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PAPER

Issues Paper on the Philippine Milk Products Industry

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BACKGROUND

This issues paper looks into the milk manufacturing industry of the Philippines using the Structure-Conduct-Performance (SCP) paradigm. The study provides a detailed description of the industry covering the variety of products available in the market, the manufacturers and suppliers, and the production value chains. It attempts to ascertain whether the structure of the milk manufacturing industry induces the manufacturers and suppliers to behave uncompetitively and identifies potentially anticompetitive laws and regulations that affect the industry structure and firms' conduct. Recommendations on possible measures to address competition issues are also provided.

Given the limited understanding as to the reason behind the milk industry's high concentration and large margins, this issues paper helps to deepen stakeholders' understanding of the industry and identify factors that potentially limit market competition at each milk product segment.

Objectives

This issues paper aims to provide a detailed description of the milk industry focusing on selected Philippine Standard Industrial Classification (PSIC) codes. For each of the identified sectors, the major industry players and their corresponding profile are discussed. Given the available data, this issues paper assesses their production and distribution channels for possible competition issues. In addition, the consumption patterns of milk products of Filipinos are presented to ascertain trends in demand and supply.

This study also identifies potentially anti-competitive laws and regulations that affect firm entry and hinder business expansion. Lastly, this issues paper provides policy recommendations to the Philippine Competition Commission (PCC) on how to address anti-competitive conditions and practices identified.

Scope and limitations of the study

The study encompasses all major milk products, including production, importation, distribution and retail processes. Subject to available data, the milk products covered are the following:

1. Processing of fresh milk and cream (PSIC 1051)
2. Manufacture of non-infant powdered milk, condensed milk and evaporated milk (PSIC 1052)
3. Manufacture of infant's powdered milk (PSIC 1053)
4. Manufacture of ice cream and sherbet, etc. (PSIC 1055)
5. Manufacture of butter, cheese and curd (PSIC 1054)
6. Manufacture of milk-based infants' and dietetic foods (PSIC 1056).

The study covers the entire geographic scope of the industry in the Philippines. Information on distribution of manufacturers and sales for each product market are, to the extent possible, at the provincial level.

The study is limited by data available at the establishment level for each of the milk products. The Philippine Statistics Authority (PSA) classifies milk manufacturers according to their main product. Thus, secondary data from the PSA would not allow the analysis of the milk value chain of different products manufactured/sold by the same establishment.

While critical to the value chain, this study does not cover the production of raw milk from cattle, sheep and goats (PSIC 0412). Because of such limitation, the value chain for manufacture of milk products focuses on the dairy plant (See Figure 3). Milk substitutes like non-dairy milk and cheese are also excluded.

To characterize the dairy marketing system, this scoping study is guided by Jabbar, Tambi and Mullins (1997) methodology based on the SCP approach which posits that the industry structure influences the conduct of its participants which in turn influence the industry's performance. It is important to note that certain fundamental conditions are necessary for the SCP approach to work, including characteristics which are exogenous to the market, for example infrastructure, legal and policy environment, and available technology.

Industry structure is described by "those characteristics of the organization of the market that seem to exercise strategic influence on the nature of competition and pricing within the market" (Bain, 1968). Some of the indicators that describe the structure of the milk industry in the Philippines include: (a) the number and size distribution of firms in relation to the size of the market; (b) the presence or absence of barriers to entry facing new firms; (c) physical or subjective; product differentiation; (d) degrees of vertical integration; and (e) ratio of fixed to total costs. Conduct refers to behavior of the firm. Examples of conduct are pricing and selling policies and tactics, overt or tacit inter-firm cooperation, or rivalry, and product or market related research and development activities. Performance is commonly measured in terms of productive and allocative efficiency.

Following Jabbar, Tambi and Mullins (1997), the marketing system for each of the segments of milk products are described by functional parameters and performance indicators. Functional parameters describe how the system operates. Examples of functional parameters are dairy products marketed, marketing agents, marketing outlets, prices at each marketing node, modes of transporting marketed products, etc. Functional parameters combine characteristics related to market structure and conduct. Performance indicators on the other hand assess the performance of the system. These include the percentage of total dairy products marketed¹, the ratio of standardized to non-standardized products marketed ; the ratio of marketing to total costs; and the ratio of farm gate to retail price.

¹ A dairy product is considered standardized when it meets a legally accepted minimum standard or quality (e.g. pasteurized, homogenized milk with 4% butter fat content) as opposed to a non-standardized dairy product which does not conform to any such standards e.g. raw milk.

To identify potentially anti-competitive laws and regulations that affect firm entry and hinder business expansion, this paper adopts the checklist proposed by the Competition and Markets Authority in 2015 which provides a framework for assessing the competition impact of policies. **Table 1** presents the competition checklist questions. The SCP analysis of the business environment coupled with key informant interviews of industry players are the bases for the responses to the questions in Table 1.

Table 1. Competition checklist

<p><i>Does the policy impact on the number/range of market players...</i></p> <ul style="list-style-type: none"> • <i>By awarding exclusive rights to supply?</i> • <i>Purchasing, franchising or licensing from a single supplier or a restricted group of market players?</i> • <i>Introducing a licensing scheme that limits on the number of market players?</i> • <i>Introducing a market scheme that introduces quality?</i>
<p><i>Does the policy indirectly limit the number or range of milk processors by...</i></p> <ul style="list-style-type: none"> • <i>Significantly raising the cost of current milk processors, causing them to leave the market?</i> • <i>Significantly raising the cost of new market players relative to existing market players?</i>
<p><i>Does the policy limit the market player's ability to compete by...</i></p> <ul style="list-style-type: none"> • <i>Controlling or substantially influencing the price a market player may charge?</i> • <i>Controlling or substantially influencing the characteristics of the products supplied?</i> • <i>Limiting the sales channels a market player can use?</i> • <i>Introducing restrictions on production processes or how market players are governed?</i> • <i>Substantially restricting the ability of the market players to advertise their products?</i>
<p><i>Does the policy limit the market players' incentives to compete by incentivizing coordination?</i></p>
<p><i>Does the policy limit the choices and information available to consumers by...</i></p> <ul style="list-style-type: none"> • <i>Limiting the ability of consumers to decide from whom to purchase?</i> • <i>Changing the information available to consumers but not improving their ability to make informed decisions?</i> • <i>Increasing the cost of changing products?</i>

INDUSTRY STRUCTURE AND LOCAL PROFILE

This section describes the players of the milk manufacturing industry. It presents the value chain/distribution channel model for each of the milk segments identified in the PSIC. The characteristics of the Philippine companies across the value chain are presented to further understand the milk manufacturing industry.

Description of Dairy Products and Industry

It is important to describe products under the dairy or milk industry. Table 2 presents the classification of milk as utilized by international bodies and statistics authorities when they look at milk as a commodity or as an industry. The types of milk products available in the market vary in terms of fat content and the form at which they are traded.

The Food and Agricultural Organization (FAO) describes the milk products as follows:

- a. **Liquid milk** - Processed liquid milk includes pasteurized milk, skimmed liquid milk, standardized milk, reconstituted milk, ultra-high temperature (UHT) milk and fortified milk. According to FAO, liquid milk is the most consumed, processed, and marketed dairy product.
- b. **Condensed milk** - This can be sweetened or unsweetened. Condensed milk is obtained from the partial removal of water from whole or skimmed milk.
- c. **Evaporated milk** - This result from the partial removal of water from whole or skimmed milk. Processing includes heat-treating to make the milk bacteriologically safe and stable.
- d. **Milk powder** - This is obtained from the dehydration of milk and is usually in the form of powder or granules.
- e. **Cream** - This is the part of milk that is comparatively rich in milk fat. It is extracted by skimming or centrifuging the milk. Cream products include recombined cream, reconstituted cream, prepared creams, pre-packaged liquid cream, whipping cream, cream packed under pressure, whipped cream, fermented cream and acidified cream.
- f. **Cheese** - This is produced through the coagulation of milk protein, which is separated from the milk's whey. Cheese can be soft, hard, semi-hard, hard ripened or unripened.
- g. **Butter** - This is a fatty milk product produced by churning milk or cream.

The PSA classifies establishments related to the manufacture of milk according to the following 4-digit code: Processing of fresh milk and cream; Manufacture of powdered milk and condensed or evaporated milk; Manufacture of yoghurt; Manufacture of whey and the Manufacture of butter, cheese and curd.

In **Table 2**, note that with the exception of yoghurt and whey, there is no one-to-one matching of milk manufacturers to milk products. Given this complication, the reader should note whether the analysis is looking at milk as a product or milk as an industry. Characteristics of the product itself including prices and volume of trade looks at milk as a product while characteristics of the manufacturer looks at milk as an industry.

Table 2. Milk as a product and as an industry

Milk as a product		Milk as an industry	
HS Code	Description	PSIC code	Description
40110	Milk and cream of $\leq 1\%$ fat, not concentrated, not containing added sugar or other sweetening matter	1051	Processing of fresh milk and cream
40120	Milk and cream of $> 1\%$ but $\leq 6\%$ fat, not concentrated, not containing added sugar or other sweetening matter		
40130	Milk and cream of $> 6\%$ fat, not concentrated, not containing added sugar or other sweetening matter		
40210	Milk and cream in solid forms of $\leq 1.5\%$ fat	1052	Manufacture of powdered milk and condensed or evaporated milk
40221	Milk and cream in solid forms of $> 1.5\%$ fat, unsweetened		
40229	Milk and cream in solid forms of $> 1.5\%$ fat, sweetened		
40291	Concentrated milk and cream, unsweetened (excl. other than in powder, granules or other solid forms)		
40299	Sweetened milk and cream (excl. in solid form)		
40310	Yogurt	1057	Manufacture of yoghurt
40390	Buttermilk, curdled milk and cream, etc. (excl. yogurt)	1051	Processing of fresh milk and cream
40410	Whey & modified whey, concentrated or not, or containing added sugar or other sweetening matter	1058	Manufacture of whey
40490	Products consisting of natural milk constituent	1054	Manufacture of butter, cheese and curd
40500	Butter and other fats and oils derived from milk		
40610	Fresh (unripened or uncured) cheese, (including whey cheese), not fermented, and curd		
40620	Grated or powdered cheese		
40630	Processed cheese, not grated or powdered		
40640	Blue-veined cheese		
40690	Cheese, not elsewhere classified		

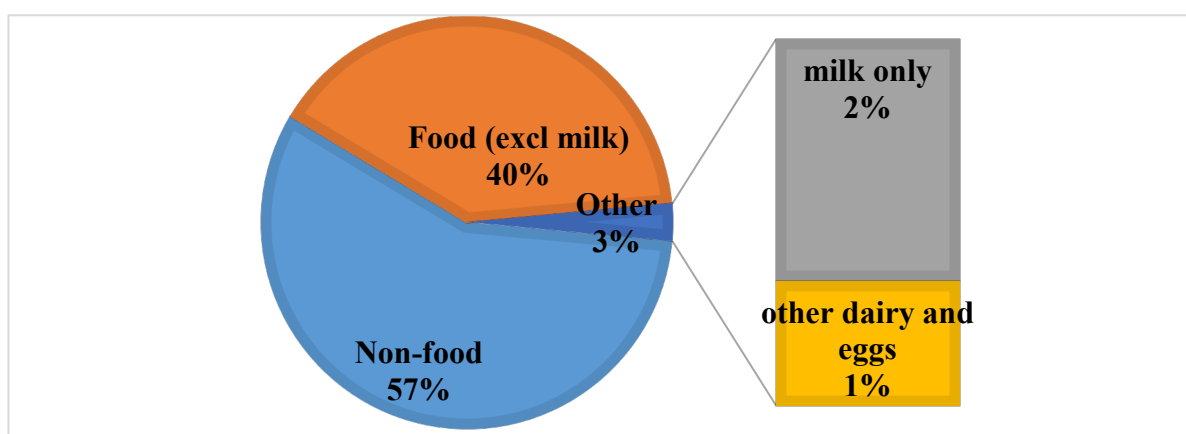
Source: WITS and PSIC

Consumption

As a food product, milk is vital in children’s nutrition. According to FAO, a daily glass of milk provides a five-year-old child with 21% of protein requirements, 8% of calories, and various micro-nutrients such as calcium, magnesium, riboflavin, vitamin B12 and B5, and selenium. In fact, fresh milk and processed milk are among the basic necessities identified and monitored by the Department of Trade and Industry. Despite its nutritional value, milk and other dairy products are not among the top 10 food products consumed by Filipino households (Gavilan, 2016). Powdered milk (19th) is the only dairy product in the top 20 most common food items consumed by Filipino households.

