

A continuación, se presenta una copia del capítulo de libro:

Garvía Soto, Roberto (2016), "The Economic and fiscal Impact of Syndicate Play", en Zollinger, Manfred (ed.), *Random Riches. Gambling Past and Present*. Londres: Editorial Routledge, pp. 132-142.

En los márgenes he anotado las páginas del siguiente capítulo de libro donde aparece el mismo texto en español:

Garvía Soto, Roberto (2009), "Motivaciones y efectos económicos y fiscales del juego en compañía", en Garvía Soto, Roberto (ed.), *Fortuna y virtud: historia de las loterías públicas en España*, Madrid: Editorial Silex, pp. 67-94.



## 8 The Economic and Fiscal Impact of Syndicate Play

Roberto Garvía

Syndicating is a relatively institutionalized practice by which friends, relatives or co-workers share a lottery ticket. By doing this, syndicate players enact and negotiate their membership of a social network, and transform a lottery ticket from a purely economic asset into a carrier of interpersonal ties. This chapter analyses the economic and fiscal impact of syndicating in the USA and Spain. The chapter shows that syndicating is responsible for 10 and 23 per cent of total lottery sales in the USA and Spain, respectively, and indicates that sharing a lottery ticket reduces the regressivity of the lottery tax.

Like any other kind of gambling, lottery play has long represented a challenge for economic theory. Since rational, risk averse economic actors are not expected to buy an economic asset with negative value, lotteries should not exist. They do, however, and indeed, they are very popular in many countries. Thus, in 2012/2013, the British National Lottery generated a total turnover of nearly £7 billion. Similarly, in 2012 total lottery expenditures in the USA amounted to \$78 billion, and in 2011 Spain, they reached €11.7 billion. Economists have employed different strategies to deal with this contradiction between facts and theory. A first one, coming from Adam Smith,<sup>1</sup> considers lottery play as plainly irrational behaviour, a statement difficult to sustain given the popularity and extension of the gambling market worldwide. A second strategy is to add exogenous variables, such as consumption indivisibilities, timing effects, transaction costs, or market imperfections into the explanation.<sup>2</sup> A third strategy is to disregard the first-order irrationality of the decision to gamble in order to concentrate on a second-order

rationality which demonstrates that, once the decision to play has been made, people become rational and place their bets rationally in order to maximize their probability of winning. Thus, similar to the way in which there exist an economics of health, an economics of education, or even an economics of culture, we also have an economics of gambling.<sup>3</sup>

A sociological approach coming from the new economic sociology gives us new clues to understanding lottery play. Contrary to neoclassical economics, the new economic sociology emphasizes that economic action is not carried out by isolated, utility-maximizing individuals, but is embedded in social relations that facilitate trust and cooperation, and imprint value and meaning to economic transactions.<sup>4</sup> A clear-cut example of social relations in lottery play is syndicate play. This is a social practice by which by which one person, or "broker," buys a lottery ticket, gives a chance to her friends to buy a share of it, keeps the original ticket, and collects and distributes the prize among share-holders in the case of winning. Although syndicate play is beset by the risk of opportunism (the broker, for example, might cash the prize and run), sharing lottery tickets is a very common practice: 10 per cent of Germans, 12 per cent of Americans and 22 per cent of Britons regularly share a ticket with their friends, co-workers or relatives. In Spain, syndicate play is a more widespread practice: 33 per cent of Spaniards share a lottery with somebody else at least once a month. At Christmas they represent 75 per cent of the Spanish population.<sup>5</sup>

In a former historical and comparative article I studied the emergence and institutionalization of syndicating in Spain, and tried to demonstrate that this practice is the best candidate to explain why Spain had ranked first in the word lottery sales as a percentage of GDP from the last quarter of the nineteenth to the end of the twentieth century.<sup>6</sup> Since syndicate play can be

3 See, for example, the contributions to *The Oxford Handbook of the Economics of Gambling*, ed. Leighton Vaughan-Williams and Donald S. Siegel (Oxford: Oxford University Press, 2013).

