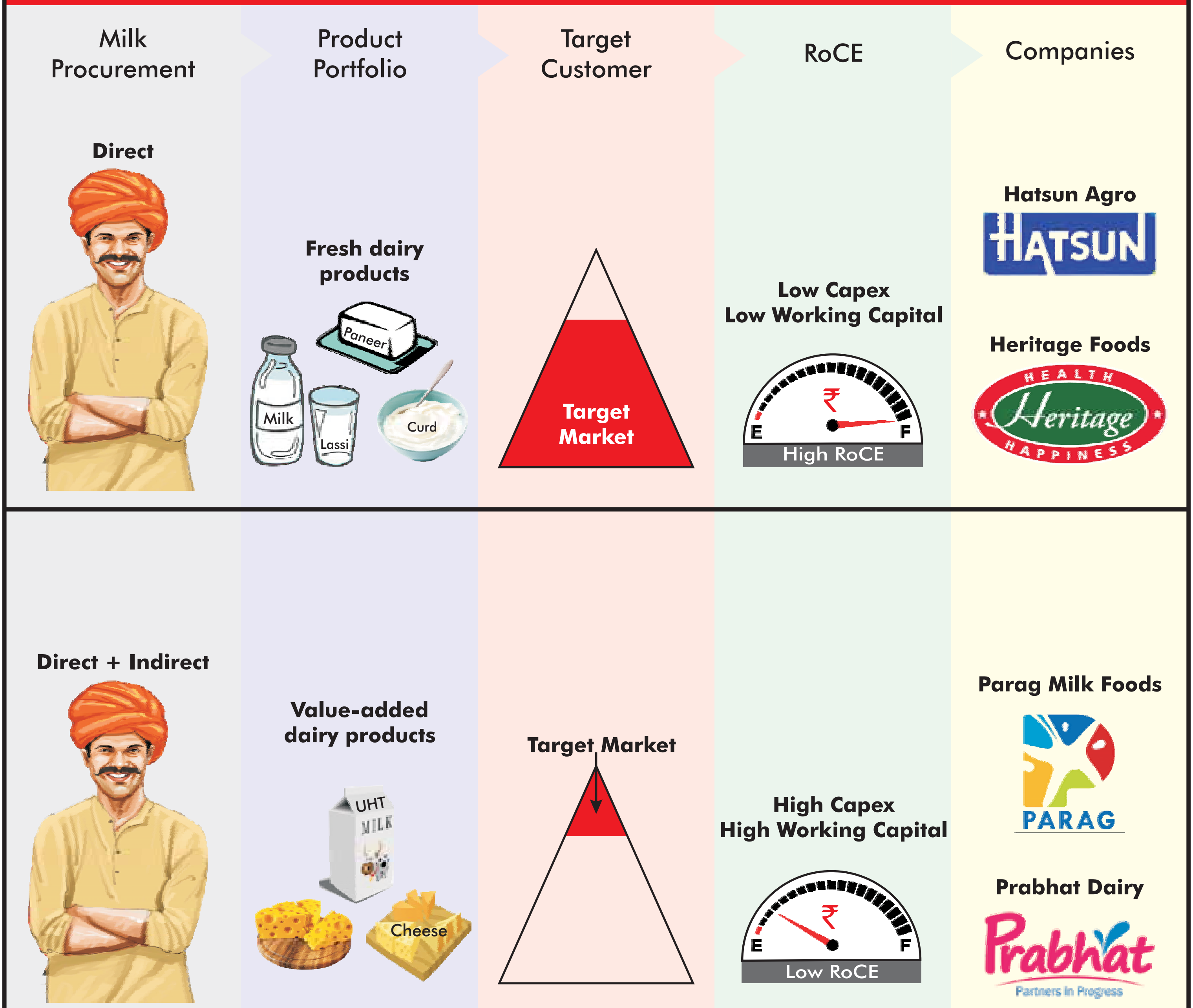
# CONSUMER STAPLES

AMBIT
Acumen at work

**August 2016**




# Fresher the better

**Research Analyst:**

**Ritesh Vaidya, CFA**
riteshvaidya@ambitcapital.com
Tel: +91 22 3034 3246

# CONTENTS

Consumer Staples: Fresher the better.....................................................3

Executive summary...............................................................................4

Milk production will continue to be led by small, marginal farmers...............6

Fresh dairy products to grow at a fast pace over the next decade...............12

Defining dairy's competitive advantage framework.................................17

Driver #1: Milk procurement – every little drop counts........................... 19

Driver #2 – Marketing: getting the correct product portfolio......................26
and distribution

Financial metrics - Fresh dairy companies score high...............................35

Hatsun best placed on our dairy competitive advantage framework............38

Consolidation is the way forward for the dairy sector...............................41

Questions for management................................................................ 42

Hatsun Agro.......................................................................................43

Heritage Foods...................................................................................45

Parag Milk Foods................................................................................47

Prabhat Dairy.................................................................................... 49

Kwality Dairy.....................................................................................51

Annexure...........................................................................................53

AMBIT
Acumen at work

# Consumer Staples
## POSITIVE

**THEMATIC** | **DAIRY** | **August 30, 2016**

# Fresher the better

**While investors have been focusing on companies operating in value-added category, our analysis suggests fresh dairy products like liquid milk, curd, paneer, butter milk promise higher growth/profitability. We use a competitive advantage framework evaluating companies on their ability to expand direct milk procurement, product portfolio orientation towards fresh dairy products and distribution reach. Hatsun Agro with 2.5mn litres of daily milk procurement directly from farmers, portfolio focus on fresh dairy products and distribution reach across South India is best-placed amongst Indian dairy companies on our framework. This should help it counter the growing presence of Amul and Mother Dairy.**

### Fresh dairy products have a brighter future than value added products

Government data suggests milk forms ~90% of household dairy consumption (10% CAGR in last 10 years). Demand for fresh dairy products like curd, paneer, butter milk has been rising at 12-15% in the last decade but is largely serviced by unorganised sector. Increasing distribution of dairy players, refrigerator penetration in semi-urban/rural areas and rising income levels will drive 15-20% growth over FY16-20 for fresh dairy products in organised sector.

### Milk procurement and marketing key differentiators in dairy business

High quality milk is essential for making fresh and value-added dairy products (VADP), making direct milk procurement essential for private dairy players. Inability to grow outside home state and political interferences are common issues in scaling milk procurement. As milk is highly perishable, marketing/distribution is equally important to optimise sales without losses. So, procurement and marketing/distribution are the key drivers of dairy business.

### Hatsun best placed on our dairy competitive advantage framework

Compared to VADP, fresh dairy products have equal or higher margins, less susceptible to competition from pan-India dairy companies, need low working capital, and can leverage distribution to sell other products. Hatsun Agro with ~2.5mn litres of daily direct milk procurement supported by strong brand and distribution is best-placed to grow and counter threat of co-operatives. Parag Milk Foods also scores high due to strong brand and distribution.

### Consolidation inevitable in the Indian dairy industry

Currently, dairy is predominantly a regional business given limitations of milk procurement and distribution. In the long term (5-7 years) we expect increased consolidation driven by: a) regional leaders acquiring smaller competitors to increase scale and counter threat from Amul and Mother Dairy and b) larger Indian players/MNCs like Britannia, ITC, Lactalis and Danone acquiring regional dairies for their direct procurement and distribution network.

**Hatsun Agro is best placed for delivering profitable growth ahead of the market**

| Company | Milk Procurement | Marketing | Financial performance | Overall |
|---|---|---|---|---|
| Hatsun Agro | ● | ● | ● | ● |
| Heritage Foods | ◕ | ◕ | ● | ◕ |
| Parag Milk Foods | ◕ | ◕ | ◕ | ◕ |
| Prabhat Dairy | ◑ | ◑ | ◑ | ◑ |
| Kwality Dairy | ◑ | ◑ | ◑ | ◑ |

*Source: Company, Ambit Capital research. Note: ● - Strong; ◕ - Relatively Strong; ◑ - Average*

### Key Recommendations

| | |
|---|---|
| **Hatsun Agro** | **NOT RATED** |
| Mcap (US$ mn): | 780 |
| **Heritage Foods** | **NOT RATED** |
| Mcap (US$ mn): | 250 |
| **Kwality Ltd** | **NOT RATED** |
| Mcap (US$ mn): | 420 |
| **Parag Milk Foods** | **NOT RATED** |
| Mcap (US$ mn): | 404 |
| **Prabhat Dairy** | **NOT RATED** |
| Mcap (US$ mn): | 134 |

### Ambit Hawk eye

| | Forensic accounting decile | Greatness score |
|---|---|---|
| Hatsun Agro | D5 | 92% |
| Heritage Foods | D2 | 92% |
| Kwality | D7 | 67% |

*Source: Ambit Capital research; We divide the market in to deciles with D1 representing best decile on accounting quality and D10 indicating the worst decile. Greatness score represents improvement in company's capital allocation relative to its own history and its peers over the last 6 years. Higher score indicates improvement in performance.*
*For more details visit http://hawk.ambit.co*

### Research Analysts

**Ritesh Vaidya, CFA**
+91 22 3034 3246
riteshvaidya@ambitcapital.com

**Rakshit Ranjan, CFA**
+91 22 3043 3201
rakshitranjan@ambitcapital.com

**Dhiraj Mistry, CFA**
+91 22 3043 3264
dhirajmistry@ambitcapital.com

# Executive summary

## Dairy competitive advantage framework has two key drivers

### Key driver #1: Milk procurement – Higher direct milk procurement is needed to grow product portfolio

**Exhibit 1: Issues faced in milk procurement**

| North India | West India | South India |
|---|---|---|
| High % of milk self-consumption and high seasonality of production due to buffalo milk domination | Gujarat is dominated by co-operatives | Karnataka and Tamil Nadu are dominated by co-operatives |
| Uttar Pradesh market is dominated by agents who have political clout; Rajasthan, Bihar have strong co-operatives | Maharashtra is dominated by co-operatives and private players having political clout | Karnataka government offers subsidy to farmers for milk procurement |
| Amul and Mother Dairy have started milk procurement in Punjab, Haryana and UP | | |

*Source: Ambit Capital research*

### Milk procurement evaluation framework – evaluate track record of direct milk procurement and diversification of milk procurement base

**Exhibit 2: Hatsun Agro is best placed on our direct milk procurement competitive advantage framework**

| Company | Daily milk procurement (mn lpd) | % Milk directly procured | Diversification of procurement base | Daily milk procurement growth FY13-15 | Overall rating |
|---|---|---|---|---|---|
| Hatsun Agro | 2.5 | ~100% | 70-75% from Tamil Nadu; 25-30% from 4 other states | 11-12% | Strong |
| Heritage | 1.1 | ~100% | 60-65% from Andhra Pradesh; 35-40% from 5 other states | ~6% | Relatively Strong |
| Parag Milk Foods | 1.0 | ~100% | 85% Maharashtra, non-Maharashtra proportion reduced from 24% in FY13 to 15% in FY15 | 10-11% | Relatively Strong |
| Prabhat Dairy | 0.9 | 60-65% | 100% Maharashtra | NA | Average |
| Kwality | 3.0 | 15% | Sources from 3 states - Rajasthan, Uttar Pradesh and Haryana | 4% | Average |

*Source: Company, Ambit Capital research. Note: - Strong; - Relatively Strong; - Average*

### Key driver #2: Marketing: product portfolio and distribution reach – Need focus on fresh dairy products, investment on brands and multi-state distribution network

~90% of milk consumption is dominated by liquid milk; Consumption of packaged fresh dairy products has been increasing over the last decade at ~15% CAGR

**Exhibit 3: Split of monthly per capita expenditure on milk and milk for rural and urban households**

| | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 | 2011-12 |
|---|---|---|---|---|---|---|
| **Rural** | | | | | | |
| Milk liquid | 88.5% | 92.2% | 90.2% | 93.7% | 94.5% | 92.5% |
| Ghee | 7.2% | 4.8% | 7.1% | 4.1% | 3.6% | 5.0% |
| VADP | 4.3% | 3.0% | 2.7% | 2.2% | 1.9% | 2.6% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |
| **Urban** | | | | | | |
| Milk liquid | 81.5% | 86.9% | 84.5% | 88.0% | 87.2% | 86.0% |
| Ghee | 10.2% | 9.0% | 10.8% | 7.9% | 8.5% | 8.9% |
| VADP | 8.4% | 4.2% | 4.8% | 4.2% | 4.4% | 5.2% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

*Source: NSSO, Ambit Capital research*

Fresh dairy products have high profitability, require low capital investments and have higher addressable markets than value added dairy products like cheese, UHT/flavoured milk

**Exhibit 4: Fresh dairy products have margin comparable to value added dairy products**

| Product | Profit margin | Comments |
|---|---|---|
| Set curd | ~40% | Requires low capex, commands high margin if brand has pricing power |
| Pouch curd | 15-20% | Is a fast moving product consumed mostly in B2B channel; has low shelf life |
| Paneer | 40-45% | Is a fast moving proving with high margin and low capital investment; B2B is big market |
| Cow cheese | 20-25% | Slow moving product; B2B is bigger market than B2C; low margin and high capex needed |
| UHT flavoured milk | ~35% | High margin, but slow moving product; lesser product differentiation across brands |
| Table butter | 11-12% | B2C segment dominated by Amul; fast moving basic milk product |
| Ghee | ~10% | Low margin, low capex, fast moving product |
| Pouch milk | 7-8% | fastest moving milk product; negative working capital needed; low capex |

*Source: Ambit Capital research*

## Marketing competitive advantage framework: Prefer companies with focus on fresh dairy products, focus on brand building and multi-state distribution presence

**Exhibit 5: Hatsun Agro and Heritage Foods are best placed on our marketing competitive advantage framework; Parag Milk Foods scores lower due to its focus on value added dairy products**

| Company | Distribution reach and brand Equity | Orientation of portfolio towards fresh dairy products | | Overall score | Comments |
|---|---|---|---|---|---|
| | | Current | Future | | |
| Hatsun Agro | ◕ | ● | ● | ● | Hatsun has the largest private pouch milk network in South India; The company derives 85%+ revenues from fresh dairy and plans to continue to do so |
| Heritage Foods | ◑ | ◕ | ◕ | ◕ | Heritage has the second largest private pouch milk network in South India; The company derives ~65% of total sales from fresh dairy products; plans to diversify into cheese in the near future |
| Parag Milk Foods | ◕ | ◕ | ◑ | ◕ | Parag is well-known in Western India for its value-added portfolio; Derives only 35-40% of revenue from fresh dairy products and continues to focus on VADP |
| Prabhat Dairy | ◔ | ◑ | ◑ | ◑ | Prabhat has only recently increased focus on B2C; it is focusing on fresh dairy products along with products like cheese, flavoured milk |
| Kwality Dairy | ◔ | ◔ | ◑ | ◔ | Plans to launch products under Kwality brand name which was well known as an ice cream brand; is planning to increase presence largely in VADP category |

*Source: Company, Ambit Capital research. Note: ● - Strong; ◕- Relatively Strong; ◑- Average; ◔- Relatively weak.*

## Accounting framework - Hatsun is best placed followed by Heritage and Parag

**Exhibit 6: Competitive framework on financial ratio analysis**

| | Profitability | Cash Conversion | Return | Overall | Comments |
|---|---|---|---|---|---|
| Hatsun Agro | ● | ● | ● | ● | Has healthy margins, cash conversion and stable ROE |
| Heritage Foods | ◑ | ● | ◕ | ◕ | Margin is volatile, ROE has been improving |
| Parag Milk Foods | ◕ | ◕ | ◑ | ◕ | Stable margin, stable cash conversion but deteriorating ROE |
| Prabhat Dairy | ● | ◔ | ◔ | ◑ | Stable margin but deteriorating cash conversion and ROE |
| Kwality Dairy | ◑ | ◔ | ◑ | ◑ | Stable margin, poor cash conversion and deteriorating ROE |

*Source: Ambit Capital research. Note: ● - Strong; ◕- Relatively Strong; ◑- Average; ◔- Relatively weak.*

## Dairy competitive advantage framework: Hatsun Agro best placed on milk procurement, marketing and financial metrics framework

**Exhibit 7: Hatsun Agro is the best performer on all the parameters followed by Heritage foods; prefer Heritage over Parag due to the latter's focus on value added dairy products like cheese, UHT milk**

| Company | Milk Procurement | Marketing | Financial performance | Overall |
|---|---|---|---|---|
| Hatsun Agro | ● | ● | ● | ● |
| Heritage Foods | ◕ | ◕ | ◕ | ◕ |
| Parag Milk Foods | ◕ | ◕ | ◕ | ◕ |
| Prabhat Dairy | ◑ | ◑ | ◑ | ◑ |
| Kwality Dairy | ◑ | ◔ | ◑ | ◑ |

*Source: Company, Ambit Capital research. Note: ● - Strong; ◕- Relatively Strong; ◑- Average; ◔- Relatively weak.*

# Milk production will continue to be led by small, marginal farmers

**Unlike in developed nations, milk production in India is dominated by marginal farmers and landless labourers owning 1-2 animals each and using manual means for dairy farming. Milk productivity of cattle and buffaloes in India is still only 1/8th of the global average. Land prices in India are very high, which makes running large dairy farms unviable. So, dairy farming will continue to be dominated by small and marginal farmers for the foreseeable future. We expect 4% CAGR in milk production over the next decade driven by 2.5%/1.5% increase in productivity/population of milch animals.**

## Dairy farming in India dominated by marginal farmers

*"In our co-operative structure, the production of milk is kept in the hands of the small farmers, the marginal farmers and landless labourers." - Dr. Verghese Kurien, Author - I Too Had A Dream*

### Marginal farmers increasing dependence on income from sale of milk

Although milk is one of the largest cash crops in India, farmers selling milk to dairy companies/co-operatives are largely small, marginal and landless labourers. As shown in the exhibit below, income from animal farming, which largely comprises milk sales, forms a significant portion of income for farmers having less than 1 hectare of farm land. The cow is cared for like a family member by the farmer and till few years ago, selling a cow was akin to selling the family jewels. The animals are largely fed farmland waste and waste food and left to graze in the open and little is spent on their medical needs. This has resulted in lower productivity of these milch animals, at 5-6 litres of milk per day vs the global average of 20-25 litres.

Payout from sale of agricultural produce happens once or at most twice a year. Draught conditions add to the uncertainty of this payout. Hence, farmers have been increasingly depending on income from daily sale of milk, which supports their daily expenditure.

**Exhibit 8: Animal farming is a significant income driver for marginal farmers**

| Size of land holding (hectares) | Proportion of income for an agricultural rural household depending on their land holding | | | | |
|---|---|---|---|---|---|
| | Income from wage/salary (%) | Income from cultivation (%) | Income from farming animals (%) | Net receipt from non-farm business (%) | Total Income (%) |
| <0.01 | 64% | 1% | 26% | 10% | 100% |
| 0.01-0.4 | 57% | 17% | 15% | 11% | 100% |
| 0.41-1 | 38% | 41% | 12% | 9% | 100% |
| 1.01-2 | 24% | 57% | 11% | 8% | 100% |
| 2.01-4 | 15% | 69% | 11% | 5% | 100% |
| 4.01-10 | 10% | 78% | 8% | 4% | 100% |
| 10+ | 3% | 86% | 6% | 4% | 100% |
| **All Sizes** | **32%** | **48%** | **12%** | **8%** | **100%** |

*Source: NSSO*

**Exhibit 9: Milk is the major source of income in animal farming**

| | Major sources of income from animal farming | | | | | | |
|---|---|---|---|---|---|---|---|
| | Milk (%) | Egg (%) | Live animals (%) | Wool (%) | Fish (%) | All other receipts (%) | Total (%) |
| **All-India** | 69 | 1 | 18 | 0 | 2 | 11 | 100 |

*Source: NSSO*

### Animal farming is under-invested in India with minimal mechanization

As shown in the exhibit below, as the land holding of a rural household increases, it increases focus on cultivation with animal farming becoming a secondary occupation looked after mostly by the women in the family. Farmers invest a larger portion of their incremental income into agricultural machinery and implements rather than in animal farming. Hence, milking of animals is mostly done by the women manually, while the men undertake the sale of the surplus milk. This has resulted in lower milk productivity of Indian cattle vs global average.

