

Culture, Conflict and Cooperation Revisited: A New Interpretation of the Evidence from Irish Dairying¹

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Abstract: Recent work has used pre-independence Ireland as an illustration of how a lack of social capital due to conflict can impact on economic performance. It is claimed, based on a simple econometric analysis, that conflict hindered the development of cooperative creameries in Ireland which were to be of such importance in more successful economies, such as Denmark. We argue however that the measure of cooperation used, the cooperatives as a share of all creameries, is flawed, since it is only low in the south of the island because of the historic importance of Munster as a centre of the dairy industry, and this just happens to be where the measure of social capital, so-called ‘outrages’, is highest. We demonstrate that controlling for the uniqueness of Munster shows the relationship to be spurious.

JEL Codes: A13, N33, N53

Keywords: Cooperatives, creameries, dairying, Ireland, social capital

¹ Thank you to Cormac Ó Gráda, and William Smyth for helpful comments and suggestions. Thank you also to Andreea-Alexandra Maorean for very conscientious research assistance.

1. Introduction

A paper by Kevin O'Rourke (2007) is one of the few to test formally the relationship between culture, social capital and cooperation. He takes up the example of Ireland's failure to maintain its grip on the important British market for its dairy products in the closing years of the nineteenth century, and compares it to the extraordinary success of the Danes, which led to them capturing 40 per cent of the British market for butter and 50 per cent of the market for bacon by 1900. Ireland's failure was not, he argues, the result of the Catholic religion, but rather that of her sectarian/political conflict and hence inability to exploit the cooperative organizational form, which was of crucial importance to the development of the sector in Denmark (Henriksen et al 2010). He demonstrates this by exploiting cross sectional variation in Ireland, using data on 'outrages' by county (a measure of poor social capital), and relating this to the cooperative share, i.e. cooperative creameries as a share of the total number of the creameries.

This paper argues that the analysis presented by O'Rourke is flawed, in large part because the cooperative share is a poor indicator of the ability of the Irish people to cooperate. In fact, O'Rourke's econometric analysis is picking up spurious correlation, due to his failure to control for important regional differences within Ireland, in particular the fact that it was Munster, not Ulster, which was 'different' in the context of dairying, having been the historical heartland of the industry for centuries before the push to introduce cooperatives into Ireland in the wake of the competition from continental Europe.

Given the continuing interest for the role of social capital in economics² and the growing interest amongst economic historians for the history of the dairy industry³, we feel it is important and necessary to bring to light the failures of this paper, which is published in one of the leading scholarly journals in economics.

² See for example Knack and Keefer (1997), Tabellini (2010).

³ See for example Henriksen et al (2011), Henriksen et al (2012a), and Henriksen et al (2012b).

2. Munster and the Irish Agricultural Organisation Society (IAOS)

The only mention O'Rourke gives of the province of Munster is in relation to it being overwhelmingly Catholic, which indeed it was, in common with most of Ireland. No paper about Irish dairying is, however, complete without at least a mention of the historical role of the province. This was very much based around an area known as the Golden Vale or Golden Vein, an area of rolling pastureland which was exceedingly good for dairy farming (see for example O'Donovan 1940, p. 302, Freeman 1947, p. 48).

This fact was of course recognized by the founding father of Irish cooperation, Horace Plunkett, who records in his memoirs that the strength of the dairy industry in Munster was one of the factors which inspired his early efforts:

‘Though the economic conditions of the Irish farmer clearly indicated a need for the application of cooperative effort to all branches of his industry, it was necessary at the beginning to embrace a more limited aim. It happened at the time we commenced our Irish work that one branch of farming, the dairy industry, presented features admirably adapted to our methods...New machinery, costly but highly efficient, had enabled the factory product, notably that of Denmark and Sweden, to compete successfully with the home-made article, both in quality and cost of production...To add to the interest of the situation, capitalists had seized the material advantages which the abundant supply of Irish milk afforded, and the green pastures of the “Golden Vein” were studded with snow white creameries which proclaimed the transfer of this great Irish industry from the tiller of the soil to the man of commerce.’ (Plunkett 1905, pp. 187-8)

The numbers of private creameries established by year, along with the cooperatives, is illustrated in Figure 1. The importance of Munster in the early years is clearly apparent.

