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Recalls in the Automotive industry

Academic skills (ACHA4005)

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1. Introduction

There are many reasons why a wide percentage of sold cars in the UK and EU end up recalled and sent back to their manufacturers, some reasons include faulty airbags or software malfunctions. In this technical report I will be deducing what the most common cause for recalls in the auto industry is and exploring why recalls are essential for road safety. "In the first eight months of 2024, around 1.1 million cars and almost 1.2 million vehicles in total have been subject to a recall notice by the DVSA." according to (Reeves, 2024) these figures provide detailed insight into how often recalls are issued.

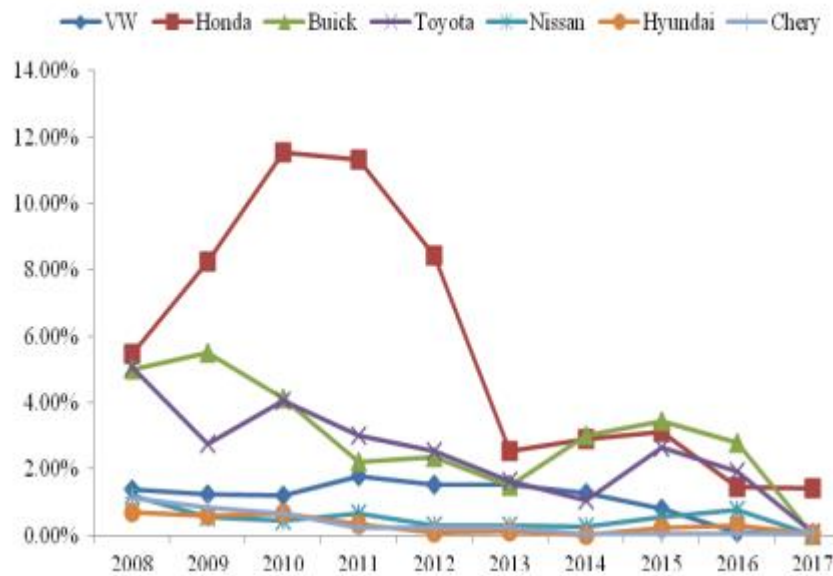


Figure 1 - Recall rates of the 7 auto brands in 2008-2017. (Feng, 2022)

In figure 1 a statistical analysis was made on 7 automobile manufacturers and their products recall rates. This shows the number of recalls between manufacturers is not consistent within every company as each face individual problems that need to be fixed in order to reduce the number of recalls coming in. These issues could take years to fix or find a solution to. Manufacturers can halt production and go back to their designs to find the issue causing the model to be issued for recalls but this leads to profit loss and other negative consequences for the business.

Another thing to note is that the DVSA (Driver and Vehicle Standards Agency) only issues recalls for safety concerns only, meaning if the vehicle in question is mechanically sound and road legal the owner or the manufacturer would have to issue the recall. This results in an even larger number of recalls that go unaccounted for in the DVSA's systems. The increase in the number of recalls in the automotive industry is due to the ever growing technological advancements in the industry. As of more recently software malfunctions have become a more common reason recalls have been issued in the auto industry, as modern vehicles become more complex more recall cases have been issued. according to (tallodi, 2022) "If an issue is not considered serious enough for a recall, the DVSA can also issue a Consumer/Garage Warning or an amendment to maintenance or servicing requirements. If a recall is required, then the vehicle will inspected then repaired if a fault

is detected. In extreme cases the manufacturer may initiate a buy-back of the vehicle to remove it from use.”.

2. Contextual/background information

Recalls can be assorted into 2 separate categories those being Safety-related recalls and non-safety-related recalls. Non-safety recalls are minor issues with the vehicle such as cosmetics, noncritical defects, and minor component faults that do not impact on the safety of the driver, any passengers, and the pedestrians that maybe within range of the vehicle while its being operated. Recalls can be harmful to the manufacturer's reputation in the long term because the general population will associate their automobiles has cheaply built and not durable leading to a loss in interest towards products in the manufacturers catalogue for example BMW with 698 recalls in the last 30 years. “The German motoring giant actually experienced a mass recall with 268,000 vehicles needing work to fix possible leaks which could lead to fires. If that wasn’t bad enough for the owners, supply issues meant that many were without their cars for up to eight weeks while the issues were resolved.” according to (Zutobi, 2022) .

