MarketLine

Methodology

Consumer Data Analytics

Introduction

This document sets out how MarketLine produces market data sizing data for consumer packaged goods retail sales by:

- Volume
- Value
- Brand / manufacturer
- Channel

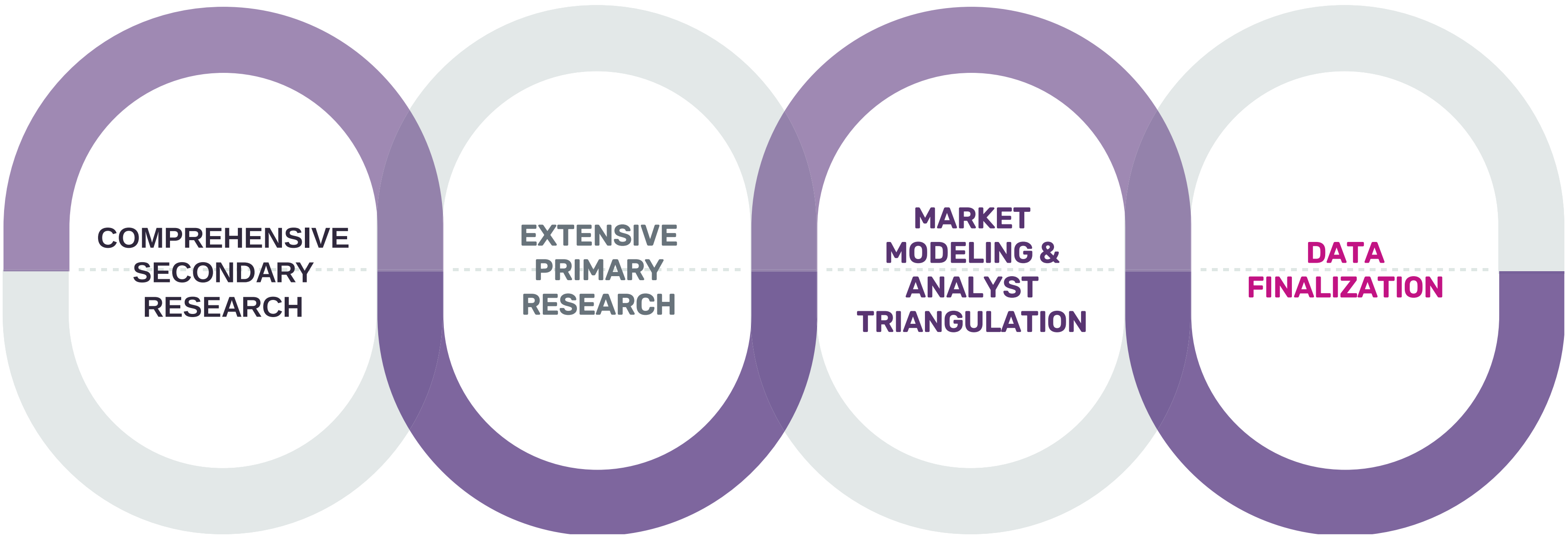
Consumer Packaged Goods Retail Data

We use a robust and transparent research methodology

Thorough review of:
- Industry and trade research
- Government and official statistics
- Proprietary online databases
- Academic journals
- Press releases

- Review of historical data
- Testing and assessment by Category Analyst

TOP-DOWN
CROSS CHECKS



- Comprehensive on-the-ground store audits
- Industry interviews from companies representing 80% market share
- Key opinion leader interviews
- Over 200,000 consumer survey responses

BOTTOM-UP
DATA CREATION

Multiple layers of review; bottom-up and top-down

Consumer Packaged Goods Retail Data

MarketLine creates market data country by country with each country file undergoing multi-step management review

- MarketLine builds market data from the bottom up, with each country undergoing a thorough analyst review at the segment and sub-segment level. Each country's data file undergoes multiple rounds of proofing by a senior analyst and project manager before sign off.

- Using last year's data as an initial baseline input, every row of data is audited and assigned a confidence score based on the level of sourcing available.

- Research inputs at this stage include contact with:
  - Trade bodies
  - Manufacturers and brands
  - Native retailers
  - Financial/broker reports
  - National statistics
  - MarketLine's internal resources such as consumer surveys, macroeconomic databases, deals and company news tracking, consumer sentiment analysis, country and city profiles.

- These inputs are triangulated to produce a final category, segment, or sub-segment data point. Each data point is checked on a country by country basis against population size and economic information to ensure consumption per capita, expenditure per capita and average prices are robust.

- MarketLine also conducts primary interviews with multiple players across the value chain in order to confirm market sizing and brand and manufacturer shares. Market size figures are also confirmed with MarketLine's network of industry contacts.

