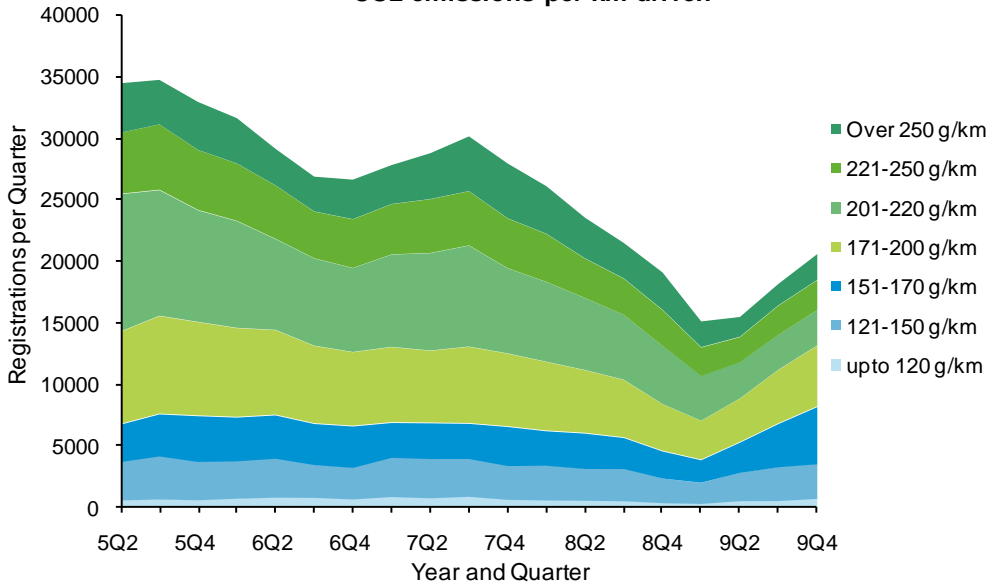
Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

The CO₂ emissions of the used imported petrol light fleet registrations

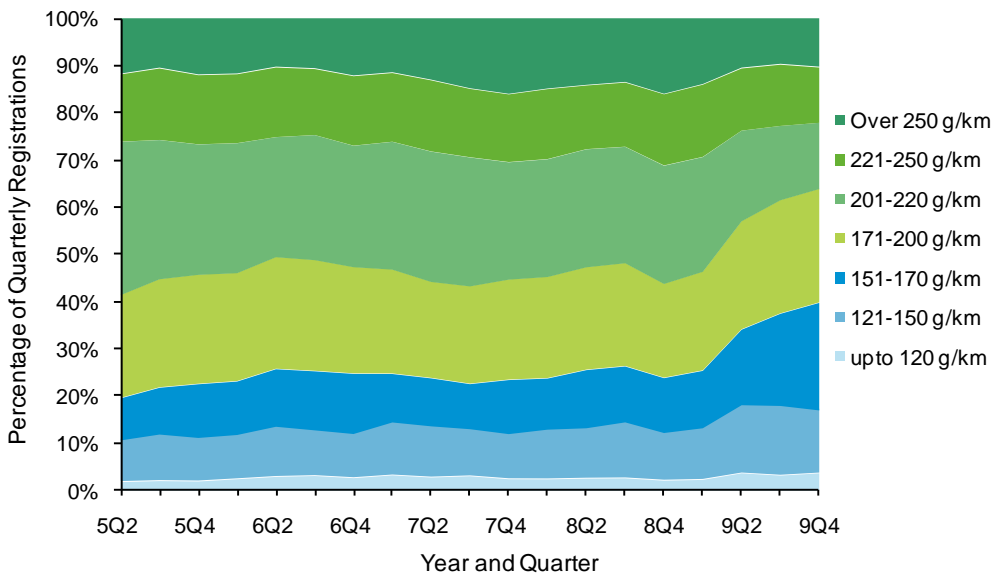
Imported used petrol vehicles tend to be more CO₂ efficient than New Zealand-new petrol vehicles (see Figure 3). Figure 6a shows that the number of sales has been dropping, and Figure 6b shows that the percentage of fuel efficient vehicles entering the fleet showed little change from 2005 to 2008, but increased markedly in 2009.

To enable the CO₂ values for used vehicles to be compared with new vehicles (shown in Figures 5a and 5b), their figures have been converted from Japanese warm start test values to the European cold start values.