4 Mark Granovetter, "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology* 91 (1985): 481–510; M. Granovetter, "A Theoretical Agenda for Economic Sociology," in *The New Economic Sociology*, ed. Mauro F. Guillén et al. (New York: Russell Sage Foundation, 2002), 35–60; Viviana Zelizer, "Enter Culture," in *New Economic Sociology*, ed. Guillén, 101–25; Mauro F. Guillén, Randall Collins, Paula England and Marshall Meyer, "The Revival of Economic Sociology," in *New Economic Sociology*, ed. Guillén, 1–32; Richard Swedberg, "New Economic Sociology: What Has Been Accomplished, What is Ahead?," *Acta Sociologica* 40 (1997): 161–82; R. Swedberg, "Markets in Society," in *The Handbook of Economic Sociology*, ed. Neil J. Smelser and Richard Swedberg, 2nd edition (Princeton, NJ: Princeton University Press, 2005), 233–53; Viviana Zelizer, *The Social Meaning of Money* (New York: Basic Books, 1994).

5 These data come from *Gambling Impact and Behavior Study, 1997–1999*, the UK 2000 Time Use Survey; Jens Beckert and Mark Lutter, "The Inequality of Fair Play: Lottery Gambling and Social Stratification in Germany," *European Sociological Review* 25 (2009): 475–88; J. Beckert and M. Lutter, "Why the Poor Play the Lottery: Sociological Approaches to Explaining Class-based Lottery Play," *Sociology* 47 (2013): 1152–70; and the Spanish EuroVoc 06 survey.

6 Roberto Garvía, "Syndication, Institutionalization and Lottery Play," *American Journal of Sociology* 113 (2007): 603–53.

1 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* [1776] (London: William Bannan, 1952), 54.

2 John S. Flemming, "The Utility of Wealth and the Utility of Windfalls," *Review of Economic Studies* 36 (1969): 35–66; Nils H. Hakansson, "Friedman-Savage Utility Functions Consistent With Risk Aversion," *Quarterly Journal of Economics* 84 (1970): 472–87; Young Chin Kim, "Choice in the Lottery-Insurance Situation Augmented-Income Approach," *Quarterly Journal of Economics* 87 (1973): 148–56; Elie Appelbaum and Eliakim Katz, "Market Contracting as a Rationale for the Friedman-Savage Utility Function," *Journal of Political Economy* 89 (1981): 819–25; Benjamin Eden, "An Expected Utility Function for the Insurance-Buying Gambler," *Review of Economic Studies* 46 (1979): 741–2.



socially driven (as a way of conveying membership in a social network), or economic-driven (as a way of minimizing risk by buying a share of a lottery ticket), in a second article, co-authored with Mauro Guillén and Andrés Santana, we explored these competing explanations, and concluded that rather than an instance of economic cooperation, sharing a lottery ticket is a social practice which reinforces interpersonal ties.<sup>7</sup> In this chapter I want to conduct another exploration, which has to do with the economic impact of syndicate play in Spain and the fiscal impact of this same practice in the USA and Spain. To do this, I will use the *American Gambling Impact and Behavior Study, 1997–1999* and, regarding Spanish data, the *EuroNet\_06*, and Community Innovation Survey (CIS) 1,779 surveys.<sup>8</sup>

### Economic Impact of Syndicate Play in Spain

If contrary to economic theory, economic action is not carried out by isolated, utility-maximizing individuals, but embedded in social relations that nurture trust and cooperation, it is worth exploring the extent to which this embeddedness affects the size of lottery markets. To properly measure the economic effect of syndicating it is necessary to consider, first, whether syndicate play is a substitute for individual play. If syndicate players spent the same amount of money they do now if they were playing individually, then it could be claimed that the net economic effect of syndicating is zero. If, on the contrary, syndicate players reduced or discontinued altogether their lottery expenditures if their opportunities to syndicate were diluted, then it could be claimed that their syndicating is not a substitute of individual play, and, consequently, that their syndicated expenditures represent a net increase on total lottery sales.

In order to estimate this syndicate or embeddedness effect on total lottery sales, I included in the Spanish EuroNet\_06 survey a question asking Spanish syndicate players to consider what they would do if their syndicates were dismantled. Their responses are quite illustrative. Only 16.8 per cent claimed that they would play individually and spend the same amount as before; 33.9 per cent responded that they would play individually but reduce their spending; and a sizeable 49.3 per cent maintained that that they would stop playing altogether.

