Organic innovation: The growing importance of private label products in the United States

10

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10.1 Introduction

In recent years, the burgeoning United States organic food industry has experienced double-digit growth. A new record high in total organic product sales of $47 billion [Organic products include foods, ingredients and beverages, as well as organic fibers, personal care products, pet foods, nutritional supplements, household cleaners and flowers (Organic Trade Association (OTA), 2016). See more at https://www.ota.com/about-ota.] was reached in 2016. Within this, organic food and drink sales reached $43 billion and accounted for 91% of total organic sales. This value reflects an increase of food sales of 8.4% from the previous year and far outpaced the overall food market's growth rate of 0.6% (Organic Trade Association (OTA), 2017a).

Private label (PL), also known as store brand, products have contributed significantly to this increase in organic sales. The overall PL dollar share in the consumer packaged goods (CPG) industry in the United States was approximately 16% during the period 2010−14 (IRI, 2015). PL products, which had a relatively low presence of 8% among organic products in 2003, have quickly grown and by 2008 accounted for 17% of organic products (Nielsen, 2008; Nutrition Business Journal, 2004). In 2007, about 43% of certified organic handlers manufactured PL products, which constituted approximately 19% of handlers' organic sales (Dimitri & Oberholtzer, 2009). [One example is Organic Valley, which adopted a branded, PL, and bulk products three-pronged strategy. PL output accounted for 25% of its total revenue in 2011 (Su & Cook, 2015; Organic Valley, 2013).] Increased availability, lower price points, improved quality, joint marketing of organic and health attributes, and product innovation are among the top drivers behind PL organic purchases (Jonas & Roosen, 2005; Mintel, 2015a; 2016). [Also, organic PL products are less likely to be identified as store brands and more likely to be mistaken for brand-name products. Thus, PL organic products may have more success competing with national brands (NBs) for some consumers' food dollars as a result (Mintel, 2013).] Consumers no longer view PLs simply as low-cost alternatives to national brands,

Case Studies in Food Retailing and Distribution. DOI: https://doi.org/10.1016/B978-0-08-102037-1.00010-4

or name brands, and increasingly accept them as reliable high-quality options to meet their organic needs (Hartman Group, 2014).

This chapter examines innovation through new product development in the US organic food and beverage market. In particular, innovation stemming from PL and NB product lines is explicitly considered. Due to their importance in organic market product innovation, two case studies are used to examine the processed fruit & vegetable and dairy product categories. To complement this discussion, the price premiums for organic products relative to their conventionally produced equivalents are estimated and evaluated for several food industry subsectors. We demonstrate that PL products may be leading organic innovation in certain dimensions, particularly value. Implications for PL brand strategies are considered.

This study makes use of Mintel's Global New Product Database (GNPD), which provides detailed information (including images of packaging) concerning launches of new products and is often used to monitor product innovation and retail strategies in CPG markets. The collection of the GNPD's new product launch information is primarily facilitated by a network of field associates referred to as "shoppers." The database includes product information from other sources such as press releases, trade shows, media, and company tracking (GNPD, 2016). The data provide a comprehensive resource for new product development and innovation, thus allowing comparisons of firms' new product strategies.

10.2 A premium private label—organic products

NBs, or name brands, are distributed across the United States under brand names that are owned by the producer or distributor. In contrast, PL products, also known as store brands [While the terms PL and store brands are often used interchangeably, there is some slight difference (Semeijn, Van Riel, & Ambrosini, 2004). For instance, the Private Label Manufacturers Association uses PL, whereas the Food Marketing Institute refers to 'store brands' (Stanton, Wiley, Hooker, & Salnikova, 2015)], are owned by a retailer or wholesaler. They are typically manufactured or provided by one company for offer under the retailer's brand. Retailers commonly sell a mix of NBs and PL goods to take advantage of the benefits of each. Moreover, retailers often carry a portfolio of PLs serving different quality tiers. In general, PL products can be classified into three different types: typical cheap and low quality own labels (i.e., economy PLs; "generics," or "white labels"); somewhat less expensive PLs comparable in quality to the NBs (i.e., standard PLs; "copycats," "me-toos"); and premium quality and high value added PLs (i.e., "premium PLs" and "value innovators") (Kumar & Steenkamp, 2007; Laaksonen and Reynolds,1994). Retailers often adopt a three-tiered PL approach as it can give consumers more choice and can satisfy the heterogeneous nature of the consumer market. It also offers retailers flexibility and control over a category and further creates differentiation compared to their competitors (PWC, 2011). Premium PLs usually target distinct consumer or niche segments such as healthy eating, kids, and organic

foods (Hökelekli, Lamey, & Verboven, 2017). They serve not only to distinguish retailers' product lines from one another but also to place NBs and PLs more directly in price and quality competition. Organic PLs stand as an attractive alternative to branded organic goods as they undermine three main barriers preventing consumers from purchasing organic products; affordability, availability, and lack of information provided to consumers (Labajo, 2016; Martinez, 2007).