**Figure 6a : Used import light petrol registrations
CO₂ emissions per km driven**



**Figure 6b : Percentage of used import light petrol registrations
CO₂ emissions per km driven**



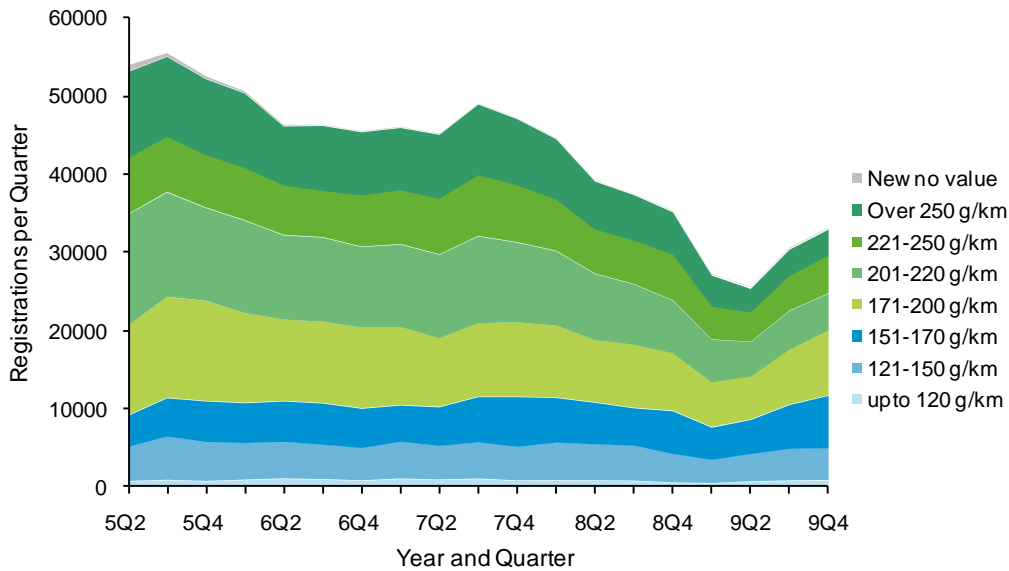
Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

The CO₂ emissions of all petrol light fleet registrations

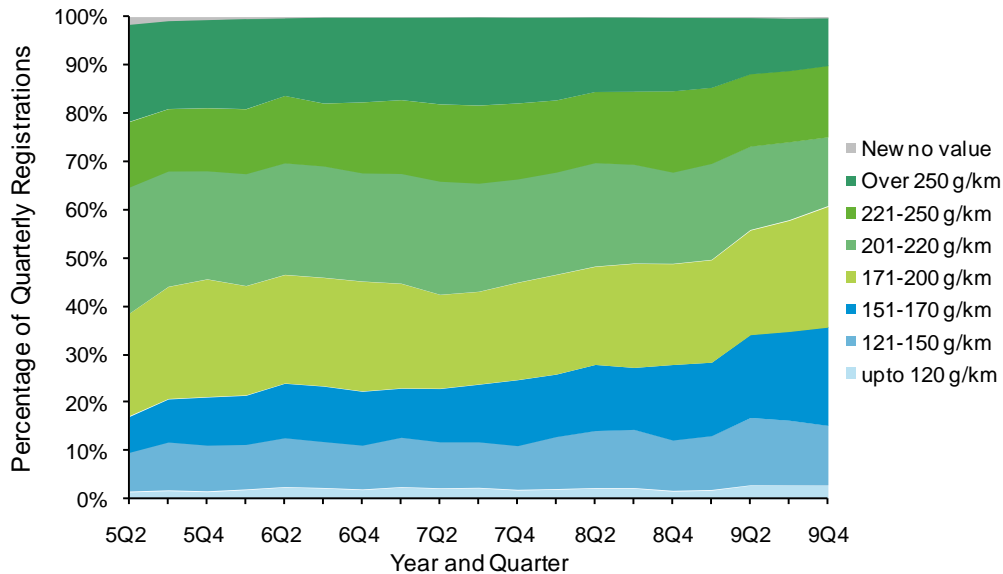
While registrations of new vehicles were high in early 2008 (see Figure 5a), fewer used import registrations has meant an overall drop in light petrol vehicle registrations (see Figure 7a).

Figure 7b shows that there has been a trend towards buying more fuel efficient vehicles, especially in the most recent quarters.

