Contributions

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Boycott or *Buycott*?: Internal Politics and Consumer Choices

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Abstract: Does politics affect economic relations? In particular, do political tensions significantly affect consumer choices? The main objective of the paper is to study the consequences of political conflicts between Spain and Catalonia (a region of Spain) and the subsequent boycott calls on sales of Catalan sparkling wine (*cava*) in the Spanish market. We use data from sales of sparkling wine in supermarkets and similar outlets. To determine with precision the boycott period we use data on the number of news on the issue that appeared in the main national Spanish daily newspapers. The results of our econometric analysis indicate that the boycott calls triggered different consumers' reactions in different territories. While consumers in some Spanish regions followed them and reduced their purchases of Catalan *cava*, there was also an anti-boycott reaction of Catalan consumers which led them to increase their consumption of the product. As a consequence of this, the boycott calls had an insignificant impact at the Spanish aggregate level. These results can be rationalized by the predictions of theoretical models of boycotts that include both the free riding and animosity motives.

Keywords: consumer boycott, political conflict, wine sales, consumer behavior

JEL classification codes: D12, F52, L66, D74, N14

1 Introduction

Do political tensions affect consumer choices? Firms are very often threatened by consumer boycotts that intend to modify their business strategies and behavior with different objectives such as the defense of the environment or the

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protection of workers' rights. Often things get more complicated than this and boycotts on firms are caused by more general political conflicts. Examples of this kind of boycotts arise when, due to interstate tensions, consumers from one country are called to boycott products imported from another country. There are many instances of this kind of boycotts and economists have long disputed about their likely economic impact. On the one hand, free riding problems, common to any collective action phenomenon, are an obvious hurdle to significant reductions of individual consumer purchases. On the other hand, though, consumers are sometimes led by their animosity against products and firms coming from a country that has somehow offended them and the country they belong to. In this paper we take on this issue and examine the consequences of boycott calls on sales of Catalan sparkling wine (*cava*) in the Spanish market during episodes of intrastate political tensions in Spain.

Map 1: Catalonia, Spain and Europe.

Catalonia is a relatively rich region in the northeastern corner of Spain, a southern European country (see Map 1). It has its own language and a long history of political conflicts with Spain about matters such as culture, language, education, autonomy and self-determination, public investments or taxation (see Paluzie 2010). From time to time, when the political temperature rises, this leads to demands for greater autonomy (especially related to fiscal matters) and even secession from some sectors of Catalan society. One of the reactions of some parts of Spanish society to these political demands from Catalan politicians and electorate has been to call for consumer boycotts against Catalan products.

One of the boycott episodes with greater impact in the media took place from 2005 onward, after the approval of the project of a new Statute of Autonomy in

the Catalan Parliament (September 30) and its subsequent negotiation with the Spanish political parties in the Spanish Parliament. This process triggered what some observers called the “*cava* boycott” (*cava* is the name of a popular sparkling wine which is mainly, but not only, produced in Catalonia). Although the call from the organizers was for a general boycott on many Catalan products, the truth is that a great deal of the mass media attention was devoted to this particular item. The main objective of the paper is to study the consequences of the boycott on sales of Catalan *cava* in the different regions of the country. The main contributions of the paper are to show the different reactions of consumers and to rationalize them appealing to models of boycotts that include both the free riding and animosity motives. These are discussed in more detail in Section 2.

There are several papers in the literature that study the impact of consumer boycotts due to international political disputes on different product sales. Several of them use, like ours, data of direct sales to consumers. Thus, Ashenfelter, Cicarella and Shatz (2007) and Chavis and Leslie (2009) study the case of French wine in the United States during the Iraq war in 2003, which the French government strongly opposed. Pandya and Venkatesan (2014) look at the same historical episode, but concentrate on changes on a more diverse set of product categories sold in supermarkets. Hong et al. (2011) examine the case of French automobiles in China during the Beijing Olympic Games in 2008, after a series of political clashes between the Chinese and French governments on the political situation in Tibet and human rights issues. Clerides, Davis and Michis (2015) study the case of American soft drinks and fabric detergent in seven Arab countries during the Iraq war, which unleashed a wave of anti-American sentiment there. Fouka and Voth (2013) look at German car sales in Greece during the Euro crisis, when Greek and German governments clashed over the terms of the European Union bailout of Greece (see the table in Appendix A for more details about these papers). Our paper follows an identical approach, although with the particularity that it deals with the effects of boycott calls due to political tensions within a state. A different approach is taken in Michaels and Zhi (2010), Davis and Meunier (2011) and Fuchs and Klann (2013), which focus on how political conflict and the worsening of public attitudes in different countries (sometimes even implying calls for boycotts) affect aggregate bilateral economic relationships (trade, investment flows, etc.). A recent paper by Fisman, Hamao and Wang (2014) studies the impact of political tensions between Japan and China and subsequent boycott calls on the value of firms.

The main body of data we use come from Symphony IRI Group (Spain) and consists of four-week sales (revenues in euros and quantities in liters) in the Spanish market of different types of *cava* and related products (sparkling wine) running from 2001 to 2012. Moreover, the data are disaggregated for eight

different regions within the Spanish market. To determine with high precision the boycott period we use data on the number of news which mention the issue of the boycott and appear in the main national Spanish daily newspapers.

The results of our econometric analysis indicate that the boycott calls triggered different consumers' reactions in different territories. While consumers in some Spanish regions followed them and reduced their purchases of Catalan *cava*, there was also an anti-boycott reaction of Catalan consumers which led them to increase their consumption of the product. These results can be rationalized by the predictions of the models of boycotts discussed in Section 2 and, moreover, are also consistent with some anecdotal evidence gathered from reports in the media at the time. As a result of this, the boycott calls had an insignificant impact at the Spanish aggregate level, itself a direct consequence of the combination of a negative impact of the boycott in some regions and a positive impact in the Catalan market. The quantitative implications of the analysis are as follows. For the regions that suffered a negative impact, the boycott amounted to a drop of revenues from sales between 5.8 and 9.8 percent over the period 2004–2007, depending on the region. For the regions that enjoyed a positive impact, the increase in revenues is estimated to be between 7.3 and 8.4 percent over the same period.

The rest of the paper is organized as follows. Section 2 describes the political background of the *cava* boycott calls, making explicit their timing and possible causes. Section 3 describes our data. Section 4 presents the economic analysis of the boycott and contains the main results of our work. Section 5 provides additional empirical results which help look into the specific mechanism of the boycott. A final section summarizes the arguments and concludes.

2 Political Economy of Boycotts: The Case of Catalan *Cava* in Spain

The general issue of the interrelation between economic interdependence (trade and financial flows, migration and workers mobility, etc.) and the existence of political conflicts among different countries has always been at the center of interest in Political Economy.¹ A particular channel by which political hostilities may end up causing lower degrees of economic interdependence among countries is the alteration of consumer choices and, in particular, the organization of

¹ See Davis and Meunier (2011) and references therein.

consumer boycotts against products imported from countries regarded as political antagonists for some reason. When and why boycotts are effective are questions on which economic models can shed some light. On the one hand, standard economic theory predicts that boycotts, like other instances of collective action, are subject to *free riding* problems that seriously limit their success chances (see John and Klein 2003). On the other hand, Pandya and Venkatesan (2014) (see references therein) describe how the political and emotional reactions to international conflict may drive changes in consumer behavior and trigger waves of *animosity* against companies and products that consumers relate to a foreign country regarded as hostile. According to their description, political disputes may generate anger, desire for retaliation and greater willingness to participate in punitive collective actions such as consumer boycotts.² This type of boycott is sometimes called surrogate boycott.³ The companies that are targeted by boycotters are not directly responsible for the egregious act that causes consumers' anger and, thus, have a very limited path of action to placate it. Moreover, even though boycott calls are generally directed to all products coming from the offending country, often only a few emblematic and representative items (or companies), very easily recognizable by a vast majority of consumers, end up being penalized in a substantial way. These two circumstances make this class of boycotts particularly arbitrary from a company's point of view but, at the same time, might reduce the motivation of the consumers against the targeted company and the intensity of the boycott actions. Thus, boycotts of this type may also trigger waves of *sympathy* toward the targeted companies and products, therefore offsetting the main intended effects of the boycott (see John and Klein 2003, p. 1198).⁴ These three elements, free riding,

² The model of consumer *animosity* is analyzed in Klein, Ettenson and Morris (1998). See Riefler and Diamantopoulos (2007) for a literature review.