10.2.1 Overview of organic product introductions in the US market

In October 2002, the National Organic Program (NOP), part of the USDA's Agricultural Marketing Service, was established with the core mission to protect organic integrity. The NOP develops, implements, and administers national production, handling, and labeling standards for organically produced agricultural products [United States Department of Agriculture (USDA), 2017]. Prior to 2002, the term organic was unregulated and subject to various voluntary certifications by private organizations or state agencies, so there was no uniformity in standards (OTA, 2017b; Sanchez, 2014). Across food and drink, NB and PL new organic product introductions exhibited an upward trend over the period 2000–15, especially following the implementation of the NOP (see Figure 10.1). The number of new organic food and beverage products declined following the Great Recession of 2007–09, but rebounded in 2010. In 2002, there were approximately 900 new organic food and drink products launched on the US market. In 2011, the number of new organic products jumped to more than 1800. By 2015, there were 2,911 new organic product releases, which included 2,326 foods and 585 drinks and, respectively, accounted for 17% and 15% of the total food and drink introductions

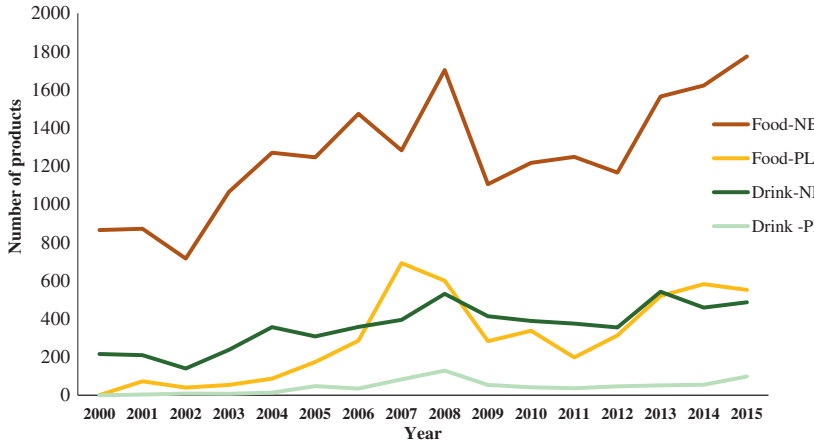

Figure 10.1 Recent trends in US NB and PL organic product innovation, 2000–15. Authors' calculations based on GNPD (2016).

(GNPD reports a total of 13,307 foods and 3,836 drinks launched in the United States in 2015). Among these, 78% of them were NBs, while PLs made up the other 22%.

Most food retailers introduced their own organic PL, and they are being developed at a fast pace. From 2001 to 2015, the average share of PLs among total new organic food and drink product introductions was 16%. The share of innovations that are PL (versus NBs) peaked in 2007 at 32%. However, its average annual growth rate during the same period is 29%, 3.6 times faster than that of NB counterparts (Fig. 10.1). In considering the type of new product launch [All GNPD records are assigned a launch type; new formulation ("New Formula," "Even Better," "Tastier," "Now Lower in Fat," "New and Improved," or "Great New Taste" on package); new packaging ("New Look," "New Packaging," or "New Size"); brand new product (representing entries of new range, line, or family of products or crossing over to a new subcategory for existing brand); new variety/range extension; and relaunch.], NBs outperformed PLs in brand new product offerings. Of the new NB organic products, 35.7% were brand new products and 32.4% were new varieties or a product line extension. These results differ from the innovation pattern of PL organic products where new varieties or product line extensions accounted for 41.7%, new packaging for 26.6%, and brand new products for 23.8% of new innovations.

It is worth also considering innovation in the amount of organic content contained in multi-ingredient food and drink products. To help consumers determine the organic content of the food they purchase, the NOP has developed labeling standards, along with production and processing requirements. As described in Appendix 1, organic products are grouped into four categories, which are largely dependent on the percentage of organic content (excluding salt and water) that a product contains: 100% organic content, 95%–99.9% organic ("organic") content, 70%–94.9% organic content, and less than 70% organic content (Calculating the Percentage of Organically Produced Ingredients, 2017). Organic content trends for PL products are more aligned with the organic content trends of all new products. Among all PL organic products, 56% were 100% organic, and an additional 31% were in the 95%–100% (organic) category. These values are lower for NB organic products where 38% were 100% organic and 27% were organic.

Product innovation is often regarded as an effective strategy for name brand firms to defend their products against PL entry. The pressure from PL sales may stimulate further product development and innovation by branded product manufacturers, thus increasing the product differentiation and quality variety for consumers. Various studies examine the impact of manufacturer brand innovation on PL consumption. For example, Pauwels and Srinivasan (2004) found that the adoption of a defensive strategy of investing in product innovation by manufacturer brands could enhance their competitive advantage and enable a sustainable price premium over PLs. Sriram, Balachander, and Kalwani (2007) showed that the introduction of new products by CPG manufacturers can improve their brand equity, thus reducing their vulnerability to the entry of PLs. Kumar and Steenkamp (2007) demonstrated that product innovation is an effective strategy to counter the success of PLs, as new

products decrease the substitutability between PLs and manufacturer brands. Abril and Sanchez (2016) found that nonprice strategies, such as promotions (e.g., feature and display) and product innovation, are more effective than price strategies when competing with PLs, especially in the context of recovering consumers who have switched to PLs. Additional findings reveal that manufacturer brands' innovation intensity in a given category negatively correlates to PL share (Martos-Partal, 2010; Steenkamp & Gielens, 2003).

On the other hand, retailers are also launching new products to differentiate themselves from their competitors and to add value to their consumer franchise. PL innovation is an important market dynamic. Gielens (2012) assesses when and to what extent new products change NBs' market position and finds that products introduced by leading NBs, standard PLs, and premium PLs are more likely to increase category sales than products introduced by follower NBs or economy PLs. Abril and Martos-Partal (2013) investigated whether or not consumers accept product innovations by PLs—and if so, then to what extent. They found that PLs positively affect consumer adoption of new products, as measured by both the trial purchase level and the repurchase rate.

