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Research Report

Compulsory annual roadworthiness tests of older used cars: An economic fallacy

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Compulsory annual roadworthiness tests of older used cars: An economic fallacy

FORMOE Policy Impulse #4

W. Benedikt Schmal & Max Zombek

Summary

The EU Commission is planning an annual general inspection for cars over ten years old in order to increase road safety. This Policy Impulse analyzes the measure from an economic perspective and shows: The planned regulation hardly achieves any safety-relevant effects, but causes considerable economic damage. A cascade effect makes younger used cars more expensive, which places a particular burden on low-income households. Anticipation effects also shorten the useful life of existing cars – with negative consequences for the climate and resource efficiency. The measure also conflicts with the subsidiarity principle and is likely to primarily serve industrial policy purposes. From an economic perspective, the proposal is highly questionable from a German perspective.

Introduction

The EU Commission has triggered a broad debate with its new proposal for an annual roadworthiness test (HU) for cars and light commercial vehicles over ten years old.¹ The measure is part of a broader package aimed at promoting road safety in Europe and aims to detect potential technical defects at an earlier stage. In practice, this means millions of vehicle owners would have to have their vehicles inspected much more frequently, with corresponding financial and organizational consequences. But does this measure make economic sense, and is it effective?

At first glance, the plan seems sensible. Safety is a valuable asset, and more frequent technical inspections may seem suitable for reducing road traffic hazards. However, a closer analysis reveals that the measure has hardly any positive effects on actual accident prevention, but far-reaching negative consequences for vehicle owners, the used car market, the overall ecological balance of mobility, and social justice.

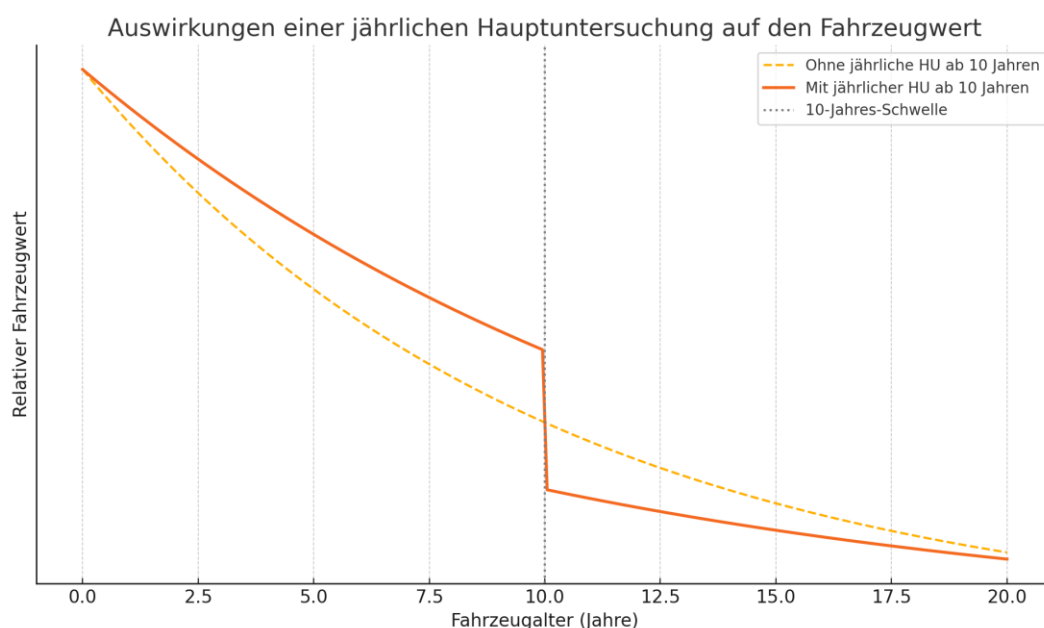
This Policy Impulse analyzes the planned tightening of inspection intervals from a political economy perspective *for Germany*. It focuses on three central lines of argument: Firstly, the measure fundamentally changes the price and demand conditions on the used car market due

¹ See EC Press Release “Updated rules for safer roads, less air pollution and digital vehicle documents” from 24 April 2025: https://ec.europa.eu/commission/presscorner/detail/en/ip_25_1083

to the so-called *cascade effect*. Secondly, it undermines the ecological longevity of vehicles through *anticipation effects*. And thirdly, does an EU-wide regulation violate the European principle of subsidiarity, with consequences for consumers, markets, and political trust in rational regulation. All of this raises the question of whether transport policy objectives are actually at the forefront here, or whether industrial policy interests are being served through the back door.