³ See Friedman (1999). These are cases in which the offending party is not directly accessible to the boycotters, so they choose as target a different party which they believe can be forced to bring pressure to bear on the offending party.

⁴ There are at least two general causes that may justify this: (a) political opinions are not unanimous among consumers and, consequently, they do not all share the feeling of offense caused by the political actions of the foreign government. In fact, they may even choose to express their support to those actions through their augmented purchases of the boycotted goods (sometimes this phenomenon is referred as *buycott*); (b) consumers regard the companies targeted by the boycotters as innocent victims of a political situation they did not contribute to create and are not able to terminate. Ashenfelter, Cicarella and Shatz (2007) refer to the possibility of *buycott* in the case of the French wine in the United States during the Iraq war. Many people in the United States were strongly opposed to the war and could have expressed this by modifying their purchases toward French goods.

animosity and sympathy, are the theoretical arguments analyzed in the economic literature on boycotts with which the main empirical results of the paper can be rationalized.

Although so far we have only mentioned political tensions at the international level, the logic of the arguments follows in cases of conflicts that take place within a country. Typically, some consumers may choose to express their disconformity with decisions taken by governments at regional or local level by refusing to purchase goods made by firms located in the geographic area whose governing body or electorate has offended them (Friedman 1999 refers to many such cases in the United States). This also applies to the specific case we analyze in this paper.

The political scenario in Catalonia has always been characterized by frequent political and legal disputes between the Catalan and Spanish governments about questions such as the distribution of fiscal revenues and the degree of devolution (see Paluzie 2010 and Castells 2014 for more details on these questions). In part as a result of this troublesome relationship, a general agreement was reached in the Catalan Parliament to approve a new Statute of Autonomy in September 2005. The new law declared that Catalonia was a nation and its basic objectives were to improve the fiscal position of the regional government and safeguard its jurisdiction on matters regarded important such as education. The approval of the new Statute was not very well received in Spain. There were political objections from the main Spanish parties, which considered that devolution was going too far and accused the proposal of lack of solidarity. There was also a noisy controversy about whether parts of the new law were contrary to the Spanish Constitution. In the middle of this deteriorated political environment the new Statute was discussed, amended and approved by the Spanish Parliament and, then, submitted to referendum to the Catalan electorate in June 2006.

This was the strained political context in which boycott calls appeared and were propagated in 2005. Although the main boycott calls were generally addressed to a vast variety of Catalan products, the truth is that the media and public attention were mainly devoted to the boycott against a very representative Catalan consumer product, *cava*, so that the boycott has been known as the *cava* boycott. In fact it is difficult to find reports about other products affected by a similar boycott at the time.

Was the *cava* boycott effective? Was it equally intense everywhere in Spain? News reports at the time claim that Catalan *cava* producers complained about lower sales, especially around the Christmas campaign in 2005. The media also reflects that the boycott was especially effective in some parts of Spain. Contrary to this, there were also indications that purchases of Catalan *cava* in Catalonia

increased during the period, which might be evidence that Catalan consumers engaged in some sort of *buycott*. The following sections of the paper analyze the available data and shed some light on these issues.

3 Description of the Data

We use two main different sources of data in our analysis. First, we have data for sales of sparkling wine (*cava* and related products) in the Spanish market (dependent variable) and, second, the number of news which mention the issue of the *cava* boycott in the five leading Spanish newspapers at the time (independent variable).

3.1 Dependent Variable

The data are from Symphony IRI Group (Spain) and correspond to sales of sparkling wine in supermarkets and hypermarkets (the firm collects the information from a universe of approximately 17,000 commercial outlets of this type). These data fit well our research objective, which is to evaluate the impact of political events on the behavior of final consumers. However, it is less adequate to make a precise assessment of the boycott from the producers' point of view, because it leaves out the part of the production which is distributed through hotels and restaurants and also firms that elaborate gifts that companies offer to customers and employees (an important tradition in Spain, especially around Christmas).⁵ The data are available both for quantities (liters) and revenues (euro) and consist of observations on sales for 13 four-week periods per year for the period spanning from 2001 to 2012 (although we only have the first four observations for the last year). This is a total of 147 time periods. In comparison with some of the papers mentioned in the Introduction, the relatively large number of years of our sample will allow us to introduce a detailed consideration of the long-term time trends observed in the data, something that will be important for some of our results. The data indicate that sales of sparkling wine are highly seasonal in Spain and around 30% of the total value of sales takes place in the last four weeks of the year.

⁵ See Nueno (2006), who argues that an important part of the impact of the boycott was due to the behavior of firms in these distribution channels rather than final consumers.

We do not have detailed observations for all specific products or commercial brands of sparkling wine in sale in the Spanish market. The observations we have correspond to aggregate categories such as “French champagne,” “private label *cava*” (*cava* commercialized under private labels by supermarket chains), “non-Catalan *cava*” and so on. There are 17 such categories in our database. To avoid confusion we will refer to these categories as *varieties* of sparkling wine. A more detailed description of our data and this variety classification can be found in Appendix B.

For our purposes, the most relevant distinction we will make in the data is between **Catalan *cava***, which we will define as *cava* which is clearly perceived to be produced in Catalonia, and the **rest of sparkling wine**, which includes *cava* produced in other parts of Spain, private label *cava* (although most of it is produced in Catalonia) and other sparkling wines such as French Champagne, Granvas wines (natural sparkling wine different from *cava* whose second fermentation takes place not in bottle but in large metallic containers) and others (see Appendix B for details). Catalan *cava* has a large, although clearly declining, share in the market for sparkling wine both in revenues and in quantities during the period (Table 1). This secular reduction in share is largely due to two different factors: (1) the increase of very cheap *cava* sales commercialized under private labels; and (2) the increase in the sales of French Champagne, a comparatively very expensive product. This observed increasing trend in the consumption of Champagne and the cheapest varieties of *cava* occurs for all the years of our sample (see Table 1). It will be crucial for our objectives to disentangle the effects of political tensions and the subsequent calls for boycotts and the long-term trend effects we observe for the whole period, whose causes should be attributed to very different factors.

Cava is a sparkling wine which is mainly produced in Catalonia. Only 159 municipalities in Spain form the area where *cava* can be produced. Of those, 133 are in Catalonia and 26 in the rest of Spain. The average number of firms producing *cava* during the period 2001–2012 was 267, but only 10% of them were located outside Catalonia.⁶ Not surprisingly, the share of non-Catalan *cava* in our data is very small for all years, reaching a maximum in 2007 (Table 1).

