

**Superb and Marketable Meat from Efficient and Robust Animals**  
**Markedsdrevet, højværdi økologisk kødproduktion med robust dyr**

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## INTRODUCTION

This report concerns the analysis of successful high-value products as case studies in each of the three meat categories: chicken, beef and pork. The main objective of our study was to identify strategic groups within the meat market, in which the new, high-value organic meat products were going to perform. The strategic group analysis also serves as a benchmark for determining the competitive situation on the Danish meat market. Hence, we analyse the market performance of the strategic groups and we describe the competition on the market, in order to identify the optimal market position for the new products.

The concept of strategic groups was coined in 1972 by Michael S. Hunt and it was mostly used in strategic management theory. The concept was greatly studied in the 80s, at which time it was established that industries can be divided into strategic groups of firms which follow the same strategy and have similar reactions to changes in the macro-environment (Day & Wensley, 1983). One definition of the concept of strategic groups states that within an industry, firms form groups according to their strategies, and these groups show persistent performance differences (Tang & Thomas, 1992). Moreover, firms within a strategic group are likely to respond in the same way to identical stimuli and they show sensitiveness to group interdependency (Cool & Schendel, 1988). They also share mutual understandings and a common identity with the other members of the strategic group (Peteraf & Shanley, 1997). Mobility barriers are often mentioned while defining the concept of strategic groups, as mechanisms that are used for protection against other groups. McGee and Thomas (1986) explain that the best way to assign firms to strategic groups is by considering the similarity of strategies within the group and the relatively sharp differences between groups. The within-strategic group protection comes from the fact that a company within a group makes strategic decisions which cannot be easily imitated by firms outside the group, unless substantial costs are involved, as well as time resources and uncertainty about the outcome (McGee & Thomas, 1986).

Previous literature has also brought criticism to the study of strategic groups. Some researchers have questioned the existence of strategic groups, while also pointing out that there is a lack of theory on how groups are formed, how they evolve and how they influence outcomes (Peteraf & Shanley, 1997). Others have pointed out that strategic groups are useful constructs for studying industry structure and competitive strategy, but that they do not explain performance differences (Lewis & Thomas, 1990).

A marketing-oriented view of the concept of strategic groups was presented by Harrigan (1985), who explained the concept from the point of view of competition. Harrigan stated that "strategic groups are comprised of firms who may compete for the same customers' patronage in diverse ways. In an idealized industry, one strategic group would serve a niche of demand. [...] Different strategic groups approach competition dissimilarly. A particular market segment could be served by more than one type of strategic

group and groups' products may sometimes be substitutable for the products of another group as far as a particular customer is concerned" (Harrigan, 1985).

In order to understand the situation on the Danish meat market, we tried to define strategic groups and we analysed consumers' buying patterns in connection to these groups. As Bennett (2005) points out, "the past contains the patterns and foundations that underlie the present and direct the future". In the case of new product development it is of great importance to look at consumers' past behaviour in order to understand what the prospect for future market performance is. In our analysis, we defined strategic groups mainly based on product price, but we also took organic products into consideration as a distinct sub-category. We expect that the new, high value organic meat products will compete with brands in the premium end of the market - meaning high priced meat products -, but also that they will compete with other organic meat products. The organic and premium categories do not necessarily overlap when it comes to price levels; therefore we consider these two different classifications:

- Low vs. medium vs. high (premium) price tiers
- Organic vs. conventional.

We consider premium meat and organic meat products to be a niche market in Denmark. A niche refers to a small segment of consumers who develop needs that differ from the general needs that consumers have from a product category (Kahn, Kalwani, & Morrison, 1988). In terms of market performance, niche brands and products usually have low market shares, but the upside is that they usually serve consumer segments that buy these products repeatedly and also show high levels of attitudinal loyalty. However, consumers can also start to look for variety in their consumption, which brings about a change in their purchase patterns. The brands that consumers purchase occasionally, when switching from their regular brands, are called "change-of-pace". Even though such a strategy might be successful for some companies, they will only capture a limited share of the market, due to the low frequency of purchase (Kahn, et al., 1988). These aspects show that the success of a product on the market is very much dependent on consumers' buying behaviour and that the choice of marketing strategy should take these things into consideration. Consumers' perception of high value can be related to market share both negatively and positively, depending on the size of the consumer segment that the company is targeting. The high value perception may very well be targeted towards a niche segment (Grunert, Baadsgaard, Larsen, & Madsen, 1996).

Bennett points out that high product quality, low differentiation and price sensitive consumers are determinants of low consumer loyalty, also defined as characteristics of "the declining loyalty era" (Bennett, 2005). Because of the fact that the quality of substitute brands and products is not necessarily a major issue anymore, the risk attributed to switching to other brands and products is considerably lower

nowadays. What companies can do to avoid consumers' switching behaviours is to implement a differentiation strategy, which can also work as a potential key driver of consumer loyalty. Differentiation implies trying to be unique in those dimensions that are highly valued by consumers, for example by selecting certain product attributes that are considered to be important, and then being rewarded for the "uniqueness" that is delivered through a premium price (Porter, 1985). Differentiation can be formed based on a multitude of aspects: product quality, product features or attributes, innovation, distribution, a strong brand name, etc. Perceived differentiation is what marketers are trying to achieve to increase brand loyalty (Bennett, 2005). Hence, the key lies in creating a product or a brand that is perceived as having no substitutes that match its offering. Moreover, by creating and providing value to consumers, companies gain competitive advantage.

## **METHODOLOGY**

The report presents the results from a series of analyses conducted on meat purchases registered by the members of the Gfk panel. The panel data comprises information about a limited number of households' buying behaviour – what products were bought, what amount, at what price etc. The purchase records are self-registered by the members of the household. In order to ensure the representation of the Danish population, the panel is balanced each year (in terms of socio-demographic characteristics). Our analysis is based on data from 2011, while some calculations that illustrate trends over several years were based on data from 2006 to 2011 (2384 households were registered in the panel per year on average).

By high-value products we imply premium products. These types of products have high quality, which generally gives the possibility of charging a price premium, making them more expensive than average products. The products registered in the sales data were not listed with an up-front label or description of them being premium. For this reason we conducted our own calculations in order to implicitly determine what price category each product falls into: low, medium or high price. We then focused on the high price category, as a strategic group that the new high value organic meat products would be a part of. Hence, when discussing the three price groups (low, medium, high), the results are representative when the groups are defined the way they are in this report. As mentioned before, we also considered organic meat as a separate sub-category in our analysis, in order to characterize the organic meat market that the new organic meat products are expected to compete on.

Prices are dynamic. They can fluctuate a lot over time, as a result of promotions and short-term pricing deals run by retailers or due to manufacturers' changing strategies. One of the consequences of ever-changing observed prices is the uncertainty that develops regarding the "true" price of a product (Winer, 1986). Taking this into consideration, in some of our analyses we chose to use the average

price/100 grams rather than individual prices. The reason why we made these calculations was that during one year, each product had been bought at several different price levels. For example, a product had a certain fixed price at the beginning of the year, but at another point in time it became more expensive (for example due to inflation or extra taxes) and it might have also been bought on offer many times (thus at a lower price than normal). By calculating the average of these prices over a period of time we aimed at controlling for these fluctuations. The average price/100 grams was determined by dividing the total amount paid by the total volume bought in the analysed year. The three price tiers were determined using the average price and the standard deviation<sup>1</sup>. The high price tier contains the products whose average price/100 gram is higher than the average plus the standard deviation. The low price tier contains the products whose average price/100 gram is lower than the average minus the standard deviation. The medium price tier is the in-between interval.

When talking about consumer loyalty, research has identified two approaches: the behavioural loyalty, which is determined based on repeated purchases, and attitudinal loyalty, which refers to a certain commitment towards a specific brand or product. By using panel data, one can determine the levels of behavioural loyalty, based on the performance measurements: penetration levels and purchase frequencies. In our analysis, we did not have any knowledge of what attitudes the households' members had towards the products they bought. Thus, we resume ourselves at identifying the levels of behavioural loyalty, based on data from 2011. We used the polarisation index ( $\varphi$ ) as a method for assessing loyalty. We estimate the value of this index by fitting the Dirichlet model to the data.

The Dirichlet is a comprehensive statistical model that describes patterns of buyer behaviour and various observed brand performance patterns (Ehrenberg, Uncles, & Goodhardt, 2004). The model requires only a few inputs: penetration<sup>2</sup> and purchase frequency<sup>3</sup> for brands, products or overall category, depending on the level of analysis. Based on the input, the model predicts a wide range of brand performance statistics, like brand penetration, share of category requirements, proportion of solely loyal buyers, repeat buying rate etc. The model is thus a useful tool that helps understand consumer behaviour, while revealing market structure and benchmarking brand performance (Sharp, Wright, & Goodhardt, 2002). The Dirichlet model assumes that each consumer has a certain inclination or probability to buy a given brand, a probability which is assumed to be steady for the time being, but differing across heterogeneous consumers (Ehrenberg, et al., 2004). What Dirichlet analyses often show is that brands often differ little in their loyalty-related measures and vary more in their penetrations, which means that

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<sup>1</sup> **Standard deviation** shows how much variation exists from the average.

<sup>2</sup> **Penetration:** The number of households buying the brand or product at least once divided by the total number of households registered in one year.

<sup>3</sup> **Purchase frequency:** units purchased of a certain product (or brand) divided by the total number of buyers of that product (or brand)

measures such as changing prices, product formulations, selling and distribution can have little impact on increasing customer loyalty, but they might affect the brand's penetration, market share and sales volume (Ehrenberg, et al., 2004).

The values of  $\varphi$  vary from 0 to 1. When  $\varphi$  equals 0 it is an indication of pure homogeneity in the consumers' choice, which indicates high switching levels among brands or products and high randomness of product choice in a category. Higher values of the polarization reflect a higher loyalty level in the product category. As  $\varphi$  gets closer to 1, maximum heterogeneity in the product category is reached, meaning that product choice is a systematic behaviour (Chrysochou, Krystallis, & Giraud, 2012). In order to calculate  $\varphi$ , it is necessary to first estimate the value of  $S$ , a switching behaviour parameter, by fitting the Dirichlet multinomial distribution (DMD) to the choice of all the brands or all the levels of product attributes in a product category (Corsi, Rungie, & Casini, 2011). In our analysis we use both the DMD and the Beta Binomial Distribution (BBD), which provides measures for individual brand or product levels by reducing the calculations for DMD down to a binomial model (Chrysochou, et al., 2012). There is a bigger potential for understanding loyalty to product attributes, besides the brand name, when using the BBD.

We conducted analyses of brand performance at different levels, both across and within categories and sub-categories, in order to determine the level of switching behaviours. The Dirichlet analyses were conducted using data from 2011, when the panel consisted of 2512 households. Table 22 contains a summary of all the results from our Dirichlet analyses. The main switching behaviours that we were interested in determining and that we thought would be relevant for our strategic group analysis were:

- Switching behaviour within each meat category: chicken brands, pork products, beef products
- Switching behaviour across chicken, beef, pork products (in general)
- Switching behaviour across conventional chicken, beef, pork products
- Switching behaviour across organic chicken, beef, pork products
- Across price tiers for meat categories: chicken, beef, pork products
- Across high price chicken, beef, pork products
- Within the high price tier sub-categories: chicken, beef, pork products
- Within the organic sub-categories: chicken, beef, pork products

When we conducted the within meat categories analyses we used brands for chicken and products for beef and pork<sup>4</sup>. In order to minimize potential measuring errors, we grouped all the brands and products that had less than 1% market share in aggregate variables called either "other brands" or "other products". We did not use this method for the other analyses, as for some of them (for example within

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<sup>4</sup> Brands were not registered for beef and pork meat products in the sales files.



organic products or within high price products) many of the products had very low market shares, so aggregating them would leave too few variables as input for the analyses.

In the within high price tier analyses, the input data contains the products whose average price/100 grams was in the high price tier. In the across price tiers analyses and the across high price tier analysis, the price tiers were determined based on singular purchases.

