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A government-driven sectoral transformation? French and German policy responses to the COVID-crisis in the automotive industry

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Abstract: This paper explores the COVID-era government stimulus programs for the automotive industry in France and Germany. We assess the design of the sectoral support packages and the related policymaking processes against the background of the discourse about crisis-era state aid as an instrument of economic restructuring. We place the sectoral stimulus programs in the context of changing EU-level regulations and the following three country-level characteristics: the revival of industrial policy thinking among national policymakers; the growing economic pressures in the domestic automotive sectors; and the established structures of government-industry interest intermediation. Our results suggest that in both countries, large and technologically transformative recovery programs were introduced for the automotive sector. However, both support packages had a rather structurally conservative character and were influenced by different pre-existing state-industry dynamics: the corporatist concertation in Germany and post-dirigiste state interventionism in France.

Keywords: European Union; France; Germany; automotive industry; COVID crisis; electrified vehicles; industrial policy; corporatism; post-dirigisme.

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1 Introduction

Following the outbreak of the COVID-19 pandemic, many governments across the world decided to introduce generous stimulus programs to mitigate the negative economic effects of domestic lockdowns, depressed consumption, and transnational supply-chain disruptions. Based on the experience of the 2008 financial crisis, policy debates initially focused on the necessary size of the stimulus packages and the choice of instruments that could effectively counter any economy-wide or sector-specific downturns (see Baldwin and Weder di Mauro, 2020). However, as the first shock passed, the idea of using crisis-era state aid as an instrument of economic restructuring increasingly took centre stage (Fratzscher and Michelsen, 2020; Mazzucato and Andreoni, 2020).

Against this background, an important topic of the policy debate in the European Union (EU) has been the provision of public support for the automotive industry. The COVID crisis came at a difficult moment, in which the sector was entering a new technological path of low- and no-emission electrified powertrains (Humphrey and Lechowski, 2020). From the perspective of established automotive firms and car-producing countries, this transition represents a considerable challenge, as the shift to electrified vehicles (EVs) will destroy many existing industrial capabilities and will require significant investment in the development of new technologies. At the same time, the political pressure within the EU to accelerate the sectoral transformation has significantly increased over the last couple of years. In the context of the COVID pandemic, the regulations attached to the recovery and resilience facility (RRF) – currently being implemented as the centrepiece of the next generation EU (NGEU) recovery plan – have reemphasised the need to stimulate the green and digital transformations of the EU economy (EC, 2022). Moreover, the EC (2020a) has explicitly indicated its willingness to use the crisis as an opportunity to encourage pro-environmental technological change in the automotive sector.

Our main goal in this paper is to reconstruct the policymaking processes and policy outcomes of COVID-era sectoral government interventions in two of the EU’s key car-producing economies: France and Germany. Our focus on these two member states is grounded in the observation that both countries face serious economic risks resulting from the sectoral transformations promoted by the EU-level policy discourse – such as negative labour-market implications or diminishing shares of domestic sectoral value creation. The main interest of the following analysis is to explore whether and in what ways the two national governments have managed to use the COVID-era recovery

programs to accelerate and steer the ongoing restructuring processes in their domestic automotive industries. We will focus on country-level developments, since, in the context of the COVID crisis and the NGEU plan, the EU has left decisions regarding the introduction of any industry-specific support programs to the discretion of individual member-state governments.

The following case study addresses two sets of empirical questions:

- First, regarding *the design of the two COVID-era recovery programs*: What kinds of measures to support the automotive industry have been implemented in France and Germany? To what extent and in what ways do these measures promote technological change in the sector?
- Second, focusing on the *policymaking processes* behind the two national recovery programs: Which country-level actors have been able to shape the stimulus programs and in what way? How can we understand the relationship between the transformative EU-level policy discourse and the interventions of the two national governments?

The remaining part of this paper is structured as follows. In the next section, we reconstruct the broader regulatory, institutional, and sectoral-economic contexts of the COVID-era government interventions in the French and German automotive industry. Building on this, Section 3 analyses the design of the two sectoral stimulus packages and the related policymaking processes. The final part of the paper summarises the results of the case study and formulates some broader conclusions regarding the dynamics of business-government relations and the perspectives of transformative policy intervention in the two national automotive sectors.