**Exhibit 10: About 75% of the expenditure of an agricultural rural household is on agriculture-related activities**

| Size of land holding (hectares)% | Expenditure split for an agricultural rural household depending on their land holding | | | | |
|---|---|---|---|---|---|
| | % on livestock and poultry | % on agriculture related activities | Total | Non-farm business | All |
| <0.01 | **66.8** | **12.1** | **78.9** | **21.1** | **100** |
| 0.01-0.4 | 48.3 | 33.0 | 81.3 | 18.7 | 100 |
| 0.41-1 | 15.8 | 77.5 | 93.3 | 6.7 | 100 |
| 1.01-2 | 11.1 | 82.6 | 93.7 | 6.3 | 100 |
| 2.01-4 | 21.4 | 74.3 | 95.7 | 4.3 | 100 |
| 4.01-10 | 14.9 | 82.8 | 97.7 | 2.3 | 100 |
| 10+ | 6.0 | 92.2 | 98.2 | 1.8 | 100 |
| **All Sizes** | **18.2** | **74.8** | **93.0** | **7.0** | **100** |

*Source: NSSO*

**Exhibit 11: Animal feed is the major expenditure in animal farming**

| | Major outlets of expenditure in animal farming | | | | | |
|---|---|---|---|---|---|---|
| | Cost Animal (Young one) (%) | Animal Feed (%) | Veterinary charges (%) | Labour charges (%) | All other expenses (%) | Total (%) |
| **All-India** | 9.0 | 77.0 | 7.7 | 2.1 | 4.2 | 100 |

*Source: NSSO*

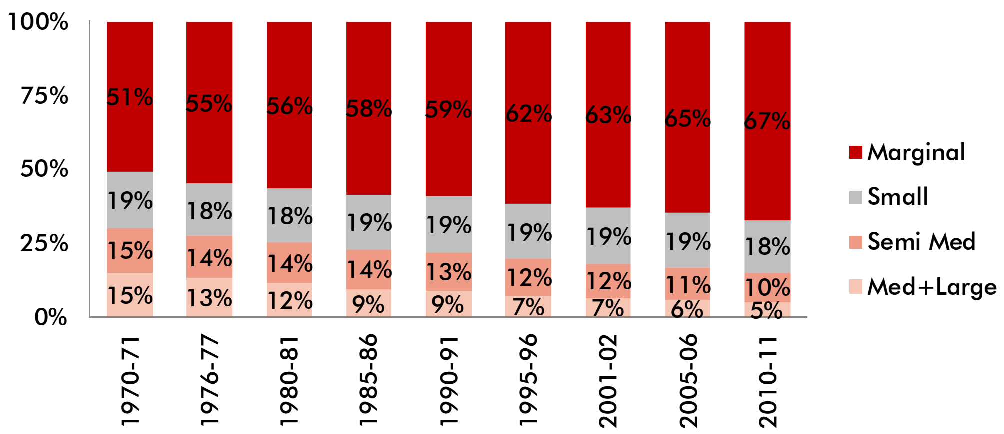
*Only ~18% of totally monthly household expenditure is on animal farming. ~77% of this is spent on animal feed indicating under investment on other essential services like Veterinary expenses.*

## Lower productivity and dairy farming's secondary status imply large dairy farms are a distant dream

In the developed countries, dairy farming is undertaken by farmers having large dairy farms with at least 100 cows each. For e.g., in New Zealand ~4.2mn cows are owned by ~11,000 farmers (averaging ~380 cows per farmer). Dairy farming is the primary occupation of these farmers. We believe large dairy farms are unviable in India due to the following reasons:

- **Productivity of Indian cows is 1/4$^{th}$ of developed countries:** Indian cows and buffaloes produce an average of 1,500kg of milk per annum vs 6,000-7,000kg per annum in developed countries. The lower productivity results in lower income for farmers, further discouraging them from making additional investments in dairy farming.
- **Very high land prices:** Most of the existing dairy farmers in India own less than 1 hectare of land. Also, as shown in the exhibit below, the share of small land holdings is increasing. Buying more land for rearing more animals is unviable as land prices in India are extremely high (land prices in India per hectare are 2-3x of the per hectare land price in Germany and United States).

**Exhibit 12: Category-wise land holdings in India**




*Source: Agricultural census - GoI, Ambit Capital research*

- **Farmer's reluctance to invest in animal farming:** In India animals are fed on farmland waste and waste food of households with very less investment in high quality animal feed. No additional labour is deployed in looking after the animals with household members undertaking activities like milking and taking the animals for grazing. Home remedies are used instead of veterinary help for treating diseases. Farmers do not invest in animal farming as they still see this as a secondary occupation.
- **Absence of a remunerative market for dry cows:** Unlike in developed countries where farmers realize 40-50% cost of the cattle by selling the dry cow to the slaughterhouse, the same isn't possible in India. Cow slaughter is banned in several states in India as it is considered as a holy symbol in Hindu religion.

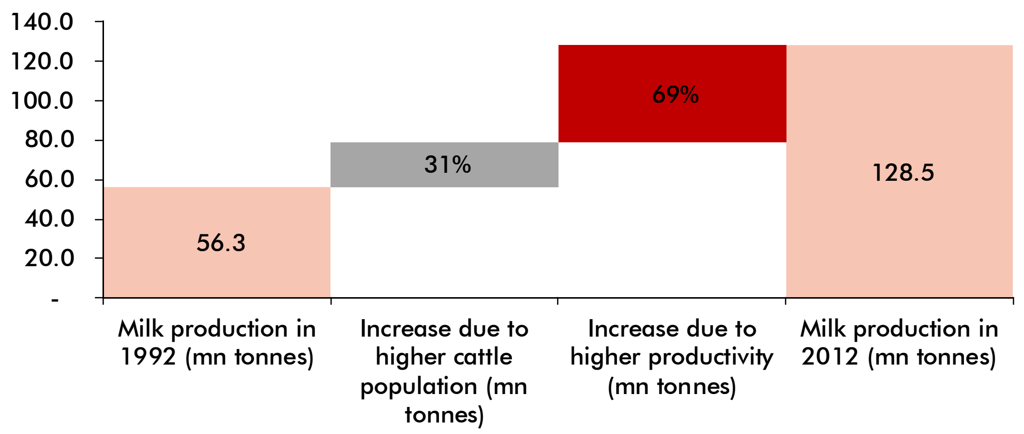
Due to these reasons, we do not believe large dairy farms are possible in India in the next decade. Hence, we believe in the near future milk production will continue to be dominated by small and marginal farmers having very less mechanization.

## Expect 4% CAGR in milk production driven by productivity gains

### Milk productivity increased at 2.5% CAGR over the last two decades

Over the last two decades, milk production has increased at 4% CAGR YoY. As shown in the exhibit below, based on our estimates, ~70% of the growth in milk production has been led by increasing productivity of cows and buffaloes than by an increase in their population. Total population of in-milk cattle and buffalo has increased by 1.7% CAGR over 1992-2012 while productivity of this population has increased at 2.5% CAGR. Higher productivity has been driven by the entry of private players and the NDDB (National Dairy Development Board) which has provided farmers with better cattle fodder and artificial insemination facilities. Cross-bred cows yield 6-7kg milk/day vs indigenous cows which yield only 2-3kg milk/day. The proportion of cross-bred cows has increased in the total cattle population from 13% in 1992 to 33% in 2012, leading to an increase in overall productivity of animals.

**Exhibit 13: Productivity improvement mainly behind increase in production**




*Source: NDDB, Department of Animal Husbandry*

**Productivity to drive milk production over the next decade**

NDDB has started the National Dairy Plan – I to be implemented over 2012-17 with an investment of ₹22.4bn. This programme meant only for dairy co-operatives focuses on increasing the productivity of animals through several input activities like better cattle feed, artificial insemination and farmer-level education. Lack of increase in land holding of farmers is hindering addition of animals. Hence, the focus has been on increasing milk productivity. Investment by private players in the dairy sector is expected to further increase milk productivity. So, we expect milk productivity to increase at a similar rate as in the last decade at 2.5% CAGR over the next 10 years.

Given rapid urbanization, we expect rural population to grow slower than overall population growth. Increasing scarcity of grazing land in rural areas will add to feeding costs for animal farming, deterring farmers from increasing their herd size. Hence, we expect the cattle and buffalo population to increase at a 1-1.5% CAGR over the next decade, similar to the growth rate in the last two decades.

**Thus, we expect milk production to post a 4% CAGR in the next 10 years.**

## Milk production has evolved around centres of milk consumption

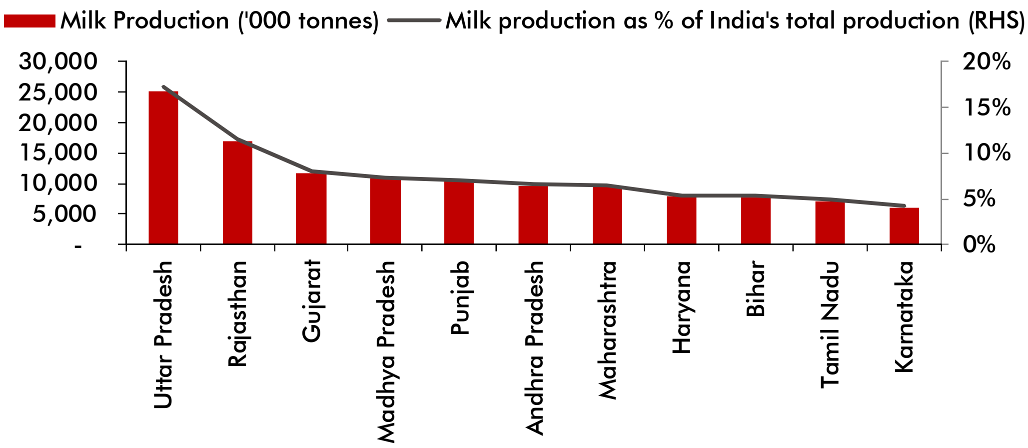
*"…there would have been no Anand unless there was a Bombay." - Dr. Verghese Kurien, Author - I Too Had A Dream*

*"As most of the milk consumption in India is still in the liquid milk form, given the perishable nature of the product and the road infrastructure in the country, milk production has grown strongly around areas of consumption. This has led to very high competitive intensity for milk procurement in these areas." – Dairy industry expert*

During the last five decades Amul, NDDB and private players have linked the milk surplus rural areas to the key demand urban areas. Through marketing activities, they have been able to grow demand for milk in these urban areas. Rising demand led to remunerative prices for farmers, encouraging them to produce more. However, given the perishable nature of milk and most consumption being in liquid form, these production centres are typically within a 250-300km radius of demand areas. High demand in Mumbai led to production growth in Gujarat and Maharashtra; similarly demand in Delhi spurred production in Uttar Pradesh, Rajasthan and Haryana.

*"We could go to Odisha to procure milk but then the end-market is Cuttack or Bhubhaneshwar, which has limited milk demand. Hence, Odisha hasn't yet evolved in milk production." – Listed private dairy player based out of Maharashtra*

**Exhibit 14: Major milk producing states in India**




*Source: NDDB*

## Self-consumption in North India higher than in West and South India

*"Although milk production is very high in Uttar Pradesh, Haryana and Punjab self-consumption is equally high in these states leaving very less marketable surplus for us to procure." – Milk procurement head a dairy company in North India*

Estimates from NDDB suggest that only 52% of milk production is marketable as ~48% is self-consumed by dairy farmers. While there are no official measures of self-consumption across states, we have used the per capita milk consumption for different states obtained from NSSO's (National Sample Survey Office) household consumption survey of 2012 to estimate the amount of self-consumption of milk. Based on the milk production figures for individual states and the self-consumption estimate from the NSSO survey, we arrive at an approximate estimate of the percentage of milk production self-consumed in each state. Our analysis and primary research suggests that North Indian states have a high rate of self-consumption vs South Indian states.

**Exhibit 15: North-Indian states have higher self-consumption than South Indian states**

| Top milk producing states | Region | Approx. % of self-consumption |
|---|---|---|
| Bihar | North India | 77% |
| Haryana | North India | 71% |
| Rajasthan | North India | 60% |
| Uttar Pradesh | North India | 55% |
| Maharashtra | West India | 54% |
| Tamil Nadu | South India | 48% |
| Karnataka | South India | 48% |
| Madhya Pradesh | Central India | 45% |
| Punjab | North India | 44% |
| Gujarat | West India | 42% |
| Andhra Pradesh | South India | 31% |
| **All - India** | | **48%** |

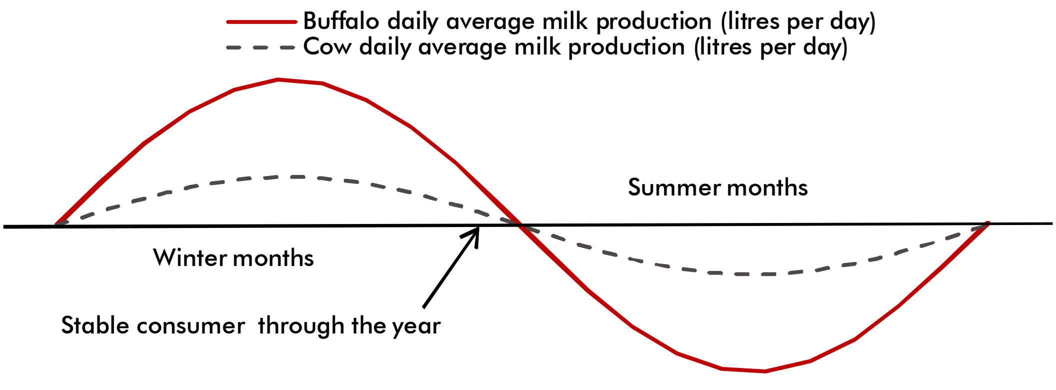
*Source: NSSO, NDDB, Ambit Capital research*

### Higher buffalo milk production in North India makes the marketable surplus seasonal

*"One of the unique problems with Indian dairying is that buffaloes give double the milk in winter than in summer." - Dr. Verghese Kurien, Author - I Too Had A Dream*

The seasonal nature of milk production further adds to the complications of a dairy business. During winter buffaloes produce ~2x of the milk they produce on average during the summer season. Cows show lesser variation in milk production than buffaloes do.

**Exhibit 16: Milk procurement and marketing have to work to help match cyclical supply with steady demand**




*Source: Ambit Capital research*

As shown in the exhibit below, North Indian states have higher production of milk from buffaloes. Due to the high variation in buffalo milk production and high self-consumption in the North Indian states, most of the milk produced in summer is self-consumed, leaving little to no marketable surplus. Only in the winter season when milk production increases to ~2x of the summer level do these states have surplus.

**Exhibit 17: North Indians states have a higher proportion of milk production from buffaloes**

| Top milk producing states | % split of milk production | |
|---|---|---|
| | Buffaloes | Cows |
| Haryana | 84% | 16% |
| Andhra Pradesh | 74% | 26% |
| Uttar Pradesh | 73% | 27% |
| Punjab | 68% | 32% |
| Gujarat | 63% | 37% |
| Rajasthan | 58% | 42% |
| Madhya Pradesh | 57% | 43% |
| Bihar | 47% | 53% |
| Maharashtra | 46% | 54% |
| Karnataka | 32% | 68% |
| Tamil Nadu | 12% | 88% |

*Source: NDDB, Ambit Capital research*

*"….Our woes are compounded by the fact that there is marketable surplus only in the winter in these states when there is higher milk surplus in other states but demand is still steady." - Milk procurement head at a dairy company in North India*

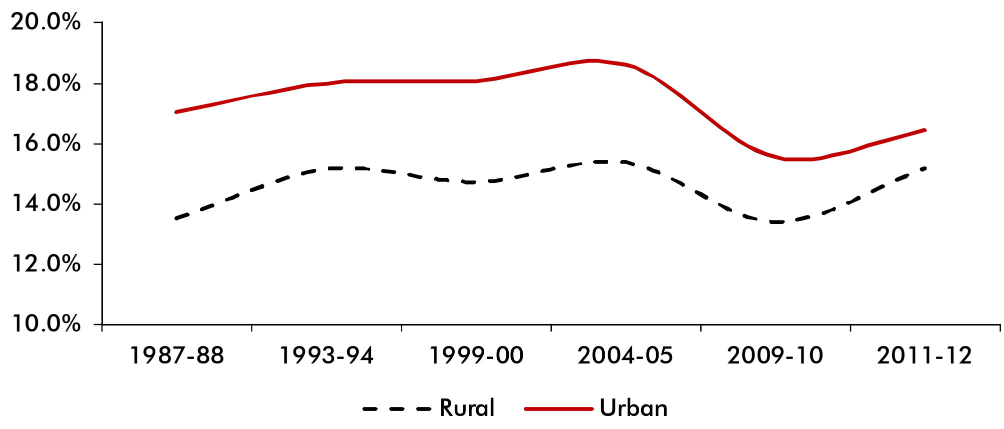
# Fresh dairy products to grow at a fast pace over the next decade

**Analysis of NSSO data on household milk consumption suggests that ~90% of milk consumption is still in the form of liquid milk. This consumption also includes curd, ghee and other milk products prepared at home using milk. Consumption of liquid milk in households has increased at 10-12% CAGR over the last decade. Purchase of packaged ghee, curd and other fresh dairy products has increased at 15-16% CAGR over the last 10 years in both urban and rural households. Increasing household income levels should help sustain this demand. Consumption of value-added dairy products like cheese and paneer is still dominated by consumption in the HoReCa (Hotels, Restaurants and Café) channel with only 35-40% consumption at household level. Demand for dairy products could get a boost with the successful roll-out of DBT across the country over the next 12-18 months.**

### Households not increasing proportion of spend on dairy products

Given the increased focus of dairy companies on driving sales of the B2C segment, we analysed NSSO data over the last 3 decades to understand the consumption pattern of milk and milk products at the household level. Urban households spend 16-18% of their food budget on dairy products while rural households spend 13-15%. According to NSSO data, per capita consumption of dairy products has increased at ~9% CAGR in both urban and rural India over 1988-2012. However, in value terms, the share of allocation of the household food budget for dairy consumption has remained almost flat over the last 25 years.