Brands or levels of attributes with BBD polarisation values higher than the DMD polarisation value (the average polarisation of the category or the attribute) are considered as “reinforcing” or “niche”, depending on their size, while anything below this value are “change-of-pace” brands or attribute levels (Jarvis, Rungie, & Lockshin, 2007). We drew schematic representations of reinforcing, niche and change-of-pace characteristics for the organic vs. conventional sub-categories and the price tiers for each meat category (Figure 7, Figure 14, Figure 21).

All the tables with results and figures with graphic illustrations are presented in the Appendix at the end of the report. The layout follows a category view, presenting one meat category at a time (chicken – beef – pork), with all the relevant tables and graphs. Some across-meat categories results are presented lastly, with the final table presenting a summary of the results from the Dirichlet calculations.

## RESULTS

Results of market performance metrics showed a relatively constant trend for each meat category, with more or less stable market shares over a period of six years. Chicken had a little under 20% market share (Figure 1), beef had an almost constant share of the market accounting for 30% (Figure 8), while pork had the highest market share out of all meat categories, peaking at 40% in 2008 (Figure 15).

In the organic meat category, the numbers are much smaller. Organic chicken registered the lowest levels of market share out of the three meat categories. The highest level was reached in 2011, but it still accounted for merely 0,17% of the chicken market (Figure 5). Organic beef had the highest levels of market share, with 3,57% in 2007 and a decline in the following years, down to 1,98% in 2011 (Figure 12). Organic pork also had the highest market share in 2007 – 2,07% - while registering a much smaller proportion in 2011 – 0,87% (Figure 19). The same trends were followed by penetration levels in the organic sub-category. Organic chicken registered very low penetration levels in all years between 2006 and 2011, with the highest level of 0,44% registered in 2011 (Figure 6). Organic beef had the highest penetration levels, reaching 11,15% in 2011 (Figure 13). Organic pork registered declining levels of penetration, the lowest values being registered in 2010 and 2011 – 5,89% (Figure 20).

We investigated the difference in average price/100 grams between the organic and conventional meat products, based on registrations from 2011. The category analysis showed that the widest price range

was registered for conventional chicken (Figure 2), while and the smallest difference between the cheapest and the most expensive option was registered for conventional pork (Figure 16). Conventional pork was the cheapest sub-category, whereas conventional beef was the most expensive (Figure 9). We also noticed that in the case of beef and chicken, the most expensive organic option was cheaper than the most expensive conventional product.

Next, we continued by determining the proportion of sales registered in each price category. We used both the average price/100 grams and the prices of individual purchases when reporting the results. Comparing the two types of results gives a more complete overview of the situation. The biggest difference is registered for beef products, where 14% of the products with average price/100 grams fall into the low price tier, whereas only 3% of the individual purchases do (Figure 10). However, our main interest was the high price tier, where the difference in proportions was not that big. Our results showed that overall most of the meat products that were bought fell into the medium price sub-category. Less than 20% of the products that were bought in each category were high priced: 13-14% for chicken (Figure 3), 13-17% for beef (Figure 10), 14-17% for pork (Figure 17).

The sales data contains registrations of planned purchases and of products bought on offer. Table 16 reports the percentage of such purchases for organic meat products. Table 17 shows the numbers for high price products. The results are based on registrations from 2011. Between 67% and 79% of the organic and high price products were planned to be purchased. The brand was planned to a smaller extent: approximately 39% of high price products and 50% of organic products. On average, 32% of the high price purchases were registered to be made on offer, while in the case of organic products the proportion reached 45% on average.

The first results of the Dirichlet analyses reveal consumers' switching behaviour across the meat categories, as well as across the sub-categories that are of interest for this report. A score of  $\varphi=0,09$  for the across meat categories analysis reveals high switching levels across chicken, beef and pork (Table 18). The polarisation index has a similar value in the analysis (i.e. 0,08) for switching across conventional meat products (Table 19). We notice a higher value of 0,55 in the across organic meat categories analysis, indicating a moderate level of switching behaviour, much more temperate than in the case of conventional products or even compared to the overall meat categories (Table 20). In the case of the high price sub-category, a score of  $\varphi = 0,29$  indicates a rather high switching behaviour across high-price meat category (Table 21).

In the following section we are going to present the results of Dirichlet analyses separately for each meat category. We conducted four analyses for each category: the switching behaviour within the whole

category; across low, medium and high price tiers; within the high price sub-category; within the organic sub-category. We will present the results for one meat category at a time.

*Chicken:* The within brands analysis returned a  $\varphi$  value of 0,2. The brands with the highest levels of penetration were Rose Poultry, Danpo, Dansk Supermarked private label and Coop private label (Table 1). Figure 4 illustrates the DMD and BBD polarisation estimates, as well as the market shares for the chicken brands. Most of the brands have polarisation estimates that are bigger than the category  $\varphi$ , making them either niche or reinforcing brands. The two organic brands, Hanegal and Rose Poultry, had very low market shares and high polarisation estimates, thus falling into the niche category. The polarisation index has a value of 0,2 for the across price tiers estimate, reflecting relatively high levels of switching between price tiers (Table 2). A score of  $\varphi=0,99$  in the case of within organic chicken products analysis reflects very low levels of switching behaviour (Table 3). In the case of the high price sub-category, a score of  $\varphi=0,13$  signifies that there is high switching between high price products (Table 4).

*Beef:* Within products polarisation estimate was 0,07, indicating high levels of switching behaviour (Table 6). Figure 11 illustrates the position of the products that were included in the analysis. One can notice that a fair share of products fell into the niche category, while the product with the highest sales fell into the “change-of-pace and more important” category.  $\varphi=0,17$  for the across price tiers analysis (Table 7). Within sub-categories,  $\varphi=0,68$  in the case of organic products (Table 8) and  $\varphi=0,17$  in the case of high price products (Table 9).

*Pork:*  $\varphi=0,06$  for within products, indicating high levels of switching behaviour in the category. Figure 18 is a schematic representation of pork products, according to the levels of market share and polarisation index. We notice that the analysed products fell into one of the niche, reinforcing or change-of-pace and less important categories. Across price tiers, the levels of switching behaviour are quite high ( $\varphi=0,15$ ) (Table 12).  $\varphi=0,42$  for within organic pork products (Table 13) and  $\varphi=0,21$  for within high price pork products (Table 14).

Tables 5, 10 and 15 present the results from the polarisation estimates for the two product attributes we are interested in - production method and price - and the attribute levels for each meat category. The DMD estimates show which of the two attributes were more important in driving loyalty, thus implying less switching from one category to the other. For all three categories the estimate for organic had a higher value than high price, meaning that organic is an attribute that is more loyalty-driving than the high price, which can be seen as an indicator of premium quality. In the case of chicken, polarisation estimates for organic vs. conventional was higher than the estimates for the price tiers. Within organic vs. conventional, organic had a low market share and a polarisation estimate higher than that of the category (“niche” characteristic). Conventional had a high market share and a low polarisation estimate. The same results

were reported for the price tier attribute. The high price tier had a low market share and a polarisation estimate smaller than the category value (“change-of-pace and less important” characteristic). Figure 7 illustrates the relationship between market share, BBD and DMD polarisation estimates and the position of each attribute level. In the case of beef, both organic and high price were placed in-between the niche and change-of-pace categories, with polarisation scores which were similar to the category values (Figure 14). For pork, organic fell into the “change-of-pace and less important” category, due to the low market shares and polarisation estimates being lower than the category values. High price also registered low market shares and an even smaller polarisation estimate; however it was bigger than the category value, making this attribute a niche sub-category (Figure 21).

## CONCLUSION

This report presented results from analyses conducted on panels of Danish households. The analyses were aimed both at meat categories as a whole, but also at organic and high price sub-categories, considered to be the high-value categories competing on the high end of the meat market. We analysed the market performance of chicken, beef and pork products, in order to present a picture of the Danish meat market. It is true that the high-value positioning of a product is dependent on the producer’s strategy and the way the product differentiates itself from competing products. However, regardless of a product’s positioning on the market, we consider it important to analyse consumers’ purchasing patterns and purchasing behaviour on the market, due to the direct impact that these have on a product’s success.

The first results presented showed that the market shares of each meat category were more or less constant over a period of six years. Hence, the amount of meat that Danes ate was more or less stable, as well as their preference for pork over beef and chicken. As mentioned in other similar reports, pork is the most consumed meat category, with chicken accounting for approximately half of pork’s share of the market. The fact that there were very small yearly fluctuations shows us that the consumers’ buying behaviour for, or proneness to buy from, a specific meat category is relatively stable over time. We noticed that organic chicken had the fewest sales registered over a period of six years, with market shares below 1%. Organic beef and organic pork had slightly higher market shares, yet the small numbers nonetheless show that organic meat products are still bought at a very small scale. An analysis of the average price paid for 100 grams showed that conventional pork was the category with the smallest price range and smallest level of highest price. Pork was also the category where the price difference between conventional and organic products was the biggest. For chicken and beef, the difference between the highest price levels for organic and conventional was not that big. These results showed that the difference between organic and conventional alternatives is not necessarily as big as expected, that organic products may sometimes be cheaper than conventional options and that the price range for each sub-category is very wide. Another

analysis showed that most of the meat products that were bought fell into a medium price category, with low and high price having almost equal, much smaller proportions. As expected, the high price products constitute a smaller part of consumers' shopping baskets, which in the case of meat products accounts for 15% on average. We also found that most of the time, the purchase of an organic or high price product was planned before the shopping session. The brand which was bought was planned to a lesser extent, more often in the case of organic products than for high price products. Moreover, almost half of the organic sales were of meat products bought on offer, with a smaller percentage for the high price sub-category. Based on these results, it seems that most of the times when people buy organic or high price products they plan that beforehand. Deciding on which brand to buy might more often be a decision they make later on, most probably at the point of purchase. The high percentage of products bought on discount might indicate that people place a great importance on offers. This is in line with the knowledge that Danish consumers are price sensitive, but it also shows the effect of the weekly offers that Danish supermarkets practice on a high scale.

The results of the Dirichlet analyses showed that the highest levels of switching behaviour were registered within pork products, within beef products, across beef, pork, chicken products and across conventional products, all four estimates having a value smaller than 0,1. The rest of the estimates had slightly bigger values, reflecting mostly moderate levels of switching behaviours. These results show that consumers are not loyal to a certain meat category or sub-category. Consumers switch between the products and the price range they buy. The highest estimates were recorded within the organic categories, as well as across organic categories. The polarisation index had a value of 0,55 across organic meat categories, which reflects a clearly moderate level of switching behaviour. If anything this shows that consumers are more prone to have specific preferences when choosing between organic pork, beef and chicken. The biggest polarisation index – 0,99 - was registered within organic chicken products, which would reflect a very low switching behaviour and almost total loyalty. This result is however biased by the fact that only few organic chicken products were registered in the sales data, hence a small number and low diversity would of course determine such a result. Organic beef products had  $\varphi=0,68$ , while organic pork products had  $\varphi=0,42$ . Both of these two values reflect a moderate to small level of switching behaviour within the two sub-categories. Similar to the case of organic chicken, beef and pork have relatively few organic products registered in the sales files. The results nevertheless show that the levels of loyalty are higher for organic products than for expensive products. Organic is thus a more loyalty-driving attribute than the high price. In the case of chicken, organic fell into the niche category and high price belonged to the "change-of-pace and less important" category. In the case of beef, both organic and high

price fell in-between the “change-of-pace” and niche categories. For pork, both organic and high price fell into the “change-of-pace and less important” category.

## DISCUSSION

The main objective of our study was to identify strategic groups within the meat market, in which the new, high-value organic meat products were going to perform. The strategic group analysis was used as a benchmark for determining the competitive situation on the Danish meat market. We analysed the market performance of the strategic groups and we described the competition on the market, in order to identify the optimal market position for the new products. In order to fulfil the objective of this study, we tried to understand the situation on the Danish meat market by defining strategic groups and analysing consumers’ buying patterns in connection to these groups.