Data from the Family Income and Expenditure Survey 2015 shows that on average, dairy products comprise about 3 percent of total household expenditure with milk products contributing about 2 percent (**Figure 1**).

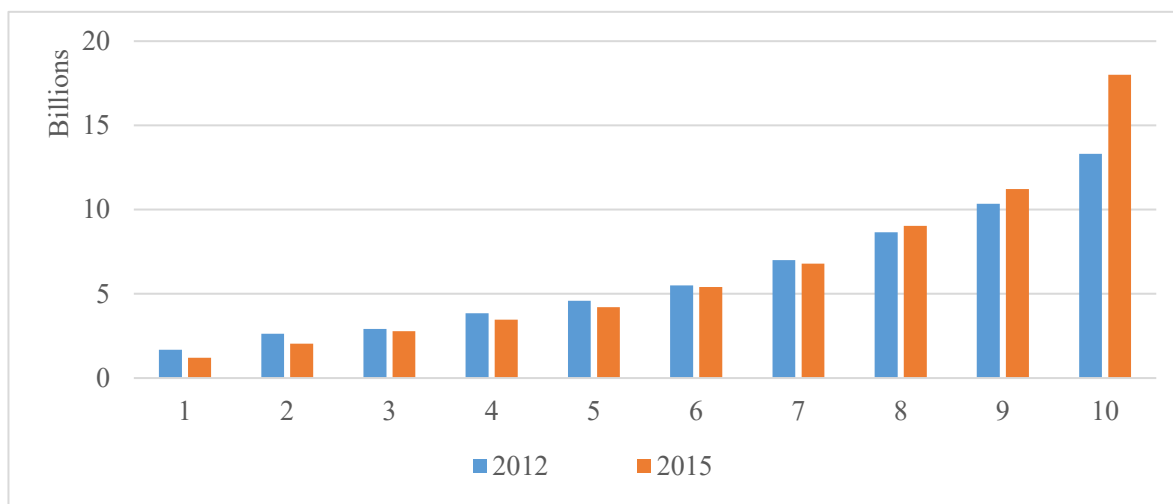
Figure 1. Household expenditure by type



Source: 2015 Family and Income Expenditure Survey

Grouping households by income decile and calculating the total milk expenditure by decile, **Figure 2** shows that milk consumption is increasing with income and over time. The increase in milk consumption from 2012 to 2015 is mainly driven by the increase in consumption of milk by the top 3 income deciles. With an expanding middle class and a growing population, the Philippines is expected to rapidly expand its demand for milk and milk products. The country’s annual dairy requirement in 2017 is at 2.4 metric tons. BMI Philippines also reported that per capita dairy consumption levels across Asia have been rising in recent years. Improvements in infrastructure like expanding cold chain capacity, increasing number of supermarkets, and a blossoming food processing industry may reinforce the long-term trend of strong growth in dairy consumption.

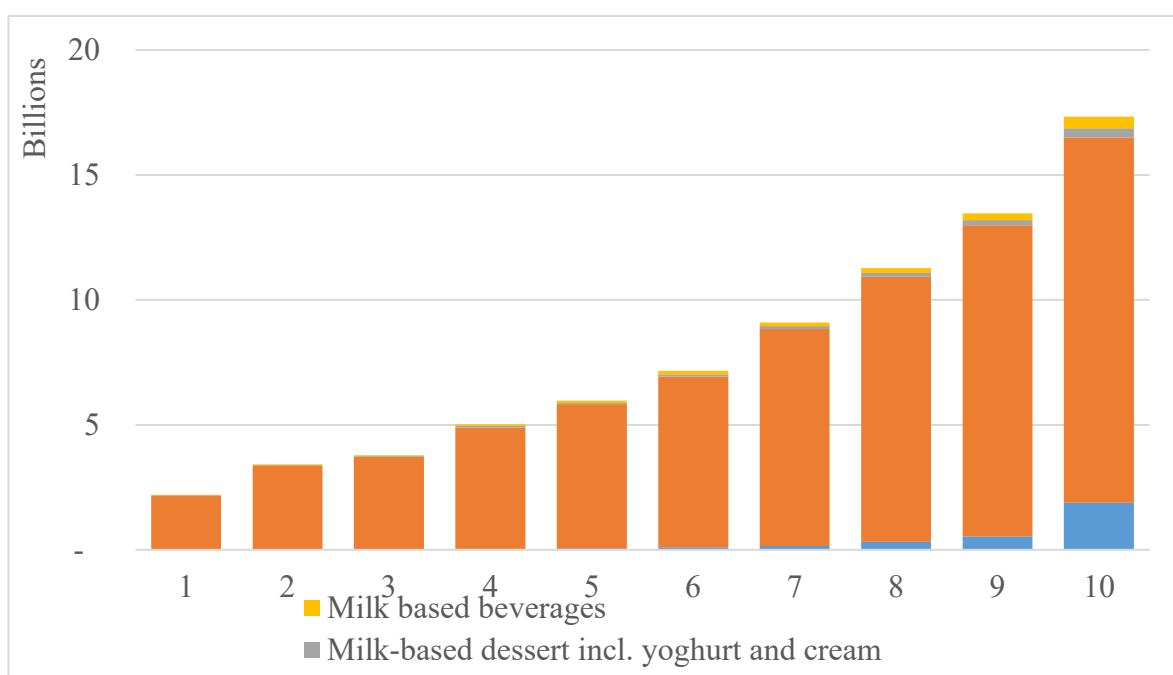
Figure 2. Milk expenditure (real) by income decile, 2012 and 2015



Source: 2015 Family and Income Expenditure Survey

Filipino households' most commonly consumed milk products are condensed milk, evaporated milk or (non-infant) powdered milk (**Figure 3**). These products correspond to PSIC 1052 which is the manufacture of condensed, evaporated and powdered milk. This industry provides almost all the source of milk for the entire country. It is interesting to note that the top 30% of households also consume raw milk, milk-based beverages and milk-based desserts including yoghurt and ice cream. The expenditure for these types of products are very minimal for the other income groups.

Figure 3. Breakdown of total milk expenditure by industry

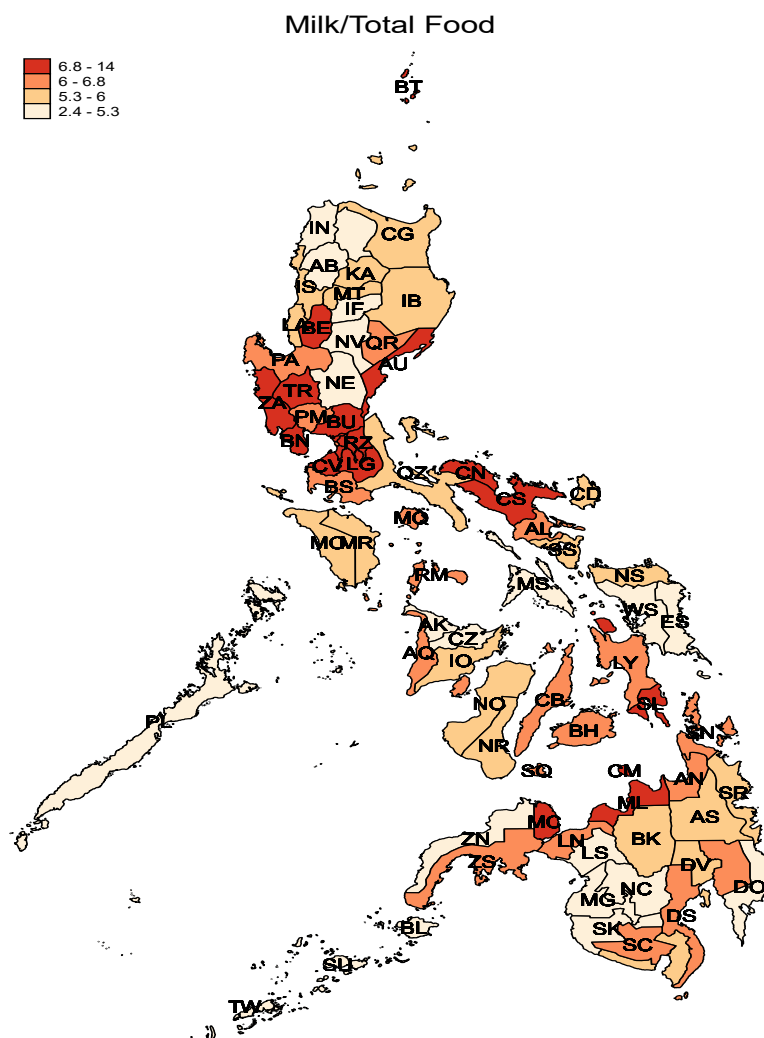


Source: 2015 Family and Income Expenditure Survey

The distribution of milk consumption also varies among provinces (**Figure 4**). The provinces with the highest average share of milk expenditure (as a share of total food expenditure, in percent) are Batanes (14), Laguna (7.8), Zambales (7.8), Benguet (7.7), Camiguin (7.7), Tarlac (7.6), Cavite (7.4), Manila-District 3 (7.4), Bataan (7.3), Camarines Norte (7.3), Manila-District 4 (7.3), Misamis Oriental (7.3), Bulacan (7.2), Misamis Occidental (7.2), and Rizal (7.2).

On the other hand the provinces with the least milk expenditure as a share of total food expenditure are Palawan (5.1), North Cotabato (5.0), Masbate (4.9), Sultan Kudarat (4.9), Zamboanga del Norte (4.9), Tawi-Tawi (4.8), Aklan (4.7), Apayao (4.7), Basilan (4.4), Ifugao (4.4), Samar (4.4), Eastern Samar (4.2), Lanao del Sur (4.2), Abra (3.2) Maguindanao (2.8), and Sulu (2.4).

