Consumers' purchases of organic meats in Great Britain during the COVID-19 pandemic

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Abstract

There is an increasing interest on food production that is more environmentally friendly. The purpose of this paper is to analyse the evolution of purchases of meats (i.e., beef, lamb, pork and poultry) focusing on the organic category and using a unique dataset that allowed us to construct time series data by meat and by income group. This is interesting because of the continue reporting of an increase in the sales of organic products, particularly during the lockdown due to the pandemic, without mentioning anything about the evolution of quantities. Price and quantity indices were constructed for all the meats and they were subject to a trend analysis, which included seasonal components and a dummy variable for the period since March 2020 to test whether the first lockdown period had any effect on the purchases of organic meats. The preliminary results show a negative trend on the quantity demanded for organic beef and also a negative effect for the Covid-19 lockdown. The effect on the other meats (trend or Covid-19) is minimal of inexistent.

Keywords - Organic meat market, consumers' response, Covid-19 pandemic

I. Introduction

There is an increasing interest on food production that is more environmentally friendly as shown by the report from the Assembly Citizens (Assembly Citizens, 2020) chapter 6 about the food we eat and how we use the land. Organic production fits that environmental interest because food is produced by practices that cycle resources, promote ecological balance, and conserve biodiversity. Moreover, the use of certain pesticides and fertilizers in the farming process is restricted. Despite this, the organic sector as a proportion of the conventional sector remains quite small.

The purpose of this paper is to provide an analysis of the organic meat sector during the Covid-19 period (i.e., March to June 2020). The choice of the meat sector was due to the fact that most of the climate change issues are related to meat sector performance.

The Covid-19 period is interesting to analyse because (at least at the beginning) households were able to allocate more money to the supermarket purchases due to the closure of food service. Using the latest figures from

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Defra's Family Food annual report (2017/18), if the lockout would have been perfect, and all the meals had been taken at home (all the money is still spent on food), it would have implied a maximum average increase in demand for household supplies of around 44 per cent (this is an average figure with the first income decile being able to spend 24 per cent more on their household food items and the last decile 66 per cent).

The present results could be interesting for organic producers in order to help them make an informed decision whether to stay in the market, expand or convert back to conventional agriculture. They could be of interest to the Organic Trade Board that has received 10.4 million Euro by the EU to run a 3-year campaign to promote organic food in the UK. At the same time, this analysis could inform retailers on the evolution of the organic demand so that they can design their sales and advertisement policy accordingly. The present estimates could also be of interest in different consumer market contexts such as agri-food with credence attributes.

The results of this paper are also interesting as a background for the European Green Deal, which stands at the centre of the European Commission's policy agenda towards a sustainable and climate-neutral Europe, while organic farming will be key in delivering these over-arching objectives through its sustainable use of natural resources and processes, according to a draft of the 'Action Plan for the development of the organic sector: on the way to 2030'. The Action Plan, due to be unveiled on March 24, is divided into three axes, namely: (1) organic food/products for all: stimulate demand - ensure consumer trust; (2) on the way to 2030: stimulating conversion and reinforcing the entire value chain; and (3) leading by example: improving the contribution of organic farming to sustainability (Agrafacts, 2021).

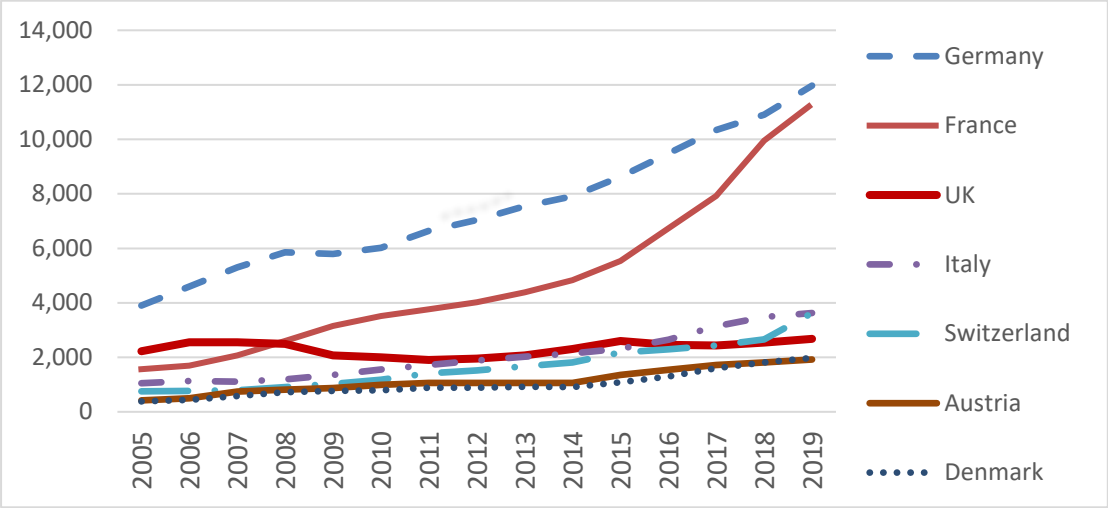
The structure of the paper is as follows: it starts with a background of the organic market; next, the methodology is presented, comprising a brief description of the construction of the data and the analyses carried out. It is followed by a discussion of the results and some conclusions.