- Forecasts are created using the first draft data set, which is fed into a multivariate forecasting tool. The tool runs correlation tests on over 20 macro-economic and socio-demographic market drivers and indicators, and selects the most statistically significant to be used as final forecasting inputs. Forecasting models are then applied and the results of these are then rigorously reviewed against research on trends and forecasts to ensure final forecasts fully reflect market signals.

Consumer Packaged Goods Retail Data

A primary research team conducts interviews to confirm the data

- MarketLine conducts primary interviews with multiple players across the value chain in order to gain primary industry inputs into our market sizing data, as well as brand, manufacturer and channel shares.
- Over the entire process, which includes on-going data validation, every brand present in the dataset is contacted so that they may verify or amend the market share assigned them. Market size figures are also confirmed with the MarketLine network of industry contacts.
- A dedicated in-house primary calling team works to verify the data after each initial country file has been created, in particular focusing on any areas where information was scarce or on any points of query arising from the review.
- Full details and transcripts of each interview are recorded and the information that is provided is sanity-checked against other inputs before use. Once checked, the data is either considered verified or updated in line with the new primary information.
- Post-review, a quality audit team conducts a thorough review of the new dataset in order to quantify how much improvement has been made and if there are any areas where further work is needed. A final numerical score is created and this score is reviewed by senior management. Sectors where scores are not considered satisfactory receive additional attention and review.
- Further calls take place post-publication to help further validate and verify the data and in order to contact as many brands and manufacturers as possible.

Consumer Packaged Goods Retail Data

Consistent taxonomies across all markets ensures that data is comparable at a global scale

- Each country market data file contains a detailed standardised sector taxonomy to ensure that data is comparable at a global level. This coverage is restricted (in most sectors) to retail sales of packaged goods, but covers both organized and unorganized, but legal, distribution. Entirely unpackaged, informal, supply is excluded.

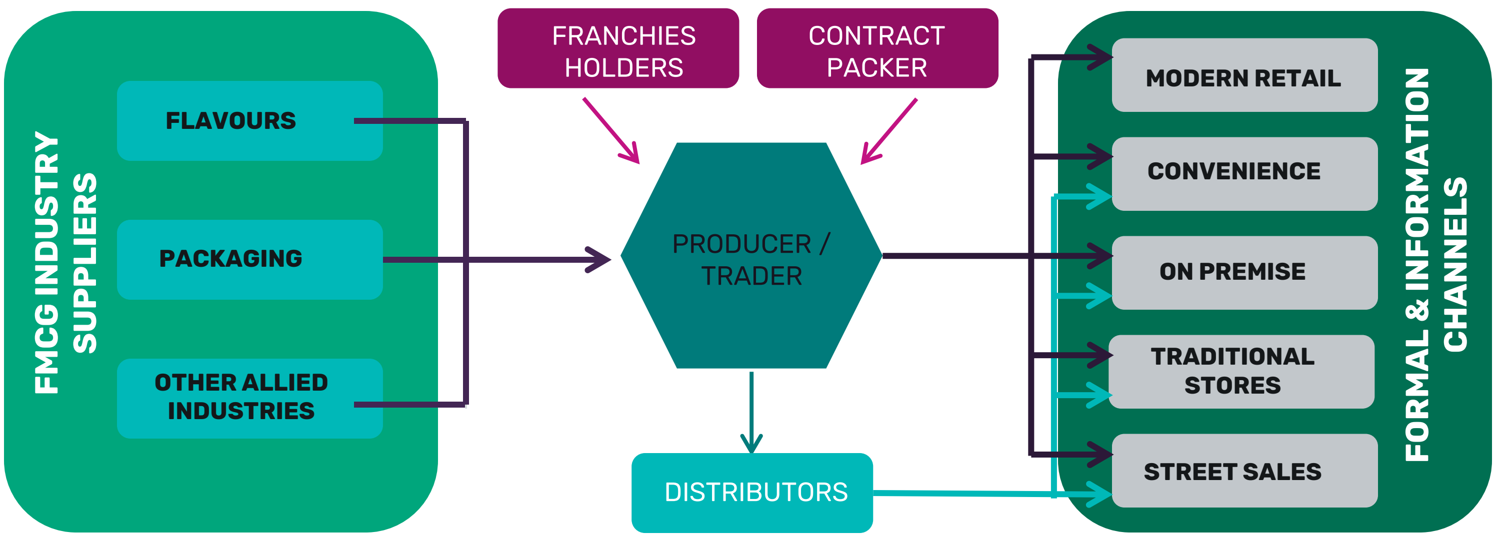
Milk	***Overall***
Milk	*Evaporated Milk*
Milk	*Fermented Milk*
Milk	*Flavored Milk*
Milk	*White Milk*
Drinkable Yogurt	***Overall***
Yogurt	***Overall***
Yogurt	*Set Yogurt*
Yogurt	*Frozen Yogurt*
Cheese	***Overall***
Cheese	*Natural Cheese*
Cheese	*Processed Cheese*
Cream	***Overall***
Cream	*Single*
Cream	*Double*
Cream	*Sour*
Cream	*Clotted*
Cream	*Whipping*
Cream	*Crème Fraiche*
Cream	*Other (Cream)*