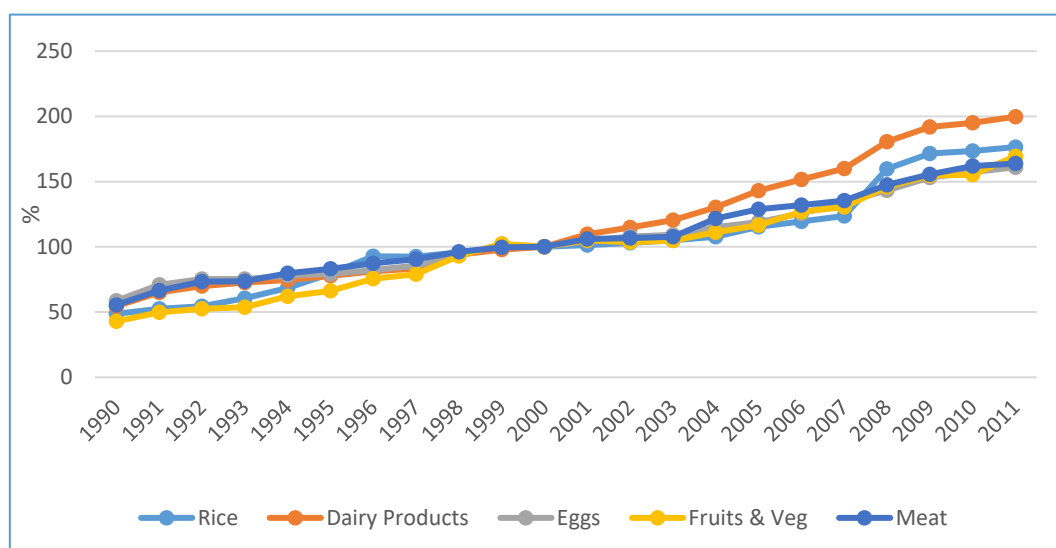
Figure 4. Breakdown of total milk expenditure by industry



Source: 2015 Family and Income Expenditure Survey

Price data from 1990-2011² seem to indicate that among key food items like rice, meat, fruits and vegetables, and eggs, milk has exhibited the biggest increase. Compared to prices in 2000, milk products in 2011 have almost doubled. Other food products have risen but at a slower pace (**Figure 5**).

Figure 5. CPI of key food groups, 1990-2011



Source: CountryStat, NSO

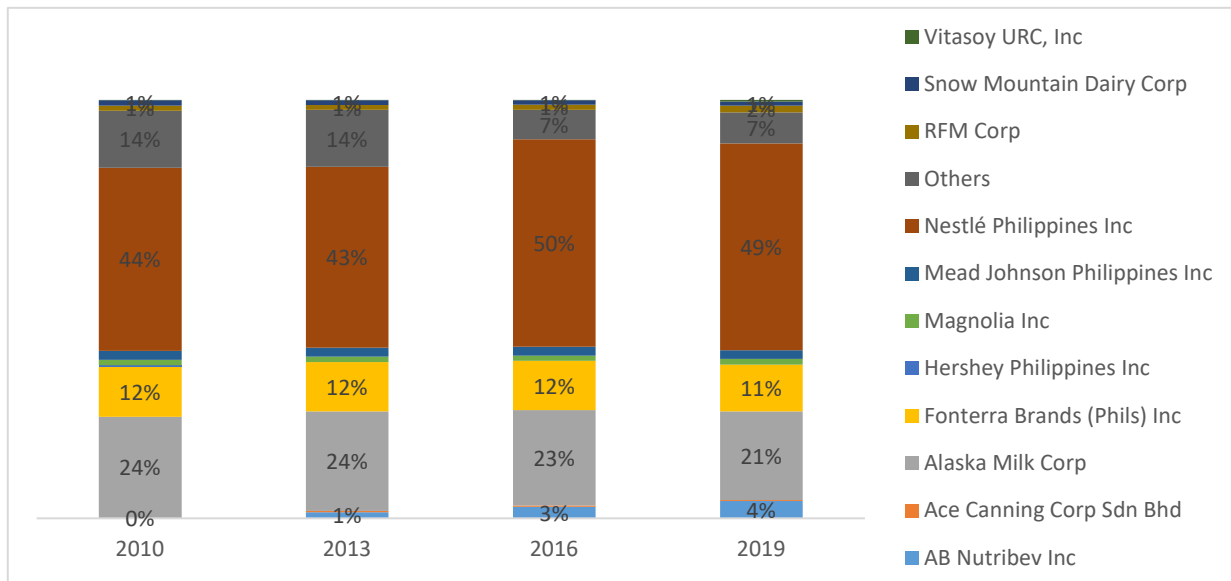
Average farmgate price of milk surged from as low as Php 13.70 per liter in 2000 to as high as Php 32.03 in 2015. Latest data from the PSA as of March 2018 also shows that average farmgate price of milk remained high at Php 34.75.

The *Euromonitor* database was used to obtain an idea on the brands and companies that are often patronized by consumers (as reflected by their market share). The database contains aggregated market information on fresh/pasteurized milk, long-life/UHT milk, goat milk, flavored milk drinks, non-dairy milk alternatives, powder milk and flavored powder milk drinks. While this database may not exactly meet the requirements for this study as it does not distinguish between the various milk industries as defined by the PSIC, it is the only available resource on the milk manufacturing market.

For 2019, close to half of the market for drinking milk products are captured by Nestlé Philippines (henceforth Nestlé), followed by Alaska Milk Corporation (henceforth Alaska Corp) at 21% and Fonterra Brands Phils (henceforth Fonterra) at 12%. Since 2010, Nestlé, Alaska Corp and Fonterra have been the companies with the three largest market shares (**Figure 6**). What is notable is the entry of AB Nutribev, Inc.³, which had the fourth largest market share at 4%.

² After 2011, the consumer price index for milk has been combined with eggs and other dairy products.
³ AB Nutribev is the manufacturer of Vitamilk.

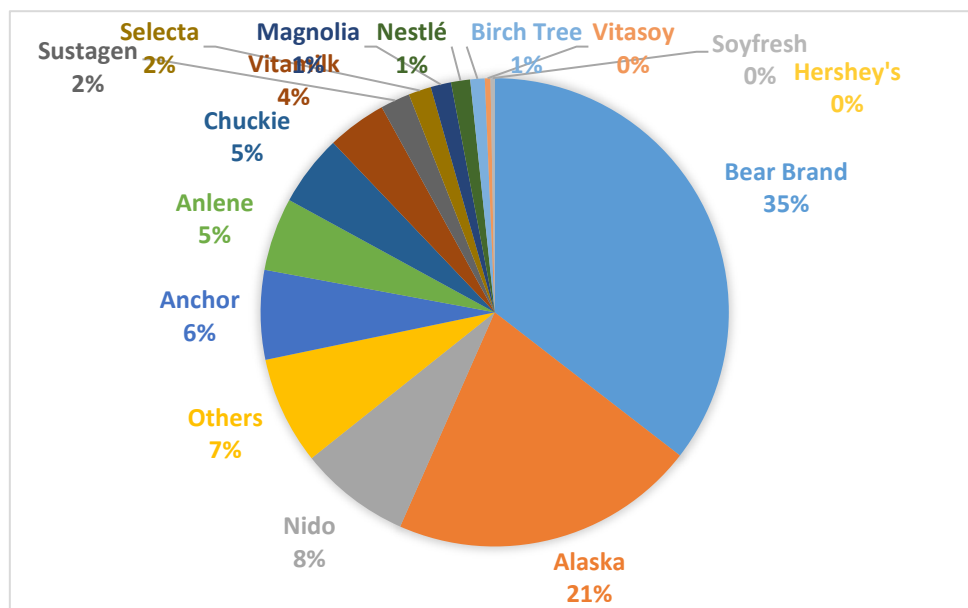
Figure 6. Company Shares of Drinking Milk Products



Source: Euromonitor

For 2019, the brands leading in terms of market share in drinking milk category are Bear Brand (Nestlé)⁴ at 40%, Alaska (Alaska Corp) at 21%, Nido (Nestlé) at 8%, and Anchor (Fonterra) at 6%. Other companies in total make up 7% of the market share. Selecta (RFM Corp) and Magnolia (Magnolia Inc) have only 1 percent market share each in this category (**Figure 7**).

Figure 7. Top brands in the Drinking Milk Category, 2019

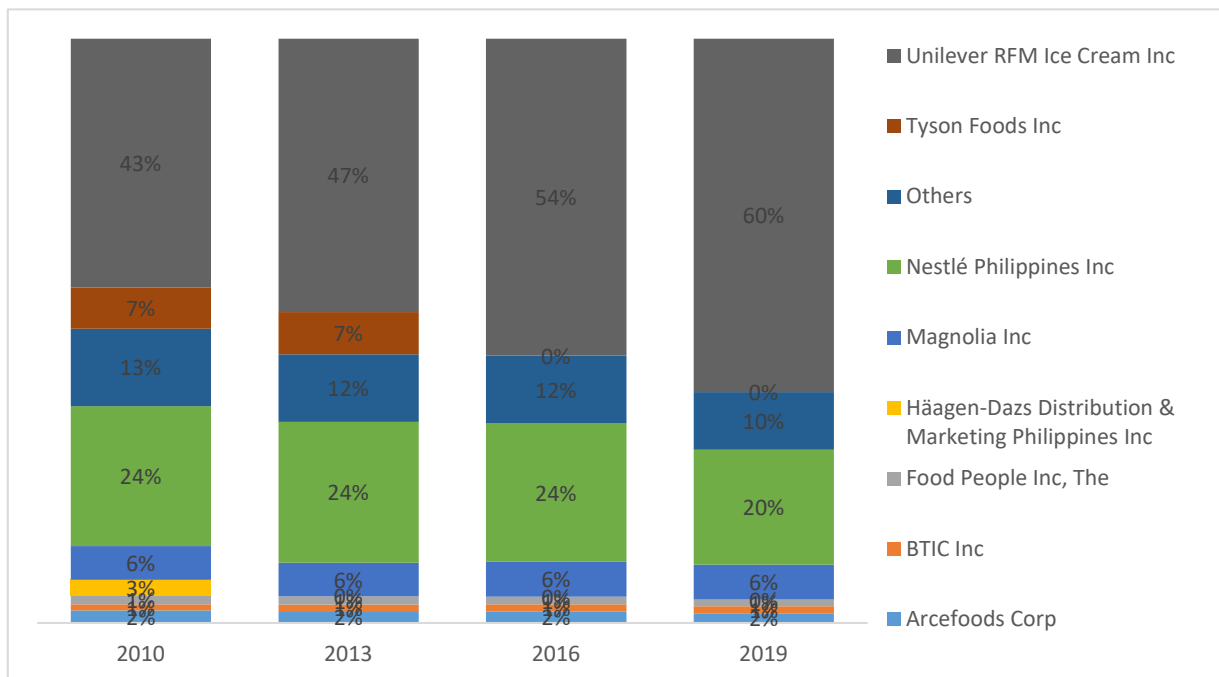


Source: Euromonitor

⁴ Local Brand Owner or manufacturer in parentheses.

For ice cream and frozen desserts, Unilever RFM Ice Cream Inc. (henceforth Unilever RFM) has had the largest market share from 43% in 2010 to 60% in 2019. Nestlé Philippines, Inc. is a distant second at 24% in 2010 (20% in 2019) while Magnolia, Inc. follows closely as third (**Figure 8**). The brands contributing to the large market share of Unilever RFM are Cornetto, Magnum and Selecta. Nestlé has three brands: Drumstick, Lait, Nestlé and Pinipig. Magnolia, Inc. is the manufacturer of products with the Magnolia and Magnolia Popsies brand (See **Appendix 3**)

Figure 8. Company shares of ice cream and frozen desserts



Source: Euromonitor

Production

The Philippines produces less than one percent of its total annual dairy requirement and imports the rest. Based from the National Dairy Authority (NDA), local milk production increased to 22.76 million liters in 2017 from 21.16 million liters the previous year (**Table 3**). Despite the said growth, average milk production in the Philippines per animal remains low at 8 liters/day as compared with other milk-producing countries (30 liters/day in US and 20 liters/day in UK). The NDA attributes this to poor feeds and management practices as well as high production costs and inadequate dairy infrastructure.