II. Background

Analysing organic food consumption in the UK is interesting because while organic sales have consistently increased worldwide, in the UK they have stayed relatively constant over the periods 2005–2019 (Figure 1).

As shown in Figure 1, there was a short spike in 2015 in the UK figures; however, the organically farmed area in the UK is declining, implying that organic food imports are increasing, and that the UK may not be experiencing both the economic and the environmental benefits of organic production. In the light of Brexit, the exit of the UK from the EU Common Agriculture Policy (CAP) and the redesign of the UK agricultural policy, the present results about organic meat consumption might be of interest to several stakeholders.

Figure 1: Development of the Organic Market in Selected European Countries 2005-2019 (Sales in Million €)



Source: Organic Data Network

The literature on organic food shows that organic products are bought both for their use values such as better taste and better perceived health (Wier et al. 2008; Aertsens et al. 2009; Griffith and Nesheim, 2013; Gschwandtner, 2018, Gschwandtner and Burton, 2020) and for their non-use values such as environmentally friendliness and higher animal welfare (Zander and Hamm, 2010; Heid and Hamm, 2013; Bravo et al., 2013; Akaichi et al., 2019). The latter sometimes also called 'ethical', 'public' or 'credence' attributes are especially numerous in the case of organic products.

Additionally, to the "classical non-use values" such as existence, bequest and option value also the wish to support local producers if organic is produced locally and fairer prices may be added. Millock et al. (2004) and Wier et al. (2008) explicitly identify and quantify the existence, option, bequest values of organic products and additionally define altruistic and vicarious non-use values for them.

Organic consumption is viewed as one of the ways for a more sustainable food provisioning system (Aschemann, Witzel and Zielke, 2015; Mørk et al., 2017; Van Loo et al., 2015; Verein et al., 2015; Vittersø and Tangeland, 2015; de Magistris and Garcia, 2016) and as a central component of a more sustainable diet (Baudry et al., 2017 a,b; Seconda et al., 2017; Strassner et al., 2015). Herewith, it is related to the sustainable consumption and production patterns which is one of the goals of Agenda 2030 for Sustainable Development (goal number 12).

Organic food consumption is also perceived to be safer, less risky and to increase in the cases of food scandals or shocks to the food chain (Saba and Messina, 2003). During the last decades there were several scandals that have generated consumers mistrust in the food chain (Bánáti, 2011; Falguera et al., 2012). Food scandals or 'crises' are recognized as strong predictors of organic food consumption (Hughner et al., 2007; Falguera et al., 2012). Although it is still controversial whether organic food is actually healthier, and

safer than conventional, what is not controversial is that they are perceived as such (Kriwy and Mecking, 2012; Bryla, 2016; Hasimu et al., 2017). The current paper relates to this literature as it investigates the organic consumption behaviour in the UK after the hit of the worldwide pandemic caused by the Covid-19 virus.

The question of whether organic meat consumption has increased overall after Covid-19 is interesting. On the one hand, the overall meat sales (including organic red meat) are expected to fall due to environmental concerns. On the other hand, organic meat consumption is expected to rise as a result of the current pandemic and of a substitution between conventional and organic meat. To our knowledge, this is the first paper to analyse the development of organic meat consumption in the UK after Covid-19.

III. Methodology

The data used for the analysis were from the Kantar Worldpanel dataset for Great Britain from 2013 to 2020, which provide information about purchases at the level of products by households. The data excluded out of household consumption. The purchases in the dataset are accompanied with weights that allow constructing country-level time series, which were the basis for the analysis in this paper.

It should be noted that Kantar data use months of four weeks (i.e., a year is made of 13 months), therefore, the dataset since 2013 comprised 98 observations. For the analysis defined five periods of interest were defined. The pandemic outbreak was from February 24 to March 22, 2020 (the first death from Coronavirus in the UK was confirmed on March 5).

The household data contain information about their income ranges (i.e., £0 - £29,999, £30,000 - £39,999, £40,000 - £49,999, £50,000 - £59,999, £60,000 - over) and it was used to estimate a purchases time series by income group. The income ranges were provided by Kantar.

