Incentives, Externalities, and Unintended Consequences: France's Long Dependence on Diesel

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Abstract

This article examines how government incentives shaped France's long-standing reliance on diesel, creating both economic advantages and unintended social and environmental costs. After WWII, diesel tax cuts supported recovery by lowering costs for farmers, haulers, and artisans. In the 1980s, facing Japanese competition and a surplus of unused diesel, the government reinforced these incentives, aligning fiscal policy with manufacturers specialized in diesel engines. The result: by 2018, 61% of French cars ran on diesel — one of the highest rates in Europe. Yet diesel's hidden costs soon surfaced: higher fine particulate emissions, greater public health risks, and an estimated 10,000 premature deaths per year. When the state sought to reverse incentives by equalizing diesel and petrol taxation, it triggered widespread protests and the Yellow Vest movement. This paper analyzes the role of incentives in this crisis, evaluates alternative strategies, and explores policy options for a sustainable, health-conscious transport future.

Introduction

After the Second World War, Charles de Gaulle jump-started the French economy by lowering diesel taxes for the first time, providing targeted support to haulers, farmers, and artisans who relied heavily on diesel fuel.

In the 1980s, Toyota's revolutionary production system disrupted the French automotive market with reliable, fuel-efficient cars. At the same time, France replaced its diesel-based power plants with nuclear reactors to secure energy independence. The government subsequently introduced additional diesel incentives to bolster the competitive position of domestic manufacturers specializing in diesel engines and to absorb the millions of litres of surplus diesel rendered unnecessary by the power sector transition.

Today, 61% of cars in France run on diesel (INSEE, 2018), one of the highest proportions in the European Union. This dependence has produced significant environmental and public health consequences. Diesel engines emit more fine particulate matter (PM) than their petrol counterparts, contributing to heightened air pollution and potentially increasing the risk of lung cancer.

Around 10,000 premature deaths per year in France are linked to diesel emissions (European Commission, 2015; Anenberg et al., 2017). Air pollution also costs the country an estimated 100 billion euros annually (Aichi, 2015), and eleven French cities are currently under investigation by the European Commission for exceeding authorized pollution thresholds (European Commission, 2015).

In response to this long-standing crisis, the government sought to reduce the diesel–gasoline differential by aligning fuel taxes. This measure became a political and social tipping point: diesel-dependent households — symbolic of the French working and rural classes — mobilized against the policy, igniting the Yellow Vest movement. For more than seven months, the protests have shaken one of the world's most advanced economies.

This paper examines the role of incentives in this crisis, evaluates what could have been done differently, and outlines potential solutions for the present situation.

Findings and Analysis

After the war, de Gaulle's government used diesel tax reductions strategically to accelerate economic recovery, lowering energy costs for farmers, haulers, and artisans. This policy reinforced productive capacity and employment, without meaningfully altering private consumers' choices. However, after the 1973 oil shock, diesel cars became increasingly appealing to individuals due to their lower fuel consumption, and French manufacturers seized this opportunity to invest in diesel technology.