Regarding the market structure of the *cava* sector it is worth mentioning that there are two clearly dominant firms (to which we refer as Company A and B; see Appendix B for more details), both selling *cava* under different brands, which together have a share higher than 50% of total revenues. Their share of the market, though, has dramatically decreased throughout the period (see Table 1).

⁶ All these (and additional) information can be found at <http://www.crcava.es/english/inicio.htm>

Table 1: Market shares (as % of total sparkling wine market in Spain).

Year	Catalan <i>cava</i>		Rest of sparkling wine			
	Total	Dominant firms	Total	French Champagne	Private label	Non-Catalan <i>cava</i>
2001	82.93	72.55	17.07	5.81	7.53	0.82
	<i>77.98</i>	<i>71.40</i>	<i>22.02</i>	<i>0.89</i>	<i>14.71</i>	<i>0.95</i>
2002	81.64	70.62	18.36	6.30	7.12	0.78
	<i>76.96</i>	<i>70.24</i>	<i>23.04</i>	<i>0.99</i>	<i>14.47</i>	<i>0.98</i>
2003	80.80	69.61	19.20	6.71	7.97	0.67
	<i>75.21</i>	<i>68.32</i>	<i>24.79</i>	<i>1.03</i>	<i>16.87</i>	<i>0.83</i>
2004	79.48	67.85	20.52	7.73	8.53	0.69
	<i>73.68</i>	<i>66.02</i>	<i>26.32</i>	<i>1.16</i>	<i>18.41</i>	<i>0.87</i>
2005	76.10	63.09	23.90	9.27	9.07	1.22
	<i>70.58</i>	<i>61.21</i>	<i>29.42</i>	<i>1.38</i>	<i>19.59</i>	<i>1.46</i>
2006	73.87	60.77	26.13	11.06	9.30	1.31
	<i>68.18</i>	<i>59.61</i>	<i>31.82</i>	<i>1.73</i>	<i>20.89</i>	<i>1.57</i>
2007	73.18	59.61	26.82	11.51	9.82	1.32
	<i>65.92</i>	<i>57.61</i>	<i>34.08</i>	<i>1.87</i>	<i>23.15</i>	<i>1.67</i>
2008	72.01	58.69	27.99	11.30	10.91	1.27
	<i>62.77</i>	<i>54.45</i>	<i>37.23</i>	<i>1.88</i>	<i>25.72</i>	<i>1.59</i>
2009	71.46	56.97	28.54	11.67	11.66	1.30
	<i>62.14</i>	<i>52.09</i>	<i>37.86</i>	<i>1.95</i>	<i>27.53</i>	<i>1.59</i>
2010	71.01	55.40	28.99	12.13	11.81	1.12
	<i>62.23</i>	<i>49.75</i>	<i>37.77</i>	<i>2.02</i>	<i>27.90</i>	<i>1.37</i>
2011	69.96	53.72	30.04	12.79	12.44	0.84
	<i>61.53</i>	<i>47.18</i>	<i>38.47</i>	<i>1.99</i>	<i>29.01</i>	<i>1.01</i>

Note: Numbers in the table correspond to market shares in revenues (quantities in italic) for each year for the whole Spanish market.

The fact that this fall has been much more acute for quantities than revenues is a clear indication that the two firms have been concentrating their sales in the higher price segments, probably as a consequence of the growing competition of private label and other brands in the lower end segment. The rest of the sector has a very atomistic structure: there are two medium-sized firms (which are clearly specialized in the opposite segments of the market) and a large number of small firms which together have a share of the market for sparkling wine which is around 6% (in revenues) (see Appendix B for a more detailed description of the data).

The data are also disaggregated by eight different territories in Spain which include the two main metropolitan areas (Madrid, in the geographical center of Spain and political capital of the country, and Barcelona, the main city in the

region of Catalonia) and six other regions which are North East (NE), East (E), South (S), Center (C), North West (NW) and North (N). They group all Spanish provinces (except the Canary Islands) according to the specific geographical criteria used by the provider of the data, which do not correspond to administrative and political divisions in Spain (see Map 2).

Map 2: Spanish regions for disaggregated data.

These regions have very different relative sizes with respect to the whole Spanish market for sparkling wine. Figure 1 shows the relative size of each region in our data. This disaggregation of the data will be very useful for our purposes, since news reports at the time of the boycott reflected a very different behavior of consumers in each region. Not surprisingly, they did not echo any negative effect of the boycott in the Metropolitan Area of Barcelona and Region NE, which includes the rest of Catalonia.⁷ As a matter of fact, the boycott calls could even have had a positive impact on purchases of Catalan *cava* in

⁷ Region NE includes the whole region of Catalonia except the Metropolitan Area of Barcelona, the community of the Balearic Islands and two (Huesca and Zaragoza) of the three provinces of the community of Aragón. Some additional available data make us think that more than half of the sales (in euros) of Catalan *cava* in Region NE correspond to Catalonia.

Figure 1: Relative size of each region in the market for sparkling wine (2001–2012). *MAB: Metropolitan Area of Barcelona; **MAM: Metropolitan Area of Madrid.

Catalonia.⁸ The other six regions are where the boycott is more likely to have had a more significant repercussion. According to some news reports published at the time, the Metropolitan Area of Madrid and Region E (of which Valencia is the main town) are the zones where the boycott had the largest effects.⁹

3.2 Independent Variable

The second main source of our data comes from counting the number of news that mention the issue of the *cava* boycott and appeared in the five leading Spanish newspapers at the time.¹⁰ We take this measure (“total number of news”) as a way of approximating the actual timing of the boycott and the fact that they show a strong positive correlation suggests that it is a reasonable

⁸ *La Vanguardia*, a newspaper published in Barcelona, had a piece in January 5, 2006, under the headline “The *cava* counterboycott of Catalans increases sales by 10% in Christmas.” Interestingly, this does not seem to be the outcome of an organized *buycott* call promoted by some social group.

⁹ An example of this is the article under the headline “Consumers from Madrid and Valencia led the boycott against Catalan *cava*,” which appeared in *ABC*, a newspaper published in Madrid, on February 15, 2006.

¹⁰ These are *El País*, *El Mundo* and *ABC* (published in Madrid) and *La Vanguardia* and *El Periódico* (published in Barcelona). Although there were changes in the order in the ranking, these were the five most read papers in Spain for the whole period 2001–2012. Together they represent a quota of 42% of national newspaper market. The source of this information is the *Encuesta General de Medios* (Media General Survey) (available at www.aimc.es).

Table 2: Correlations between news that appeared in different newspapers.

	La Vanguardia	El Mundo	El País	Abc	El Periódico
La Vanguardia	1				
El Mundo	0.60	1			
El País	0.52	0.40	1		
Abc	0.82	0.78	0.52	1	
El Periodico	0.94	0.66	0.57	0.89	1

Figure 2: Number of news that mention the Catalan *cava* boycott in five leading Spanish newspapers.

proxy for the boycott call (Table 2).¹¹ Figure 2 shows the distribution of the number of news from 2001 to 2012.¹²

4 Economic Analysis of the Boycott

Our economic analysis of the boycott is divided into two different parts. To have a perspective on how firms reacted to the boycott calls we first look at the

¹¹ We follow a similar approach to Chavis and Leslie (2009), Fouka and Voth (2013) and Pandya and Venkatesan (2014) on this.