Price and quantity index numbers

The methodology consisted of constructing time series for the period 2013 to 2020 for meats (beef, lamb, pork and poultry) by income group. As expenditure shares change over time Tornqvist-Theil-Divisia (TTD, hereafter) price and quantity indices (Diewert, 1976) were produced. These indices are a weighted geometric average of the price and quantity relatives using arithmetic averages of the value shares in the two periods as weights, in other terms, they have the advantage to capture changes in the composition of the purchased basket. The TTD indices for prices and quantity are given by (1) and (2):

$$\frac{P_t}{P_{t-1}} = \prod_{i=1}^{n} \left(\frac{p_{i,t}}{p_{i,t-1}} \right)^{\frac{1}{2}\left[\frac{p_{i,t-1}q_{i,t-1}}{\sum_{j=1}^{n}(p_{j,t-1}q_{j,t-1})} + \frac{p_{i,t}q_{i,t}}{\sum_{j=1}^{n}(p_{j,t}q_{j,t})} \right]} \quad (1)$$

$$\frac{Q_t}{Q_{t-1}} = \prod_{i=1}^{n} \left(\frac{q_{i,t}}{q_{i,t-1}} \right)^{\frac{1}{2}\left[\frac{p_{i,t-1}q_{i,t-1}}{\sum_{j=1}^{n}(p_{j,t-1}q_{j,t-1})} + \frac{p_{i,t}q_{i,t}}{\sum_{j=1}^{n}(p_{j,t}q_{j,t})} \right]} \quad (2)$$

Trend analysis

The prices and the quantities purchased indices were subject to a trend analysis. For this, the both the calories per quantity and the saturated fats per quantity were first seasonally adjusted before estimating the trends. Based on the observed data graphs the following model was applied (3)

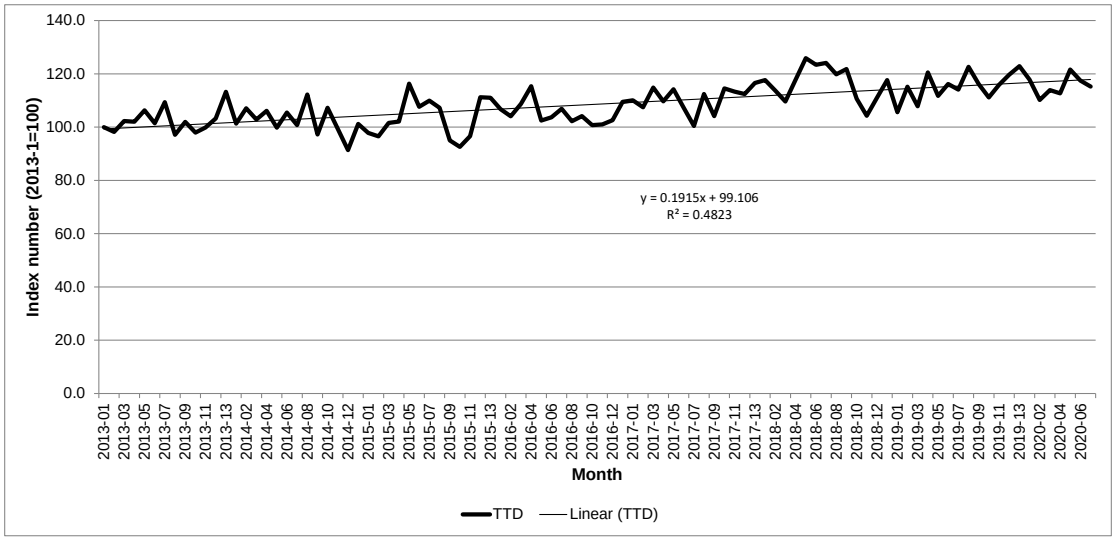
$$Y_t = \alpha_0 + \beta_0 t + \sum_{i=2}^{13} \alpha_{1i} d_{1i} + \alpha_2 d_2 \quad (3)$$

Where Y_t is the series to be analysed, the $\alpha's$ and β are parameters, α_2 tested a change in the variables due to the effect of Covid-19 lockdown. In addition, the same trend analysis was applied to the organic share of the total purchases by meat and by income group in order to test whether organic products had gained market within the different income groups.

IV. Results and discussion

Figures 2 and 3 presents the evolution of the price and quantity indices considering all the organic meats together. In the case of prices, when considered all the meats together during the period 2013-20, prices showed an increasing trend over time, rising on average 0.19 each period. On the other hand, the quantity index shows a decreasing trend (-0.08).