10.2.2 Food and beverage innovation: national brands versus private labels

Table 10.1 reports the number of organic and conventional food and drink products distinguished by brand type and category. Snacks, sauces and seasonings, and bakery products took the top three spots in both organic and conventional food categories in the number of new product introductions. When considering both organic and conventional products, NBs dominated new product introductions in almost all categories. "Processed fruit & vegetables" was the only category for which PL had a greater share than its NB counterpart in the new organic product launch. This category has increased in popularity as consumers are increasingly seeking organic forms of fresh, relatively unprocessed products, which offer convenience. (Within this category, different levels of processing are available such as prewashed, chopped, or microwave-ready bags.) Sales of organic packaged fresh produce jumped nearly 40% from 2012 to 2014, and surpassed the $200 million benchmark in January 2015, putting the category far ahead of any other organic category (Mintel, 2015b). PL had almost the half of all new organic sauces & seasonings; the fastest growing organic category in 2015 (OTA, 2016). However, except for the categories of sauces & seasoning, prepackaged fruit & vegetables, and alcoholic beverages, the share of PLs among total new organic products was lower than shares of PLs in the total new conventional products, indicating a distinct product development strategy and suggesting likely continued growth of new PL organic products in these categories.

Table 10.1 US organic and conventional food and drink new product introductions by brand type and category, 2015

Category	Organic			Conventional		
	National brand	Private label	Total	National brand	Private label	Total
Food						
Snacks	450	59	509	1230	677	1907
Sauces & seasonings	144	140	284	754	500	1254
Bakery	185	56	241	1183	565	1748
Dairy	196	40	236	705	293	998
Side dishes	78	43	121	194	167	361
Breakfast cereals	98	18	116	337	73	410
Baby food	81	27	108	37	29	66
Fruit & vegetables	37	70	107	206	132	338
Chocolate confectionery	86	16	102	408	154	562
Processed fish, meat & egg products	78	23	101	601	289	890
Meals & meal centers	80	18	98	557	193	750
Desserts & ice cream	85	7	92	388	230	618
Sweet spreads	71	17	88	140	56	196
Soup	58	7	65	95	47	142
Sweeteners & sugar	21	8	29	30	20	50
Sugar & gum confectionery	15	1	16	345	211	556
Savory spreads	12	1	13	89	46	135
Food total	**1,774**	**552**	**2,326**	**7,299**	**3,682**	**10,981**
Drink						
Juice drinks	177	27	204	256	101	357
Hot beverages	89	43	132	374	196	570
Other beverages	83	15	98	284	104	388
Ready to drink (RTD) beverages	60	6	66	113	11	124
Carbonated soft drinks	24	3	27	163	35	198
Alcoholic beverages	16	4	20	1301	23	1324
Sports & energy drinks	20	0	20	95	3	98
Water	18	0	18	112	80	192
Drink total	**487**	**98**	**585**	**2,698**	**553**	**3,251**
Total	**2,261**	**650**	**2,911**	**9,997**	**4,235**	**14,232**

Note: Categories are ordered by the total number of new organic products.
Source: Authors' calculations based on GNPD, 2016. *Global new products database: How we do it*. Mintel International Group Ltd., London, England. [Online] Available from: ⟨http://www.gnpd.com/sinatra/gnpd/&lang = uk/info/id = how⟩ (accessed: March 12, 2017).

10.2.3 The top two organic food categories—fresh fruit & vegetables and dairy products

PL penetration varies widely across product categories. According to data from the Private Label Manufacturers Association's (2016) Private Label Yearbook provided by Nielsen, the top five categories (There were more than 700 food and nonfood product categories and subcategories in US supermarkets, drug chains, mass merchandisers, the club channel, dollar store channel, and military exchanges.) in overall store brand dollar sales across all the major retail outlets were all in fresh and perishable categories in 2015: milk has the highest store brand share at 56% with $6.1 billion in sales, followed by cheese ($4.6 billion; 39%), bread & baked goods ($4.2 billion; 28.8%), fresh produce ($4 billion; 21.6%), and fresh eggs ($3 billion; 64.8%). Common features shared among these categories include minimal differentiation, low brand equity, high consumer price sensitivity, high purchase frequency, and low innovation characteristics (Batra & Sinha, 2000; Nielsen, 2014; Sethuraman & Gielens, 2014). Retailers are more likely to introduce premium PLs in categories with a higher PL share, and with greater assortment in terms of standard PLs. Thus, it is not surprising that produce and dairy are among the most common first organic PL products introduced by retailers, with the highest PL organic presence (Nielsen, 2008). They were also the top two organic food sales categories in 2015 and generated $14.4 billion and $6.0 billion in sales respectively. Together, they accounted for more than half of the total organic food sales (OTA, 2016). PL share of organic milk sold across all retail channels rose steadily and markedly through 2004−08, from about 10% to just over 50% of all organic milk sales (Jaenicke & Carlson, 2015).

Tables 10.2 and 10.3 summarize the companies responsible for the majority of US introductions of PL and NB organic processed fruit & vegetable and dairy products in 2015. All the new fruit & vegetable products were either organic or 100% organic. 70 new PL products were launched by 14 retailers while 37 new NBs were introduced by 23 companies. In contrast to PLs, the NBs were less concentrated and had a more even distribution. The top two PLs took up almost half of the total PL fruit & vegetable innovations, while the top two NBs accounted for about one-fifth of the total NB new organic products. The top PL company, Safeway, introduced more than five times more products than its closest counterpart, Earthbound Farm. Safeway's produce items, which were all sold under its brand O Organics, accounted for one-third of the total new PL fruit & vegetable products.