Table 3. Milk supply, by volume in million liters

	2013	2014	2015	2016	2017	Jan-Mar 2018
Local production	19.53	19.73	20.39	21.16	22.76	6.05
Imports	1,945.69	1,740.08	1,793.29	2,772.57	2,486.29	638.05
Gross Supply	1,965.22	1,759.81	1,813.68	2,793.73	2,509.05	644.10
Exports	48.52	69.40	168.32	211.58	52.34	25.55
Net Supply	1,916.70	1,690.41	1,645.36	2,582.15	2,456.71	618.55

Source: National Dairy Authority

The NDA data as of March 2018 also shows that local milk production registered at 6.05 million liters, bulk of which comes from cow's milk at 63%, followed by carabao and goat's milk at 34% and 3%, respectively. Half of local smallholder milk production goes to school and community milk feeding programs and the rest to local commercial sales or household consumption. With dairy production in the country being more community-based, maintaining the quality of fresh milk is a challenge due to the lack of processing and distribution systems, and a dependable, continuous cold chain.

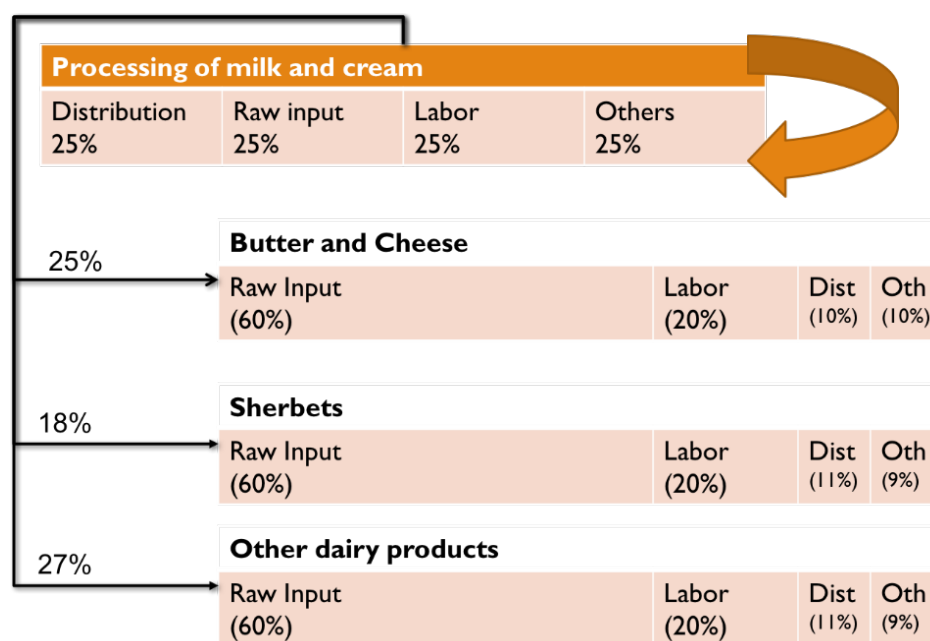
Since the Philippines imports bulk of its dairy requirement, only one glass out of every four glasses of liquid milk supply (not reconstituted from powder) consumed in the Philippines is produced locally. According to the NDA, a Filipino family typically spends approximately Php 4,000 annually for dairy products.

Data on the production structure of the industry is not readily available so the Input-Output (IO) table was utilized. From the IO table, it can be seen that PSIC1051 (processing of milk and cream which includes 1052 and 1053) is the base industry that tends to supply key inputs to the other industries like manufacture of butter and cheese (1055); manufacture of sherbets and ice cream (1054); and manufacture of other dairy products (1056).

Processing of milk and cream (1051) has 4 main components in its production: raw inputs, distribution, labor and others⁵. Each component has about an equal share in the production structure. As most of the milk and raw materials for dairy production is imported, it is reasonable that distribution (including warehousing and logistic cost) is a significant component of processing milk and cream. Milk and cream products are distributed to the other industries as follows: 25% is utilized in the manufacture of butter and cheese, 18% for the production of sherbets and ice cream and 27% is distributed to the manufacture of other dairy products. For these industries, raw inputs comprise 60% of the inputs while distribution only has a 10% share (**Figure 9**).

⁵ Others include services, utilities, packaging, etc.

Figure 9. Linkages among of dairy industries and factors of production



Source: IO Table 2006

These details are significant because the fact that distribution is a quarter of the cost of production of processing of milk and cream highlights the contribution of transport, logistics to the industry.

Various years of the annual survey on business and industry was scrutinized to obtain an understanding of the growth in the number of players. **Table 4** presents the number of establishments for each industry from 2008 to 2014 (industries were grouped together to preserve anonymity). The manufacturers of powdered milk (whether for infants or otherwise) has increased over time from 7 establishments in 2008 to 10 establishments in 2014. Only 3 establishments were involved in the manufacture of butter and cheese from 2008 to 2010 but this number has increased to 5 in 2014 indicating the entry of new manufacturers.

Table 4. Number of dairy manufacturers over time

Number of maufacturers	2008	2009	2010	2013	2014
Processing of fresh milk and cream	6	8	8	13	13
Manufacture of powdered milk (except for infants) and condensed or evaporated milk (filled, combined or reconstituted); Manufacture of infants' powdered milk	7	8	9	8	10
Manufacture of butter and cheese	3	3	3	5	5
Manufacture of ice cream and sherbet, ice drop, ice candy and other flavored ices	25	35	29	71	70
Manufacture of milk based infants' and dietetic foods; Manufacture of dairy products, n.e.c.	6	5	4	17	17

Source: PSA, ASPBI and CPBI

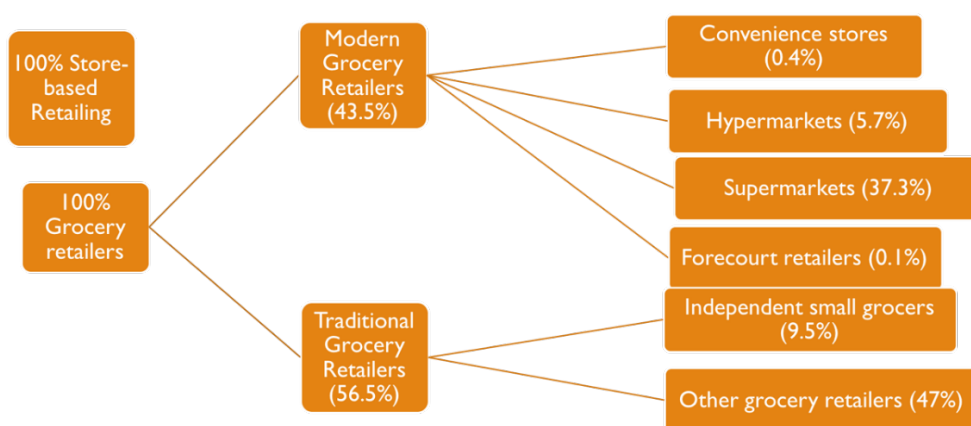
The manufacturers of ice cream and sherbet, ice drop, ice candy and other flavored ices have seen entry and exit of firms. Starting with about 25 establishments in 2008, this industry has seen a jump in the number of establishments to 35 in 2009 but this declined the following year to 29. In 2013, the number of establishments increased to 71 but declined to 70 in 2014. The combined industries on the manufacture of milk-based infants' and dietetic foods together with the manufacture of dairy products had a total of 17 establishments in 2014.

Since the Annual Survey of Philippine Business and Industry (ASPBI) data does not identify the establishments that have entered or exited the market, it was necessary to complement the PSA data with the Euromonitor database. Annual data on drinking milk products showed the entry of AB Nutribev in the market in 2011 when Vitamilk obtained a market share of 1.07 percent. Data also showed the exit of Hershey's Philippines Inc. (maker of Hershey's) in 2012. Data on the ice cream and frozen desserts segment showed the exit of Häagen-Dazs Distribution & Marketing Philippines, Inc. in 2012 and Tyson Foods, Inc. in 2014. Meanwhile, large market player Unilever RFM introduced another global brand (Magnum) into the market in 2012 indicating innovation of established manufacturers (See **Appendix 3** and **Appendix 4**).

The discussion so far showed the entry and exit of firms in the milk industry. Certain industries (or combination of industries) have few players (less than 10) which can present some opportunities of collusion. Another insight is that the base industry (processing of milk and cream) has few establishments. Any activity in this industry would certainly affect the other industries and eventually the consumers.

Distribution plays a critical component of the supply of milk in the country. Milk supply is mostly purchased in store-based retailing. That is, products are purchased within physical stores or shops. More specifically, these physical stores, shops or grocery retailers (i.e. bulk sellers of food and non-perishable food items packaged in bottles, boxes or cans) are the main distribution channels (**Figure 10**).

Figure 10. Drinking milk distribution



Source: Euromonitor

Grocery retailers can be classified into two: modern or traditional. Modern grocery retailers include convenience stores, hypermarkets and supermarkets while traditional grocery retailers are mainly independent small grocers. Supermarkets are modern grocery stores that focus on providing low cost high volume self-service operations to meet varied shopper needs. Supermarkets are usually located near residential areas and offer a wide variety of food and household merchandise. A Hypermarket, in contrast, is a superstore which combines a supermarket and a department store. They carry non-food products like clothes, jewelries, stationery, electronic goods and others. Convenience stores are relatively small stores located near residential areas. They offer limited line of convenient products such as candy, ice cream, soft drinks, tobacco products and others. Convenience stores are known to stock a limited range of high turnover convenience products and are usually open for extended periods. Because of this, they tend to charge higher prices due to convenience premium. Forecourt retailing involves the establishment of stores in front of buildings in high traffic areas.

Traditional retailers include small-scale independent grocers which are typically passed on from one generation to another and the family-owned and operated *sari-sari* stores. Traditional retailers are known to have good relationship with the customers.

The distribution of milk in the Philippines is divided between two types of grocery retailers: modern (43.5%) and traditional (56.5%). Zooming in the distribution of modern grocery stores according to merchandise offered, Figure 4 shows that supermarkets (37.5%) have the largest share among the types of modern grocery stores followed by hypermarkets (5.7%). Convenience stores and forecourt retailers have less than 1% share of milk supply. As for traditional grocery retailers, independent small grocers sell about 9.5% of the milk in the market while the rest (47%) is sold through other traditional grocery retailers or the traditional *sari-sari* stores.

Trade

As the Philippines produces less than 1% of its total annual dairy requirement, much of the dairy requirements of the country is imported from other countries. Dairy products are the third largest agricultural commodities imported by the Philippines, following wheat and soybean meal. In 2017, the Philippines imported a total of 2.49 million liters of dairy products, valued at USD 903.10 million (or Php 45.52 billion). This is lower than dairy imports in 2016 which may be due to rising global milk prices. The imports for 2018 have picked up with close to 3.0 million liters (**Figure 11**). In terms of sources and value share, New Zealand continued to be the Philippines' major milk supplier at 40%, followed by the United States at 22% and Netherlands at 5%.

Figure 11. Domestic supply of milk



Source: Phil. Dairy Update

According to the data of the NDA, skim milk powder and whole milk powder imports comprise more than half of the country's total dairy imports (**Table 5**).