Figure 2: Great Britain - Tornqvist-Theil-Divisia price index for all organic meats

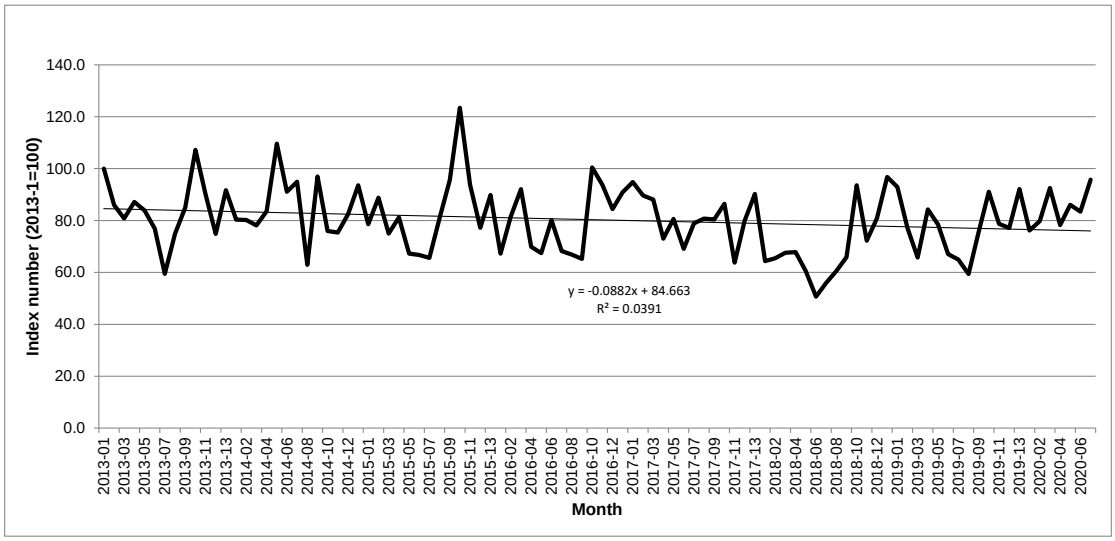


Source: Own elaboration based on Kantar Worldpanel data

The positive trend for prices and negative for quantities indicate that the positive trend observed in the sale of organic products is be associated to the

effect of prices. This is important because although producers might be getting more for their produce and the revenues are increasing, the actual market for organic meat (i.e., the quantity demanded) is not. Moreover, if the prices are constantly increasing (as shown by the observed trend), it may further discourage the purchases of organic products.

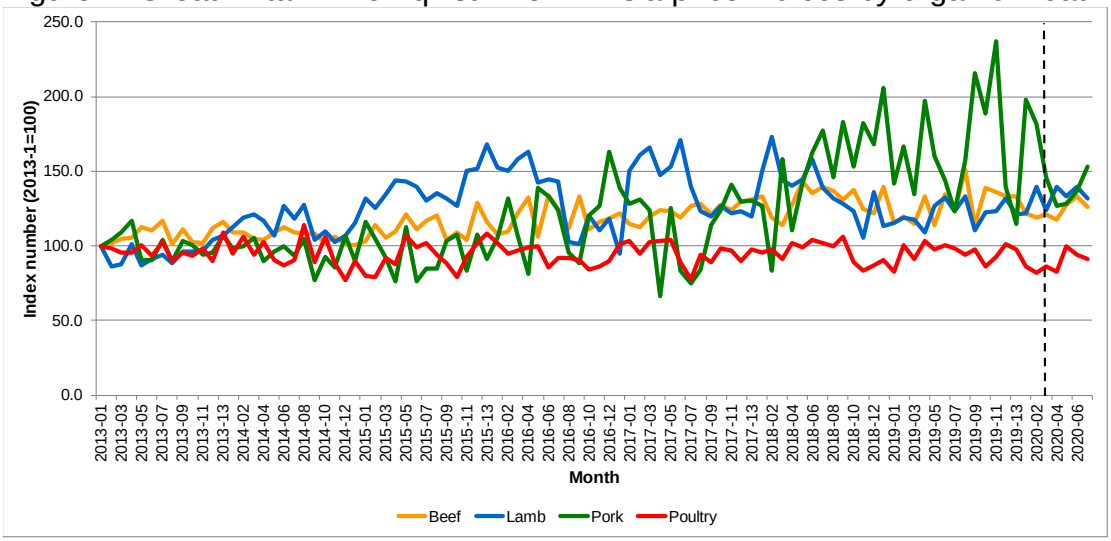
Figure 3: Great Britain - Tornqvist-Theil-Divisia quantity index for all organic meats



Source: Own elaboration based on Kantar Worldpanel data

Figures 4 and 5 disaggregates Figures 2 and 3 by meat. The price index shown in Figure 2 masks the behaviour of the different meats. Thus, beef, and pork showed clear increasing trends; lamb does show a clear trend whilst poultry prices appear to have a decreasing trend.