Changes in vehicle values over time: The cascade effect

The intervention in the test cycles has an impact on the value development of motor vehicles, not only for older used vehicles, but also for vehicles less than 10 years old. This is outlined in the graph. First of all, it is plausible to assume a falling vehicle value over time. In individual cases, it is possible that young timers (from 20 years old) are already increasing in value again and that the prices of many classic cars (from 30 years old) resemble a U-shape and are rising again. However, with a share of around 1.72%, they represent only a fraction of all cars registered in Germany.²



² Data basis: Registration statistics from the Federal Motor Transport Authority (Kraftfahrtbundesamt), as at 1.1.2024, available at https://www.kba.de/DE/Statistik/Fahrzeuge/Bestand/Jahresbilanz_Bestand/fz_b_jahresbilanz_node.html;jsessionid=B74D8E38B0273580746E1DB6C86CD30E.

The yellow dashed line outlines the average value development of cars without the change in inspection frequency after 10 years. The red solid line, on the other hand, outlines the expected value trend after the introduction of a stricter inspection frequency. From the age of 10 years, the value falls in relation to the value trend with a constant inspection requirement. Although this makes older used vehicles cheaper to buy, the costs and effort involved in the mandatory annual inspection increase in return.

However, the prices of younger used cars are also likely to change significantly. What initially seems counterintuitive can be described economically as a "cascade effect" on the used car market. Owners of older vehicles are more likely to buy new vehicles if their old models become more expensive and inconvenient due to more frequent inspection appointments. Even if a younger used car is bought instead, this will increase demand - and therefore prices - for these vehicles. Anyone previously considering a five-year car could then go straight for a new car. This creates a cascade effect that is expected to stimulate new car sales overall.

Regional variation in traffic patterns and safety: not all traffic is the same

Anyone who has traveled in Europe knows that road traffic is very different in reality, even though the rules are almost identical. Driving in Palermo is different from driving in Amsterdam, Berlin, or Warsaw. This also applies to the condition of vehicles. Damage that would raise concerns in Germany may be considered negligible elsewhere.

Technical defects are only a negligible cause of accidents throughout Europe. In Germany, their share is particularly low at just 0.7%,³ and this does not only apply to older vehicles. If local conditions differ, political measures should be taken at the smallest level that makes sense - the so-called subsidiarity principle. A uniform set of rules without regard to regional differences carries the risk of costly inefficiencies. Finland is not Portugal - accordingly, rules should be developed where they fit the reality.

³ See "Study on the Roadworthiness Package" by fka Strategy & Consulting on behalf of the European Automobile Manufacturers Association (ACEA), available at https://www.fka.de/images/publikationen/2025/ACEA_-_Study_on_the_Roadworthiness_Package_Final_Report.pdf

A turning point in the used car market: drivers face a double burden

The financial burden of more frequent inspections is obvious. But the consequences go further: the used car market will be severely affected. Thanks to the quality improvements of recent decades, the supply includes many good vehicles that are more than ten years old. In Germany, the average age of a car is 10.4 years, and the trend is rising.

The new regulation would split the market: Demand for vehicles less than ten years old is likely to rise, while demand for older vehicles is likely to fall. The result: prices for young used cars will rise considerably - an effect that was also observed after the introduction of the scrappage scheme. The main victims are families and private buyers, who often opt for (young) used cars. Older vehicles will understandably lose value and therefore become cheaper to export.