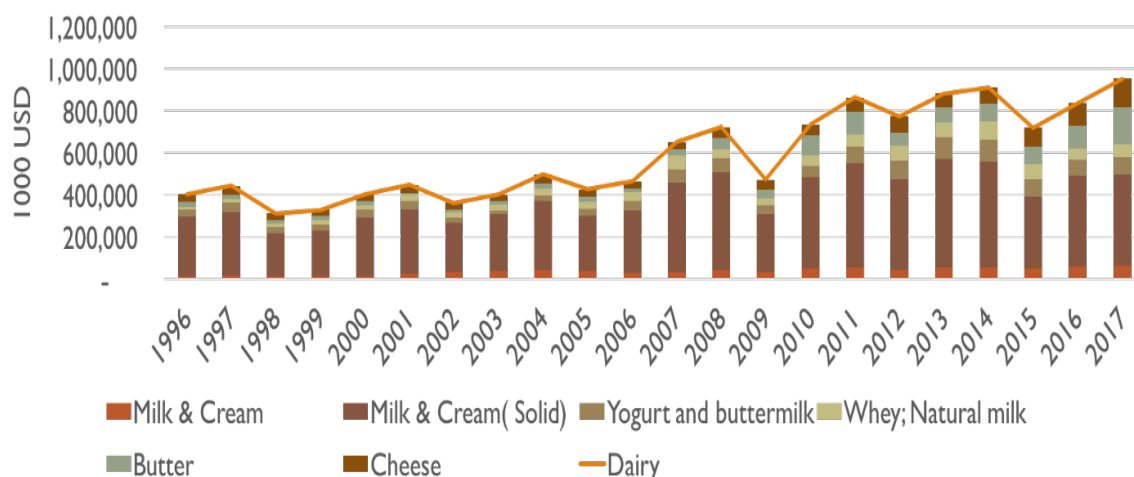
Table 5. Imported Dairy Products, by Volume in million liters

	2013	2014	2015	2016	2017	Jan-Mar 2018
1. Skim milk powder	887.38	746.30	787.40	1,435.85	1,121.44	32.87
2. Whole milk powder	205.65	154.00	134.10	166.17	150.51	5.24
3. Whey powder	338.18	380.41	375.71	403.93	422.34	12.41
4. Buttermilk/buttermilk powder	175.31	146.76	142.50	237.18	241.44	8.62
5. Liquid (RTD) Milk	47.51	43.66	42.66	65.60	61.49	18.27
6. Evaporated milk	0.31	0.48	0.30	0.60	6.73	0.58
7. Condensed Milk	11.15	20.21	8.40	16.70	19.63	6.36
8. Cream	5.01	6.03	5.96	28.84	3.78	9.77
9. Other milk and cream	82.01	35.76	43.79	54.62	59.00	7.67
10. Butter/Butterfat	125.43	129.63	148.50	232.21	247.65	6.90
11. Cheese	64.21	68.86	95.05	127.32	108.20	6.75
12. Curd	3.54	7.98	8.92	3.55	44.08	2.51
TOTAL	1,945.69	1,740.08	1,793.29	2,772.57	2,486.29	117.95

Source: National Dairy Authority

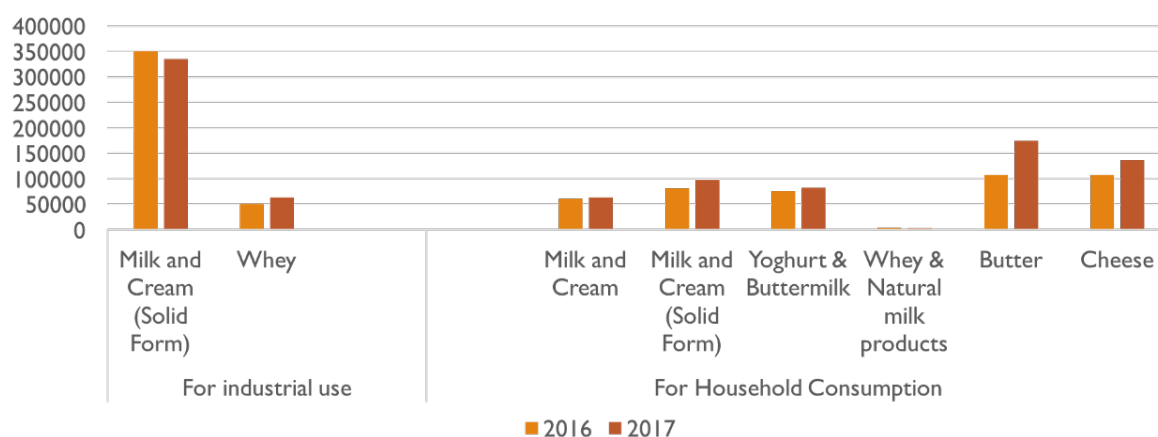
This is corroborated by data in **Figure 12** which presents milk and cream in solid form as the major imports of the country. Other imported dairy products such as whey and natural milk serve as inputs in the domestic production of other dairy products. Butter and cheese have also driven the increase in the imports of dairy products in the recent years.

Figure 12. Importation of milk



Source: WITS

Figure 13. Distribution of milk products by use



Source: WITS

More than 95% of milk and cream (solid form) and whey are imported for industrial use with a small proportion being sold for household consumption (**Figure 13**). Products like skim milk, whole milk powder and butter milk powder are imported as inputs to the manufacture of condensed milk, evaporated milk and other milk products. According to the US Department of Agriculture Global Agriculture Information Network (GAIN) Report of 2017, imported milk and cream (powder) are used in the production of the following:

- *Skim Milk Powder*: Recombined sweetened condensed milk, recombined UHT milk, ice cream, infant and follow-on formulas, and medical nutrition formulas.
- *Whole Milk Powder*: Recombined UHT milk, ice cream, infant and follow-on formulas, medical nutrition formulas, and instant powdered milk.
- *Butter Milk Powder*: Recombined sweetened condensed milk, ice cream, and bakery.

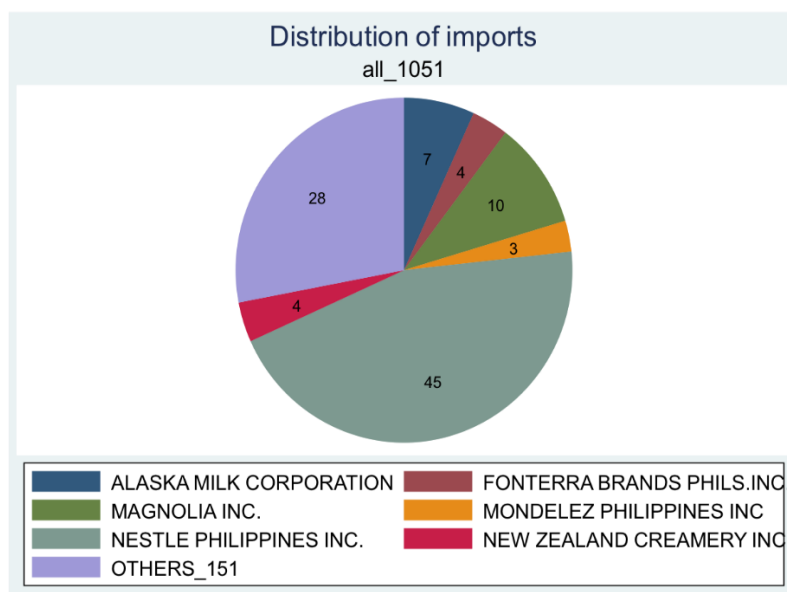
- *Whey Products*: Recombined sweetened dairy creamer, ice cream, infant and follow-on formulas, processed meat, processed food, confectionery, bakery, and animal feed.

Key informant interviews also corroborate the finding that milk and cream (solid form) is imported for industrial purposes by top manufacturers of condensed milk.

Given the critical role of imports, it is important to identify who does the importing and how they are related to the suppliers in the market. The following figures present the breakdown of the different milk commodities, by importers and industry.

Top importers of dairy products in PSIC code 1051 (processing of milk and cream) include Nestlé Philippines, Inc. with a market share of 45%, Magnolia, Inc. (10%) and Alaska Milk Corporation (7%). Fonterra Brands Phils, Inc., New Zealand Creamery, Inc. and Mondelez Philippines, Inc. complete the top 6 importers. Note that there are 157 importers of fresh milk and cream in total; the smaller importers collectively make up 28% of the market (**Figure 14**).

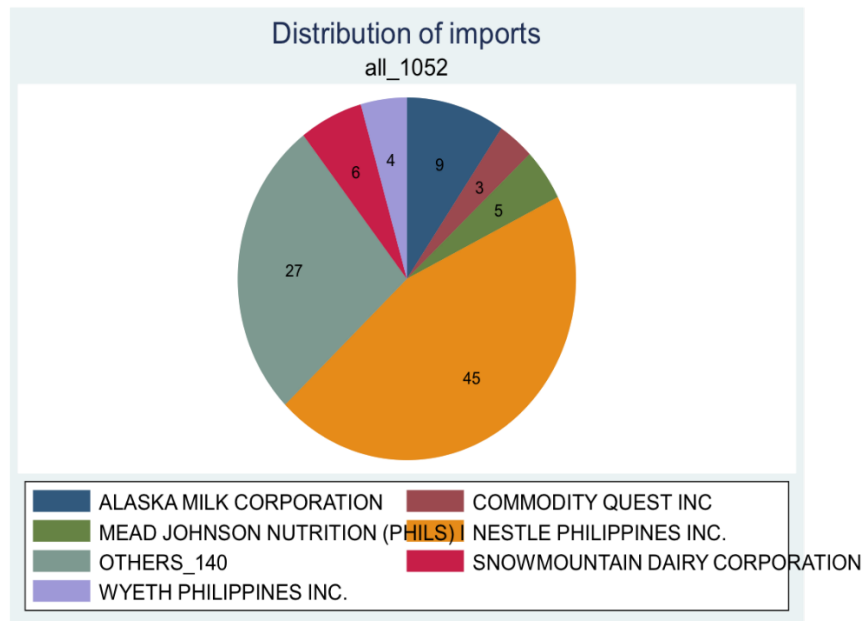
Figure 14. Importers of milk products in the Processing of fresh milk and cream



Source: *Business Statistics Monitor*

For non-infant powdered milk (PSIC 1052), the top importers are Nestlé Philippines, Inc. (45%) followed by Alaska Milk Corporation (9%) and Snowmountain Dairy Corporation (6%). There are 140 other importers of non-infant powdered milk who collectively make up 27 percent of total imports (**Figure 15**).

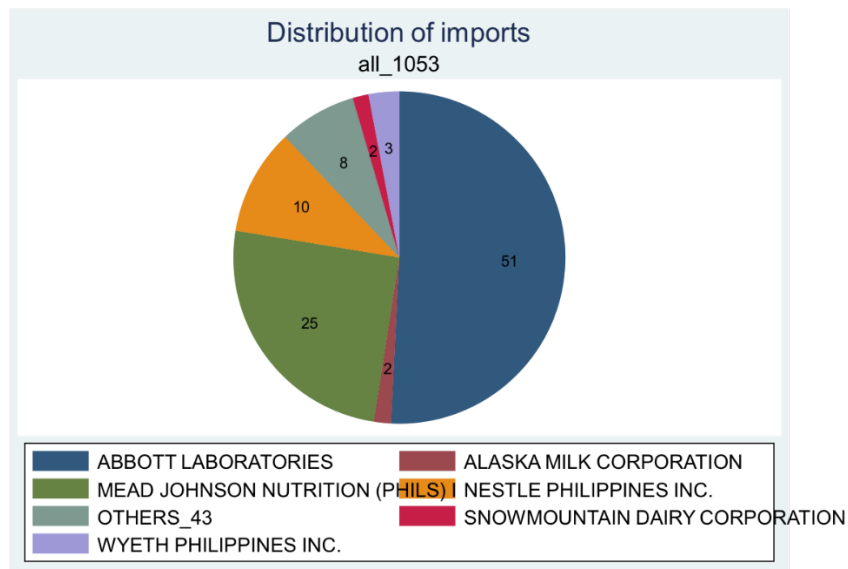
Figure 15. Importers of powdered (non-infant) milk



Source: Business Statistics Monitor

For infant powdered milk, Abbott Laboratories make up more than 50 percent of total imports followed by Mead Johnson Nutrition Philippines (25%) and Nestlé Philippines, Inc. (10%). There are 43 other importers with significantly smaller imports share (**Figure 16**).