Figure 4: Great Britain - Tornqvist-Theil-Divisia price indices by organic meat

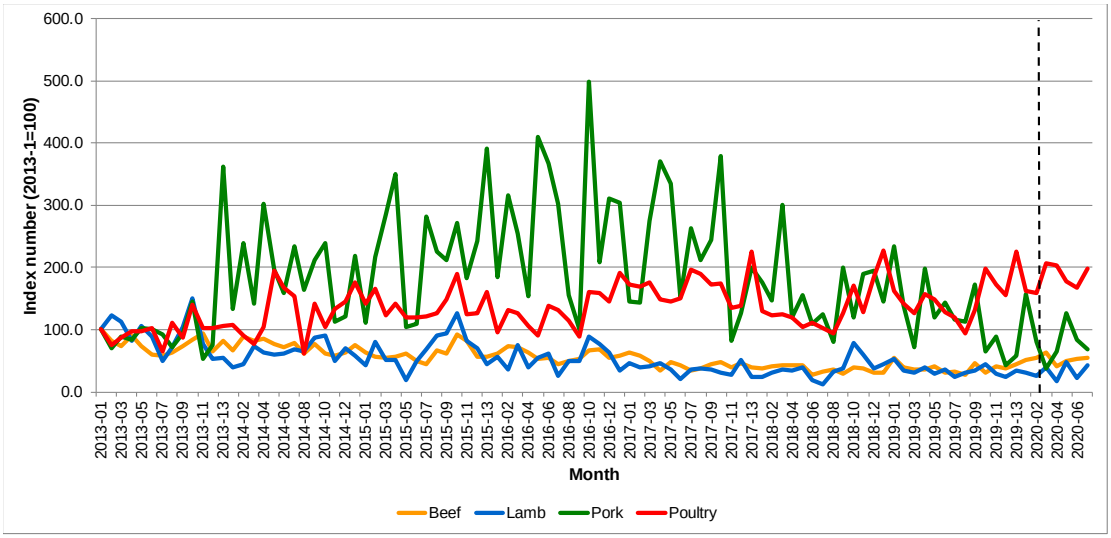


Source: Own elaboration based on Kantar Worldpanel data

Moreover, when quantities are considered, there are differences by meat type. On the one hand, beef, lamb and pork (after 2016) show a decreasing

trend, while poultry shows a steady increasing trend during the period of study.

Figure 5: Great Britain - Tornqvist-Theil-Divisia quantity indices by organic meat



Source: Own elaboration based on Kantar Worldpanel data

As it is difficult to visualise the trends in Figures 4 and 5 as well as differentiate it from any seasonal component, the series were subject to a trend analysis using regression analysis. Table 1 presents the results.

As regards the prices, beef, lamb, and pork prices show a positive trend, whilst poultry's trend is not statistically significant. From all the meats, only beef shows a coefficient for Covid-19 that is negative and significant indicating a decrease in prices. This is probably due to the issues observed on beef at the beginning of the lockdown.

The results for quantities presented in Table 1 are interesting because they show that beef and lamb have negative trends; the trend for pork is not statistically significant, whilst poultry shows a positive trend over the period of study.

As regards the effect the Covid-19 period, all the meats show a positive effect although not on the same direction. Thus, the coefficient for beef, lamb and poultry showed a positive effect, indicating a surge in their consumption; whilst pork had an opposite effect.

Table 2 analyses the evolution of the shares in the purchases of the four studied organic meats by income groups. As shown in the Table, the shares are small fluctuating around 1 to 2 per cent.

All the trends for the share of organic beef were negative and statistically significant, indicating that organic beef is losing presence amongst consumption. Moreover, the Covid-19 coefficients were not significant in any of the cases.

Table 1: Organic meats - Trend, seasonal dummies, and Covid-19 dummy regression 1/