If we reduce by half the expenditures of those players who claimed that they would cut their spending if their syndicate was dismantled, and deduct the expenditures of those who claimed they would stop playing altogether, it is possible to estimate the net economic impact of syndicating. The results of this computation, performed for each single lottery, are summarized in Table 8.1.

7 Mauro Guillén, Roberto Garvía, and Andrés Santana, "Embedded Play: Why do People Play the Lottery in Syndicates?" *European Sociological Review* 28 (2012): 344–54.

8 For a description of the first two surveys, see Guillén, Garvía, and Santana, "Embedded Play," and a description of CIS Survey 1,779 can be found at [www.cis.es](http://www.cis.es).

Table 8.1 Net economic impact of syndicate play in Spain

Market share that can be directly assigned to syndicate play as a non-substitute of individual play	
<b>Public lotteries</b>	
Lotería Nacional (Thursday and Saturday draws)	10.39
Euro Millones	20.9
Primitiva	10.76
El Gordo de la Primitiva	23.95
Quiniela	28.36
Bonoloto	42.25
Christmas lottery	40
<b>Lotteries of the Organization of the Blind</b>	
Cupón diario	6.44
Cuponazo viernes	11.34
Supercupón fin de semana	22.22
Combo	18.72
Rasca	3.98
<b>Regional lotteries of Catalonia</b>	
Loto Rápido	25.91
Loto 6/49	38.76
Tio	62.5
<b>TOTAL All lotteries combined</b>	<b>23</b>

Source: EuroNet\_06 for all lotteries with the exception of the Christmas lottery. Calculations for the Christmas lottery come from the CIS survey 1,779.

As Table 8.1 shows, syndicate play accounts for 23 per cent of total lottery expenditures in Spain. Or in other words: nearly one quarter of lottery sales in Spain can be explained not by the player's expectation of winning a prize, but by the willingness of a substantial number of them to play along with members of their social networks.

The *American Gambling Impact and Behavior Study, 1997–1999* survey does not let us make the same calculations and estimate how much American syndicate players would cut their expenditures if the syndicates were dismantled. Nevertheless, the American survey indicates that 10 per cent of lottery expenditures in the USA are made not by individual players, but within social networks, no matter the risk associated with this practice. The American questionnaire, however, lets us explore the fiscal impact of syndicating.

### Fiscal Impact of Syndicate Play in the USA and Spain

Lottery research has unequivocally established that lotteries are regressive. While in absolute terms the relatively wealthy transfer more money to lottery offices



than the poor, the latter usually spend a higher share of their income on lottery tickets, making the lottery a regressive tax.<sup>9</sup> But while lotteries aim in the same regressive direction, syndicates might not. Relatively wealthy people might be lured into the game by less affluent people. A member of the syndicate of employees of the Citizen's First State Bank of Indiana who won the jackpot in August 1996, for example, was the President of the Bank himself, who decided to join when: "She [his broker] told me that I should join the group because it would be lonely running the bank alone since the group has won. That's all I needed to hear."<sup>10</sup> Similarly, Sergio Pereira, a security guard from Madrid, stopped regretting that he had spent more money than planned by syndicate playing with his colleagues when he realized that they all had won a small prize of the Christmas lottery.<sup>11</sup> While the first example indicates that syndicates can attract into the game the relatively wealthy, the second shows that the enticing power of syndicates can increase the level of spending of the relatively poor. Thus, on top of their impact on aggregate sales, syndicates can also determine the final distribution of the lottery tax, making lotteries more or less regressive. Syndicates will have a positive redistributive effect if, relative to the poor, they bite a higher portion of the income share of the wealthy. If, on the contrary, syndicate expenditures concentrate among the poor, they can unbalance even more the distribution of the lottery burden. Only if syndicate expenditures mirror the distribution of lottery sales among income groups, will their fiscal effects be zero, no matter how popular and economically significant syndicating might be. Since syndicate play can have opposing fiscal effects it is important to know about the extension and direction of these effects.