Figure 16. Top importers of infant powdered milk

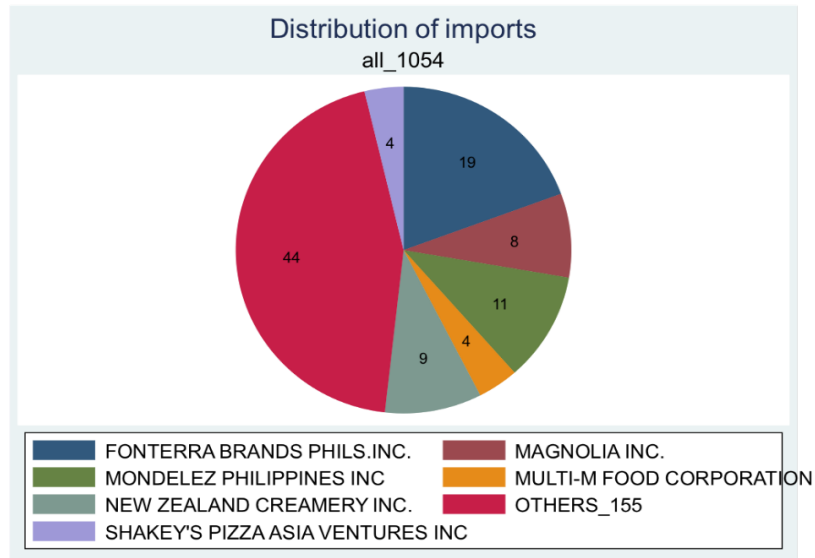


Source: Business Statistics Monitor

For butter and cheese, the largest importers are Fonterra Brands Philippines, Inc. (19%), Mondelez Philippines, Inc. (11%), New Zealand Creamery (9%) and Magnolia, Inc. (8%). The

remainder is shared by 155 smaller importers. Some importers such as Shakey’s Pizza Asia Ventures indirectly sell cheese to customers as input to their pizza products (**Figure 17**).

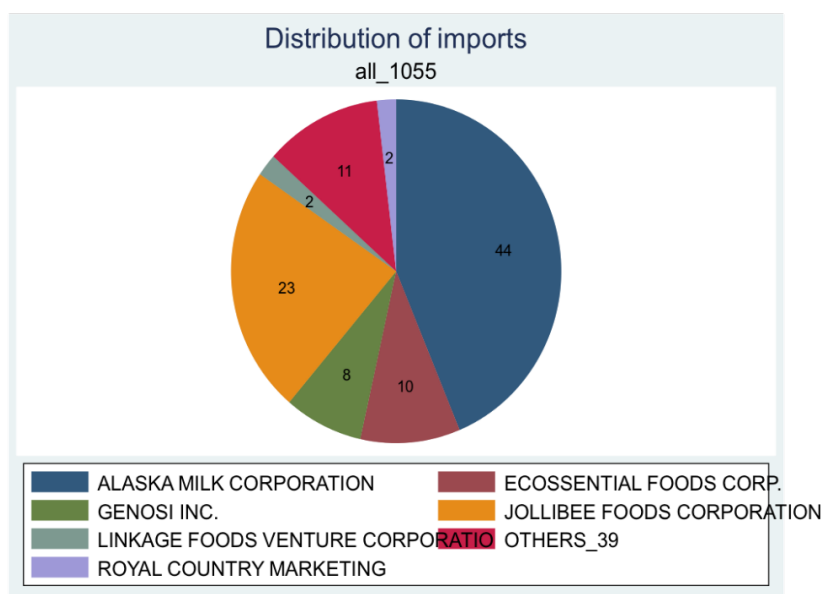
Figure 17. Top importers of butter and cheese



Source: Business Statistics Monitor

Similar to butter and cheese, top importers of ice and sherbet include suppliers to fast food establishments like Jollibee Foods Corporation (23%). Alaska Milk Corporation is the top importer of ingredients for ice cream and sherbet. Other companies that import ice cream and sherbet are Ecosential Foods Corp., Genosini, Inc., Linkage Foods Venture Corporation, and Royal Country Marketing. There are 39 other importers that serve the remainder of the market (**Figure 18**).

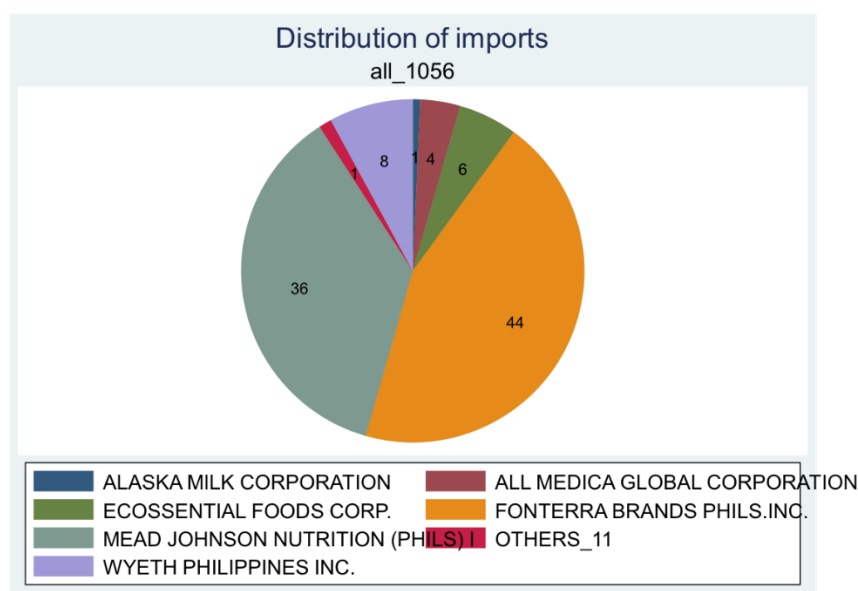
Figure 18. Top importers of PSIC 1055 (Manufacture of Ice cream and sherbet, etc.)



Source: Business Statistics Monitor

The top importers of the milk-based infants' and dietetic foods (PSIC 1056) are Fonterra Brands Phils., Inc. (44%), Mead Johnson Nutrition Philippines (36%) and Wyeth (8%). Note that there are only 11 other importers of these products—significantly fewer players relative to other milk product categories (**Figure 19**).

Figure 19. Top Manufacture of milk-based infants' and dietetic foods (PSIC1056)



Source: Business Statistics Monitor

SCP ANALYSIS

Data from the PSA shows that all segments of milk manufacturing industry are highly concentrated with HHI registering above 2,500⁶. Aside from manufacturers of fresh milk and cream, all dairy products manufacturing industry segments recorded high (above 15%) to moderate (10-15) price-cost margin. **Table 6** shows the dairy products manufacturing in terms of concentration ratio, price-cost margin, and their importance to the industry.

Table 6. Dairy products manufacturing industry, 2014

PSIC Code	Description	No. of establishments	HHI	APCM (in %)	% GVA share in Mfg.
C1051	Processing of fresh milk and cream	13	9,633	1.48	0.02
C1052	Manufacture of powdered milk (except for infants) and condensed or evaporated milk (filled, combined or reconstituted)	8	2,947	14.80	2.42

⁶ Medalla et al (2018) classified industries as highly concentrated if HHI is greater than 2500; moderately concentrated if HHI is between 1500 and 2500; and low concentration if HHI is less than 1500.

PSIC Code	Description	No. of establishments	HHI	APCM (in %)	% GVA share in Mfg.
C1053	Manufacture of infants' powdered milk	2	5,048	14.70	0.51
C1054	Manufacture of butter and cheese	5	4,645	10.60	0.60
C1055	Manufacture of ice cream and sherbet, ice drop, ice candy and other flavored ices	70	6,654	10.51	0.17
C1056	Manufacture of milk-based infants' and dietetic foods	1	10,000	16.59	0.42
C1059	Manufacture of dairy products, not elsewhere classified	16	4,495	16.45	0.37

Source: Philippine Statistics Authority

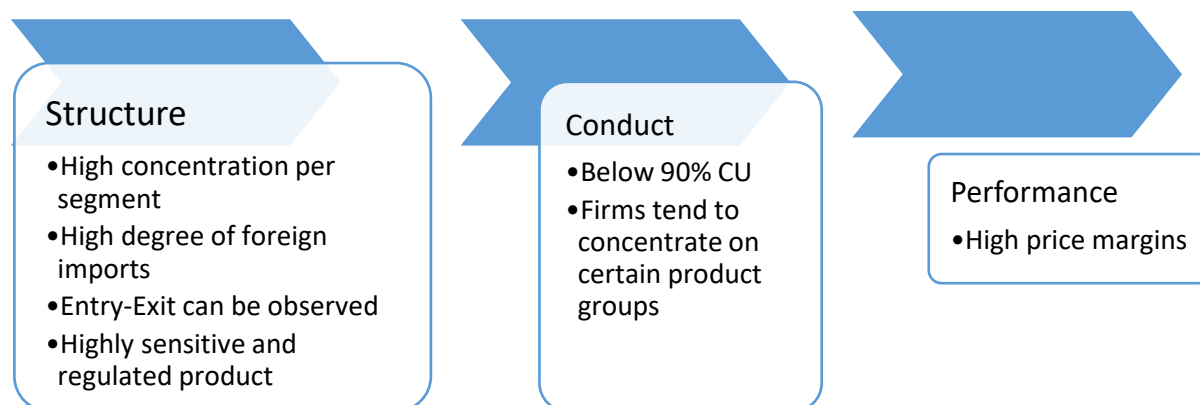
Structure-Conduct-Performance Analysis

The limited data on the milk industry has only allowed the researchers to identify the following Structure-Conduct-Performance indicators. The industry produces highly sensitive products that are easily spoiled; thus, milk should be stored at temperatures not higher than 4°C. Specifically, fresh raw milk requires special procedures in order to be safely transported and distributed. Likewise, milk manufacturing needs to follow general principles of food hygiene to ensure that the product is safe for consumption. The industry is highly concentrated and most products are imported. There is entry and exit of firms across the years as evidenced by the changing number of establishments for each industry group. Locally, one of the important observations is the limited number of suppliers. Production of fresh raw milk is highly regulated and requires significant capital investment in order to be competitive nationwide. The NDA estimates that the cost of one cow is at PhP150,000.00 each. Cows and even grass seeds are sourced from abroad. For a dairy farmer to be considered as a smallholder, a minimum of 25 cows is needed. However, in the Philippines, the NDA estimates that each dairy farmer only owns five (5) to ten (10) cows.⁷ Because of the challenges in appropriately collecting, storing and transporting of fresh raw milk, the investment necessary to support the local industry is tremendous.⁸ Thus, domestic suppliers of fresh milk remain small-scale and often concentrate on their local community (**Figure 20**).