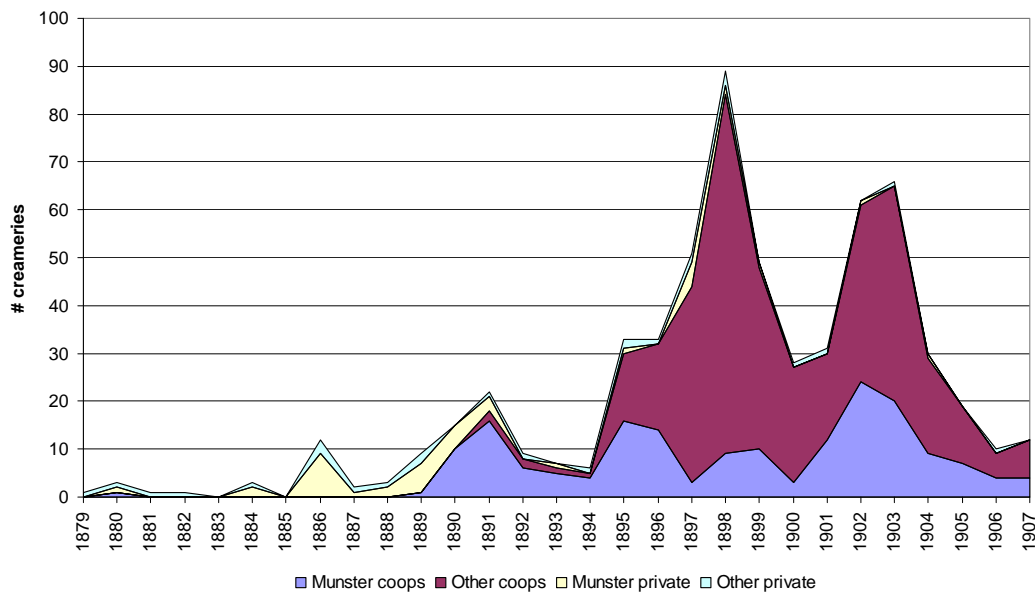


Figure 1: Establishment of Cooperative and Private Creameries in Ireland, 1879-1907

Sources: Reports of the Chief Registrar of Friendly Societies, 1879 to 1907; Return of Joint Stock Companies, 1879 to 1907.

Figure 1 is compiled from comprehensive information from a variety of sources. Since Irish cooperation was heavily influenced by the activities of Horace Plunkett and the Irish Agricultural Organisational Society (IAOS), the standard source material for studying cooperation is from the annual reports of the society. These recorded information on the activities of cooperatives which were founded by and registered with the IAOS, but excludes creameries that experienced alternative beginnings such as joint stock companies operated by farmers or cooperatives associated with rival institutions. Thus, to overcome the IAOS bias we have used UK registers of Joint-Stock companies and Industrial and Provident Societies, and we have also used a list of all creameries published by John Porter (n.d./c.1909).

In the UK cooperatives could incorporate under a number of legal acts. The early British consumer cooperatives registered as Friendly Societies and were enabled to do so by the clause that they were engaging in other purposes that those specified in the act provided they were

not illegal activities (Gosden 1973, p. 191). Further developments in cooperative organisation and methodology in the 1840s, especially the payment of dividends on shares, led to the enactment of the Industrial and Provident Societies Act. These Acts diverged from the Friendly Societies Acts and converged with the Company Acts, especially with the granting of limited liability to Industrial and Provident societies in 1862. There were few restrictions on Industrial and Provident societies. For example, banking, which was prohibited under early legislation, was legalised under the 1876 Industrial and Provident Societies Act. Cooperatives were required to register under the acts, and statements of the number of societies registered were published in the annual reports of the Chief Registrar of Friendly Societies. O'Donovan (1940, p. 303) stated that there were calls for the formation of cooperatives as early as the 1860s and '70s.

Of course it was not just cooperative creameries that were established. The reports of the Chief Registrar illustrate the immense number of mutual societies formed as either friendly societies or industrial and provident societies in Edwardian Ireland. In fact the cooperative lists highlight the wide variety of associational culture in this period. For example the lists include the Abbey Theatre, registered under the National Theatre in 1905, an important institution in Irish cultural revival. There is little to suggest a lack of cooperation here. We have traced the first creamery operating as a cooperative to 1880 when the County Waterford Dairies Society (Limited) was formed, although this cooperative had a short existence and was wound up in 1882. The literature attributes the first cooperative to Horace Plunkett and this is corroborated by our data since no other cooperatives were formed until 1889. The IAOS itself was registered as an Industrial and Provident Society in 1894.⁴

The alternative to the cooperative organisational form was to found joint stock companies or private family creameries. We were able to track the incorporation of joint-stock creameries but private family enterprises were difficult to trace. However, the major private creameries of this period, including the Condensed Milk Company of Ireland (Cleeve's) registered on 18 June

⁴ See Ó Gráda 1977 for more on the early history of the Irish dairy industry.