At the lower end of the price scale, shifts are therefore taking place to the detriment of consumers, while prices are rising in the middle price range, i.e., for young used cars. This opens up a range of socio-political implications that cannot be adequately covered here in the Policy Impulse. However, in addition to CO₂ pricing without compensatory climate money, they are a further, heavy burden for low-income households that are dependent on individual mobility for professional or private reasons. New cars, in particular, are hardly an option for them due to the high purchase costs.⁴

Incentive for less sustainability: the anticipation effect

One aspect that is often underestimated when discussing older vehicles is their overall ecological footprint. Modern vehicles are energy-intensive to produce: the production of a single car already causes between 5 and 10 tons of CO₂ emissions – depending on the vehicle class and production technology. For electric vehicles, especially those with large batteries, the emissions are even higher due to the energy-intensive battery production. From a life cycle

⁴ See Tagesspiegel Background Verkehr & Smart Mobility: “Social Leasing: Förderung für kleine Geldbeutel könnte teuer werden. <https://background.tagesspiegel.de/verkehr-und-smart-mobility/briefing/foerderung-fuer-kleine-geldbeutel-koennte-teuer-werden>

perspective, 15-20% of total emissions are attributable to production.⁵ These emissions and resource consumption occur before the first kilometer is driven. They are so-called *upstream emissions* that arise regardless of how efficiently the vehicle is later used, as the term refers to those generated before the vehicle is ever driven. The longest possible service life of a vehicle is therefore a key lever for improving the overall ecological balance.

It is therefore ecologically desirable to use vehicles for as long as possible instead of recycling and building new ones. An annual inspection requirement for older used vehicles may seem sensible at first glance, as shorter inspection intervals could lead to more frequent repairs. But this is only one side of the coin. As outlined in the graph on the development of average vehicle residual values, a stricter inspection requirement would cause a jump in the loss of value from the age of ten years. Those who are not financially dependent on the residual value of the car may then make greater use of their car and take less care of the material in advance. This phenomenon is known from rental cars, where the value of the car is irrelevant to the user as long as the vehicle has no obvious damage.

The consequences would be fatal for the environment and the economic use of resources. What will happen as a result of the planned annual mandatory roadworthiness test for used cars older than 10 years?

- Early replacement: When older vehicles become economically less attractive due to the annual roadworthiness test requirement, the pressure to replace vehicles increases, often long before their technical service life is reached.
- Increasing the fleet renewal rate: A higher rate of new vehicle purchases means that the upstream emissions for new vehicles occur more quickly and more frequently.
- Delayed or missed climate benefits of more efficient new vehicles: Even if new models are more efficient in operation, it often takes many years before the emissions caused by production are "amortized" through lower consumption values in operation. If this phase is constantly interrupted by premature replacement, the balance deteriorates.

In addition, the safety of older vehicles could also suffer. If you know that your car will significantly lose value once it passes the ten-year mark, a car owner may be inclined not only to let

⁵ The figure is based on an analysis of the Austrian mobility association "VCÖ - Mobilität mit Zukunft": Wie viele Ressourcen werden bei der PKW-Produktion verbraucht. Available at: <https://vcoe.at/serie/fragen-und-antworten/wie-viele-ressourcen-werden-bei-der-pkw-produktion-verbraucht>

the car deteriorate visually but also to postpone essential maintenance and safety-related repairs, such as the timely replacement of brake pads or tires. A "pass" in the main inspection does not necessarily mean that these components are truly roadworthy.⁶ This would be just as detrimental to road safety as it would be to environmental protection. In many cases, a vehicle that is used for as long as possible makes more ecological sense than a new one, as a significant proportion of emissions are generated during production.

Classic cars: Already well-regulated and low-risk

As already described, classic cars account for only 1.72% of the total car stock in Germany. However, even this relatively small population of around one million vehicles represents a significant number in absolute terms. And even though classic cars must be at least 30 years old in order to receive the "historic" H license plate, their state of preservation must also be extensively checked by a recognized testing organization as part of a special classic car report in accordance with §23 StVZO. In the course of this, the vehicle is examined for road safety and checked for any residual accident damage. In addition, historic vehicles must undergo a roadworthiness test every two years like all other cars.⁷

Not every vehicle over 30 years old has an H license plate. There is no need to apply for this type of registration and if an application is made, it can also be rejected if the condition does not meet the requirements for an automotive cultural asset. In 2023, around 56% of all vehicles over 30 years old were registered as historic.⁸ However, this does not mean that the remaining half were in poor condition. Many owners now do without an H license plate because there