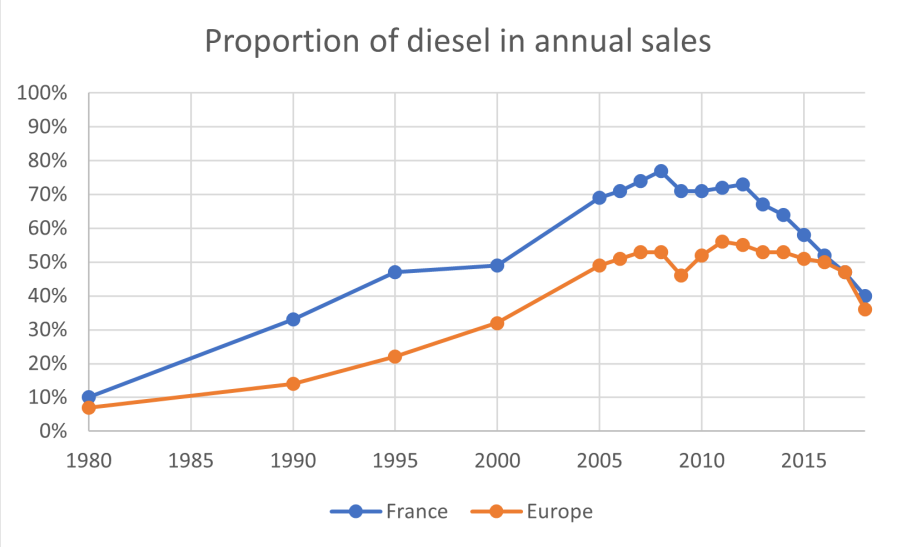

Figure 1: Proportion of diesel in annual sales. Source: (L'Argus, 2015)

In 1980, Toyota was dominating the competition thanks to its exemplary production model, heavily influenced by statistician W. Edwards Deming. In response, the French government once again reduced diesel fuel taxation and introduced VAT deductions for businesses to strengthen domestic manufacturers' competitive advantage, namely their expertise in diesel engines. As a result, the proportion of diesel vehicles in France tripled between 1980 and 1990, while it only doubled across the rest of Europe (see Figure 1). From a financial perspective, French consumers made a perfectly rational choice: diesel cars were cheaper to run and heavily incentivized by the state. Yet this apparent rationality concealed a major hidden cost — public health — which was poorly understood at the time and rarely communicated. This information gap prevented consumers from accurately assessing the trade-offs and long-term risks. What appeared to be sound economic behaviour was, in fact, driven by information asymmetry: while the government and manufacturers were aware of diesel's environmental and health risks, the general public was largely unaware.

Fast forward to the 2000s, where manufacturers marketed diesel as a form of "clean energy" on the basis that it produced fewer greenhouse gas (GHG) emissions than petrol (BP, 2000). These marketing campaigns, combined with technological advances that made more powerful diesel engines, drove a surge in sales that remained steady until 2012. After that, growing awareness of PM led to the introduction of new regulations (e.g., Euro 6) and a reduction in tax incentives for individual consumers. As a result, the cost of owning a diesel vehicle rose, diminishing its value relative to petrol-based models. In 2015, the "Dieselgate" scandal (in which Volkswagen and other manufacturers were found to have manipulated emissions tests to understate diesel pollution) was the final nail in the coffin for diesel vehicles.

The last two decades have left the country with a large number of diesel cars on the road (see Figure 2). Consequently, many people remain dependent on this fuel, constraining the government's ability to implement an effective transition toward less harmful vehicles. Meanwhile, lobbying groups and diesel-dependent corporations push back against every attempt to reduce incentives, claiming job losses that could trigger strikes with the potential to bring the country to a standstill. For this reason, company incentives remain highly attractive (see Figure 3).

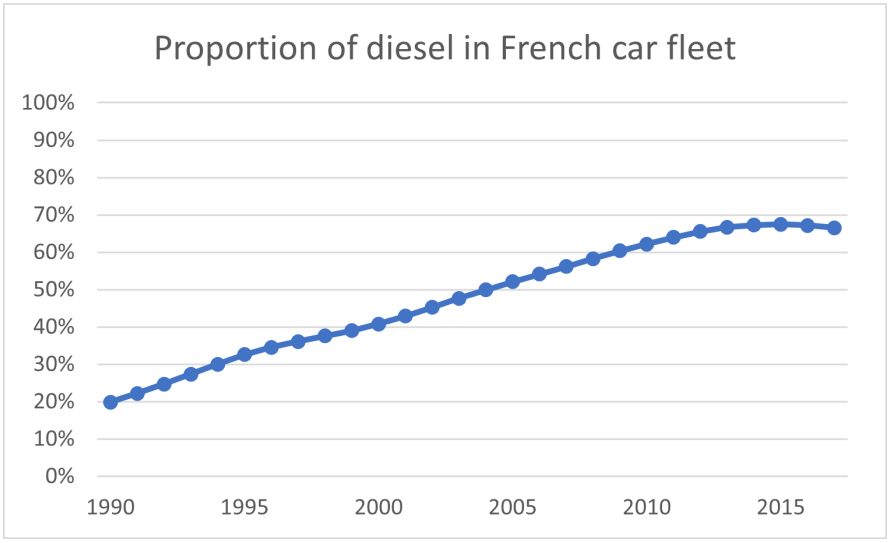

Figure 2: Proportion of diesel in the French car fleet. Source: (INSEE, 2018).