1889, are included in our dataset. Many of the large joint-stock creameries opened branches and these were predominantly located in the south-west of the island in the Golden Vale.⁵

Figure 1 thus illustrates that until the 1890s, private creameries were the predominant institutional form, and mostly located in Munster. After this time, cooperatives become the dominant form, and they are increasingly located outside of the dairy heartland of Munster. This point is crucial of course to the argument put forward by O'Rourke. The other side of this is, however, the location decisions of the founders of private creameries. Our data has been cross-referenced with a list of all creameries from Porter (c. 1908). Porter's list highlights the importance of the Manchester based Co-operative Wholesale Society and the Scottish Wholesale Co-operative Society in operating creameries. It also highlights the role of large joint stock companies that operated subsidiary networks. These included the Maypole Dairy Company, headquartered in London, The Newmarket Dairy Company (Cork), the Cork and Kerry Creamery (Cork), J. J. Lonsdale & Co. (Liverpool), the Golden Vale Dairy Company, Cleeve Brothers (Limerick), and the North Kerry Creamery Company. Combined these firms accounted for 57 per cent of non cooperative creameries in Porter's list. Of these, 83 per cent were located in Munster and less than one per cent were located in Ulster. Of the remaining non-cooperative creameries, 79 per cent were located in Munster whereas 13 per cent were located in Ulster. So we might then also ask why private creameries did not choose to locate in Ulster.

In fact, the answer to these questions has nothing to do with the ability or otherwise of the Irish to cooperate, and is even rather banal. By using cross-sectional information on the proprietary status of creameries in 1906, O'Rourke ignores the time dimension and assumes implicitly that there was an element of choice between private and cooperative incorporation. In fact, the true reason for the low share of cooperatives in Munster was path dependence. The IAOS tasked itself with establishing cooperative creameries around Ireland, but institutionally different, whilst functionally equivalent, creameries already existed in Munster. The IAOS thus

⁵ Curiously, Porter stated that many of the smaller joint-stock, 'though not strictly co-operative, are mostly owned and worked by the milk suppliers'.

quickly understood that the need for cooperation was elsewhere. In fact, Figure 2 illustrates nicely that this decision was taken from the mid-1890s. The IAOS from its establishment in 1894 solicited farmers to establish cooperatives and it was not until 1912 that farmers began to solicit the IAOS to help them establish cooperatives (1912, p.3). Furthermore, the IAOS believed that the available dairy land was reaching saturation point and had closed creameries established on marginal dairy land (IAOS 1906, 1905, cited in Ó Gráda 2006, footnote 9).