	Intercept	Seasonality dummy (month)												Trend	Covid	R^2
		2	3	4	5	6	7	8	9	10	11	12	13			
Prices																
All meats	97.8 *	-0.8	0.6	3.5	4.8	2.6	2.2	3.3	-1.7	-2.7	-3.5	-0.7	4.9	0.2 *	-3.6	0.60
t-stat	45.7	-0.3	0.2	1.3	1.8	1.0	0.8	1.2	-0.6	-1.0	-1.3	-0.2	1.8	9.6	-1.3	
Beef	98.3 *	-0.5	0.6	6.4	6.5	10.2 *	9.0 *	9.0 *	3.9	4.3	1.9	6.1	7.6	0.3 *	-10.6 *	0.63
t-stat	32.1	-0.1	0.2	1.7	1.7	2.6	2.3	2.2	1.0	1.1	0.5	1.5	1.9	10.7	-2.6	
Lamb	114.2 *	4.7	3.5	4.2	0.9	8.8	-1.9	-9.1	-16.7	-12.3	-14.7	-6.2	-11.1	0.3 *	-14.7	0.30
t-stat	15.5	0.5	0.4	0.5	0.1	0.9	-0.2	-1.0	-1.7	-1.3	-1.5	-0.6	-1.2	4.5	-1.5	
Pork	84.0 *	-2.5	-3.7	-18.5	-3.3	-12.7	-12.6	-18.4	-1.8	-2.6	5.7	-1.0	-6.7	0.9 *	-24.3	0.54
t-stat	8.2	-0.2	-0.3	-1.4	-0.3	-1.0	-1.0	-1.4	-0.1	-0.2	0.4	-0.1	-0.5	9.2	-1.8	
Poultry	93.5 *	1.1	1.4	4.6	7.4	1.6	2.2	3.8	0.7	-2.0	-1.7	-2.1	6.1	0.0	-5.1	0.16
t-stat	31.3	0.3	0.4	1.2	1.9	0.4	0.6	1.0	0.2	-0.5	-0.4	-0.5	1.6	-0.4	-1.3	
Quantities index																
All meats	88.6 *	-0.6	-4.0	-5.7	-4.4	-10.4 *	-10.4 *	-12.3 *	-0.9	15.4 *	-0.2	-1.6	11.2 *	-0.1 *	19.6 *	0.43
t-stat	21.5	-0.1	-0.8	-1.1	-0.9	-2.0	-2.0	-2.3	-0.2	2.9	0.0	-0.3	2.1	-3.6	3.6	
Beef	87.3 *	0.1	-5.2	-8.2	-7.9	-14.2 *	-15.0 *	-13.1 *	-6.8	-0.8	-0.5	-9.0	-4.1	-0.5 *	26.6 *	0.74
t-stat	23.2	0.0	-1.1	-1.7	-1.7	-3.0	-3.2	-2.7	-1.4	-0.2	-0.1	-1.8	-0.8	-14.6	5.4	
Lamb	80.4 *	3.7	7.3	-2.7	0.2	-2.9	-6.4	5.3	15.3	40.5 *	11.0	7.0	-3.3	-0.7 *	19.7 *	0.63
t-stat	11.5	0.4	0.8	-0.3	0.0	-0.3	-0.7	0.6	1.7	4.4	1.2	0.8	-0.4	-9.9	2.2	
Pork	163.3 *	13.5	41.2	65.0	53.4	12.9	45.4	-9.2	21.3	90.8	-23.5	4.6	85.5	-0.2	-114.4 *	0.19
t-stat	4.4	0.3	0.9	1.4	1.1	0.3	1.0	-0.2	0.4	1.9	-0.5	0.1	1.8	-0.5	-2.3	
Poultry	108.2 *	-2.5	-8.3	-5.5	-5.8	-5.7	-5.5	-21.1	-6.8	26.9	0.5	6.1	50.2 *	0.6 *	35.6 *	0.49
t-stat	9.6	-0.2	-0.6	-0.4	-0.4	-0.4	-0.4	-1.4	-0.5	1.8	0.0	0.4	3.4	5.0	2.4	

Notes

1/ First rows are the coefficients and the second row are the t statistics of the coefficients. * stands for statistically significant at 95*.

Table 2: Share of organic meat by income group – Trend, seasonal dummies and Covid-19 dummy regression 1/