2 Conceptualising sectoral government involvement in France and Germany

To explain the characteristics of the two COVID-era sectoral government interventions, we propose to consider the influence of broader structural conditions that shape state-business relations in the French and German automotive industries. Drawing on existing literature, we will focus on the following set of country-specific and EU-level factors.

2.1 Government-industry dynamics at the national level

Relevant to understanding the country-level political dynamics in the automotive sector is, *first*, the gradual *revival of industrial policy thinking* in France and Germany, which challenges the more dominant neo- or ordo-liberal policy discourses in the two countries (Levy, 2017; Schnellbach and Schwuchow, 2019). In Germany, an important step towards a more strategic involvement of state actors in industrial governance was made around 2006, when the first national high-tech strategy (HTS) was introduced by the government. This strategy aimed to stimulate domestic R&D activities and support innovation-oriented companies in selected key technology domains (Allen, 2010; Garcia Calvo and Coulter, 2020). Later, in 2013, the *Plattform Industrie 4.0* initiative was established within a follow-up HTS framework to promote the digital transformation of

manufacturing industries (Bianchi and Labory, 2020). In France, the recent revival of industrial policy thinking can be traced back to the 2008 financial crisis and the subsequent reintroduction of *filière* policies (Klebaner and Voy-Gillis, 2022). These sector-specific coordination frameworks were established by the government to stimulate multi-actor collaboration and foster the development of new productive capabilities in selected manufacturing sectors. However, the actual impact of these policies on domestic industrial upgrading remains controversial (Pardi, 2020). More recently, in both France and Germany, the idea of government actors providing direct economic support and guidance to strategic industries has gained particular relevance in the context of growing global competitive pressures and technological rivalries (Alami and Dixon, 2020). This new and explicitly geopolitical industrial policy discourse emphasises the importance of the automotive sector for the two national economies and highlights the need to develop stronger domestic capabilities in the production of such critical emerging components as electric batteries and semiconductors (BMW, 2019).

Second, an important factor influencing COVID-era sectoral government interventions in France and Germany is the serious *domestic economic pressures* related to ongoing structural change in the automotive industry. Although both France and Germany continue to be important car manufacturing locations in Europe, during the last two decades their domestic production bases have been exposed to intensive cost-driven relocation processes. Automotive production volumes in France began to decline sharply around 2004 and had fallen by over 40% by 2019. Likewise, France has lost around 120,000 automotive jobs since 2004. The ongoing transition to electromobility has not reversed these trends. For instance, the key national carmaker Stellantis (until 2021: PSA) has already announced that several of its new electrified models will be produced in Spain and Slovakia. In Germany, the impacts of transnationalisation processes have so far been much less severe. In 2018, there were over 880,000 people employed in automotive production in the country – a disproportionately large number compared to the approx. 230,000 employees in France (ACEA, 2021). In addition, despite ongoing cost-driven relocations, many German plants have managed to specialise in high-value-added tasks and cutting-edge products within regional production networks (Schwarz-Kocher et al., 2019). However, the imminent shift to EVs has already put a huge transformative pressure on the automotive production base in Germany, and may negatively impact both domestic employment levels and the country's share of automotive value creation (for an overview of macroeconomic predictions, see Krzywdzinski et al., 2022). In particular, technological change may harm the domestic supplier sector, which includes many relatively small and medium-sized firms producing components for internal-combustion-engine (ICE) powertrains.

Finally, *third*, we can assume that the design of the two crisis-era stimulus packages was influenced by the established *structures of state-industry interest intermediation* (Meckling and Nahm, 2018). Based on the existing literature, France and Germany can be described as two different models of sectoral governance, whose characteristics shape the ability of the industry to influence government policies and – vice versa – the government's capacity to implement relevant policy proposals. The German case is usually described as a *corporatist* regime, involving close coordination (or concertation) between industry, the state, and trade unions. Within this arrangement, the role of the state is to facilitate sectoral collective action by orchestrating intermediation and providing the necessary institutional or regulatory conditions (Vitols, 1997). The continued relevance of this framework was demonstrated during the 2008 financial crisis,