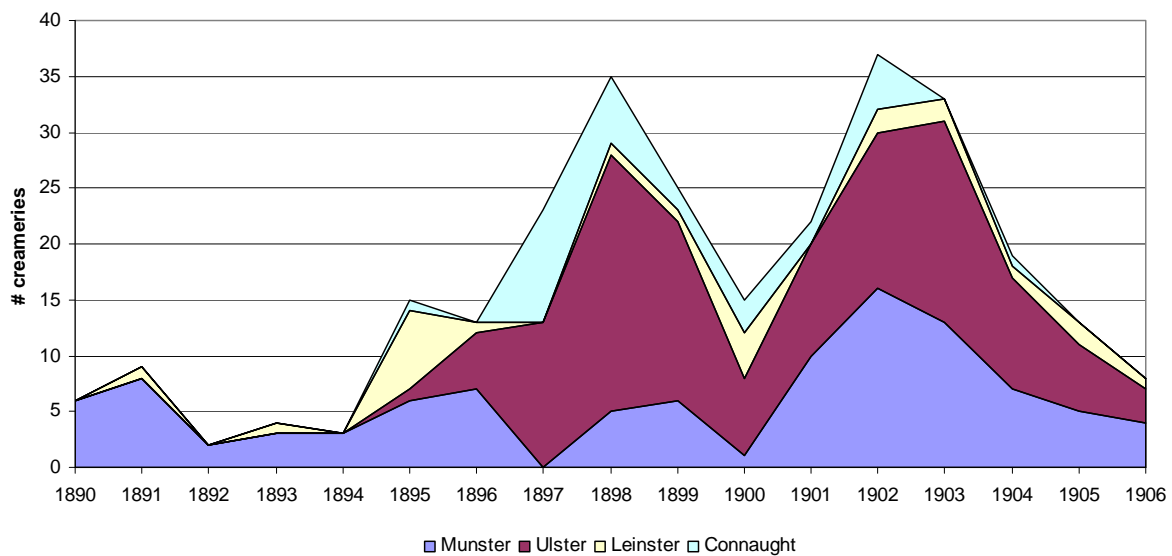


Figure 2: Year of establishment of creameries registered with the IAOS in 1906

Source: IAOS (1907)

Of course, the question remains as to why the pre-existing private creameries in Munster did not convert to cooperatives, as they often did in Denmark, where the cooperative form was clearly institutionally superior (Henriksen et al 2011). Does this reflect lack of cooperation in the south western corner of the Ireland? Again, the answer is quite simple. In Ireland, as the Industrial and Provident Societies Act converged to the Companies Act, cooperation did not possess clear institutional advantages and thus there were no additional benefits from switching organisational form. Moreover, Henriksen et al (2012) discuss how Irish cooperative creameries were additionally disadvantaged compared to their Danish counterparts, largely due to the impossibility of enforcing the binding vertical contracts necessary to secure the supply of milk to the cooperative. Irish private creameries, unlike the vast majority of those in Denmark,

did therefore not become cooperatives – there was simply no reason for them to do so. There were some transfers from private to cooperative, but these were at the behest of the IAOS who, according to O’Donovan (1940, pp324-325) persuaded joint stock companies ‘that it was unwise to invest capital in creameries in Ireland’ leading to the sale of private creameries and conversion to cooperatives. O’Rourke’s account of the Irish dairying industry post independence suggests that Ireland, once independent, had no barriers to cooperation as there was a homogenous Catholic population. However, this teleologic narrative fails to account for the role of state policy, in particular the Dairy Disposal Company, in the dairy industry of the Irish Free State post-1920.

3. Outrages and Cooperation Revisited

We turn now to the econometric analysis given by O’Rourke (2007), since it remains of course to be explained why he finds a statistical relationship between his indicator of discontent (‘outrages’) and the share of cooperatives by county. Here we find a couple of main issues: first concerning his data (which comes from the 1901 census and the 1906 report of the Department of Agriculture), and second concerning the econometric analysis itself, which fails to account for the uniqueness of Munster, given its historical role as described above.

3.1 The data

According to the 1906 report, there were 780 creameries in Ireland, of which 345 were cooperative and the remainder were proprietary and joint stock. Overall, there was a greater density of creameries in the province of Munster but the province of Ulster had a greater cooperative share. As Table 1 illustrates, however, this cooperative share is somewhat deceptive as the numerators (cooperatives) are quite similar whereas the denominators (the sum of cooperatives and private creameries) are significantly different. In fact, of all the provinces only Munster had a significant private sector, giving it also a very large total number of creameries.

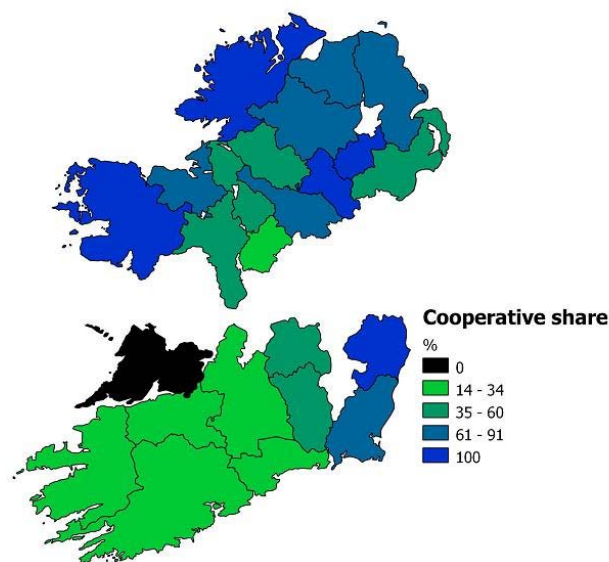
Table 1: Provincial distribution of creameries in Ireland, 1906