**Exhibit 18: Share of milk and milk products spend of the total household food budget has remained largely flat over 1971-2012**




*Source: NSSO, Ambit Capital research*

*Households haven't increased the proportion of their monthly spends on dairy products*

## Milk consumption has increased at 9% CAGR over last 25 years

**Exhibit 19: Rural milk consumption has increased by 9%/1% CAGR in value and volume over the last 24 years**

| Per capita consumption (₹/month) | Rural | | | | | | CAGR |
|---|---|---|---|---|---|---|---|
| | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 | 2011-12 | 1988-12 |
| **Milk liquid** | **12.1** | **24.9** | **38.4** | **44.3** | **76.2** | **106.3** | **9.5%** |
| Ghee | 1.0 | 1.3 | 3.0 | 1.9 | 2.9 | 5.7 | 7.6% |
| VADP | 0.6 | 0.8 | 1.2 | 1.1 | 1.5 | 2.9 | 6.9% |
| **Total Milk consumption** | **13.6** | **27.0** | **42.6** | **47.3** | **80.6** | **114.9** | **9.3%** |
| **Per capita consumption (litres/month)** | | | | | | | |
| Milk | 3.2 | 3.9 | 3.8 | 3.9 | 4.1 | 4.3 | 1.3% |
| **Households reporting consumption out of every 1000 surveyed** | | | | | | | |
| Milk | | | 678 | 713 | 764 | 780 | |
| Ghee | | | 89 | 70 | 67 | 97 | |
| **Total** | | | **711** | **749** | **798** | **823** | |
| **Liquid Milk cost (₹/litre)** | **3.8** | **6.3** | **10.1** | **11.5** | **18.5** | **24.5** | **8.1%** |

Source: NSSO

*Increase in milk cost has contributed to an increase in per capita expenditure on milk products*

*Number of households consuming dairy products has increased steadily over the last two decades*

**Exhibit 20: Urban milk consumption has increased at 9%/1% CAGR in value and volume over the last 24 years**

| Per capita consumption (₹/month) | Urban | | | | | | CAGR |
|---|---|---|---|---|---|---|---|
| | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 | 2011-12 | 1988-12 |
| Milk liquid | 19.4 | 39.1 | 62.7 | 73.3 | 119.4 | 158.4 | 9.6% |
| Ghee | 2.4 | 4.0 | 8.0 | 6.5 | 11.6 | 16.3 | 8.7% |
| VADP | 2.0 | 1.9 | 3.5 | 3.5 | 6.0 | 9.6 | 7.1% |
| **Total milk consumption** | **23.8** | **45.0** | **74.2** | **83.3** | **137.0** | **184.3** | **9.3%** |
| **Per capita consumption (litres/month)** | | | | | | | |
| Milk | 4.3 | 4.9 | 5.1 | 5.1 | 5.4 | 5.4 | 1.0% |
| **Households reporting consumption out every 1000 surveyed** | | | | | | | |
| Milk | | | 829 | 850 | 849 | 849 | |
| Ghee | | | 234 | 222 | 232 | 274 | |
| **Total** | | | **869** | **882** | **880** | **890** | |
| **Liquid Milk cost per (₹/litre)** | **4.6** | **8.0** | **12.3** | **14.4** | **22.3** | **29.2** | **8.0%** |

Source: NSSO

*Per capita milk consumption increase of 9% CAGR over last three decades has been driven by 1% CAGR in volume and ~8% CAGR in price*

## ~90% of household milk consumption still dominated by liquid milk

As shown in the exhibit below, NSSO data suggests that ~92% of a rural household's milk spends are on liquid milk. The proportion of liquid milk in total milk spends has remained flat over the last 20 years, indicating the resilience of this product in the dairy consumption basket. Similarly, for an urban household the proportion of spends on liquid milk of total spends on milk products have remained constant at ~86% over the last 20 years with spends on other products also being almost constant. It is only over 2010-12 that the proportion of milk spends on value-added dairy products has increased both in the urban and rural areas.

**Exhibit 21: Split of monthly per capita expenditure on milk and milk for rural and urban households**

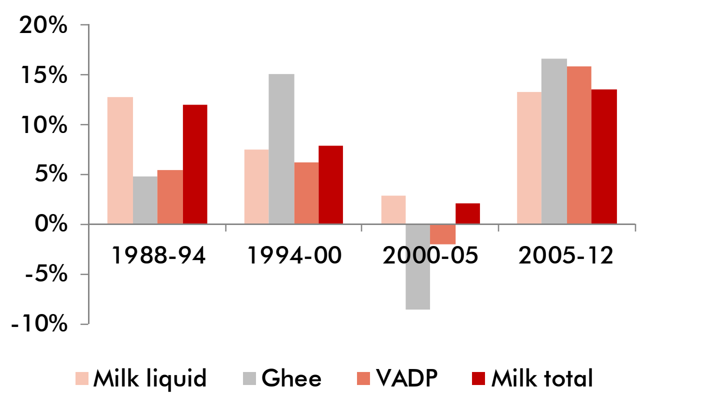
| | 1987-88 | 1993-94 | 1999-00 | 2004-05 | 2009-10 | 2011-12 |
|---|---|---|---|---|---|---|
| **Rural** | | | | | | |
| Milk liquid | 88.5% | 92.2% | 90.2% | 93.7% | 94.5% | 92.5% |
| Ghee | 7.2% | 4.8% | 7.1% | 4.1% | 3.6% | 5.0% |
| VADP | 4.3% | 3.0% | 2.7% | 2.2% | 1.9% | 2.6% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |
| **Urban** | | | | | | |
| Milk liquid | 81.5% | 86.9% | 84.5% | 88.0% | 87.2% | 86.0% |
| Ghee | 10.2% | 9.0% | 10.8% | 7.9% | 8.5% | 8.9% |
| VADP | 8.4% | 4.2% | 4.8% | 4.2% | 4.4% | 5.2% |
| **Total** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

*Source: NSSO, Ambit Capital research*

## Expenditure on VADP has been increasing over the last decade

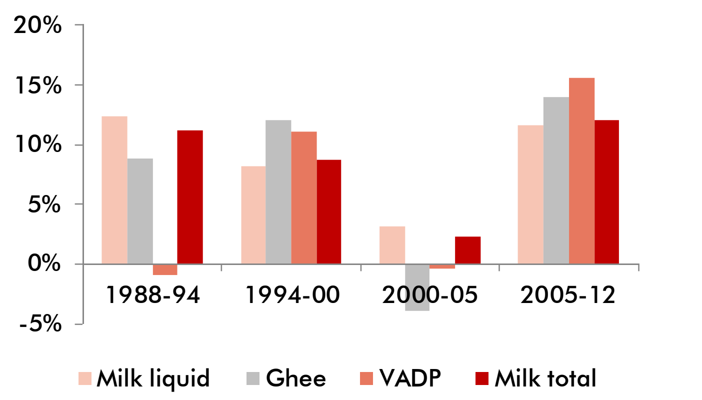
NSSSO data suggests that over 2005-2012 both rural and urban households have increased their expenditure on Value Added Dairy Products (VADP) at ~16% CAGR compared to liquid milk CAGR of 10-12%. Products which contributed to higher growth in VADP portfolio are fresh dairy products like curd, buttermilk and other value-added products like baby food, ice cream and cheese. ~9% of the 10-12% expenditure growth in liquid milk over 2005-12 has been driven by price hikes and ~1% higher milk consumption per person.

**Exhibit 22: YoY growth in monthly per capita expenditure on milk products by rural household**




*Source: NSSO, Ambit Capital research*

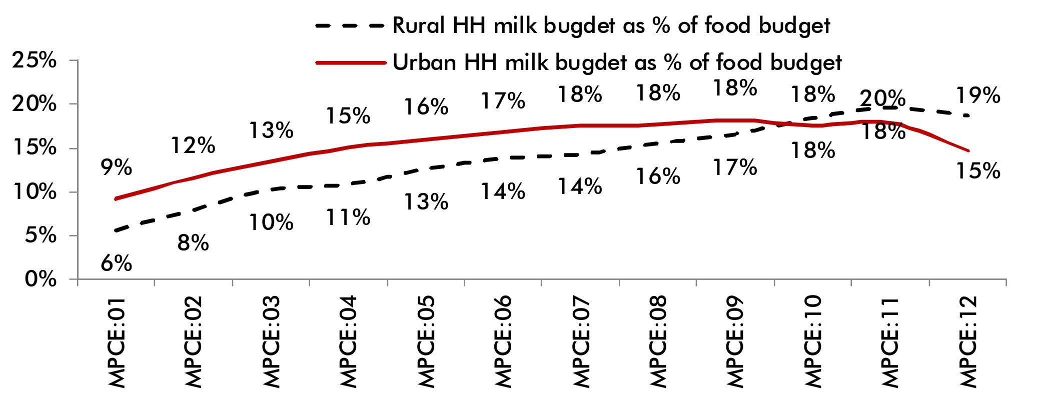
**Exhibit 23: YoY growth in monthly per capita expenditure on milk products by urban household**




*Source: NSSO, Ambit Capital research*

## Expenditure on milk increases with the increase in household income

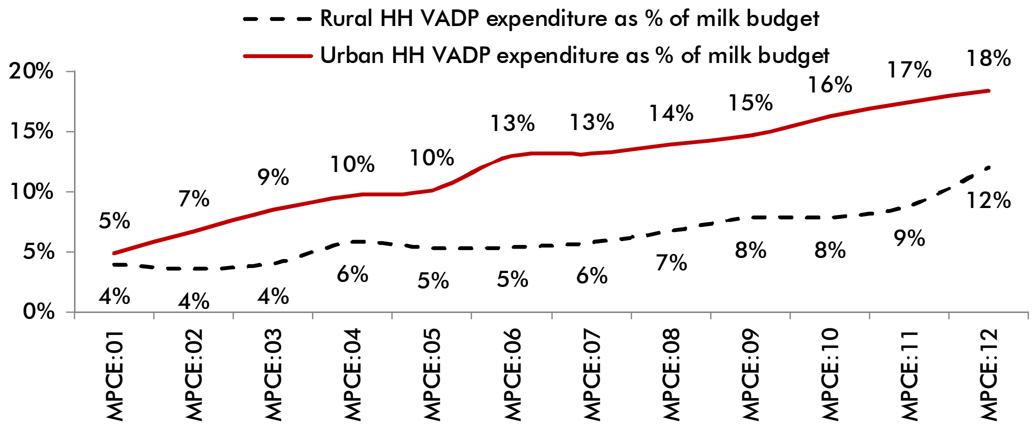
**Exhibit 24: Rural and urban households typically increase expenditure on milk products as income increases**




*Source: NSSO survey 2012, Ambit Capital research; Note: MPCE:01 denotes lowest monthly per capita expenditure household & MPCE:12 denotes highest monthly per capita expenditure household*

*Per capita expenditure on milk as % of total expenditure on food increases with increase in income level both for urban and rural households. The average per capita expenditure on milk and milk products as % of total household food expenditure is ~15% and ~16% in rural and urban household respectively.*

**Exhibit 25: Rural and urban households spend more on VADP as income levels increase**



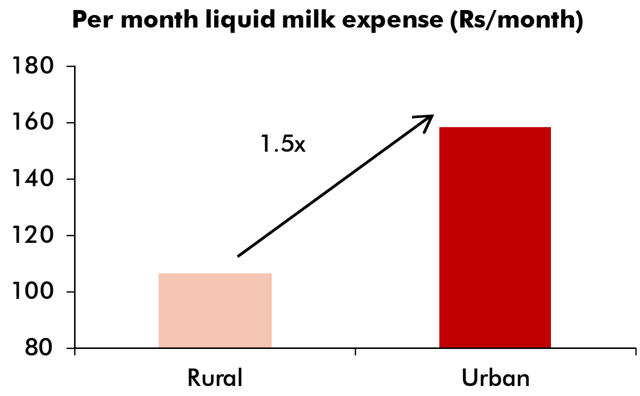

*As income level increases, households tend to increase their spends on value added dairy products.*

*Source: NSSO, Ambit Capital research; Note: MPCE:01 denotes lowest monthly per capita expenditure household & MPCE:12 denotes highest monthly per capita expenditure household; VADP is defined as milk products excluding liquid milk and ghee*

## Urbanisation also drives increase in milk consumption

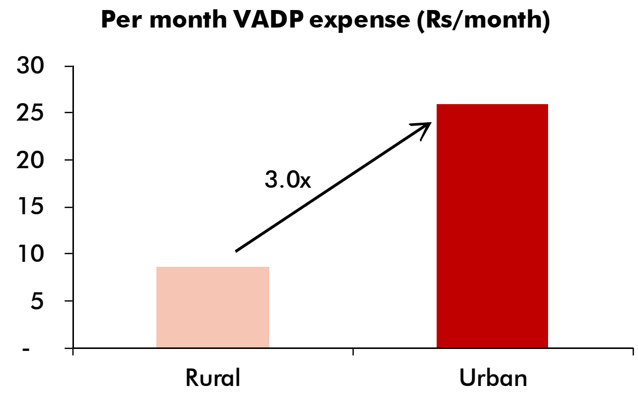
According to the NSSO data, an average urban household spends 1.5x and 3.0x the amount spent by a rural household on liquid milk and VADP respectively. Thus urbanization can be a driver of increase in milk consumption.

**Exhibit 26: Urban liquid milk expenditure is 1.5x of rural**




*Source: NSSO, Ambit capital research*

**Exhibit 27: Urban value-added dairy products expenditure is 3.0x of rural**




*Source: NSSO, Ambit Capital research*

## Lower refrigerator penetration constrains VADP growth

While there aren't exact estimates of refrigerator penetration in India, various sources suggest the penetration is 10-20%. The penetration levels are particularly low (1-2%) in rural India. The refrigerator penetration is low in households as well at retail level. The lower penetration of modern trade which normally has a chiller section has also slowed growth of dairy products. The need for refrigeration is particularly critical in a tropical country like India. The long-life UHT dairy products which do not need refrigeration are more expensive than the normal dairy products. This has also been one of the reasons for milk consumption being limited to liquid milk, which then is converted to ghee to prolong its shelf life without the need for refrigeration.

### Demand for dairy products to grow at 12-15% over the next 5 years

Demand for dairy products is expected to be driven by increase in income levels and urbanization. Due to these factors, we expect household demand for packaged dairy products like ghee, curd, butter and ice cream to grow at ~15% CAGR over the next 5 years. Demand for liquid milk is expected to grow at ~10% over this period driven by ~8% increase in price and ~2% volume growth. However, demand for value-added products such as paneer and cheese is expected to grow more in the HoReCa segment than at the household consumption level as most consumption of these products happens at homes. We do not expect this trend to reverse as the number of working women is increasing.

## Demand could get a boost from DBT implementation

In 2013, a study was conducted in 500 self-selected households in Delhi, which were given direct cash transfer instead of subsidized food grains (refer to http://tinyurl.com/ohcs798). Whilst a major concern expressed was that households might prioritize wasteful expenses rather than ensure food security, results showed that food security was not compromised. Results showed that cash transfers provided opportunities for households to shift to nutritious options in the non-cereal segment like milk and other dairy products. Hence, implementation of DBT could encourage demand for dairy products over the next 12-18 months.

# Defining dairy's competitive advantage framework

*"The first of the principles was that if we wanted to produce milk, we must have a market for it and that market must be such that the person producing the commodity must profit….. Once we assure a market and a good price, farmers will produce." – Dr. Verghese Kurien, I too had a dream*

**Access to quality milk is needed to produce fresh and value-added dairy products. Due to the highly perishable nature of milk, timely marketing and distribution are equally important to sell maximum products without losses. Hence, milk procurement and marketing are the two key drivers of competitive advantage for a vertically integrated dairy business. In milk procurement, it is important to assess a company's current scale of direct milk procurement, its track record in growing direct milk procurement and ability to expand this network beyond its home state. To assess the ability to sell, we look at the company's product portfolio, brand equity and distribution reach. We combine this competitive advantage framework with the financial performance to arrive at an overall framework for evaluating vertically integrated dairy companies in India.**

## Driver #1: Milk procurement

Access to good quality milk is the most basic requirement for setting up a vertically integrated dairy business. This milk can be procured only by setting up a direct milk procurement network. Milk procured from agents/venders isn't of reliable quality and, hence, cannot be used to dairy products. We evaluate a company's milk procurement on the basis of:

- Scale of direct milk procurement,
- Track record in growing direct milk procurement, and
- Ability to grow milk procurement beyond the home state (diversity of milk procurement base)

## Driver #2: Marketing - product mix and distribution

For any dairy company, the primary objective is to maximize the realization and timely sale of the milk procured. We believe a portfolio focused on fresh dairy products is profitable and helps in timely sale of the milk products. Hence, in order to evaluate a company's product mix and distribution, we look at:

- the proportion of fresh dairy products in the current sales mix,
- the targeted product mix of the company, and
- Distribution reach and brand equity

### Financial ratio framework to evaluate profitability, cash conversion and return ratios

We also evaluate the financial performance of the companies on profitability, cash conversion and return ratios. We combine our financial ratios framework with our dairy competitive advantage framework to arrive at a comprehensive dairy competitive advantage framework.

## Dairy landscape dominated by co-operatives and regional private dairy companies

The dairy landscape is dominated by large vertically integrated dairy co-operatives like Gujarat Co-operative Milk Marketing Federation (GCMMF), Karnataka Milk Federation and NDDB-led Mother Dairy. In the private sector, Britannia isn't a vertically integrated dairy company while Nestle is only partially integrated. Products from these companies are present across the country. Other private dairy companies like Hatsun Agro, Heritage Foods, Parag Milk Foods, Prabhat Dairy and Kwality are vertically integrated dairy companies but have a largely regional presence. We limit our analysis to only vertically integrated private dairy companies.