when the tripartite negotiations helped the government implement various emergency labour-market policies, such as short-time work (Dribbusch, 2012). But at the same time, the close sectoral coordination regime has also created a risk of policy capture by the industry (Meckling and Nahm, 2018). A prominent example of this from the transition to EVs was the failure of the government-supported national platform for electric mobility initiative, whose ‘transformative’ agenda for the sector was largely shaped by the interests of the dominant incumbent producers (Hildermeier and Villareal, 2011; Meckling and Nahm, 2018; Schroeder, 2021). In France, existing literature on the country’s evolving state-industry relations suggests an increasingly weak sectoral coordination regime. Trade unions in France have long been perceived as incapable of mobilising significant numbers of workers (Rhodes, 1998) – making them rather unattractive political allies for both the government and business. In addition, due to the historical disintegration of the ‘dirigiste’ institutional framework, the ability of the state actors to develop relevant strategic plans and influence company behaviour has significantly diminished in recent decades (Klebaner and Voy-Gillis, 2022; Levy, 2017). This can be seen in the ongoing decline of the domestic automotive production base, which has continued despite many ambitious interventions from the government (Pardi, 2020).

2.2 The evolving EU regulatory context

As well as country-level factors, any analysis of the two national recovery programs for the automotive industry also needs to acknowledge the impact of EU-level regulations. On the one hand, the EU’s mode of economic governance is usually characterised as a market-oriented model, which assigns a high priority to competition policy and emphasises primarily ‘horizontal’ forms of public intervention (e.g., the public supply of infrastructure, education, or pre-competitive R&D; see Mordue, 2020) as appropriate instruments to promote industrial development (Bulfone, 2022; Dullien and Hackenbroich, 2022; Landesmann and Stöllinger, 2020). Given this, both individual member-state governments and EU institutions should only have very limited direct influence on restructuring processes in the industrial economy. However, following the outbreak of the COVID pandemic, the EC decided to suspend some key competition-policy regulations to facilitate the introduction of various state-aid programs by national governments (Meunier and Mickus, 2020). This created a significant opportunity for member states to provide direct economic support to companies and influence ongoing restructuring processes in the automotive sector. Second, in addition to crisis-era ‘emergency’ policies, some incremental but more fundamental changes have occurred within the EU’s regulatory context in the past decade that have gradually pushed the EU away from the established neoliberal paradigm of economic governance. In the following, let us discuss two particular developments that are of central importance for the automotive sector.

First, there is the tendency towards more proactive involvement of EU institutions in sectoral governance processes to support and guide the development of stronger domestic industrial capabilities. Within this policy discourse, the emphasis on the need to enhance the international competitiveness and resilience of the EU economy goes hand in hand with the growing recognition that market-based mechanisms alone may not be able to secure the EU’s ‘strategic autonomy’ in key emerging technology domains (EC, 2021).

The main instrument activated in this context in the automotive industry has been the Important Projects of Common European Interest (IPCEIs), which allow EU member states to provide direct economic support for firms and other industry actors involved in strategic technological innovation (Pichler et al., 2021). Although this policy tool existed already earlier, it had hardly been used until 2014, when new application guidelines and eligibility criteria were specified (EPSC, 2019). The most significant IPCEI initiatives to date in the automotive sector have been the two large international consortia focused on the development of battery technologies. These projects were approved in 2019 and 2021 and received total financial support of around €6 billion. Both projects involve many established French and German automotive firms, which joined the consortia either as direct partners or as stakeholders in specialised battery-technology firms.