	<i>Munster</i>	<i>Ulster</i>	<i>Connaught</i>	<i>Leinster</i>	Ireland
Cooperatives	112	162	45	26	345
Proprietary and joint stock	365	28	16	26	435
Total Creameries	477	190	61	52	780
Cooperative Share (%)	23	85	74	50	44

Source: HCPP (1908, pp 128-129)

Another odd feature of this variable becomes more apparent when the data are mapped, as in Map 1. The most noticeable aspect is the absence of creameries of all types across the middle of the island from west to east. Furthermore, there are a number of extreme outliers such as Clare, which had no cooperatives, whereas Armagh, Donegal, Monaghan and Wicklow all had 100 per cent with 10, 15, 27 and 1 cooperative respectively in each county. Tipperary, located in Munster, was the county with the highest number of cooperatives, 44, but it had a large number of private creameries, 84, which gives it a very low cooperative share. Controlling for the number of farms, Limerick had the highest number of creameries (63 per 10,000 farms) and again Tipperary had the highest number of cooperatives (19 per 10,000 farms). Both of these counties were located in Munster.

Map 1: Cooperative share in 1906

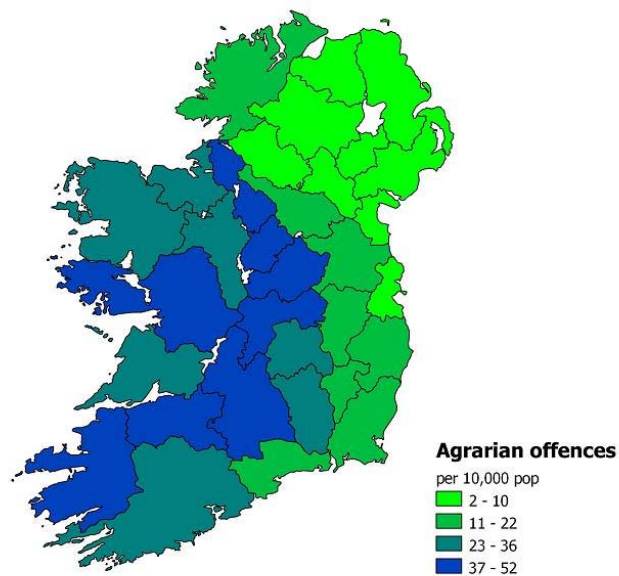


Source: HCPP (1908, pp 128-129)

Note: Map intervals chosen using nested mean. Population mean = 57.6 and standard deviation = 33.72.

The variable that O'Rourke chooses to represent the lack of social capital were 'Agrarian Outrages' from 1880-82, years associated with the Irish 'Land War'. These data were sourced from Rumpf and Hepburn (1977, p. 52) but are lacking context and description. Firstly, the primary data from which they are based are available through parliamentary papers and they indicate a wide array of agrarian crimes committed in the years 1880, 1881 and 1882. These crimes are dominated by threatening letters and physical intimidation rather than violence. In fact, in each year murder is less than 1 per cent of all crimes committed. Map 2 displays the geographical pattern of these agrarian offences, low in the north and east and high in the south and west, the inverse of the cooperative share pattern, and thus the reason for his findings.

Map 2 Agrarian offences per 10,000 population 1880-82



Sources: HCPP (1881, 1882, 1883)

Note: Map intervals chosen using nested mean. Population mean = 22.4 and standard deviation = 15.36.

The biggest concern about using this data is the fact that it overlooks a large literature on the period of the land war in Ulster in particular the existence of institutional alternatives that chose different methods of agitation. Agrarian offences were primarily related to the policy of boycotting, named after the economic and social ostracisation of Captain Boycott, during the Irish Land War. However, Bew and Wright (1983) show how it was difficult to implement such policies, enforced by intimidation, in Ulster. This was despite the fact that land agitation was also pursued in Ulster as tenants were equally interested in rent abatements as those in the south – but this simply does not show up in the statistics.

Finally, some variables are just wrong, the most severe case being the Catholic share. O'Rourke's summary statistics indicated that the maximum value was 89.6 per cent whereas the 1901 census gave a maximum value of 97.98 per cent. These discrepancies are outlined in Table 2.