**Exhibit 28: Indian dairy landscape is dominated by regional vertically integrated dairy companies**

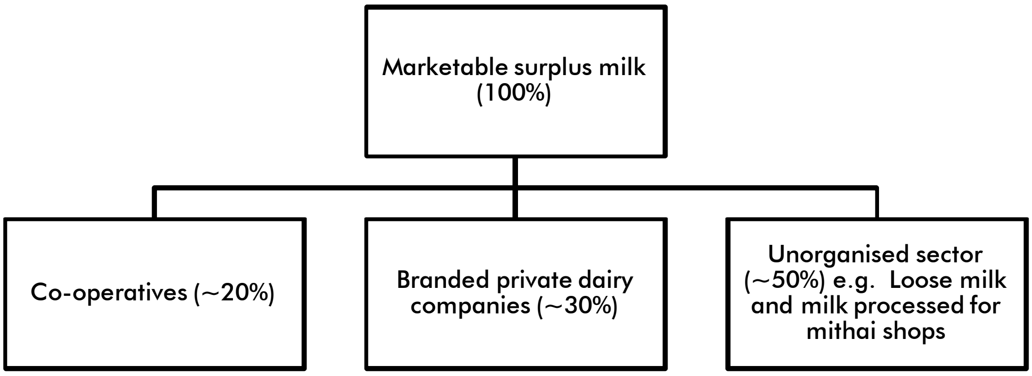
| Name | Product categories | Sales (in ₹ bn) | Brand name | Vertical integration | Distribution reach |
|---|---|---|---|---|---|
| **Co-operative dairy players** | | | | | |
| GCMMF | Pouch Milk, Fresh Dairy, VADP, ice cream, Confectionery, Baby Foods | 230 (FY16) | Amul, Sagar | 100% integrated | Pan India |
| KMF | Pouch Milk, Fresh Dairy | | Nandini | 100% integrated | Karnataka, Maharashtra |
| Mother Dairy Fruits & Vegitables Pvt Limted | Pouch Milk, Fresh Dairy, VADP, ice cream | 71.9 (FY16) | Mother Dairy | 100% integrated | North and West India |
| RCDF | Pouch Milk, Fresh Dairy | | Saras | 100% integrated | Rajasthan |
| TCMPF | Pouch Milk, Fresh Dairy | | Aavin | 100% integrated | Tamil Nadu |
| MILKFED | Pouch Milk, Fresh Dairy | | Verka | 100% integrated | Punjab |
| OMFED | Pouch Milk, Fresh Dairy | | Omfed | 100% integrated | Orissa |
| Mahasangh | Pouch Milk, Fresh Dairy | | Mahanand | 100% integrated | Maharashtra |
| COMFED | Pouch Milk, Fresh Dairy | | Sudha | 100% integrated | Bihar |
| HDDCF | Pouch Milk, Fresh Dairy | | Vita | 100% integrated | Haryana |
| MPCDF | Pouch Milk, Fresh Dairy | | Sanchi and Sneha | 100% integrated | Madhya Pradesh |
| PCDF | Pouch Milk, Fresh Dairy | | Parag | 100% integrated | Uttar Pradesh |
| **Private dairy companies** | | | | | |
| Britannia | Fresh dairy, VADP | 79.5 (FY16) | Britannia | 100% outsourced | Pan India |
| Nestle | Pouch Milk, Fresh dairy, VADP, Baby Foods, Confectionery, Nutrition | 81.7 (CY15) | Milkmaid, Cerelac, Everyday, Neslac | 100% integrated for baby foods; outsourced for other products | Pan India |
| Danone | Pouch Milk, Fresh dairy, VADP, Nutrition | | Danone, Dexolac, Farex, Nusobee and Protinex | 100% outsourced | Pan India |
| Hatsun Agro | Pouch Milk, Fresh Dairy, ice cream | 34.4 (FY16) | Arokya, Arun, Hatsun | 100% integrated | TN, AP, Karnataka |
| Parag Milk Foods | Pouch Milk, Fresh Dairy, VADP | 16.5 (FY16) | Go, Gowardhan and Topp up | 100% integrated | West and South India |
| Prabhat Dairy | Pouch Milk, Fresh Dairy, VADP | 11.7 (FY16) | Prabhat | 100% integrated | Maharashtra |
| Kwality Dairy | Pouch Milk, Fresh Dairy | 64.1 (FY16) | Dairy best, Kwality | 100% integrated | North India |
| Heritage Foods | Pouch Milk, Fresh Dairy | 23.8 (FY16) | Heritage | 100% integrated | South and North India |
| GSK Consumer | Baby foods | 43.1 (FY16) | Horlicks | 100% integrated | Pan India |
| Triumala | Pouch Milk, Fresh Dairy, VADP | ~18.0 (FY15) | Triumala | 100% integrated | TN, AP, Karnataka |
| Creamline Dairy | Pouch Milk, Fresh Dairy, Ice cream | ~10.0 (FY16) | Jersey | 100% integrated | AP, TN, Karnataka & Maharashtra |
| Bohle Baba | Pouch Milk, Fresh dairy | ~4.0 (FY16) | Dholpur Fresh, Krishna | 100% integrated | North India |
| Umang Dairy | Pouch Milk, Fresh dairy | 1.9 (FY16) | Umang | 100% integrated | North India |
| Vadilal | Ice cream | 4.1 (FY15) | Vadilal | 100% integrated | West and North India |
| Modern Dairies | Pouch Milk, Fresh dairy | 5.0 (FY16) | Modern | 100% integrated | North India |
| Sterling Agro Industries | Pouch Milk, Fresh dairy | | Nova | 100% integrated | |

*Source: Ambit Capital research*

# Driver #1: Milk procurement – every little drop counts

**About 48% of India's milk production is self-consumed, leaving only ~52% of marketable surplus. As more dairy companies look to focus on the B2C segment, they will have to set up direct procurement networks to procure quality milk. We believe this will increase competition for quality milk at the village level. We use a competitive advantage framework evaluating private dairy companies on their track record of growing direct milk procurement and ability to grow this network beyond their home state. We believe, Hatsun Agro is best placed with 2.5mn litres of daily direct milk procurement and a procurement base spread across Tamil Nadu, Karnataka, Andhra Pradesh and Maharashtra.**

**Exhibit 29: About 20% of surplus milk is processed by co-operatives**




*Source: Ambit Capital research*

*On a daily basis, out of the ~182mn litres of surplus milk, only ~50% of milk is processes by the co-operatives and private dairy companies selling branded dairy products.*

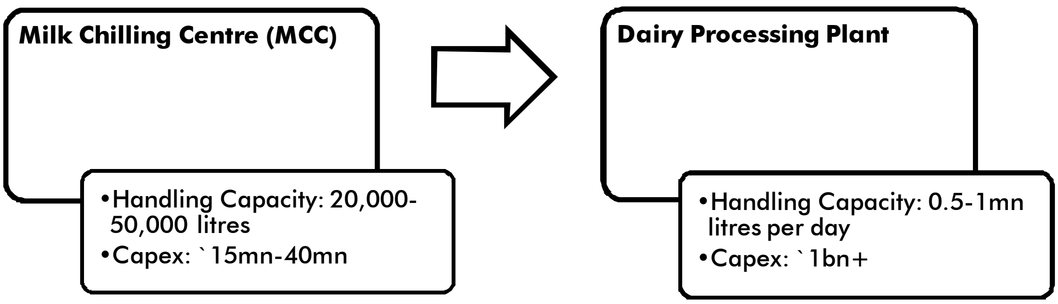
## Direct procurement – slow and steady wins the race

Dairy companies can procure milk in the following two ways:

- Milk procurement through vendors/agents,
- Direct milk procurement from farmers,

**Milk procured from agents/vendors isn't of high quality and cannot be used to produce VADP**

**Exhibit 30: In case of milk procurement through agents/vendors, agent supplies milk through a tanker directly at the milk chilling centre**




*Source: Ambit Capital research*

A typical milk agent/vendor is a person who is well-known in his village, has his own milk tanker and many a times drives it on his own. This helps him keep the overall cost of operations low. In order to build his trust with the farmer he often extends loans to farmers. He either has his own village collection centre where farmers come with their milk or the agent would collect the milk from farmer's doorstep. Many agents still pay the farmer on the quantity of milk supplied rather than on the quality of milk. The agent doesn't have his own chilling facilities. Once the collection is done, the agent would then sell the milk procured to the dairy company offering him the highest milk price.

**Issues faced with milk procured from agents:**

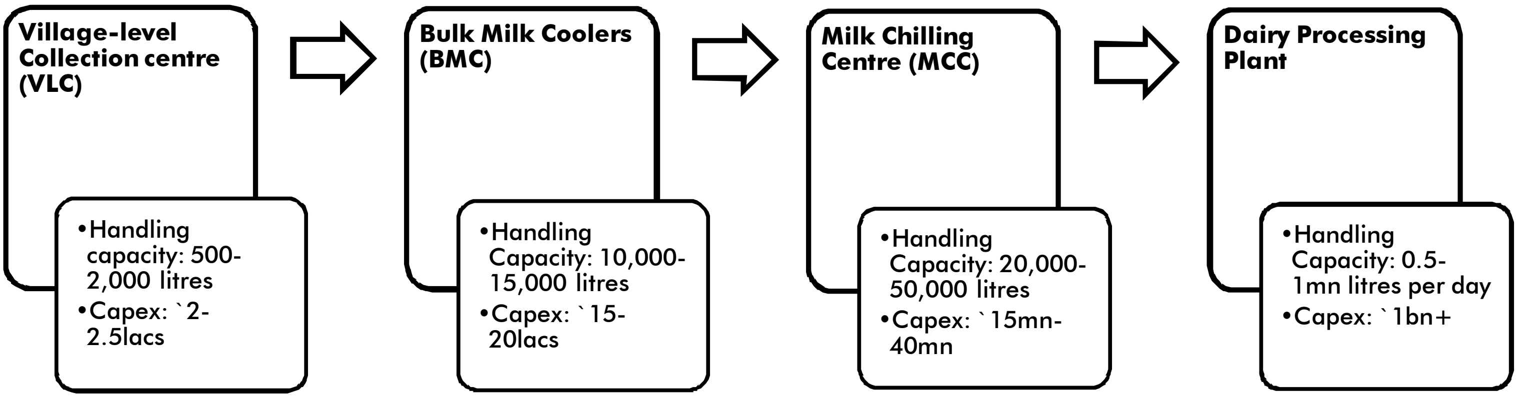
- **Milk quality isn't consistent:** The agent doesn't invest in providing the farmer with the correct cattle feed, veterinary services and other inputs. As a result, the quality of milk in terms of its fat content varies.
- **No quality control at point of collection:** Most of the agents pay the farmer based on the quantity of milk supplied and not on the fat content as the agent doesn't invest in milk testing equipment. Hence, farmers sometimes adulterate milk to increase the quantity.
- **Lack of chilling facilities increases bacterial content of milk:** Agents do not have any chilling facilities of their own. In order to collect more milk, there are often delays in chilling the milk. This deteriorates the quality of milk.
- **Not assured of quantity of milk supplied by the agent:** The agent supplies milk to the dairy plant which pays the highest price. Hence, dairy plants could face milk shortage if the agent decides to supply milk to another dairy plant that pays a better price.

*"Using agent-sourced milk for processing increases our operating costs as many a times milk sourced for agent is of poor quality and hence we have to reject it forcing us to source milk from another agent or face loss of sales due to non-availability of milk. This increases our cost of production." – CFO of listed dairy company in Western India*

Due to all of the above issues, milk supplied by agents is of lower quality than directly procured milk. Hence this milk isn't normally used for producing fresh dairy products like pouch milk, curd, butter milk and other value added products. Commodity products like ghee and SMP can be produced using this milk.

**Direct milk procurement network needs to be built gradually by gaining the farmer's trust**

**Exhibit 31: In direct milk procurement, farmer supplies the milk at the village-level collection centre after which it undergoes testing before reaching the dairy processing plant**




*Source: Ambit Capital research*

As shown in the above exhibit, setting up a direct milk procurement network involves significant capital expenditure. In direct milk procurement, the farmer is usually paid 10 days after supplying the milk, hence building trust with the farmer is extremely essential to convince him to sell you milk on credit. Given that dairy farmers are usually marginal or landless farmers, trust is built by:

- Promptness of payment,
- Remunerative milk price,
- Transparency in calculating the fat content of milk,
- Procurement of entire quantity of milk supplied even in the flush season,
- Providing other inputs like subsidised cattle feed, veterinary services, artificial insemination etc.

Many a time unsecured loans need to be extended to the empanelled farmers for helping him with a family wedding or a medical emergency. As a result, significant time is needed in nurturing and growing the direct milk procurement network.

*"Only by setting up VLCs, BMCs, MCCs you cannot expect to grow your direct milk procurement. You need to spend time with the farmers, understand their issues and connect with them to win their trust. The senior personnel of the dairy company or the procurement team need to spend time with the farmers. Initially the farmers will get only few litres of milk to your VLC. Once they see that payment is prompt and milk quality is determined in a transparent fashion, will they then get their entire milk to your VLC. As a result, building direct milk procurement requires quite a few years." - Dairy industry expert*

## Co-operatives, private dairy companies and agents in a pitch-forked battle for milk procurement

In order to understand the potential for a private dairy company to grow its milk procurement it is necessary to analyse the dynamics of milk procurement in different parts of the country. Some of the common issues faced by dairy companies in direct milk procurement are as follows:

- **No region left unexplored; intense competition in existing regions:** Our primary channel checks suggest that all the top milk producing states of Uttar Pradesh, Gujarat, Karnataka, Tamil Nadu, Maharashtra, Andhra Pradesh, Bihar and others have been covered by co-operatives, private dairies or by agents. For example, in a village we visited in Uttar Pradesh, within a radius of 3km, there were almost seven companies with their own village-level collection centres procuring milk directly from farmers.
- **Private dairy companies facing difficulties in moving out of their local region of influence:** Every private dairy company has established a dominant market share in its home region of operations but finds it difficult to enter new regions. Prabhat in Ahmednagar (Maharashtra), Parag in Manchar (Maharashtra) and Heritage in Andhra Pradesh have established very robust direct milk procurement in the region where their promoters hail from. In some cases, promoter's local influence has helped establish the direct milk procurement network. Our channel checks suggest that when these companies ventured outside their home turf, they faced difficulties in establishing milk procurement network as they cannot assert similar influence in these new regions.
- **Sourcing and retaining local talent for a VLC creates supply issues:** The village-level collection centres are usually operated by a local, educated person who is well-known in the village. He/she acts as a village-level representative of the dairy company. The dairy company provides the representative with milk testing equipment, basic furniture and milk storage cans. He is paid a commission based on the quantity of milk collected at his VLC. As more dairy companies look to setup VLCs, given lack of quality talent in villages, there is high incidence of poaching of these village representatives by competing dairy companies who pay the representative a higher commission. As farmers usually associate their trust with the dairy company's village-level representative, switching of the village representative to another dairy company also results in several farmers defecting to the new company.

### Co-operatives a dominant force in Gujarat, Karnataka, Bihar, Rajasthan

*"A cooperative without a "brand" can never aspire to survive-let alone thrive-while marketing commodities in today's competitive environment. Only by nurturing its marketing skills and building solid brands can cooperatives make their own growing space in the market."* – Dr. Verghese Kurien at GCMMF's 2005 AGM

Milk procurement is dominated by state milk federations like Amul in Gujarat, Nandini in Karnantaka, Saras in Rajasthan and Sudha in Bihar. These co-operatives use their brand equity to sell all the milk procured in the form of pouch milk or other milk products. This has ensured that these co-operatives pay highly remunerative milk price to the farmer. Also the co-operatives are prompt with payments. The strength of these state co-operatives has made it very difficult for private dairy companies to procure milk directly from farmers in these states. The Karnataka state government gives subsidy to farmers for supplying milk to dairy co-operatives. This has ensured success for Karnataka Milk Federation, making it almost impossible for private players to procure milk from Karnataka.

**Exhibit 32: Gujarat, Karnataka, Bihar, Maharashtra and Tamil Nadu milk procurement dominated by co-operatives**

| Top milk-producing states | Milk surplus (%) | Co-operative milk procurement as % of surplus milk | State milk federation milk brand |
|---|---|---|---|
| Gujarat | 58% | 83% | Amul |
| Karnataka | 52% | 67% | Nandini |
| Bihar | 23% | 34% | Sudha |
| Maharashtra | 46% | 27% | Mahanand |
| Tamil Nadu | 52% | 24% | Aavin |
| Rajasthan | 40% | 14% | Saras |
| Punjab | 56% | 8% | Verka |
| Haryana | 29% | 7% | Vita |
| Madhya Pradesh | 55% | 7% | Sanchi |
| Andhra Pradesh | 69% | 7% | Vijaya |
| Uttar Pradesh | 45% | 1% | Parag |
| **India** | **52%** | **20%** | |

*Source: Ambit Capital research*

### Maharashtra - Political hold on co-operatives constrains private players

Dairy co-operatives in Maharashtra have evolved from the sugar co-operatives in the state. These co-operatives are normally controlled by politicians who use these co-operatives as vote banks for them. This makes it difficult for private dairy players to scale up their direct milk procurement network in Maharashtra.

*"Although we can source the entire quantum of milk we need from Ahmednagar, we do not do so as it might upset some of the local politicians there."* – Dairy company in Maharashtra

### Uttar Pradesh – Milk procurement is dominated by vendors

Political intervention has weakened Uttar Pradesh's state milk federation. The failure of dairy co-operatives has allowed agents get a strong hold on milk procurement in the state. These agents have local political backing and use the farmer networks as vote banks. This has constrained private dairy companies in expanding their direct milk procurement.

## Hatsun tops in our milk procurement framework

As private dairy companies look to focus on the B2C segment, they will have to set up their own milk procurement networks to procure quality milk. We use the below framework to evaluate the robustness and scalability of the direct milk procurement of listed Indian dairy companies.

- **Current scale of direct milk procurement** – Companies need to go through a learning curve as they set up their direct milk procurement network. The current scale of direct milk procurement helps understand the expertise that a company has developed in direct milk procurement.
- **Diversification of milk procurement base** – Companies usually source most of their direct milk only from one particular region/state, also because of issues (as discussed above) in sourcing milk from other regions. Hence, we believe diversification of the milk procurement base is an important criterion.
- **Growth in daily direct milk procurement** – We look at the increase in daily direct milk procurement over FY13-15 to measure the scalability of the milk procurement network.

Based on our milk procurement competitive advantage framework, Hatsun Agro has the best direct milk procurement network among private Indian dairy companies. It has one of the largest milk procurement networks which is diversified beyond Tamil Nadu and has grown by 11-12% CAGR over FY13-15.

**Exhibit 33: Hatsun Agro is best placed on our direct milk procurement competitive advantage framework**

| Company | Daily milk procurement (mn lpd) | % Milk directly procured | Diversification of procurement base | Daily milk procurement growth FY13-15 | Overall rating |
|---|---|---|---|---|---|
| Hatsun Agro | 2.5 | ~100% | 70-75% from Tamil Nadu; 25-30% from 4 other states | 11-12% | ● |
| Heritage | 1.1 | ~100% | 60-65% from Andhra Pradesh; 35-40% from 5 other states | ~6% | ◕ |
| Parag Milk Foods | 1.0 | ~100% | 85% Maharashtra, non-Maharashtra proportion reduced from 24% in FY13 to 15% in FY15 | 10-11% | ◕ |
| Prabhat Dairy | 0.9 | 60-65% | 100% Maharashtra | NA | ◑ |
| Kwality | 3.0 | 15% | Sources from 3 states - Rajasthan, Uttar Pradesh and Haryana | 4% | ◑ |

*Source: Company, Ambit Capital research. Note:* ● *- Strong;* ◕*- Relatively Strong;* ◑*- Average*

## Hatsun Agro – Perfect example of leveraging marketing to grow procurement

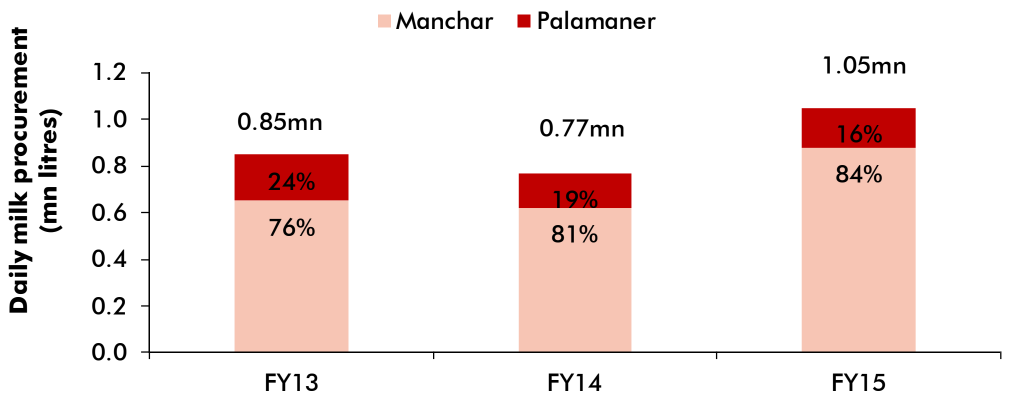
Over the last three decades, Hatsun has steadily built a 2.5mn litre per day direct milk procurement network spanning five states of Tamil Nadu, Andhra Pradesh, Telangana, Maharashtra and Karnataka. It sources milk through 8,000 collection centres, each fitted with an automatic milk testing unit (AMU). This ensures payment is made to the farmer based on the milk's quality and quantity. The company ensures that it collects the entire quantity of milk supplied by its empanelled farmers twice a day. Our channel checks suggest that Hatsun pays its farmers ₹1-1.5/litre higher than competitors in its area because Hatsun's pouch milk commands a price premium to peers in the market. By passing on a portion of this benefit to the farmer through higher milk procurement price, it has been able to grow its direct milk procurement across five states. Steady demand for Hatsun's pouch milk has ensured a short cash conversion cycle for the company, allowing it to do timely payment to farmers. Over the years, it has ensured that 100% of its milk is sourced directly from farmers.