Based on our results of this study, we can say that introducing new high value meat products (organic, as well as premium) to the Danish meat market is certainly a challenge. We expected that the new, high value organic meat products will compete with brands in the premium end of the market. However, the Danish premium meat market is still under-developed. The organic food market, on the other hand, is very well developed in Denmark, yet organic meat is one of the categories that still does not have very good market performance. The analysis showed that organic meat and high price meat products fall into different strategic groups, depending on the meat type. This indicates that it is difficult to draw one overall conclusion with regards to strategic groups’ structure on the meat market. Results clearly show that consumers have different purchasing patterns in which meat type plays an important role. The case is similar when diving meat categories into sub-categories based on product attributes, in our case production method and price. The common characteristic for the two divisions (organic and high-price) is that they both have relatively low market shares, which reflect people’s low inclination of buying these types of products. In terms of repeat purchase loyalty however, organic meat and high-price meat score differently from one category to the other. This is also in line with Danish consumers’ meat products buying habits. The organic and high-price meat markets are far from being saturated and they are both potential competitors for new products that might fit in these segments. Our results also give input to the choice of marketing strategy, where we can say that there is room for both a market penetration strategy (which would focus on stimulating product trial), as well as for stimulating repeat purchase from consumers who already have an experience with organic meat products.

The fact that consumers plan most of their purchases, and to a lesser extent also the brands they buy, might suggest that if new products manage to satisfy consumers, they might be included in consumers’ consideration set before they go shopping. However, the fact that many products are bought

on offer is not to be neglected, as this can prove that consumers' at-home preparations might be neglected when promotions are running in stores. Previous studies have shown that consumers use the same time or effort when choosing a "green" product as when they choose a conventional one (Thøgersen, Jørgensen, & Sandager, 2012), which is something that needs to be taken into account while shaping the marketing strategy for new organic products.

On the supply side, branding is one of the elements that play a key role in a product's positioning. Although it is understandable that branding meat products is more difficult than branding other types of food (many meat products are portioned and packed in-store), it is still a fact that Danish companies in the meat sector own considerably fewer brands than the food sector on average. Hence, while premium brands and premium labels are scarce on the meat market, other product attributes need to facilitate consumers' perceptions of a high quality product. In line with our previous observation, if the brand is missing, then other attributes need to make the new products "memorable": taste, eating quality, appearance, size, price etc. The key may thus lie in finding that level of quality that not only meets consumers' expectations, but also exceeds them, and so delights, rather than merely satisfies consumers.

It seems that Danish consumers have stable purchasing patterns. Even though the price differences between organic and conventional products is not always big, consumers still seem to prefer buying conventional products much more than organic. They switch often between brands and products, but to a lesser extent when it comes to organic products than for high price products. It is difficult to make suggestions for future actions based on the past performance of organic and high price meat products, due to the fact that their share of the market was generally very small. In theory, levels of attributes that have higher estimates for the polarisation index require reinforcing strategies, e.g. strong branding, advertising, while the levels that fit into the change-of-pace characteristics require variety seeking strategies, e.g. sales promotions (Chrysochou, et al., 2012). According to our results, organic chicken and high price pork fall into a niche category, hence the strategy for these two sub-categories should focus on differentiation and branding. Organic pork and beef, as well as high price chicken and beef fall into the change-of-pace category, which is the outcome of high switching levels on consumers' side. These are the categories where most effort needs to be put in for increasing customer retention. Of course, strategies that stimulate higher penetration levels for all sub-categories should be considered, in order to increase sales of premium and organic meat products.

## LIMITATIONS

One of the limitations of using panel data comes from coding errors and incompatibilities that sometimes exist between different files, which can be difficult to spot and correct. In our particular case, the meat category was more problematic than other food categories registered in the sales data, for instance because in the red meat category the products were registered with unknown information about brand and producer, which made it impossible to conduct any analysis at the brand level. Another limitation is the fact that in the meat category the number of organic products that were registered was very small, thus making some of the results less meaningful. Lastly, the sales data contains one unique category code for all red meat products, which includes beef, pork, game, lamb etc. In order to run the analyses on beef and pork, two separate categories were created – pork and beef - and products were attributed to them based on their product names. Some of article names were not easily identifiable as being either pork or beef products, which made the split between these categories subjective to some extent. However, we believe that the results of our analyses would not differ significantly in case some of the products were wrongly labelled.



## APPENDIX

Figure 1. Evolution of market share for chicken products (2006-2011)

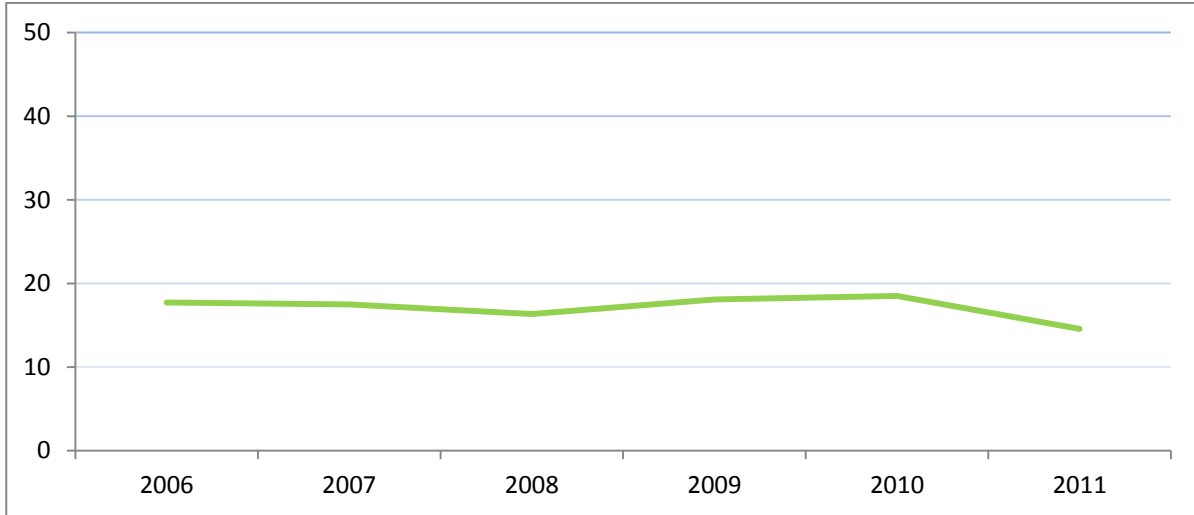


Figure 2. Minimum and maximum average price/100 gr. for chicken products (2011)

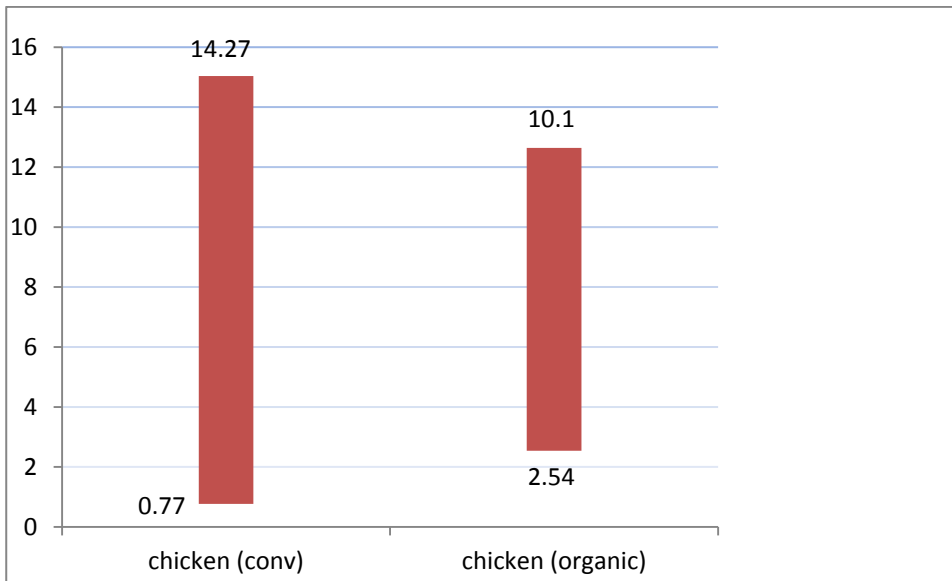


Figure 3. Percentage of chicken products bought in different price tiers (2011)

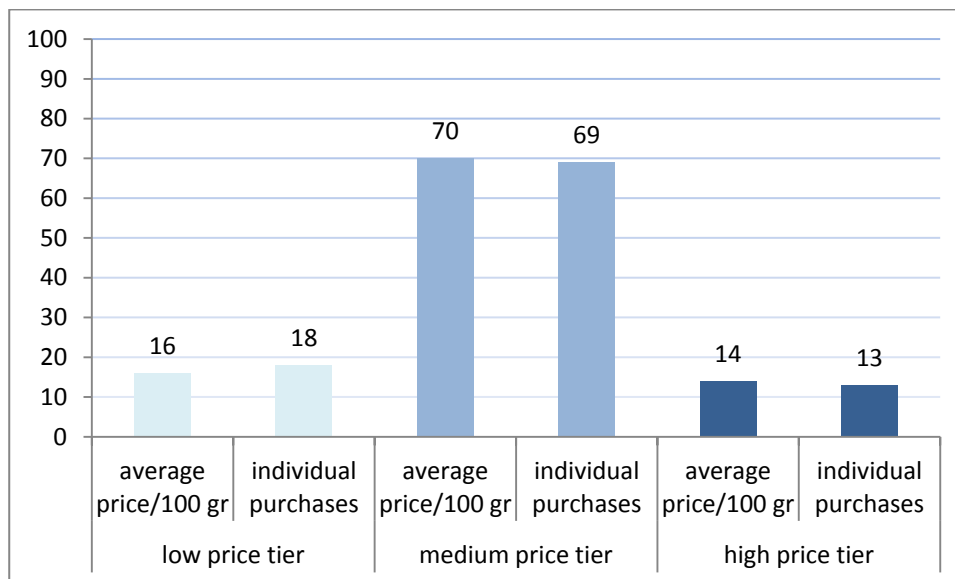


Table 1. Observed and theoretical performance measures – within chicken brands (2011)

	Penetration		Purchase Frequencies		s <sup>^</sup>	weighted s <sup>^</sup>
	O	T	O	T		
Rose Poultry	41%	41%	3.3	3.3	3.723	1.0
Danpo	40%	38%	3.0	3.1	5.417	1.3
Dansk Supermarked (private label)	25%	26%	2.7	2.6	3.573	.5
other conventional brands	23%	23%	2.5	2.5	4.366	.5
Coop (private label)	11%	11%	2.3	2.2	3.235	.2
A Frost Ukendt	9%	9%	2.1	2.2	4.232	.2
De 5 Gaarde	9%	13%	3.4	2.3	1.101	.1
Lidl (private label)	6%	6%	2.1	2.1	4.024	.1
Oliver	6%	5%	1.9	2.1	5.373	.1
Grønne Gaarden	5%	5%	2.2	2.1	3.227	.1
Padborg	3%	4%	2.3	2.1	2.869	.0
Bosco Food	3%	3%	1.9	2.0	4.878	.1
Landlyst	3%	3%	2.3	2.0	2.666	.0
Victors	2%	3%	2.7	2.0	1.687	.0
Hanegal Økologisk	0%	1%	5.4	2.0	0.12	.0
Rose Poultry Økologisk	0%	0%	1.5	2.0	0.605	.0
<b>S=4 ; φ =0.2</b>						

Figure 4. DMD and BBD polarisation vs. market share for chicken brands (2011)