¹² Although the Statute of Autonomy was approved in the Catalan Parliament in September 30 and this triggered the *cava* boycott, there was an earlier precedent which took place at the end of 2004. On November 26, a leading Catalan politician declared that, following a series of conflicts with the Spanish Government, Catalan individuals and organizations should withdraw their support to the bid of Madrid to organize the Olympic Games in 2012. This led to a general call to boycott Catalan products in Spain. The impact of this call on news about boycotts on *cava* is also clearly reflected in Figure 2.

evolution of prices and advertising expenditures before and after the end of 2004. We then look at the effects of the boycott on sales of *cava* and related products in different regions in Spain.

4.1 Prices and Advertising Expenditures

Figures 3 and 4 display the evolution of the unit value of *cava* (calculated dividing revenues by quantities for each period) for all varieties sold by the two main firms in the market, which represent more than 80% of the total value of sales of Catalan *cava* in the Spanish market (see Appendix B). It must be taken into account that we do not have direct data on product prices and, moreover, our varieties in these cases include different products which are marketed under the same commercial brands. This means that changes in unit values may be due to changes in prices and also to changes in the mix of products of a same brand purchased by consumers. We choose to present prices for a short period before and after the beginning of the boycott (2004–2006), so that changes in the composition of products within a brand are minimized. Figure 3 presents the evolution for higher value varieties (A1, B1 and B5) and Figure 4 does the same for lower value varieties (A2, A3, A4, B2, B3 and B4). The vertical line in the two figures signals the last period of 2004, when boycott calls started.

Figure 3: Prices for varieties of Catalan *cava* (higher value), 2004–06.

Figure 4: Prices for varieties of Catalan cava (lower value), 2004–06.

The figures do not seem to indicate any strong reaction of firms in the form of changes of prices above or below trend at the time of the boycott, especially for the varieties which are quantitatively more important (A1 and B1 in Figure 3). Only variety A3, which represents relatively small amounts of sales, might be affected by a reduction of prices after the last period of 2004.

Table 3: Advertising expenditures (annual growth rate).

Year	Firm A	Firm B	Cava	Spain
2005	13.7%	–28.7%	–10.8%	7.8%
2006	5.2%	–8.0%	17.6%	6.3%
2007	–3.6%	104.3%	28.6%	9.3%
2008	–4.5%	–36.6%	–28.8%	–7.5%
2009	–26.4%	–45.3%	–23.7%	–14.9%

Source: Infoadex (www.infoadex.es).

Table 3 presents data on rates of growth of advertising expenditures for the period 2005–2009 for the two dominant firms in the market, the whole sector of cava and the entire advertising market in Spain.

We do not observe a particularly strong immediate reaction of firms in the sector to the boycott calls in terms of greater expenditures on advertising. Firm A has positive rates of growth in 2005 and 2006, but only in the former year

growth is higher than for the whole economy. Firm B has even negative rates of growth for these years, although it more than doubles its expenditures later in 2007. The relatively important rate of growth for the whole sector of *cava* in 2006 is the effect of sizeable expenditure campaigns by firms that had not been active in this market before, while firm B is mainly responsible for the even higher rates of growth in 2007. Finally, the effects of the Great Recession are evident for years 2008 and 2009 both for the sector and the aggregate economy.

4.2 Quantities

In order to explore systematically the effects of the boycott calls on sales of *cava* in the Spanish market we estimate a model of the revenue share of Catalan *cava* sales in the sparkling wine market, taking advantage of the disaggregation of our data. In particular, we use four-week observations (13 periods per year) for the eight different geographical markets contained in our database. The model we estimate is the following:

$$RS_{tpj} = \beta_0 + \phi N_{tp} + \delta T_t + \sum_{p=1}^{p=13} \alpha_p P_p + \sum_{j=1}^{j=8} \beta_j M_j + u_{tpj} \quad [1]$$

where RS_{tpj} is the Catalan *cava* revenue market share in percentage in year t , period p and area j ; T_t is the year (a linear trend variable); P_p is the period of the year, which accounts for seasonality; M_j is the geographical market; and N_{tp} is a boycott variable which is specified as the “total number of news” measure we have defined in Section 3. ϕ , δ , α_p and β_j are the estimated coefficients and u_{tpj} is the disturbance term, which follows the usual assumptions.¹³

Column 1 in Table 4 shows the results of the estimation of eq (1). The coefficient of the boycott variable is negative and statistically significant. This result indicates that, once we control for seasonal effects and area differences, there is a drop in the market share of Catalan *cava* which could be attributed to the boycott activity. The sign of the time trend coefficient is also negative and statistically significant.

There is a big caveat with the previous analysis, however. As shown in Table 1, different varieties of sparkling wine experience very different time trends during the period 2001–2012 and the estimation of model (1) does not make use of the information disaggregated by variety, therefore assuming a common time trend for all. To correct for this problem and check whether it is

¹³ Heteroskedasticity robust standard errors were computed (White 1980).

Table 4: Determinants of market share of revenues.

Variables	Model (1)	Model (2)	Model (2) with interactions
Boycott (news)	−0.0522*** (0.0117)	0.00143 (0.00388)	
Price		0.646*** (0.0555)	0.645*** (0.0554)
MAB*boycott			0.0279*** (0.00854)
MAM*boycott			−0.0125*** (0.00546)
Region C*boycott			−0.000222 (0.00917)
Region E*boycott			−0.0249*** (0.00662)
Region NE*boycott			0.0258*** (0.00645)
Region NW*boycott			0.00909 (0.00958)
Region N*boycott			0.00875 (0.0110)
Region S*boycott			−0.0225* (0.0134)
Trend	−1.346*** (0.034)		
Observations	1,176	19,992	19,992
Adjusted R^2	0.974	0.831	0.832

Note: The dependent variable in Model 1 is the percentage revenue market share of Catalan *cava* for each year, period and area. The dependent variable in Model 2 is the percentage revenue market share of sparkling wine for each year, period, area and variety. The boycott variable takes the value “total number of news” in Model 1 and “total number of news” when the variety belongs to the Catalan *cava* subset and 0 otherwise in Model 2. Sample period is 2001–2012. All models include period of the year and geographical market dummies. Model 1 includes year fixed effects and Model 2 includes variety-year fixed effects. Robust standard errors in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

relevant for our results, we propose the estimation of the following linear equation, adding variety variability:

$$RS_{tjpi} = \beta_0 + \alpha_{it} + \eta Pr_{tjpi} + \phi N_{tjpi} + \sum_{j=1}^{j=8} \beta_j M_j + \sum_{p=1}^{p=13} \mu_p P_p + u_{tjpi} \quad [2]$$

where the dependent variable is now the percentage revenue market share of sparkling wine for year t , period p , area j and variety i (RS_{tjpi}); α_{it} are variety-year

fixed effects; Pr_{tpji} is the price of every variety for every year, period and area¹⁴; P_p is the period of the year; M_j is the geographical market; and N_{tpi} is a boycott variable which takes the value “total number of news” when the variety i belongs to the Catalan *cava* subset and 0 otherwise. ϕ , η , μ_p and β_j are the estimated coefficients and u_{tpji} is the disturbance term, which follows the usual assumptions.

Column 2 of Table 4 shows the results of the estimation of model (2). As shown there, the coefficient of the boycott variable now is positive, although not statistically significant. Our interpretation of this outcome is that the results from the estimation of model (1) were affected by an aggregation bias problem. Once we control for variety-year fixed effects, which we have hypothesized that may be very relevant because different varieties have very different time trends, there is no observable boycott effect in the whole Spanish market. In other words, in the previous model the boycott variable not only captured the effects due to the boycott to Catalan *cava*, but also the effects due to differences in time trends between varieties. Now, when we isolate the boycott effect from the variety effect, the former becomes insignificant in the whole Spanish market.

