Future Demand
Peak car: Does it exist and is it evident in New Zealand?
November 2014
Abstract

In most developed countries there has been a flattening in vehicle kilometres travelled (VKT) by light vehicles. Various views have been advanced to explain this phenomenon. One view is the downturn is a response to the global financial crisis and VKT will bounce back once developed world economies strengthen. Another view is structural reasons are behind the flattening in VKT and VKT per capita is unlikely to significantly increase in the future. This analysis reviews a number of significant papers on the ‘peak car’ phenomenon and sets out key influences seen as common by most commentators. It then analyses some of these influences in the New Zealand context. Issues such as GDP per capita distance driven in cars, young peoples’ ambivalence about driving, locational patterns and recent economic factors are discussed. It concludes the assembled weight of factors does point towards a structural change impacting on VKT per capita. As a postscript travel data for 2013 is considered. The year 2013 was a period of strong economic growth in New Zealand with near record levels of vehicle sales.

This paper is presented not as policy, but with a view to inform and stimulate wider debate.

The opinions expressed in this paper are those of the author and do not necessarily represent the views of the Ministry of Transport.
Introduction

Throughout most developed countries vehicle kilometres travelled (VKT) by light vehicles has been flattening. There are two divergent views on the cause of this:

► it is a response to the Global Financial Crisis (GFC) and VKT will bounce back once the world economy picks up; or
► there are structural reasons behind the flattening in per capita VKT and per capita VKT is unlikely to significantly increase in the future.

Two measures of VKT are commonly used. These are total VKT (the aggregate distance travelled) and VKT per capita (the ratio between VKT and population).

Total VKT can imply the total demand being placed on the network but VKT per capita may reflect important signals of changes in society and their relationship to transport. The initial part of this paper deals with VKT from a total demand perspective, while the latter part deals more with VKT per capita.

Peak car is the idea that VKT per capita has reached an apex whereby subsequent decline will be experienced. What evidence is there for Peak Car? The following sections of the paper look at evidence for other developed countries. The evidence for New Zealand is then considered.

Commentary on aggregate observed trends at a national level

Goodwin (2012) highlighted some early research that speculated light vehicle kilometres were levelling off. Subsequent observations have shown a levelling off was occurring in many countries. In his report, observations of national passenger kilometres from OECD countries were provided. The figures for a number of developed countries were showing a levelling off or, in some cases, a decline in passenger kilometres travelled by private car and light trucks (Figure 1).

![Figure 1: Passenger kilometres by private car and light trucks 1990-2009 (Index 1990 = 100) reproduced from Goodwin (2012).](source: International Transport Forum statistics.)
Explanations offered for the changes in trend
As Goodwin (2012) noted, there are two broad schools of thought as to the underlying cause of the flattening trend in VKT:

► economic variables such as economic strength and fuel prices are responsible for a flattening in VKT; or
► cultural and social factors may be inducing structural change in driving habits and distance travelled.

While professional consensus has not been reached about the causes of recent flattening\(^1\), the notion of a saturation level can apply in both cases.

Ideas of saturation
With most goods, at some point people have had enough of them and it has been speculated the same would apply with the amount we wish to drive. As wealth and opportunity increase, people would be driving as much as they wanted — a so-called ‘saturation point’ is reached when this occurs. This saturation point can relate both to an individual and to society. It is only when the large proportion of a society reaches saturation point there would be an overall levelling off in demand.

Saturation and the travel time budget
As Goodwin (2012) highlights, the idea of saturation may come from quite different approaches. The idea of a ‘travel time budget’ was postulated in the 1970s, recognising that the amount of time people spend travelling has remained relatively stable at roughly an hour a day.\(^2\)

Various explanations of the travel time budget have been put forward. Schafer and Victor (2000, as cited in Goodwin, 2012) state there is a very strong elasticity of total distance travelled (by all modes) for income, but the total amount of time spent on travel is stable. Therefore, increases in income drive the transfer to faster modes.

Another explanation provided by Metz (2010, as cited in Goodwin, 2012) is “the number of destinations that can be reached within a distance, increases, on average, with the square of distance, but the additional utility to be gained from a more distant destination decreases as each closer destination is passed” (p.14).

Goodwin (2012) provides a pertinent caveat to these explanations by stating that just because a relatively simple econometric model, including a saturation level, can be consistent with observed trends, that does not mean its representation of underlying factors is adequate when considering future demand.