**Figure 7a : New and used light petrol registrations
CO₂ emissions per km driven**



**Figure 7b : Percentage of new and used light petrol registrations
CO₂ emissions per km driven**



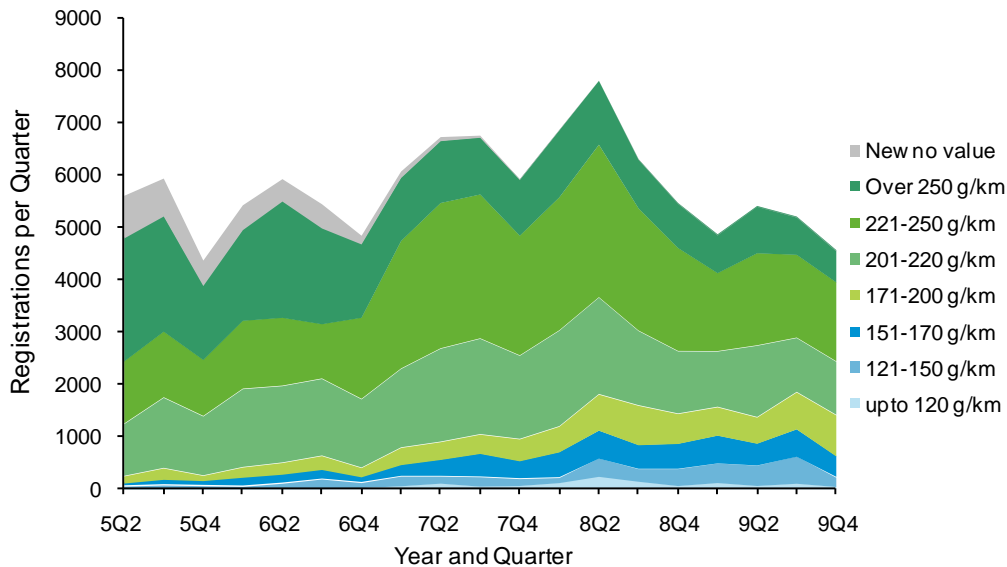
Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

The CO₂ emissions of the new diesel light fleet registrations

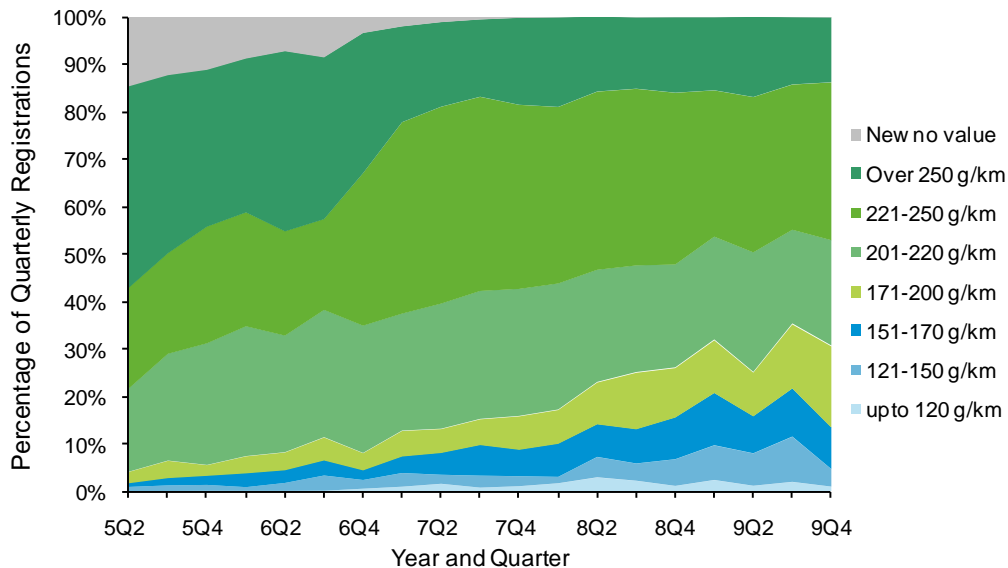
Figure 8a shows that registrations of the least CO₂ efficient diesel vehicles (over 250 g CO₂/km) have dropped. However, registrations of diesels under 170 g CO₂/km are limited. Light diesel vehicle sales continue to be mainly light commercial vehicles (vans and utes) and SUVs.

It is not possible to analyse the CO₂ emissions of used diesels, as too few of those entering the fleet have known fuel consumption values.