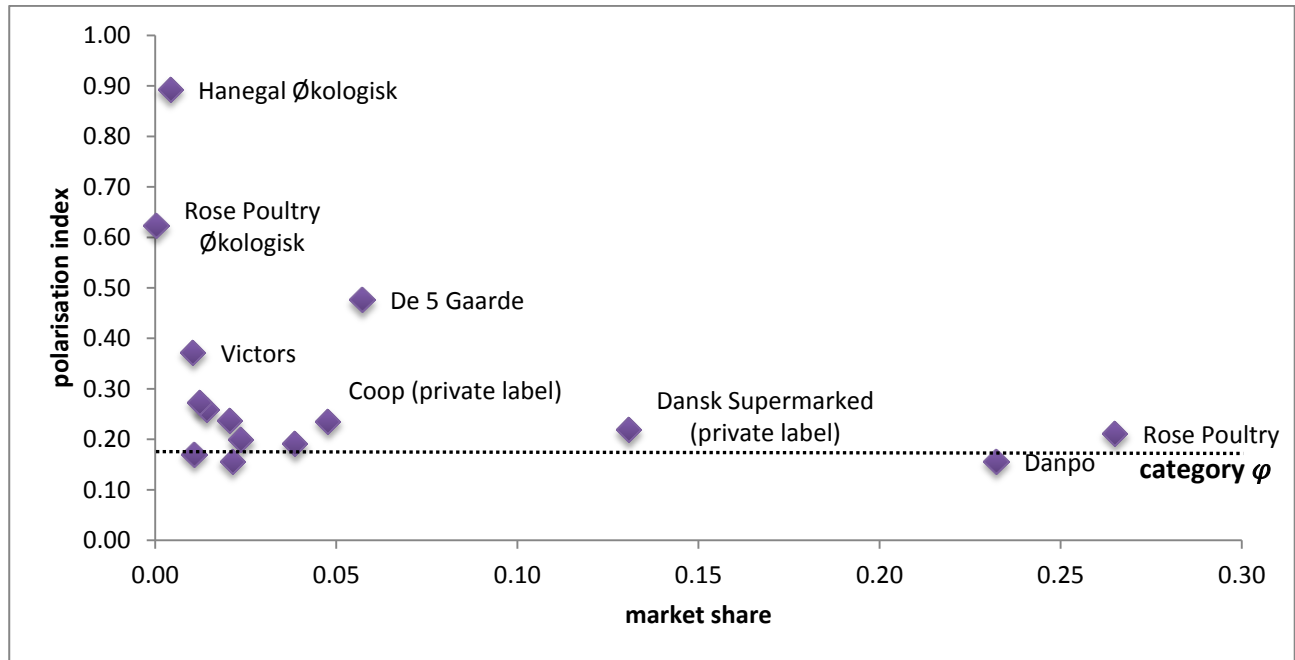


Table 2. Observed and theoretical performance measures – across price tiers, chicken products (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	$s^{\wedge}$	weighted $s^{\wedge}$
medium	63%	63%	5.6	5.7	4.929	3.4
low	27%	32%	3.4	2.8	1.802	0.3
high	23%	26%	2.9	2.6	2.417	0.3
<b>S=4.04; <math>\varphi</math> =0.2</b>						

Table 3. Observed and theoretical performance measures – within organic chicken products (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	$s^{\wedge}$	weighted $s^{\wedge}$
Hanegal Kyllingefilet Øko. 260 gr	0%	0%	5	3.4	0.01	0
Hanegal Hakket Kylling Øko. 400 gr	0%	0%	2.8	3.3	0.002	0
Rose Poultry Kylling Øko. 1500 gr	0%	0%	1.5	3.3	0.002	0
<b>S=0.01; <math>\varphi</math> =0.99</b>						

Figure 5. Market share (by volume) organic chicken (%) (2006-2011)

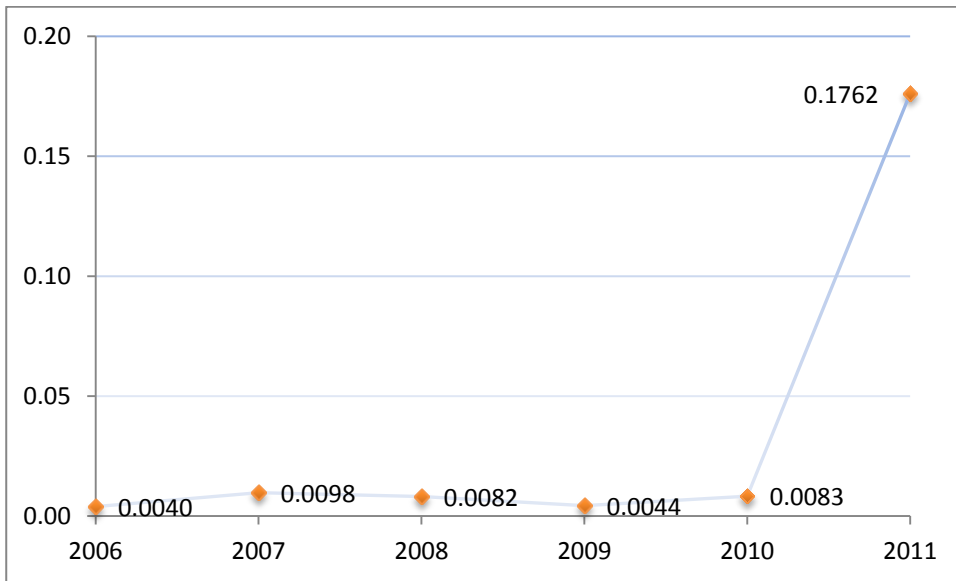


Figure 6. Penetration organic chicken (%) (2006-2011)

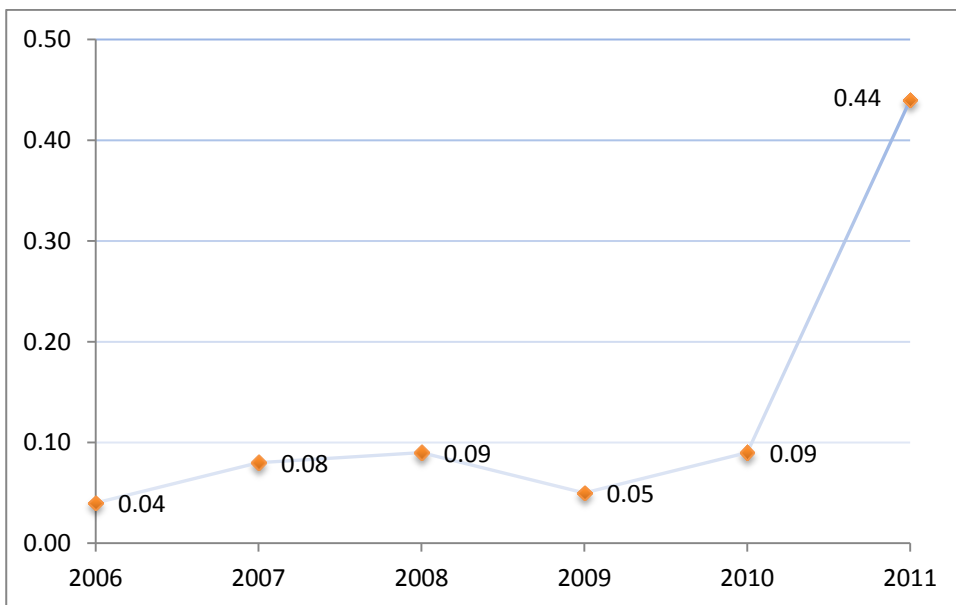


Table 4. Observed and theoretical performance measures – within high price tier, chicken products (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	s <sup>^</sup>	weighted s <sup>^</sup>
other products	9%	8%	1.5	1.6	25.278	5
Dampo Kyllingeinderfilet 400 gr	2%	3%	1.5	1.3	3.279	0.2
Rose Poultry De 5 Gårde Kyllingebrystfilet 260 gr	2%	4%	2.8	1.4	0.016	0
Coop P.L. Kyllingebrystfilet 280 gr	2%	3%	1.9	1.3	0.959	0.1
D.S. P.L. Tasty Chicken Kyllingefilet 400 gr	2%	2%	1.1	1.3	16.81	0.5
Rose Poultry De 5 Gårde Kyllingeinderfilet 260 gr	2%	3%	2.4	1.3	0.22	0
Coop P.L. Kyllingefilet 290 gr	1%	2%	1.8	1.3	1.154	0
D.S. P.L. Oliver Kyllingefilet 300 gr	1%	2%	1.9	1.3	0.747	0
Dampo Grønnegården Kyllingefilet 280 gr	1%	3%	2.9	1.3	0.002	0
D.S. P.L. Kyllingeinderfilet 400 gr	1%	1%	1.4	1.3	3.678	0.1
D.S. P.L. Tasty Kyllingefilet 280 gr	1%	1%	1.3	1.3	5.672	0.1
D.S. P.L. Tasty Chicken Kyllingefilet 280 gr	1%	1%	1.6	1.3	1.502	0
Rose Poultry (Rema 1000) Kyllingefilet 400 gr	1%	1%	1.5	1.3	2.501	0.1
Rose Poultry Kyllingefilet 900 gr	1%	1%	1.1	1.3	11.954	0.2
D.S. P.L. Kyllingefilet 650 gr	1%	1%	1.4	1.3	2.805	0.1
D.S. P.L. Kyllingefilet 270 gr	1%	1%	1.3	1.3	4.417	0.1
Rose Poultry Kyllingefilet 500 gr	1%	1%	1.2	1.3	5.497	0.1
D.S. P.L. Majskyllingefilet 280 gr	1%	1%	1.9	1.3	0.616	0
D.S. P.L. Kyllingefilet 500 gr	1%	1%	2.2	1.3	0.294	0
Lantmännen Dampo Kyllingefilet 250 gr	1%	2%	2.9	1.3	0.002	0
Lidl P.L. Kyllingefilet 400 gr	1%	1%	1.5	1.3	2.072	0
Coop P.L. Kyllingefilet 500 gr	1%	1%	1.4	1.3	2.24	0
D.S. P.L. Wokstrimler 270 gr	1%	1%	2	1.3	0.503	0
Lantmännen Dampo Grønne Gaarden Kyllingebrystfilet 700 gr	1%	1%	1.4	1.3	2.24	0
Rose Poultry De 5 Gaarde Frijsenborg Kyllingefilet 800 gr	1%	1%	1.1	1.3	8.821	0.1
Rose Poultry Kyllingefilet 300 gr	1%	1%	1.1	1.3	8.821	0.1
Dampo Grønnegården Kyllingeinderfilet 280 gr	1%	1%	1.5	1.3	1.985	0
Rahbekfisk Indbagt Kylling 320 gr	1%	1%	2.9	1.3	0.002	0
Rose Poultry Kyllingefilet 350 gr	1%	1%	1.3	1.3	3.104	0
Aldi P.L. Landlyst Kyllingefilet 400 gr	0%	1%	1.6	1.3	1.047	0
Hanegal Kyllingefilet Øko. 260 gr	0%	1%	4	1.3	0.01	0
<b>S=6.93; φ =0.13</b>						

Table 5. Dirichlet Multinomial distribution (attribute) and Beta Binomial distribution (attribute level) polarisation index vs. market share) for chicken (2011)

	$\varphi$	Market share
Organic/conventional	0,88	
Organic	0,99	0,004
Conventional	0,18	0,996
Price tier	0,2	
High price	0,13	0,13
Medium price	0,4	0,69
Low price	0,44	0,18

Figure 7. DMD and BBP polarisation index vs. market share for attributes – chicken (2011)