For dairy products, 12 retailers offered 40 new organic PLs in 2015, while 50 NBs introduced 196 new products. Both new PL and NB dairy products concentrated on the "organic" tier, as it is relatively difficult for dairy products to be 100% organic given the vitamin fortification requirements for fluid milk products (Food & Drug Administration, 2005). It is worth noticing that PL has a higher percentage of "organic" and 100% organic products (90% of introduced products) than its NB counterpart (83% of product introductions). Moreover, similar to fruit & vegetables, PL has a higher level of concentration: the top three companies introduced 68% of the total organic products compared with 30% of those introduced by the top three NB labels.

Table 10.2 Top national brand and private label companies' for new organic fruit and vegetable products, 2015

	Company	Percentage of organic content				Total
		100% Organic	Organic (95%–99%)	Made with organic ingredients (70%–94%)	Specific organic ingredients (<70%)	
NB	Earthbound Farm	4	0	0	0	4
	Hain Celestial Group	3	0	0	0	3
	Lisa's Kitchen	1	2	0	0	3
	organicgirl	3	0	0	0	3
	Enray	2	0	0	0	2
	Mann Packing	2	0	0	0	2
	Sambazon	0	2	0	0	2
	Taylor Fresh Foods	2	0	0	0	2
	Timeless Seeds	2	0	0	0	2
	Blanco & Dinapoli	1	0	0	0	1
	Subtotal	20	4	0	0	24
	Total	**30**	**7**	**0**	**0**	**37**
PL	Safeway	19	2	0	0	21
	Wegmans	10	0	0	0	10
	Supervalu	7	2	0	0	9
	Target	6	1	0	0	7
	Kroger	3	3	0	0	6
	Aldi	4	0	0	0	4
	Trader Joe's	3	0	0	0	3
	Meijer	2	0	0	0	2
	Topco Associates	2	0	0	0	2
	Whole Foods Market	2	0	0	0	2
	Subtotal	58	8	0	0	66
	Total	**62**	**8**	**0**	**0**	**70**

Source: Authors' calculations based on GNPD, 2016. *Global new products database: How we do it*. Mintel International Group Ltd., London, England. [Online] Available from: ⟨http://www.gnpd.com/sinatra/gnpd/&lang = uk/info/id = how⟩ (accessed: March 12, 2017).

Table 10.3 **Top national brand and private label companies' new organic dairy products**

	Company	Percentage of organic content				Total
		100% Organic	Organic (95%–99%)	Made with organic ingredients (70%–94%)	Specific organic ingredients (<70%)	
NB	Organic Valley	2	26	0	0	28
	Stonyfield Farm	0	17	0	0	16
	Horizon Organic Dairy	1	11	3	0	15
	Forager Project	6	0	0	0	6
	Maple Hill Creamery	1	4	1	0	6
	Great Lakes Cheese	0	6	0	0	6
	Pacific Foods of Oregon	0	6	0	0	6
	So Delicious Dairy Free	0	0	2	4	6
	Rebbl	2	3	0	0	5
	Hain Celestial Group	2	0	0	3	5
	Subtotal	14	73	6	7	100
	NB Total	**35**	**127**	**7**	**27**	**196**
PL	Safeway	1	16	0	0	17
	Meijer	0	6	0	0	6
	Topco Associates	0	4	0	0	4
	Aldi	0	1	0	2	3
	Kroger	0	2	0	0	2
	Trader Joe's	0	2	0	0	2
	H-E-B	0	2	0	0	2
	Wegmans[a]	0	1	0	0	1
	Subtotal	1	33	0	2	36
	PL Total	**1**	**35**	**0**	**4**	**40**

[a]*Note:* Similarly, Whole Foods Market, Target, The Fresh Market each had one new dairy product.
Source: Authors' calculations based on GNPD, 2016. *Global new products database: How we do it*. Mintel International Group Ltd., London, England. [Online] Available from: ⟨http://www.gnpd.com/sinatra/gnpd/&lang = uk/info/id = how⟩ (accessed: March 12, 2017).

10.3 Organic product prices

When retailers launch PL organic lines, they often highlight their affordability and explicitly state their pricing goals. For example, Whole Foods Market claimed that its private brand 365 Everyday Value marked the first time that organic products have been priced at everyday low prices rather than premium prices (Whole Foods Market, 2002). When SuperValu launched Wild Harvest, the line was set to be priced approximately 15% lower than branded organic and natural products and was positioned to meet or beat competitors' private-label organic prices (SuperValu, 2008). Walmart targeted an even lower price point when launching Wild Oats, aiming to remove price premiums associated with organic products. It emphasized that customers can save 25% or more when comparing Wild Oats to NB organic products (Walmart, 2014). Appendix 2 provides additional information about retailers' expansion of their PL product portfolios through organic PL brands.