Second, the growing environmental concerns related to climate change have prompted EU policymakers to adopt an increasingly top-down approach to implementing transformative ‘green’ economic policies (Pichler et al., 2021). Most recently, the Von der Leyen Commission (2019–2024) integrated the goal of achieving climate neutrality by 2050 into the new industrial strategy for Europe (EC, 2020b; Körner, 2020). The primary focus of the pro-environmental policy efforts in the automotive sector has been the attempt to phase out ICE vehicles (ICEVs) through increasingly strict *vehicle emission standards* (Pardi, 2021). Relevant are here, first, the so-called ‘Euro’ tailpipe emission norms, which were launched in 1992 and focus on various kinds of air pollutants such as nitrogen oxides or particulate matter. Second, there are the CO₂ fleet-wide emission standards, first introduced in 1998 on a voluntary basis, which apply to the average emission levels of the total new vehicle fleets sold by a given carmaker in the EU. Following the failure of the automotive sector to achieve the voluntary target of 25% reductions in CO₂ emissions by 2008 (140 g/km on average), the EC decided to make these norms mandatory – with huge penalties for carmakers that fail to meet the standards.¹ However, in the case of both kinds of standards, the exact specifications of emission levels have, until very recently, been strongly influenced by the economic interests of the dominant automotive firms – and in particular, by the interests of the German car sector (Haas and Sander, 2019). As a matter of fact, only after the dieselpgate scandal of 2015 has the tightening up of regulations gained momentum and forced carmakers to increase their sales of zero- or low-emissions vehicles. Most recently, following the outbreak of the COVID pandemic, the EC announced new and even stricter Euro and CO₂ norms, which may entail a *de facto* total ban on the sales of ICE cars in the EU by 2035.

3 COVID-era government interventions in France and Germany

Building on the above reconstruction of the country- and EU-level contextual factors, the following empirical case study investigates the design and the related policymaking processes of COVID-era sectoral stimulus packages in France and Germany. Our main interest in the analysis is to investigate whether the two governments have been able to use the crisis as an opportunity to accelerate and steer processes of technological change in their domestic automotive industries. More specifically, we investigate how the potentially transformative crisis-era interventions may have interacted with the pre-existing national sectoral dynamics and the EU regulatory context. Our comparative case study relies on two kinds of empirical sources: qualitative expert interviews and

archival online data describing the two stimulus programs and the related country-level political dynamics.

3.1 France

The COVID-crisis had a significant impact on the automotive industry in France, as demonstrated by the total volume of domestic production (−38%) and the number of new car registrations (−26%) in 2020. When the first national lockdown was announced in March 2020, the French government quickly introduced a horizontal recovery package worth €45 billion. This covered some of the employment costs and fiscal and social contributions of companies and provided state-backed loans for crisis-affected firms. It was largely thanks to of this initial state-aid program that the domestic automotive industry survived the crisis without major closures or layoffs.

Following the horizontal support measures, the French government decided to also introduce various sector-specific programs. Although public opinion and political actors held a rather supportive (or neutral) stance towards these plans, policymakers have been confronted with different (and often conflicting) expectations from the automotive industry itself. One of the main sectoral associations, the *Plateforme de la Filière Automobile* (PFA) – created in the aftermath of the 2008 crisis and representing the interests of Renault, PSA and the three major national suppliers² – requested that the government stimulate demand for battery-electric and plug-in hybrid-electric vehicles (hereafter: BEVs and PHEVs) and support the development of domestic charging infrastructure. The PFA formulated these demands in response to the increasing regulatory push at the EU level – and primarily, to the threat of severe penalties for carmakers that failed to meet the increasingly strict CO₂ emission standards. The other key French automotive association, *fédération des industries des équipements pour véhicules* (FIEV) – which represents the interests of smaller suppliers – called for the government to introduce a ‘reshoring pact’ that would create incentives for carmakers to relocate production back to the country. Moreover, the FIEV requested that any demand-side measures used to stimulate the domestic market focus not only on EVs, but also include traditional ICE cars. In addition to the diverging expectations of the main industry associations, another important aspect of the political dynamics around the sectoral recovery package was the effective exclusion of trade unions from the negotiation process.

The official announcement of the sectoral recovery package – *Le plan automobile*, worth around €8 billion – was made personally by President Emmanuel Macron during his visit to a Valeo electric-engine plant in late May 2020. Macron stated that the overall goal of the plan was to help the country become a leading EV producer in Europe within the next five years (Automotive News, 2020b; L’Elysée, 2022). Regarding the conditions tied to the state-aid package, it was reported that the government explicitly required the key national carmakers (PSA and Renault) to reshore some of their production activities in exchange for financial support (Automotive News, 2020a). In addition, policymakers also tried to obtain guarantees regarding companies’ investments in domestic battery-manufacturing capabilities. Negotiations with industry actors regarding these conditions were, however, anything but easy. Perhaps most importantly, Renault – which is 15% owned by the state – was unwilling to join the state-supported automotive battery consortium ACC (funded under the IPCEI program), in which PSA (Renault’s main