**Figure 8a : New light diesel registrations
CO₂ emissions per km driven**



**Figure 8b : Percentage of new light diesel registrations
CO₂ emissions per km driven**

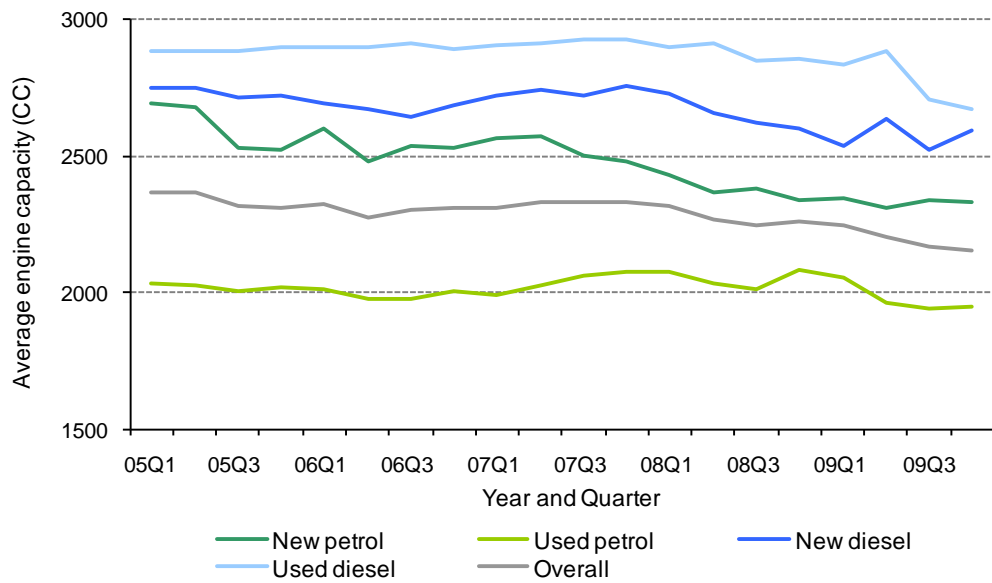


Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

The engine size of light fleet registrations

The engine capacity of new petrol vehicle registrations has been trending down. Used petrol vehicles have been fairly flat and the capacity of new diesel engines has dropped this quarter. Figure 6a showed that the most economic used petrol vehicles are making up a larger share of the diminished volume of registrations.

Figure 9 : Engine size of vehicles entering the light fleet



Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

Petrol and diesel deliveries

This section of the report is one quarter behind the other data, as it takes longer for the fuel data to become available. Fuel deliveries have seasonal patterns, so quarterly comparisons should be made with the same quarter in other years.

Fuel deliveries in the last quarter of 2008 and the first quarter of 2009 were down on the same quarters of the last two years. Petrol deliveries in the second quarter of 2009 were similar to the same quarter of 2008, and slightly up in the third quarter compared with the same quarter of 2008. Diesel deliveries were lower than those for the preceding year.

Diesel deliveries had been increasing far more than petrol. One reason for this is that an increasing proportion of the light fleet is diesel powered, but it is also important to remember that diesel is used in many non-transport areas of the economy including agriculture, mining, forestry, fishing, industrial and at times electricity generation. The Ministry of Economic Development and Statistics New Zealand has identified the transport/non-transport use of diesel more definitively, and their report is available at http://www.med.govt.nz/templates/MultipageDocumentTOC___42502.aspx