Organic PLs are often regarded as premium PLs compared with the traditional value-based PLs. Certified USDA organic PL products must hold the same standards as their NB counterparts. Nonetheless, they still have lower prices than NBs as they usually incur less research and development, image-building costs such as advertising outlays, and no slotting fees or slotting allowances—incentives paid by the food manufacturer to the retailer to encourage new products to be placed in stores (Hyman, Kopf, & Lee, 2010; Wilkie, Desrochers, & Gundlach, 2002). In addition, food retailers are able to leverage their robust sourcing and supply chain capabilities for ingredients at a lower cost, including turning to imports for procurement because they have potentially lower price points (Jaenicke, Dimitri, & Oberholtzer, 2011). Moreover, PLs are less prone to intrabrand competition. All these factors, combined, lead to higher profit margins for PLs than NBs (Ailawadi & Harlam, 2004; Hyman et al., 2010; Steiner, 2004; Tuck Communications, 2010). Supermarket profits also rise from carrying PL brands because they create loyalty to a particular supermarket chain rather than to a NB (Koschate-Fischer, Cramer, & Hoyer, 2014; Pivato, Misani, & Tencati, 2008; Seenivasan, Sudhir, & Talukdar, 2015).

At the retail level, the two top organic food sales categories, fresh fruit & vegetables and dairy products, support significant price premiums over conventional versions of these products. Using 2005 data on produce purchases for 18 fruits and 19 vegetables, Lin, Smith, and Huang (2008) found that the organic premium as a share of the corresponding conventional price was less than 30% for over two-thirds of the items examined. Using actual retail purchases from the 2006 Nielsen Homescan panel data, Smith, Huang, and Lin (2009) found that branded organic milk commanded higher premiums than PL organic milk. Organic price premiums for a half-gallon container of milk ranged from 60% to 68% for PL organic milk above the conventional counterpart and 89% to 109% for branded organic milk above the conventional counterpart. Jaenicke and Carlson (2015) estimated the organic price premiums for four diverse retail-level food products—canned soup, packaged coffee, milk, and bagged carrots, using the Nielsen

consumer panel data (2004−10). In each case, they found strong organic premiums of about 30% for bagged carrots, over 40% for canned soup, over 50% for coffee, and over 70% for milk. They also found that the interaction of organic and PL was consistently negative for each of the four product categories, reflecting the fact that PL organic products were priced below their branded counterparts. Another study, also by Carlson and Jaenicke (2016), used Nielsen Homescan data and estimated the organic premiums for 17 organic products, including fresh produce, processed products, dairy, and eggs. They found that most premiums fluctuated during the study period of 2004−10. Only three products demonstrated a steady decrease in their premiums (spinach, canned beans, and coffee), while only the yogurt premium steadily increased. Eggs and milk have the highest organic premiums in 2010 at 82% and 72%, respectively, which most likely reflect high production costs compared with plant-based products. Fresh fruit and vegetables, generally recognized as the largest part of the organic market, had the widest spread of premiums (ranging from 7% for spinach to 60% for salad mixes). Processed food premiums ranged from 22% for granola to 54% for canned beans.

While the premiums for organic products have been well documented in the literature, the potential role PL organic products may have had in lowering organic price premiums for processed food has received little attention. To examine this issue, Table 10.4 presents the prices for fruit & vegetable and dairy subcategory products by brand type and unit of measurement. Data used in this analysis were drawn from GNPD and reflect average prices (by product subcategory) that shoppers paid for new products introduced to the market in 2015. We also conducted mean-comparison tests (*t*-tests) on the price difference between categories: organic versus conventional; organic NB/organic PL; organic NB/conventional NB; organic PL/conventional PL.

Organic premiums for all categories and subcategories were found to be significantly different from zero ($P < 1\%$) except for milk (mL), flavored milk (mL), spreads (g), and fruit (g). [Some products in the same category are available in units of grams (g)—a mass unit, or milliliters (mL)—a volume unit. No conversion between the two measures was conducted as it must take into account the density of the ingredients, which was not available.] Organic premiums for dairy products sold in g and mL were 21% and 60%, respectively. Dairy drinks and substitutes had the highest premiums (100%) among all dairy products, followed by cheese (56%) and yogurt (25%). There were no significant differences between organic and conventional prices for milk, flavored milk, or spreads. The combined organic fruit & vegetable category (g) had a 27% price premium. However, when separately examined, the category organic fruit does not command a price premium, while organic prepackaged, frozen, and canned vegetables had a 38% premium over conventional counterparts. Except for milk (mL), flavored milk (mL), and fruit (g), PL organic products for all other categories have lower prices than their NB counterparts (at the 5% significance level). In addition, the percentage differences between organic NB and organic PL prices were much larger than those between organic and conventional within each brand type. For instance, NB organic dairy products (g and mL) were priced four and two times higher than PLs, respectively. Prices of NB