national rival) was already a member. Meanwhile, the carmaker reported a record loss of over €7 billion in early 2020 and had to request financial assistance from the government to survive the crisis. While the EC quickly approved the application for a state-guaranteed loan (worth €5 billion), the ministry of economic affairs attempted to tie the actual provision of these funds to the condition that Renault become a member of the battery consortium. However, the company successfully resisted political pressure and, instead of joining the project, promised to locate the production of two EV models in France and establish its own battery plant through a joint venture with a tech partner from Asia.

More details about the stimulus program for the automotive industry (beyond the special loan to Renault) came in September 2020 – as part of the government’s announcement of the €100 billion national COVID recovery plan, *France relance*. In particular, the following three sector-specific measures were important in managing the transition to EVs (see Table 1 for a broader overview):

- First, the government introduced two kinds of demand-side subsidies: a scrappage scheme for up to 200,000 vehicles targeted at middle- to low-income households, and an EV buyer-incentive program. Although the subsidies clearly privileged BEVs and PHEVs (as requested by the PFA), they also covered more traditional ICE cars (as requested by the FIEV association). At a later point in the pandemic, however, the government extended the program to the year 2021 without any ICEV incentives. Regarding their impact on the domestic market, the crisis-era demand-side measures pushed the share of EVs in new car registrations to the record levels of 11% in 2020 and 19% in 2021 (IEA, 2022).
- The second key sector-specific intervention focused on stimulating domestic technological innovation and supply-chain restructuring. Funds were awarded on a competitive basis to companies and addressed the following three areas:
 - 1 the digitalisation and robotisation of automotive-supplier plants and SMEs (€200 million in 2020 and €600 million within the next three years)
 - 2 R&D projects in battery technology, hydrogen, and power electronics (€150 million)
 - 3 financial support for crisis-affected domestic suppliers (€600 million, including €200 million provided by Renault and PSA).

While all these goals targeted issues that are of central importance for the French automotive sector, we may note that the allocated funding was relatively small—in particular, with regard to such capital-intensive R&D goals as battery-technology development.

- Finally, the third key sector-specific program allocated €500 million to mitigate negative employment effects caused by the transition to EVs (e.g., through retraining measures). The program was managed by the PFA and, given that the association represents the interests of key established firms, can be seen as an indirect form of financial support provided by the government to these companies. More specifically, we may assume that the companies were able to use these funds as an important argument within their negotiations with trade unions resisting the technological transformations at the company level.

Table 1 Main sectoral support programs in the French COVID recovery package

<i>Program</i>	<i>Main goals</i>	<i>Allocated funds</i>
Demand stimulus	<ul style="list-style-type: none"> • Scrappage scheme: <ul style="list-style-type: none"> €3,000 for modern ICE vehicles with low CO₂ emissions €5,000 for BEVs or PHEVs (with electric ranges above 50 km) • BEV buyer incentives: <ul style="list-style-type: none"> €7,000 for cars below €40,000 (€5,000 in case of fleets) €3,000 for cars between €40,000 and €60,000 • PHEV buyer incentives: <ul style="list-style-type: none"> €2,000 for cars below €50,000 (with electric ranges above 50 km) 	€1.90 bn
Public procurement	<ul style="list-style-type: none"> • ‘Greening’ of the public-sector vehicle fleet 	€0.18 bn
Funds for the ‘future of the automobile’	<ul style="list-style-type: none"> • Support for digitalisation and robotisation of suppliers and SMEs (€0.2 bn in 2020 and €0.6 bn within the next three years) • Support for R&D: batteries, battery recycling, hydrogen, power electronics (€0.15 bn) • Support for crisis-affected suppliers, including merger-and-acquisition support (€0.6 bn; including €0.2 bn from carmakers) 	Approx. €1.55 bn
Charging infrastructure	<ul style="list-style-type: none"> • Additional funding for charging infrastructure 	€0.10 bn
Employment and training	<ul style="list-style-type: none"> • Managing negative employment effects (program managed by the PFA) 	€0.50 bn
Total estimated budget of the <i>France relance</i> program		Approx. €100.00 bn