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\(^1\) See Lyons and Goodwin (2014) for commentary from transport professionals on the current state of VKT
\(^2\) See Metz (2013).
Are the forecasts accurate based on ‘conventional’ economic variables?

Traffic forecasts, particularly in the United Kingdom, have been and are based on the school of thought that focuses on economic variables. Some commentators such as Keith Buchan, past Chair of the UK Transport Planning Society, have commented the forecasts are “now so far from reality” as to be implausible. Goodwin (2012) considered the track record of the currently authorised forecasting procedures in the United Kingdom in Figure 2.

![DfT Forecasts and actual car traffic growth](image)

Figure 2: DfT Forecasts and actual car traffic growth reproduced from Goodwin (2012).

Similar forecasts were made in the past for light vehicle traffic in New Zealand. Note that Figure 3 for New Zealand covers a shorter time period than Figure 2 for the United Kingdom.

![Historic New Zealand Light Vehicle traffic forecasts and actual growth](image)

Figure 3: Historic New Zealand Light Vehicle traffic forecasts and actual growth

Source: Ministry of Transport, Wellington, internal working paper 2014. Note forecast may use data from an earlier time period.
These New Zealand forecasts should be treated as indicative only, as there may be definitional issues and different approaches between the forecasts. But there is a remarkable similarity between the United Kingdom and the New Zealand forecasts. Both the United Kingdom and the New Zealand forecasts appear to demonstrate an ongoing lack of success in accurately forecasting VKT.

**Interpretations of the long-term trends**

There are different interpretations of the longer term forecasts in the United Kingdom. Le Vine and Jones (2012) undertook a review of traffic trends and commented the trend in national VKT hides quite different experiences from one part of the country to the other. They refer to factors that may have influenced changes in travel such as the taxation of company cars, the recession and increasing use of cars for those aged 30 and over outside London. They conclude the notion that car traffic peaked in the mid-2000s is at best an oversimplification.

A number of commentators are examining a range of factors influencing car traffic. Because the factors are interactive it remains difficult to establish the extent to which different factors influence car traffic over time. However, it is plausible they are contributing to a process of transitional use of the car in society that may result in a persistent flattening in VKT.

Metz (2013) takes a slightly different approach by placing the current observed trends amongst ‘four eras of travel’. In the first era of human travel, our hunter-gatherer ancestors walked out of Africa and populated the earth. In the second era they settled in agricultural communities where travel was generally limited to about an hour a day on foot. The third era began early in the 19th century with the coming of the railways, when the energy of fossil fuels could be harnessed to achieve faster travel through a succession of technological innovations, culminating in mass mobility made possible by the motorcar. Metz pointed to emerging evidence that growth of personal daily travel has ceased, so we are entering a fourth era in which, on average, travel time, trip rate, and distance travelled hold steady. The ‘peak car’ phenomenon, whereby car mode share in cities like London reached a peak and has subsequently declined, marks the transition from the third to the fourth era.

Lyons (2014) discusses the interaction between the motor age and the digital age. He put forward the hypothesis that society is undergoing a fundamental transition from ‘a regime of automobility to something significantly different’. He concluded that “transport’s future in the digital age is uncertain and key actors need to embrace this uncertainty by turning to scenario planning to rehearse the future” (Lyons, 2014, p. 1).

**Trends in car usage in advanced economies – commentary on the International Transport Forum’s 2013 paper**

The International Transport Forum (Van Dender and Clever, 2013) has recently released a paper on observed car trends across some OECD countries. The paper comments that “over the past 10 to 15 years, car usage has decelerated in several high-income economies and, in some, growth has stopped or turned negative” (p. 5). The ITF has graphed the relationship between GDP, fuel price and passenger kilometres (PKM) for 10 high-income economies for the period 1970 to 2010 (Figure 4).
Figure 4: Index of GDP, fuel price and passenger-kilometres (PKM) in 10 high-income economies, 1970-2010 (base year 2000) reproduced from Van Dender and Clever (2013).
For New Zealand, a similar graph to those above has been produced. It shows a relationship that is similar to the 10 high-income economies.

Data from Ministry of Business, Innovation and Employment, Statistics New Zealand and the Ministry of Transport. Note: petrol consumption attributed to transport is used as a proxy for light VKT before 2000.