Table 10.4 Prices for new organic dairy and fruit & vegetable products

Category	Subcategory	Unit	Organic (P^O)	Organic		Conventional (P^C)	Conventional		Price difference (ΔP)			
				NB price (P^O_{NB})	PL price (P^O_{PL})		NB price (P^C_{NB})	PL price (P^C_{PL})	$P^O - P^C$	$P^O_{NB} - P^O_{PL}$	$P^O_{NB} - P^C_{NB}$	$P^O_{PL} - P^C_{PL}$
Dairy	Dairy	g	0.017 (136)	0.019 (113)	0.009 (23)	0.014 (799)	0.015 (560)	0.011 (242)	0.003***	0.009***	0.004***	− 0.0015
		mL	0.008 (98)	0.009 (80)	0.002 (18)	0.005 (194)	0.005 (143)	0.003 (51)	0.003***	0.007***	0.003**	− 0.001
	Milk	mL	0.006 (37)	0.007 (27)	0.002 (10)	0.005 (77)	0.006 (56)	0.008 (16)	0.0003	0.005*	0.0005	− 0.0004
	Flavored milk	mL	0.003 (4)	0.003 (3)	0.004 (1)	0.003 (25)	0.003 (20)	0.003 (5)	0.0003	− 0.001	0.00005	0.0008
	Dairy drinks and substitutes	mL	0.009 (53)	0.011 (46)	0.002 (7)	0.005 (86)	0.005 (66)	0.004 (21)	0.005***	0.009***	0.006***	− 0.002
	Yogurt	g	0.010 (69)	0.011 (58)	0.002 (13)	0.008 (275)	0.008 (252)	0.005 (26)	0.002***	0.002**	0.003	0.004***
	Cheese	g	0.029 (42)	0.031 (38)	0.013 (4)	0.018 (401)	0.023 (242)	0.012 (159)	0.010***	0.018***	0.008***	0.0007
	Spread	g	0.017 (18)	0.020 (14)	0.009 (4)	0.016 (66)	0.017 (42)	0.013 (24)	0.002	0.011**	0.002	− 0.004
Fruit & vegetables	Fruit & vegetables	g	0.011 (103)	0.014 (35)	0.010 (68)	0.009 (333)	0.010 (201)	0.007 (132)	0.003**	0.004**	0.004*	0.003***
	Fruit	g	0.012 (20)	0.011 (7)	0.012 (13)	0.010 (73)	0.012 (36)	0.009 (37)	0.001	− 0.0004	− 0.0009	0.003**
	Vegetables	g	0.011 (83)	0.015 (28)	0.010 (55)	0.008 (260)	0.010 (165)	0.006 (95)	0.003***	0.005***	0.004**	0.004***

Notes: Numbers of product are in parentheses. Milk includes white milk, drinking yogurt & liquid cultured milk, and sweetened condensed milk. Dairy drinks and substitutes include rice/nut/grain & seed based drinks, soy based drinks and creamers. Cheese products include fresh cheese & cream cheese, hard cheese & semihard cheese, processed cheese, soft cheese & semisoft cheese, curd & quark. Spread includes butter cream margarine & other blends.
Milk, flavored milk, and dairy drinks and substitutes products are measured in g. Yogurt, cheese, spread, fruit and vegetables measured reported in ml were omitted due to small numbers of new products.
Single, double, and triple asterisks (*) denote statistical significance at the 10%, 5%, and 1% levels, respectively.
Source: Authors' calculations based on GNPD, 2016. *Global new products database: How we do it*. Mintel International Group Ltd., London, England. [Online] Available from: ⟨http://www.gnpd.com/sinatra/gnpd/&lang = uk/info/id = how⟩ (accessed: March 12, 2017).

organic dairy drinks and substitutes were more than five times higher than their PL counterparts. Comparing organic and conventional prices within each brand type, NB organic prices were higher for the diary category (both in g and mL), dairy drinks and substitutes (mL), cheese (g), and vegetables (g). For other subcategories, price differences were not statistically significant. PL organic prices were higher than PL conventional counterparts only for the yogurt (g), fruit (g), and vegetables (g) subcategories. We defined the organic price premium as the difference between the organic price and the nonorganic price, assuming all other factors, such as retail channel, brand, and promotional activities, are equal. In addition, the price data are prices for newly introduced products, for which promotions are highly likely. Due to the limitation of our data, we are not able to control for these product characteristics. This could explain the discrepancies between our results and previous studies. For instance, our tests do not support an organic price premium for milk, while previous studies documented a considerably high organic price premium (Carlson & Jaenicke, 2016).

10.4 Current trends and future concerns

This chapter demonstrates the important role of PL products in new organic product introductions. Although NB organic products dominated new product introductions in almost all food categories in 2015, it is likely that PL products will continue to gain market share—especially in top categories for product innovation such as snacks, sauces, and seasonings.

Moving forward, product innovation and consumer access to organic products is likely to be affected by these and other food supply-chain actors. Innovation in organic product retailing is also stemming from traditional grocers. Kroger opened a new store format called Main & Vine in Washington in 2016, which focuses on fresh produce, food preparation advice, and high-quality prepared foods. This format draws upon the company's experience in the natural and organic retail space (Tu, 2016). Publix is planning to relaunch its organic grocery store concept, Greenwise, in late 2018. And, in a similar spirit, Winn Dixie has begun remodeling many of its stores using a more contemporary, upscale, layout, and esthetic, which will focus on organic options and prepared foods. The recent entrance of German discount food retailer Lidl and growth of Aldi in the US marketplace are similarly leading to an increase in the availability of organic foods at lower prices. All of these retailers have a strong PL portfolio that includes a notable number of organic products. These and initiatives by other US retailers (e.g., Target, Wegmans) will certainly continue to increase the availability of organic foods and are likely to particularly augment demand for PL organic products.

Other important changes underway in the marketing channels through which consumers opt to purchase foods also have implications for the availability of organic products. Current trends in "channel shifting" have found consumers of organic foods are increasingly purchasing these products in traditional grocery

stores. The increasing market presence of the conventional food retailers, including Kroger and Walmart, and online grocery ordering, has hampered the growth of specialty retailers. Whole Foods, Sprouts and Fresh Market, the three largest US publicly traded natural and organic supermarkets by market capitalization, saw their stock prices plummet in 2015 (Duff & Phelps, 2016). In addition, the purchase of Whole Foods by Amazon in August 2017 is expected to have significant impacts in the organic food market. In an attempt to shed its "Whole Paycheck" image (high prices) immediately following the ownership transfer, prices of some Whole Foods organic products were lowered by up to 43% (Kaplan & Boyle, 2017). Moreover, this takeover is expected to have a significant impact on the availability of organic products. Whole Foods brand products are now available for purchase through Amazon.com and Amazon's Prime platforms such as Prime Now—the same-day delivery service available in some markets (Amazon, 2017; Wattles, 2017).