*"Out of all the dairy companies, Hatsun has one of the best direct milk procurement system" – Dairy industry expert*

## Parag – Facing issues scaling up procurement outside Maharashtra

Parag Milk Foods procures ~85% of its milk requirement from one place, Manchar, in Maharashtra. The promoter family has resided in Manchar near Pune for more than 5 decades. They have been able to use their local influence to secure milk from this area. While the company claims that its entire milk procurement is directly from farmers, 40-45 days of accounts payable and related-party transactions indicate that the company possibly acquires some portion of milk from agents. Our channel checks suggest that the company along with its own network of village collection centres use milk agents who procure and supply exclusively to Parag. The company helps these agents secure working capital finance for milk procurement activities. Channel checks also suggest that Parag hasn't had much success in securing milk procurement outside Pune district in Maharashtra.

**Exhibit 34: Parag's direct procurement has been slow outside Maharashtra**




*Source: Company, Ambit Capital research*

According to the company's IPO prospectus, Parag's milk procurement outside Maharashtra has de-grown from 0.2mn lpd in FY13 to 0.17mn lpd in FY15. We believe, given the value-added nature of Parag's product portfolio, it should be able to pay farmers remunerative price for milk. However, unlike Hatsun Agro, which largely trades in a fast moving product like liquid milk, Parag has more than 40 days of inventory outstanding due to the slow moving nature of its products like cheese and UHT milk. This we believe creates a cash flow issue for Parag, restraining it from rapidly growing its direct milk procurement network.

### Prabhat– Untested outside home ground; limitations in home territory

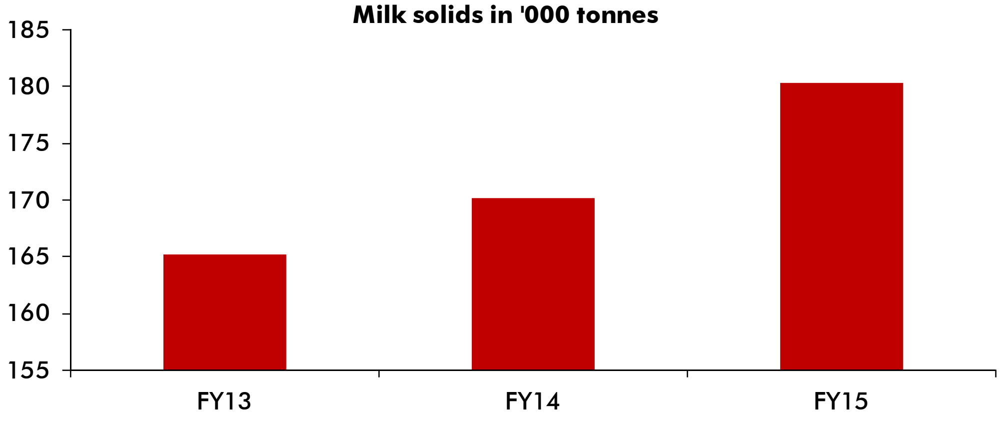
About 30% of Prabhat Dairy's sales are in its B2C business. As the company looks to increase its focus on B2C business, it is trying to scale up direct milk procurement. The company currently procures ~0.9mn litres per day through a mix of direct milk procurement and from agents. About 0.5mn litres of milk are procured directly from Ahmednagar and little quantities from Nashik and Pune, all in Maharashtra. As highlighted earlier, due to the political influence of dairy co-operatives in Ahmednagar, the company cannot scale up its milk procurement in this region. According to our channel checks, as Ahmednagar was historically dominated by weak dairy co-operatives who didn't test the quality of milk procured, farmers in this district tend to adulterate milk. This has impacted the milk quality of Prabhat dairy.

Given Prabhat's low brand equity, we do not believe it can command a premium for its B2C products. As a result, Prabhat will be constrained in being able to pay highly remunerative price to farmers for their milk. Also, as Prabhat's B2C business is in a nascent stage, demand for its products will grow only gradually. Slow demand leading to high inventory could lead to working capital issues for Prabhat, thus limiting its ability to grow its direct milk procurement network.

### Kwality Dairy – Taking the first steps in direct milk procurement

Kwality Dairy currently derives ~70% of its sales from B2B. The company is now making a shift in strategy to focus on the B2C business driven by higher sales of value-added dairy products. To support VADP sales, the company has been gradually scaling up its direct milk procurement network in Uttar Pradesh, Haryana and Rajasthan. In these states, the company faces competition from state co-operatives like Saras in Rajasthan and Mother Dairy and Amul in other states. As the company hasn't yet been able to create sufficient consumer demand for its VADP, direct milk procurement growth has slowed to 4% CAGR over FY13-15. The company has also set up a state-of-the-art manufacturing facility for value-added products at Softa in Haryana. All hopes are pinned on the launch of value-added products under the Kwality brand name over the next 3-4 months. Till now, Kwality has had limited success in the B2C segment under its Dairy Best brand.

**Exhibit 35: Kwality Dairy milk solid procurement has grown at 4% CAGR over FY13-15**

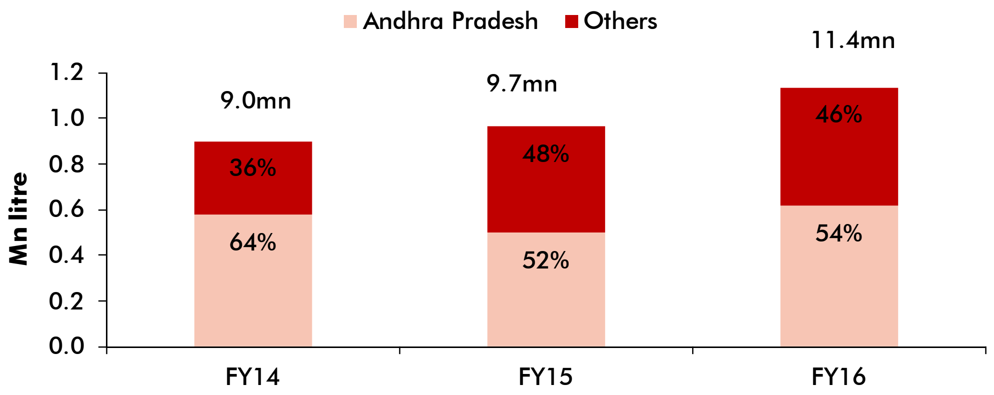



*Source: Company, Ambit Capital reserach*

### Heritage Foods – Growing milk procurement at a steady pace

Heritage procures ~1.1mn litres of milk per day. About 50% of this is procured from Andhra Pradesh where the company's promoter, Chandrababu Naidu, is the Chief Minister. This has significantly helped Heritage grow its milk procurement network in the state. However, the company has had limited success in growing milk procurement outside of AP. In Rajasthan, the company faced issues with milk quality due to which it had to scale back its milk procurement.

**Exhibit 36: Heritage's procurement has grown at 6% CAGR over FY14-16**




*Source: Company, Ambit Capital research*

### Nestle – One of the best managed milk procurement networks

As we have been evaluating 100% vertically integrated dairy companies, we haven't evaluated Nestle on the milk procurement competitive advantage framework. However, our channel checks suggest that Nestle has a well-established milk procurement network spanning Punjab and the adjoining areas. It procures the best quality milk by paying highly remunerative prices to the farmers, encouraging them to sell milk to Nestle instead of the state co-operative. Nestle is also known for its prompt payments to farmers.

**Hence, Hatsun Agro is one of the best placed dairy companies on our milk procurement competitive advantage framework. Given the ability it has exhibited in the past in expanding its network beyond its home state, we believe Hatsun Agro can grow its direct milk procurement ahead of peers.**

# Driver #2 – Marketing: getting the correct product portfolio and distribution

**Given the highly perishable nature of milk, the more a dairy company procures the more it has to sell, and sell fast. About 90% of expenditure on milk products in a household is still dedicated to liquid milk with the remainder on fresh dairy products. Selling fresh dairy products can be as profitable as selling value-added dairy products like cheese. Fresh dairy products can generate higher returns due to lower working capital and capex requirements. A fresh dairy business also helps develop the direct milk procurement network. To evaluate dairy companies on marketing, we look at their current and future exposure to fresh dairy products, distribution reach and brand equity. Hatsun Agro and Heritage Foods, which are focused on fresh dairy products, are best placed on our marketing competitive advantage framework.**

## Pouch milk – Basic but most essential building block

### Scale begets scale

Given the highly perishable nature of liquid milk and the fact that 85% of milk is water, transporting liquid milk over large distances doesn't make economic sense. As a result, the pouch milk market is dominated by regional private or co-operative dairy companies procuring milk from adjacent areas. However, pouch milk is an extremely low profit margin business with brands normally not having much pricing power. Hence, adequate volumes of pouch milk sales are needed to cover fixed and transportation costs. Sizable presence in one region can be leveraged to enter adjoining markets. Hence, attaining scale is extremely important in the liquid milk business.

### Pouch helps increase procurement, create brand, set up supply chain

Direct milk procurement is extremely essential for a liquid milk business. Demand is normally stable and voluminous in a liquid milk business, which helps in steady scaling up of the direct milk procurement network. However, given the low profit margin of the liquid milk business, companies cannot pay higher milk price to farmers to secure their milk supply.

*"While we offer 4-5 days credit to distributors of liquid milk, Amul instead asks for advance payment from distributors. This further helps them in offering better milk procurement price to farmers." – CFO of a private dairy company*

Consumers don't easily switch pouch milk brands once they develop a liking for a particular brand. Hence demand variations are low and consumption is extremely sticky. Due to daily consumption, the trust developed with consumers through the sale of pouch milk can be leveraged for cross-selling other dairy products.

As pouch milk is supplied to the consumer on a daily basis, its supply chain can be used to supply other fresh dairy products as well.

*"As our pouch milk truck visits the distributor on a daily basis, we also send few trays of curd, butter milk and lassi along with it. This helps us is in minimizing transportation cost for these products."* – CFO of a dairy company in Maharashtra.

### Huge addressable market with low competition from pan-India players

Given ~90% of milk consumption for a household is still in the form of liquid milk, the addressable market for pouch milk is huge. Given that pouch milk cannot be transported over long distances, threat from national players trying to leverage their pan-India distribution is limited in this category.

### High asset turns and negative WC cycle biggest advantages of pouch milk

Milk procured from farmers reaches the consumers in packaged form within 30 hours. Farmers are paid 10 days after milk procurement, while distributors pay within a week of purchasing the milk. Hence, the company operates on a negative working capital cycle. Capital investments in processing and procurement facilities are the only major capital investments needed for a liquid milk business. As pouch milk is one of the most basic milk products, the capital investment needed for pouch milk processing is significantly lower than that needed for value-added dairy products. **Companies usually make ₹2-3/litre (8-10% profit margin), however the higher asset turns and negative working capital needs make this a high-RoCE business.**

## Ghee and SMP – low-margin products one can't avoid

For most large dairy players, ghee (clarified butter) and skimmed milk powder (SMP) are byproducts of other dairy products. During the flush season, milk production is higher than demand for dairy products. However, as dairy companies are obligated to procuring all the milk produced by the farmer, they procure the milk and store it as cream/butter and SMP. SMP is sold in bulk as a commodity at extremely low margins. Currently, the procurement price of SMP is ~₹140/kg and the market price is ₹145-150/kg. Cream/butter can be used to produce ghee which is sold in consumer packs or bulk packs in the HoReCa segment.

Ghee sold in bulk (15-20kg tins) is sold at close to 5% margins in the wholesale channel. Only if a company is able to create a branded ghee business is it able to realize 10-12% profit margin.

**Exhibit 37: Profit margin on cow ghee is only 10-12%**

| | |
|---|---|
| MRP (₹/litre) | 410 |
| Retailer margin @ 12% (₹.) | 44 |
| Ex-Retailer margin (₹.) | 366 |
| ex-VAT @ 5% (₹.) | 349 |
| Distributor margin @ 3% (₹.) | 10 |
| ex-factory price (₹/ltr) – (a) | 338 |
| Cow Milk procurement price (3.5% FAT + 8.5% SNF) ₹/ltr | **24** |
| Cow milk needed for 1ltr ghee (ltr) | 26 |
| Milk cost (₹.) | 623 |
| SNF generated (kg) | 2.2 |
| SMP sale (95% SNF, 4% moisture, 1% FAT), Kg | 2.3 |
| SMP realisation (₹/kg) | 145 |
| SMP sales (₹.) | 337 |
| Net Milk cost | 286 |
| Ghee conversion and packaging cost (₹/kg) | 17 |
| Ghee profit (₹/kg) | 35 |
| **Ghee profit margin (%)** | **10%** |

*Source: Ambit Capital research*

### Butter margins only marginally better than ghee; Amul dominates category

Butter (~82% fat) is produced from cream (25-50% fat). Most of the butter is consumed in the institutional market, where it is used to produce ghee or for reconstituting milk. If sold as table butter, it has a slightly higher profit margin than ghee. However, the consumer market of table butter is dominated by Amul, forcing other players to offer higher distributor margins or consumer promotions to drive consumer sales. Recently, Patanjali has been a big consumer of butter in the institutional market as it uses butter to produce ghee.

**Exhibit 38: Profit margin for table butter is 13-15%**

| **Table Butter** | **₹/kg** |
|---|---|
| MRP | 390 |
| Retailer margin @ 15% (₹.) | 51 |
| Ex-Retailer margin | 339 |
| ex-VAT @ 5% | 323 |
| Distributor margin @ 5% (₹.) | 15 |
| ex-factory price | 308 |
| Cow Milk procurement price (3.5% FAT + 8.5% SNF) ₹/ltr | **24** |
| Cow milk needed for 1kg butter (ltr) | 23 |
| Milk cost (₹.) | 562 |
| SNF generated (kg) | 1.9 |
| SMP sale (95% SNF, 4% moisture, 1% FAT), Kg | 2.0 |
| SMP realisation (₹/kg) | 145 |
| SMP sales (₹.) | 293 |
| Net Milk cost | 269 |
| Butter conversion and packaging cost (₹/kg) | 17 |
| Table butter profit (₹/kg) | 36 |
| **Table butter Profit margin** | **11%** |

*Source: Ambit Capital research*

# Understanding the cheese profitability conundrum

Cheese production requires significant capital investment for setting up the manufacturing facility and working capital. Despite the significant investments, our calculations suggest that the profit margin (before employee costs and A&P expenses) is only 22-26%. This is only in-line/lower than the profit margin on other fresh dairy products. The profit margin for cheese sold in the B2B segment would be lower than 20%.

**Exhibit 39: Gross margin for cow cheese sold in consumer packs is only 22-26%**

| **Cow cheese** | **₹/kg** |
|---|---|
| MRP (₹/kg) | 390 |
| Retailer margin @ 15% (₹) | 51 |
| Ex-Retailer margin (₹/kg) | 339 |
| ex-VAT @ 5% (₹/kg) | 323 |
| Distributor margin @ 5% (₹) | 15 |
| ex-factory price (₹/kg) | 308 |
| Cow Milk procurement price (3.5% FAT + 8.5% SNF) ₹/ltr | **24** |
| Cow milk for 1kg cheese (ltr) | 9 |
| Milk cost (₹.) | 216 |
| Whey generated (kg) | 0.13 |
| Whey realisation (₹/kg) | 40 |
| Whey sales (₹.) | 5 |
| Net Milk cost | 211 |
| Cheese processing and packaging costs (₹/kg) | 30 |
| Cheese profit (₹/kg) | 67 |
| **Cheese profit margin** | **22%** |

*Source: Ambit Capital research*

The reasons for low profitability of cheese are:

**Cheese sold in India is low value-addition cheese:** Most of the cheese sold in India is processed cheddar and is sold either in blocks or slices. The type of cheese remains the same while only the packaging changes. Processed cheddar cheese is sold as a commodity in European nations. Although the milk procurement price in India is only slightly lower than that in European countries, cheese is sold at a MRP of only ~₹400/kg, significantly lower than the ₹2000-3000/kg realization for most variants of cheese in Europe.

Parag Milk Foods sells Mozarella cheese and processed cheese under the 'Go' brand at ₹450/kg and ₹400/kg respectively while paneer, which is a significantly lower value-add product and requires lower processing costs, is sold at ₹400/kg.

**Most consumption is still in HoReCa segment:** Our interaction with people in the industry suggests that only 40% of the total cheese consumption is at the household level. About 60% of the cheese market is in the Hotel, Restaurant and Café (HoReCa) segment. Realisation in the HoReCa is lower than that of the household segment.

**High capital investment needed in manufacturing and sale of cheese:** Significantly high capex is needed for setting up a cheese plant. Cheese production process needs curing of cheese for up to six months, which blocks working capital. The curing needs to be done in a temperature-controlled environment, which also entails high processing costs. Cheese is one of the slowest moving dairy products in a retail store. So, retailers need to be offered 15-20 days credit at least. Hence, cheese sales entail significant capital investments for the producer.

**Sales of whey can boost cheese margins:** Currently, whey produced during production of cheese is either disposed of or sold in bulk. If companies can convert it into whey powder and sell it as own branded consumer packs, profitability of cheese could increase. However, the target market for powdered whey is still very small and dominated by foreign players. There is significant capital investment needed for whey processing plant. Also, you need scale in the cheese business to produce enough whey to justify investment in a whey processing plant. Hence, benefit from whey sales could be limited for Indian cheese players.

### India's cheese production capacity to almost double over the next 1-2 years

Amul, Dynamix and Parag Milk Foods are the leaders in cheese production in India. Over the next 1-2 years, several other players are planning to commission their cheese facilities. Prabhat Dairy is ramping up its 40MT facility, Amul plans to triple its capacity from 40MT to 120MT over the next three years, Parag plans to increase capacity to 60MT from 40MT currently, Kwality Dairy is also planning commissioning its cheese facility over the next year. While cheese capacity is expected to double, pizza chains which have been one of the largest consumers of cheese in this segment are slowing their store addition run-rate. Hence, we do not see the possibility of cheese consumption increasing so rapidly in such a short time.

### Indians dairy companies beware – the French are coming

Given the long shelf-life of cheese, it is possible to produce cheese in one location and transport it across the country. Hence, competition in this category is from national players having a pan-India distribution network vs fresh dairy products category where competition is mostly regional. Producing higher quality cheese requires technological expertise which is present with international companies like Lactalis which is one of the largest cheese producers in Europe. Lactalis which recently acquired Tirumala dairy in South India and Anik dairy in Central India, plans to use leverage milk procurement from these dairies to produce higher quality and different varieties of cheese under the *President* brand in the consumer segment over the next few months.