Advancing technologies in the modern automotive industry like self driving capabilities and automatic braking systems which depend on sensors and complex software to be on the vehicle and be serviced and in working order along with standard vehicle maintenance makes manufacturing cars to standard every single time harder to control especially when manufacturers

are primarily using batch manufacturing to produce the models of automobiles as assembly errors due to human error or machine faults could occur.

Reasons for Recalls		
	Recall Defect	Number of recalls
1	Fire may occur	643
2	Engine may stall	458
3	Fuel may leak	231
4	Airbag may fail to deploy correctly	204
5	Steering may fail	163
6	Brakes may fail	143
7	Engine's plastic inlet manifold may melt and deform	58
8	Short circuit may occur	54
9	Exhaust gas recirculation module cooler could leak	44
10	Fuel pump impeller can crack and cause fuel pump to become inoprative	43

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Figure 2 – Reasons for recalls (Zutobi, 2022)

leading to the increase of recalls over the last decade. This is due to the likelihood of these new systems failing while in use compared to tried and tested systems on a vehicle which can be fixed by a common mechanic. Because these advanced systems are so complex to install it also means that if the problem requires a recall it is sent to the manufacturer because only the manufacturers and designers may have the capability and required knowledge to fix the issue to standard using special tools or methods only the makers are aware of the process to. Meaning if a vehicle has a issue requiring a recall if the manufacturer cannot take back the vehicle the chance of a write off is high.

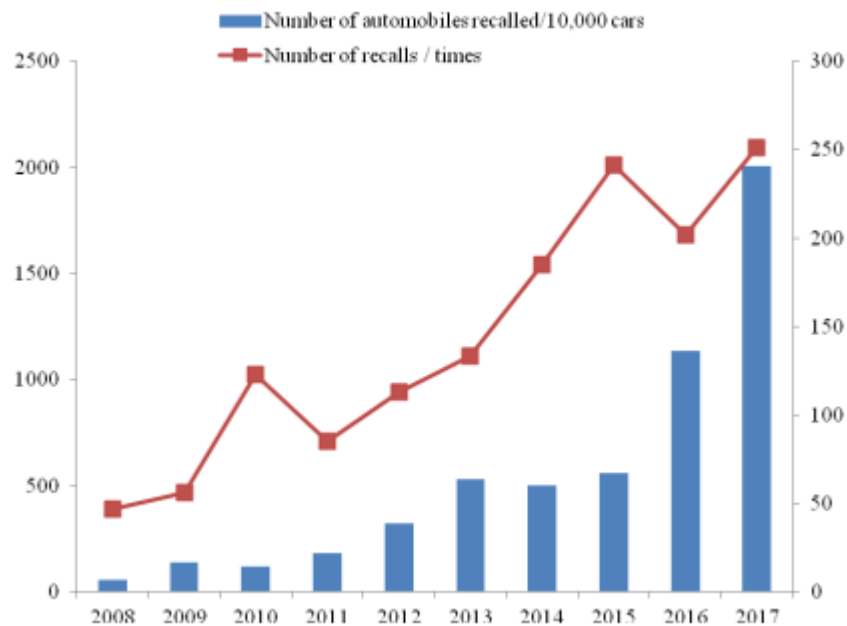


Figure 3 - Number of automobile product defect information reports and complaints in 2008-2017. (Feng, 2022)

In figure 3 it shows the correlation between the growing number of years and the number of automobiles that have been reported with defects. This may further support the idea that the more advanced technology becomes in the automotive industry the more recalls get issued.