While the impact of these trends on organic PL innovation is still uncertain, the growing importance of PL organic products does present a conundrum. On the one hand, the organic sector is characterized by many small manufacturers. For small firms, the production of organic PLs provide lower (entrance) costs, in particular by decreasing transaction and marketing costs (Jonas & Roosen, 2005). On the other hand, manufacturers of NB products can temper the challenge posed by PL goods as many large manufacturers are also suppliers of PLs. While PL products are increasing the availability and affordability of organic products, counterintuitively their success may decrease consumer access to a broader organic market. Competition from store PL products might be forcing out smaller organic brands. This may occur for at least two reasons. First, grocers may want to favor sales of their own PL brands. Second, organic products manufactured by smaller firms may be relatively more expensive due to their lack of economies of scale in production, distribution, and marketing. This outcome would have important, longer term implications for the US organic innovation. Overall, organic PL offerings are expected to flourish and are expected to continue to boost organic sales. However, while the number of organic products would likely continue to significantly increase, growth among smaller branded products is also likely to continue to increase but at a slower pace.

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Appendices

Appendix 1 USDA organic labeling standards

To help US consumers better understand the organic content of the food they purchase, the NOP has developed labeling standards, along with production and processing requirements for products to be considered organic. Labeling requirements apply to raw, fresh, and processed products that contain organic agricultural ingredients. For packaged products, organic labeling standards cover the wording allowed on both the principal display panel and the information panel. Four distinct labeling categories are used to classify organic food products by the percentage of their certified organic content (excluding salt and water):

<table>
<tr><th rowspan="2">Category</th><th rowspan="2">Certified organic ingredient content (%)</th><th colspan="2">Product label</th></tr>
<tr><th>Principal display panel</th><th>Information panel</th></tr>
<tr><td>100% Organic</td><td>100</td><td rowspan="3">May include USDA organic seal and/or organic claim
  </td><td rowspan="3">Must list organic ingredients (e.g., organic whey) or indicate via an asterisk or other mark. Label must state the name of the certifying agent</td></tr>
<tr><td>Organic</td><td>95–99.9</td></tr>
<tr><td>Made with organic__</td><td>70–94.9</td></tr>
<tr><td>Organic ingredients</td><td><70</td><td>Must not include USDA organic seal anywhere</td><td>May only list certified organic ingredients as organic in the ingredient list and the percentage of organic ingredients</td></tr>
</table>

Only products in the top two tiers, those containing a minimum of 95% organic content, can be labeled "organic" and/or bear the USDA Organic Seal. The remaining ingredients may be nonorganic agricultural products that are not commercially available in an organic form and/or nonagricultural products that are on the *National List of Allowed and Prohibited Substances* (the National List). Products that contain at least 70% certified organic ingredients may specify that they are "Made with Organic __ (insert up to three ingredients or ingredient categories)." This category of products may not include the USDA organic seal on the product or the word "organic" on the principal display panel. General statements like, "Made with organic ingredients" are also not allowed. Organic products falling within these first three categories must also state the name of their organic certifying agent on the information panel. Products that contain less than 70% organic ingredients may only list the certified organic ingredients as organic in the ingredient list and can note the percentage of organic ingredients.

Source: Federal Regulations Subpart D on Labels, Labeling and Market Information for the National Organic Program, 7 C.F.R. §205 2017. Additional information about US organic labeling requirements is available at www.ams.usda.gov/NOPOrganicLabeling.

Appendix 2 Retailers expand the availability of organic products by introducing private labels

Major retailers, including mass merchandisers such as Walmart and Target, are expanding or adding organic private label brands, making these products even more accessible to consumers. Increased availability of organic foods is predicted to continue to fuel organic food sales and consumption (Pew Research Center, 2016). In contrast to standard private label food products which can be perceived as inferior (Barsky, Bergen, Dutta, & Levy, 2007), private label organic product lines are often marketed as premium (quality or good-for-you/better-for-you) but affordable brands. These brands typically include products from the most commonly purchased food and grocery categories such as produce, dairy, bread, and breakfast cereals. Major US retailer organic private brand releases are highlighted in chronological order below.

In 1977, nearly three decades before "Organic" became a mainstream movement, Trader Joe's introduced its first private label organic item—Organic Unfiltered Apple Juice. Its organic offerings now include milk, yogurt, apples, lettuce, cereal, meat, almonds, cashews, extra virgin olive oil, beans, frozen pizza, chocolate, bread, cheese, pasta, and wine. Trader Joe's sells approximately four times more organic products than a typical grocery store (Trader Joe's, 2017).

In 2000 Topco Associates LLC, the largest food buying cooperative in the United States, introduced its natural and organic products, Full Circle. This brand was recently renamed Full Circle Market and now offers products in categories of produce, meat & seafood, dairy, grocery, beverages, frozen foods, and home care. Topco is a vertically integrated organization which produces and distributes foods to more than 50 members, including Wegman's and Meijer (Howard, 2016).