Figure 10a : Quarterly petrol deliveries

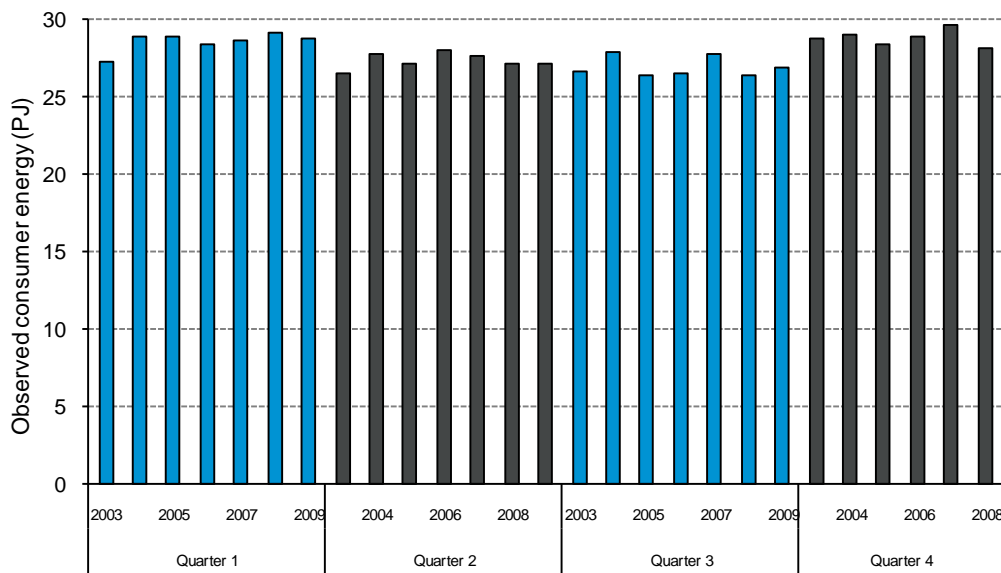
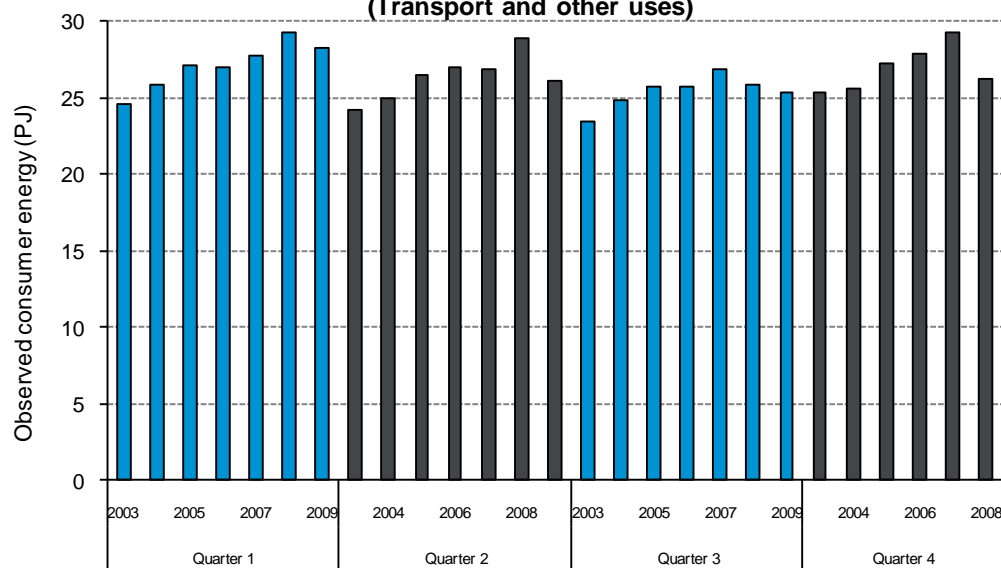


Figure 10b : Quarterly diesel deliveries (Transport and other uses)



Petrol and diesel pump prices¹

Pump prices increased considerably in 2008, and dropped back in the final quarter of that year. The price trend has been flat since then. Diesel increased proportionately more than petrol, and did not drop back as much as petrol until early 2009. The prices shown are pump prices, and are not adjusted for subsequent inflation.