	Intercept	Seasonality dummy (month)												Trend	Covid	R^2
		2	3	4	5	6	7	8	9	10	11	12	13			
Beef																
Less than 30K	1.082 *	-0.238	-0.376	-0.268	-0.449 *	-0.069	-0.479 *	-0.253	-0.261	-0.281	-0.288	-0.066	-0.165	-0.007 *	0.260	0.28
t-stat	6.64	-1.16	-1.82	-1.30	-2.18	-0.33	-2.32	-1.19	-1.23	-1.33	-1.35	-0.31	-0.77	-4.51	1.22	
30K to 40K	1.112 *	0.079	0.051	-0.057	-0.035	-0.168	-0.116	-0.109	-0.111	0.058	0.120	-0.072	0.003	-0.009 *	0.180	0.73
t-stat	15.96	0.90	0.58	-0.65	-0.40	-1.90	-1.32	-1.20	-1.22	0.64	1.32	-0.79	0.03	-13.78	1.98	
40K to 50K	1.094 *	-0.136	-0.143	-0.090	-0.164	-0.225	-0.205	-0.081	-0.235	0.031	-0.017	-0.150	-0.176	-0.005 *	0.326	0.23
t-stat	8.52	-0.84	-0.88	-0.55	-1.01	-1.38	-1.26	-0.48	-1.40	0.19	-0.10	-0.90	-1.05	-4.30	1.94	
50K to 60K	1.327 *	0.162	0.173	0.039	0.237	0.153	0.029	0.236	0.339	0.447	0.125	0.038	0.313	-0.006 *	-0.290	0.14
t-stat	4.93	0.48	0.51	0.12	0.70	0.45	0.09	0.67	0.97	1.27	0.36	0.11	0.89	-2.39	-0.82	
Over 60K	0.807 *	-0.011	-0.036	-0.059	-0.051	-0.031	-0.027	-0.080	0.024	0.032	0.078	-0.138	0.031	-0.005 *	0.140	0.46
t-stat	11.39	-0.12	-0.40	-0.65	-0.56	-0.35	-0.31	-0.87	0.26	0.35	0.85	-1.50	0.33	-7.83	1.51	
Lamb																
Less than 30K	0.326	0.428	0.177	0.020	0.047	-0.066	0.631 *	0.338	0.565 *	0.185	0.379	-0.043	-0.115	-0.004	-0.150	0.26
t-stat	1.69	1.76	0.72	0.08	0.19	-0.27	2.58	1.34	2.25	0.74	1.51	-0.17	-0.46	-1.87	-0.59	
30K to 40K	0.849 *	-0.233	-0.252	-0.490	0.128	0.083	-0.054	0.226	0.221	0.098	-0.137	-0.423	-0.462	-0.001	-0.150	0.20
t-stat	3.94	-0.86	-0.92	-1.79	0.47	0.30	-0.20	0.80	0.79	0.35	-0.49	-1.50	-1.64	-0.66	-0.53	
40K to 50K	0.815 *	-0.049	-0.197	-0.303	0.248	-0.345	-0.032	-0.300	0.024	0.400	-0.111	-0.308	-0.412	0.000	0.211	0.14
t-stat	3.30	-0.16	-0.63	-0.97	0.79	-1.10	-0.10	-0.93	0.08	1.24	-0.35	-0.96	-1.28	0.05	0.65	
50K to 60K	0.961 *	0.029	-0.047	0.064	0.034	-0.290	0.084	0.648	0.161	1.061 *	0.884	0.242	-0.198	-0.003	0.207	0.19
t-stat	2.80	0.07	-0.11	0.15	0.08	-0.67	0.19	1.45	0.36	2.38	1.98	0.54	-0.44	-1.03	0.46	
Over 60K	0.746 *	-0.155	-0.316	-0.367	-0.185	-0.445 *	-0.278	-0.128	-0.210	0.738 *	0.060	-0.116	-0.346	0.000	0.543 *	0.40
t-stat	4.86	-0.80	-1.62	-1.88	-0.95	-2.29	-1.43	-0.64	-1.05	3.69	0.30	-0.58	-1.73	-0.14	2.71	

1/ First rows are the coefficients and the second row are the t statistics of the coefficients. * stands for statistically significant at 95*.

Table 2: Share of organic meat by income group – Trend, seasonal dummies and Covid-19 dummy regression 1/ (cont.)