In 2002, Whole Foods launched its 365 Organic Everyday Value brand, the first national all-organic product line in the United States. In June 2003, Whole Foods Market became America's first national "Certified Organic" grocer. Among all private label natural and organic products, this brand has led new product introduction trends during the period of 2007–11 (Mintel, 2011). In total, the company offers more than 2,600 natural and organic products under its store brands: Whole Foods Market, 365 Everyday Value, and Whole Catch (MarketLine, 2016). In August 2017, the e-commerce giant Amazon acquired Whole Foods Market for $13.7 billion (Kaplan & Boyle, 2017).

In 2003, Wegmans, a chain based in New York which has stores in the mid-Atlantic and New England regions, introduced its first PL organic products under the brand name Wegmans Organic. Now more than 3,000 items are sold under the brand.

In 2004, Costco introduced its first organic item, milk, under its flagship private label line, Kirkland Signature. Now, Kirkland Signature organic products include beef, coconut oil, egg, granola cereal (by Nature's Path), honey, lemonade, nuts, quinoa, salsa, seaweed, soy milk, sugar, and pet food, among others. In order to maintain access to reliable supplies to meet a growing demand for organic products, Costco has established several programs with its suppliers. For instance, thanks to

the Kirkland Signature organic ground beef program, Costco is the largest seller of organic ground beef in the United States (Volchok, 2012). Costco has supported several egg producers in converting conventional operations to organic through its regional organic egg programs (Talevich, 2011). Currently, 14% of Costco's produce, 9% of its meat items, and 20% of all its other grocery items are organic (Store Brands, 2016). Costco's annual sales of just organic products reached about $4 billion in 2014, eclipsing Whole Foods for the title of the biggest organic grocer in the United States (Kowitt, 2015).

In 2005, Safeway launched the O Organics line, which now contains over 300 products across various categories, including produce, meat, eggs, dairy, coffee, snacks, and baby food. The brand has also been carried by other retailers such as Albertsons and some regional grocers by joining the Better Living Brands Alliance formed by Safeway and sold overseas (Africa, Asia, and South America) (Private Label Manufacturers Association, 2009; Xu, 2010), which is an unusual approach for private-label goods. O Organics is among the most successful and widely known PL food brands and has strengthened Safeway's image as a leading player in the natural and organic food market (Winter, 2010).

In 2007, Meijer introduced the Meijer Organics line. In 2009, this Midwest grocer unveiled another health-focused brand, Meijer Naturals, which serves to complement the Organics line and allows Meijer to offer a wider variety of healthier alternative foods. In an effort to minimize confusion, Meijer combined the two in-house brands under the new brand True Goodness in September 2015 (Meijer, 2015).

In 2008, SuperValu, the fifth-largest food retailing company in the United States, launched a natural and organic foods brand, Wild Harvest. The initial debut featured approximately 150 items ranging from mealtime staples like milk, eggs, meat, and fresh produce to pastas and sauces, cookies, crackers, cereal, and juice. New products were available at its 10 grocery store chains: Acme, Albertsons, Bigg's, Cub Foods, Farm Fresh, Hornbacher's, Jewel-Osco, Lucky, Shaw's/Star Market, Shop 'n Save, and Shoppers Food & Pharmacy (SuperValu, 2008). In early 2015, Supervalu "refreshed" the Wild Harvest brand, with a new logo, slogan, and a "free-from" product label, as well as plans for an additional 200 new items to be added to the brand's 300 products (Progressive Grocer, 2015).

In September 2012 Kroger, the second-largest general retailer (behind Walmart; Groner, 2016), launched its Simple Truth lines of natural and organic foods. Simple Truth and Simple Truth Organic offer over 800 unique items in over 90 categories. The lines have been experiencing fast growth and exceeded $1.5 billion in annual sales in 2015. Now it is the nation's largest natural and organic brand (Kowitt, 2015).

In June 2013, Target introduced its organic and natural food line called Simply Balanced, which features over 350 products in snacks beverages, pasta, frozen fruit and vegetables, frozen seafood, dairy, and cereal categories. All products in this line are made without artificial flavors, colors, and preservatives, and many are sourced using fair trading practices from producers certified to social or environmental certifications (Target, 2017).

In January 2014, Aldi, recognized as the nation's low-price grocery leader (Market Force, 2016), launched a new brand called SimplyNature that offers products with only all-natural or organic ingredients. SimplyNature products include cereal, honey, fruit bars, pasta sauce, snacks, and apple juice. The company hopes this will improve its image of offering fresh, natural, quality products. In early 2016, Aldi announced that it was expanding its organic food brands, removing some artificial ingredients from products, and adding more gluten-free items. Additionally, it plans to remove multiple pesticides from all of its products. These changes will likely help Aldi continue to establish itself as a chain that offers incredible value and makes food and drink more affordable for everyone (Mintel, 2017).

In March 2014, the San Antonio-based grocery chain H-E-B created an organic line, H-E-B Organics. From farm fresh produce to organically raised meat, breakfast foods to salty snacks, there are about 318 products available under H-E-B Organics. The retailer also plans to add hundreds of more products to the line in the near future.

In April 2014, Walmart partnered with Wild Oats Markets to introduced nearly 100 organic products into their US stores (Walmart, 2014). However, two years later, the retail giant announced in April 2016 that it is phasing out Wild Oats products, as the line fell short of the retailer's expectations (Nassauer, 2016). In 2016, Walmart introduced 52 new organic products under the store's existing Great Value brand, with sauces & seasonings (29), dairy products (8), and fruit & vegetables (5) as the top three categories (GNPD, 2016).