Source: Authors, based on Gouvernement de la République Française (2020a, 2020b)

While the three sector-specific stimulus measures were introduced as part of the national COVID-era recovery package *France relance*, they were later extended to the years 2021 and 2022. Moreover, in October 2021, the government unveiled an additional stimulus program, *France 2030*, focused on promoting sustainability transitions in multiple sectors of the French economy. Within this package, the funds directly allocated to the automotive sector addressed the needs of the supplier companies and regions negatively affected by the technological change (€300 million for suppliers and €100 million for regions). In addition, some larger funds have been proposed for reskilling measures across different sectors of the national economy (Gouvernement de la République Française, 2021).

3.2 Germany

Similar to what we observed in the French case, the German automotive industry was also strongly affected by the COVID crisis. One indication of this is the domestic employment reductions announced in the sector during the pandemic. Based on media reports collected in the European Restructuring Monitor (Eurofound, 2021), the net loss of automotive jobs in Germany between March 2020 and October 2021 amounted to around 43,000 employees – far more than in other European countries, although proportionally comparable to the job losses in France. The negative impact of the pandemic is also reflected in the company data. Although the main German carmakers managed to stay profitable in 2020, their cumulative global turnover fell by around 10% in comparison to 2019 (Statista, 2021). The situation was most difficult in the supplier sector, with some key companies reporting losses of several hundred million euros. We may assume that many smaller German producers were only able to avoid bankruptcy due to the generous horizontal support program introduced by the government at an early stage of the pandemic (DB Research, 2020).

Apart from the economy-wide support measures, the idea of a sector-specific recovery package targeted at automotive firms surfaced in Germany in early spring 2020. Initially, the proposal generated many controversies in the public sphere, and it took the government a few months to decide whether this kind of support program should actually be introduced – and if so, in what form. The concept was contested by environmental NGOs and social movements. Moreover, some economically liberal politicians and think-tanks were also sceptical of the idea. Eventually, in June 2020, despite strong political resistance, the ruling ‘grand coalition’ of conservatives (CDU/CSU) and social democrats (SPD) announced the sector-specific stimulus program as a part of the national COVID recovery program (worth approx. €130 billion in total). The official document presented to the media listed a number of measures targeted at the automotive industry (totalling around €7 billion) and emphasised that the funding should reinforce the sector’s transition towards more environmentally sustainable technologies (BMW, 2020).

In addition to the public debate, the decision to introduce the targeted recovery program was accompanied by a series of multilateral meetings – the so-called *Autogipfel* (automotive summits) – which involved high-level representatives of the state, the key automotive trade union (IG Metall), and selected industry actors (including: the three main carmakers, BMW, Daimler, and Volkswagen; key supplier firms; and the VDA association). The *Autogipfel* series was launched already before the COVID-crisis (in 2019) and, from the very beginning, focused on the question of the possible provision of financial support to the industry in the context of the transition to electromobility. After the outbreak of the pandemic, however, the pressure on the government has increased significantly. One common expectation articulated by the industry and the labour representatives was a request that the government more actively defends domestic automotive firms against any regulatory interventions from Brussels. At the same time, however, the COVID-era negotiations also revealed some clear divergencies between different industry actors. Given the recently announced stricter EU emission standards and the huge penalties for non-compliant firms, the carmakers (and in particular: Volkswagen) emphasised the need to introduce demand-side measures to stimulate the domestic EV market. These demands conflicted with the position of some established suppliers – and in particular, the smaller ones, represented at the *Autogipfel* primarily by IG Metall – whose business models depended to a much larger degree on the production

of traditional ICE powertrain components. Finally, regarding its overall position during the negotiations, IG Metall lobbied for a ‘technology-open’ approach that would include support measures for the producers of both electrified and more traditional ICE cars (IG Metall, 2020).