Can we infer from this that the *cava* boycott did not have any impact at all? The answer is “No.” In column 3 of Table 4 we show the results corresponding to the estimation of the model (2) introducing interactions between the boycott and geographical area variables. This allows us to check for the possibility that the boycott had different effects in each geographical area, something our analysis in Sections 2 and 3 makes very plausible. As a matter of fact, this is precisely what our results indicate. We observe a significant reduction in market share due to the boycott in Region E, Region S and MAM. In all of these cases the coefficient of the interaction (boycott*region) is negative and statistically significant. For instance, in the case of Region E the effect of the boycott amounts to -0.0249 . That is, a unit increase in the number of news reduces the revenue market share of Catalan *cava* variety i in year t and period p by 0.0249 percent points. For Region C, Region NW and Region N the estimated coefficient is not significantly different from zero. There is also clear evidence of a positive effect of the boycott on the market share of Catalan *cava* in the two regions that form the Catalan market, MAB and Region NE, which is consistent with the reports about the existence of a *buycott*. To sum up, we find evidence of the negative impact of the boycott in the market share of Catalan *cava* in

¹⁴ Prices are calculated dividing revenues by quantities for each observation (year, period, area and variety).

Regions E, S and MAM and, on the contrary, of a positive impact (*boycott*) in MAB and Region E. The impact appears negligible in the rest of the markets.¹⁵

Interestingly, our systematic approach to this issue confirms many of the results from previous reports that appeared in the newspapers at the time of the boycott (see footnotes 9 and 10), which were based on less elaborated information from sources close to Catalan producers. *Boycott* in Catalonia can naturally be related to a reaction of solidarity or support of Catalan consumers toward Catalan firms, especially in the context of a politically charged environment. Animosity reactions and boycott in MAM and Region E could be linked to political and electoral attitudes. In 2005 the conservative party (Partido Popular, PP), one of the main political opponents to the new Statute of Autonomy of Catalonia, had been the dominant force in electoral contests in these territories at least for ten years and this could explain, at least partly, consumers' reactions. The PP did not have at the time this clear hegemony in any of the other regions. On its part, Region S is composed of the region of Andalusia and one of the provinces (Badajoz) of the region of Extremadura. The main political force there was the Spanish Socialist Party, which was not so radically opposed to the Statute. However, these two regions are among the most important recipients of net interregional fiscal transfers in Spain. Provided that one of the main objectives of the Statute was to reduce the level of the negative fiscal transfer of Catalonia, it is likely that the proposal was not well received by the public opinion in Region S and accused of lack of solidarity. This could have increased the levels of animosity and explain consumers' reactions.

We use the price as a regressor as in Pandya and Venkatesan (2014). The coefficient of the price variable is positive and statistically significant. This result reflects the absence of close substitutes for Catalan *cava* (it must be taken into account that French Champagne is much more expensive and non-Catalan *cava* is produced in very small quantities) and this could be one of the reasons why the *cava* boycott was only successful in a few regions in Spain. Section 5 provides more details on this issue. In any case it turns out that the results of our estimations are not sensitive to the exclusion of the price variable,

¹⁵ A different empirical strategy (followed, for instance, by Ashenfelter, Cicarella and Shatz (2007) and Clerides, Davis and Michis (2015)) consists in estimating a similar model using as boycott variable a dummy which takes value 1 for the boycott period and 0 otherwise. In Table 8, column (a) we present the results obtained from estimating model (2) using a boycott variable that takes value 1 in periods in which there are more than 10 newspaper reports and 0 otherwise. As is clear from the table the overall outcome of the estimation is qualitatively identical to our results in Table 4, column 3.

something which is also reported in Ashenfelter, Cicarella and Shatz (2007), Chavis and Leslie (2009) and Clerides, Davis and Michis (2015) (see Table 8, columns (c) and (d)).

As Hendel, Lach and Spiegel (2015) discuss, price endogeneity is always a concern in these kinds of models, due to both cross-sectional and time series issues. On the one hand, stores of different quality may determine both sales and prices. This does not seem an important problem in our case, since our dataset only includes stores of similar characteristics (supermarkets and hypermarkets). On the other hand, there is also a time dimension concern if unobserved demand shocks affect prices as well as quantities. We deal with this problem by controlling for within-period variation and variety time trends adding a dummy for every period and also for every year and brand.

The estimates shown in Table 4 are not a very intuitive indication of the actual magnitude of the boycott in the different regions. Following Chavis and Leslie (2009), the analysis in the following lines has the objective of presenting a clearer view of the impact of the boycott implied by the estimates of our model. In order to do this, we take the estimated coefficients and compute the predicted market share for all Catalan *cava* varieties given the boycott (predictions from the model) and without the boycott (predictions from the model under the assumption that the coefficients of the boycott variables, number of news iterated by area, are 0). We then compute the difference between the two numbers and take it as an approximation of the impact of the boycott on the predicted market share for all Catalan *cava* varieties, which varies along periods and areas. This is originally computed as the change in the market share for Catalan *cava*, in percentage points, but can be more meaningfully expressed as the percentage of the variation of total revenues. This is what is presented in Table 5. Column 1

Table 5: Actual impact of the boycott (in %).

	Peak of the boycott 13-2005	Boycott 1 13-2004/13-2007	Boycott 2 13-2004/13-2006	Boycott 3 13-2004/13-2005
Region S	-34.9	-9.8	-14.1	-21.0
Region E	-39.3	-8.9	-12.2	-18.0
MAM	-16.9	-5.8	-7.8	-11.1
MAB	24.5	8.4	11.1	15.1
Region NE	23.4	7.3	9.5	12.9

Note: Percentage change of revenues of all Catalan *cava* varieties in each region and time period indicated due to the boycott, as implied by our estimates of model (2) in Table 4 (column 3). They are calculated from the computed difference between the predicted market share for all Catalan *cava* varieties given the boycott (predictions from the model) and without the boycott (predictions from the model under the assumption that the coefficients of the boycott variables are 0).

shows the percentage variation of revenues for the five regions for which we have evidence of boycott (Region S, Region E and MAM) or *buycott* (MAB and Region NE) in the four-week period of our sample in which the impact of the boycott is strongest (“peak of the boycott”). Of course, by construction of the model this period is the same for all the regions and coincides with the moment in which the published number of news about the boycott was greatest (last period of year 2005). Although the comparison of different boycotts, motivated by different causes in different contexts, can only be done with great caution, it is worth mentioning that Chavis and Leslie (2009) estimated that the impact of the boycott to French wine in the United States during the Iraq war resulted in a decrease of 27% of total sales during the peak period, a number which is in line with our results. The size of the *buycott* effect in Catalonia, big enough to offset the negative impact of the boycott in other markets, is surprisingly large, especially taking into account that we do not have any evidence that this was the outcome of organized campaigns promoting it. Comparisons in this case are not possible, because we are not aware of other examples of *buycotts* in the empirical literature.

Table 5 also displays the percentage of lost (or gained) revenues in each region due to the boycott calls, again basing our calculations on the counterfactual described before. This measure obviously depends on the assumptions we make about the length of the boycott. Since our boycott variable (“total number of news”) is clearly decreasing and, hence, so is the impact of the boycott each period, clearly the longer the boycott it is assumed to last, the lower its average impact will be. Columns 2, 3 and 4 in Table 5 present our results for three different alternatives of the length of the boycott. Similar studies to ours offer estimates of the negative effect on sales of politically motivated boycotts for relatively short (usually less than a year) periods of time. Thus, Chavis and Leslie (2009) estimate that the impact is equivalent to 13%, Hong et al. (2011) value it as 25–33% and the calculations in Fouka and Voth (2013) reduce it to 11%. These are not too far from our results in Table 5 (column 4).