### Competition to increase due to concentrated demand and new entrants

Unlike for some other dairy product categories, cheese products' consumer demand is concentrated in the metros/Tier I regions. Given the concentration of demand and entry of several players in the cheese category, we believe competitive intensity in the cheese category will rise significantly going ahead.

**To summarise the arguments, though the cheese category can be expected to grow at 15-17% CAGR over the next 3-5 years, returns could be lower than those of fresh dairy products of comparable scale.**

# Curd and paneer have higher margins than cheese

As shown in the exhibits below, the gross margin for fresh dairy products like curd and paneer is significantly higher at 35-65%.

**Exhibit 40: Gross margin on curd is higher than that in cheese**

| Set curd | ₹/kg | Pouch curd | ₹/kg |
|---|---|---|---|
| MRP | 99 | MRP | 50 |
| Retailer margin @ 15% (₹.) | 13 | Retailer margin @ 12% | 5 |
| Ex-Retailer margin | 86 | Ex-Retailer margin | 45 |
| ex-VAT @ 5% | 82 | ex-VAT @ 5% | 43 |
| Distributor margin @ 5% (₹.) | 4 | Distributor margin @ 5% | 2 |
| ex-factory price | 78 | ex-factory price | 40 |
| Cow Milk procurement price (3.5% FAT + 8.5% SNF) ₹/ltr | **24** | Cow Milk procurement price (3.5% FAT + 8.5% SNF) ₹/ltr | **24** |
| Cow milk needed for 1kg set curd (ltr) | 1 | Cow milk needed for 1kg pouch curd (ltr) | 1 |
| Milk cost (₹.) | 24 | Milk cost (₹.) | 24 |
| Culture (₹/kg) | 1 | Culture (₹.) | 1 |
| Net Milk cost | 25 | Net Milk cost | 25 |
| Processing and packaging cost (₹/kg) | 20 | Processing and packaging cost (₹/kg) | 10 |
| Set curd profit (₹/kg) | 33 | Pouch curd profit (₹/kg) | 6 |
| **Set curd profit margin** | **42%** | **Pouch curd profit margin** | **15%** |

*Source: Ambit Capital research*

**Exhibit 41: Gross margin on Paneer and UHT flavoured is also ~50%**

| UHT Flavoured Milk | ₹/ltr | Paneer | ₹/kg |
|---|---|---|---|
| MRP | 100 | MRP (₹/kg) | 400 |
| Retailer margin @ 15% (₹.) | 13 | Retailer margin @ 15% (₹) | 52 |
| Ex-Retailer margin | 87 | Ex-Retailer margin (₹/kg) | 348 |
| ex-VAT @ 5% | 83 | ex-VAT @ 5% (₹/kg) | 331 |
| Distributor margin @ 5% (₹.) | 4 | Distributor margin @ 5% (₹) | 16 |
| ex-factory price | 79 | ex-factory price (₹/kg) | 315 |
| Cow Milk procurement price (3.5% FAT + 8.5% SNF) ₹/ltr | **24** | Buffalo Milk procurement price (5.5% FAT + 9.1% SNF) ₹/ltr | **31** |
| Cow milk for 1ltr flavoured milk (ltr) | 1 | Buffalo milk for 1kg Paneer (ltr) | 5 |
| Milk cost (₹.) | 24 | Milk cost (₹.) | 155 |
| Sugar cost (₹.) | 3.5 | Processing and Packaging cost (₹/kg) | 30 |
| Other flavours (₹.) | 10.0 | Paneer gross profit (₹/kg) | 130 |
| Packaging costs (₹.) | 10.0 | **Gross margin** | **41%** |
| Net raw material cost | 43 | | |
| Processing cost (₹/kg) | 10 | | |
| Flavoured milk gross profit (₹/kg) | 26 | | |
| **Gross margin** | **33%** | | |

*Source: Ambit Capital research Note: Paneer is normally made from buffalo milk as the paneer produced is white in color which is more preferred by consumers than paneer produced from cow milk which is slightly yellow in colour*

## Curd and paneer have a large addressable market

After liquid milk and ghee, curd and paneer are the largest dairy products by market size in both urban and rural areas. Most of the consumption of these products is in the HoReCa channel. As both these products are fresh dairy products with short shelf life, the consumption market for these products is dominated by local vendors. Over the last decade, higher income levels and more working women have resulted in higher demand for packaged curd as also long-life packaged paneer than short shelf-life paneer of local vendors. This trend is expected to sustain.

## Regional production is key given short shelf life and transportation issues

Pouch curd has a shelf life of only 2-3 days. Set curd has a shelf life of 15 days. However, our channel checks suggest that consumers normally don't purchase the product if it is older than 7 days. Also, during the transportation of set curd over long distances, there is accumulation of whey liquid over the curd which is perceived by consumers as deterioration in quality of the curd. Hence, the production of pouch/set curd is normally done at a facility close to the end-market, making this a regional business.

Companies having pouch milk businesses are better placed to grow in the packaged curd market as they can leverage their regional processing and supply chain setups to produce and sell pouch/set curd at a regional level. The packaged curd market is dominated by regional co-operatives and national brands like Amul, Britannia, and Nestle, which have their curd co-packaged by regional dairy plants.

**Flavoured milk – high margin but less differentiation make it highly competitive**

Flavoured milk is a highly profitable business as effectively milk procured at ₹25/litre is sold at ₹100/litre. As this milk is Ultra High Temperature treated, it has shelf life of at least 90 days and hence can be transported across the country at ambient temperature. Long shelf life and high profitability allows for creation of a Pan-India distribution network in this category. The flavoured milk market is currently dominated by Amul which retails flavoured milk under its brand *Amul Kool*. Given the high profitability for this category, several private dairy companies are entering this category which should increase competitive intensity in the category. However, there is very little differentiated offering in this category due to which Amul leverages it distribution to dominate this category. Due to the slow moving nature of this product of retail shelves, credit is extended to retailers thus increasing working capital requirements and reducing returns for the manufacturer.

**As shown in the above section, fresh dairy products like curd and paneer have significantly high margins than cheese. Also, the former requires lower capital for manufacturing and selling than cheese.**

## Fresh dairy portfolio preferred over VADP

**Two possible product portfolios – fresh dairy or value-added dairy products**

A dairy business tries to sell those dairy products which will help it maximize the realization for the milk procured. There are two sets of product portfolios that dairy companies can usually follow:

- Portfolio focused only on fresh dairy products like pouch milk, curd, paneer, pouch butter milk, shrikhand and sweets, or
- Portfolio of long-life, high-value-added dairy products like cheese, UHT milk and flavoured milk.

Dairy companies either have a portfolio of fresh dairy products or a combination of short and long shelf-life products.

**Fresh dairy products – natural extension to pouch milk business by choice or by compulsion**

If a dairy company is in the business of pouch milk, sales of other fresh dairy products like curd, paneer, butter milk, sweets and shrikhand are a natural extension by choice or by compulsion.

- **Pouch milk supply chain is used for fresh dairy products:** The same supply chain of pouch milk can be used for distribution of the other products.
- **Unsold pouch milk can be used to produce fresh dairy products:** A portfolio of fresh dairy product allows the company to utilize unsold pouch milk to produce fresh dairy like curd and paneer instead of converting the unsold pouch milk into butter/cream and SMP.

### VADP portfolio – possible only for national dairy brands

Different varieties of cheese, UHT milk, flavoured UHT milk, UHT buttermilk, probiotic yoghurt and baby food are some VADPs. Britannia, Nestle and Danone have a major presence in these categories. Nestle has its own milk procurement only for a few product categories like baby food and the rest are contract manufactured. As the target market for these products is still small, investment in own milk procurement is not economically viable yet. By contract manufacturing these products, they avoid incurring capex. These companies leverage their brand equity and distribution reach to get the maximum realization for these products.

### VADP + fresh dairy products = not exactly a great combination

Amul and Mother Dairy among the co-operatives and Parag Milk Foods (PMF) among private dairy companies have a combination of both value-added and fresh dairy products. All these companies started as pouch milk businesses and then entered the VADP category. For the co-operatives, pouch milk remains their mainstay (~80% of sales) while the long shelf-life dairy products are only a small portion of their portfolio. They leverage their national brand equity to sell these products across the country.

Parag, Kwality and Prabhat Dairy have been trying to increase their presence in the high-value-added category. However, they don't have the benefit of a national brand or country-wide distribution like the co-operatives. The target market for these value-added products is limited and highly competitive due to the presence of national brands. These companies also need to invest significantly in working capital and manufacturing facilities for manufacturing and selling their products.

Given the **high capital investment** needed in manufacturing and sales of value-added dairy products, **significant A&P expense** needed to create national brand equity to compete with domestic and MNC dairy brands, and **limited target market**, we believe over the medium term (3-5 years) this portfolio **will not yield significantly high margins** to generate returns higher than companies operating in only a fresh dairy product business. **Hence, we prefer companies with focus on the fresh dairy products portfolio.**

## Strong brand and distribution + right portfolio = winning strategy

We define a dairy marketing competitive advantage framework to identify dairy companies having a combination of strong brand equity and the right product portfolio. We prefer companies with the following characteristics:

- **Strong brand equity:** We measure brand equity on the basis of A&P spends as percentage of sales by the company. The higher the A&P spends higher is the brand equity.
- **Distribution reach:** We prefer companies having a wide reach of products across metros/Tier I/II/III cities and rural areas.
- **Product portfolio:** We rate those companies higher which have a major exposure to fresh dairy products and plans to grow this part of the portfolio.

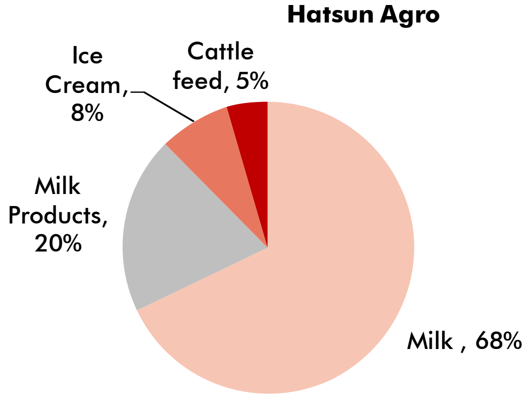
**Exhibit 42: Hatsun and Parag have the highest A&P spends (% of sales)**

| A&P as % of Sales | FY11 | FY12 | FY13 | FY14 | FY15 |
|---|---|---|---|---|---|
| Hatsun Agro | 2.0% | 2.3% | 1.5% | 2.0% | 2.2% |
| Heritage Foods | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| Parag Milk Foods | 1.6% | 1.4% | 1.9% | 1.2% | 1.7% |
| Kwality Dairy | 0.4% | 0.2% | 0.1% | 0.1% | 0.3% |

*Source: Company, Ambit Capital research*

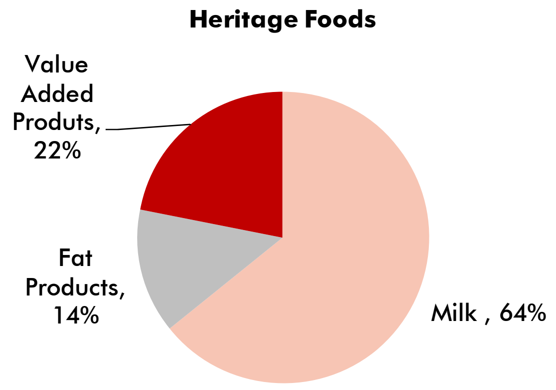
**Product portfolio of key vertically integrated Indian dairy**

**Exhibit 43: Hatsun's portfolio is dominated by fresh dairy products along with presence in ice cream**



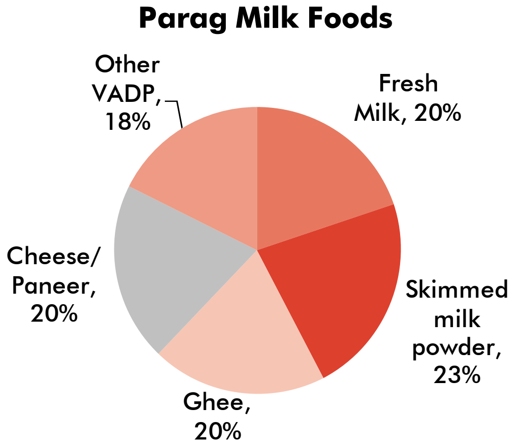

*Source: Company, Ambit Capital research Note: Product portfolio as per FY16*

**Exhibit 44: Heritage has presence only in fresh dairy products**



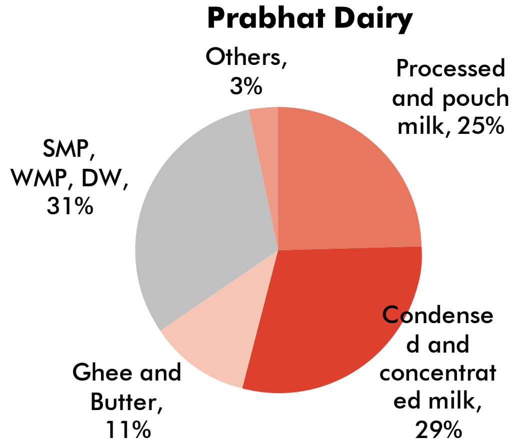

*Source: Company, Ambit Capital research Note: Product portfolio as per FY16*

**Exhibit 45: PMF is focusing more on value-added dairy products**



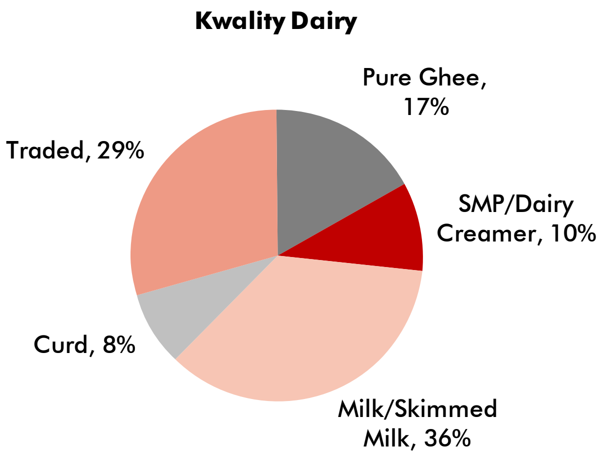

*Source: Company, Ambit Capital research Note: Product portfolio as per FY15*

**Exhibit 46: Prabhat Dairy has been driving a shift from B2B to B2C; B2C is currently ~30% of sales**




*Source: Company, Ambit Capital research Note: Product portfolio as per FY15*

**Exhibit 47: Kwality derives only ~18% of its sales from retail segment**




*Source: Company, Ambit Capital research Note: Product portfolio as per FY15*

**Hatsun Agro is best placed on the marketing and distribution competitive advantage framework**

**Exhibit 48: Hatsun Agro and Heritage Foods are best placed on our marketing competitive advantage framework**

| Company | Distribution reach and brand Equity | Orientation of portfolio towards fresh dairy products | | Overall score | Comments |
|---|---|---|---|---|---|
| | | Current | Future | | |
| Hatsun Agro | ◕ | ● | ● | ● | Hatsun has the largest private pouch milk network in South India; The company derives 85%+ revenues from fresh dairy and plans to continue to do so |
| Heritage Foods | ◑ | ◕ | ◕ | ◕ | Heritage has the second largest private pouch milk network in South India; The company derives ~65% of total sales from fresh dairy products; plans to diversify into cheese in the near future |
| Parag Milk Foods | ◕ | ◕ | ◑ | ◕ | Parag is well-known in Western India for its value-added portfolio; Derives only 35-40% of revenue from fresh dairy products and continues to focus on VADP |
| Prabhat Dairy | ◔ | ◑ | ◑ | ◑ | Prabhat has only recently increased focus on B2C; it is focusing on fresh dairy products along with products like cheese, flavoured milk |
| Kwality Dairy | ◔ | ◔ | ◑ | ◔ | Plans to launch products under Kwality brand name which was well known as an ice cream brand; is planning to increase presence largely in VADP category |

*Source: Company, Ambit Capital research. Note: ● - Strong; ◕- Relatively Strong; ◑- Average; ◔- Relatively weak*

**Based on this framework, we prefer Hatsun which derives ~88% of its sales from pouch milk and fresh dairy products with significant distribution presence in South India across urban and rural areas. The company has also been growing its presence in Maharashtra. Hatsun continues to focus on the fresh dairy products segment for the future. Heritage is the second-best as ~65% of its total sales come from pouch milk and other fresh dairy products. However, the company's focus on entering the cheese segment in the future is a negative.**

# Financial metrics - Fresh dairy companies score high

**The financial performance of a dairy company is influenced by a mix of B2B and B2C sales and product mix. Companies with higher B2B mix have high working capital requirements. As the mix of B2B sales increases, working capital requirement reduces. However, lower capacity utilisation for B2C businesses impacts return ratios. Companies in the fresh dairy business with large exposure to pouch milk segment have lower margin but higher asset turns, low working capital requirement and hence better cash conversion and return ratios. We use an evaluation framework based on profit margin, cash conversion and return ratios to evaluate the financial performance of companies. Hatsun Agro followed by Heritage and Parag Milk Foods score high on this framework.**

### Prabhat Dairy has highest profitability due to high-margin B2B business

Hatsun and Heritage are predominately into pouch milk and hence have low profitability. Heritage's profitability is also impacted due to its presence in the lower profitability retail business. Despite its presence in value added dairy products segment, Parag Milk Foods' gross margin is only marginally ahead of peers. Due to investments needed in A&P spends for the B2C business, EBITDA margins of Hatsun and Parag are only in high single digits. Despite significant presence in the B2B segment, Prabhat has one of the highest EBITDA margins due to sale of high-margin condensed milk to Mondelez. However, its margin could be impacted in the future as Mondelez has changed the recipe of its chocolates globally to use lower margin SMP instead of sweetened condensed milk.

**Exhibit 49: Hatsun Agro, Parag Milk Foods and Heritage Foods are 100% B2C businesses**

| Company | % sales from B2C business |
|---|---|
| Hatsun Agro | 100% |
| Heritage Foods | 100% |
| Parag Milk Foods | 100% |
| Kwality Dairy | 30% |
| Prabhat Dairy | 30% |

*Source: Company, Ambit Capital research*

**Exhibit 50: Parag's gross margin is only marginally ahead of peers despite its value-added portfolio**

| GM | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Hatsun Agro | 24.8% | 24.5% | 25.8% | 25.5% | 27.7% |
| Prabhat Dairy | 20.9% | 21.4% | 21.5% | 22.6% | 22.3% |
| Parag Milk Foods | 21.8% | 25.4% | 23.1% | 26.5% | 28.4% |
| Kwality Dairy | 9.0% | 7.9% | 8.0% | 8.3% | 9.4% |
| Heritage Foods | 19.7% | 22.8% | 22.0% | 18.7% | 21.1% |

*Source: Ambit Capital research*

**Exhibit 51: EBITDA margin is similar for Hatsun, Heritage and Parag**

| EBITDA margin | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Hatsun Agro | 6.8% | 6.8% | 7.1% | 6.8% | 8.8% |
| Prabhat Dairy | 10.1% | 11.3% | 10.6% | 10.3% | 10.2% |
| Parag Milk Foods | 8.8% | 9.2% | 7.5% | 7.4% | 9.0% |
| Kwality Dairy | 6.9% | 5.7% | 5.9% | 6.0% | 6.1% |
| Heritage Foods | 3.8% | 6.5% | 5.6% | 4.0% | 5.5% |

*Source: Ambit Capital research*

## Hatsun and Heritage have the best cash conversion

As shown in the exhibit below, cash conversion of Hatsun and Heritage has been healthy with average CFO (pre-tax)/EBITDA of ~80% and ~95% over FY12-16 respectively. This is due to their significant presence in the pouch milk business, which operates on a very short working capital cycle. As companies shift to higher value dairy products in the B2C segment, working capital needs increase as they have to offer higher credit to the channel. Increasing presence in cheese also impacts inventory days as it takes almost 6 months of curing to manufacture cheese. Hence, Parag's cash conversion is inferior to Hatsun and Heritage. For B2B businesses, working capital is high as customers usually pay dairy companies after 90 days.