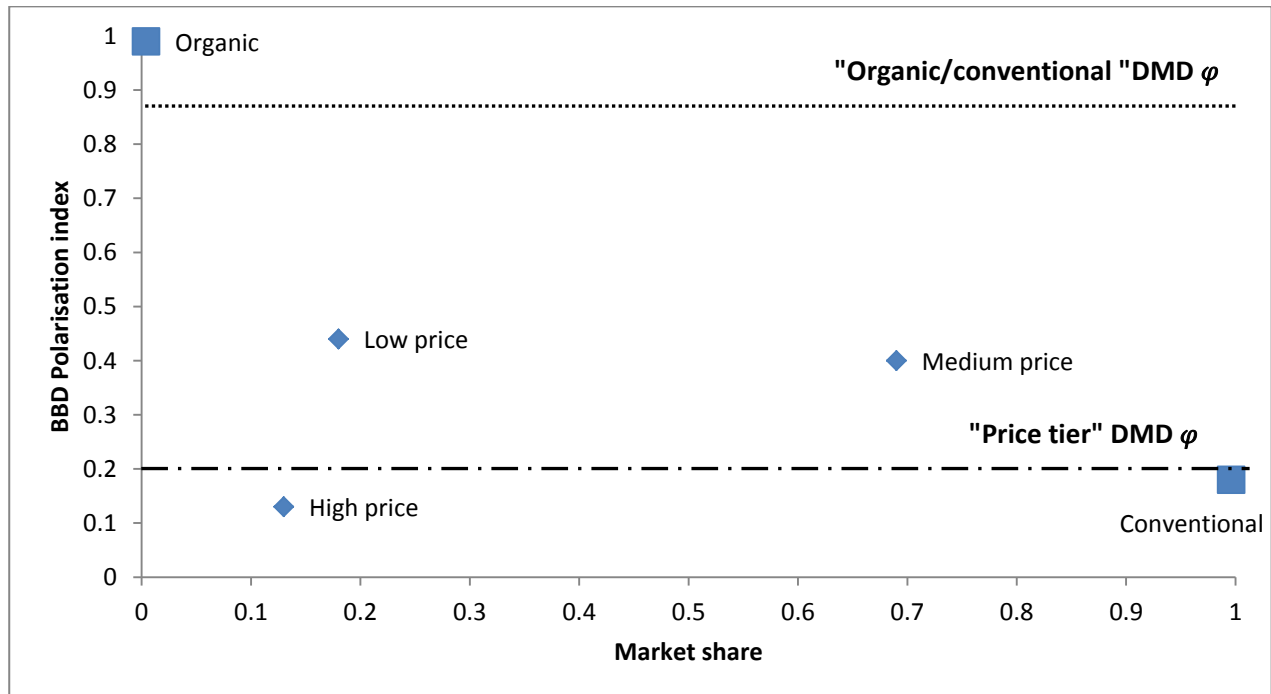


Figure 8. Evolution of market share for beef products (2006-2011)

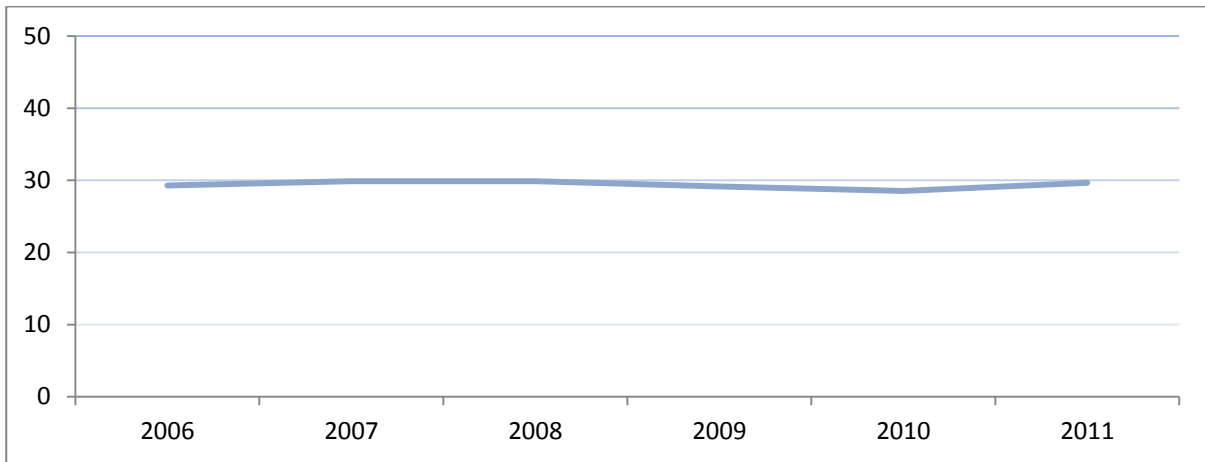


Figure 9. Minimum and maximum average price/100 gr. for beef products (2011)

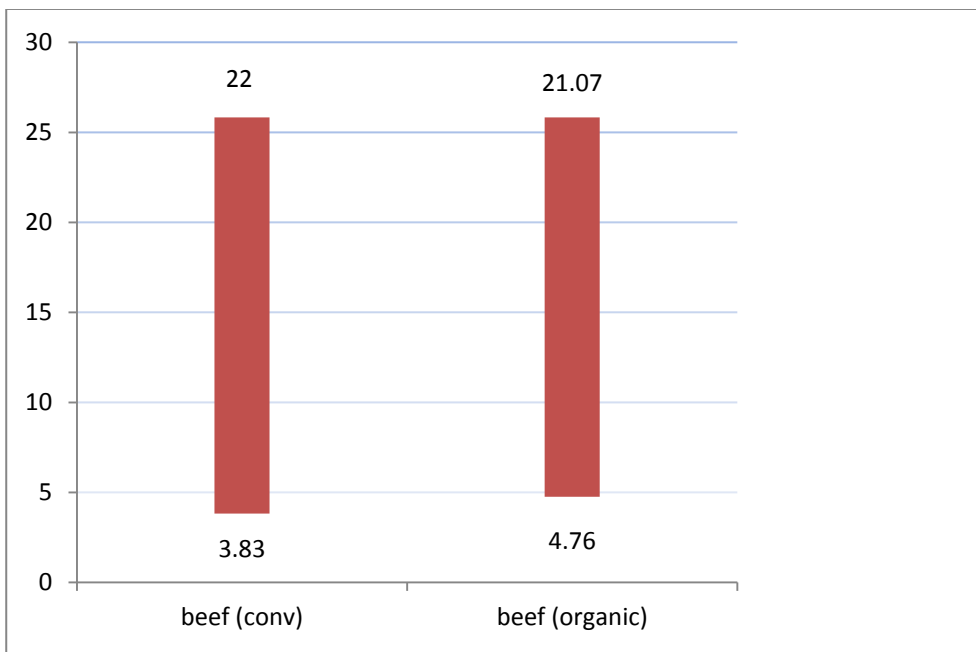


Figure 10. Percentage of beef products bought in different price tiers (2011)

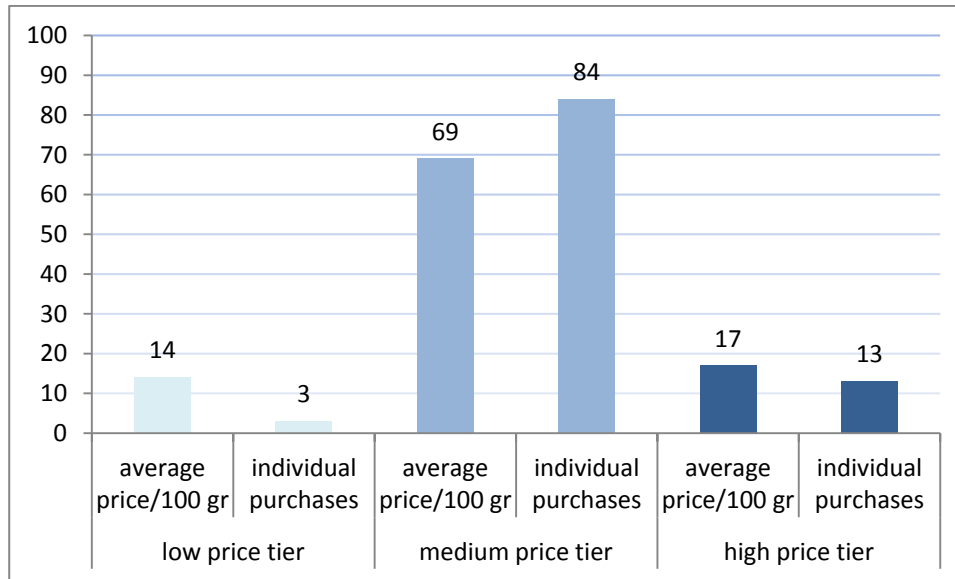


Table 6. Observed and theoretical performance measures – within beef products (2011)

	Penetration		Purchase Frequencies			weighted $s^{\wedge}$
	O	T	O	T	$s^{\wedge}$	
Hakket Oksekød	69%	69%	9.4	9.4	15.472	7.2
other products	44%	45%	3.8	3.8	13.098	1.6
Hakket Kalv / Flæsk	41%	49%	4.9	4.2	4.4	0.6
Øvrige Oksebøffer	22%	24%	2.8	2.6	9.675	0.4
Oksekød I Tern	17%	18%	2.5	2.4	12.221	0.4
Tynd/Skivet Bøf/Steak	16%	15%	2.2	2.3	18.182	0.5
Entrecote	14%	14%	2.3	2.3	14.491	0.3
Engelsk Bøf	12%	16%	3.2	2.3	5.296	0.1
Oksecuvette	12%	10%	1.7	2.2	36.31	0.5
Øvrige Kalvesteg	11%	8%	1.6	2.1	50.001	0.6
Kalvekød, Indmad	11%	11%	2.1	2.2	15.895	0.3
Okseculotte	10%	8%	1.8	2.1	28.354	0.4
Oksegrydesteg	10%	7%	1.5	2.1	50.001	0.5
Hakket Oksekød Øko.	9%	13%	3	2.2	5.617	0.1
Roastbeef	9%	7%	1.6	2.1	40.888	0.4
Kalveschnitzler	9%	10%	2.4	2.2	10.697	0.2
<b>S=14.26; <math>\varphi</math> =0.07</b>						



Figure 11. DMD and BBD polarisation vs. market share for beef products (2011)

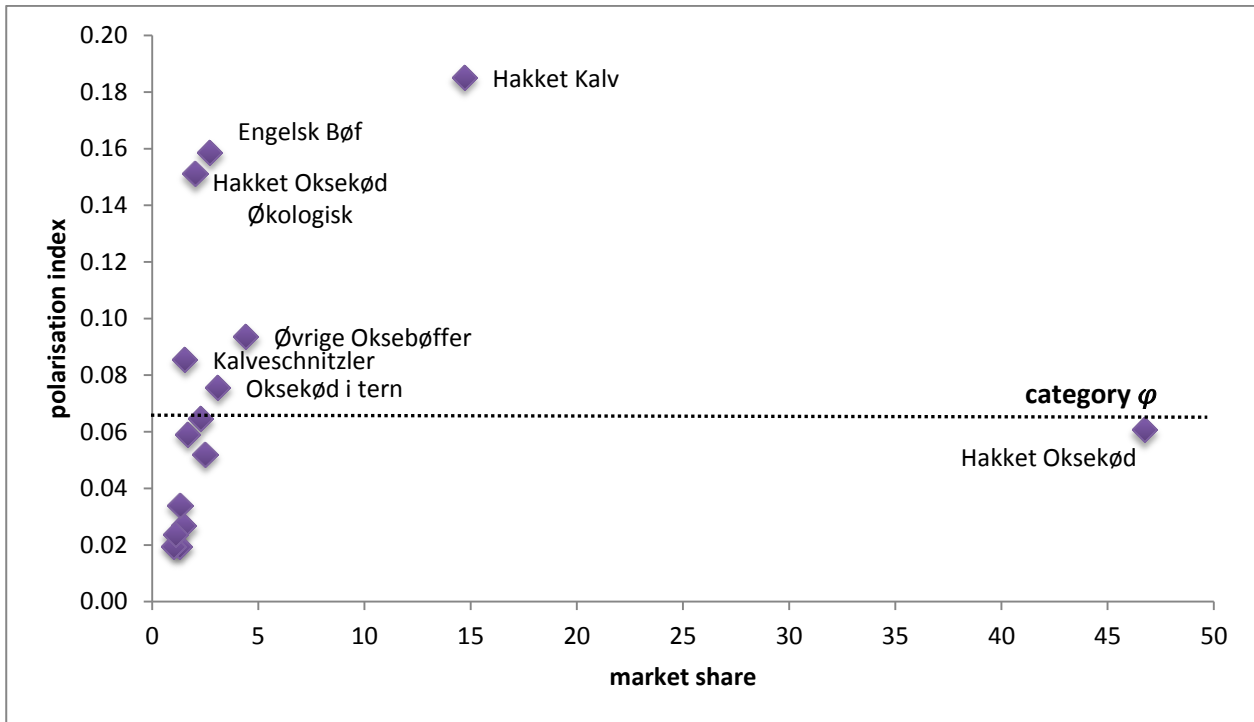


Table 7. Observed and theoretical performance measures – across price tiers, beef products (2011)