Figure 11a : Average quarterly petrol price

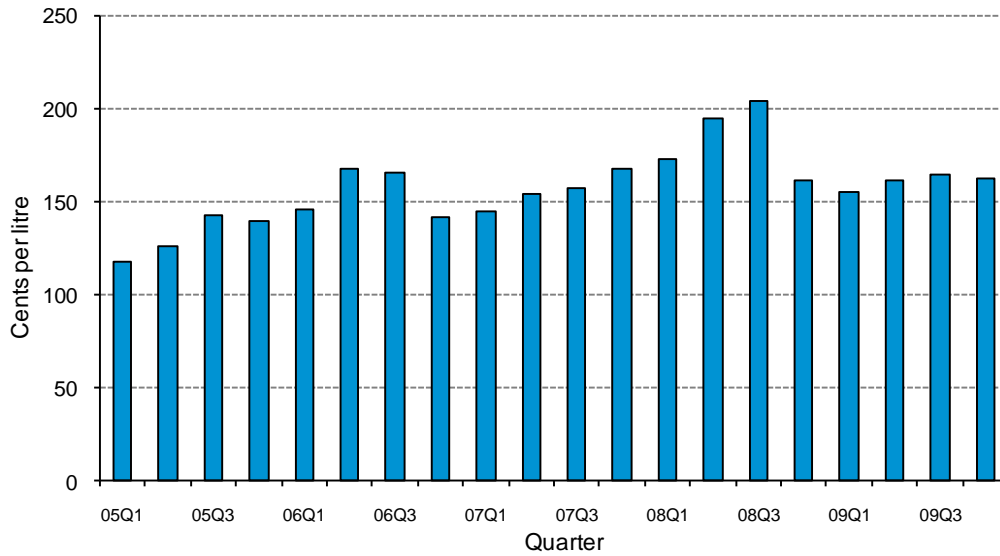
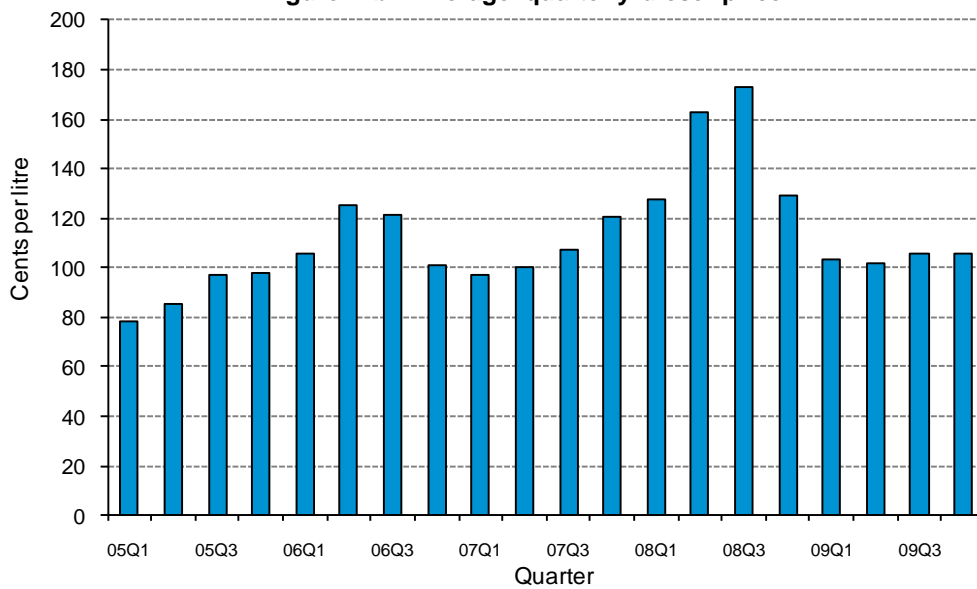


Figure 11b : Average quarterly diesel price



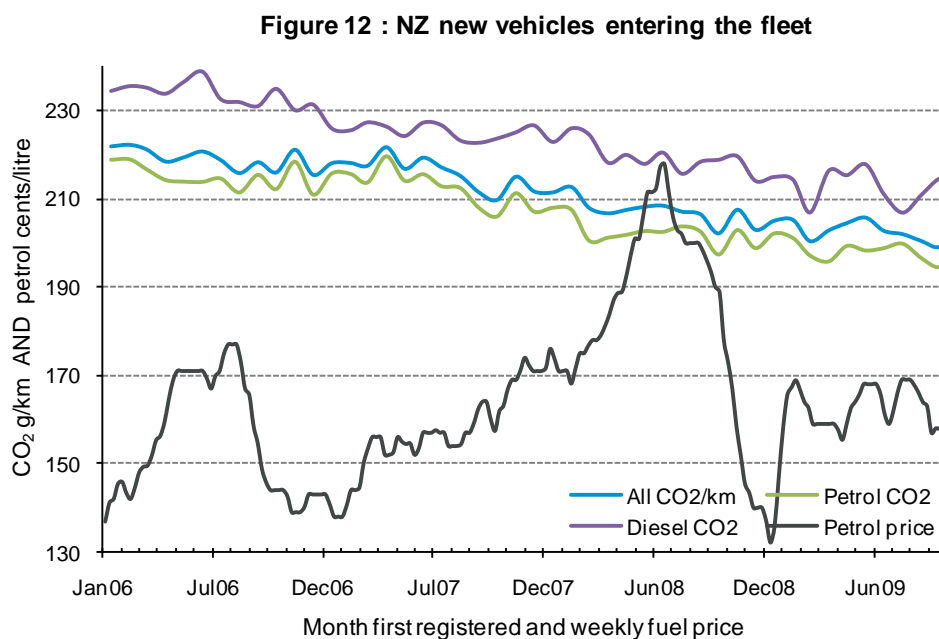
Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