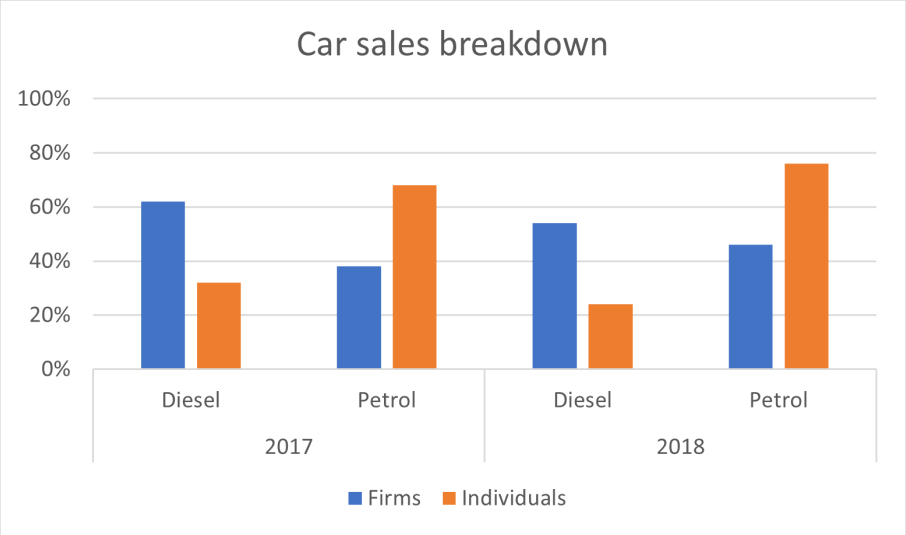

Figure 3: Car sales breakdown. Source: (Bonnet, 2018)

In this context, the government struggles to offer a clear and coherent vision of the issue (see Figure 4). Ongoing uncertainty and mixed policy signals around diesel and combustion-engine vehicles make it difficult for consumers to make informed purchasing decisions, especially for long-term investments such as cars.