	Penetration		Purchase Frequencies			weighted s <sup>^</sup>
	O	T	O	T	s <sup>^</sup>	
medium	77%	76%	15.3	15.4	50.001	
high	37%	38%	4.7	4.6	4.178	0.5
low	16%	14%	2.9	3.4	7.326	0.2
<b>S=4.84; φ=0.17</b>						

Figure 12. Market share (by volume) organic beef (%) (2006-2011)

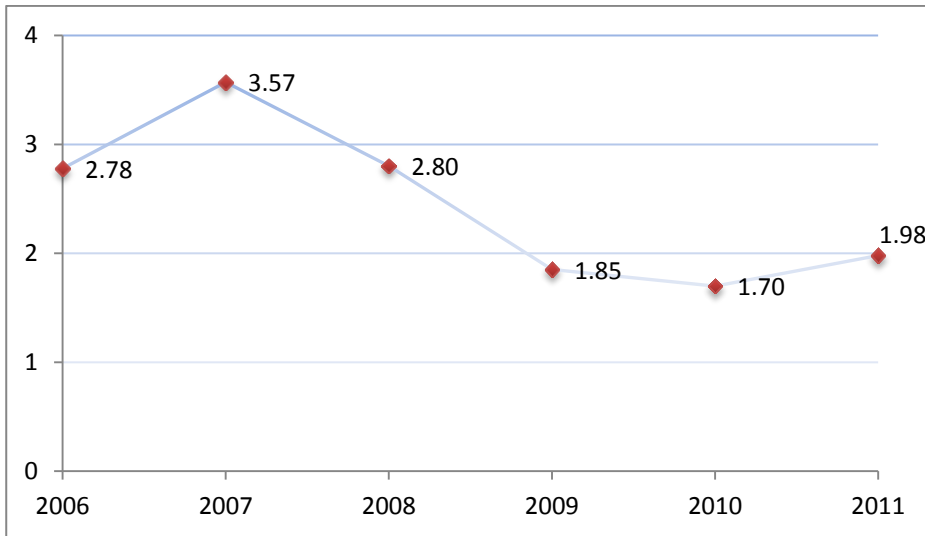


Figure 13. Penetration organic beef (%) (2006-2011)

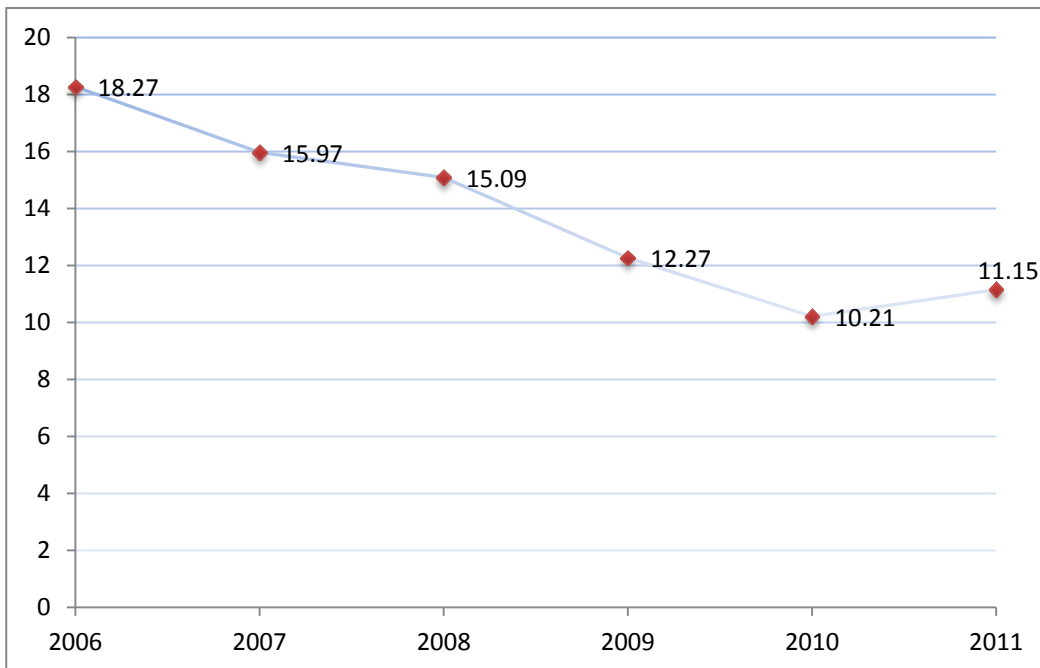


Table 8. Observed and theoretical performance measures – within organic beef products (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	s <sup>^</sup>	weighted s <sup>^</sup>
Hakket Oksekød Øko.	9%	9%	3	3	0.229	0.2
Hakket Kalv / Flæsk Øko.	2%	1%	2	2.4	0.913	0.1
Øvrige Oksebøffer Øko.	0%	0%	1.5	2.3	2.152	0
Engelsk Bøf Øko.	0%	0%	2.7	2.3	0.002	0
Oksekød I Tern Øko.	0%	0%	1	2.3	7.441	0.1
Entrecote Øko.	0%	0%	1.2	2.3	2.285	0
Ribeye Bøffer Øko.	0%	0%	1	2.3	5.382	0
Tynd/Skivet Bøf/Steak Øko.	0%	0%	1.3	2.3	1.334	0
Alt Andet Kalvekød Excl- Indmad Øko.	0%	0%	1	2.3	3.45	0
Osso Buco Øko.	0%	0%	2	2.3	0.002	0
Oksemørbrad Øko.	0%	0%	1.7	2.3	0.106	0
Roastbeef Øko.	0%	0%	1.3	2.3	0.494	0
Alt Andet Oksekød Excl-Indmad Øko.	0%	0%	1	2.3	1.678	0
Storkøb Oksekød, Som Ikke Kan Udsplittes Øko.	0%	0%	1	2.3	1.678	0
Oksegrydesteg Øko.	0%	0%	1	2.3	1.678	0
Oksebovklump Øko.	0%	0%	1	2.3	1.678	0
Øvrige Kalvesteg Øko.	0%	0%	1	2.3	1.678	0
Oksefilet Øko.	0%	0%	1	2.3	0.193	0
Oksecuvette Øko.	0%	0%	1	2.3	0.193	0
Kalvekød, Indmad Øko.	0%	0%	2	2.3	0.002	0
Kalvekoteletter Øko.	0%	0%	2	2.3	0.002	0
Øvrige Oksesteg Øko.	0%	0%	1	2.3	0.002	0
Kalvesteg Øko.	0%	0%	1	2.3	0.002	0
Kalveschnitzler Øko.	0%	0%	1	2.3	0.002	0
Øvrige Kalvebøffer Øko.	0%	0%	1	2.3	0.002	0
<b>S=0.46; <math>\varphi</math> =0.68</b>						

Table 9. Observed and theoretical performance measures – within high price tier, beef products (2011)

	Penetration		Purchase Frequencies			weighted $s^{\wedge}$
	O	T	O	T	$s^{\wedge}$	
Øvrige Oksebøffer	14%	15%	2.4	2.2	2.535	0.5
Entrecote	10%	10%	2	1.9	4.132	0.5
Kalveschnitzler	7%	9%	2.3	1.8	1.89	0.2
Tynd/Skivet Bøf/Steak	7%	7%	1.8	1.8	4.243	0.3
other products	7%	6%	1.6	1.8	8.594	0.5
Oksemørbrad	5%	5%	1.8	1.7	4.411	0.2
Engelsk Bøf	5%	5%	1.6	1.7	5.845	0.3
Ribeye Bøffer	5%	6%	2	1.7	2.541	0.1
Oksekød I Tern	5%	6%	1.9	1.7	3.124	0.2
Øvrige Kalvebøffer	4%	4%	1.9	1.7	2.965	0.1
Kalvekoteletter	4%	4%	1.9	1.7	3.208	0.1
Hakket Oksekød	4%	6%	2.7	1.8	0.943	0.1
Oksefilet	3%	2%	1.2	1.6	29.162	0.6
Okseculotte	3%	3%	1.4	1.6	10.969	0.3
Øvrige Kalvesteg	3%	2%	1.3	1.6	15.167	0.3
Alt Andet Oksekød Excl-Indmad	2%	2%	1.3	1.6	15.969	0.2
Roastbeef	2%	2%	1.3	1.6	16.876	0.2
Alt Andet Kalvekød Excl- Indmad	2%	2%	1.4	1.6	8.368	0.1
Kalvefilet	2%	2%	1.3	1.6	10.934	0.2
<b>S=5.02; <math>\varphi</math> =0.17</b>						

Table 10. Dirichlet Multinomial distribution (attribute) and Beta Binomial distribution( attribute level) polarisation index vs. market share) for beef products (2011)

	$\varphi$	Market share
Organic/conventional	0,66	
Organic	0,68	0,03
Conventional	0,06	0,97
Price tier	0,17	
High price	0,17	0,13
Medium price	0,08	0,84
Low price	0,68	0,03

Figure 14. DMD and BBD polarisation index vs. market share for attributes – beef (2011)

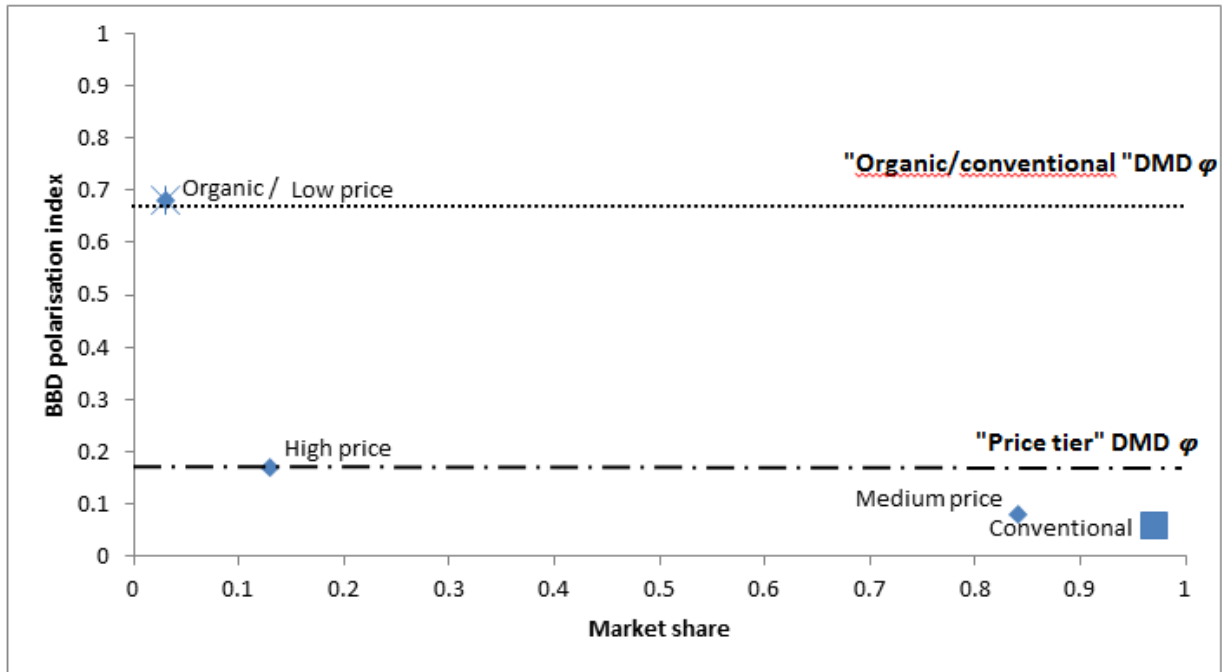


Figure 15. Evolution of market share for pork products (2006-2011)