	Intercept	Seasonality dummy (month)												Trend	Covid	R^2
		2	3	4	5	6	7	8	9	10	11	12	13			
Pork																
Less than 30K	0.033	-0.003	-0.038	-0.043	-0.014	-0.027	-0.012	-0.079	-0.080	-0.058	-0.069	-0.047	0.030	0.001 *	0.013	0.23
t-stat	0.98	-0.08	-0.89	-1.01	-0.33	-0.64	-0.29	-1.80	-1.83	-1.32	-1.56	-1.07	0.69	2.97	0.29	
30K to 40K	0.135	-0.194	-0.219	-0.132	-0.244 *	-0.164	-0.207	-0.194	-0.160	-0.211	-0.284 *	-0.043	-0.118	0.004 *	-0.195	0.28
t-stat	1.50	-1.72	-1.92	-1.16	-2.14	-1.44	-1.81	-1.66	-1.36	-1.80	-2.42	-0.36	-1.01	4.50	-1.66	
40K to 50K	0.267 *	-0.116 *	-0.104	-0.088	-0.130 *	-0.119 *	-0.065	-0.047	-0.049	-0.083	-0.134 *	-0.084	-0.064	-0.002 *	0.109	0.22
t-stat	6.17	-2.13	-1.88	-1.59	-2.36	-2.16	-1.18	-0.84	-0.86	-1.46	-2.37	-1.48	-1.14	-3.56	1.93	
50K to 60K	0.289 *	0.042	-0.070	0.019	-0.030	-0.084	-0.022	-0.074	-0.059	-0.008	-0.044	-0.006	-0.024	-0.002 *	0.122	0.18
t-stat	4.37	0.50	-0.83	0.23	-0.36	-1.01	-0.26	-0.86	-0.68	-0.09	-0.52	-0.07	-0.28	-3.69	1.41	
Over 60K	0.085	0.011	0.027	0.001	0.030	-0.010	0.035	-0.050	0.018	-0.009	-0.051	-0.012	0.104	0.000	-0.009	0.11
t-stat	1.88	0.19	0.48	0.02	0.52	-0.18	0.60	-0.84	0.30	-0.15	-0.86	-0.21	1.77	-0.13	-0.15	
Poultry																
Less than 30K	0.610	0.532	-0.001	-0.027	0.476	0.212	0.694	0.060	0.713	0.709	0.028	0.082	-0.001	-0.003	-0.411	0.11
t-stat	1.51	1.04	0.00	-0.05	0.93	0.41	1.35	0.11	1.35	1.34	0.05	0.16	0.00	-0.64	-0.78	
30K to 40K	0.255 *	0.174	0.045	0.058	0.004	0.073	0.179	0.065	0.144	0.196	0.100	0.210	0.111	0.001	-0.086	0.13
t-stat	2.89	1.56	0.40	0.52	0.03	0.65	1.60	0.56	1.25	1.70	0.86	1.82	0.97	1.55	-0.75	
40K to 50K	0.497 *	0.048	0.107	0.005	0.164	0.111	0.062	-0.042	0.044	0.201	0.164	0.168	0.077	-0.003 *	0.043	0.16
t-stat	4.88	0.38	0.83	0.04	1.27	0.86	0.48	-0.32	0.33	1.52	1.24	1.26	0.58	-2.84	0.33	
50K to 60K	0.649 *	0.084	0.159	0.127	0.271	0.318	0.346	0.285	0.011	0.485 *	0.307	0.172	0.335	0.001	-0.165	0.10
t-stat	3.55	0.36	0.69	0.55	1.17	1.37	1.49	1.20	0.04	2.04	1.29	0.72	1.41	0.55	-0.69	
Over 60K	0.328 *	-0.016	-0.087	-0.060	-0.077	0.035	-0.041	0.007	-0.060	0.069	-0.063	-0.095	0.054	0.000	0.101	0.19
t-stat	6.69	-0.26	-1.41	-0.96	-1.25	0.57	-0.66	0.11	-0.94	1.07	-0.99	-1.49	0.85	-0.21	1.58	

1/ First rows are the coefficients and the second row are the t statistics of the coefficients. * stands for statistically significant at 95*.

In the case of lamb, none of the trend coefficient were statistically significant and only one of the Covid-19 coefficients was positive and statistically significant (for the over 60K group).

The trend results for organic pork share were significant only for the first four income groups. The first two groups showed a positive sign and the following two, they were negative. Nevertheless, although statistically significant all the coefficients were very small. None of the Covid-19 coefficients were statistically significant.

Only one of the trend coefficients for poultry was statistically significant (for the 40 to 50K group) and was slightly decreasing. None of the Covid-19 coefficients were statistically significant.

The results point out that if there is an interest to increase the size of the organic sector, there is the need to follow similar actions to the European plan for the development of the organic sector, which requires to stimulate the demand for the sector. This could be done just by fostering consumers' demand for organic products or like in the case of Copenhagen, through public procurement, that is the first city that has reached 100 per cent organic public canteens (Agrafact, 2021). However, in both cases it is important to simultaneously improve the productivity of the sector to reduce its costs and prices.

V. Conclusion

The purpose of this study has been to provide an analysis of the organic meat market using time series constructed from a scanner panel dataset for Great Britain.

The results show, in contrast with the typical way of reporting the situation of the organic sector, that it is worthwhile to separate prices from the demanded quantities. The increase on the size of the market reported by the media is due mostly to an increase in prices and not in the demanded quantity. This is important because it shows, if there is an interest to expand the sector, then it is essential to find ways to foster the demand (either directly from consumers or from procurement). However, this needs to be accompanied with an increase in the sector productivity that reduces the prices of the organic product.

The analysis of the share of organic meats by income group also shows that the sector represents a small part for all the meats demand of each income group (e.g., between 1 to 2 per cent). These shares were not changed by the Covid-19 situation.

Overall, in the context of the increasing interest of environmentally friendly production, the results provide a background to what extent consumers may support, under the current conditions, environmentally sustainability food. In other terms, the information points out that prices are an important factor and consumers interest on the environment is not enough to expand the sector.

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