As diverse as all these expectations were, the list of support programs eventually included in the sectoral recovery package seemed to accommodate the interests of practically all the actors involved in the *Autogipfel* negotiations. Let us take a closer look at three particularly important programs proposed by the government (see Table 2 for a broader overview):

- First, program 35b³ doubled buyer subsidies for EVs that had been put in place in 2016. The proposal to introduce this measure sparked many controversies during the industry-government negotiations. While various actors from civil society (e.g., environmental NGOs) strongly opposed the introduction of incentives for PHEVs, the eventual integration of these kinds of cars into the program has been a political success for both the business actors and IG Metall. In the context of increasingly strict EU emission standards and the growing popularity of BEVs, stimulating the domestic demand for PHEVs can be interpreted as a lifeline for the domestic supplier firms that are still largely dependent on the production of various ICE technologies.
- Another sector-specific measure, program 35c, allocated €2 billion to promote technological upgrading activities by automotive firms and research organisations. Although the grant competitions were primarily targeted at the supplier sector and SMEs, larger companies were also allowed to take part. The scope of upgrading activities supported within the program was very broad. For one thing, funding was provided to promote the transformation of regional supplier clusters. During negotiations with the government, the importance of this measure was emphasised by IG Metall, which has a strong organisational base in many regions highly dependent on the production of ICE components. Another focus of the program was support for diverse vehicle-technology innovation. The Ministry of Economic Affairs, which was responsible for the program, emphasised, however, that the funding scheme was not targeted especially at battery-electric technologies. Rather, the program was meant to include any ‘economically viable’ powertrain technologies. Considering this, the measure can be seen as yet another form of economic support tailored to the specific needs of traditional domestic supplier companies. Finally, the program’s third component focused on the digitalisation of production infrastructures and strongly relied on earlier ‘smart manufacturing’ initiatives coordinated by the German government – such as the *Industrie 4.0* initiative or the more recent Gaia-X project (see Lechowski and Krzywdzinski, 2022).
- The last of the key COVID-era sectoral programs, 35f, provided support for the development of domestic charging infrastructure and R&D projects in the field of electromobility and battery technology. €2.5 billion was initially allocated to these goals. Regarding battery technologies, our online data suggest that some of the funds may have been used as a part of the German contribution to one of the international IPCEI battery consortia. Furthermore, various official documents indicate that around €1 billion was targeted towards projects supporting the development of both commercial and private EV charging stations in the country. The introduction of this

particular measure closely corresponded with the expectations articulated by key German industry actors during negotiations with the government (and especially, by the carmakers and the VDA association).

Table 2 Main sectoral support programs in the German COVID recovery package

<i>Program</i>	<i>Main goals</i>	<i>Allocated funds</i>
35b	<ul style="list-style-type: none"> • BEV incentives: €6,000 for cars below €40,000 €5,000 for cars between €40,000 and €65,000 • PHEV incentives: €4,500 for cars below €40,000 €3,750 for cars between €40,000 and €65,000 	€2.20 bn
35c	<ul style="list-style-type: none"> • Support for technological innovation by firms (mostly suppliers and SMEs) • Focus on: regional clusters, new vehicle technology, digitalisation of production 	€2.00 bn
35f	<ul style="list-style-type: none"> • Development of domestic charging infrastructure • R&D in the field of electromobility and battery technologies 	€2.50 bn
35d	<ul style="list-style-type: none"> • Fleet renewal program (focus on EVs for social workers) 	€0.20 bn
Total estimated budget of the national COVID recovery program		Approx. €130.00 bn

Source: Authors, based on Deutscher Bundestag (2021).

Similar to the decision of the French government, also German policymakers – following another *Autogipfel*, held in November 2021 – announced a supplementary support package targeted at the automotive industry, in addition to the sector-specific measures already included in the main national COVID recovery program. Partly overlapping with the aims of the earlier program, the package allocated an additional €3 billion for the attainment of the following three goals: the extension of EV buyer subsidies until 2025 (€1 bn); the introduction of incentives for the replacement of old diesel-powered trucks by newer models (€1 bn); and the provision of financial support for technological innovation by regional clusters and SMEs (€1 bn). At the same time, however, some of these measures (along with earlier decisions) were fundamentally revised by the new ruling coalition that came to power in December 2021. Perhaps most importantly, the new Minister of Economic Affairs from the Green Party (Robert Habeck) reduced the subsidies for electrified cars and entirely excluded PHEVs from the program.