Figure 5: Index of GDP, petrol price, and light VKT (normalised to 100 base year 2001)

For New Zealand, a casual observation might suggest there is a stronger relationship between petrol price and light VKT than in the other countries in the ITF graphs. Numerous studies internationally have found a link between the price of petrol and light VKT. Gillingham (2010, as cited in Litman, 2012, pg. 24) highlights that the strength of the link between petrol price and light VKT is likely to be influenced by other factors including:

► “demographics (portion of residents in different age and income classes),
► the magnitude of fuel prices relative to household incomes,
► the magnitude and duration of price changes,
► geographic factors (how price sensitivities vary between urban, suburban and rural areas),
► the quality of alternatives [and] the time period of analysis.”

Potential explanatory factors provided by the ITF

The ITF considers the following factors that are common to a number of commentaries as useful starting points for detailed empirical analysis of a decline in VKT:

► Age
► Gender
► Income
► Saturation of aggregate vehicle ownership and travel
► Employment and education
Recent analysis from the ITF

Goodwin and Van Dender (2013) have analysed a number of recent papers in the Peak Car area. They conclude that while there are a variety of elements influencing various countries, there are three common themes. These are:

- **Young people** – it appears young people are choosing to connect more using digital technology rather than physically. This, combined with increasing costs of car ownership, is having a significant effect in the urban areas.
- **Location** – car use is declining in urban areas, attributed to choosing to avoid congestion, the availability of public transport and a renewed interest in active modes of transport. This means it is important to recognise you cannot simply look at national headlines of car use; there will be varying patterns of demand in different parts of any country.
- **Economic factors** – economic factors remain important. However, other factors such as those above are also changing the relative importance of the economy affecting the level of driving in developed countries.

A New Zealand perspective

When the first draft of this paper was written in early 2014, many commentators in New Zealand were expecting a strong bounce back in VKT as the effects of the global financial crisis (GFC) diminished. In April 2013, some interesting analysis of a contrary view was undertaken by Stuart Donovan, a New Zealand economist. He posted his thoughts on the Auckland Transport Blog3, about the relationship between factors such as VKT, GDP per capita and unemployment rate. He hypothesised the demand for vehicle travel in New Zealand (when measured in terms of VKT per capita) was falling in response to powerful wider forces.

Donovan discussed whether the drop in VKT per capita that had occurred since 2004 was a temporary aberration caused by post-GFC economic malaise. He also investigated what he called the “economic malaise” hypothesis by adding (indexed) real GDP per capita to VKT per capita. An adapted representation of Donovan’s hypothesis is demonstrated in Figure 6.

He concluded economic malaise did not seem to explain VKT per capita trends very well. The data actually contradicted the hypothesis; unless it was suggested drivers started preparing for the 2008 GFC way back in 2004. The GFC did have a negative impact on GDP per capita, but this impact was relatively slight and has since been more than wiped out. In fact, since 2004, which was the peak in per capita VKT, New Zealand’s GDP per capita appears to have increased by about 12 percent, whereas per capita VKT fell by about 6 percent.

Trends in distance driven

The Ministry of Transport’s Fleet Statistics show that, after a period of traffic growth in the early to mid 2000s, the amount of travel by light passenger vehicles has slightly decreased (Figure 7). This pattern is reflected in the distance driven by drivers in the Household Travel Survey⁴.

Note: After 2000, data points are based on the average of 3 years of data per point.

Figure 7: 100 million km per year driven in cars, vans, utes and SUVs (New Zealand Household Travel Survey)

⁴ The New Zealand Household Travel Survey is an ongoing survey of household travel conducted for the Ministry of Transport. Each year, people in 4,600 households throughout New Zealand are invited to participate in the survey by recording all their travel over a two-day period. Each person in the household is then interviewed about their travel. The graph is focussed on the period July 2010 to June 2013.
Breaking down distance driven by cars into age groups over time (Figure 8); there are divergent trends across different age groups:

► The distance driven by the 15–24 age group has been flat since 1997/98.
► The distance driven by the 25–34 age group has declined since 1997/98.
► The distance driven by the 35–64 age group has been flat since 1997/98.
► For the 65–74 age group, the distance driven moved up sharply between 1989/90 and 2005–2008; since then it has been relatively flat.
► For the 75+ age group, the distance driven increased between 1989/90 and 2006–2009. Since then it has trended slightly down.

Figure 8: Distance driven in cars, vans, utes and SUVs based on Household Travel Survey data.