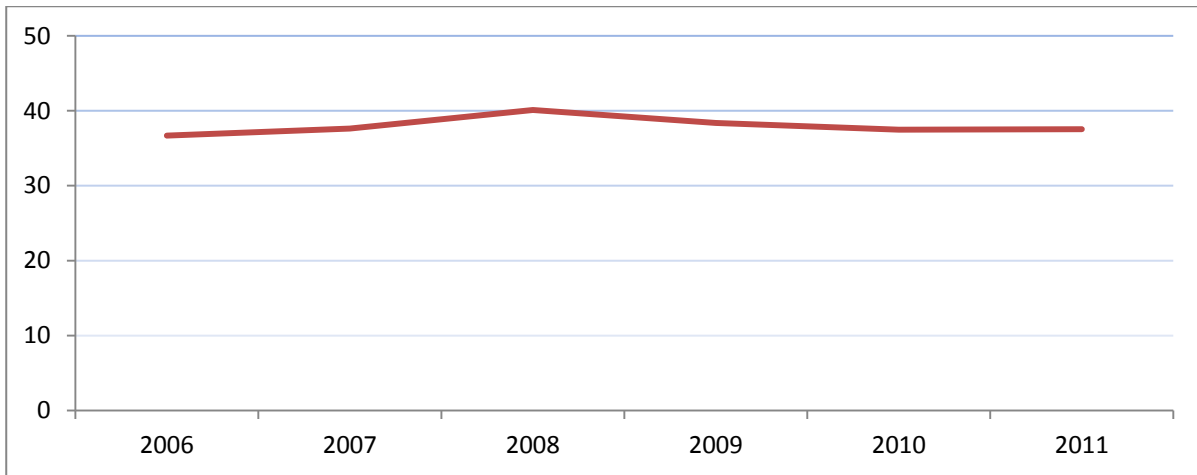


Figure 16. Minimum and maximum average price/100 gr. for pork products (2011)

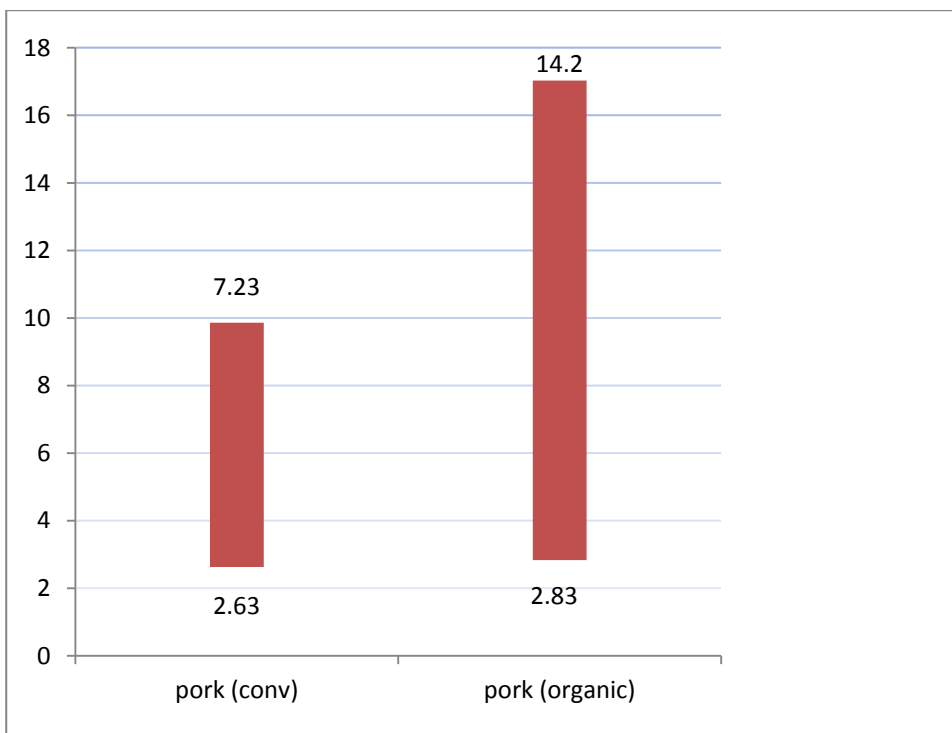


Figure 17. Percentage of pork products bought in different price tiers for pork products (2011)

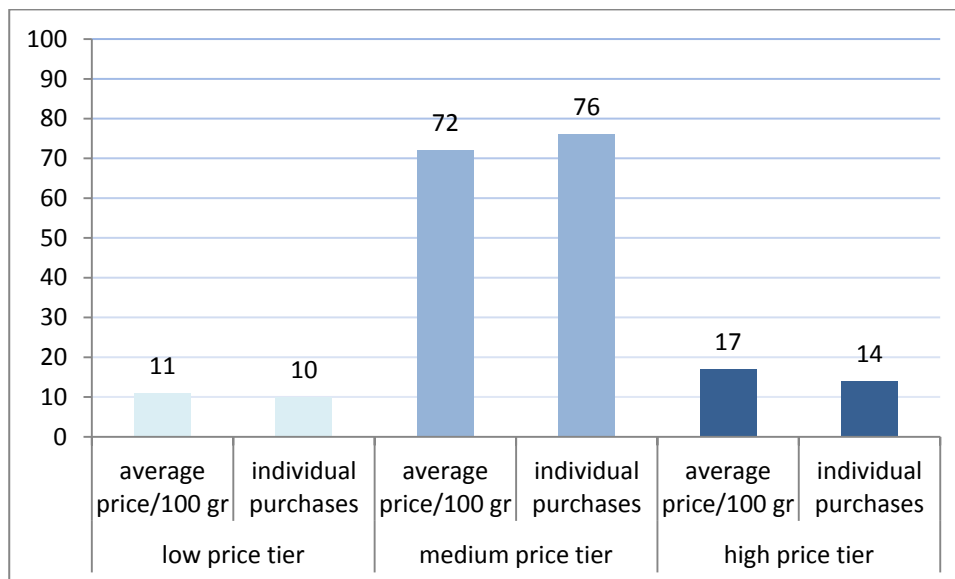


Table 11. Observed and theoretical performance measures – within pork products (2011)

	Penetration		Purchase Frequencies			weighted s <sup>^</sup>
	O	T	O	T	s <sup>^</sup>	
Hakket Svinekød, Incl- Rørt Fars	52%	57%	6.2	5.7	4.523	1.1
Svine Kotelet	47%	48%	4.3	4.2	12.206	1.8
Medisterpølse; Rå, Røget Eller Stegt	43%	45%	4	3.9	11.118	1.4
Mørbrad	39%	37%	3.1	3.2	25.301	2.2
Hel Svinekam	32%	28%	2.4	2.7	40.533	2.3
other products	32%	29%	2.5	2.7	36.797	2.1
Ribensteg & Kogeflæsk	27%	27%	2.8	2.7	14.13	0.8
Stegeflæsk	26%	28%	2.9	2.7	11.081	0.6
Schnitzler	24%	23%	2.4	2.5	19.359	0.8
Røget Skinke	17%	14%	1.7	2.2	50.001	1.1
Nakke Koteletter	16%	17%	2.3	2.3	14.884	0.4
Nakkefilet	16%	14%	1.9	2.2	37.014	0.8
Alt Andet Svinekød (Bovblad,Skank) - Excl- Indmad	14%	13%	2	2.2	26.758	0.5
Tern Svinekød	13%	13%	2.1	2.2	20.326	0.4
Svinekød, Indmad	12%	12%	2.2	2.2	14.65	0.3
<b>S=16.72; φ =0.06</b>						

Figure 18. DMD and BBD polarisation vs. market share for pork products (2011)

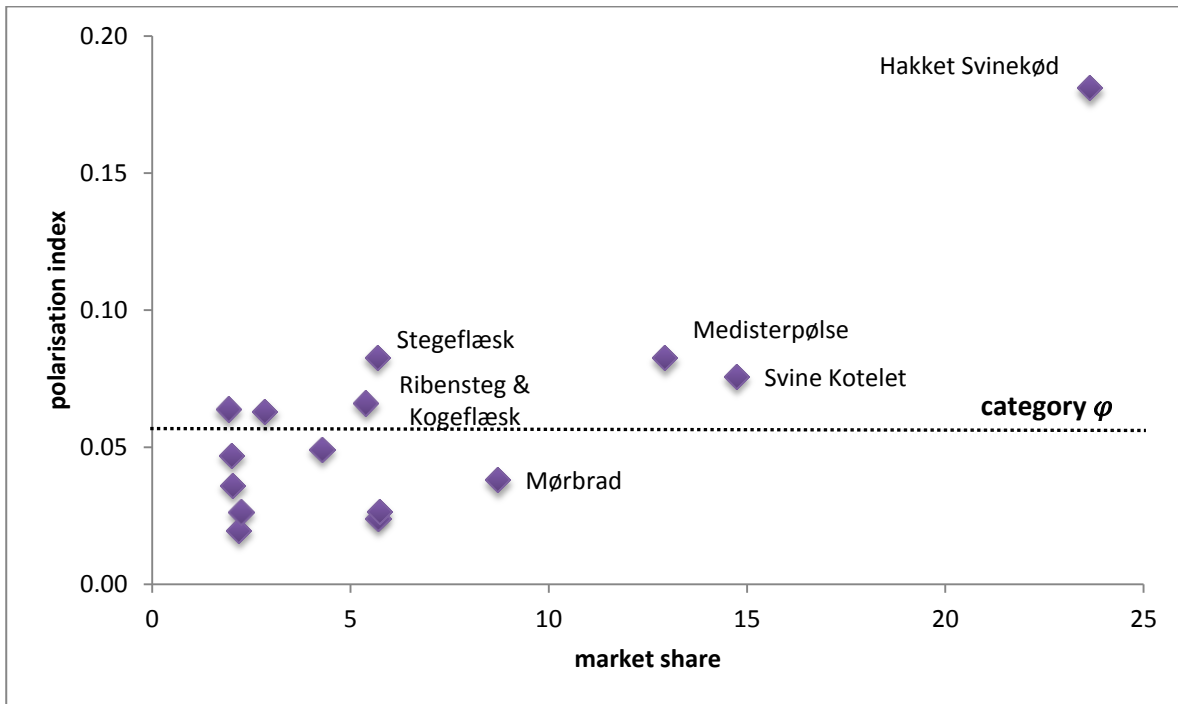


Table 12. Observed and theoretical performance measures – across price tiers, pork products (2011)

	Penetration		Purchase Frequencies			weighted $s^{\wedge}$
	O	T	O	T	$s^{\wedge}$	
medium	73%	73%	14.2	14.2	4.115	3.1
high	46%	41%	4.2	4.7	12.43	1.7
low	33%	32%	4	4.1	6.235	0.6
<b>S=5.48; <math>\varphi</math> =0.15</b>						



Figure 19. Market share (by volume) organic pork (%) (2006-2011)

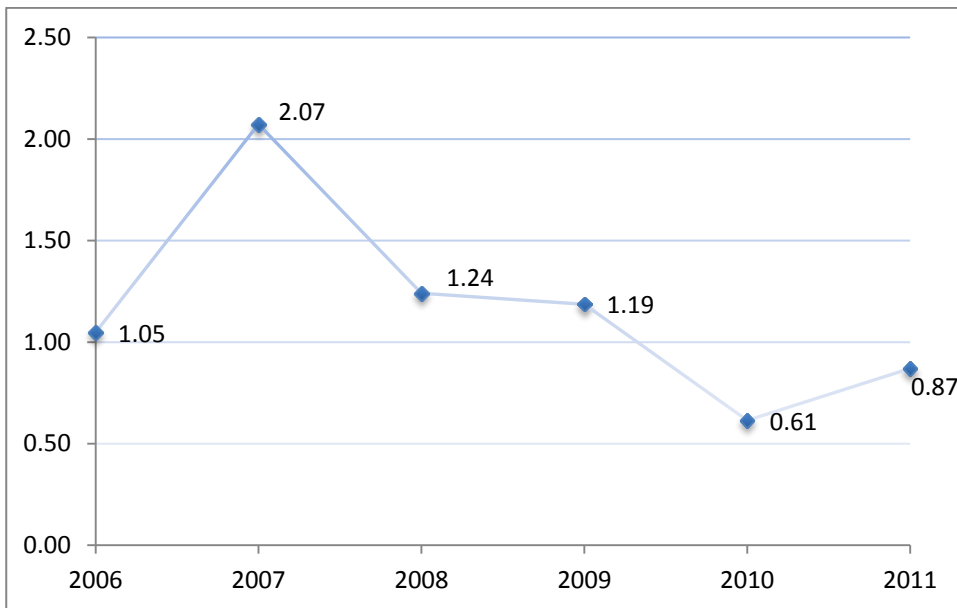


Figure 20. Penetration organic pork (%) (2006-2011)