Dairy-based & Soy Desserts	***Overall***
Dairy-based & Soy Desserts	*Cheesecakes*
Dairy-based & Soy Desserts	*Flans (Puddings/Desserts)*
Dairy-based & Soy Desserts	*Mousses*
Dairy-based & Soy Desserts	*Fools*
Dairy-based & Soy Desserts	*Trifles*
Dairy-based & Soy Desserts	*Frozen Puddings/Desserts*
Dairy-based & Soy Desserts	*Other (Puddings/Desserts)*
Dairy-based & Soy Desserts	*Soy Desserts*
Dairy-based & Soy Desserts	*Creme Caramel*
Dairy-based & Soy Desserts	*Custard Ready to Eat*
Dairy-based & Soy Desserts	*Gateaux dairy-based*
Fromage Frais & Quark	***Overall***
Soymilk & Soydrinks	***Overall***
Soymilk & Soydrinks	*Soymilk Liquid*
Soymilk & Soydrinks	*Soymilk Powdered*
Soymilk & Soydrinks	*Soy Drinks*
Soymilk & Soydrinks	*Soy Cream*
Butter & Spreadable Fats	***Overall***
Butter & Spreadable Fats	*Butter*
Butter & Spreadable Fats	*Margarine/Spreadable fats*

Consumer Packaged Goods Retail Data

A note on beer & soft drinks methods: a 'brick-by-brick' approach

MarketLine's research methodology is industry leading, and this is especially the case in Beer & Soft Drinks. In addition to the base methodology, in Beer & Soft Drinks close industry partnerships across the value chain, from suppliers to brand producers and both on- and off-premise channels provide further granular data. In these sectors MarketLine's research is built from brand data upwards. This 'brick-by-brick' approach, as well as using the results of other related research, ensures that the data is internally consistent and is validated by cross-checks from all perspectives, from brand volume through to corporate volume, flavor segmentation, packaging splits and channel distribution.



Consumer Packaged Goods Retail: South Korea Dairy Walkthrough

Dairy: MarketLine's South Korea Dairy market data has been compiled using an extensive array of primary and secondary research, including:

- The UN's Food and Agriculture Organization Corporate Statistical Database (**FAOSTAT**)
- US Department of Agriculture (**USDA**)
- Published material from **121 different brands** in the market
- **Over 40 industry interviews**. Key information was gathered from:
  - Marketing Manager at a leading national milk cooperative run by over 2,000 farms
  - Marketing Manager at a leading South Korean processed food and dairy products manufacturer worth KRW 290bn in 2015
  - Sales Director at a UK-based dairy group operating in South Korea, China and South East Asia
  - International Business and Development Manager at a leading South Korean dairy, beverage and food manufacturer and exporter
- A program of brick and mortar **store audits** of leading Korean retailers including:
  - Hanaro – a leading supermarket chain
  - Shinsagae and Hyundai department stores
  - GS 25 – a convenience store
  - Emart – a leading Hypermarket Chain
- Online store audits and analysis of results from Price Intelligence

Consumer Packaged Goods Retail: South Korea Dairy Walkthrough

Cheese: MarketLine's Cheese data is based on industry standard sources

Category	Segment	Units	2015	2016	2017	2018	2019	2020
Cheese	Overall	KRW m	454,363	476,154	499,707	525,473	553,651	579,679
Cheese	Natural Cheese	KRW m	357,294	374,215	392,499	412,500	434,549	454,974
Cheese	Processed Cheese	KRW m	97,068	101,939	107,207	112,973	119,101	124,705
Cheese	Overall	Kg m	23.4	24.2	25.0	25.8	26.7	27.6
Cheese	Natural Cheese	Kg m	19.0	19.6	20.3	20.9	21.6	22.3
Cheese	Processed Cheese	Kg m	4.4	4.6	4.7	4.9	5.1	5.3

1. To produce South Korean Cheese data, MarketLine looked at industry standard sources such as:
   - **Korean Customs Service** data
   - Articles published in financial magazines such as **The Wall Street Journal**
   - Global Dairy Sources such as **International Dairy Federation (IDF)**

2. According to these sources, the **overall per capita consumption of cheese is 2.6 kg in 2015** which translates to 130 Kg m. Industry participants indicated **80-90% of the cheese consumption in South Korea is driven through supply to foodservice channels** either directly or indirectly. In this case industry interviews indicated that ‘bulk cheese’ being reprocessed into other products for foodservice accounted for 75-85% of the foodservice cheese use, with a further amount being lost due to wastage. As a result **final retail cheese volume data is calculated at 23.4 kg million for 2015**. Using the prices for the various types of cheese i.e. 19420.3 KRW/Kg (calculated using a weighted average of the key brands in the category with 187 SKUs), **final retail value is 454 KRW billion in 2015**.