⁷ Interview with National Dairy Authority dated 31 January 2019

⁸ According to the proposed code for Hygienic practice for Milk, there is a need to train milk producers and handlers on the proper hygienic milking; storage, handling, collection and transport of milk; microbiological, chemical and physical hazards and their control measures; disease control and prevention and others. (https://members.wto.org/crnattachments/2017/SPS/PHL/17_2020_00_e.pdf)

Figure 20. SCP Analysis Milk industry



Studies [Medalla et al. (2018), Adera et al. (2016), Setiawan et al. (2012)] have identified indicators of firm behavior or conduct such as advertising expenditure, R&D and Capacity Utilization. Using data for 2014 ASPBI, this study looked at the average R&D expenditure for each industry. The hypothesis is that firms with market power would have no incentive to invest in R&D or would reserve R&D as a means of preventing new entrants to the market. Similar interpretation can be made for capacity utilization.

53% of milk-related establishments have a capacity utilization (CU) of below 80 percent; this is lower than the 60 percent average for all industries. CU below 80 percent suggests that there is room for the industry to expand production as most of the milk-related establishments fall below the full capacity range (80-100 percent). Meanwhile, the average industry R&D at 1% of total expenditures is higher than all industry average. High R&D suggests that there is high degree of innovation in the industry. We note that while the dataset shows that 100 percent of firms in milk-based infants' and dietetic foods have CU below 80%, the average R&D of firms in this industry is much higher than the average for all industries.

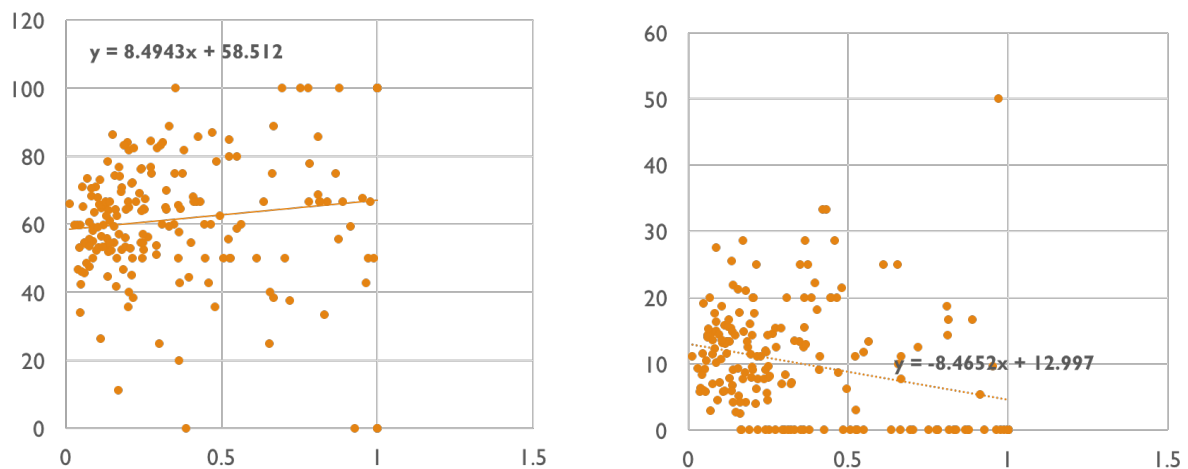
Table 7. Indicators of industry structure and conduct

	HHI	Import Penetration (% of Industry Sales)	Ave. R&D Expenditure/ Total Expenditure (%)	% of establishments with CU below 80%
Processing of fresh milk and cream (PSIC 1051)	9,634	192	0.04	43
Manufacture of non-infant powdered milk, condensed milk, evaporated milk (PSIC 1052)	2,999	0.05	0.01	25
Manufacture of infant's powdered milk (PSIC 1053)	5,048	272	0.58	50
Manufacture of ice cream and sherbet etc. (PSIC 1055)	4,643	3	0.28	60

	HHI	Import Penetration (% of Industry Sales)	Ave. R&D Expenditure/ Total Expenditure (%)	% of establishments with CU below 80%
Manufacture of Butter, cheese and curd (PSIC 1054)	6,654	40	0.06	38
Manufacture of milk-based infants' and dietetic foods (PSIC 1056)	10,000	22	5.08	100
All industries	1,742	24.33	0.058	60

Figure 21 provides some indication whether industry structure indeed influences firm conduct. We find a positive correlation (8.48) between industry structure as measured by HHI and the proportion of firms in an industry operating at 50-80 percent capacity. In contrast, there is a negative correlation (-8.46) between HHI and firms operating at 90-100 percent capacity. This may be an indication that industry structure is related to firm conduct. Using data on all industries, we find that industries that have high concentration tend to have larger proportion of firms with capacity utilization rate below 80 percent.

Figure 21. Does Structure affect Conduct?



Source: Author's calculations using ASPBI

REGULATORY ANALYSIS

A critical feature of the industry is that it is highly regulated. The Department of Health (DOH) issued Administrative Order (AO) 0029 series 2014 classifies condensed milk, evaporated milk, reconstituted milk and milk powder as medium risk foods, while dairy products and analogues such as milk and dairy-based drinks, cream, cheese, dairy-based desserts, whey and whey products, milk for manufacture and dairy-based desserts (ice cream) as high-risk food products. In addition, infant formula and milk supplements

classified as foodstuffs intended for particular nutritional uses are also considered as high-risk products.

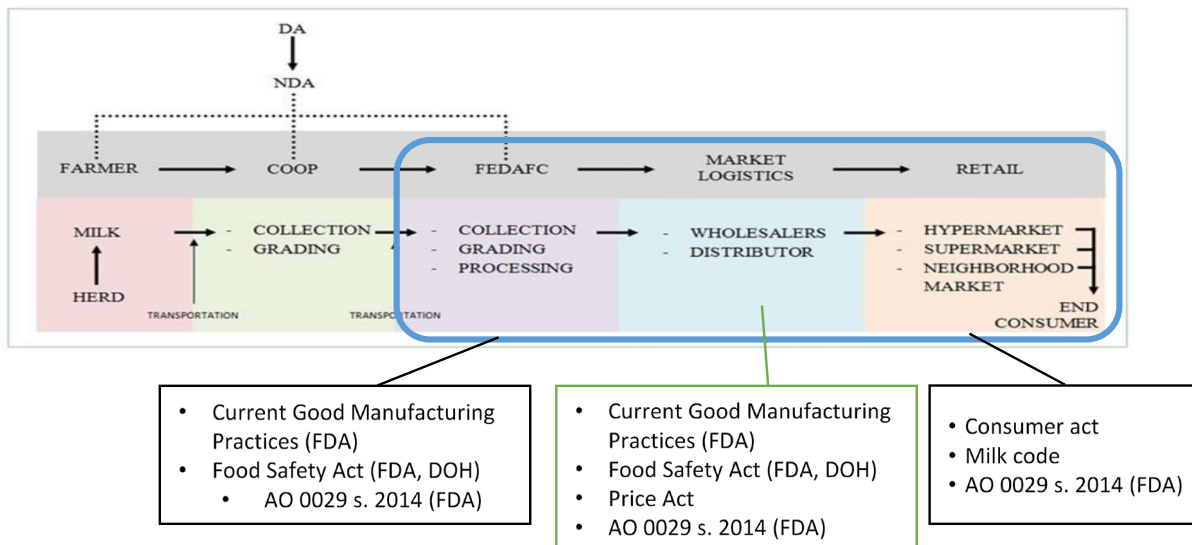
The following are the key policy instruments regulating the milk industry. The primary regulator of the industry is the Food and Drug Administration (FDA) under the DOH. Other policy instruments designate some aspects of regulation to other government agencies such as the Department of the Interior and Local Government (DILG), local government units (LGU), Department of Agriculture (DA) and the Department of Trade and Industry (DTI). These agencies are essentially tasked to ensure that the consumers are protected by regulating the prices of milk products in the market (**Table 8**).

Table 8. Key regulations in the milk industry

Regulation	Regulator	Key features
BO No. 163 s. 1997 Specific Requirements for the Registration of Imported Food and Food Products	DOH-BFAD (now FDA)	Two systems of registration: Dairy products (Cat. I) and Foods for infant and children (Cat. II)
RA 10611 Food Safety Act of 2013	DA (NDA), DOH, DILG, LGU	
RA 7581 (The Price Act), as amended by RA 10623	DTI and DA	Covers basic necessities (processed milk) and prime commodities during periods of calamity, emergency, widespread illegal price manipulation, etc.
EO 51s. 1986 Philippine Milk Code of 1986	DOH	Regulates the marketing of products related to infant feeding
DOH AO 153 s. 2004 Revised Guidelines on Current Good Manufacturing Practice in Manufacturing, Packing Repacking, or Holding Food	FDA	Ensures food safety and quality of food products
DOH AO 0029 s. 2014 Rules and Regulations on the Licensing of Food Establishments and Registration of Processed Food, and Other Food Products, and for Other Purposes	FDA	Provides guidelines on the issuance of License to Operate to food establishments engaged in the manufacture or processing and distribution of processed food and food products and Certificate of Product Registration to FDA-licensed establishments before processed food or other food products enter the market

These regulations cover various segments of the milk value chain. **Figure 22** presents the milk value chain and identifies the segments where these regulations are relevant. For instance, good manufacture practices (Administrative Order 153 s. 2004) covers the entire value chain while the Philippine Milk Code (Executive Order 51 s. 1986) covers only the distribution segment particularly advertising and marketing of milk products related to infant feeding.

Figure 22. Regulations in the value chain



Source: Ricalde et al. (2014)

Following the CMA (2015) checklist, we attempt to answer a modified set of questions based on KII's conducted with milk players and regulators.

Does the regulatory environment impact on the number/range of market players?

There seems to be no indication that the current regulatory environment limits the number or range of market players or exclusively provide rights or awards certain market players to supply certain milk products as there has been no special treatment to single suppliers or discrimination of certain suppliers or products.

Does the regulatory environment indirectly limit the number or range of milk processors?

While no regulation limits the number or range of milk processors or manufacturers, it is possible that the implementation of milk regulations, particularly the product registration and testing, limit the participants in the market. Milk manufacturers may have more competitive advantage than new and smaller-scale entrants since the former already know what requirements to submit to FDA as well as the flow and processes for each requirement. Meanwhile, those new in the business, specially smaller-scale entrants, may find it more difficult to enter given the new rules and requirements they have to follow. Each product has to undergo various tests to show that the quality is at par to FDA's standard before they are given a Certificate of Product Registration (CPR). This may have an impact on the ease of entry for smaller scale businesses as well as their ability to expand their businesses. Further, an interview with the Center for Food Regulation and Research of the FDA (FDA-CFRR) also shows that the agency is swamped with the demand for its services, thus, the agency's limited capacity does not allow it to respond to the demands of the milk processors in a timely manner. However, with the enactment of Republic Act No. 11032 or

the Ease of Doing Business Act, the FDA will now have to comply with issuing the CPRs within 20 days for initial registration.

Does the regulatory environment limit the market players' incentives to compete by incentivizing coordination?

There seems to be no indication that the regulatory environment has incentivized coordination among the establishments in a certain dairy industry. In fact, the number of products and players in the industry may be an indication that there is healthy competition. A potential red flag is the lack of head-to-head competition among establishments manufacturing products for multiple industries. For example, RFM manufactures ice cream but also chocolate milk drinks while Nestlé manufactures ice cream but also powdered milk. Based on key informant interviews, we note that companies tend to focus their resources on products in which they have significant market share and production expertise, i.e. RFM for ice cream, Alaska for evaporated and condensed milk, Nestlé for powdered milk. While Nestlé would still maintain manufacturing other products, they would rather avoid directly competing with RFM for ice cream but rather concentrate on milk powder.