4.3 Robustness Checks

Next we check the robustness of our main results to changes in the definition of the boycott explanatory variable, the definition of Catalan *cava*, the time period of our sample and the dependent variable of the model, introducing alternative possibilities such as quantity market shares.

4.3.1 Alternative Definition of the Boycott Explanatory Variable

We rescale the boycott explanatory variable in our main model (2) with interactions by taking logarithm of $(1 + N_{tpi})$ (N_{tpi} is the total number of news). The results of this estimation can be found in column (b) of Table 8. The results displayed there are identical, in qualitative terms, to our previous estimates in Table 4 (column 3).

4.3.2 Alternative Definition of Catalan Cava

So far we have left private label *cava* out of the general category of **Catalan cava**, but this could lead to the wrong conclusions in our analysis if, at least to some extent, Spanish consumers held the perception that this type of *cava* comes from Catalonia (which is actually true to a very large extent, although this information is not always easily available to consumers when they do their shopping). If this was the case, a consumer boycott to Catalan *cava* should also affect this variety. In order to check whether our conclusions are much affected by our specific definition of **Catalan cava**, we present in Table 8 (columns (e) and (f)) the results of our estimations when we include private label *cava* in the general category of **Catalan cava**. Qualitatively the results we obtain are similar to what was presented in Table 4. In the model without interactions the boycott variable is not significant, just as before. Once we introduce interactions in the model the main difference is that now the impact of the boycott on Region S is not significant. The rest of results follow as before: the boycott effects are negative in Region E and MAM, positive in Region NE and MAB and negligible in the rest of the regions.

4.3.3 Alternative Length of the Sample

As in many other countries, macroeconomic conditions changed dramatically in Spain at the end of 2008. This marked the end of a long phase of economic bonanza and the beginning of a period characterized by negative or very low economic growth rates and important increases of the unemployment rate. In order to check that this structural change is not affecting our results in a relevant way, we repeat our baseline estimation excluding from our sample the period 2009–2012, when the macroeconomic scenario had been radically altered. As can be seen in Table 8 (column (g)) our results remain qualitatively unchanged, with the only change being now the inexistent impact of the boycott in the case of Region S.

4.3.4 Alternative Dependent Variables: Quantity Market Shares

There are different considerations involved in the choice of the dependent variable of the model. First, there is the choice between market shares and sales levels. As in Hong et al. (2011) we use market shares in our estimations, which seems a natural choice to examine the potential substitution patterns caused by the boycott. Second, one must choose between revenues and quantities. Due to the wide price range of the products we examine (French Champagne is on average between six and seven times more expensive than the average *cava*), we use revenue shares in our main specification. Nevertheless, Table 6 presents the estimation of our baseline model using the

Table 6: Determinants of market share of quantities.

Variables	Quantity share
Price	−0.235*** (0.0273)
MAB*boycott	0.0283*** (0.00824)
MAM*boycott	0.0207*** (0.00728)
Region C*boycott	0.00383 (0.00915)
Region E*boycott	−0.0253*** (0.00640)
Region NE*boycott	0.0265*** (0.00652)
Region NW*boycott	0.0213* (0.0116)
Region N*boycott	0.0124 (0.0112)
Region S*boycott	−0.00344 (0.0135)
Observations	19,992
Adjusted R^2	0.852

Note: The dependent variable is the percentage quantity market share of sparkling wine for each year, period, area and variety. The boycott variable takes the value “total number of news” when the variety belongs to the Catalan *cava* subset and 0 otherwise. Sample period is 2001–2012. The model includes period of the year and geographical market dummies and variety-year fixed effects. Robust standard errors are in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

quantity market share as alternative dependent variable. On the whole the results are consistent with *buycott* attitudes in MAB and Region NE and boycott in Region E. There are two main differences with respect to our results in Table 4. First, although it is negative, the coefficient corresponding to Region S is now clearly not significant. Second, the coefficient for MAM is now positive and significant. In essence, what we have is that although the impact of boycott calls is clear in MAM and Region S when one looks at revenue market shares, this effect disappears when one looks at quantity market share. Section 5 will provide with a more detailed discussion of this result. As expected, the coefficient for the variable price is negative and statistically significant.

5 Substitutes of Catalan *cava* and the Impact of the Boycott

Finally, as in Chavis and Leslie (2009), we examine the effectiveness of the boycott for varieties of sparkling wine in two different price categories, estimating our baseline model separately for subsamples of high- and low-value varieties. As we shall see, this analysis (together with some of the results from Table 6) will shed some light on the specific mechanism of the boycott, reveal some apparently paradoxical results and, finally, provide some hints which may explain, at least partly, why the boycott was not more widely successful.

The final exercise will consist in estimating the baseline model segmenting the sample according to the average value of the different varieties of sparkling wine. We have two general kinds of sparkling wine in our sample: 7 high-value varieties (8,232 observations) and 10 low-value varieties (11,760 observations), as categorized in Appendix B.

There are some important differences in the results of the estimations for the two samples, presented in Table 7. The first thing worth noticing is that the results corresponding to the sample of high-value varieties are qualitatively very similar to the results presented for the entire sample (Table 4, column 3). As there, the coefficient of the price variable is positive and statistically significant. Also, the results are consistent with the existence of significant levels of boycott to higher value Catalan *cava* in the same regions highlighted in Section 4, that is, the MAM, Region E and Region S. In contrast, when we examine the results for the sample of low-value sparkling wine things look quite different. The coefficient of the price variable is now negative and statistically significant. At the same time, looking at the value of the coefficients for the regions mentioned before we can conclude that the impact of the boycott is inexistent for Region S

Table 7: Determinants of market share of revenues by type of variety.

Variables	High-value share revenue	Low-value share revenue
Price	1.43*** (0.0949)	-1.40*** (0.125)
MAB*boycott	0.0421* (0.0253)	0.0926*** (0.0227)
MAM*boycott	-0.0840*** (0.0203)	0.0429*** (0.0108)
Region C*boycott	-0.0214 (0.0261)	0.00793 (0.0154)
Region E*boycott	-0.0348* (0.0203)	-0.0658*** (0.0101)
Region NE*boycott	0.0397** (0.0177)	0.0826*** (0.0176)
Region NW*boycott	-0.00108 (0.0231)	0.0114 (0.0165)
Region N*boycott	0.00918 (0.0282)	-0.0328*** (0.0125)
Region S*boycott	-0.0815** (0.0409)	-0.0148 (0.0210)
Observations	8,232	11,760
Adjusted R^2	0.816	0.818

Note: The dependent variable is the percentage revenue market share of sparkling wine for each year, period, area and variety. Column 1 corresponds to the subsample of 7 high-value varieties (8,232 observations) and column 2 to the subsample of 10 low-value varieties (11,760 observations). The boycott variable takes the value “total number of news” when the variety belongs to the Catalan *cava* subset and 0 otherwise. Sample period is 2001–2012. All models include period of the year and geographical market dummies and variety-year fixed effects. Robust standard errors are in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

and MAM (in fact the coefficient in this case is even positive). Sales of cheaper Catalan *cava* in Region E, instead, appear to be clearly affected by the negative impact of the boycott campaign. Notice that the finding, highlighted in the previous section, that evidence of boycott behavior in MAM and Region S could be found by looking at revenues but not by looking at quantities is consistent with the fact that the boycott was mainly concentrated in the high-value segment of the market and consisted of substituting expensive French Champagne for cheaper Catalan *cava*.

The fact that the consumption of cheaper varieties of sparkling wine is more responsive to prices than that of more expensive varieties is a result which is consistent with our basic economic intuition about consumer behavior. It must

be taken into account that the main substitute for high-value Catalan *cava* is French Champagne, a much more expensive product. Lower price varieties, instead, have much closer substitutes. The fact, however, that the impact of the boycott is stronger for expensive Catalan *cava* than for cheaper varieties is an apparently paradoxical result from the point of view of the models of boycotts we cited in Section 2. This is because, given some levels of animosity which may induce consumers to reduce purchases of Catalan *cava*, it is less costly to do so for buyers of cheaper varieties, who may have close and easily available alternatives. In comparison, buying French Champagne instead of relatively expensive Catalan *cava* implies a much higher cost for boycotters, a fact that should discourage them from embracing this behavior. Summing up, our empirical results in Table 7 are not, at least apparently, consistent with a model that predicts that, taking as given levels of animosity from political confrontations, boycotts should be more prevalent in those segments of the market for which the targeted good has better substitutes and, hence, imply lower costs to consumers who decide to reduce their purchases of the good which is the object of the boycott.

We propose a reasonable explanation to this apparent paradox, based on the perceptions of Spanish consumers of *cava* about the product. *Cava* is a product which is generally perceived in the Spanish market to have a clear and unmistakable Catalan origin. In part this explains why, even when boycott calls around 2005 were general against many Catalan products, only the *cava* sector was affected. In other words, it is an emblematic product of its country, a type of product we know is especially liable to be affected by boycotts. Nevertheless, and for the same reason, consumers perceive it as a product with few substitutes other than French Champagne, a product which is much more expensive. Non-Catalan *cava*, the most obvious substitute for boycotters, was a largely unknown alternative to Spanish consumers. Moreover, due to the specific regulations of the sector, the volume of *cava* not produced in Catalonia is very small and its growth possibilities very limited (it can only be produced in a fixed number of municipalities). This left consumers of cheaper varieties of Catalan *cava* with very limited alternatives, since French Champagne was out of reach for most of them and explains why boycott attitudes were more prevalent among consumers of more expensive varieties. A possible exception to this type of behavior may have occurred in Region E, which is the only region where the impact of the boycott on lower value Catalan *cava* is substantial. This might be explained by the fact that this region concentrates 40% of all non-Catalan firms that produce *cava* in Spain and, consequently, there non-Catalan *cava* is a much better known substitute for Catalan *cava*.

In summary, the results of this section hint at the possibility that strong perceptions of consumers about the Catalan origin of *cava* made it particularly liable to be affected by a boycott. At the same time, however, the perception of absence of substitutes (other than much more expensive French Champagne) limited its widespread impact. In other words, if the boycott had focused on some other good with a larger range of substitutes from Spanish producers, it would probably have resulted in a greater negative impact on Catalan firms.

6 Conclusions

This paper analyzes what has been known as the *cava* boycott in Spain. The approval in September 2005 of a new project of Statute of Autonomy of the region of Catalonia by the Catalan Parliament and its subsequent negotiation with the Spanish political parties in the Spanish Parliament caused a great deal of political controversy in the country. Partly as a consequence of this, there were boycott calls against Catalan consumer products, although most media attention was devoted to a particularly popular item, Catalan sparkling wine (also known as *cava*). The results of our analysis are indicative of different behavior of consumers in different regional submarkets. Thus, consumers from some regions in Spain, particularly in the South, the East coast and Madrid, decreased their purchases of Catalan *cava* during the period. On the contrary, Catalan consumers counteracted the boycott calls and, relative to a long-term time trend of diminishing consumption, increased their purchases of Catalan *cava* during the boycott years. Finally, we do not observe any impact of the boycott calls in the consumption choices of residents in the rest of Spain. As a result of this, the boycott calls had an insignificant impact at the Spanish aggregate level. The analysis of different segments of the sparkling wine market (higher and lower prices) allows us a more detailed exploration of the mechanism of the boycott and may explain why *cava*, a product of unmistakable Catalan origin, was the focus of the boycott campaign and why its impact was limited by the absence of close substitutes.

Our study contributes to a large body of literature in Political Economy that investigates the relationship between political conflicts and economic outcomes and, more specifically, consumer choices. While most studies in the field are about political disputes in the international arena, we analyze a case of a consumer boycott due to political struggles within a country. In particular, we show that the negative impact of the boycott on sales of Catalan *cava* in several regions in Spain, due to consumers' animosity against some decisions taken by

Catalan political actors, was offset by higher sales of the product in Catalonia. These were the result of a positive reaction of Catalan consumers, perhaps as a manifestation of their solidarity toward Catalan producers in the context of a politically charged environment. This is an interesting result, because there are not many examples of empirical studies documenting the existence of *buycotts*. The simultaneous presence of boycotting and *buycotting* behavior might be a prevalent characteristic of consumers' reactions in the face of political tensions, especially when these are long lasting and take place within a state, giving rise to politically motivated consumer decisions. It might become more relevant in spaces like Europe, which is economically very integrated while, at the same time, still experiencing the effects of current and historical political rivalries among different countries.

We think that there are several avenues for further research on this issue. Most obviously, one would like to undertake a much more detailed investigation of the sociological and political factors that could explain the different boycotting behavior by consumers in different Spanish regions. Also, given the limited amount of research on the *buycott* phenomenon, we think it is worth exploring in great detail the nature of its causes and under which circumstances collective action problems can be overcome to give rise to consumption decisions that are driven, at least partly, by political considerations.

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Appendix A: Synoptic table: Empirical literature on the effect of consumer purchases of trade boycotts due to international political disputes

Paper	Event	Product	Data	Main conclusions
Ashenfelter, Cicarella and Shatz (2007)	The French opposition to the Iraq war (2003) triggered calls of boycott against French products in the US market	French wine	Four-week wine sales in supermarkets in 64 major US markets from September 2001 to May 2003	There was no boycott effect and sales of French wine in the United States stayed on trend (secular decline)
Chavis and Leslie (2009)	The French opposition to the Iraq war (2003) triggered calls of boycott against French products in the US market	French wine	Weekly wine sales in supermarkets in four US markets (Boston, Houston, Los Angeles and San Diego), from December 2001 to November 2003	The boycott lasted six months during which sales were estimated to be 13% lower
Hong et al. (2011)	Before and during the Beijing Olympic Games (2008) there were a series of political clashes between the Chinese and French governments on the political situation in Tibet and human rights issues. This motivated boycott calls against French products in the Chinese market	French cars	Monthly sales of all domestically produced noncommercial cars marketed in China from December 2004 to March 2009	The effects of the boycott were of short duration (two months), but had a large impact during the period (a reduction of 25–33% of sales of French automobiles)

(continued)

(continued)

Paper	Event	Product	Data	Main conclusions
Clerides, Davis and Michis (2015)	The Iraq war (2003) unleashed a wave of anti-American sentiment in several Arab countries and motivated boycott calls against US products in these countries	US soft drinks and fabric detergent	Monthly sales of soft drinks and bimonthly sales of fabric detergent in nine Arab markets. The period covered varies across countries, but for most countries goes from 2002 to 2005	In seven of the nine countries there is a statistically significant relative drop in sales of US soft drinks. In contrast, there is very little evidence of a relative decline of sales in the case of US detergent sales
Fouka and Voth (2013)	The debt crisis in the Eurozone (starting at the end of year 2009) triggered clashes between the Greek and German governments over the terms of the European Union bailout of Greece and motivated calls against German products in the Greek market	German cars	Monthly number of new passenger vehicles registered during the period between January 2008 and August 2012	Boycott calls reduced sales of German automobiles in general during the conflict months (6 out of 56 in the sample). These reductions were significantly greater in the prefectures where the German army had committed large-scale massacres during the Nazi occupation period (1941–44).
Pandya and Venkatesan (2014)	The French opposition to the Iraq war (2003) triggered calls of boycott against French products in the US market	Supermarket French items	Weekly supermarket sales of 8,644 brands across 27 categories of grocery products in the US market for years 2002 and 2003	Sales of French “sounding” brands declined during the weeks with more media coverage of the boycott

Appendix B: Description of the data on sparkling wine

There are many producers, commercial brands and specific products within brands in the sparkling wine market in Spain. However, our database does not provide with all the detailed information at product or brand level. In fact, the available observations correspond to 17 aggregate *varieties* as follows. We have information on sales of *cava* corresponding to nine different brands (which in many cases may include more than one product) of **Catalan cava** owned by the two market leader firms and sales by the two midsized, also Catalan, companies. The rest of Catalan *cava* is grouped under another variety. There are two other varieties of *cava* which are left out of the **Catalan cava** category, namely non-Catalan *cava* (which is *cava* produced in other regions of Spain) and private label *cava* (*cava* commercialized under private labels by supermarket chains, independently of their origin). We also have observations on French Champagne, Granvas wines (natural sparkling wine different from *cava* whose second fermentation takes place not in bottle but in large metallic containers) and, lastly, a final miscellaneous variety that corresponds to products not included in the previous varieties. The following list summarizes the information and it also includes information about the relative importance of each variety in the market (both for revenues and quantities). Each variety is also classified as high value or low value if its average value (revenue divided by quantity) is respectively higher or lower than the average value of the whole sample.

List of varieties of sparkling wine in the database:

Catalan cava

From company A (one of the market leaders)

		% Revenues	% Quantities
1. <i>Cava</i> brand A1	High value	26.4	18.4
2. <i>Cava</i> brand A2	Low value	5.1	6.9
3. <i>Cava</i> brand A3	Low value	1.9	3.8
4. <i>Cava</i> brand A4	Low value	1.2	1.8

From company B (one of the market leaders)

5. <i>Cava</i> brand B1	High value	19.8	19.0
6. <i>Cava</i> brand B2	Low value	2.2	3.5
7. <i>Cava</i> brand B3	Low value	1.7	2.5
8. <i>Cava</i> brand B4	Low value	1.3	1.8
9. <i>Cava</i> brand B5	High value	1.9	1.4
10. <i>Cava</i> brand C	High value	5.7	2.1
11. <i>Cava</i> brand D	Low value	1.6	2.7
12. Other Catalan <i>cava</i>	High value	6.1	4.6

Rest of sparkling wine

13. Private label <i>cava</i>	Low value	9.9	22.0
14. Non-Catalan <i>cava</i>	Low value	1.2	1.4
15. French Champagne	High value	9.9	1.4
16. Granvas	Low value	2.1	4.7
17. Other sparkling wine	High value	2.0	2.0

Other sources of data on *cava* sales:

A different source of data is the *Consell Regulador del Cava* (*Cava* Regulatory Board, CRC), which is always the source quoted in news reports about the boycott and its consequences. This is annual data on all *cava* sold in the Spanish market and includes *cava* sold in supermarkets and other types of shops, served in hotels and restaurants and distributed through firms specialized in preparing and delivering gifts from companies to workers and customers, which is an important tradition in Spain (especially around Christmas). The data published by the CRC show that around 20% of *cava* is distributed in the Spanish market via hotels and restaurants and also that, on average, the data we use in the paper correspond to 44% of all *cava* sold in the Spanish market during the period 2001–2012. For the sake of comparison between the two sources we present in Figure 5 the two time series corresponding to the data released by the CRC and our data (aggregated by years) of purchases of *cava* (which includes varieties 1–14 in the list above).

Figure 5: *Cava* sold in the Spanish market (number of bottles).

Appendix C: Additional robustness checks

Table 8: Determinants of market share of revenues.

Variables	(a) Boycott dummy variable	(b) Boycott variable log (1 + news)	(c) Model (2) excluding prices	(d) Model (2) excluding prices with interactions	(e) Private label <i>cava</i> as Catalan <i>cava</i>	(f) Private label <i>cava</i> as Catalan <i>cava</i> (with interactions)	(g) Sample 2001–2008
Boycott (news)			0.00122 (0.00388)		0.00152 (0.00389)		
Price	0.644*** (0.0554)	0.644*** (0.0547)			0.646*** (0.0555)	0.645*** (0.0554)	0.788*** (0.0662)
MAB*boycott	0.915*** (0.323)	0.528*** (0.0911)		0.0286*** (0.00894)		0.0250*** (0.00845)	0.0266*** (0.00856)
MAM*boycott	−0.458*** (0.164)	−0.201*** (0.0553)		−0.0128** (0.00555)		−0.0113** (0.00541)	−0.0113** (0.00556)
Region C*boycott	−0.0570 (0.269)	−0.0424 (0.0756)		−0.000256 (0.00921)		0.000672 (0.00915)	0.000819 (0.00931)
Region E*boycott	−0.874*** (0.213)	−0.471*** (0.0644)		−0.0243*** (0.00658)		−0.0220*** (0.00652)	−0.0229*** (0.00670)
Region NE*boycott	0.850*** (0.244)	0.490*** (0.0712)		0.0257*** (0.00659)		0.0233*** (0.00636)	0.0247*** (0.00649)
Region NW*boycott	0.231 (0.325)	0.141 (0.0869)		0.00987 (0.00934)		0.00857 (0.00957)	0.0100 (0.00975)

Region N*boycott	0.284 (0.373)	0.143 (0.101)	0.00636 (0.0109)	0.00802 (0.0110)	0.00935 (0.0112)
Region S*boycott	-0.865** (0.414)	-0.516*** (0.111)	-0.0234* (0.0133)	-0.0200 (0.0133)	-0.0194 (0.0135)
Observations	19,992	19,992	19,992	19,992	14,144
Adjusted R ²	0.833	0.831	0.830	0.832	0.839

Notes: (1) The dependent variable is the percentage revenue market share of sparkling wine for each year, period, area and variety. Sample period is 2001–2012, except for column (g). All models include period of the year and geographical market dummies and variety-year fixed effects. Robust standard errors are in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

(2) The boycott variable is defined in different ways:

Column (a): it is a dummy variable that takes value 1 in periods in which there are more than 10 newspapers reports when the variety belongs to the Catalan *cava* subset and 0 otherwise.

Column (b): it takes the value of $\log(1 + \text{“total number of news”})$ when the variety belongs to the Catalan *cava* subset and 0 otherwise.

Columns (c), (d) and (g): it takes the value “total number of news” when the variety belongs to the Catalan *cava* subset and 0 otherwise.

Columns (e) and (f): it takes the value “total number of news” when the variety belongs to the Catalan *cava* subset or the private label variety and 0 otherwise.

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