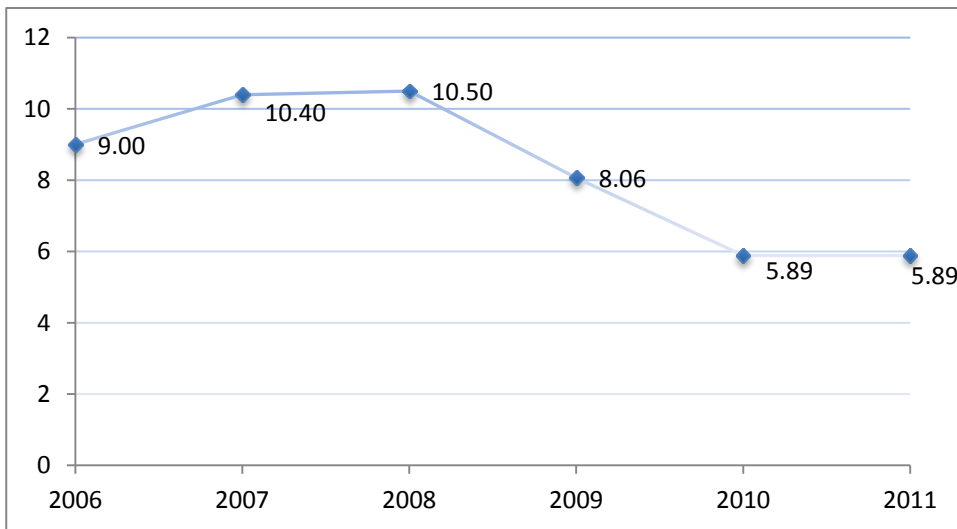


Table 13. Observed and theoretical performance measures – within organic pork products (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	s <sup>^</sup>	weighted s <sup>^</sup>
Medisterpølse; Rå, Røget Eller Stegt Øko.	2%	2%	1.8	1.7	0.98	0.3
Hakket Svinekød, Incl- Rørt Fars Øko.	2%	2%	1.9	1.7	0.529	0.1
Svine Kotelet Øko.	1%	1%	1.3	1.6	4.426	0.6
Stegeflæsk Øko.	1%	1%	1.4	1.6	2.284	0.2
Nakke Koteletter Øko.	1%	0%	1.3	1.5	1.978	0.1
Hel Svinekam Øko.	0%	0%	1.1	1.5	2.242	0.1
Mørbrad Øko.	0%	0%	2	1.5	0.002	0
Tern Svinekød Øko.	0%	0%	1.5	1.5	0.387	0
Ribensteg & Kogeflæsk Øko.	0%	0%	1.4	1.5	0.424	0
Øvrig Svinebryst Øko.	0%	0%	1.3	1.5	0.495	0
Schnitzler Øko.	0%	0%	1.3	1.5	0.02	0
Alt Andet Svinekød (Bovblad,Skank) - Excl- Indmad Øko.	0%	0%	1	1.5	0.687	0
Nakkefilet Øko.	0%	0%	1	1.5	0.002	0
Forender - Halve Grise Øko.	0%	0%	1	1.5	0.002	0
Nakkekam Øko.	0%	0%	1	1.5	0.002	0
Skinkesteg Øko.	0%	0%	1	1.5	0.002	0
Skinkemignon Øko.	0%	0%	1	1.5	0.002	0
Skinkeculotte Øko.	0%	0%	2	1.5	0.002	0
Røget Skinke Øko.	0%	0%	1	1.5	0.002	0
Øvrig Kam Øko.	0%	0%	1	1.5	0.002	0
Svinekød, Indmad Øko.	0%	0%	1	1.5	0.002	0
<b>S=1.4; <math>\varphi</math> =0.42</b>						

Table 14. Observed and theoretical performance measures – within high price tier, pork products (2011)

	Penetration		Purchase Frequencies			weighted $s^{\wedge}$
	O	T	O	T	$s^{\wedge}$	
Mørbrad	25%	24%	2.3	2.3	4.769	1.4
Svine Kotelet	17%	18%	2.2	2.1	2.54	0.5
Schnitzler	11%	12%	2	1.9	2.373	0.3
other products	9%	9%	1.8	1.8	3.864	0.3
Hakket Svinekød, Incl- Rørt Fars	6%	8%	2.4	1.8	1.064	0.1
Tern Svinekød	5%	5%	1.6	1.7	4.749	0.2
Stegeflæsk	4%	4%	1.6	1.7	4.068	0.1
Alt Andet Svinekød (Bovblad,Skank) - Excl- Indmad	4%	4%	1.6	1.7	4.068	0.1
Nakke Koteletter	4%	4%	1.8	1.7	2.496	0.1
Medisterpølse; Rå, Røget Eller Stegt	3%	3%	1.5	1.6	4.975	0.1
Hel Svinekam	3%	3%	1.4	1.6	7.715	0.2
Skinkemignon	2%	2%	1.7	1.6	3.078	0.1
Nakkefilet	2%	2%	1.3	1.6	11.363	0.2
Filet Royal	2%	2%	1.4	1.6	6.833	0.1
Hakket Svinekød, Incl- Rørt Fars Øko.	1%	1%	2	1.6	1.386	0
<b>S=3.71; <math>\varphi</math> =0.21</b>						

Table 15. Dirichlet Multinomial distribution (attribute) and Beta Binomial distribution( attribute level) polarisation index vs. market share) for pork products (2011)

	$\varphi$	Market share
Organic/conventional	0,55	
Organic	0,42	0,01
Conventional	0,06	0,99
Price tier	0,15	
High price	0,21	0,14
Medium price	0,07	0,76
Low price	0,3	0,10

Figure 21. DMD and BBD polarisation index vs. market share for attributes, pork products (2011)

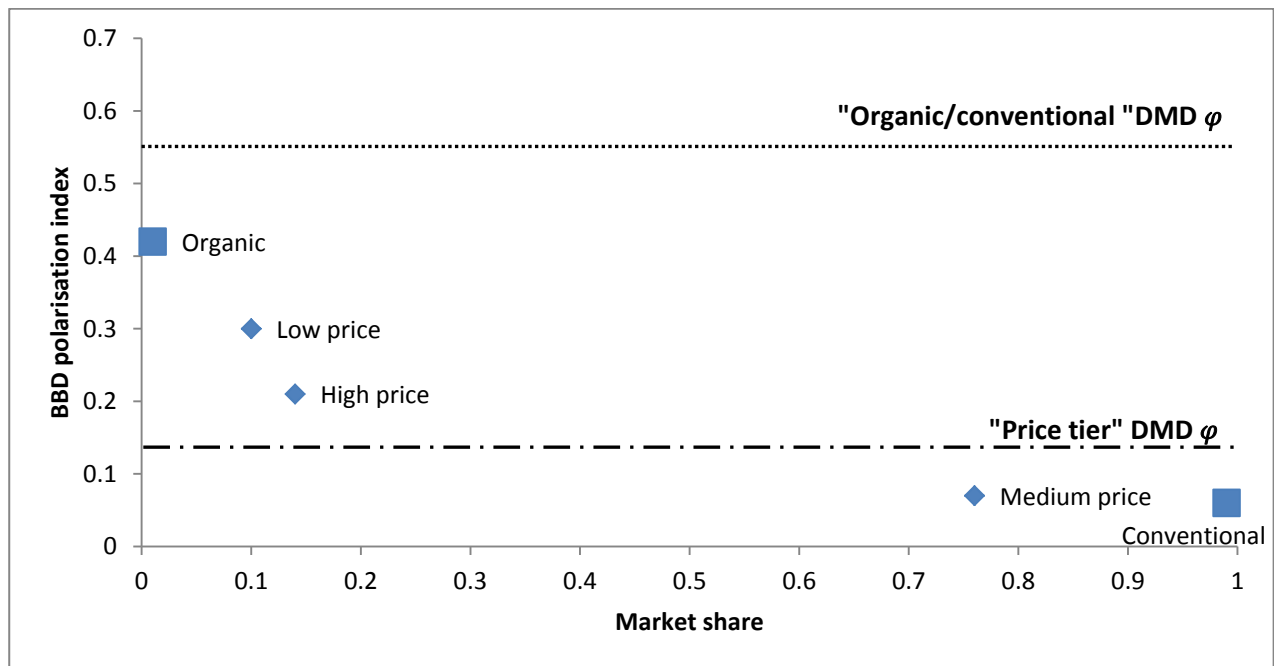


Table 16. Percentage of planned purchases and of products bought on offer out of total purchases of organic products (2011)

	chicken	pork	beef
% of purchases planned	71	68	74
% of purchases when the brand was planned	59	46	45
% of purchases bought on offer	50	44	40

Table 17. Percentage of planned purchases and of products bought on offer out of total purchases of high priced products (2011)

	chicken	pork	beef
% of purchases planned	79	70	67
% of purchases when the brand was planned	39	37	42
% of purchases bought on offer	22	39	34

Table 18. Observed and theoretical performance measures – across meat categories (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	s <sup>^</sup>	weighted s <sup>^</sup>
beef	78%	80%	17.8	17.3	3.666	1.6
pork	76%	80%	17.9	17	2.665	1.1
chicken	69%	64%	7.4	8	50.001	7.9
<b>S=10.57; φ =0.09</b>						

Table 19. Observed and theoretical performance measures – across conventional meat categories (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	s <sup>^</sup>	weighted s <sup>^</sup>
beef	77%	80%	17.5	17.1	3.929	1.7
pork	76%	79%	17.8	16.9	2.741	1.2
chicken	69%	64%	7.4	8	50.001	8
<b>S=10.8; <math>\varphi</math> =0.08</b>						

Table 20. Observed and theoretical performance measures – across organic meat categories (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	s <sup>^</sup>	weighted s <sup>^</sup>
beef	11%	11%	3.2	3.1	0.629	0.4
pork	6%	5%	2.3	2.6	1.396	0.4
chicken	0%	1%	4.9	2.3	0.01	0
<b>S=0.81; <math>\varphi</math> =0.55</b>						

Table 21. Observed and theoretical performance measures – across high price meat categories (2011)

	Penetration		Purchase Frequencies			
	O	T	O	T	s <sup>^</sup>	weighted s <sup>^</sup>
pork	46%	44%	4.2	4.3	3.833	1.7
beef	37%	42%	4.7	4.1	0.961	0.4
chicken	23%	23%	2.9	3	2.67	0.4
<b>S=2.49; <math>\varphi</math> =0.29</b>						

Table 22. Dirichlet metrics – summary of results

	S	$\varphi$
Within chicken brands	4	0,2
Within pork products	16,72	0,06
Within beef products	14,26	0,07
Across beef, pork, chicken products	10,57	0,09
Across conventional beef, pork, chicken products	10,8	0,08
Across organic beef, pork, chicken	0,81	0,55
Across high price beef, pork, chicken products	2,49	0,29
Across price tiers – beef products	4,84	0,17
Across price tiers – pork products	5,48	0,15
Across price tiers – chicken products	4,04	0,2
Within high price – beef products	5,02	0,17
Within high price – pork products	3,71	0,21
Within high price – chicken products	6,93	0,13
Within organic beef products	0,46	0,68
Within organic pork products	1,4	0,42
Within organic chicken products	0,01	0,99

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