Figure 9 shows how far males and females of different ages drive. In New Zealand, male drivers do more driving than female drivers. On average, New Zealand men drive just over 12,000km per driver per year, while women on average drive just over 8,000km per driver per year. Males make up approximately 61 percent of the total distance driven by New Zealanders in cars, vans, utilities and SUVs. Older and retired people drive less than those of working age. Distance driven tails off sharply for both men and women after the age of 60.
Figure 9: Average annual distance driven per driver\(^5\) (cars, vans, utes and SUVs)

The ‘Peak Car’ literature, particularly in the United Kingdom, indicates driving by men has decreased and driving by women has increased since 1995. In New Zealand, since 1997/98, the distance driven per person for men and women has decreased; however, the decrease for women is less than for men (Figure 10). Both male and female total distance driven has trended down since about 2005. Overall the amount of driving done per driver increased from 25km/day in 1989/90 to 29.7km/day in 2004–2007 and then decreased again to about 28km/day in 2010–2013. Males and females of 65 plus years of age are the sole group in which the distance driven per person per year increased from 2005. This probably reflects the baby boomers, who have good driving experience, moving into that age group. After 2009, the distance driven by males in the 65 plus age group has trended down.

Figure 10: Distance driven per person per year (Household Travel Survey)

Note: From 2005 onwards, data points are based on an average of 3 years of data per point

\(^5\)“Driver” is defined as someone who reported having driven 100km or more in the previous year.
Young people

Lyons (2014) refers to the notable trend of fewer young people (especially males) acquiring driving licences and corresponding declines in per capita car use being observed. Delbosc and Currie (2013, as cited in Lyons, 2014) explores a range of factors which may be affecting the amount young people drive; these could be grouped into three broad categories: young people choosing to connect virtually rather than physically, cultural trends, and changes in ease of access to cars.

A worldwide trend known as ‘driving ambivalence’ has hit young people in New Zealand. Statistics show the number of teens getting their licence has dropped drastically in the past five years.

Both rural and urban New Zealand are affected by the trend. New Zealand Transport Agency statistics show\(^6\) the number of driving licences held by 16 to 19 year olds has declined across the country over the five-year period 2008 to 2013. Of the cities, Auckland had a 21 percent decline, while Wellington shows the biggest decline with the number falling by 56 percent. Dunedin and New Plymouth, both smaller cities, had a 25 percent drop, while smaller districts such as Opotiki had a 42 percent decline and Gore showed a 16 percent slump.

In her research project on youth travel behaviour, University of Otago PhD student Aimee Ward\(^7\), stated focus groups had overwhelmingly told her cost was an issue; licence cost, vehicle prices and maintenance fees all came into the equation:

> But they are also ambivalent about driving. Their parents or friends will drive them around so they don’t need a licence. I said to them, ‘what if you get a job?’ And they reply, ‘it would need to be at the weekend so my parents could drive me.’

> *Ward (2014)*

Figure 11 shows the levels of youth unemployment over time. High rates of unemployment are evident in the 15 to 24 years-of-age group which may affect access to light vehicle travel.

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\(^6\) Data is for Class One licences (all stages).

Figure 11: Unemployment rate by age group

**Young people compared with older people**

Table 1 shows total car licences held increased by 9.5 percent between 2006 and 2012. But the number of driving licences held by young people in the 16 to 19 years of age group has declined despite a small increase in numbers in the cohort (note, the minimum age for obtaining a learner licence increased from 15 to 16 years in 2011).

Licences held in the 20 to 24 age group have increased at a slower rate than the increase in numbers in the cohort. In the 25 to 44 age group there has been a modest increase in the number of licences held.

