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HETEROGENEITY OF THE IMPACT OF THE SPANISH
PROGRAMME OF INCENTIVES FOR THE PURCHASE
OF ELECTRIC VEHICLES

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ABSTRACT

Promoting e-mobility in the transport sector is essential for the transition to a low-emission economy. One of the goals of the Spanish programmes of incentives for efficient and sustainable mobility (MOVES) is to encourage the general public and firms to purchase electric vehicles. This article analyses the impact of the MOVES II programme, launched in June 2020, on electric vehicle registrations, based on the microdata provided by the Directorate General for Traffic. The results suggest that the impact has been very uneven across Spain's regions. Specifically, from its launch up to December 2020, the programme appears to have increased the percentage of new electric vehicle registrations in Asturias, Madrid, Navarre and the Balearic Islands, and on average in the provinces of Catalonia, by an average of at least 1 percentage point. By contrast, the average impact on electric vehicle registrations by province in each of the other regions may be statistically zero.

Keywords: electric vehicles, incentives programme.

JEL classification: L98, O38, H71.

HETEROGENEITY OF THE IMPACT OF THE SPANISH PROGRAMME OF INCENTIVES FOR THE PURCHASE OF ELECTRIC VEHICLES

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Introduction

E-mobility has huge potential in the fight against climate change, as the transport sector has high greenhouse gas (GHG) emissions, accounting for 27% of all GHGs in Spain in 2020.¹ To encourage e-mobility, many governments, including the Spanish Government, have introduced monetary and non-monetary incentives to encourage electric vehicle adoption. Drawing on provincial-level vehicle registration data, this article analyses the impact of a programme of monetary incentives for the purchase of electric vehicles – the MOVES programme – in Spain.

For Europe, various studies find that monetary incentives have a positive – albeit limited – impact on the purchase of electric vehicles. Drawing on data from 32 European countries over an eight-year period (2010-2017), it is estimated that a €1,000 incentive would increase the proportion of sales of electric vehicles by between 5% and 7% (see Münzel et al. (2019)). Given that electric cars still account for a small share of total car sales (according to Münzel et al. (2019), just 1% on average in the period 2010-2017 in the 32 European countries analysed), the final impact is not quantitatively significant. The findings are similar for other countries. In the United States, for example, it is estimated that financial incentives of US\$1,000 would increase the sales of electric vehicles by between 3% and 11% (see Clinton and Steinberg (2019), Jenn et al. (2018) and Wee et al. (2018)), while in Canada, adding Can\$1,000 to the monetary incentives would increase the proportion of electric vehicles sold, on average, by between 5% and 8% (see Azarafshar and Vermeulen (2020)).

These programmes will not necessarily have an equal impact on all households or firms; in particular, their effectiveness appears to vary according to household income. The evidence available so far in the literature for various countries and contexts is insufficient to conclude that these measures favour higher-income over lower-income households, although it does seem to rule out the possibility of their being considered progressive measures. For instance, Mersky et al. (2016) find for Norway that, following the introduction of an incentives system, the higher the municipal median household income, the higher the municipal-level electric vehicle

¹ Latest year available. See *Informe de Inventario Nacional. Gases de Efecto Invernadero (2022)* (available only in Spanish).

sales. However, for the United States, Clinton and Steinberg (2019) conclude that the impact of incentives for electric vehicle registration does not vary with household income at the state level.

Other articles have shown that the impact of subsidies or grants can vary according to how programmes are designed and whether there are non-monetary incentives as well as monetary subsidies. For instance, programmes found to have the most impact are those that provide subsidies or grants in locations with a better charging infrastructure² (see Clinton and Steinberg (2019), Mersky et al. (2016), Sierzchula et al. (2014) and Li et al. (2017)), together with other benefits such as discounts for electric vehicles in public parking spaces³ (see Langbroek et al. (2016)) or preferential access to restricted highway lanes⁴ (see Diamond (2009) and Wee et al. (2018)).

The next section of the article describes the characteristics of the Spanish programme of incentives for the purchase of electric vehicles. This is followed by a description of the data used. An estimated impact of the programme on the percentage of electric vehicle registrations is then presented, together with a heterogeneity analysis of the impact by region. The last section sums up the main conclusions drawn.

Description of the MOVES programme

So far there have been three editions of the MOVES programme. The first ran from February to December 2019 and had a budget of €45 million. The second – MOVES II – was launched in June 2020 and was in force for one year from the date of publication of the corresponding announcement in each region. It had a budget of €100 million and included changes to certain requirements in the first edition, made to ensure the funds were put to better use.⁵ Lastly, the third – MOVES III – was launched in April 2021 and will run to 31 December 2023. It has a budget of €400 million, which could be increased

2 Clinton and Steinberg (2019) construct an aggregate measure of the number of public and private charging stations in each US state. The results show a positive correlation between charging infrastructure and electric vehicle adoption at the state level. Drawing on municipal-level data for Norway, Mersky et al. (2016) conclude that access to charging infrastructure is one of the most important factors for growth in electric vehicle sales. For 30 different countries in 2012, Sierzchula et al. (2014) find that the variables most highly correlated with electric vehicle adoption are the existence of incentives and the availability of charging points, albeit with only a small impact. Li et al. (2017) conclude that the increased availability of public charging stations has a statistically and economically significant impact on decisions to purchase electric vehicles.

3 Langbroek et al. (2016), through an experiment in Sweden, find that free parking for electric vehicles is one of the non-monetary incentives most highly valued by potential purchasers of electric vehicles. This could indicate that this type of incentive is a more efficient and cheaper alternative to other more expensive monetary subsidies.

4 Diamond (2009) includes, for the United States, information on preferential access to restricted traffic lanes (high occupancy vehicle (HOV) lanes) on one or more highways for different types of hybrid vehicles and finds that this incentive is important in those states in which it operates. However, Wee et al. (2018) conclude that access to HOV lanes in the United States is less important, probably owing to electric vehicle drivers having limited possibilities to use these lanes.

5 The main changes compared with the first edition, apart from the increased budget allocation, include broadening the eligible activities to help municipal authorities adapt to mobility needs post-pandemic, considering the scrapping of a vehicle that is over seven years old as optional, and increasing the price limit for a passenger car to be eligible.

if there is a budget allocation for the programme's goals⁶ of promoting the use of electric vehicles and incentivising the industry and associated business sectors.

The activities eligible for subsidies within the different editions of the programme are: the purchase of alternative energy vehicles; the installation of electric vehicle charging infrastructure; the implementation of electric bicycle hire schemes; and the introduction of sustainable commuting measures. This article analyses the purchase of alternative energy vehicles. Table 1 summarises the requirements for vehicles to qualify for grants under the MOVES programme.

The amount of the grants available depends on the type of vehicle, its battery range and the type of owner (individual, SME or large corporation), and has varied in the successive editions of the programme. Thus, in MOVES II and MOVES III, the grants for category M1 and N1 vehicles may be increased by a certain amount (see Table 1) if the purchaser provides evidence of having scrapped a vehicle.⁷ These grants are for individuals, legal persons and local government.

The grants are distributed to the Spanish regions and the city enclaves of Ceuta and Melilla by population. The regional authorities are responsible for announcing the grants, as established in the respective royal decrees for each edition of the MOVES programme. Accordingly, the implementation of each edition of the programme, and in consequence the grant application dates, vary by region.⁸ For example, as Table 2 shows, the grants under MOVES II were announced in Valencia in July 2020, in Madrid in August 2020, in Castile-La Mancha (among others) in September 2020, in Castile-Leon (among others) in October 2020, and in Murcia and Extremadura not until January 2021.

Description of the data

Monthly vehicle registrations from the Directorate General for Traffic (DGT) are used to evaluate the impact of the MOVES programme.⁹ The microdata include the code

6 See [Royal Decree 72/2019](#), [Royal Decree 569/2020](#) and [Royal Decree 266/2021](#) for all the respective details on the three editions of the MOVES programme.

7 Under the first MOVES programme, the scrapping of a vehicle was a necessary requisite to be eligible for a grant.

8 Although anyone who had purchased an electric vehicle after 18 June 2020 could apply retrospectively for a grant under MOVES II, this request could not be made until the corresponding announcement was published in the region's *Boletín Oficial* (Official Gazette). Most regions (ten in total) did not announce the grants in their corresponding *Boletín Oficial* until 18 September 2020, once grant applications could be made. Only Valencia (in July) and Madrid (in August) published earlier, while the Canary Islands, Cantabria and Castile-Leon published in October. In Extremadura and Murcia the grants were not announced until 2021. Various [press items](#) indicated that this delay was due to administrative difficulties, so the economic reasons for the purchase may be considered exogenous to the announcements. The [National Commission on Markets and Competition](#) (CNMC by its Spanish acronym) detected certain demand and supply constraints in the requirements included in the announcements in some regions, meaning that some people who had purchased eligible electric vehicles before the announcement was published in their region were not certain of being able to benefit from the grants.

9 The DGT microdata are available here: https://sedeapl.dgt.gob.es/WEB_IEST_CONSULTA/subcategoria.faces.

Table 1

TERMS AND CONDITIONS OF THE DIFFERENT EDITIONS OF THE MOVES PROGRAMME AND GRANTS AVAILABLE

1 ELECTRIC VEHICLES

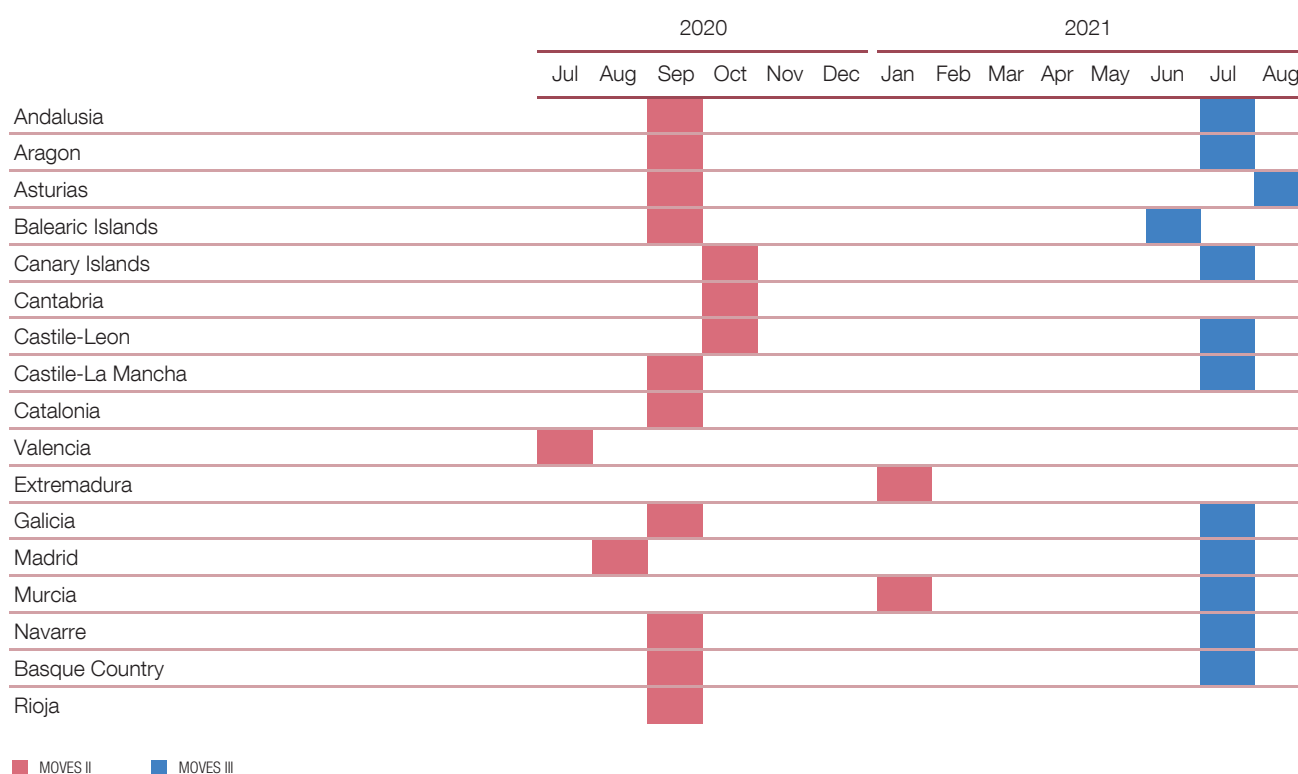
Power type	Vehicle category	Battery range (km)	Maximum vehicle selling price (€)	Grants (€)						
				MOVES	MOVES II (with/without vehicle scrapping)			MOVES III (with/without vehicle scrapping)		
					Individuals/ SMEs/Large corporations	Individuals	SMEs	Large corporations	Individuals	SMEs
Fuel cell (FCV, FCHV)		—		5,500	4,000/ 5,500	4,000/ 5,500	4,000/ 5,500	4,500/ 7,000	2,900/ 4,000	2,200/ 3,000
		≥12 and <32		1,300/1,100/ 1,000						
	M1	MOVES: ≥32 and <72 MOVES II & III: ≥30 and <90	MOVES: 40,000 (45,000 for disabled and reduced-mobility users and large families) MOVES II & III: 45,000 (53,000 for 8-/9-seater BEVs)	2,600/2,300/ 2,200	1,900/ 2,600	1,670/ 2,300	1,600/ 2,200	2,500/ 5,000	1,700/ 2,300	1,600/ 2,200
PHEVs, EREVs, EVs, fuel cell (FCV, FCHV)		MOVES: ≥72 MOVES II & III: ≥90		5,500/4,000/ 3,000	4,000/ 5,500	2,920/ 4,000	2,190/ 3,000	4,500/ 7,000	2,900/ 4,000	2,200/ 3,000
	N1	MOVES: ≥32 MOVES II & III: ≥30		6,000/5,000/ 4,000	4,400/ 6,000	3,630/ 5,000	2,900/ 4,000	7,000/ 9,000	3,600/ 5,000	2,900/ 4,000
	M2, N2		—	8,000/6,000/ 5,000	8,000	6,000	5,000			
	M3, N3			15,000	15,000	15,000	15,000			
EV	L6e			600	600	600	600	1,400/ 1,600	800/1,000	800/1,000
	L7e			800	800	800	800	1,800/ 2,000	1,200/ 1,500	1,200/ 1,500
	L3e, L4e, L5e, with P≥3kW	≥70	10,000	750/750/700	750	750	700	1,100/ 1,300	750/950	700/900

2 OTHER ALTERNATIVE ENERGY VEHICLES

Power type	Vehicle category	Maximum tare weight (kg)	Maximum vehicle selling price (€)	Grants (€)			
				MOVES	MOVES II		
					Individuals/ SMEs/Large corporations	Individuals	SMEs
	N2	—		4,000/2,500/ 2,000	3,600	2,250	1,800
LPG/Autogas or bifuel	N3	<18,000		6,000	5,400	5,400	5,400
		≥18,000		15,000	13,500	13,500	13,500
	N2	—		5,000/2,500/ 2,000	4,500	2,250	1,800
CNG, LNG or bifuel	N3	<18,000		7,000/6,000/ 6,000	6,300	5,400	5,400
		≥18,000		15,000	13,500	13,500	13,500

SOURCE: Banco de España, drawing on information from *Real Decreto 72/2019*, *Real Decreto 569/2020* and *Real Decreto 266/2021*.

Table 2

MOVES II AND MOVES III LAUNCH MONTH IN EACH REGION

SOURCE: Devised by authors.

of the province where the vehicle is registered, in addition to information on different vehicle characteristics, such as vehicle type, manufacturer, fuel type, horsepower, tare weight, type of owner and, where applicable, electric vehicle category. The data used in this analysis are monthly provincial-level data.¹⁰

Using the vehicle characteristics it is possible to identify most of the requirements that electric vehicles must meet to qualify for the MOVES programme incentives (see Table 1): vehicle category (M, N or L); whether it is a new or second-hand vehicle; propulsion type (petrol, diesel, electric, liquefied petroleum gas (LPG), compressed natural gas (CNG), liquefied natural gas (LNG)); and, where applicable, electric vehicle category (plug-in hybrid electric vehicle (PHEV), extended range

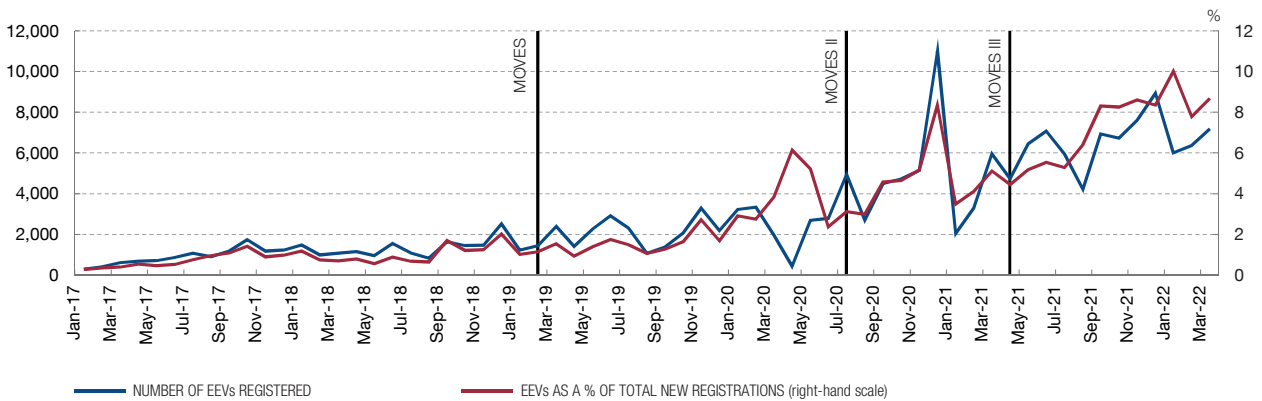
¹⁰ The dataset also contains information on the municipality where the vehicle is registered. An issue with the municipal dimension is that in most of the municipalities in the sample there are months during which no electric vehicles are sold. As a result, the dataset includes several zeros that complicate the econometric analysis. To have a larger number of observations, robustness checks were conducted, estimating the impact of the programme on the probability of at least one vehicle being sold in a sample of municipalities with months with and without electric vehicle sales. The results reveal a wide range of impacts across municipalities with different characteristics in terms of per capita income and charging points.

Chart 1

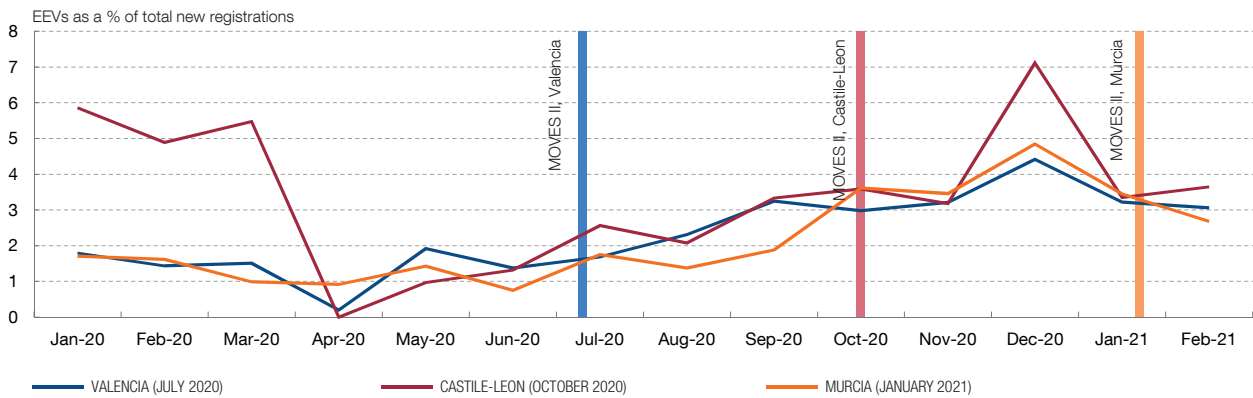
MONTHLY EEV REGISTRATIONS

EEV registrations have increased slightly since the launch of MOVES II and MOVES III.

1 THE THREE EDITIONS OF THE MOVES PROGRAMME. TOTAL SPAIN (JANUARY 2017-MARCH 2022)



2 EEV REGISTRATIONS AND LAUNCH DATE OF MOVES II IN SOME REGIONS (PERIOD 2020-2021)



SOURCE: Banco de España calculations, drawing on DGT microdata.



electric vehicle (EREV), hybrid electric vehicle (HEV) or battery electric vehicle (BEV)).¹¹

Chart 1.1 depicts the change in the number of eligible electric vehicle (EEV) registrations and in EEVs as a percentage of total new registrations from January 2017 to March 2022.¹² The first edition of the MOVES programme saw scant EEV registrations, possibly stemming from excessively strict conditionality, whereas after the launch of MOVES II and MOVES III both the number and proportion of EEV registrations rose, from 0.25% (281 EEVs registered) in

11 However, no information is available on vehicle price or on the additional €1,000 discount from the manufacturer or at the point of sale.

12 The last month available at the time of writing.

January 2017 to 7.6% (7,196 EEVs registered) in March 2022. However, it is possible that the increase after the launch of MOVES II or MOVES III was linked to a natural trend to purchase more electric vehicles. In particular, Chart 1.2 shows a very similar increase in the percentage of EEV registrations in Valencia, Castile-Leon and Murcia, despite MOVES II being rolled out at different times in those regions.

This article uses the regional variation in the implementation of MOVES II to identify the effectiveness of the programme beyond the change in the underlying trend observed in the data since 2017. In particular, the sample period that will be considered in this analysis runs from January 2017 to December 2020 (see Table 2). This allows the sample to include two regions (Murcia and Extremadura) that had not yet launched the programme (they did so in January 2021). It is also assumed that once launched, the programme continued until December 2020.¹³ We decided not to evaluate the additional impact of MOVES III as its estimation would further complicate the analysis. Specifically, the regional governments launched MOVES III at different intervals (number of months) after the previous programme (MOVES II). The regions therefore have different starting points, which complicates the analysis when calculating differences between regions where the programme has been rolled out (“treated” regions) and those where it has not (“control” or “comparison” regions). The article assumes that this is not, at least not markedly, the case with MOVES II, as the first edition of MOVES had a very small impact on EEV registrations, in part as a result of its strict conditionality.

Impact of MOVES II on electric vehicle registrations

The impact of programmes such as MOVES II has traditionally been estimated using an empirical “difference-in-differences” specification.¹⁴ This type of specification would quantify the change in the proportion of EEV registrations before and after the programme was implemented by comparing it with the change in the proportion in another country or region that did not implement any other similar programme at the same time. A disadvantage of this type of estimation is that each country’s or region’s incentive programmes are implemented and end at different points in time; as a result, it is possible that the control group of countries or regions includes locations where the programme has never been launched and locations where such programme has ended after running, for example, for two years. The control unit’s pre-treatment

13 Although the funds were intended to subsidise all purchases over the following 12 months, some press articles indicate that Madrid and Catalonia had depleted their entire budget for this item by September 2020.

14 Specifically, on the basis of regressions that include as independent variables the unit fixed effects, the time fixed effects common to the treated and control units, and the dichotomous variable identifying the point before and after the treatment for the treated units (see, for example, [Diamond \(2009\)](#) for the United States and [Münzel et al. \(2019\)](#) for the European countries).

period could therefore be affected by a previous treatment, which would make the estimation impossible. Another additional disadvantage would arise if the programme's impact were to change over the course of the treatment. In this case, traditional difference-in-differences analysis, which uses all the possible comparisons of treated and control units, regardless of the number of periods of treatment, would be hard to interpret.¹⁵

To solve these issues, [Callaway and Sant'Anna \(2021\)](#) propose analysing units that receive treatment at the same time and estimating the impacts in specific periods relative to the start of the programme. In our case, first we will perform an unconditional difference-in-differences estimation of the provinces in each region vis-à-vis the provinces in Murcia and Extremadura, as these regions did not launch MOVES II until 2021. By choosing as the control group the provinces in the regions where the programme was not in force during the sample period, we standardise the control and check, for all the provinces belonging to a region that implemented the programme in a specific month, whether there was differential growth – as compared with Extremadura and Murcia – in vehicle registrations between the previous month and some subsequent months.

Chart 2 depicts the average impact of the programme for the provinces in each region during the months it was in force up to December 2020. This average impact is constructed as the simple average of the growth differential between the treated provinces and the control group from the month prior to the start of the programme through to December. For example, for the provinces in the Valencia region, which implemented the programme in July, the differential growth is calculated between June and July 2020, between June and August, and so on until the period June-December is covered, and the average of the six resulting increments is used. For the Madrid region, which implemented the programme in August, the average of five increments – starting with the differential growth between July and August, and so on, until July-December is covered – is used.

As Chart 2 shows, there is a high level of heterogeneity in the average impact in each region, with Asturias, Madrid, Catalonia, the Balearic Islands and Navarre displaying positive impacts that are statistically significant at 95%. The largest impact is in Asturias (over 2 percentage points (pp)). Madrid, Catalonia, the Balearic Islands and Navarre have average impacts of close to 1 pp.¹⁶ In the provinces of the remaining regions, the programme does not have an average impact that is statistically different

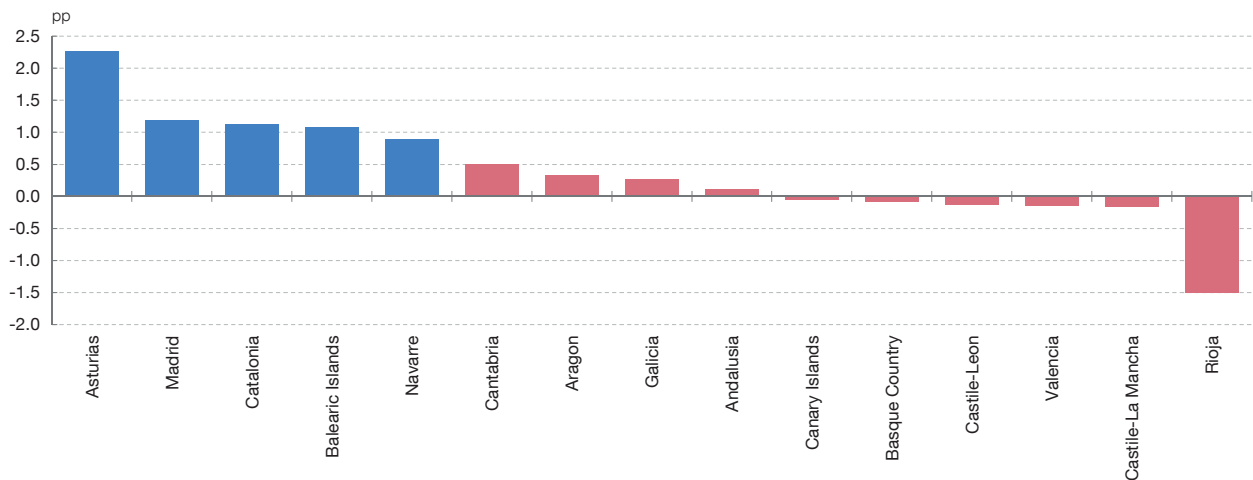
15 See [Goodman-Bacon \(2021\)](#), which sets out the problems of the traditional difference-in-differences estimation in a context with the aforementioned issues.

16 Asturias, Madrid, the Balearic Islands and Navarre are single-province regions, whereas in Catalonia the aggregate impact at regional level is 1 pp and is significantly different from zero. In the latter case, all the provinces in Catalonia taken separately have a positive impact vis-à-vis those in Murcia and Extremadura of between 0.5 pp and 2 pp that is statistically different from zero at 95%. In all the exercises performed, we cannot rule out the hypothesis that pre-programme trends between each region and Murcia and Extremadura taken as a whole were identical.

Chart 2

AVERAGE PROVINCIAL IMPACT ON THE PERCENTAGE OF EEV REGISTRATIONS IN EACH REGION FROM THE LAUNCH OF MOVES II IN THE REGION THROUGH TO DECEMBER 2020 (a)

MOVES II had a heterogeneous impact on the different regions, which launched the programme at different points in time.



SOURCE: Banco de España calculations, drawing on DGT data.

a Each bar depicts the average treatment effect on the treated calculated using the STATA command "csdid" bilaterally between each region and the control regions (Extremadura and Murcia) in the period January 2017 to December 2020. The blue bars denote the coefficients that are statistically significant at 95% and the red bars the non-statistically significant ones. The standard errors are calculated using a cluster of regions.

from zero.¹⁷ The different impact between provinces in different regions does not appear to be attributable to the treatment lasting longer in some of them, since, for example, regions where the impact was statistically zero implemented the programme relatively early.¹⁸

In any event, it is interesting to use the provincial-level information to analyse the possible dynamics of the programme's impact. To do so, we analyse the monthly impact of the programme in the provinces of the ten regions that approved MOVES II in September 2020. Chart 3 shows the average differences between the treatment group and the control group (Extremadura and Murcia) some months before and after treatment. Chart 3.1 combines the provinces of the regions which, having launched the programme in September, had a positive average impact as depicted in Chart 2 (Asturias, the Balearic Islands, Catalonia and Navarre) and Chart 3.2 those which did not record such impacts (Andalusia, Aragon, Castile-La Mancha, Galicia,

17 Although there are some specific provinces whose isolated impact cannot be ruled out as being positive, for all these regions, except for Castile-La Mancha, the regional impact is not statistically positive. In the case of Castile-La Mancha, the impact is 0.3 pp and is significantly different from zero at 95%. This result is due to three of its five provinces (Albacete, Ciudad Real and Toledo), whereas the other two did not have statistically positive impacts.

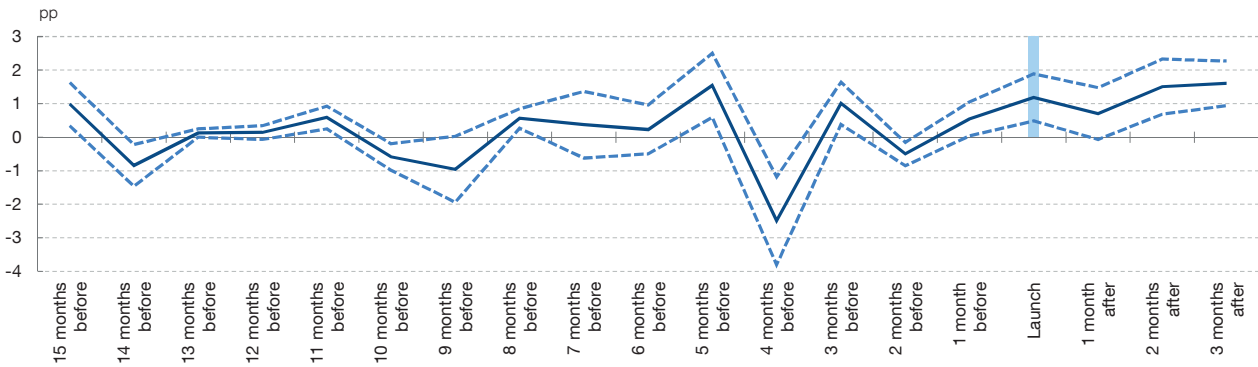
18 For example, Valencia was the first region to implement the programme (in July 2020), whereas Andalusia, Castile-La Mancha, Galicia, the Basque Country and Rioja did so in September of that year.

Chart 3

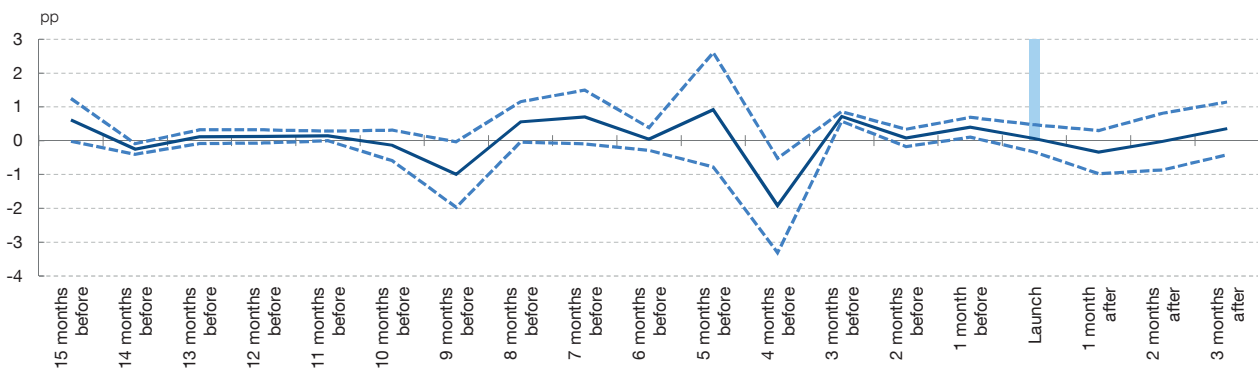
DYNAMIC IMPACT OF MOVES II IN THE PROVINCES OF THE TEN REGIONS THAT APPROVED THE PROGRAMME IN SEPTEMBER 2020

In the provinces of four regions (Asturias, Catalonia, Navarre and the Balearic Islands) where MOVES II launched in September 2020, the programme's average impact is significantly positive in the following three months (see Chart 3.1). By contrast, in the provinces of the other regions where the programme was approved in September 2020, its average impact is not statistically significant in the subsequent months (see Chart 3.2).

1 IMPACT ON THE PROVINCES OF ASTURIAS, CATALONIA, NAVARRE AND THE BALEARIC ISLANDS (a)



2 IMPACT ON THE PROVINCES OF ANDALUSIA, CASTILE-LA MANCHA, GALICIA, ARAGON, THE BASQUE COUNTRY AND RIOJA (b)



SOURCE: Banco de España calculations, drawing on DGT data.

- a Chart 3.1 depicts the four regions that approved MOVES II in September 2020 where, according to Chart 2, the programme had a statistically significant impact.
- b Chart 3.2 depicts the six regions that approved MOVES II in September 2020 where, according to Chart 2, the programme did not have a statistically significant impact.

the Basque Country and Rioja).¹⁹ In both charts an unbroken line denotes the estimated monthly difference (in pp) before and after the programme was launched and the two broken lines denote the uncertainty of this estimate. The fact that, prior to the programme, these confidence bands mostly include zero means that we

19 The methodology aggregates the impacts up to the same month in these regions as a simple average of the different provinces in the regions that implemented MOVES II in September 2020 as compared with the provinces of Murcia and Extremadura. The standard errors are asymptotic and grouped at regional level.

cannot rule out the possibility that the trend of the provinces in both groups of treated regions was identical to that observed in Murcia and Extremadura. Subsequently, while in Asturias, Catalonia, the Balearic Islands, Navarre and Aragon the average provincial impact over the four-month duration of the programme is 1.25 pp and is statistically significant, in the second group of regions it falls to 0.02 pp and is not statistically significant. Therefore, the findings point to the percentage of EEV registrations increasing by around 1 pp on average over the first four months of the programme in the provinces of the first set of regions. Starting with a proportion of EEVs in these provinces of around 2% on average when the programme was first launched, MOVES II increased this proportion to 3%. In addition, the programme has an immediate impact after it is approved, which continues, or even increases slightly, over the first four months.²⁰

Conclusions

The results of the analysis show that the impact of the MOVES II programme of incentives for purchase of electric vehicles in Spain had a high level of cross-provincial heterogeneity. Indeed, from its launch to December 2020, the programme appears to have increased the percentage of new electric vehicle registrations in Asturias, Madrid, Navarre and the Balearic Islands, and on average in the provinces of Catalonia, by an average of at least 1 pp. The average impact of the provinces in all the other regions may be statistically zero. There is insufficient information available to determine the reasons for these differences between provinces in different regions. In particular, it would be interesting to know to what extent they hinge on differences in the regions' per capita income, or on the higher number of charging points available in some regions, as observed in other studies. In this respect, on some metrics, Spain is not well positioned among its European peers in terms of public charging infrastructure. According to the literature cited, this could render programmes such as MOVES less effective.²¹ Lastly, it would also be interesting to have data on the relative prices of eligible and non-eligible vehicles, and on the price changes observed before and since the MOVES programme was launched. This information would give an insight into how much the prices of eligible vehicles have risen compared with those of non-eligible ones and, therefore, into how much consumers have actually benefited from the corresponding grants.

20.10.2022.

20 The chart for Valencia would be similar to that for Andalusia, Castile-La Mancha, Galicia, the Basque Country and Rioja, even despite running the programme for two additional months. This would also be the case for the Canary Islands, Cantabria and Castile-Leon, with just three months of post-treatment observation. The estimated monthly impact for Madrid is more volatile than that for Asturias, Catalonia, the Balearic Islands, Navarre and Aragon, with most of the post-treatment monthly values being positive and statistically significant.

21 See, for example, the [E-mobility Barometer](#).

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