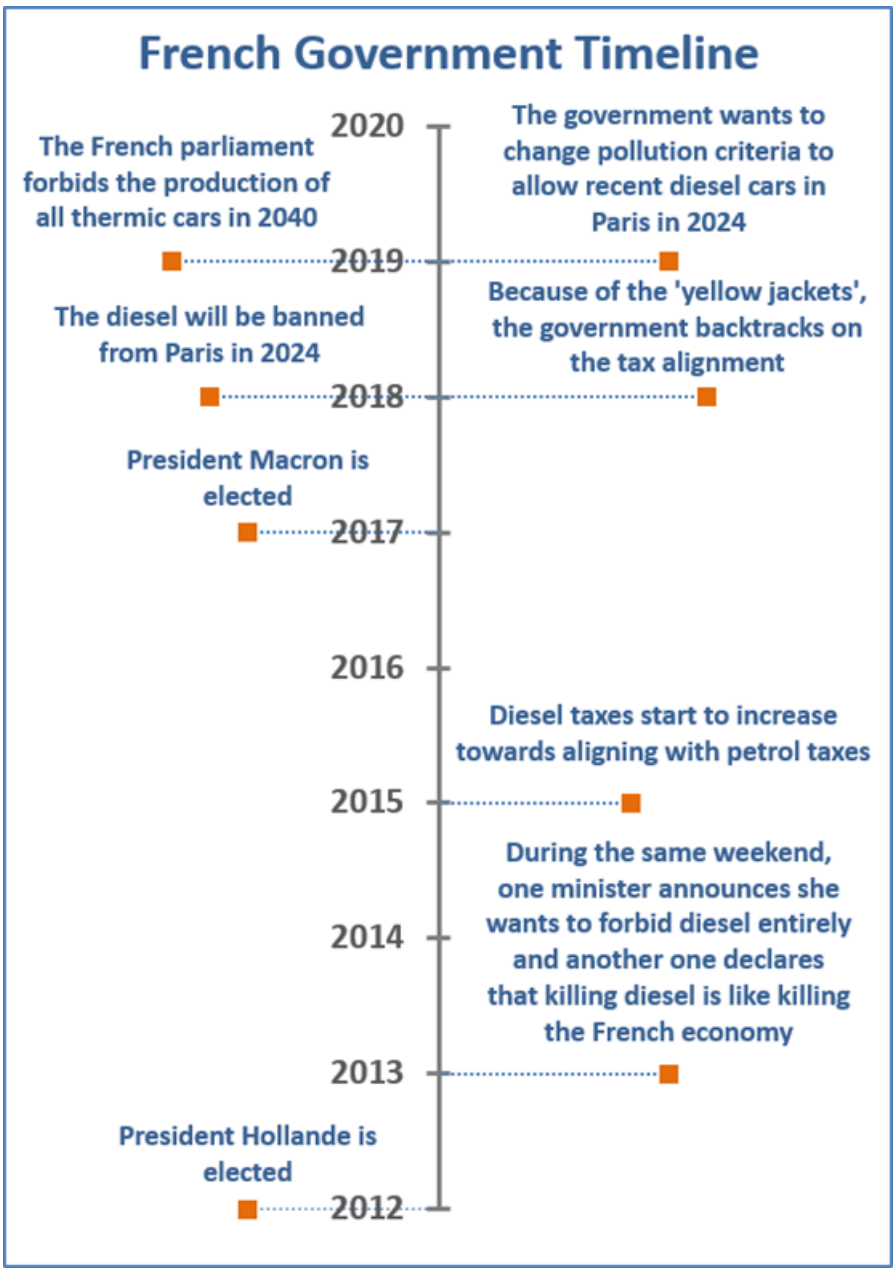

Figure 4: French government timeline

Considering the information above, one might wonder whether the French government made the right decision in the 1980s. It arguably saved the French car industry, but at what cost? The government was already aware of diesel's adverse effects: a 1983 report explicitly outlined the risks associated with diesel-powered engines and even recommended halting their production (Roussel, 1983).

Moreover, Toyota's competitive success did not stem from unfair advantages such as low labour costs. Instead, the company's focus on understanding variation and its continuous improvement mindset enabled it to reduce waste and consistently produce high-quality cars at lower costs (The Deming Institute, 2007). In contrast, the French government intervened directly in the market, distorting price signals that typically guide consumer and business decisions — what Adam Smith described as the "invisible hand". As Friedrich Hayek later argued, such intervention can undermine market efficiency by substituting market-based, decentralized decision-making with political judgment, a dynamic clearly reflected in this case.

Furthermore, the government's primary objective was effectively protectionist. This policy approach limited product variety for consumers and reduced competitive pressure on domestic manufacturers, preventing them from reaching their full potential. Had the government allowed competition to take its natural course, French manufacturers would have either improved their quality and performance or exited the market. In both scenarios, consumers would have been better off with higher-quality, more affordable cars. As for employment, Toyota would likely have created new jobs in France, offsetting those that would have been lost, as ultimately happened in 2001 when it opened its Valenciennes factory.

Discussion

Economic interventionism can profoundly shape a country's trajectory, not only economically. For this reason, governments should adopt a systemic approach when evaluating the relevance of incentives and ensure that potential unintended consequences are anticipated rather than discovered *ex post*. France's diesel policy offers a revealing case study, clearly illustrating how seemingly similar policies can lead to radically different outcomes.

In the post-war context, lower diesel taxation played a significant role in the revival of the French economy. At that time, it made sense for the government to absorb investment risk: infrastructure was in ruins, and the future was uncertain (the country had endured two wars in just thirty years).