**Table 1: Number of car licences held by age and sex of licence holder between 2006 and 2012**

<table>
<thead>
<tr>
<th>Age group</th>
<th>2006</th>
<th></th>
<th>2012</th>
<th></th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>16-19</td>
<td>93,791</td>
<td>82,271</td>
<td>176,062</td>
<td>83,302</td>
<td>75,546</td>
</tr>
<tr>
<td>20-24</td>
<td>142,633</td>
<td>129,775</td>
<td>272,408</td>
<td>152,398</td>
<td>140,659</td>
</tr>
<tr>
<td>25-34</td>
<td>288,634</td>
<td>283,921</td>
<td>572,555</td>
<td>308,579</td>
<td>296,768</td>
</tr>
<tr>
<td>35-44</td>
<td>317,702</td>
<td>317,300</td>
<td>635,002</td>
<td>314,774</td>
<td>320,248</td>
</tr>
<tr>
<td>45-54</td>
<td>280,340</td>
<td>269,598</td>
<td>549,938</td>
<td>315,402</td>
<td>311,261</td>
</tr>
<tr>
<td>55-64</td>
<td>207,737</td>
<td>191,660</td>
<td>399,397</td>
<td>245,646</td>
<td>233,639</td>
</tr>
<tr>
<td>65-74</td>
<td>126,975</td>
<td>113,416</td>
<td>240,391</td>
<td>156,266</td>
<td>146,952</td>
</tr>
<tr>
<td>75+</td>
<td>73,062</td>
<td>63,184</td>
<td>136,246</td>
<td>84,173</td>
<td>78,828</td>
</tr>
<tr>
<td>Total</td>
<td>2,981,999</td>
<td></td>
<td>3,264,441</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NZ Transport Agency
Table 2: Numbers in age cohort (select ages)

<table>
<thead>
<tr>
<th>Age group</th>
<th>2006</th>
<th>2012</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>16-19</td>
<td>125,820</td>
<td>122,120</td>
<td>247,940</td>
</tr>
<tr>
<td>25-34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55-64</td>
<td>211,980</td>
<td>217,480</td>
<td>429,460</td>
</tr>
<tr>
<td>65-74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Statistics New Zealand

There have been significant increases in licences held by drivers in the 45 to 74 age group. These increases may reflect the baby boomers moving through the age cohorts. For example, licences held in the 55–64 cohort increased by 20 percent, while their cohort population increased by 17.4 percent.

A similar pattern is shown in Figure 12 with declines in the percentage of the 15 to 29 year old age group holding a car licence. The percentage of 30 to 64 year old age group holding a licence has been flat since 2005, while there has been an increase in the percentage of 65 plus age group holding a car licence.

Figure 12: Percentage of age group with a car license (learner, restricted or full) – Household Travel Survey

Note: From 2005 onwards, data points are based on an average of 3 years of data per point
The annual number of driver licences issued is likely to be closely related to the distance driven. Figure 13 below shows the number of driver licences issued on an annual basis between 2003 and 2013 (based on NZ Transport Agency statistics as cited in www.transportblog.co.nz).

Figure 13: Total Driver Licences issued

The number of learner licences issued has been trending down since 2003. The issue of restricted licences has been flat between 2003 and 2009 and has since trended down. The number of full licences issued increased up until 2009; since then the number has trended down.

The change in the minimum driving age in August 2011, whereby 15 year olds could not obtain licences, affected the number of licences issued in 2012. The bounce back in 2013 probably reflects the impact of this change moving through the system. Despite the bounce back, the numbers are still down on the past in all three categories.
**Location: Urban and rural travel patterns**

The Household Travel Survey shows travel by urban and rural residents. The 22 percent of people in New Zealand who live in small towns and rural areas account for 27 percent of the total distance travelled and 21 percent of total travel time.

**Table 3: Travel per person by city/town and rural dwellers (2009–2013)**

<table>
<thead>
<tr>
<th>Travel mode</th>
<th>Main/secondary urban (population centres of 10,000 or more)</th>
<th>Minor urban/rural (population less than 10,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours per person per year</td>
<td>Km per person per year</td>
</tr>
<tr>
<td>Car/van driver (per person)</td>
<td>184</td>
<td>6,199</td>
</tr>
<tr>
<td>Car/van driver (per person aged 15+)</td>
<td>231</td>
<td>7,818</td>
</tr>
<tr>
<td>Car/van passengers</td>
<td>97</td>
<td>3,560</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>51</td>
<td>203</td>
</tr>
<tr>
<td>PT (bus/train/ferry)</td>
<td>16</td>
<td>328</td>
</tr>
<tr>
<td>Cyclist</td>
<td>7</td>
<td>82</td>
</tr>
<tr>
<td>Other (including motorcyclist)</td>
<td>9</td>
<td>185</td>
</tr>
<tr>
<td>Total</td>
<td>363</td>
<td>10,557</td>
</tr>
</tbody>
</table>

People living in small towns (population less than 10,000) and rural areas travel on average a little under one and a half times as far in a year as ‘urban dwellers’ living in larger towns and cities. The average trip leg length (between stops) is 8km for urban dwellers and 12km for small town/rural dwellers.