Creditor days cannot be high in the dairy business as the biggest raw material is raw milk (~80% of COGS). Companies doing direct milk procurement have to pay farmers within 10-15 days of procurement to maintain a healthy operating relationship. Parag with >50 creditor days is an outlier and needs closer inspection.

**Exhibit 52: Hatsun and Heritage have the healthiest cash conversion amongst peers**

| CFO/EBITDA | FY12 | FY13 | FY14 | FY15 | FY16 | Cumulative |
|---|---|---|---|---|---|---|
| Hatsun Agro | 52% | 104% | 126% | 37% | 82% | 81% |
| Prabhat Dairy | 129% | 82% | 14% | 8% | NA | 45% |
| Parag Milk Foods | 47% | 34% | 58% | 64% | 13% | 40% |
| Kwality Dairy | -68% | -41% | 4% | 5% | NA | -17% |
| Heritage Foods | 119% | 106% | 91% | 73% | NA | 96% |

*Source: Ambit Capital research*

**Exhibit 53: Hatsun and Heritage have the healthiest cash conversion days amongst peers**

| Cash conversion days | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Hatsun Agro | 3 | 7 | 3 | 4 | 9 |
| Prabhat Dairy | 56 | 64 | 71 | 85 | 104 |
| Parag Milk Foods | 74 | 109 | 118 | 76 | 66 |
| Kwality Dairy | 92 | 89 | 92 | 96 | 107 |
| Heritage Foods | 5 | 3 | 6 | 10 | 6 |
| **Debtors days** | | | | | |
| Hatsun Agro | 2 | 4 | 5 | 2 | 1 |
| Prabhat Dairy | 35 | 36 | 50 | 66 | 68 |
| Parag Milk Foods | 42 | 52 | 52 | 42 | 45 |
| Kwality Dairy | 81 | 78 | 85 | 82 | 85 |
| Heritage Foods | 3 | 3 | 3 | 4 | 4 |
| **Inventory days** | | | | | |
| Hatsun Agro | 31 | 28 | 20 | 29 | 44 |
| Prabhat Dairy | 22 | 22 | 22 | 25 | 30 |
| Parag Milk Foods | 67 | 74 | 72 | 69 | 75 |
| Kwality Dairy | 14 | 10 | 12 | 16 | 15 |
| Heritage Foods | 26 | 26 | 26 | 27 | 28 |
| **Creditors days** | | | | | |
| Hatsun Agro | 15 | 16 | 17 | 17 | 19 |
| Prabhat Dairy | 28 | 20 | 19 | 25 | 23 |
| Parag Milk Foods | 38 | 47 | 47 | 55 | 56 |
| Kwality Dairy | 4 | 6 | 10 | 7 | 3 |
| Heritage Foods | 17 | 18 | 17 | 16 | 16 |

*Source: Ambit Capital research*

## Hastun and Heritage have the highest return ratios

- Although Hatsun and Heritage have lower margins, their higher asset turns and lower working capital needs result in higher RoCE and RoE than peers.
- Parag Milk Foods has lower capacity utilization at its Andhra Pradesh plant, which has resulted in depressed return ratios.
- Over FY12-16, Kwality's RoE declined to ~23% from ~68% due to equity issuance to fund increasing working capital needs and capex.
- Prabhat Dairy has one of the lowest return ratios due to higher working capital needs and lower capacity utilization.

**Exhibit 54: Hatsun and Heritage have the best return ratios**

| Gross asset turnover | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Hatsun Agro | 3.1 | 3.7 | 3.5 | 3.2 | 3.2 |
| Prabhat Dairy | NA | 2.3 | 2.8 | 3.1 | NA |
| Parag Milk Foods | 3.1 | 2.8 | 3.1 | 3.6 | 3.3 |
| Kwality Dairy | 32.5 | 39.8 | 38.2 | 41.9 | 38.3 |
| Heritage Foods | 4.2 | 4.5 | 4.4 | 4.7 | 5.1 |
| **Debt/Equity** | | | | | |
| Hatsun Agro | 2.5 | 2.6 | 2.2 | 2.1 | 2.3 |
| Prabhat Dairy | 2.2 | 1.0 | 0.8 | 1.1 | 0.2 |
| Parag Milk Foods | 7.5 | 6.1 | 5.9 | 3.4 | 1.0 |
| Kwality Dairy | 3.6 | 3.3 | 2.5 | 1.9 | 1.7 |
| Heritage Foods | 1.5 | 0.7 | 0.7 | 0.7 | 0.4 |
| **ROCE** | | | | | |
| Hatsun Agro | 16.5% | 18.9% | 23.8% | 14.4% | 12.6% |
| Prabhat Dairy | 5.9% | 8.4% | 8.9% | 9.6% | 6.7% |
| Parag Milk Foods | 12.3% | 12.6% | 12.0% | 12.8% | 13.0% |
| Kwality Dairy | 23.6% | 18.7% | 17.9% | 16.9% | 13.6% |
| Heritage Foods | 10.3% | 28.9% | 20.9% | 12.8% | 19.6% |
| **ROE** | | | | | |
| Hatsun Agro | 26.5% | 37.7% | 52.9% | 19.5% | 26.8% |
| Prabhat Dairy | 8.4% | 7.9% | 7.3% | 7.8% | 4.9% |
| Parag Milk Foods | 31.8% | 32.7% | 16.7% | 29.5% | 19.5% |
| Kwality Dairy | 67.9% | 46.7% | 40.7% | 30.5% | 22.7% |
| Heritage Foods | 10.3% | 45.1% | 28.6% | 15.3% | 26.2% |

*Source: Ambit Capital research*

## Hatsun best placed on our accounting framework

Based on our accounting framework, combining all the key financial metrics, we have rated companies on basis of volatility and absolute performance on profitability, cash conversion and return ratios.

**Hatsun is best placed followed by Heritage and Parag. Although Prabhat scores high on profitability, it scores low on cash conversion and return ratios, which impacts its overall score.**

**Exhibit 55: Competitive framework on financial ratio analysis**

| | Profitability | Cash Conversion | Return | Overall | Comments |
|---|---|---|---|---|---|
| Hatsun Agro | ● | ● | ● | ● | Has healthy margins, cash conversion and stable ROE |
| Heritage Foods | ◑ | ● | ◕ | ◕ | Margin is volatile, ROE has been improving |
| Parag Milk Foods | ◕ | ◕ | ◑ | ◕ | Stable margin, stable cash conversion but deteriorating ROE |
| Prabhat Dairy | ● | ◔ | ◔ | ◑ | Stable margin but deteriorating cash conversion and ROE |
| Kwality Dairy | ◑ | ◔ | ◑ | ◑ | Stable margin, poor cash conversion and deteriorating ROE |

*Source: Ambit Capital research. Note: ● - Strong; ◕- Relatively Strong; ◑- Average; ◔- Relatively weak*

# Hatsun best placed on our dairy competitive advantage framework

**We believe milk procurement, marketing and financial performance are the key parameters to evaluate a dairy company. We combine our competitive advantage frameworks on these three metrics discussed earlier to arrive at an overall score for the five vertically integrated domestic dairy companies. Hatsun Agro with its extensive direct milk procurement network, fresh dairy products portfolio and superior financial track record seems best placed on our competitive advantage framework. The next best are Heritage Foods followed by Parag Milk Foods (PMF). PMF scores lower due to its increasing focus on value added dairy products like cheese and UHT segment.**

## Dairy competitive advantage framework = direct milk procurement + widespread distribution

As mentioned earlier, direct milk procurement and marketing of dairy products are the two key drivers of the dairy business. We have combined our milk procurement and marketing competitive advantage frameworks with the financial ratios framework to arrive at an overall dairy competitive advantage framework. Those companies which have large direct milk procurement networks spread across regions, product portfolios focused on fresh dairy products and superior financial performance score high on our competitive advantage framework. Based on these parameters, Hatsun Agro is the best-placed domestic, vertically integrated dairy company followed by Heritage Foods and Parag Milk Foods.

**Exhibit 56: Hatsun Agro is the best performer on all the parameters**

| Company | Milk Procurement | Marketing | Financial performance | Overall |
|---|---|---|---|---|
| Hatsun Agro | ● | ● | ● | ● |
| Heritage Foods | ◕ | ◕ | ◕ | ◕ |
| Parag Milk Foods | ◕ | ◕ | ◕ | ◕ |
| Prabhat Dairy | ◑ | ◑ | ◑ | ◑ |
| Kwality Dairy | ◑ | ◔ | ◑ | ◑ |

*Source: Company, Ambit Capital research. Note: ● - Strong; ◕- Relatively Strong; ◑- Average; ◔- Relatively weak*

## Hatsun best placed to counter threat of co-operatives

*"I ensured from the start, therefore, that Amul always operated as a business enterprise – but at all times keeping in mind that the business was to maximise the price paid for the milk, not in order to maximise the dividend, as is the case in the private sector. We did this by manufacturing value-added products which allowed us to give farmers a higher milk price every year. From liquid milk we went into the production of milk powder and very soon into butter." – Dr. Verghese Kurien, Author – I too had a dream*

Due to its pan-India brand and distribution reach, Amul has been exploring milk procurement options outside Gujarat to cater to the growing consumer demand. It has now started milk procurement from Maharashtra, Punjab and Andhra Pradesh. Our channel checks suggest that Amul has paid higher than the prevalent market milk price to farmers in these states in order to establish its milk procurement network. In North India, Mother Dairy, which till recent times didn't have its own milk procurement, has started milk procurement from Uttar Pradesh, Haryana, Punjab and other neighbouring states.

*"Amul paid as high as ₹25/litre in Maharashtra when others were paying ₹21-22/litre. This led to lower milk procurement for us as some farmers defected to Amul." – CFO of dairy company in Maharashtra*

**We believe companies like Hatsun Agro and Heritage Foods, which have shown the ability to grow their direct milk procurement networks and are focused on fresh dairy products, are better placed to protect their milk procurement network and product market share from the threat of co-operatives like Amul and Mother Dairy.**

# Indian dairy companies trading in line with global peers

Due to the different capital structure followed by the dairy companies, we believe, EV/EBITDA is better valuation metric for these companies. As shown in the exhibit below, domestic Indian vertically integrated dairy companies are trading in line with their global peers. Among the global dairy companies, companies having presence in value-added dairy products segment trade at a 30-40% premium to companies having presence in the fresh dairy product segment. This is because fresh dairy products are commoditized in developed countries with most of these dairy companies producing private label dairy products for modern retail chains. Scale and operational efficiency are drivers of growth for these companies.

### Growth of fresh dairy products to help sustain current valuations for domestic dairy players

Fresh dairy products are not yet commoditized in India and have significant scope of growth through penetration and shift from unorganized to organized consumption. The profitability of these products is comparable to value-added dairy products. Hence, given the growth prospects, profitability and high return of the fresh dairy segment, we believe Indian companies in this segment can trade at a premium to global peers having exposure to value-added dairy products. Hatsun Agro is the best play on the fresh dairy products segment in India.

Currently, only 15-20% of the dairy market in India is controlled by organized players. Due to the short shelf life of milk and the fragmented nature of milk production, we do not complete shift in consumption to the organized players. However, there is significant room for well-managed regional dairy franchises based on our competitive advantage framework to grow at 15%+ CAGR over the next decade driven by shift in consumption to the organized market and premiumisation. Hence, valuations for these companies will always continue to seem expensive.

Some of the weaker franchises based on our framework could see compression of valuation multiples as their financial performance could be impacted due to higher milk prices over the next 12 months and increased competitive intensity over the medium term.

**Exhibit 57: Indian dairy companies trading in line with global peers**

| Company name | CMP (₹) | Mcap (₹ mn) | Rev CAGR | EBITDA CAGR | EPS CAGR | TTM PE | EV/ EBITDA | RoE | RoCE | Working Capital % of Sales | CFO/ EBITDA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FY13-16 | FY13-16 | FY13-16 | FY16 | FY16 | FY16 | FY16 | FY16 | 3 yr Avg |
| Hatsun Agro | 344 | 52,300 | 17% | 27% | 11% | 86.5 | 18.6 | 27% | 13% | 2% | 82% |
| Prabhat Dairy | 93 | 9,035 | 22% | 18% | 21% | 36.8 | 9.3 | 5% | 7% | 27% | 11% |
| Parag Milk Foods | 315 | 26,462 | 21% | 20% | 29% | 55.9 | 20.9 | 19% | 13% | 18% | 45% |
| Kwality Dairy | 116 | 27,059 | 18% | 20% | 17% | 15.6 | 10.1 | 23% | 14% | 28% | 4% |
| Heritage Foods | 727 | 16,863 | 14% | 8% | 2% | 29.7 | 10.0 | 26% | 20% | 0% | 82% |
| **Median** | | | **18%** | **20%** | **17%** | **36.8** | **10.1** | **23%** | **13%** | **18%** | **45%** |

*Source: Company, Ambit Capital research*

**Exhibit 58: Global value-added dairy companies trade at a premium to companies selling basic dairy products**

| Company Name | Country | Market Cap (mn USD) | 3yr sales CAGR | Gross margin | EBITDA margin | ROE | WC/ Sales (%) | CFO / EBITDA (%) | Gross block turnover | EV/ EBITDA | PE Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CY12-15 | CY15 | CY15 | CY15 | CY15 | CY15 | CY15 | CY15 | CY15 |
| **Fresh Dairy Products companies** | | | | | | | | | | | |
| Fonterra Shareholders Fund | New Zealand | 6,826 | (0.5) | 17.4 | 9.2 | 10.8 | 6% | 18% | 1.8 | 10.8 | 13.3 |
| Dean Foods | USA | 1,566 | (4.0) | 24.3 | 5.5 | 19.3 | 4% | 151% | 2.9 | 5.9 | 13.4 |
| Megmilk Snow Brand Co Ltd | Japan | 2,230 | 3.4 | 23.1 | 5.1 | 12.8 | 2% | 94% | 1.7 | 9.7 | 13.3 |
| China Mengniu Dairy Co | China | 6,743 | 11.3 | 31.4 | 8.5 | 10.9 | 13% | 59% | 2.2 | 11.0 | 16.3 |
| **Median** | | | **1.4** | **23.7** | **7.0** | **11.8** | **5%** | **77%** | **2.0** | **10.3** | **13.4** |
| **Value Added Dairy Products companies** | | | | | | | | | | | |
| Almarai | Saudi Arabia | 11,840 | 11.8 | 38.3 | 27.9 | 17.2 | 10% | 121% | 0.5 | 14.7 | 22.0 |
| Nestle Sa-Reg | Switzerland | 257,378 | (0.3) | 49.8 | 17.7 | 13.7 | -4% | 91% | 1.7 | 14.3 | 27.4 |
| Danone | France | 51,312 | 2.4 | 50.0 | 16.7 | 14.2 | -5% | 69% | 2.1 | 11.2 | 24.3 |
| Vietnam Dairy Products Jsc | Vietnam | 9,169 | 14.7 | 40.6 | 25.5 | 37.1 | 27% | 82% | 2.8 | 14.8 | 25.0 |
| Fromageries Bel | France | 3,792 | 3.7 | 33.6 | 12.8 | 13.4 | 22% | 84% | 1.8 | 8.0 | 16.6 |
| Whitewave Foods Co | USA | 9,760 | 19.6 | 34.2 | 12.2 | 15.4 | 0% | 70% | 2.2 | 18.3 | 44.4 |
| **Median** | | | **7.7** | **39.4** | **17.2** | **14.8** | **5%** | **83%** | **2.0** | **14.5** | **24.7** |

*Source: Bloomberg, Ambit Capital research*

# Consolidation is the way forward for the dairy sector

**The Indian dairy sector is dominated by regional dairy companies. We believe as co-operatives like Amul and Mother Dairy start going pan-India, regional dairy companies will have to acquire other dairy companies to secure new milk sources and access to new markets. Companies like Britannia, ITC and Danone have a pan-India brand but lack a pan-India milk procurement network. As these companies look to expand their product portfolios and increase focus on the dairy segment, they will scout for regional dairy co-operatives to secure milk procurement. Hence, exposure to regional vertically integrated dairy companies having strong direct milk procurement and distribution could be beneficial.**

## Key factors expected to drive consolidation in dairy industry

We believe M&A activity is inevitable in the dairy industry. It would be driven by:

- In order to counter competition from co-operatives like Amul and Mother Dairy, regional dairy companies could look to buy smaller dairy companies to secure milk sources and get access to new markets,
- Pan-India private dairy companies like Nestle, Britannia, Danone rely mostly on third party manufacturing for their dairy products. Given their increasing focus on product innovation to capture the huge market opportunity, they are looking to bring production in-house. These companies and new entrants in India's dairy sector will look at acquiring regional dairy companies to secure raw milk sources.

### Milk procurement network and distribution reach key qualities for a target

The two key qualities looked for in a target could the milk procurement network and its marketing/distribution reach:

- **Ready access to network of farmers for milk procurement:** Growing milk procurement is more a factor of time than money the company can spend. Hence, companies would look at targets having an existing network of direct milk procurement. Along with the milk procurement network, acquirers will also look at the network of processing plants of the target.
- **Distribution network of dairy products:** Most of the regions in India are dominated by regional fresh dairy product brands. These brands are well-penetrated in a particular region and have a very loyal consumer base. An acquirer will be interested in this distribution network and consumer base, which could be leveraged to cross-sell its own products.

### From private equity to consolidation – the way forward

The last decade saw capital infusion by several private equity players in the dairy industry in India. We believe the next stage of evolution for the dairy sector could be through consolidation as large MNCs like Lactalis and Danone and Indian companies like ITC and Britannia look to acquire smaller regional players to grow their presence in the dairy sector. This would also help in creating a diverse dairy market with an expanded product portfolio as these companies with far more financial, marketing and distribution muscle than the existing regional players would look to invest in the sector.

### JVs could be explored to retain original management

Milk procurement in India is usually based on strong relationships between the company and the farmer. In order to avoid farmers switching their milk supply to competitors, we believe the acquirer might also explore joint ventures in order to retain the original management and hence the relationships.

**We believe, Hatsun Agro and Heritage Foods could look at acquiring smaller dairy companies in adjoining regions to increase their milk procurement network and distribution outreach.**

# Questions for management

Any investor meeting management of a dairy company should ask questions mainly to understand the company's milk procurement methodology to assess its robustness and scalability and also on marketing/distribution initiatives for dairy products.