Another more recent reason to issue a recall has been electric vehicle technologies being added to cars creating hybrid and electric automobiles including battery and charging systems which add new technical challenges that the typical petrol or diesel system would not have previously presented.

in addition to this emission standards and regulations enforced to reduce pollution make failing to comply lead to recalls being issued. This also applies to safety standards such as the vehicles crash performance and other features which are essential to the survival of the driver and passengers in the event of a crash.

3. Discussion section

Recalls are important to the automotive industry due to the fact that their primary focus is to make automobiles safer for consumers and the roads by sending underperforming vehicles back to the manufacturer. Without the ability to issue recall notices there would be a surplus of faulty automobiles on the roads which may not be able to be repaired to standard. Consumers in the modern automotive industry are more aware of vehicle safety and are more likely to report problems to the DVSA, increasing the rates of recalls further. People are also more likely to allow for investigations to be run to find the sources of the automobiles reason for failure or recall.



Figure 4 - Quality Control & Inspection Services for Vehicle Parts (ProQC, 2024)

Although recalls are positive for consumers, they can heavily impact on the manufacturers. Recalls can be extremely expensive for the manufacturer as they may need to cover the repair costs, replacement parts or compensation if the vehicle is written off and the company is responsible.

Recall cases that have led to injuries or fatalities can result in lawsuits and other legal consequences to be placed against the people responsible.

In order to reduce the number of recall cases, manufacturers must improve their quality control measures during assembly. If the problem can be found and solved early in production consumers would not have to deal with defects in their products. Improving quality control would also mean that the safety of vehicles can be assessed further by engineers.

4. Conclusions

In conclusion, Recalls allow for us to get faulty cars off the roads in a way that positively helps the consumer deal with their car's issues safely and in compliance with the DVSA and the standards they adhere to. Although recalls negatively affect the manufacturer as they must fund the repairs or provide the consumer with compensation, meaning it could range from cheap to expensive in order to efficiently fix select models they may have in their catalogue. If the recall is huge enough it can even damage the manufacturers brand reputation globally going forward. With the growth in technology within the automotive industry recalls are becoming a regular occurrence, the more complex cars become the more need for the DVSA to issue recalls due to the problems that come along with adding new features to preexisting systems, adding completely new concepts to automobiles that may not pan out or have not been effectively tested before mass production and being put on the market. Safety related recalls are the most investigated type of recall due to the higher chance of injury or fatality placed upon the operator and passengers of the vehicle. Non safety related recalls are minor inconveniences to the driver and can be ignored if the owner of the vehicle does not wish to issue it as a recall with the manufacturer and the DVSA. In order to avoid recalls quality control during the assembly and designing phases must be done to standard, not producing to standard is a common way auto companies make mistakes that translate into recalls being issued by the DVSA. If the production process is monitored correctly faults will not appear while the vehicle is in the service of a customer to these auto companies. Overall, it is within the automotive manufacturers best interest to avoid having recalls issued to them.

5. References

Feng, Y., 2022. *Analysis on the Trends and Characteristics of automobile recalls*. [Online]
Available at: <https://iopscience.iop.org/article/10.1088/1755-1315/587/1/012106/pdf>

ProQC, 2024. *Quality Control Services for Vehicle Parts*. [Online]
Available at: <https://proqc.com/industries/vehicle-parts/>
[Accessed 2024].

Reeves, F., 2024. *GBNEWS - Major car brands set to issue 260 vehicle recalls this year as millions of drivers could be impacted*. [Online]
Available at: [Major car brands set to issue 260 vehicle recallhttps://www.gbnews.com/lifestyle/cars/major-car-brands-vehicle-recalls-impacts.](https://www.gbnews.com/lifestyle/cars/major-car-brands-vehicle-recalls-impacts)

tallodi, J., 2022. *car recalls explained*. [Online]
Available at: <https://www.carwow.co.uk/guides/running/car-recalls#gref>

Zutobi, 2022. *Most Recalled Cars Report*. [Online]
Available at: <https://zutobi.com/uk/driving-guides/uk-most-recalled-cars-report>