Urban dwellers reported more time walking in the road environment than their small town and rural-dwelling counterparts. The average urban dweller (across all age groups) walks for about 51 hours per year, compared to only 31 hours per year for small town/ rural dwellers. However, these figures do not include off-road walking, for example, tramping or walking around private land.
**Growth patterns urban/rural**

In the period 1996 to 2011, a significant number of territorial authorities in New Zealand experienced a net loss of young adults and net gain of retirement-age migrants, which together generate a strong internal momentum of population decline. These are mainly smaller urban or rural authorities.

By contrast, the cities of Auckland and Hamilton attract a significantly high number of young people, both domestically and internationally, and even though birth rates per woman are low, this results in a relatively high number of births. Indeed, while net migration is strongly positive for both cities and is disproportionately so at young adult ages, growth is still primarily from natural increase.

It is cities like Auckland and Hamilton, rather than the entire country, which are enjoying demographic dividends. For Hamilton City in 2011, 65 plus years of age formed 10.7 percent of the population. In Thames-Coromandel for the same period 65 plus formed 23.2 percent of the population. So, because of the differing rates of population growth in cities and rural areas, future rates of VKT growth are likely to be dominated by the city VKT per driver, rather than the higher rural VKT per driver.

The following graphic demonstrates the different population growth patterns between urban and more rural areas.


**Figure 14: Age-Sex Structures, Thames-Coromandel and Waitaki Districts, and Hamilton and Auckland Cities, 2012 compared with 1996**
Figure 15 shows the striking difference in natural increase and net migration between the major cities and rural districts.

Source: Author/ Statistics New Zealand (various years) Estimated Subnational Population by Age and Sex at 30 June; Infoshare: Births, Table VSB016AA; Deaths, Table VSD018AA
Notes: *Changes in timing and method of estimating Resident Population between 1995 and 1996 mean that only natural increase can be shown for that year. In 2006 Auckland City amalgamated with other TAs in the Auckland Region so there are no equivalent data for the city for 2011 and 2012

Graphic from Professor Natalie Jackson, Waikato University from a presentation to the NZSA Conference 2012

Figure 15: Natural Increase and Net Migration Components of Change: Thames-Coromandel and Waitaki Districts, and Hamilton and Auckland Cities, 1991-2012 reproduced from Jackson (2012).
Economic factors: recovery and increasing GDP per capita. Will this drive an increase in VKT per capita?

As mentioned in the introduction to this paper, VKT per capita gives a somewhat different perspective on light vehicle travel compared to total VKT. A recent discussion paper comments it is travel per capita that is principally of interest in the peak car debate, because if travel per capita is going down then something is changing in terms of the underlying drivers of demand relating to behaviour (Lyons and Goodwin, 2014).

Recent forecasts in New Zealand

In 2014, the Ministry of Transport is adopting a growth path for VKT which is rather more muted than in past forecasts. The Draft Government Policy Statement on Land Transport 2015/16–2024/25 (Ministry of Transport, 2014), states:

“This recovery in demand would be led by freight traffic, as production and consumption increases. Personal travel is expected to increase in line with demographic trends. However, the best available information to date suggests that growth in personal vehicle travel will remain more muted than in previous economic cycles... In summary, overall demand is forecast to grow over the period of GPS 2015, albeit at a slower rate than the early 2000s, and to be concentrated in areas experiencing economic and population growth. The timing and scale of this increase in demand within the GPS 2015 period is uncertain as these variables depend on the speed and scale of the economic recovery and social changes.

Has New Zealand’s recent economic performance affected VKT per capita?

A recent economic and financial overview by the New Zealand Treasury commented:

“New Zealand experienced a relatively shallow recession from March 2008 to June 2009 compared to other nations in the OECD. New Zealand was sixth least affected out of the 34 member nations with negative real GDP growth totalling 3.5%.

Through 2011, global conditions deteriorated and the terms of trade eased off their peak, continuing to moderate until September 2012. Since then, commodity prices have rebounded strongly, with strong demand from China and the international situation improving.”

In a further comment Paul Bloxham, the economist who first said New Zealand’s economy had achieved “rock star” status, has conceded the sharp decline in dairy prices over the last six months

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has clouded the outlook somewhat. Dairy prices are 40 per cent below their February 2014 peak and are now a touch below their post-2000 average.

"Dairy prices have fallen sharply in recent months, taking some of the shine off New Zealand's strong growth story," said Bloxham, who is HSBC's chief economist for Australia and New Zealand.