Table 2: Catholic share 1901 census

	<i>Mean</i>	<i>Median</i>	<i>Std.</i>	<i>Min.</i>	<i>Max</i>
	<i>Dev.</i>				
Catholic share O'Rourke (2007)	74.0	81.5	18.3	26.6	89.6
Catholic share 1901 census	78.20	90.47	22.83	22.99	97.98

Source: HCPP (1902)

3.2 New results

Despite the above concerns, we are in fact able more or less to replicate O'Rourke's results. Before this, Table 2 gives the corrected summary statistics for the variables used in the regression.

Table 2: Summary statistics

	Mean	Median	Std.Dev.	Min.	Max.
Cooperatives	11.75	11.00	10.05	0.00	37.00
Private creameries ⁶	18.13	5.00	30.58	0.00	108.00
Catholic share ⁷	78.20	90.47	22.35	22.99	97.98
Share of Irish speakers	13.38	5.67	15.51	0.69	50.09
Share of farms between 5 and 30 acres	62.55	66.47	15.77	37.02	85.62
Agrarian outrages per 10,000 population ⁸	22.08	21.50	14.39	2.00	52.00

Turning to the regression, column (1) of Table 3 presents the results of running the same regression as O'Rourke's regression (1) on the new data. Clearly, there is little quantitative and no qualitative difference. Again, the share of small farms and outrages are significant, and they have the same signs and similar magnitudes.

⁶ The discrepancies for 'Cooperatives' and 'Private creameries' with O'Rourke's Appendix Table 1 owe to his including the eight missing counties as 0 (in reality they are undefined).

⁷ See text for a discussion of the discrepancies with O'Rourke's statistics

⁸ Here the discrepancy is because O'Rourke is taking the average for all 32 counties.

Table 3: Explaining the cooperative share

	(1)	(2)	(3)	(4)
Share of farms between 5 and 30 acres	0.9999***	-0.378265	-0.387812	
	(0.27402)	(0.606)	(0.6068)	
Catholic share	2.1629	1.55961		
	(2.3101)	(1.482)		
Catholic share squared	(-0.017868)	-0.0119055		
	0.017351	(0.01264)		
Share of Irish speakers	0.21179	0.320522		
	(0.49075)	(0.3428)		
Agrarian outrages per 10,000 population	-1.4401***	-0.603375	-0.51721	-0.681645
	(0.50725)	(0.4126)	(0.4472)	(0.4964)
Ulster	-24.954			
	(25.053)			
Munster		-59.3755*	-60.1429**	-44.0426**
		(30.19)	(24.74)	(15.81)
Connaught		9.1306	8.30418	9.73414
		(16.94)	(15.83)	(17.3)
Leinster		-16.389	-20.5006	-10.3236
		(25.54)	(14.3)	(15.08)
Constant	-15.156	66.2243	113.601**	86.5925***
	(66.415)	(53.81)	(42.33)	(8.848)
Observations	24	24	24	24
R-squared	0.61251	0.728447	0.693572	0.687337

Robust standard errors in parentheses *significant at 10% **significant at 5% ***significant at 1%

Not mentioning the small number of observations, the main problem with this analysis is, of course, the failure to control for Munster. An Ulster dummy is included by O'Rourke 'in case there are unobserved differences between Ulster and the other three Irish provinces which are driving the results' (p. 1373), but as should now be apparent, the true difference in the case of the dairy industry was between Munster and the rest of the country. Introducing a full set of regional dummies, as we do in column (2), cuts the size of the outrages coefficient by more than half, and it becomes insignificant. Tellingly, the province which seemingly accounts for this is Munster, the dummy for which is strongly significant and, not surprisingly in the light of the previous discussion, negative. Removing insignificant variables, as we do in (3) and (4) does not alter this conclusion. There thus seems no doubt that it was the pre-existence of private creameries in Munster, for reasons of history and geography, and not the uncooperativeness of the people of Munster, that led to its low cooperative share.

5. Conclusions

The low share of cooperatives in the province of Munster was a result of its particular geographical features, which led it to have an historic dairy industry, before the efforts of the IAOS to set up cooperatives. Moreover, these private creameries had no reason to convert to the cooperative form, given the institutional environment of Ireland under British law. Since recorded 'outrages' were higher in the south than in the north of the Ireland, this thus results in a spurious correlation with the cooperative share – this becomes apparent, when regional specific factors are controlled for. In fact, farmers in Munster were perfectly capable of cooperating, as the available evidence makes very clear.

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