¹ Source Ministry of Economic Development (MED) website
http://www.med.govt.nz/templates/ContentTopicSummary____21609.aspx

The CO₂ emissions of new light vehicles entering the fleet versus fuel prices²

The average fuel efficiency of new vehicles entering the light fleet improved as fuel prices increased, and has continued to improve. Figure 12 shows the average CO₂ g/km of the New Zealand-new vehicles that entered the light fleet each month, and average weekly regular petrol prices. The grams of CO₂ per km driven were as high as 222 g/km in early 2006, and have been in the range of 200-205 g/km in 2009.

There was a slight improvement in CO₂ efficiency in mid-2006 when fuel prices rose, however the effect wore off when fuel prices dropped. There has been a slight improvement in fuel economy since 2007, but unlike in 2006, the improvement has been maintained following the recent reductions in fuel prices.



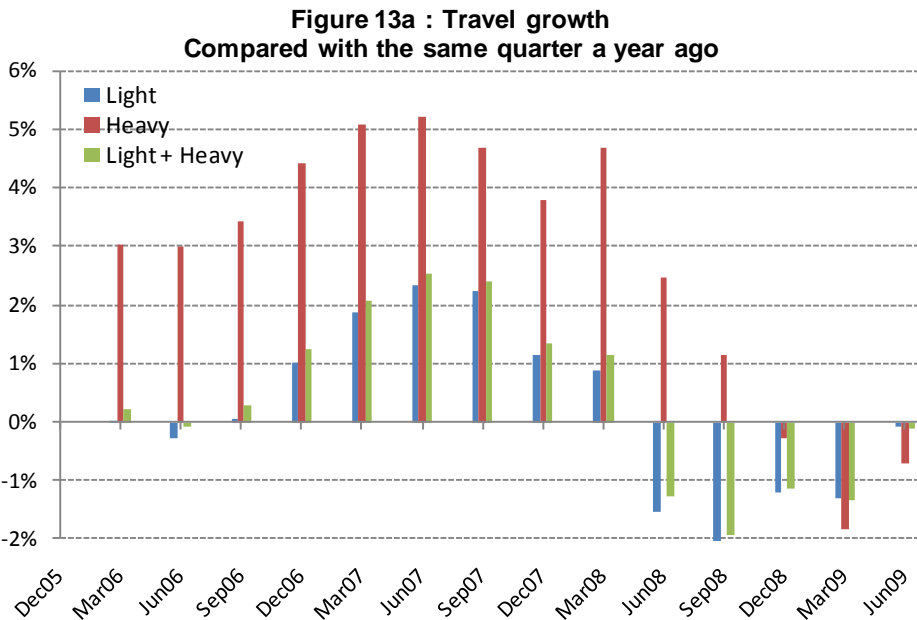
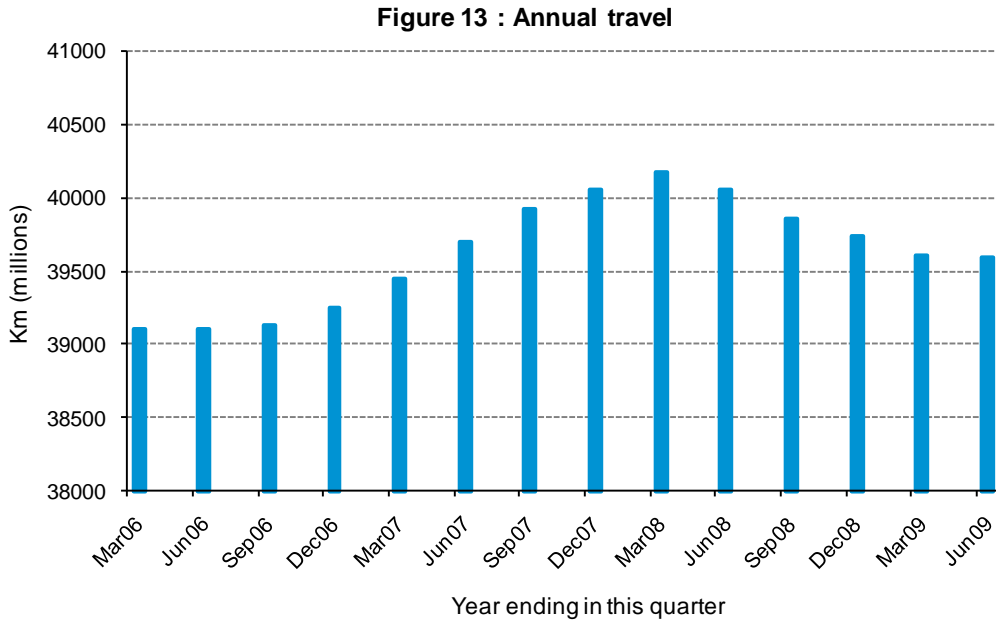
² Source Ministry of Economic Development (MED) website
http://www.med.govt.nz/templates/ContentTopicSummary____20094.aspx