⁶ One example of this is the minimum tread depth of tires: While the law stipulates a minimum depth of 1.6mm - which also leads to a passed general inspection - the ADAC, for example, strongly recommends a minimum depth of 3-4mm depending on the type of tire, but this makes a much earlier and more frequent replacement necessary. See also ADAC (28.4.25): Minimum tread depth for tires: When it becomes dangerous: <https://www.adac.de/rund-ums-fahrzeug/ausstattung-technik-zubehoer/reifen/sicherheit/reifenprofil/>

⁷ See <https://www.tuev-nord.de/de/privatkunden/ratgeber-und-tipps/oldtimer/>

⁸ See <https://www.kfz-betrieb.vogel.de/adac-das-sagen-die-kba-zahlen-im-fall-oldtimer-aus-a-76627a2228f753fa2a5c2bfb892cac5d/>

are fewer financial benefits for young classic cars and many now meet environmental standards that entitle them to display a green environmental badge, which allows them to drive in all environmental zones.⁹

In other words, the vast majority of classic cars are officially or unofficially in a roadworthy and well-maintained condition. In addition, these vehicles have a low average annual mileage, which means that wear and tear is limited.¹⁰

Economically, this type of use makes perfect sense. In addition to being a collector's item, many old cars can be expected to increase in value, which makes consistent maintenance not only desirable but also economically rational. Imposing mandatory annual inspections on these vehicles is therefore redundant at best. Classic cars are treated and driven with care for economic reasons. Although it cannot be ruled out that annual main inspections may reveal technical defects in individual cases that would otherwise have led to an accident, the costs of this measure are economically disproportionate to the expected benefits. In view of these circumstances, there have already been political discussions about extending the inspection intervals for these vehicles,¹¹ instead of shortening them. From FORMOE's point of view, such an extension would make a lot of sense.

Industrial policy through the back door?

If the benefits for road safety are so limited, why is the EU Commission pursuing this proposal? There is no specific reason. The tense situation of many European car manufacturers, who are important employers in many EU countries, seems much more pressing. Both the cascade effect and the anticipation effect ensure an increased demand for new cars in economic terms. This is very welcome for the industry. This indirect promotion also has political advantages: On the one hand, no tax money is needed, because you influence the market, which then boosts new car sales in a cascade - seemingly of its own accord. In times of tight budgets and

⁹ This is no longer permitted for vehicles with a lower emissions class. Exceptions are vehicles with an H license plate, which are allowed to drive in low-emission zones in Germany ("Umweltzonen") despite their high emissions.

¹⁰ According to a study conducted by the Allensbach Institute in 2018, the mileage of classic cars is less than 2000 km per year. https://www.ifd-allensbach.de/fileadmin/IfD/sonstige_pdfs/OLDTIMER-STUDIE_2017_18.pdf

¹¹ See <https://dip.bundestag.de/vorgang/verl%C3%A4ngerung-der-hauptuntersuchungsintervalle-f%C3%BCr-oldtimer-mit-h-kennzeichen/275404>

rising costs for defense and coping with demographic change, this is a welcome political measure, as the automotive industry is a key taxpayer and employer.

Furthermore, car drivers are an enormously large, diffuse and heterogeneous group. In terms of political economy, this means that it is difficult for them to bundle their interests and present them concisely to politicians and the public. It is virtually impossible to establish an effective representation of interests for such a broad and diverse group. Conversely, it means that it is easier for politicians to establish measures at the expense of such a group.

The lack of a budget also makes the measure immune to free riders, attempts at participation, and volume debates. Whenever a budget is made available for one industry, there are calls from other industries to also be given funding, subsidies, or tax rebates. At the same time, there are usually attempts to increase the volume of the package of measures, even in the favored industry. Fiscal measures, therefore, become a subject of dispute in politics and industry, with multiple calls for greater funding or protests from opposition parties that reject monetary contributions outright for various reasons.

Industry support implemented through regulatory means avoids all of these challenges. It may well be that the effect size of such an intervention is smaller than that of direct subsidies. However, as already discussed, they are significantly more favorable for political, not private(!), households. Furthermore, it is obvious that the described mechanisms of action have a long-term effect rather than a short-lived fiscal stimulus, which is expensive and may quickly fizzle out.