The American *Gambling Impact and Behavior Study, 1997-1999* can help us estimate the fiscal effect of syndicate play. In this survey, respondents were questioned about the games they played in the last seven or thirty days, and their frequency of play. In their report to the Gambling Impact Study Commission, Clotfelter and associates assigned numerical values to the categorical responses

on the frequency of play in order to estimate per capita average spending in the year of reference.<sup>12</sup> In the analysis that follows, I am going to use the same values. However, Clotfelter and associates included in their analysis 461 interviews that a later examination of the survey showed to be unreliable. In the ensuing analysis I use the data file released by the ICPSR (Inter-university Consortium for Political and Social Research), which identifies 50 unreliable questionnaires that I have excluded.<sup>13</sup> More concretely, the analysis that follows comprises a total of 2,867 individuals, 2,417 from the household sample, and 450 from the patron sample (identified in the ICPSR data file as survey=1 and survey=2, respectively). Also, to cancel under-declaration effects, Clotfelter and associates calculated and included in their analysis adjustment ratios for each type of lottery game, which adjust their survey-based estimates of lottery spending to real spending. Since I have worked with a slightly different sample, adjustment ratios had to be recalculated. Also, since syndicate play concentrates on both lotto and numbers, but not on instant games, I focus on the former lotteries. The survey includes data on the annual household income and level of spending of syndicate and it is possible to compare the distribution and level of spending of syndicate and individual players by income group. The *Gambling Impact and Behavior Study*, however, does not include data on the exact amount syndicate players spend individually or with friends and relatives. If it is assumed that, had they not been lured into the game by their friends or relatives, syndicate players would have spent the same amount of money that individual players of the corresponding income category do, a reasonable and conservative estimate of the distribution of individual and syndicate expenditures by income group can be obtained. Results of the computations implied by these assumptions are summarized in Figure 8.1. This figure contains two Lorenz curves. The first represents the actual distribution of the tax burden of lotto and numbers games. As expected, the curve settles above the diagonal, indicating regressivity. In the second curve, the syndicate expenditures have been removed. This curve lies above the first one and further away from the diagonal, which suggests that syndicate play reduces regressivity. Or to put it another way: had American players refused to share lottery tickets with their friends or colleagues, the distribution of the tax burden would be more regressive than it actually is. To sum up: American syndicate players represent around 25 per cent of total players, and spend close to 10 per cent of total expenditures. Although their fiscal impact is not remarkable, syndicates redistribute the lottery burden in a more equitable way, by reducing the Suits index value from -0.52 to -0.48.

When we look at the Spanish Christmas lottery, the positive effect of syndicate play is rather important. With a market share of around 20 per cent, the

9 For a discussion on the regressivity of lotteries see Becker and Lueker, "Why the Poor Play the Lottery," and Lloyd R. Cohen, "The Use of the Lottery," *Wider Forest Law Review* 36 (2001): 705-15. Traditionally, gambling scholars have used the Suits Index to measure the fiscal incidence of lotteries. Suits values range from -1, when the total tax burden is paid by the lowest income group and +1, where the wealthiest income group bears the burden. Value 0 indicates proportionality. This index is defined as  $S = 1 - (L/K)$ , where  $L$  is the area under the Lorenz curve that results from plotting the cumulative percentages of lottery expenditures against the cumulative percentage of income, and  $K$  is the area under the diagonal. See Daniel Suits, "Gambling Taxes: Regressivity and Revenue Potential," *National Tax Journal* 30 (1977): 19-35. For a graphical representation of the Suits Index, see Figure 1. For a critique of this index, see Thomas Cahalan, "Measuring the Regressivity of Gambling Taxes," *National Tax Journal* 34 (1981): 267-78, and Narak C. Kakwani, *Analyzing Redistribution Policies* (Cambridge: Cambridge University Press, 1986), 78-81.

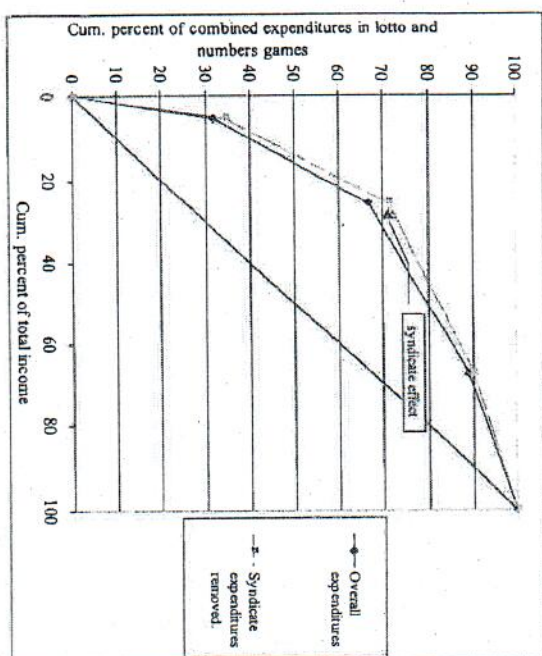
10 The reference to the Citizen's Bank syndicate was taken from the website of the American multi-state lotto ([www.mutual.com](http://www.mutual.com)).