Does the regulatory environment limit the choices and information available to consumers?

The regulatory environment strictly monitors the promotion and advertising of infant formula which may indirectly favor other substitutes for such products as stipulated in the Philippine Milk Code. The ideal case is that breastmilk would be the favored choice but in certain cases it is possible that powdered milk or evaporated milk would be the substitute. According to the handbook of dairy production, evaporated milk is often used as infant milk substitute particularly for poor segments of the population.

CONCLUSION AND RECOMMENDATION

This study explored why the milk and dairy industry in the Philippines has been observed to enjoy high profits and examined the regulatory environment that directly and indirectly affects the production of milk.

The study finds that domestic production of fresh milk is limited, and marginal as domestic supply is mainly imports-driven. The nature of milk being a highly sensitive product (because of the difficulty of safely transporting fresh milk) tends to limit competition coming from local producers.

The entire value chain of milk manufacturing is governed by some form of regulation. These regulations are meant to preserve the health of the consumers, especially infants who rely on milk for sustenance. The government itself promotes breastmilk as best for infants as reflected in the Philippine Milk Code, which was passed to contribute to the provision of safe and adequate nutrition of infants by the protection and promotion of breastfeeding.

While regulations aim to preserve consumer well-being by promoting food safety, implementation tends to raise costs. In addition, the requirement to submit for testing every product to be sold in the market overwhelms the FDA.

Data from key-informant interviews suggest that milk companies in the Philippines tend to organize themselves such that head-to-head competition is avoided. This could be observed in the way companies tend to specialize in manufacturing certain products as market players focus their resources in producing goods which they believe they have competitive advantage with. Thus, this may further strengthen their market share while other companies tend to be content with being minimal players in the market. Competition still does exist but in a limited way.

Given these findings, this paper recommends the following:

Limited data prevents researchers from exploring further the observation that there is a lack of head-to-head competition within dairy market segments. It is recommended that the PCC obtain some access to data and use behavioral economics methodology (See Harrington 2006) to pursue this observation further.

This study also identified a number of key importers who are also the main product manufacturers for milk segments. However, it was observed that there are also a number of small (in terms of import share) importers. An ensuing question is how importers are related to manufacturers. The relationship of these small importers and large importers and manufacturers has important implications to competition. The key role of imports to discipline market players is diminished when the importers themselves are closely related to the manufacturers. To pursue this analysis, there is also a need to have a more comprehensive database which links manufacturers and importers.

To increase sources of competition, it is recommended that small dairy farms and manufacturers are given assistance. The PCC should alert the Department of Agriculture and the NDA on the critical role of small dairy farmers in supplying milk in their respective markets. Small dairy farms/manufacturers provide limited competition to large, established milk manufacturers.

Regulatory analysis has shown that established manufacturers may have more advantage in terms of handling CPR and License to Operate requirements from the FDA as opposed to small-scale entrants given the former's knowledge and resources on know-how to handle FDA regulations. On top of this, the (opportunity) cost of waiting for product registration certificates may limit competition as this may be more significant for small-scale milk manufacturers.

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Appendix 1: Profile of selected milk manufacturers

	ALASKA		NESTLÉ		WHETH		AB NUTRIBEV		CENTURY PACIFIC FOOD	
Financial Highlights	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Balance Sheet										
Total Assets (in Php '000)	29,458,563	27,447,448	41,822,700	39,635,968	13,038,607	12,159,016	31,250	298,232	10,260,502	16,113,782
Total Liabilities (in Php '000)	21,871,081	18,208,932	34,580,853	32,886,916	10,468,761	9,859,017	1,659	52,727	4,042,677	6,508,110
Total Stockholders' Equity (in Php '000)	7,587,483	9,238,516	7,241,847	6,749,052	2,569,846	2,299,999	29,591	245,505	6,217,825	9,605,672
Income Statement										
Total Revenues (in Php '000)	17,815,730	18,143,130	116,747,560	121,626,094	16,852,529	17,221,058	-	-	17,049,337	19,801,041
Cost of goods sold (in Php '000)	12,305,949	11,351,611	72,365,294	66,873,192	9,387,246	7,950,287	-	-	12,421,225	14,734,035
Operating expense (in Php '000)	4,053,331	4,490,768	23,339,393	31,286,782	3,842,709	4,820,209	1,659	2,661	3,047,152	3,110,358
Net income/loss (in Php '000)	1,925,875	1,628,505	13,941,144	15,592,598	3,464,313	3,918,737	(1,659)	(2,623)	1,286,833	1,580,379
Profitability Indicators										
Gross Profit Margin (%)	30%	36%	37%	44%	44%	54%	n/a	n/a	27%	26%
Operating Profit Margin (%)	7%	12%	17%	18%	21%	26%	n/a	n/a	9%	10%
EBITDA/Net Total Revenues (%)	23%	20%	18%	19%	21%	24%	n/a	n/a	11%	11%
Return on Sales (%)	11%	9%	12%	13%	21%	23%	n/a	n/a	8%	8%
Return on Stockholders' Equity (%)	51%	19%	385%	223%	270%	161%	-11%	-2%	41%	20%

Source: Securities and Exchange Commission

Appendix 1: Profile of selected milk manufacturers (continued)

	FONTERRA		MAGNOLIA		MEAD JOHNSON		UNILEVER RFM		RFM CORP	
Financial Highlights	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Balance Sheet										
Total Assets (in Php '000)	1,662,527	1,625,005	3,970,012	5,054,570	6,982,069	8,166,151	3,702,860	3,484,513	13,958,666	13,923,168
Total Liabilities (in Php '000)	775,441	871,335	1,633,266	1,926,430	3,038,101	2,950,586	3,396,801	3,166,993	4,991,678	4,295,905
Total Stockholders' Equity (in Php '000)	887,086	753,670	2,336,746	3,128,140	3,943,968	5,215,566	306,060	317,521	8,987,604	9,651,525
Income Statement										
Total Revenues (in Php '000)	3,845,404	3,692,640	7,764,792	8,739,510	11,363,287	11,897,289	6,708,589	7,580,846	11,010,421	11,981,896
Cost of goods sold (in Php '000)	1,315,293	1,098,195	4,897,890	5,216,539	5,822,299	5,173,135	3,234,113	3,538,188	7,004,701	7,492,190
Operating expense (in Php '000)	1,315,293	1,098,195	1,982,838	2,362,543	4,014,858	4,168,951	2,381,820	2,691,575	3,008,341	3,290,863
Net income/loss (in Php '000)	68,473	112,581	623,097	801,565	1,135,697	1,887,118	746,666	888,552	833,744	904,928
Profitability Indicators										
Gross Profit Margin (%)	37%	34%	37%	40%	49%	57%	52%	53%	36%	37%
Operating Profit Margin (%)	3%	4%	11%	13%	13%	21%	16%	18%	9%	10%
EBITDA/Net Total Revenues (%)	3%	4%	11%	13%	14%	23%	16%	17%	10%	10%
Return on Sales (%)	2%	3%	8%	9%	10%	16%	11%	12%	8%	8%
Return on Stockholders' Equity (%)	15%	14%	53%	29%	58%	41%	488%	285%	19%	10%

Source: Securities and Exchange Commission

Appendix 2: Market sales of Ice Cream and Dessert Companies by brand name, 2010-2019

Row Labels	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Arcefoods Corp	278	289	297	308	315	323	331	341	352	363
Arce	278	289	297	308	315	323	331	341	352	363
BTIC Inc	139	147	157	168	180	194	208	224	240	257
BTIC	139	147	157	168	180	194	208	224	240	257
Food People Inc, The	193	200	206	211	215	220	225	230	238	246
Fruits in Ice Cream	193	200	206	211	215	220	225	230	238	246
Häagen-Dazs Distribution & Marketing Philippines Inc	357	341	180							
Häagen-Dazs	357	341	180							
Magnolia Inc	757	796	833	873	913	954	1006	1058	1173	1303
Magnolia	728	769	807	847	887	928	979	1031	1144	1272
Magnolia Popsies	28	28	26	25	26	26	27	28	29	31
Nestlé Philippines Inc	3138	3237	3445	3637	3763	3884	4013	4164	4210	4271
Drumstick	551	556	602	652	678	706	736	772	814	861
Lait	85	88	100	112	128	131	135	139	142	146
Nestlé	2324	2406	2544	2661	2738	2819	2906	3008	3133	3264
Pinipig	178	187	199	212	220	228	237	246	121	
Others	1739	1758	1648	1744	1833	1907	1970	1895	2013	2145
Others	1739	1758	1648	1744	1833	1907	1970	1895	2013	2145
Tyson Foods Inc	923	970	1024	1091	244					
Sara Lee	923	970	1024	1091	244					
Unilever RFM Ice Cream Inc	5578	5919	6609	7057	7694	8404	9184	10355	11650	13137
Cornetto	1885	2073	2250	2447	2631	2815	3010	3401	3826	4323
Magnum			208	239	274	313	357	409	469	533
Selecta	3693	3846	4150	4370	4789	5276	5818	6545	7355	8281
Grand Total	13102	13658	14399	15088	15159	15885	16938	18267	19876	21722

Appendix 3: Market sales of Drinking Milk Products Companies by brand name, 2010-2019

Row Labels	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Arcefoods Corp	278	289	297	308	315	323	331	341	352	363
Arce	278	289	297	308	315	323	331	341	352	363
BTIC Inc	139	147	157	168	180	194	208	224	240	257
BTIC	139	147	157	168	180	194	208	224	240	257
Food People Inc, The	193	200	206	211	215	220	225	230	238	246
Fruits in Ice Cream	193	200	206	211	215	220	225	230	238	246
Häagen-Dazs Distribution & Marketing Philippines Inc	357	341	180							
Häagen-Dazs	357	341	180							
Magnolia Inc	757	796	833	873	913	954	1,006	1,058	1,173	1,303
Magnolia	728	769	807	847	887	928	979	1,031	1,144	1,272
Magnolia Popsies	28	28	26	25	26	26	27	28	29	31
Nestlé Philippines Inc	3,138	3,237	3,445	3,637	3,763	3,884	4,013	4,164	4,210	4,271
Drumstick	551	556	602	652	678	706	736	772	814	861
Lait	85	88	100	112	128	131	135	139	142	146
Nestlé	2,324	2,406	2,544	2,661	2,738	2,819	2,906	3,008	3,133	3,264
Pinipig	178	187	199	212	220	228	237	246	121	
Others	1,739	1,758	1,648	1,744	1,833	1,907	1,970	1,895	2,013	2,145
Others	1,739	1,758	1,648	1,744	1,833	1,907	1,970	1,895	2,013	2,145
Tyson Foods Inc	923	970	1,024	1,091	244					
Sara Lee	923	970	1,024	1,091	244					
Unilever RFM Ice Cream Inc	5,578	5,919	6,609	7,057	7,694	8,404	9,184	10,355	11,650	13,137
Cornetto	1,885	2,073	2,250	2,447	2,631	2,815	3,010	3,401	3,826	4,323
Magnum			208	239	274	313	357	409	469	533
Selecta	3,693	3,846	4,150	4,370	4,789	5,276	5,818	6,545	7,355	8,281
Grand Total	13,102	13,658	14,399	15,088	15,159	15,885	16,938	18,267	19,876	21,722



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