3. Volume is cross verified from brand data upwards. This '**brick-by-brick**' approach as well as the cross-comparison with MarketLine’s other related services, ensures that research has an internal logic which **cross-checks from all angles** - from brand volume through to corporate volume, packaging splits and channel distribution. A key point to note here is that MarketLine publishes brand share data only for off-trade sales i.e. any sales happening to foodservice channels are NOT included in brand sales numbers.

Consumer Packaged Goods Retail: South Korea Dairy Walkthrough

Cheese: Cheese segment data is created based on inputs from the Korean Dairy Committee as well as store audits

Category	Segment	Units	2015	2016	2017	2018	2019	2020
Cheese	Overall	KRW m	454,363	476,154	499,707	525,473	553,651	579,679
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1. Inputs for the segment level data (**MAFRA** and **Korean Dairy Committee**) indicate that in 2015 the majority of the cheese (c.80%) is Natural Cheese and the rest is Processed Cheese at a consumption level. This supports MarketLine figures.

2. Further, this was also **supported by SKU analysis** at stores in South Korea.

3. Finally, this data was also verified against inputs received through interviews with major manufacturers and leading retailers and distributors in the country.

Consumer Packaged Goods Retail: South Korea Dairy Walkthrough

Milk: Milk data is cross-checked against USDA and FAOSTAT sources

Category	Segment	Units	2015	2016	2017	2018	2019	2020
Milk	Overall	KRW m	4,183,552	4,242,183	4,309,294	4,376,040	4,443,246	4,512,977
Milk	Evaporated Milk	KRW m	28,623	28,843	28,800	28,726	28626	28,468
Milk	Fermented Milk	KRW m	-	-	-	-	-	-
Milk	Flavored Milk	KRW m	977,731	1,014,948	1,054,532	1,087,089	1,119,606	1,150,872
Milk	White Milk	KRW m	3,177,198	3,198,392	3,225,963	3,260,224	3,295,014	3,333,637
Milk	Overall	Kg m	1,450.5	1,448.7	1,449.7	1,451.4	1,453.1	1,455.5
Milk	Evaporated Milk	Kg m	3.2	3.1	3.1	3.0	3.0	2.9
Milk	Fermented Milk	Kg m	-	-	-	-	-	-
Milk	Flavored Milk	Kg m	223.8	229.4	235.3	239.5	243.6	247.3
Milk	White Milk	Kg m	1,223.5	1,216.2	1,211.3	1,208.9	1,206.5	1,205.3

1. Sources used to compile South Korea Milk data include **International Dairy Federation (IDF)**, **FAOSTAT** and **USDA**. According to IDF, **per capita consumption of milk in South Korea in 2015 was 33.5 Kg** (volume consumption around 1696 Kg-m). This total includes foodservice consumption. Research inputs from MarketLine's Foodservice primary research program suggest that these sales account for around 10-15% of overall milk consumption.

2. Off-trade volume consumption of Milk is calculated by excluding foodservice consumption from overall Milk. **Overall off-trade volume of milk consumed in 2015 comes to 1450.5 kg-m.**

3. A **weighted average price of Milk of 2,884.2 KRW/Kg** is obtained through extensive price research from physical and online store audits at leading retailers such as Hanaro, Emart, GS25, and Gmarket, as well as MarketLine's Price Intelligence data. The weighted average price is calculated considering 123 SKUs of brands such as Seoul Milk, Nam Yang, and Binggrae.

4. Multiplying the weighted average price of Milk and the overall off-trade volume of Milk gives a **total retail sales figure of 4,183 KRW billion in 2015**. This is in line with information from the USDA, which sizes the retail market in 2014 as around 4.09 US$ billion, equivalent to 4,200 KRW billion.

Consumer Packaged Goods Retail: South Korea Dairy Walkthrough

Milk: Milk data for South Korea has been compiled using industry interviews as well as trade sources and store audits.

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MarketLine's **Global Beverage Forecast** database has been used to verify overall Milk volume numbers. This program makes use of interviews with key executives at leading companies nationally and globally. There were 13 respondents for South Korea milk, with job titles including:

- International Business and Development Manager
- Brand Manager
- Sales Director
- Overseas Manager
- Marketing Manager

Data is also verified through a further primary interview program, which included **inputs from over 15 different manufacturers, retailers and distributors** in South Korea. Among them were seven major manufacturers accounting for 40-45% of retail sales and revenues of around 330 KRW billion.

Contact Us

Ask the Analyst

If you have any questions regarding our research or would like more information on our service offering, please contact us.

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