11 Todd White, "Spain's 'Fat One' Lottery Payout Reaches \$2.2 Bn in 1994 Year," Online article released on December 23, 2004 by Bloomberg in its official site, [www.bloomberg.com](http://www.bloomberg.com).

12 Charles T. Clotfelter et al., *State Lotteries at the Turn of the Century: Report to the National Gambling Impact Study Commission* (1999), 10-11. Available at <http://govinfo.library.unt.edu/ngisc>.

13 See the ICPSR preliminary processor notes of the Individual Questionnaire Codebook. File [icpsr.umd.edu/data/27861](http://icpsr.umd.edu/data/27861).pdf, available at the ICPSR official site.





Income group (annual h/h income)	Accumulated percent of total income	Accumulated percent of combined expenditures in lotto and numbers games.
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		Overall expenditures	Syndicate expenditures removed.
Less than \$25 000	5.43	31.74	34.34
\$ 25 000 - \$50 000	25.52	66.80	71.27
\$ 50 000 - \$100 000	67.48	89.00	90.19
More than \$ 100 000	100.00	100.00	100.00
Suits index value		-0.48	-0.52

Source: *Gambling Impact and Behavior Study, 1997-1999*, Inter-university Consortium for Political and Social Research (ICPSR), Study no. 2778.

Figure 8.1 Lorenz curves representing the fiscal impact of syndicate play on American lotto and numbers games

Sources: *Gambling Impact and Behavior Study, 1997-1999*, Inter-university Consortium for Political and Social Research (ICPSR), Study no. 2,778

Christmas lottery is the most popular in Spain. It attracts a substantial number of newcomers: people who only play at Christmas turn out to be wealthier and more educated than regular lottery players. In this last section I use the CIS survey 1,779 for analysis. In order to calculate syndicate expenditures for each income group, I have assumed that for each income group the distribution between syndicate and individual expenditures mirrors the expenditures between only-syndicate and only-individual players of the corresponding income group. In this survey it is not possible to calculate the extent to which Christmas syndicate play is a substitute for individual play. For this reason, the following analysis of the Christmas lottery is not concerned with the net effect, but with the gross, overall effect of syndicating; this is to say, without detracting the expenditures that Christmas syndicate players would make were they not lured into the game by other people. Finally, although CIS 1,779 did not question respondents about their household income, it classifies breadwinner respondents according to the official National Classification of Occupations, established by the National Statistics Office (INE). Thus, in what follows, I am going to restrict the analysis to the sub-sample of households for which INE provides data on their average annual income, according to the occupational status of breadwinners. Table 8.2 takes these two considerations into account and distributes syndicate and lottery expenditures by income group. This table shows that whereas in every income group syndicate, per capita expenditures are greater than individual ones, it is among the relatively wealthy where this difference is the most noticeable. Also, it is among the relatively wealthy where the ratio of syndicate to individual players is the largest. Table 8.2, in sum, suggests that syndicate play might push the lottery burden to be more fairly distributed. Figure 8.2 confirms this suspicion, and shows that syndicate play reduces regressivity by 16 per cent, making the distribution of the lottery burden proportional (with a Suits value of 0.05). Social ties, in sum, dramatically reduce regressivity at Christmas time, when new syndicates emerge, apparently cutting across class boundaries and broadening the tax base.

The regressivity of the lottery tax is probably the most researched topic in gambling studies, and recommendations advanced by scholars and policy makers to reduce the negative impact of lotteries on the poor are abundant.<sup>14</sup> In the case of the US lottery market, Oster, for example, recommends the establishment of a National Lottery, under the assumption that such a huge lottery would increase the size of jackpots, attract the relatively wealthy and, consequently reduce regressivity. To attain proportionality, Oster cautiously estimates that this National Lottery should offer jackpots of \$806 million, an achievement which,

14 See, for example, Charles T. Clotfelter and Philip J. Cook, *Selling Hope: State Lotteries in America* (Cambridge, Mass: Harvard University Press, 1989), 234-49; Alan J. Karcher, *Lotteries* (New Brunswick: Transaction Books, 1992), 91-112; Gambling Impact Study Commission, *Report Recommendations* (1999). Available at the official site of the National Gambling Impact Study Commission, <http://govinfo.library.unt.edu/ngisc>



Table 8.2 Per capita syndicate and individual expenditures of the Spanish Christmas lottery, and ratios of syndicate to individual players by income groups. Sub-sample of households with working breadwinners

	Annual household income in pesetas				
	More than 2,900,000	2,400,000–2,900,000	2,193,000–2,400,000	2,000,000–2,193,000	Less than 2,000,000
Per capita expenditures (only players)					
Syndicate expenditures	5,275	5,195	4,003	2,967	1,834
Individual expenditures	1,874	1,062	1,269	2,283	1,175
Ratio synd./ind.	2.8	4.9	3.1	1.3	1.6
Ratio synd./ind. expenditures	18.3	7	7.5	2.2	3.4

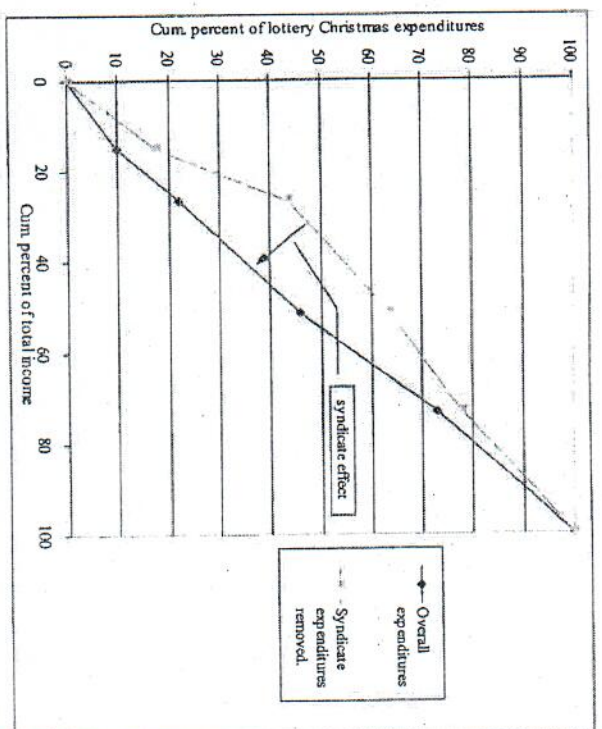
Note: Syndicate players are exclusively syndicate players as well as players who play simultaneously individually and in syndicates.

Source: CIS survey 1,779.

she concedes, could never happen.<sup>15</sup> Compared with the size of this projected American National Lottery, the Spanish market is relatively small (300 million versus 50 million people, respectively). Smaller as it is, and because of historical reasons,<sup>16</sup> the Spanish lottery market has made its most popular lottery, the Christmas lottery, to be proportional. This proportionality has not been attained by offering outrageous jackpots or fueling the economic motivations for playing but, on the contrary, by the very same players, who, putting aside those motivations, play the lottery as an opportunity to strengthen social ties.

### Conclusion

New economic sociology maintains that social networks have an impact on economic behaviour by providing a shared meaning or understanding of the expectations and practices involved in economic transactions. Syndicate play, a social practice by which networks of friends, relatives or co-workers share lottery tickets, embodies particularly well this basic tenet of economic sociology. While syndicating can be driven by economic motivations, available research has demonstrated that sharing lottery tickets can be better understood as a social practice sustained by interpersonal trust by which friends, relatives or



Income group (annual bh income in pesetas)	Accumulated percent of total income	Accumulated percent of lottery Christmas expenditures	Overall expenditures	Syndicate expenditures removed
Less than 2 000 000	15.04	10.03	17.42	
2 000 000 – 2 193 000	26.61	22.00	43.41	
2 193 000 – 2 400 000	51.04	45.73	63.55	
2 400 000 – 2 900 000	73.02	72.81	77.74	
More than 2 900 000	100.00	100.00	100.00	
Suits index value	0.05			-0.15

Source: CIS survey number 1,779.