Travel

Figure 13 shows estimates of annual national travel. The estimates are established by analysing the odometer readings recorded at WoF and CoF inspections over the last year. The estimates shown in Figure 13 are for the 12 month periods ending at the end of the indicated month.

This data lags the report period by 6 months, as WoF and COF inspections are needed after the end of the analysis period to better estimate travel up to the analysis date. The recent estimates may change a little as more inspection odometer readings are collected.

The significant decline in heavy vehicle travel in the March quarter of 2009 reflects the economic downturn.



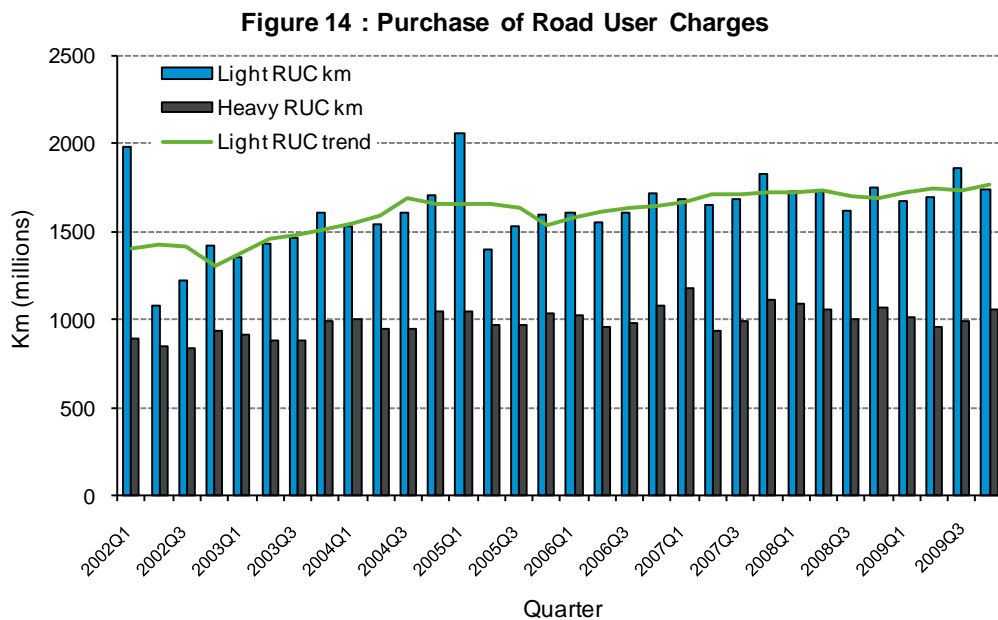
Purchase of road user charges

Vehicles with a gross vehicle mass over 3.5 tonnes, or powered by a fuel other than petrol (eg diesel or electricity) pay for their use of the roads via road user charges (RUC).

The graph shows heavy RUC (vehicles over 3.5 tonnes) and light RUC (under 3.5 tonnes) distance purchases separately. Almost all light RUC is from diesel powered vehicles.

RUC licences can be purchased in advance, and the graph shows the two spikes in light RUC purchases when price increases were expected, which was followed by a drop in purchases. This means quarterly light RUC data is only indicative of on-road behaviour, and its long term trend is the more meaningful measure. The long term trend is an average of the value for the quarter plus the two preceding and subsequent quarters.

Interestingly, light diesel vehicles travel collectively further than heavy vehicles, although the heavy vehicles use more fuel overall.



Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec