Voting Transitions in the 2019 Valencian Autonomous Community's Elections*

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ABSTRACT

The political fragmentation following the 2008 Financial Crisis and its economic, social, political and institutional fall-out have led to a growing left-right polarisation of politics and a weakening of the middle ground. The effective number of parliamentary parties is at an all-time high both in the Spanish Parliament (*Congreso*) and in the Valencian Autonomous Parliament (*Corts*). Voters are spoilt for choice and switch party more often. This paper uses transfer matrices to analyse the shifting voting patterns in the European, General, Regional, and Local elections held during 2019 in The Valencian Country. The most salient result is the ever-shifting pattern at each end of the political spectrum. On the right wing, there is the steady advance of Vox. On the left wing, *UP* and *Compromís* draw from virtually the same pool of fickle voters, with UP picking up most votes in national elections and *Compromís* winning hands-down in regional and local elections.

Keywords: vote transitions, ecological inference, Spanish elections.

INTRODUCTION

The Great Recession of 2008, apart from causing great local and global economic changes, had a deep political impact. The rise of Populist parties in Europe (Martín *et al.*, 2019; Couperus and Tortola, 2019), Trump's arrival at The White House (Skonieczny, 2018), the victory of the 'Leave' option in the 2016 Brexit referendum (Becker *et al.*, 2017) and Bolsonaro's presidency in Brazil (Hunter and Power, 2019) are just some of the most visible signs of this impact.

Spain was also affected by these new political winds. The Spanish system of political parties has undergone major changes, which began with the emergence of Podemos (Pavía, Bodoque and Martín, 2016). In a little over a decade, the country has leapt from a two-party system to a multi-party system. While Spanish politics was dominated for decades by the battle between PP and PSOE,[1] what we now see is fragmentation of the electorate. This has led to a bipolar struggle between the Left and the Right, with nationalist and pro-independence parties occasionally being able to decide which side wins.

This clear fragmentation can clearly be seen when one looks at the number of parliamentary parties (Laakso and Taagepera, 1979). Between 1982 and 2008, the figure was around 2.5 (Rama Caamaño, 2016) but rose to 4.8 in the April 2019 General Election (going from 4.1 in 2015 to 3.8 in 2016).[2] The new political parties began to occupy a significant number of seats in Spain's Congress and, together with other minority groups, played a decisive role in deciding who governed. Spain's political landscape has thus undergone a transformation.

This new political map forces parties to reach agreements — something that was hitherto unusual in Spain. In the rest of Europe, most countries are governed by coalitions of parties (whether ideologically akin or different). For example in The Netherlands and in Sweden, Centre-Left and Centre-Right blocs have broken with tradition to keep the Far-Right out of government. Italy has been governed by coalition governments ever since the end of The Second World War and Belgium's government too comprises various parties. In Spain, one can find coalitions that prove more or less successful in managing various 'autonomous communities' [regions] and municipalities. At the national scale, there is a greater willingness to forge coalitions. The Spanish Congress that emerged from the April 2019 General Election proved incapable of investing a President, leading to political in-fighting and paralysis. The upshot was another General Election in November 2019, the results of which made it possible to forge the country's first coalition government.

The Valencian Country was governed from June 2015 onwards under the so-called *Botànic* Accord (named thus because it was signed in the City of Valencia's Botanic Gardens). The accord was renewed after the Regional Election on the 29th April 2019 and this time was signed in Alicante on the 12th of June 2019, producing a coalition government comprising parties with similar ideologies (PSPV-PSOE, Compromís, Podem).

All of these changes stem from great voting transitions (see Figures 1 and 2). Electors are no longer faithful to a given party but instead switch votes much more readily than hitherto. We live in an era of new election campaigns in which parties do their utmost to keep core voters loyal and to poach niche voters from parties with similar ideologies. That is why the so-called 'vote origin-destination matrices' are invaluable sources of information that shed light on voter trends and help answer questions such as "Where have a party's lost votes gone to?" and "Where do a party's votes come from?"

Given the closeness of elections to one another (local, regional, general, and European elections), it is worth asking what mutual influence they may exert and the impact of tactical (or dual) voting from an analytical standpoint. Understanding how voting has changed

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1 PSOE and PP (AP until 1989) took an average of 83% of seats in Congress between 1982 and 2008 (Rama Caamaño, 2016), reaching a zenith in 2008 when between them they accounted for 323 out of the 350 seats.

2 In the 2019 General Election, this figure fell slightly to 4.6.

between elections of the same kind, or between elections for differing tiers of government greatly enriches studies on voters' behaviour. Such data also provides a tool for understanding contemporary politics. This paper analyses changes in voting behaviour during the last electoral cycle in The Valencian Country in 2019. The Valencian region shows greater fragmentation of the vote than is true for Spain as a whole. The effective number of parliamentary parties in Valencia's Regional Parliament (*Les Corts*) is 5.3, and with six parties being represented.

The remainder of than paper is structured as follows: The second section provides a broad overview of voting trends in the Valencian Region since 1982, in elections for Spain's Congress, and for Valencia's Regional Parliament. The third section describes the methodology for estimating and interpreting voting transitions (particularly in relation to vote transition matrices). The fourth section studies vote transitions from the 2015 Regional Election to the 2019 Regional Election, using two of the approaches described in the third section of this paper. The fifth section covers vote transitions from the 2016 General Election to the April 2019 Regional Election. The sixth section analyses vote transitions between two simultaneous elections — the General and Regional ones held in April 2019. The seventh section focuses on vote transitions between the General Election and the European Election, held in April. The eighth section covers the vote transitions between the two 2019 General Elections, one held in April and the other in November. Last, the ninth and tenth sections focus on local elections, taking The City of Valencia as a case study. The ninth section analyses vote transitions from the Regional Election to the Municipal Elections, and the tenth section returns to the subject of the links between two simultaneous elections, to wit: the European and the Municipal ones. The final section contains the conclusions. The supplementary material[3] (MS) complements and expands on the information provided in the paper.

VOTING TRENDS IN THE VALENCIAN COUNTRY
To grasp the scale of the political change affecting Spain in general and The Valencian Country in particular, one only needs look at voting trends in the Valencian Region since 1982. Figure 1 shows the results of the national election for Spain's Congress. Figure 2 shows the election results for the Valencian Regional Parliament. Both figures show the percentage of all votes received by PP and PSOE — the two political parties that were the protagonists of the historical 'bipolar' system. The remaining parties are plotted on a line and are grouped under 'Left-Wing' or 'Right-Wing', as the case may be. In Tables A1 and A2 of MS, one can find the parties making up these 'Left-Wing' or 'Right-Wing' axes, together with the PSOE and PP respectively, plotted on each axis for each election.

In both figures (1 and 2), the elections from 2015 on have been highlighted. That is because this was the year in which the electoral predominance of the PP on the Right, and the PSOE on the Left began to wane. The 2015 elections came at a point marking a sea change in the electoral and political cycle in The Valencian Country. Here, new parties emerged on the scene such as Compromís (COMP), Ciudadanos (Cs), and what is now known as Unides Podem (UP) (a party that has undergone bewildering changes of name and has taken part in diverse coalitions after elections)[4]. The newest boy on the block is Vox, which fielded candidates in the 2019 elections.

In Figure 1, it can be seen that the 1993 elections hinted at what was to come in the 1995 Regional

Figure 1 **Historical series in the Spanish General Elections in The Valencian Country**
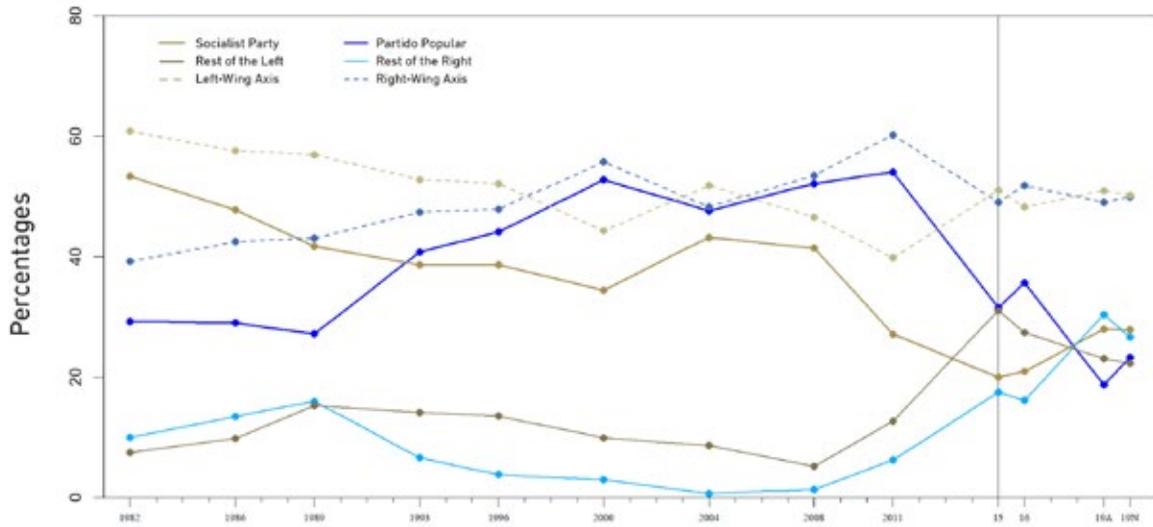
Trend in the percentage of votes cast for PP and PSOE. The Figure also shows the trends in the percentage of votes cast for other Right-Wing political parties (Rest Right) and for other Left-Wing parties (Rest Left). The aggregate votes for Right-Wing parties (Right Axis) and for Left-Wing parties (Left Axis) are also shown. The percentages are based on the votes for candidates. Table A1 of the MS gives details of the parties making up each of the two axes during each election.

Source: The Authors, based on data provided by Spain's Ministry of The Interior [Ministerio del Interior].

Election. Up until then, PSPV-PSOE had been the strongest political force in The Valencian Country. 1993 marked the first time the PP gained more seats than the PSOE in the region, even though the total number of votes cast for Left-Wing parties were greater than those for Right-Wing ones. The same occurred in 1996, despite the political sea change seen in the 1995 Regional Election (see Figure 2). From this moment on and up until 2015, PP accounted for almost all the Right-Wing votes and thus remained the dominant political force in the region. By contrast, in 2015, the electorate was much more politically fragmented. This was part of the economic, social, and political fallout that followed the 2008 financial crisis and that continues in Spain to this day (Royo, 2014; Torcal, 2014; Pavía Bodoque and Martín, 2016; Orriols and Cordero, 2016; Antentas, 2017; Benedicto and Ramos, 2018). The result was that the 2015 Regional Election saw the Left-Wing bloc winning more seats than the Right-Wing one. Nevertheless, a new General Elec-

tion in 2016 saw the balance temporarily swing back, returning the Right-Wing to power. The Right-Wing lost in the April 2019 General Election while the gap between the two parties in the November General Election narrowed.

The general panorama shown in Figure 1 is repeated in Figure 2. El PSPV-PSOE dominated regional politics until 1995, when the Right-Wing bloc overtook the Left-Wing bloc for the first time. PP formed the new Regional Government through the so-called 'Chicken Pact'[5] (*Pacto del Pollo*) between PP and Unión Valenciana (UV). From this moment on, PP became the hegemonic (and ever stronger) political force, winning over 50% of all votes cast in 2007 and 2011. Finding itself on the ropes given all the corruption cases the

5   Translator's Note: This got its name from the fact that it was signed in the office of a Valencian entrepreneur (Federico Félix) who happened to be in the chicken business.

Figure 2 Historical series in Valencian Regional Elections (Les Corts)
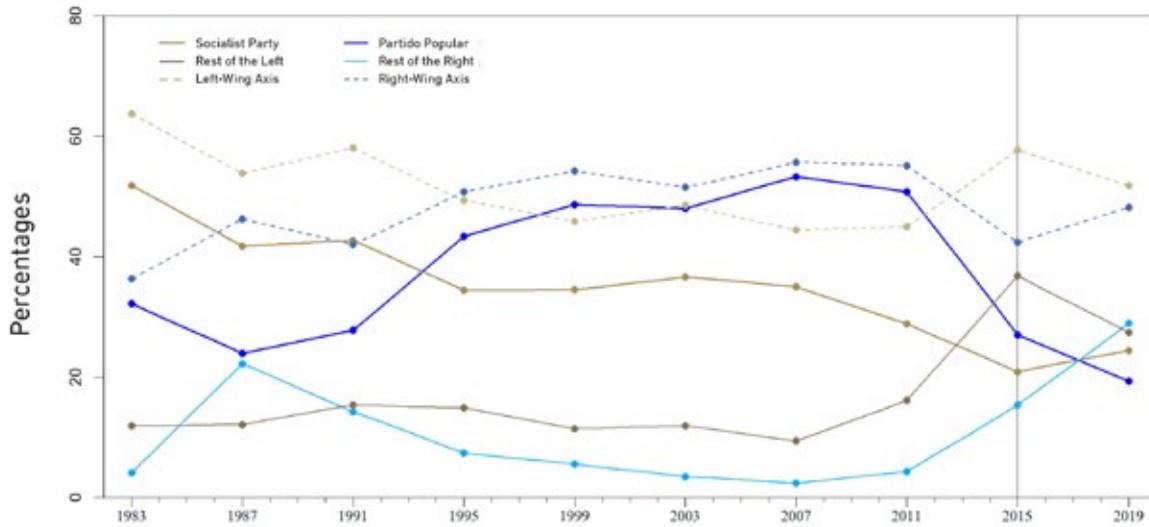
Trend in the percentage of votes cast for PP and PSOE. The Figure also shows the trends in the percentage of votes cast for other Right-Wing political parties (Rest Right) and for other Left-Wing parties (Rest Left). The aggregate votes for Right-Wing parties (Right Axis) and for Left-Wing parties (Left Axis) are also shown. The percentages are based on the votes for candidates. Table A2 of the MS gives details of the parties making up each of the two axes during each election.

Source: The Authors, based on data provided by The Valencian Government [Generalitat Valenciana].

party was involved in, the PP lost a great many votes in 2015. The result was a change in the political cycle and a new, Left-Wing government after the so-called 'Botanical Accord'[6] (*Acord Botánic*).

The two figures show how the hegemony of the PP or of the PSOE was not challenged by the remaining Right-Wing or Left-Wing parties until 2015, when there was a sea change in which support for the other parties soared. At the moment, all the other Right-Wing parties together have more seats than the PP. In the PSOE's case, all the other Left-Wing parties together have almost as many seats. It is clear that the emergence of new political parties is shaping the post-2015 scene. The rising fortunes of Ciudadanos, Compromís, Podemos and, in 2019, Vox, have greatly broadened political choice for both Right-Wing and Left-Wing voters. Currently, voters have more parties to choose from and thus voting transfers have become more alluring, as this study shows.

Although our analysis focuses on Voting Transitions in the 2019 elections, the movement that occurred in the 2015 Regional Election is worth commenting on, especially if we compare its results with those for the 2011 Regional Election. This is why MS Figures A1 and A2 include an estimate of the vote movements (vote transition and vote composition) that occurred between the 2011 and 2015 Valencian Regional Elections.[7] The most salient result (which marked the change in political cycle in 2015) was the large number of votes lost by PP. Compromís, Ciudadanos and abstention were the main beneficiaries of the PP's lost votes.

6   Translator's Note: This one got its name from the fact it was signed in The City of Valencia's Botanical Gardens.

7   The voting transition matrices in Figures A1 and A2 were estimated using a methodology based on ecological inference, described in the third section of this paper.

Table 1 **Results recorded in the elections covered by this study**

Election	PSOE	PP	Cs	COMP	UP	VOX	Rest	Abst
The Valencian Country (Units: percentages of the census, including non-residents)								
REG. 2015	14.11	18.25	8.56	12.66	7.82	0.29	7.87	30.44
GEN. 2016	14.91	25.42	10.73	18.25		0.17	2.88	27.63
REG. 2019	17.60	13.90	12.86	12.12	5.89	7.70	3.67	26.28
GEN. 2019A	20.41	13.64	13.21	4.75	10.47	8.83	2.98	25.71
EUR. 2019	20.29	13.90	8.77	5.15	5.96	4.45	3.50	38.13
GEN. 2019N	19.09	15.93	5.35	4.81	9.26	12.76	2.59	30.20
City of Valencia (Units: percentages of the census, including non-residents)								
REG. 2019	16.61	13.22	12.73	15.23	5.46	7.47	3.73	25.55
GEN. 2019A	20.09	13.02	12.95	6.42	10.77	8.66	3.01	25.08
LOC. 2019	12.72	14.36	11.64	18.14	2.75	4.79	1.91	33.68

The UP acronym stands for: Podemos/Podem in the 2015 Regional Election; for Unides Podem-EUPV in the 2019 Regional Election; and for Podemos-EUPV in all other elections save the 2016 General Election.
The COMP acronym stands for: Compromís. In the April 2019 General Election (in relation to Valencia), it stands for: Compromís, Bloc-Iniciativa-VerdsEquo; in the November 2019 General Election, it stands for Més Compromís; in the 2016 General Election, the party was part of a joint platform with UP under the name of Compromís-Podemos-EUPV: A la Valenciana; in the 2019 European Election, it formed part of the platform Compromiso por Europa.
PSOE: Partido Socialista Obrero Español
PP: Partido Popular.
Cs: Ciudadanos-Partido de la Ciudadanía.
Vox: Vox.
Others: all the other parties not grouped under any of the foregoing acronyms.
Abst. indicates abstention.
The rest of the paper will use these acronyms to identify the various electoral options.

Source: The Authors based on official and provisional data from
Spain's Ministry of the Interior and The Valencian Regional Government.

Table 1 helps give an overall view of the aggregate results of the elections analysed in the paper. The table shows the results (official or provisional, depending on the election) in terms of percentages of the census population (including non-residents) in the whole of The Valencian Country and for The City of Valencia. The notes to the table explain the acronyms of the various political parties. Although the data in Table 1 include non-residents, estimates of vote transitions by these persons have not been taken into account. This is for two reasons: (1) non-residents are not usually considered in surveys; (2) this is a group whose composition may change significantly between elections held in different periods.

METHODOLOGY

The study of vote movements or transfers is a subject of great interest to political analysts. Having good estimates in this field is of value to many agents, including political parties, journalists, and social scientists. It is therefore little wonder that the subject has attracted dozens of researchers over the decades: for example, Hawkes (1969), Miller (1972), McCarthy and Ryan (1977), Brown and Payne (1986), Payne *et al.* (1986), Füle (1994), Park (2008), Forcina and Marchetti (2011), Romero (2014), Corominas *et al.* (2015), Puig and Ginebra (2015), Klima *et al.* (2016, 2019), Pavía, Bodoque and Martín (2016), and Plescia and De Sio (2018).

VOTING TRANSITION MATRICES. INTERPRETATION

Voting transitions are usually charted in matrices or double-entry tables in which the source electoral origins appear in rows and the destination options in columns. There are three ways to show the information in voting transition matrices: (1) source-destination of votes; (2) transfer matrices; (3) composition matrices. Transfer matrices and composition matrices are calculated based on the source-destination matrices. Each cell in the voting matrix contains the number of voters who chose the row option in the selection of the source, and the option in the column in the selection of the destination. The transfer matrix is the result of the row standardising the vote matrix (dividing each row by the sum of the corresponding row). The composition matrix is the result of the column standardising the vote matrix (dividing each column by the sum of the corresponding column).

The source-destination of votes is shown in the upper panel, from which one obtains the transfer matrix (shown in the lower left panel) and the composition matrix (shown in the lower right panel). The matrix is constructed such that the percentages in the rows

Figure 3 Voting transition matrices. Scheme
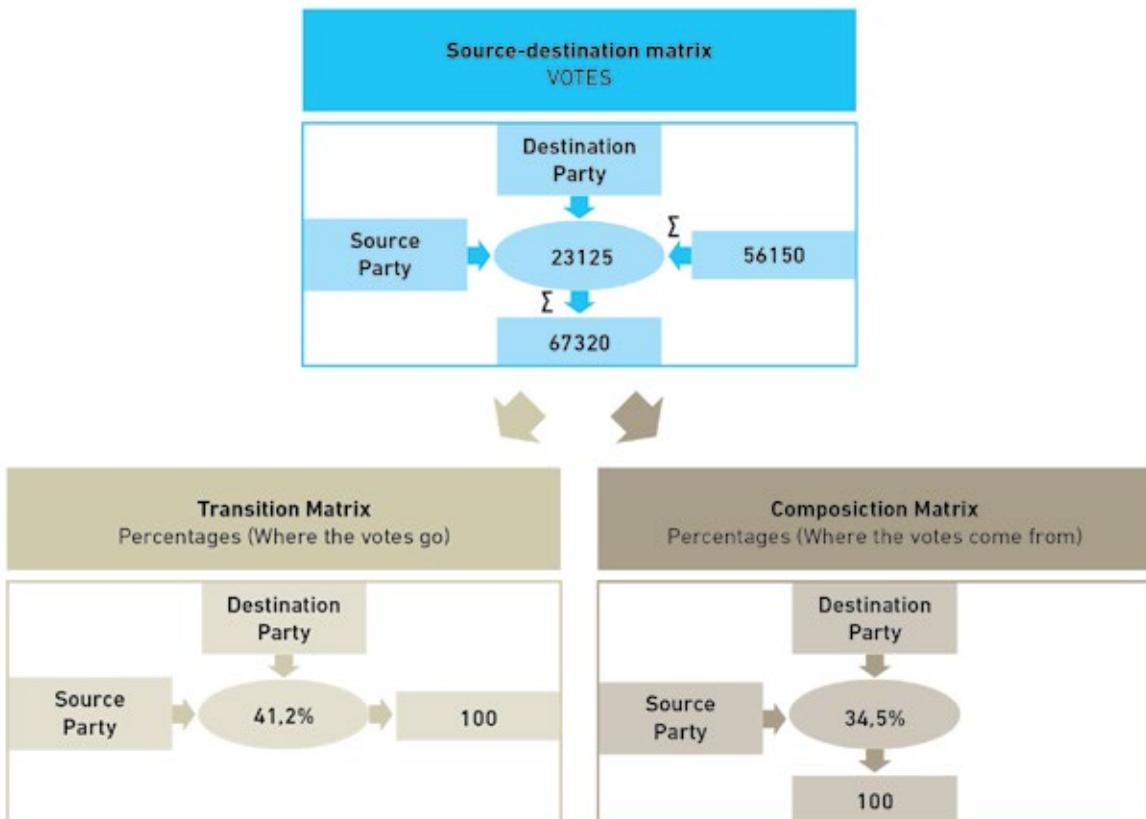
The top panel shows the source-destination vote matrix, from which the transition matrix is obtained (shown in the lower left-hand panel), and the composition matrix (lower right-hand panel). The matrix sums the percentages in the rows of the transition matrix (adding up to 100%) and sums the columns of the composition matrix (also adding up to 100%).The sum of the votes matrix feeds into the results of the source choice and the sum of the columns for the destination choice.

in the transfer matrix sum to 100%, and the percentages in the columns of the composition matrix also sum to 100%. The sum of the rows in the vote matrix influences the results in source choices and the sum of the columns for the destination choice results.

Figure 3 schematically shows the voting transition process from an example. If one looks at the voting source-destination matrix in the upper panel, 23,125 voters chose the party of origin in selecting the source and the destination party in the selection of destination. Summing the rows gives yields the total number of votes that the party of origin received in the selection of origin (56 150), and summing the columns, the total number of votes the destination party received in the destination selection (67,320).

To answer the question, "Where do the votes of the source parties go to?" one needs to construct the transition matrix (the lower left panel in Figure 3), dividing the value of each cell by the sum of the values in the corresponding row, and multiplying the result by one hundred to yield a percentage. In the example, one obtains a value of roughly 41.2 % (that is to say, the result of dividing 23,125 by 56,150).

This percentage means that 41.2 % of voters choosing the origin party in the source election either voted for (or — in the case of pre-election polls — stated an intention to vote for) the destination party in the destination election. When the source party and the destination party are one and the same (the main diagonal in square matrices), this percentage tells us about voter loyalty.

If an answer is sought to the question, "Where do the votes cast for a political party come from?" one needs to look at the composition matrix (the lower left-hand panel in Figure 3). In this case, we read the columns, and standardise the figures. For example, a value of 34.5% (the result of dividing 23,125 by 67,320) is interpreted as meaning that 34.5% of the votes obtained by the destination party come from the source party.

Although the base of the transition matrices and composition matrices lies in the vote matrix, it is hard to interpret them given that they are expressed in terms of absolute frequencies. That is why in this paper (and for reasons of space), we shall only present the transition matrices. Readers who wish to find the composition matrices in the MS may consult these (which are offered to support some of the analyses we make in relation to the source of votes. That said, the information found in any of the matrices is largely redundant. The results from the choice of source and destination, and the transition matrix for composition are sufficient by themselves to reconstruct the source-destination matrix.

VOTING TRANSITION MATRICES. ESTIMATION
Given that votes are cast in secret, one cannot say how individual voters acted in the two elections. The vote transition matrices must therefore be estimated based upon the information available. One of two strategies is usually employed to make this estimate: (1) exploit survey data, or (2) use aggregated data available on voting sub-units (for example, by polling stations or census data).[8] Each of these options has its own strengths and weaknesses.

To estimate transition matrices using survey data, one uses the statements made by respondents on their electoral behaviour before and after casting their votes. In voting surveys, responses on present and past voting behaviour are used. In panel surveys, responses are gathered from voters before and after the elections. However, this approach has major drawbacks stemming from accuracy issues (variance) and bias when making estimates.

On the one hand, large samples are needed if one is to ensure an acceptable degree of accuracy. This is so because from the statistical standpoint, one is not

8   Greiner and Quinn (2010), and Klima *et al.* (2019) propose a third approach that combines both sets of data, incorporating survey data within an ecological inference statistical model.

studying a single population but rather as many electoral options as those covered in the source election. On the other hand, surveys are subject to significant non-sampling errors (Biemer, 2010), mainly arising from non-response bias and measurement errors. Both issues undermine the representativeness of the findings. Non-response errors stem from the differing propensity among groups of voters to take part in a survey (Pavía, 2010). This propensity is not constant and depends on various factors such as: the interviewer; the socio-political context; the electoral behaviour of the respondent and even whether he changed his vote from the previous election[9] (Haunberger, 2010; Pavía, Badal and García-Cárceles, 2016). Measurement errors arise from the difficulty people have in remembering past events or from deliberate hiding or falsification of past deeds. When asked about their past electoral behaviour, voters tend to be 'forgetful' or be unduly influenced by perceived socially desirable behaviour and even by their present votes (Krumpal, 2013).[10]

In addition to the foregoing problems encountered with surveys, one also needs to add: (i) the financial cost of the chosen approach; (ii) the fact that surveys are not always available; (iii), where pre-election surveys are used, respondents may change their minds between the date the interview was conducted and election day, sometimes because of published polls (Pavía et al., 2019).

The main advantage of this approach is that given a sufficiently large sample, it is easy to calculate the likelihood of vote transitions (the cells in the transition matrix). Here, one simply needs to draw up a table of respondents' cross-referenced answer frequencies (or imputed answers) and row-standardise the table. The problem arises from the fact that the estimated probabilities tend to be at odds with the recorded results, which is why the estimates obtained are taken as indicators, which are adjusted in the post-election analysis to ensure congruence between the real results in the source and destination elections. Among the adjustment options, those based on balancing matrices are those that have proven best (Pavía et al., 2009). In this paper, we have therefore used the so-called RAS method (Bacharach, 1970) to make the adjustments (making these coincide with the real-life results) to the transition matrices based on survey responses.

The major weaknesses found in estimates based on survey data have led many researchers to estimate transition matrices solely from actual results (which are more reliable) by using mathematically-optimised statistical models. The main difficulty with this approach is that estimates are prone to what is termed *the ecological fallacy* (Robinson, 1950). This arises from the fact that the underlying mathematical problem is indeterminate. To overcome this limitation, both ecological inference approaches (statistical and mathematical) usually include hypotheses, such as supposing that there is a certain homogeneity in voters behaviour when these are close in geographical, demographic, institutional, political, and/or in socio-economic terms.

Approaches based on mathematical programming, whether quadratic (for example, McCarthy and Ryan, 1977), or linear (for example, Corominas et al., 2015), minimise a loss function that depends on the deviations arising in each voting unit, subject to the restrictions imposed by the actual results. Methods based on statistical models — which began with seminal studies by Duncan and Davis' (1953) and Goodman (1953, 1959)[11] — exploit variations in the marginal distributions of registered voters in all units in both source and destination elections,

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9   People who change their vote tend to be more willing to take part in surveys. As a result, surveys tend to over-estimate voter transitions.

10 It is not unusual to find statements regarding past voting behaviour regarding parties that did not exist at the time but that coincide with the way the voter is currently casting his vote.

11 This approach, which lay neglected for decades, received a big boost when King (1997) included key references to it, as did Cho (1998), King et al. (1999, 2004), Rosen et al. (2001), Wakefield (2004), Greiner and Quinn (2010), Puig and Ginebra (2015), and Klima et al. (2019).

learning from joint distributions yet comparing the finding with what actually happened.

One of the advantages of more modern statistical methods is that they let one obtain congruent estimates throughout all of the voting units considered. This issue tends not to be addressed by mathematical models given that the computational cost grows exponentially. In this paper, the transition matrices obtained from the recorded results — which is to say, those based on ecological inference — were obtained as the mean of the mathematical model proposed in Romero *et al.* (2019), and whose roots lie in Romero (2014, 2015, 2016), and in the statistical method programmed in Electoral Transition software (Pavía, 2016).

The main drawback of ecological inference methods is the high data-processing cost. Although one can obtain acceptable estimates using relatively few voting units, the more detailed the base information, the better the results. That is why this paper exploited provisional results at the polling station or census section level. Working with small voting units exponentially raises the cost of data processing given that changes occur between voting units in time-separated elections on the one hand, and between each voting unit on the other.

To solve the first problem of establishing a link between the voting units for two time-separated elections, we implemented the solutions proposed by Pavía-Miralles (2005), and Pavía and López-Quilez (2013).[12] To solve the second problem (the composition of each voting unit), we supposed that entries and exits produced by changes of residence and/or deaths produced in each voting units affected all the voting options *pro rata*. The solutions proposed by Pavía and Veres (2016a, 2016b) were used to estimate the number of new voters in each unit who were

entitled to vote for the first time having reached the age of majority.[13]

The solution to the second problem involved adjusting the number of votes obtained by each party in the election in the voting unit. The percentages obtained by the parties remained constant in this adjustment, whose purpose was to ensure that the source and destination electoral registers agreed.[14] In this study, we aggregated residents' votes (adjusted by source election and registered for the destination election) for each voting unit as results of the various elections. On the one hand, this implies that there may be small discrepancies with the official results given that we worked with provisional data at the electoral table level.[15] On the one hand, the votes cast in source elections did not match the official figures, although the percentages were essentially the same.[16]

To give an example of the solutions obtained using both methodologies, we present estimated transition matrices based on survey data[17] and on ecological inference procedures. The estimate for the transition matrix for the 2015 and 2019 Valencian Regional Elections was obtained using both methodologies, which allowed us to compare their respective solutions. We estimated the remaining matrices using the ecological inference approach however we used solely survey data to estimate the two transition matrices obtained from the 2016 General Election as the source event.

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12 As Pavía and Cantarino (2017) show, establishing correlations through more complex methods does not guarantee markedly better results.

13 We opted for estimating the variable given the high financial cost that buying the electoral table data or census section data from Spain's National Statistical Institute (INI) would have entailed.

14 In the case of simultaneous elections using the same voter census, no adjustment is required.

15 Some months had to be excluded from the analysis given that the figures for provisional results in both elections were not available.

16 One should recall that the calculation of the transition matrices excludes non-residents.

17 In this study, we solely used surveys administered by Spain's Sociological Research Centre (*Centro de Investigaciones Sociológicas* — CIS), given that it is the 'gold standard' for opinion surveys in Spain (Pavía and Aybar, 2018).

Figure 4 **Estimation of the vote transition matrix for the 2015 and 2019 Valencian Regional Elections, based on survey data**

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	**58.5**	12.4	16.3	2.2	0.0	0.0	0.2	10.4	629897
Cs	1.6	**62.0**	20.7	3.5	0.9	0.0	1.6	9.7	298685
PSOE	2.2	5.2	2.4	**72.9**	2.5	1.7	1.1	12.0	486058
COMP	0.0	3.9	1.5	12.0	**74.6**	2.6	4.2	1.2	437829
UP	2.3	3.2	2.5	17.3	9.5	41.8	3.4	20.0	373143
Rest	2.7	1.9	5.8	4.4	7.9	11.0	29.2	37.3	179893
NE.2015	3.5	7.2	11.2	22.6	10.2	6.3	8.6	30.4	164789
Abst.	10.7	14.0	6.2	10.4	3.4	0.9	2.4	**52.1**	975734
	507583	469416	280915	641852	441359	214426	132485	857992	3546028

The rows refer to respondents' recall of their votes in the 2015 Valencian Regional Election, while the columns show voting intention in the 2019 Valencian Regional Election. The transition matrix emerging from the survey (see Figure A3) was adjusted using the RAS method (Pavía *et al.*, 2009) so as to ensure consistency between the results of both elections. The 2015 was proportionally adjusted to coincide with the provisional results of the 2019 election (for more details, see the third section).
NE.2015: New electors who reached voting age. For a description of the remaining acronyms, see the note to Table 1.

Source: The Authors, based the data in the 3244 CIS 'barometer' (CIS, 2019b) and provisional results at census section level in the 2015 and 2019 Valencian Regional Elections.

VOTE TRANSITONS IN 2015 AND 2019 VALENCIAN REGIONAL ELECTIONS

This section presents estimates of the vote transitions occurring between the 2015 and the 2019 Valencian Regional Elections. The estimate was based on the two approaches described in the foregoing section. Figure 4 shows the estimate obtained from processing the micro-data of Study 3244 in Spain's Centre for Sociological Research (CIS, 2019b).[18] Specifically, the probabilities of the transition in Figure 4 were obtained after: (i) classifying respondents' recall of the vote cast and of voting intention from the 1109 survey responses[19] which were then duly processed,[20] and (ii) adjusting the data,[21] using the RAS method, to make them consistent with the results of the 2015 and 2019 Regional Elections. Figure 5 shows the estimate of the transition matrix obtained after applying the combination of the two ecological inference approaches (described in the third section) to the provisional results.

18 Study 3244 — which carries the long-winded name *Macrobarómetro preelectoral Elecciones Autonómicas Comunitat Valenciana* [Pre-electoral Macro-barometer for The Valencia Country Regional Elections] — was carried out between the 15th and the 24th of March 2019, with a total sample of size of 1373.

19 The final size used for the estimates excludes 'no answer', 'do not remember', 'still undecided', 'not entitled to vote in the 2015 Regional Election'. Respondents who said that they were not old enough to vote were classified as New Voters. Abstentions comprised those in the "I do not vote" and "I will not vote" categories.

20 The raw results of the survey were processed by CIS experts to ensure the sample size was maintained, imputing wherever possible voting intention and voting recall among those respondents who declined to answer.

21 In Figure A3 of the MS, the reader may consult the unadjusted transition matrix if he so wishes.

Figure 5 Estimate of the transition matrix for the 2015 and 2019 Valencian Regional Elections based on the results from the census section

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	69.8	3.2	16.3	1.5	3.4	0.4	1.5	3.9	629897
Cs	3.0	83.1	10.2	1.5	1.0	0.4	0.4	0.5	298685
PSOE	1.1	2.6	0.8	73.0	2.2	1.6	4.1	14.6	486058
COMP	2.1	3.2	1.2	7.7	78.3	1.5	3.0	2.9	437829
UP	1.3	6.9	2.1	33.0	7.4	40.3	6.0	3.1	373143
Rest	6.3	28.0	16.9	11.6	5.3	7.8	16.0	8.2	179893
NE.2015	6.4	28.3	18.0	18.6	7.1	4.9	4.9	11.8	975734
Abst.	2.2	5.3	7.3	7.2	1.0	3.0	3.0	71.1	164789
	507583	469416	280915	641852	441359	214426	132485	857992	3546028

NE.2015: new voters, having reached voting age. For a description of the remaining acronyms, consult the note in Table 1.

Source: The Authors, based on CIS 3244 barometer data (CIS, 2019b) and provisional results at the census section level in the 2019 Valencian Regional Elections.

While both estimates show similar movements in voters' opinions and indicate that the main vote transitions were among parties belonging to the same ideological axis, the estimate based on survey data shows a more volatile electorate.[22] This result is unsurprising given that voters who change their vote or are thinking of doing so tend to manifest their views more strongly. Furthermore, surveys tend to systematically underestimate the abstention percentage.[23] In fact, the biggest difference between the two estimates can be seen between the rows and columns covering abstentions.

The strongest vote transition covers UP (Podemos/ Podem in 2015, and Unides Podem-EUPV in 2019), given that the percentage of loyal voters (that is to say, those casting their ballots for Podemos/Podem in 2015 and who also voted for the Unides Podem-EUPV coalition in 2019) is by far the lowest of all the parties at around 40%. Most of UP's lost votes went to PSOE or to abstentions, depending on the matrix we use. In any case, both matrices point to PSOE as the main beneficiary of voters deserting UP. It is possible that when the survey was carried out, a significant share of 2015 UP were weighing up whether to abstain and, as Figure 5 shows, finally ended up voting for PSOE, possibly mobilising to do so during the 2019 election campaign to stop the advance of the Far-Right party, Vox.

Obviously, in addition to evaluating said result, one should also mention Vox's results. From the standpoint of where the votes came from, many were from voters who had cast their ballot for PP and Cs in the 2015 election but who chose Vox in 2019, as did a fair percentage of new voters. From the standpoint of

22 In general, voting transitions found in surveys are less reliable when it comes to variation and bias. One simply needs to apply the raw voting transitions obtained in the survey (Figure A3) to the source election to see the big gap between forecasts and results.

23 This occurs for two reasons. One is because those abstentions are under-represented in surveys given that they tend to be less sociable and therefore are more likely to refuse to take part in the survey. The second is the issue of what is deemed to be social desirable. Voting is seen as a civic duty, therefore respondents who intend to abstain are more likely to hide the fact when they give their survey answers.

composition (see Figures A4 and A5 of the MS), we find — as one might expect — that what was only a fringe party in 2015 won votes in 2019 from former PP and Cs voters. To these were added voters who had abstained in 2015.

Analysis of these first transitions clearly indicates major shifts in votes between the main parties forming the core of the two ideological axes. This result, which is almost a constant in the elections analysed, was confirmed by the transitions revealed by all of the tables analysed, in particular the dual vote of UP and Compromís followers between the elections (see Figures 8 and 12).

VOTE TRANSITIONS IN THE 2016 GENERAL ELECTION AND THE REGIONAL ELECTION IN APRIL 2019

This section covers the vote transitions between the 2016 General Election and the 2019 Valencian Regional Election. In this section, all of the transitions are estimated based on the survey data.[24] Estimation of the transition matrix between the 2016 General Election and the 2019 Regional Election was carried out by combining the micro-data covering the Valencian Autonomous Community in the CIS 3242 study (CIS, 2019a)[25] and the CIS 3245 study (CIS, 2019c)[26]. Estimation of the 2016 transition matrix between the General Election and the 2019 Regional Election was based on micro-data from CIS study 3244 (CIS, 2019b).

The estimation methodology was exactly the same as that used to calculate the data shown in Figure 4.

Figures 6 and 7 show the estimates of the transition matrix for the 2016 General Election to the 2019 Regional Election. The tables were obtained after balancing out the cross-classification of the responses covered in the CIS survey to questions regarding vote recall and voting intention, making these consistent with the aggregated provisional results. Figures A6 and A7 in the MS show unbalanced matrices, and Figures A8 and A9 show the composition matrices associated with Figures 6 and 7. The data in Figure 6 are based on a combined sample of 2228, while the data in Figure 7 are based on a sample size of 1154.

Like in Figures 4 and 5, and in Figures 6 and 7, the biggest voting transitions were between parties making up the same ideological bloc. However, when it comes to hard numbers, one needs to exercise caution given the high bias and variance shown by estimates based on survey data and the under-estimation of abstentions. As occurred in Figure 4, the percentage of abstentions shown by the sample in relatively low (just 14 %) if one is to believe the numbers in Figures A6 and A7. These contrast with real-life abstention rates, which run at roughly 25 %[27] (see Table 1). This balancing algorithm[28] therefore tends to 'inflate' the percentage of 2016 voters who abstained in 2019, thus reducing parties' loyalty rates. In any event, one can again see the larger flow of votes to PSOE and the Left-Wing bloc (in this case, the UP-Compromís alliances), and to Vox in the Right-Wing bloc.

Figures 6 and 7 also show a notable contrast in vote transitions for UP-COMP (Compromís-Podemos-EUPV: à la Valenciana), which, depending on the elections,

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24 The estimate of voting transitions from 2016 to 2019 using ecological inference was not made given the high data-processing costs this would have involved.

25 Study 3242, termed *Macrobarómetro preelectoral Elecciones Generales 2019* [Pre-electoral Macro-barometer for the 2019 General Election] was carried out between the 1st and the 18th of March 2019, with a total sample size in The Valencian Country of 1245.

26 Study 3245, termed *Macrobarómetro preelectoral Elecciones Europeas, Autonómicas y Municipales 2019* [Pre-electoral Macro-barometer for the 2019 European, Regional, and Municipal Elections] was carried out between the 21st of March and the 23rd of April 2019, with a total sample size in The Valencian Country of 1385.

27 This figure is a little lower — roughly 24%, lower — when one calculates it using Figures 6 and 7, given that these do not consider the votes of non-residents, who election turn-out is quite a bit less.

28 The balancing algorithms — such as RAS — seek the solution that involves least change in cell values, verifying the restrictions imposed (in our case, consistency with actual results).

Figure 6 Estimate of the transition matrix between the 2016 General Election and the 2019 General Election, based on survey data

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	**49.0**	15.8	17.6	2.2	0.0	0.8	1.0	13.6	870591
Cs	3.7	**53.2**	10.0	8.1	0.0	1.3	3.2	20.5	624861
PSOE	1.0	5.0	1.4	**77.6**	2.6	2.5	1.2	8.7	510744
COMP–UP	0.2	2.0	1.4	16.6	21.4	**47.9**	3.4	7.1	367591
Rest	1.2	10.3	10.0	8.2	1.8	3.9	**30.9**	**33.7**	104524
NE.2016	8.4	9.9	6.9	15.8	5.3	9.4	3.3	**41.0**	946910
Abst.	4.1	9.2	10.3	17.6	1.9	4.5	2.6	**49.8**	120807
	743727	497509	481487	380991	321912	172712	108543	839147	3546028

The rows refer to recall of votes cast in the 2016 General Election and the columns to voting intention in the April 2019 General Election. The transition matrix obtained from the survey (see Figure A6) was adjusted using the RAS method (Pavía *et al.*, 2009) so as to ensure consistency between the results of both elections. The 2016 census was proportionately adjusted to coincide with the census of the 2019 provisional results (for more details, see the third section).
NE.2016: new voters, having reached voting age. For a description of the remaining acronyms, consult the note in Table 1.

Source: The Authors based on the data in CIS barometers 3242 and 3245 (CIS, 2019a, 2019c)
and provisional results at the census section level in the 2019 General Election.

Figure 7 Estimate of the transition matrix between the 2016 General Election and the 2019 Regional Election, based on survey data

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	**48.2**	15.4	17.1	2.1	0.4	0.0	0.5	16.3	870591
Cs	2.7	**63.7**	12.3	5.0	1.2	0.0	1.3	13.7	367591
COMP–UP	0.5	2.3	1.3	11.9	**46.6**	28.1	4.9	4.5	624861
PSOE	0.6	3.2	1.6	**70.3**	11.5	2.3	0.7	9.8	510744
Rest	0.0	0.0	1.9	10.3	1.9	4.8	**52.2**	29.0	104524
NE.2016	2.7	2.6	7.4	24.7	18.2	12.3	6.0	26.1	120807
Abst.	7.2	7.1	6.3	13.9	6.2	0.8	2.9	**55.5**	946910
	507583	469416	280915	641852	441359	214426	132485	857992	3546028

The rows refer to recall of the vote cast in the 2016 General Election while the columns refer to voting intention in the 2019 Regional Election. The transition matrix obtained from the survey (see Figure A7) was adjusted using the RAS method (Pavía *et al.*, 2009), in order to ensure consistency between the results of both elections. The 2016 Census was proportionately adjusted so that it coincided with the provisional census results for 2019 (more details in the third section).
NE.2016: new voters, having reached voting age. For a description of the remaining acronyms, consult the note in Table 1.

Source: The Authors, based on CIS 3244 barometer data (CIS, 2019b)
and provisional results at the census section level in the 2019 Valencian Regional Elections.

Figure 8 **Estimate of the transfer matrix for the April 2019 General Election and Regional Election, based on electoral table-level results**

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	**95.0**	0.9	0.9	0.7	1.6	0.1	0.6	0.2	497502
Cs	1.2	**88.5**	1.3	1.1	5.8	0.6	1.1	0.4	481481
VOX	4.7	6.9	**80.7**	1.2	2.2	0.7	2.7	0.9	321906
PSOE	1.0	0.7	0.4	**82.9**	6.2	2.2	3.5	3.1	743707
COMP	0.0	0.0	0.0	0.2	**99.5**	0.1	0.1	0.1	172710
UP	0.6	1.6	0.7	2.0	43.3	**49.0**	2.1	0.8	380985
Rest	2.7	2.1	1.9	4.6	8.9	3.9	**73.1**	2.7	108543
Abst.	0.2	0.2	0.2	0.3	0.3	0.3	0.3	**98.1**	839127
	508228	467990	280246	644492	438295	215341	133108	858260	3545961

For a description of the acronyms, consult the note in Table 1.

Source: The Authors based on provisional electoral table-level results in the 2019 General Election and the Valencian Regional Election after applying the ecological inference procedure detailed in the third section.

benefits Unidas Podemos (in General Elections) or Compromís (in Regional Elections). As we shall see in the following section, this duality in the behaviour of UP-COMP voters in 2016 is strongly corroborated when one analyses the vote transitions between the General, and the Regional elections in April 2019 (see Figure 8).

VOTE TRANSITIONS BETWEEN THE 2019 GENERAL ELECTIONS AND VALENCIAN REGIONAL ELECTIONS

The 28th of April 2019 was a remarkable day in the Valencian Autonomous Community for it was the first day that the Regional Election was held on the same day as Spain's General Election. The censuses

(voting registers) for both elections were the same,[29] allowing ecological inference algorithms to be applied without having to assume the absence of significant changes between the two elections.

Figure 8 shows the vote transition estimates arising between the April 2019 General Election and Regional Election. As is usual in simultaneous elections, we took the General Election as the first order election, and the Regional Election as the destination, second-order election. One should note that up until then, estimated transition matrices were obtained using ecological inference algorithms that were sensitive

29 Even in simultaneous elections, one cannot take it for granted that the voting censuses for: local and regional elections; local and European elections; European and General elections, are the same because they usually differ. CERE voters (census of foreign residents in Spain) do not have the right to vote in Regional and General elections. That is why the voter census differs between local and European elections.

Figure 9 Estimate of the transition matrix from the April 2019 General Election to the 2019 European Election, based on electoral-table level results

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	**78.5**	2.0	12.4	1.3	1.0	0.3	2.1	2.4	498606
Cs	3.2	**54.9**	1.4	4.5	1.8	1.2	2.4	**30.6**	482549
VOX	22.8	9.8	28.0	3.8	2.6	1.5	4.7	26.7	322620
PSOE	1.1	0.5	0.2	**88.8**	0.9	1.0	1.0	6.6	745357
COMP	1.8	2.7	0.6	7.7	**69.7**	7.7	6.5	3.3	173093
UP	1.5	1.3	0.4	4.7	5.6	**47.6**	7.9	**31.0**	381830
Rest	5.5	4.1	1.2	13.7	9.6	4.7	**33.2**	28.0	108784
CERE	14.0	2.5	2.8	6.1	7.7	1.7	8.5	**56.7**	74644
Abst.	1.0	0.4	0.1	1.2	0.7	0.3	0.3	**96.0**	840991
	522275	329521	167078	762178	193291	223670	131132	1299329	3628474

For a description of the acronyms, consult the note in Table 1.
Census. CERE refers to the census of foreign residents in Valencia with the right to vote in the local elections.

Source: The Authors, based on provisional results at the electoral-table level for the 2019 General Election and European Election (European Parliament) after applying the ecological inference procedure detailed in the third section.

to deciding which election was the source and which the destination one. Accordingly, a different decision would have led to slightly different estimates. In any event, the transition matrix for the regional and general elections would have varied very little from that obtained by transposing Figure A10 of the MS, which corresponds to the composition matrix associated with Figure 8.

As was to be expected, there was less voting mobility given that the simultaneous elections were strongly linked, as can be seen in Figure 8. In general, voters chose the same party in both elections. An exception here concerned a significant share of voters for Compromís and Unidas Podemos (Unides Podem-EUPV). Taking voting transitions from the General Election to the Regional Election, one can see that UP voters in the General Election virtually split their vote between UP and Compromís in the Regional Election. Looked at the other way round (from the

Regional Election to the General Election), a significant share of voters split their ballot papers between Compromís and UP (see Figure A10).[30] In any case, analysing voting transitions from the General Election to the Regional Election and leaving aside the UP's case, among the main parties, Compromís and PP were the ones commanding greatest voter loyalty, while Vox, PSOE and Cs were the parties showing greatest vote transition. In Vox's case, almost 12% of its voters at the General Election opted to vote for Cs or PP in the Regional Election. In the case of PSOE voters, the party's greatest loss of votes from the General Election to the Regional Election was to Compromís (around 6%). The same thing happened to Cs voters in the General Election.

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30 On the other hand, one should not overlook that they voted for PSOE in the General Election.

Figure 10 Estimate of the transition matrix from the April 2019 General Election to the November 2019 Election, based on section-level results

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	91.8	0.2	2.1	1.2	0.3	0.5	0.4	3.6	495843
Cs	22.4	38.5	17.4	4.1	5.7	1.9	4.1	6.1	480074
VOX	1.2	0.2	96.8	0.2	0.2	0.1	0.1	1.1	320993
PSOE	0.4	0.2	2.0	86.0	0.4	1.3	1.4	8.2	741102
UP	0.8	0.7	1.3	4.9	4.3	77.3	4.4	6.2	379812
COMP	2.8	0.7	4.0	4.4	71.3	9.8	3.2	3.8	172358
Rest	2.6	1.8	17.2	4.8	2.1	3.7	34.9	32.9	108236
NE.Abril	6.5	3.7	35.9	5.7	4.3	4.7	7.2	32.1	23721
Abst.	0.2	0.1	1.0	0.2	0.1	0.1	0.0	98.3	836265
	583121	195374	467019	697596	175092	337770	94837	1007595	

NE.Abril: New electors reaching voting age.
For a description of the acronyms, consult the note in Table 1.

Source: The Authors, based on provisional results at the section level of the census in the April and November General Elections, after applying the ecological inference procedure detailed in the third section.

VOTE TRANSITIONS IN THE APRIL 2019 GENERAL ELECTION TO THE 2019 EUROPEAN ELECTION

The General Election and the European Election are both considered to be 'national elections' so it is worth studying the vote transitions from the former to the latter. Figure 9 shows the estimated voting transitions obtained using the ecological inference procedure described in the third section, and based on the provisional results at the electoral-table level in both elections. Figure A11 shows the corresponding composition matrix.

The PSOE was the party that kept most of its voters by a long chalk, followed by PP. Furthermore, these parties were also the ones that got most votes. By contrast, Cs, UP, and Vox voters showed very little loyalty. Vox's case is particularly noteworthy in this respect because, according to the estimate, it only retained 28 % of its voters. Nevertheless, Vox attracted a high percentage of voters who had chosen PP in the General Election.

Vox also lost almost a third of its voters in the General Election, and to abstention in the European Election — something that also happened to UP and Cs.

VOTING TRANSITIONS IN THE APRIL 2019 AND NOVEMBER 2019 GENERAL ELECTIONS

The April 2019 General Elections shaped a Spanish Parliament in which PSOE had 123 seats — almost double that of the PP, the second-largest party, with 66 seats. Despite this, the Socialist candidate was unable to marshal enough votes in parliament to be invested President. It proved impossible to break the deadlock so another General Election was held in November 2019. Figure 10 shows the estimate of the voting transitions, using the ecological inference procedure described in section three and based on the provisional results at the census level in both elections. Figure A12 of the MS shows the corresponding composition matrix.

Figure 11 **Estimate of the voting transition between the 2019 Regional and Local elections at the electoral table level**

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	**86.4**	3.7	1.7	0.6	3.5	0.5	1.4	2.1	83124
Cs	2.7	**66.6**	2.4	2.1	9.2	1.0	2.5	**13.5**	85582
VOX	17.7	13.9	**48.5**	1.7	2.2	1.0	1.2	13.8	48335
PSOE	0.3	0.3	0.3	**71.0**	2.0	2.7	1.8	21.7	88938
COMP	0.2	0.3	0.2	0.9	**94.8**	2.7	0.2	0.6	94453
UP	0.1	0.2	0.2	10.3	2.7	25.5	2.2	**58.8**	31299
Rest	2.2	1.9	1.8	19.5	7.8	3.2	22.6	**41.0**	20113
CERE	8.2	4.5	3.9	3.6	8.4	16.7	4.9	**49.9**	4693
Abst.	0.2	0.2	0.1	0.1	0.3	0.0	0.0	**99.0**	129683
	84290	68251	28109	74545	106353	16148	11269	197255	369179

For a description of the acronyms, consult the note in Table 1.
Census. CERE refers to the census of foreign residents in Valencia with the right to vote in the local elections.

Source: The Authors based on provisional results at the electoral-table level in the 2019 General Election and the Valencian Regional Election, after applying the ecological inference procedure detailed in the third section.

The new election brought major changes compared with the election held just seven months earlier. On this occasion, the big changes were on the Right Wing, with Cs doing very badly, while Vox's vote soared. Indeed, Cs only kept 38.5% of those who voted for them in April. The party's votes mainly went to PP (22.4 %) and Vox (17.4 %). Furthermore, Vox was the party that won the greatest share of new voters (35.9 %), and had the greatest voter loyalty — doing better in this respect than PP and PSOE. The repetition of the General Election hurt Left-Wing parties, with 8.2% of PSOE voters in April and 6.2% of UP voters choosing to abstain, most likely because both parties had shown themselves incapable of reaching an agreement to invest a new president following the April General Election.

VOTING TRANSITIONS IN THE 2019 REGIONAL ELECTION TO THE 2019 LOCAL ELECTIONS IN THE CITY OF VALENCIA

One cannot always study voting transitions using survey data. There are settings where surveys are not

available or they do not cover the right variables. This is this case with local elections, in which it is common to find surveys that do not contain any micro-data.

In the Spanish case, one can always resort to ecological inference algorithms to dis-aggregate data by voting units. As an example of a voting transition matrix in local elections, this section analyses the transitions that occurred in Valencia between the 2019 Regional and Local elections.[31]

If one examines the estimates shown in Figure 11, the most salient result is the high percentage of voters who abstained in the local elections after having voted in the Regional Election. The figure that most stands out in this respect is the one for UP, whose

31 There was a pre-electoral survey for the 2019 Local Election but this did not include the City of Valencia (CIS, 2019c) and accordingly it was not possible to build a matrix for this section given that no information on voting intentions in the Regional Election was gathered. In any event, the sample size corresponding to the City of Valencia was only 479.

Figure 12 Estimate of the voting transition from the 2019 European Election to the 2019 Local Election from the electoral-level results. City of Valencia

	PP	Cs	VOX	PSOE	COMP	UP	Rest	Abst.	
PP	93.5	3.4	0.7	0.2	1.6	0.2	0.3	0.1	82263
Cs	0.9	91.2	0.6	0.5	5.7	0.5	0.4	0.2	66360
VOX	12.9	8.8	73.3	0.9	2.4	0.6	0.8	0.3	33077
PSOE	0.9	0.6	1.3	64.3	19.7	6.4	5.4	1.4	109154
COMP	0.0	0.0	0.0	0.4	99.6	0.0	0.0	0.0	35990
UP	0.2	0.1	0.1	1.0	82.6	15.7	0.2	0.1	42938
Rest	7.4	6.8	6.9	4.7	41.0	7.7	24.5	1.1	17886
Abst.	0.1	0.1	0.1	1.0	0.1	0.2	0.1	98.3	197721
	84290	68251	28109	74545	106353	16148	11269	197658	585389

For a description of the acronyms, consult the note in Table 1.

Source: The Authors based on provisional results at the electoral-table level for the 2019 European Parliament and Valencia City Council elections, after applying the ecological inference procedure detailed in the third section.

voters in the Regional Election mainly abstained in the Local Election. Of the other large parties, Compromís and PP were the only ones that did not lose many of their Regional Election voters to abstention in the Local Election one month later. Vox and UP show the other side of the coin — both parties losing over half of their voters in the latter election. Here Mayor Ribó's ability to hang on to almost all of the votes won in the Regional Election and to improve his party's showing in the Local Election held a month later are particularly noteworthy achievements.[32]

VOTING TRANSITIONS BETWEEN THE 2019 EUROPEAN ELECTION AND THE LCOAL ELECTION IN THE CITY OF VALENCIA

Last, given that the 2019 European and Municipal elections were held simultaneously, it is worth studying vote transitions between the two elections. In

this case, we once again study the City of Valencia. Figure 12 shows the estimates of voting transitions between the 2019 European and Local elections. Figure A14 shows the composition matrix associated with Figure 12, whose transposition can be interpreted as the transition matrix from the local to the European elections, given that both elections were held at the same time.

It is worth noting that almost all the voters cast their ballots in both elections, which undoubtedly helped cut the usually high abstention rate seen in European elections. The most salient fact is the movements voters showed between the parties on that day. This is a clear indicator that voters considered many other factors in addition to the party name, for example, the main candidates in each party list and the kind of election. Even so, given the results we can say that the ideological axis continued to be the decisive factor in most voters' choices.

Another notable point is the huge number of votes picked up by the present Mayor, Joan Ribó, who

32 Figure A13 shows the composition matrix associated with Figure 11.

picked up almost all the voters who had plumped for Compromís in the European Election (the party being badged as 'Compromiso por Europa'). He was also able to pick up a large number of voters from other parties. Here, one should note the voting transition from the candidacy of Unidas Podemos Cambiar Europa, the result of which was that Compromís won the elections and that Podem-EUPV failed to reach the threshold needed to win seats. Compromís also picked up a fair number of votes from PSOE.

The voting transitions were not only found among the Left-Wing parties but also occurred among Right-Wing ones. In the latter case, the main beneficiary was PP, which picked up almost 13% of Vox's votes in the European Election. In fact, after UP, Vox was the second party to lose the greatest percentage of its votes. In any case, in the local elections the impact of the candidates and their connections made themselves felt — an area where Vox was at a disadvantage — as can be seen from Figure 12.

CONCLUSIONS

The 2008 economic crisis sparked great economic and global changes, upsetting the political apple-cart in most Western countries. Spain and The Valencian Country have also been affected by these changes as can be seen from what has happened since the 2015 elections. These were the first to show major voting transitions. During the 2019 elections, these changes continued and were amplified by the appearance of a new actor — Vox — upon the political stage, and seemingly greater volatility in voting behaviour.

It is against this background that our study estimates and analyses the voting transitions in The Valencian Country for the 2019 General, Regional, Municipal, and European elections. Specifically, we used results drawn from small areas, and from survey results, to estimate voting transition matrices: (1) between the 2015 Regional Election to the 2019 Regional Election; (2) from the 2016 General Election to the April 2019 General Election and Regional Election; (3) between the April General Election and Regional elections; (4) between the April 2019 General and European elections and the November 2019 General Election; (5) at the local level, between the 2019 Regional Election and the Municipal Election for the City of Valencia; (6) between the 2019 European and Municipal elections.

The most salient results are: (a) virtually constant voting transitions in each ideological bloc, and (b) the flow of votes back and forth between UP and Compromís, in which the former wins more votes in national elections while the latter virtually absorbs all of UP's votes in regional and local elections.

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