Figure 8.2 Lorenz curves representing the fiscal impact of syndicate play on the Spanish Christmas lottery. Sub-sample of active breadwinners

Source: CIS survey 1,779

<sup>15</sup> Emily Osler, "Are All Lotteries Regressive? Evidence from the Powerball," *National Tax Journal* 52, 4 (2004): 741–51.

<sup>16</sup> Garvía, "Syndication."

co-workers can activate or negotiate their membership to, and status within their relevant social groups.<sup>17</sup>

This chapter has explored the economic and fiscal impact of this social practice. More concretely, survey analysis shows that syndication is directly responsible for 10 and 23 per cent of total lottery sales in the USA and Spain respectively. Similarly, whereas syndication seems to slightly reduce the regressivity of American lotteries, it has a dramatic impact on the Spanish Christmas lottery, making it proportional instead of regressive.

Syndicate play is a neglected topic in lottery research, and comparative data on syndicate play are still quite scarce. Even sociologists who acknowledge the impact of social bonds in lottery behaviour have traditionally overlooked its most visible manifestation, which is the practice of sharing lottery tickets. Further research on this practice would substantially contribute to our understanding of cross-country variations in lottery markets and behaviour.

## 9 All You Need is a Dollar and a Dream

### Explaining the Inverse Relationship Between Socio-Economic Position and Lottery Play

Jens Beckett and Mark Lutter

Sociologists generally agree that there is an inverse relationship between socio-economic position and lottery play.<sup>1</sup> Low-income individuals spend a larger part of their incomes on lottery tickets than those with higher incomes.<sup>2</sup> However, the question remains open as to what factors explain this pattern. Why do the poor spend proportionally more of their income on lottery tickets than their wealthier and better educated peers?

Much of the research on motivating factors in lottery participation stems from cognitive psychology<sup>3</sup> and economics.<sup>4</sup> In sociology, research provides insightful historical or qualitative in-depth studies<sup>5</sup> on gambling motivations, but quantitative accounts that test theories explaining lottery play are almost

1 This study is an early version of Jens Beckett and Mark Lutter, "Why the Poor Play the Lottery: Sociological Approaches to Explaining Class-based Lottery Play," *Sociology* 47 (2013): 1152–70. It presents previously unpublished additional findings and results.

2 Jens Beckett and Mark Lutter, "The Inequality of Fair Play: Lottery Gambling and Social Stratification in Germany," *European Sociological Review* 25 (2009): 475–88.

3 In addition to references in the text, see Vanchai Arinayabudhiphong, "Lottery Gambling: A Review," *Journal of Gambling Studies* 27 (2011): 15–33; Paul Rogers, "The Cognitive Psychology of Lottery Gambling: A Theoretical Review," *Journal of Gambling Studies* 14 (1998): 111–34; Paul Rogers and Paul Webley, "It could be us! Cognitive and Social Psychological Factors in UK National Lottery Play," *Applied Psychology* 50 (2001): 181–99.

4 In addition to references in the text, see Norman Albers and Lotmar Hüb, "Gambling Market and Individual Patterns of Gambling in Germany," *Journal of Gambling Studies* 13 (1997): 125–44; Reuven and Gabrielle A. Brenner, *Gambling and Speculation: A Theory, a History, and a Future of Some Human Deviations* (New York: Cambridge University Press, 1990); Yew Kwang Ng, "Why do People Buy Lottery Tickets? Choices Involving Risk and the Indivisibility of Expenditure," *The Journal of Political Economy* 73 (1965): 330–35.

5 Emma Casey, *Money, Pleasure and the Gambling Experience* (Aldershot: Ashgate, 2008); Roberto Garvía, "Syndication, Institutionalisation, and Lottery Play," *American Journal of Sociology* 113 (2007): 603–52; R. Garvía, *Lotteries: Un mundo desde la perspectiva económica* (Madrid: CIS, 2008); Jean Light, "Numbers Gambling Among Blacks: A Financial Institution," *American Sociological Review* 42 (1977): 892–904; Gerda Reith, *The Age of Chance: Gambling in Western Culture* (London: Routledge, 1999); John Rosecrance, "Why Regular Gamblers Don't Quit: A Sociological Perspective," *Sociological Perspectives*