In the 1980s, the country's economy was once again under strain, but the context was fundamentally different. Unlike the post-war years, there was no systemic shock requiring state intervention; instead, the government turned to protectionism to shield French manufacturers from foreign competition. While such measures might have been justified in the face of unfair competition (e.g., social, environmental, or fiscal dumping practices), in this case — a regular competitive market — they reduced economic efficiency, generated health issues, and produced a range of other adverse outcomes.

Today, government intervention is necessary again, but for a different reason: the country is facing a market failure due to negative externalities. Since environmental and health costs are not reflected in market prices, future policy solutions should explicitly internalize these impacts.

This analysis also shows that traditional economic theories (e.g., Keynesian, Friedman, and Hayekian views) can be valid under different circumstances. Economic decision-makers should resist the temptation to interpret the world through a single lens. There is no silver bullet; only context, state capacity, and the willingness to adjust course when evidence demands it.

Assessment of Potential Solutions

As discussed above, the current situation is complex. Most government actions to address the issue have proved ineffective or, worse, led to adverse economic outcomes (e.g., the Yellow Vest movement).

This section assesses existing initiatives and proposes potential solutions for the future. Punitive incentives have been set aside, as they risk deepening inequalities by giving wealthier individuals the so-called "right to pollute" while further pauperizing the population, already under strain.

Expanding incentives for petrol

Since raising diesel taxes to match petrol taxes is not a viable option, an alternative could be to extend all diesel-related incentives to petrol. The French government has partially adopted this approach and plans to implement it for businesses' VAT deductions by 2022.

This alternative would remove diesel-specific incentives while increasing the purchasing power of petrol car owners. In turn, the market would adjust, leading to a decrease in the proportion of diesel vehicles. Subsequently, the government could phase out both incentives gradually and equitably.

On the other hand, this approach could also encourage individuals with tight petrol-related budgets to consume more. According to the income effect, for a constant income, a price decrease loosens budget constraints and may increase consumption. Given the growing scarcity of oil and the urgency of global warming, this type of incentive is unsustainable in the long term. Still, it could represent a reasonable short-term trade-off.

Providing subsidies to replace old vehicles

Providing subsidies to replace old diesel cars with new, cleaner, non-diesel ones is another potential solution. These subsidies already exist in France, but they are insufficient to support low-income individuals, who are more likely to own older, more polluting vehicles. Moreover, the system creates a perverse incentive: since the subsidy amount depends on the new vehicle's CO2 emissions, many people use it to purchase another diesel car.

An alternative would be to increase the subsidy amount for those who need it most while reducing it for higher-income individuals. In addition, all pollutant particles (e.g., PM) should be considered, not just CO2. Given the previously mentioned cost of air pollution, a well-calibrated mechanism could be both economically viable and beneficial to public health.

Encouraging electric vehicles

Electric cars are not as clean as they may seem: their manufacturing process generates roughly twice as much pollution as that of combustion-engine vehicles. The battery is the primary source of emissions, as it requires rare-earth elements whose extraction demands large quantities of water and chemicals. As a result, pollution is often outsourced to developing countries such as China or Brazil.

However, over their full life cycle, electric cars emit two to three times fewer GHG and PM than combustion-engine vehicles (see Figure 5). Moreover, technological progress is expected to reduce reliance on rare earths for batteries and improve recycling processes (SAFT, 2018).

