

Talking point

Increasing longevity of cars is hampering market penetration of alternative propulsion technologies

June 26, 2015

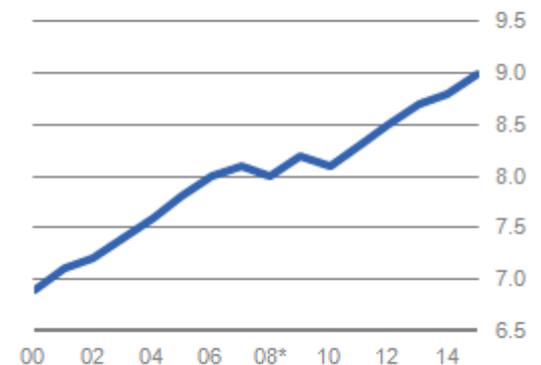
The average age of cars on German roads hit a new record high of nine years at the beginning of 2015. The primary reason for this is the improved quality of vehicles. Although the diesel share of new car registrations has averaged well over 40% in recent years, diesel only constituted 31% of the cars on German roads at last count. The durability of cars is causing the mix of cars in service to change only slowly. The diesel car example suggests that it may take many years before cars powered by alternative technologies constitute a major share of all the cars registered in Germany. The vision of a future with largely climate-neutral or locally emission-free vehicles on German roads by 2050 is virtually unattainable as things currently stand.

Cars on Germany's roads are getting older and older. Since the beginning of the millennium, the average age of cars in service in Germany has risen almost constantly. Whereas in 2000 the average age was still around seven years, this figure had risen to nine years by early 2015 and thereby reached a new record level. Only at the beginning of 2010 – that is straight after the scrappage premium of 2009, when around 2 million older cars were scrapped and replaced by new or nearly-new vehicles – was there a minimal decline in the average age of the cars on Germany's roads (see chart).

There are a variety of reasons for the developments outlined above: firstly, there is of course technological progress, which has resulted in the successively increasing “longevity” of new cars. This applies for example to the bodywork (improved corrosion protection) as well as to engine and transmission technology. They enable cars to last longer and clock up higher mileages. These improvements in vehicle quality enable drivers to put off ordering a new car for longer and longer. Another reason for the increase in the average age of cars in service is the higher list prices of new cars; in 2014 they were more than 40% higher than in 2000. This quite a high increase in prices probably prompts many private car buyers to use their cars for longer and to accept the costs of repairing and servicing older vehicles as well. The considerable rise in average new car prices is associated with the company car share of new registrations in Germany having risen in recent years. Many commercial customers are more inclined than private car buyers to acquire better equipped and thus more expensive cars. When these vehicles enter the second-hand market after a certain period they constitute a lucrative alternative to a new car for many private customers, especially as average used car prices in Germany “only” rose by nearly 24% between 2000 and 2014.

Cars on Germany's roads are getting older and older

Average age of all cars registered in Germany, years



* The decline in 2008 is due to a change in the statistical computation basis

Source: Federal Motor Transport Authority (Kraftfahrt-Bundesamt)



Besides the rising average age, the distribution of the cars by year of registration is also interesting. At the start of 2015 about 7.4 million cars in Germany were first registered in 1999 or earlier; they constitute nearly 17% of all vehicles (see chart).

Diesel share of registered cars rising slowly, but steadily

Cars in Germany are not only getting older and older, the proportion with a diesel engine is also rising constantly. Diesel cars have been a major factor in new registrations for many years already. Their share averaged about 44% during 2004 and 2014 (2014: 47.8%), with a blip in the scrappage premium year (see chart). Diesel cars consume less fuel than their petrol-driven counterparts. Diesel is also cheaper at the pump because it is taxed at lower rates than petrol. Furthermore, German carmakers are leaders in diesel technology, which gives an extra boost to domestic diesel sales especially among commercial customers. Despite this high importance of diesel cars in new registrations, their share of all the cars on German roads is increasing only relatively slowly. In 2000 it was 14% and by 2015 it had “merely” risen to 31%. If the diesel share of new car registrations were to remain constant, it would take another 15 years or so for the diesel share of all cars registered to draw level with the diesel share of new registrations. In the end, the durability of cars is thus ensuring the mix of vehicles on German roads is changing only slowly.

Market penetration by alternative propulsion technologies will take decades

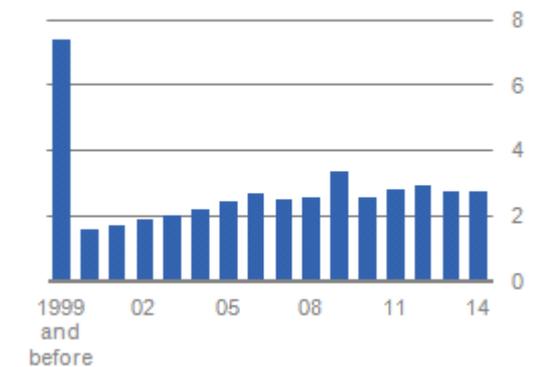
The diesel car example suggests that it will take many years before cars powered by alternative technologies constitute a major share of all the cars registered in Germany. At present, only around 0.3% of cars in Germany are fitted with an electric engine or are hybrid powered. Cars with these two technologies accounted for only around 1.2% of new registrations in 2014. The high acquisition costs – especially for electric vehicles and plug-in hybrids – are a major reason for this.