And last but not least, the entire measure of the annual inspection obligation is justified from a safety perspective, which in many cases, at least in Germany, is largely immune to economic considerations. Because when it comes to safety, the rule is usually: Who wants to argue against it?

The timing of the EU Commission's proposal is striking in connection with the presumed industrial policy dimension. Although car sales in 2024 have risen slightly compared to the previous year, they are still well below the sales figures before the Covid pandemic.¹² In addition, many European car manufacturers have come under severe economic pressure as a result of the drive towards electromobility. A demand stimulus would therefore come in very handy.

¹² <https://de.statista.com/statistik/daten/studie/1197724/umfrage/pkw-neuzulassungen-in-der-eu/>

Moreover, this is not the first time the EU Commission has made this proposal. The issue of mandatory annual testing for older cars was raised back in 2012.¹³ Even then, there was no concrete reason, but 13 years ago the European car industry was also in crisis because car sales on the continent had come under severe pressure and had fallen by around 8% compared to the previous year.¹⁴ The approach was not pursued further, but it is reasonable to assume that the EU Commission wanted to subtly stimulate demand here without needing a budget.

Inspection providers could also benefit. Although there has been more competition in recent years in Germany, with various TÜVs, GTÜ, Dekra, and KÜS offering roadworthiness tests, there is still a lack of transparency. Prices vary across federal states, lack transparency, and tend to increase over time. An annual inspection routine is unlikely to slow down this development. Rather, the lack of transparency in pricing across inspection providers could exacerbate costs for vehicle owners.

Conclusion: Mobility policies must be evidence-based

Transportation policy must be measured by its real effects, not by well-meaning intentions. On sober reflection, the proposed annual roadworthiness test requirement for older vehicles proves to be not only inefficient but also counterproductive. It creates false incentives on several levels: On the used car market, it leads to an artificial fall in the value of older vehicles, which unsettles buyers and shifts demand, with rising prices for younger used cars and social upheaval for lower-income households. Environmentally, it counteracts the sensible extension of the life cycle of cars and accelerates emissions from the production of new vehicles before existing models are used up. And the gain in terms of road safety is also marginal: empirical data from Germany and Europe shows that technical defects play a subordinate role in accidents.

What remains is the impression of a well-labeled but poorly justified initiative. It is no coincidence that this proposal is once again on the political agenda during periods of economic

¹³ See: TÜV-Pläne der EU: Was bedeutet das für die Autofahrer? | Leben & Wissen | BILD.de

¹⁴ Astrid Tribsees (16.1.2013): Neuzulassungen 2012 international: Sorgenkind Europa, AutoBild, abrufbar unter: <https://www.autobild.de/artikel/neuzulassungen-2012-international-3781306.html>

weakness for European car manufacturers, just as it was in 2012. The cascade effect and anticipation effect speak for themselves: the measure indirectly stimulates the sale of new vehicles. This is welcome for the industry and an easy lever for politicians - after all, who wants to publicly speak out against more "safety"?

But political action needs more than just good slogans. It needs evidence, proportionality, and sensitivity to the reality of people's lives. The EU Commission's proposal falls short of these criteria. Transport policy should be evidence-based and grounded in the principle of subsidiarity, not centralistic, symbolic, and ultimately industry-driven. From an economic perspective, a clear rejection is warranted.

About the FORMOE Research Forum Mobility Economics

FORMOE - Research Forum Mobility Economics is an innovative initiative for the scientific investigation of the economic challenges and opportunities of mobility in the 21st century. Through the cooperation of two technical universities with high expertise in competition and political economics, as well as in vehicle technology, FORMOE creates a unique platform for interdisciplinary research and cooperation in order to economically analyze central economic and social issues of automotive economics.

The forum was initiated and led by the economists Dr. W. Benedikt Schmal and Max Zombek, M.A.. It serves to build up expertise in mobility economics in eastern Germany and is intended to enrich the discourse on mobility issues with an economic perspective. FORMOE is based at the Ilmenau University of Technology and the Brandenburg University of Technology Cottbus-Senftenberg.

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