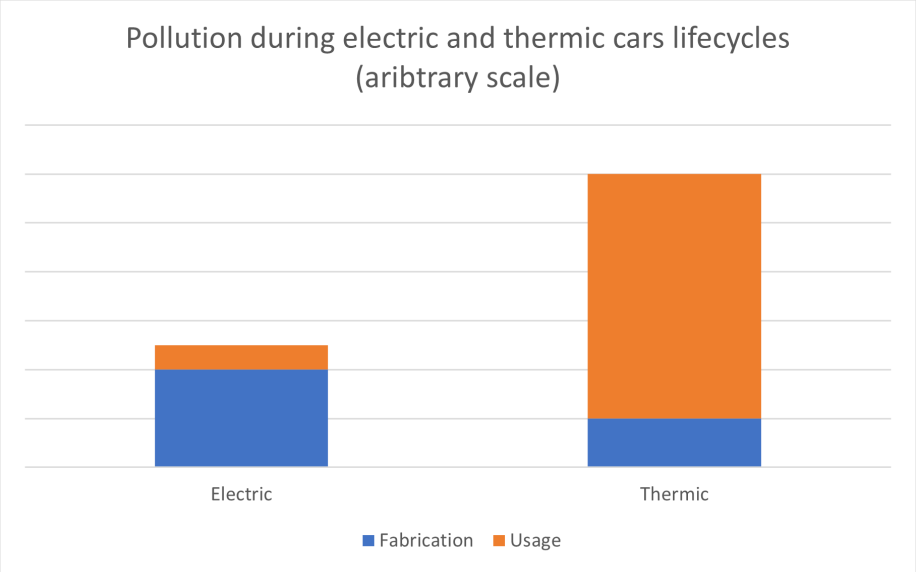

Figure 5: Pollution during electric and thermal cars' lifecycles. Source: (EEA, 2018).

France's electricity production — mainly nuclear (72%) and hydroelectric (12%) — generates very low levels of GHG and PM. Therefore, the country is well-positioned to leverage the environmental benefits of electric vehicles. Moreover, France provides subsidies that make electric cars nearly as affordable as combustion-engine models.

Soon, more competitive prices and greater utility (e.g., longer range and shorter charging times) will enhance the value of electric vehicles for consumers. Consequently, future demand, social desirability, and improved technology will shift the supply curve, reducing the share of combustion-engine cars in manufacturers' sales mixes.

Reducing the need for cars

So far, governments and manufacturers have addressed the symptoms rather than the underlying causes of the problem. It is like prescribing aspirin to relieve headaches caused by meningitis — a short-term fix that can lead to serious complications over time. Why not shift the entire paradigm instead? The idea is to reduce car use in urban centres to improve air quality and public health. Indeed, traffic congestion is one of the primary contributors to air pollution (Hermes, 2012).

Introduced in California in the 1980s, "walkable communities" are an emerging model in urban planning. These are self-contained neighbourhoods that allow residents to live, work, and access leisure activities within walking distance. They are also supported by efficient public transit systems that link them to the broader metropolitan area.

Extensive studies have demonstrated that these areas provide significant social, health, and safety benefits (Talen & Koschinsky, 2014). They also generate measurable economic value by boosting local business activity, creating employment, and encouraging consumer spending (Bent & Singa, 2008). Once established, walkable neighbourhoods require minimal upkeep from municipalities, especially when compared with the long-term costs of car infrastructure, including policing, emergency services, and maintenance.

Millennials, who now represent a large share of the working-age population, prefer to live in places where owning a car is not necessary (Mundahl, 2018), and their preferences are already shifting demand in favour of this urban model. Several cities, including Taipei, Paris, Mexico City, and Cairo, have announced plans to develop walkable cities, signalling a global shift toward healthier, more sustainable urban living (see Figure 6).

Figure 6: Paris Smart City Project

Conclusion

France's long reliance on diesel reflects how well-intentioned incentives can generate severe unintended consequences when economic, environmental, and social factors are misaligned. Initially justified to rebuild the post-war economy and protect national industry, these policies evolved into structural distortions that prioritized short-term competitiveness over public health and sustainability. The eventual reversal, through tax realignment and pollution regulations, triggered political unrest, illustrating the cost of delayed correction.

Going forward, effective transport policy must internalize externalities, foster technological neutrality, and balance economic growth with environmental responsibility. Policymakers should adopt a systemic approach that evaluates incentives across their full lifecycle, integrating health, climate, and equity dimensions. The diesel crisis ultimately serves as a cautionary example: lasting prosperity requires policies that not only stimulate production but also preserve the well-being of both citizens and the planet.

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