4 Summary and conclusions

This paper investigated the COVID-era government stimulus programs for the automotive industry in two key European car-producing countries, France and Germany. Our main goal was to explore the design of the sectoral support packages and the dynamics of the related policymaking processes against the background of the discourse about COVID-era state aid as an instrument of economic restructuring. In particular, we

aimed to investigate how potentially transformative crisis-era policy interventions have interacted with the pre-identified set of EU-level and country-specific sectoral conditions.

Our analysis reveals that both governments introduced very generous stimulus packages to promote structural change in the automotive industry. Both national recovery programs contained a number of transformative sector-specific measures, such as buyer incentives for EVs, investments in charging infrastructure, or direct subsidies to firms involved in technological innovation. However, the direction and pace of the sectoral restructuring processes were largely pre-determined at the EU level. Perhaps most importantly, it was the increasingly strict vehicle emission regulation that pushed national policymakers and producers towards the quite ambitious sectoral transformation strategies. Considering this, we may even argue that the COVID-era government interventions had an 'adjustive' (and at times defensive) nature, and attempted to tailor the EU-level policy discourse to country-specific sectoral conditions. In both countries, the automotive industry continues to be perceived as a key sector of the economy, and during the COVID pandemic, both national governments demonstrated their willingness to secure domestic automotive jobs and national shares of sectoral value creation. Moreover, the two governments integrated a number of measures in their stimulus packages specifically focused on the needs of more traditional firms which are dependent on the production of ICE technologies. Given these observations, our analysis provides a concrete example of how member-state governments develop 'creative' industrial-policy interventions to protect domestic industries from the impact of EU-level regulation (Clift and Woll, 2012).

However, despite many similarities between the two cases, our empirical analysis also reveals some slight but not insignificant differences between the COVID-era government interventions in France and Germany. The French stimulus program was less focused on directly supporting the development of new technological capabilities. It provided relatively smaller subsidies for the expansion of EV charging stations, the digitalisation of production infrastructure, and battery-technology innovation. At the same time, the French government granted a large state-guaranteed loan to Renault (€5 bn), hoping in this way to secure the company's commitment to domestic production and innovation. It is still too early to say whether this approach will achieve the desired outcomes. On the other hand, our analysis indicates a relatively greater determination on the part of German policymakers to introduce support programs to stimulate bottom-up restructuring processes in the domestic automotive industry. The country's sectoral stimulus package contained a multi-billion euro set of measures focused on the transformation of regional automotive clusters and the upgrading of production facilities at relatively smaller supplier companies.

With regard to the policymaking processes behind the two recovery packages, our case study provides multiple insights into the current state of government-industry relations in the French and German automotive sectors. For one thing, the analysis indicated a rather structurally conservative character of the two crisis-era government interventions. In both cases, the key interaction partners for policymakers were the established national automotive producers. In particular, the decision by the two governments to accelerate the sectoral transformation through generous demand-side measures seems to have been related to the increasingly EV-oriented product strategies of the dominant French and German carmakers. In France, moreover, some significant parts of the state-aid program were, in fact, directly co-managed by Renault and PSA via the

sectoral association PFA. Considering this, the present analysis underscores the need for a more intensive critical discussion of the capabilities of the French and German governments to enforce their own policy agendas vis-à-vis the interests of the industry actors. But at the same time, our case study also reveals some significant differences in state-industry dynamics in France and Germany. Perhaps most importantly, while the introduction of the German recovery program was accompanied by an intensive tripartite concertation process, in the French case, we observed a relatively weaker coordination regime without any high-level political involvement of trade-union representatives. It was probably due to this difference in the state-industry intermediation structures that the German COVID-era stimulus program took on a more inclusive character – as indicated by its stronger focus on smaller firms and regional automotive clusters.

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Notes

- 1 There are penalties of €95 per gram of CO₂ above the target, multiplied by the total number of vehicles sold by a carmaker.
- 2 Valeo, Faurecia, and Plastic Omnium.
- 3 The numbers 35b, 35c, 35f indicate the position of a given measure within the national recovery program.