Even if in the next few years the technological advances in one or another alternative propulsion method occur faster than hitherto expected and/or (supplementary) public funding programmes help to prompt more private or commercial buyers to choose such vehicles, it will take a long time before they are the most common sight on German roads. The global carmakers are currently producing or developing mainly vehicles that are fitted with (only) petrol or diesel engines. These cars will also head the new registration statistics into the 2020s and they will still satisfy a large proportion of many people's mobility requirements long after 2030 – and not only in Germany; this would even be the case if oil prices were to rise again. This illustrates that for the time being further efficiency improvements in internal combustion engines will remain the most important determinants of road transport's carbon footprint.

True, it is to be expected that the share of newly-registered cars that are propelled by alternative technologies will increase into the double-digit percentage range during the next decade in many markets (also in Germany). The vision of a future with largely climate-neutral or locally emission-free vehicles on German roads can, however, probably only then be achieved by 2050 if the market shares of alternative propulsion technologies are already trending towards 100% early in the 2030s and the government can convince owners of older cars to scrap them before the end of their service lives. This is virtually unattainable as things currently stand, if extreme regulation (e.g. a ban on cars with internal combustion engines) is ruled out, especially as the service life of future vehicles is likely to continue rising. A sensible alternative means of regulating road transport CO₂ emissions would be to integrate the sector into the EU Emissions Trading System (ideally into a global system in the long term).

Many old cars on the road

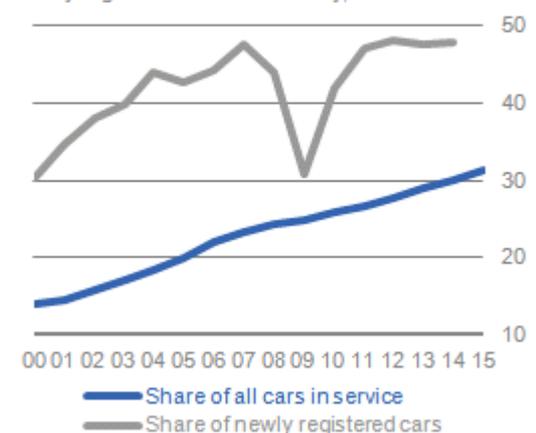
Distribution of all cars in service in Germany by year when first registered, million cars



Source: Federal Motor Transport Authority (Kraftfahrt-Bundesamt)

More and more diesel cars on the road

Diesel car share of all cars in service and of newly registered cars in Germany, %



Source: Federal Motor Transport Authority (Kraftfahrt-Bundesamt)

See also:

Heymann, Eric (2014). CO₂ emissions from cars. Regulation via EU Emissions Trading System better than stricter CO₂ limits. Deutsche Bank Research. Current Issues. Frankfurt am Main.

Publication of the German original: June 22, 2015

Authors:

Eric Heymann (+49) 69 910-31730

Alexander Karollus

...more information on **Sector Research**

Talking Point - Archive

© Copyright 2015. Deutsche Bank AG, Deutsche Bank Research, 60262 Frankfurt am Main, Germany. All rights reserved. When quoting please cite "Deutsche Bank Research".

The above information does not constitute the provision of investment, legal or tax advice. Any views expressed reflect the current views of the author, which do not necessarily correspond to the opinions of Deutsche Bank AG or its affiliates. Opinions expressed may change without notice. Opinions expressed may differ from views set out in other documents, including research, published by Deutsche Bank. The above information is provided for informational purposes only and without any obligation, whether contractual or otherwise. No warranty or representation is made as to the correctness, completeness and accuracy of the information given or the assessments made.

In Germany this information is approved and/or communicated by Deutsche Bank AG Frankfurt, licensed to carry on banking business and to provide financial services under the supervision of the European Central Bank (ECB) and the German Federal Financial Supervisory Authority (BaFin). In the United Kingdom this information is approved and/or communicated by Deutsche Bank AG, London Branch, a member of the London Stock Exchange, authorized by UK's Prudential Regulation Authority (PRA) and subject to limited regulation by the UK's Financial Conduct Authority (FCA) (under number 150018) and by the PRA. This information is distributed in Hong Kong by Deutsche Bank AG, Hong Kong Branch, in Korea by Deutsche Securities Korea Co. and in Singapore by Deutsche Bank AG, Singapore Branch. In Japan this information is approved and/or distributed by Deutsche Securities Limited, Tokyo Branch. In Australia, retail clients should obtain a copy of a Product Disclosure Statement (PDS) relating to any financial product referred to in this report and consider the PDS before making any decision about whether to acquire the product.