Postscript for 2013 data
As this paper is being finalised for publication, the 2013 Fleet and Travel Data has been released by the Ministry of Transport. It is interesting to consider whether this data supports a ‘peak car’ hypothesis or whether it demonstrates a strong bounce back in VKT and related measures post the GFC.

Figure 16: Vehicle numbers in the light vehicle fleet
In 2013, there was a significant increase in the size of the light vehicle fleet which comprises passenger and light commercial vehicles (Figure 16). Growth in 2013 was the highest since the GFC and not far short of the very high growth in 2003-2005.

In August 2014, the Motor Industry Association said:

[Y]ear to date sales of new commercial vehicles are at an unprecedented level at 21 percent (4,148 units) above 2013. If this trend continues it is possible total commercial vehicle sales could exceed a staggering 36,000 units, some 5,000 units above 2013 and 13,000 units above 2012. Year to date registrations of passenger vehicles are 5,108 units (9.6 percent) ahead of 2013.

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10 www.transport.govt.nz/research/newzealandvehiclefleetstatistics/
12 Commercial vehicles as used here include both heavy and light commercial vehicles, but the vast bulk will be light commercial.
Population growth, driven by the substantial number of New Zealanders returning home, was one of the reasons for the high level of vehicle registrations (see Figure 17). The recovering economy was probably another reason.

Travel (both light vehicles and other travel) was up 1.6 percent in 2013 and is back to the peak level of 2007. A major contributing factor is likely to be fleet growth.

Figure 17: Population and light fleet growth from 2002 to 2013

Figure 18 below shows the trends in both light fleet and other travel.

Figure 18: Light vehicle and other travel between 2001 and 2013
Light fleet travel per capita has slightly increased in 2013 (Figure 19). Travel per capita is a significant marker in the ‘peak car’ discussion. But an increase in one year is not sufficient to define a trend.

Figure 19: Light fleet travel per capita

Light fleet ownership per 1000 population has significantly increased (Figure 20).

Figure 20: Light fleet ownership per 1000 population

But the light fleet average annual travel per vehicle continues to trend down (Figure 21).

Figure 21: Light fleet average annual travel per vehicle
Conclusion

The slowing of growth in VKT in developed countries over the last 10 to 20 years has been well documented. Out of all the analysis of this phenomenon, a set of explanatory factors and stylised facts has been developed by researchers.

► The changing propensity of young people to drive is a very widespread phenomenon of great potential importance.
► A new emphasis in virtually all the recent studies is of an important locational effect, above all related to differences according to settlement size, density, or degree of urban development.
► Although the classic ‘economic’ factors are still seen to be important, without doubt, the nature of their importance seems to have changed, with a reduction over time of the size of some elasticities with respect to price and income, and more importantly through the medium of differential responses by population category and location.

For New Zealand, the material in this paper reflects elements of these factors.

► The distance driven by 25 to 34 year old drivers has been trending down since 1997/98. This reduction in distance driven is partially offset by an increase in the distance driven by drivers aged over 65.
► The distance driven by the 35 to 64 age group has been flat since 2006. One explanation for this may be the impact of the global financial crisis.
► People living in small towns (population less than 10,000) and rural areas, travel on average a little under one and a half times as far in a year as ‘urban dwellers’ living in larger towns and cities. The average trip leg length (between stops) is 8km for urban dwellers and 12km for small town/ rural dwellers. The majority of population growth is now taking place in the cities; the countryside is ‘hollowing out’ with few young people and a significant increase in the 65 plus population. So, the average distance driven should decrease, but total VKT could be maintained by increasing urban populations.
► In the United Kingdom, there is evidence of an increase in driving by women relative to men. In New Zealand, driving per person has decreased in both men and women since 1997/98. However, the decrease is less for women than for men.
► The assembled weight of the above factors seems to point to a structural change in the factors driving per capita VKT, rather than VKT declining as a result of an economic malaise.
► Total VKT per capita trended down in the recent past even though per capita GDP was increasing.
► 2013 data shows some ‘bounce back’ in total VKT as the New Zealand economy performs strongly through 2013. There was a strong increase in both population and vehicle sales in 2013.
► Although light fleet travel per capita has slightly increased, average travel per vehicle continues to decline.
► Further years data is required to determine whether the slight upturn in VKT per capita is simply a reflection of the strong economy or whether it reflects structural factors.
References