**Possible questions on milk procurement**

- From which regions do you currently procure milk? What is your daily milk procurement and what percentage of it is direct?
- What is your payment cycle to farmers and how is your price in comparison to other companies procuring milk from your region?
- What is your market share of milk procurement in the regions from where you procure milk? Do you see this increasing?
- Which regions do you plan to enter next to grow your milk procurement? Who is already procuring milk in these regions?
- How much of your milk procurement is from outside your home state/region? How has this been growing over the last three years?
- Do you have automatic milk testing equipment installed in all these village collection centres? Do you operate your own chilling centres or are they third-party operated? Do you have contracted cold chain logistics?
- What is the maximum distance between a chilling centre and the dairy plant?
- What allied benefits do you provide your network farmers? What is the attrition rate of farmers in your network?

**Possible questions on dairy products distribution and marketing:**

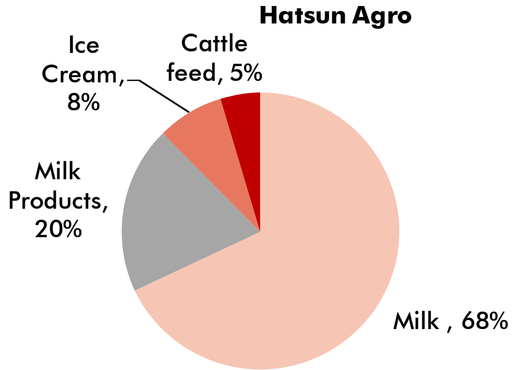
- What is your current distribution outreach in terms of distributors and outlets? What is your distribution potential in these regions?
- In the regions you operate, what is your market share in the various product categories?
- What percentage of your sales is spent on advertising and promotions? What is the split of this spend into push and pull?
- Do you have your own network of stores and what percentage of sales is from these stores? What products do these stores currently sell? What products could be sold through these stores?
- Who are your competitors in the regions in which you operate? What is your pricing power for different products?
- What is the credit that you have to extend in the channel vs that offered by your peers?
- What is the trade discount you are currently giving to your distributors? What is the outlook for this number?
- What are the product categories that you plan to enter in the future? What are the working capital requirements for these products?
- What is the capacity utilization of your dairy plants? What will drive utilization in the future?

# Hatsun Agro

**Background**

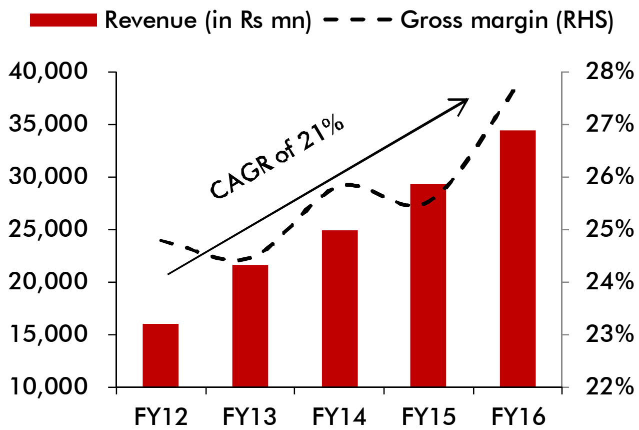
Hatsun Agro Product Limited is based in South India and was incorporated in 1970. Hatsun is the largest private sector dairy company in India. The Company's brand name includes AROKYA, which offers fresh milk; Hatsun, which offers paneer, ghee, extra cooked ghee, SMP and dairy whitener; Arun Icecreams, which is an ice-cream brand; IBACO ice creams, which offers over premium ice-creams, and Santosa, which offers cattle feeds

**Exhibit 59: Hatsun's portfolio is dominated by fresh dairy products along with presence in ice cream**



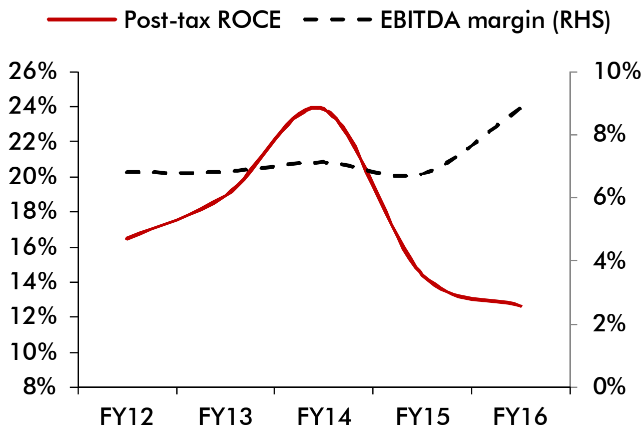

*Source: Company, Ambit Capital research Note: Product portfolio as per FY16*

**Exhibit 60: Revenue growth and gross margin**



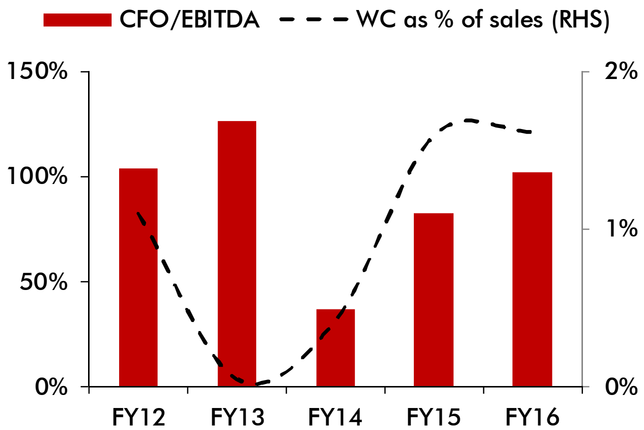

*Source: Ambit Capital research*

**Exhibit 61: Hatsun Agro ROCE and EBITDA margin**



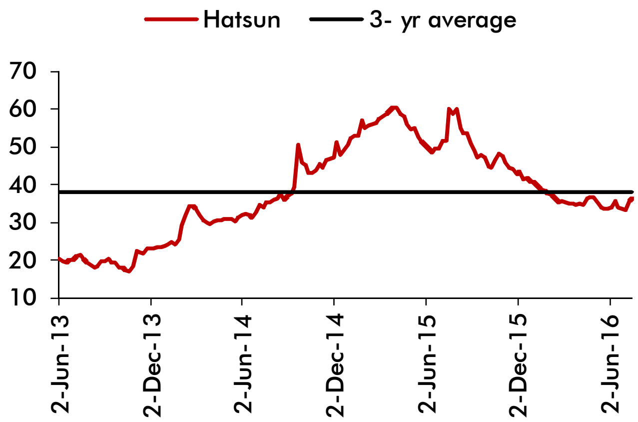

*Source: Ambit Capital research*

**Exhibit 62: Healthy CFO/ EBITDA and low working capital as % of sales**




*Source: Ambit Capital research*

**Exhibit 63: Hatsun trailing 12-month PE bandchart**




*Source: Ambit Capital research*

## Balance sheet

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Worth | 1,077 | 1,296 | 1,794 | 2,215 | 2,307 |
| Total Debt | 2,732 | 3,317 | 3,956 | 4,733 | 5,192 |
| Others | 254 | 272 | 278 | 285 | 261 |
| Current Liabilities | 1,619 | 1,987 | 2,409 | 3,324 | 3,815 |
| **Total Liabilities** | **5,683** | **6,871** | **8,437** | **10,556** | **11,575** |
| Fixed Assets | 3,697 | 4,365 | 6,100 | 6,556 | 6,798 |
| Investments | - | 7 | 8 | 8 | 3 |
| Current Assets | 1,986 | 2,499 | 2,329 | 3,992 | 4,775 |
| **Total Assets** | **5,683** | **6,871** | **8,437** | **10,556** | **11,575** |

*Source: Company, Ambit Capital research*

## Income statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Income | 16,035 | 21,650 | 24,935 | 29,331 | 34,446 |
| % Growth | 18% | 35% | 15% | 18% | 17% |
| Gross Profit | 3,975 | 5,296 | 6,439 | 7,489 | 9,557 |
| EBITDA | 1,091 | 1,478 | 1,778 | 1,983 | 3,047 |
| PBIT | 673 | 975 | 1,128 | 1,043 | 1,976 |
| PBT | 322 | 568 | 814 | 474 | 1,340 |
| PAT | 266 | 447 | 817 | 392 | 605 |
| EPS | 1.7 | 2.9 | 5.4 | 2.6 | 4.0 |
| EPS Growth | 42% | 68% | 83% | -52% | 54% |

*Source: Company, Ambit Capital research*

## Cash flow statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| EBIT | 706 | 1,013 | 1,232 | 1,108 | 2,022 |
| Depreciation | 418 | 503 | 650 | 940 | 1,071 |
| Others | (22) | (36) | (51) | (28) | (14) |
| Change in working capital | (534) | 66 | 394 | (1,281) | (537) |
| Cash flow from operations | 516 | 1,428 | 2,006 | 615 | 2,186 |
| Cash flow from investments | (473) | (1,430) | (2,124) | (1,243) | (1,342) |
| Cash flow from financing | (39) | 5 | 131 | 756 | (783) |
| Change in cash | 4 | 3 | 13 | 128 | 61 |
| Free cash flow | 32 | 197 | (356) | (632) | 833 |

*Source: Company, Ambit Capital research*

## Ratio analysis / Valuation parameters

| Year to March | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Gross margin (%) | 24.8% | 24.5% | 25.8% | 25.5% | 27.7% |
| EBITDA margin (%) | 6.8% | 6.8% | 7.1% | 6.8% | 8.8% |
| Net profit margin (%) | 1.7% | 2.1% | 3.3% | 1.3% | 1.8% |
| Net debt: equity (x) | 0.7 | 2.3 | 2.1 | 2.0 | 2.1 |
| RoCE (%) | 16.5% | 18.9% | 23.8% | 14.4% | 12.6% |
| RoE (%) | 26.5% | 37.7% | 52.9% | 19.5% | 26.8% |
| P/E (x) | 194.5 | 115.8 | 63.3 | 132.1 | 85.5 |
| Price/Sales (x) | 3.2 | 2.4 | 2.1 | 1.8 | 1.5 |
| EV/EBITDA (x) | 49.8 | 37.0 | 31.3 | 28.4 | 18.6 |

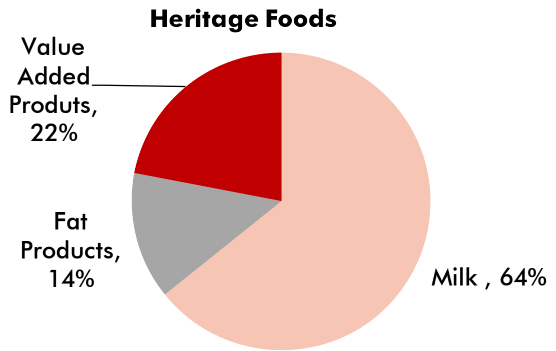
*Source: Company, Ambit Capital research*

# Heritage Foods

**Background**

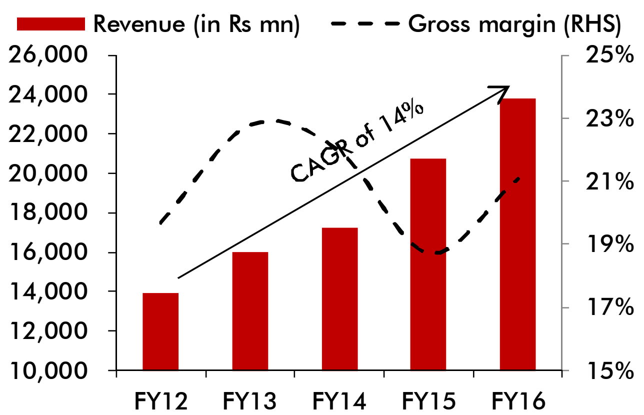
Heritage Foods Limited incorporated in 1992, is an India-based dairy company. The Company has its presence in Andhra Pradesh, Telangana, Tamil Nadu, Karnataka, Rajasthan, Maharashtra and Delhi. The Company operates in dairy, retail, agri, bakery and renewable energy segments. The Company's products in the diary segment include milk, value added products, fat products and skimmed milk powder. It sells fruits and vegetables in the agri segment. Power generated from its solar project is used for the captive purpose, for its dairy divisions. Its bakery products include browned puffs, brownies, croissants, quiches, sandwiches and cakes. Its retail segment has a chain of retail stores in South India

**Exhibit 64: Heritage has presence only in fresh dairy products**



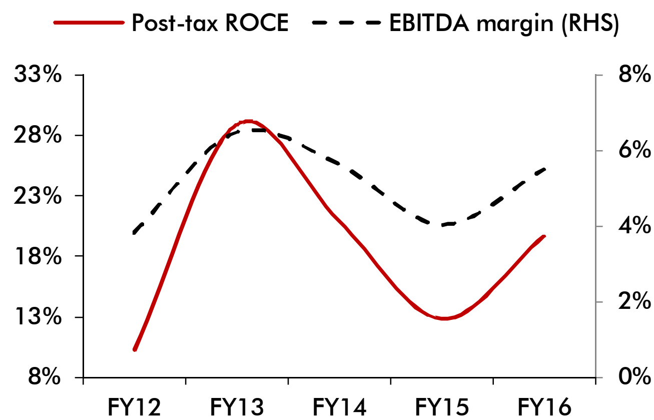

*Source: Company, Ambit Capital research Note: Product portfolio as per FY16*

**Exhibit 65: Revenue and gross margin over FY12-16**



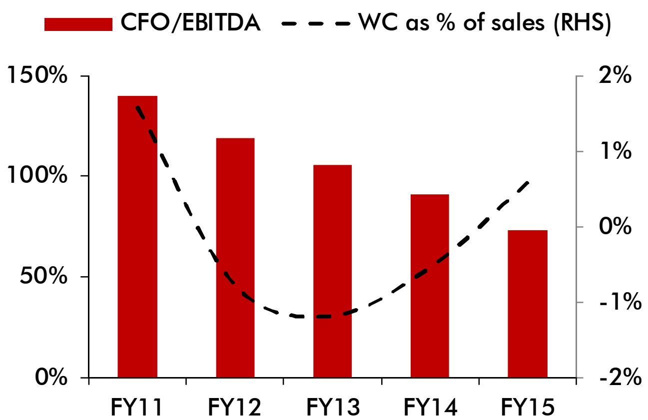

*Source: Ambit Capital research*

**Exhibit 66: ROCE and EBITDA margin**



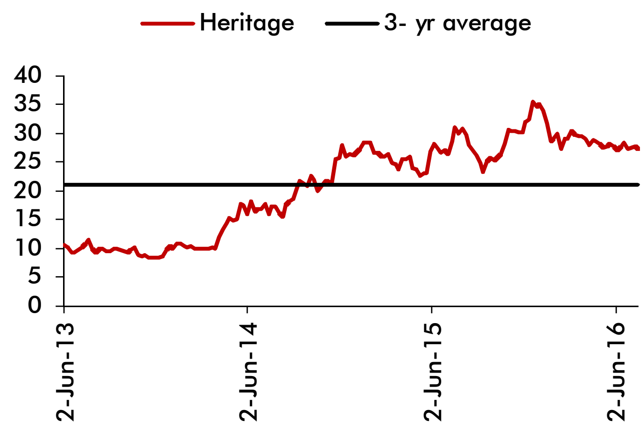

*Source: Ambit Capital research*

**Exhibit 67: Healthy CFO/ EBITDA and low working capital as % of sales**




*Source: Ambit Capital research*

**Exhibit 68: Heritage Foods' trailing 12-month PE bandchart**




*Source: Ambit Capital research*

## Balance sheet

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Worth | 928 | 1,417 | 1,788 | 1,929 | 2,399 |
| Total Debt | 1,405 | 982 | 1,274 | 1,425 | 1,051 |
| Others | 182 | 195 | 225 | 188 | 187 |
| Current Liabilities | 1,551 | 1,512 | 1,631 | 1,715 | 2,112 |
| **Total Liabilities** | **4,066** | **4,106** | **4,918** | **5,258** | **5,749** |
| Fixed Assets | 2,395 | 2,451 | 2,826 | 2,897 | 3,216 |
| Investments | 2 | 8 | 7 | 8 | 8 |
| Current Assets | 1,670 | 1,647 | 2,086 | 2,353 | 2,524 |
| **Total Assets** | **4,066** | **4,106** | **4,918** | **5,258** | **5,749** |

*Source: Company, Ambit Capital research*

## Income statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Income | 13,934 | 16,018 | 17,220 | 20,730 | 23,806 |
| % Growth | 27% | 15% | 8% | 20% | 15% |
| Gross Profit | 2,743 | 3,649 | 3,782 | 3,880 | 5,019 |
| EBITDA | 532 | 1,038 | 969 | 837 | 1,308 |
| PBIT | 321 | 818 | 719 | 497 | 963 |
| PBT | 134 | 666 | 617 | 393 | 873 |
| PAT | 92 | 529 | 458 | 284 | 568 |
| EPS | 4.0 | 22.8 | 19.7 | 12.2 | 24.5 |
| EPS Growth | 736% | 476% | -13% | -38% | 100% |

*Source: Company, Ambit Capital research*

## Cash flow statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| EBIT | 355 | 860 | 770 | 569 | NA |
| Depreciation | 212 | 220 | 250 | 340 | NA |
| Others | (4) | 7 | (5) | (13) | NA |
| Change in working capital | 114 | 56 | (98) | (256) | NA |
| Cash flow from operations | 605 | 973 | 747 | 516 | NA |
| Cash flow from investments | (265) | (292) | (617) | (475) | NA |
| Cash flow from financing | (313) | (652) | (10) | (79) | NA |
| Change in cash | 27 | 29 | 121 | (38) | NA |
| Free cash flow | 316 | 677 | 120 | 36 | NA |

*Source: Company, Ambit Capital research*

## Ratio analysis / Valuation parameters

| Year to March | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Gross margin (%) | 19.7% | 22.8% | 22.0% | 18.7% | 21.1% |
| EBITDA margin (%) | 3.8% | 6.5% | 5.6% | 4.0% | 5.5% |
| Net profit margin (%) | 0.7% | 3.3% | 2.7% | 1.4% | 2.4% |
| Net debt: equity (x) | 1.2 | 0.5 | 0.5 | 0.5 | 0.2 |
| RoCE (%) | 10.3% | 28.9% | 20.9% | 12.8% | 19.6% |
| RoE (%) | 10.3% | 45.1% | 28.6% | 15.3% | 26.2% |
| P/E (x) | 135.4 | 23.5 | 27.1 | 43.8 | 21.9 |
| Price/Sales (x) | 0.9 | 0.8 | 0.7 | 0.6 | 0.5 |
| EV/EBITDA (x) | 25.4 | 12.6 | 13.7 | 16.1 | 10.0 |

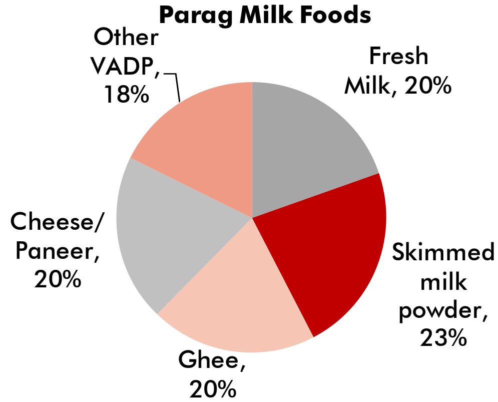
*Source: Company, Ambit Capital research*

# Parag Milk Foods

## Background

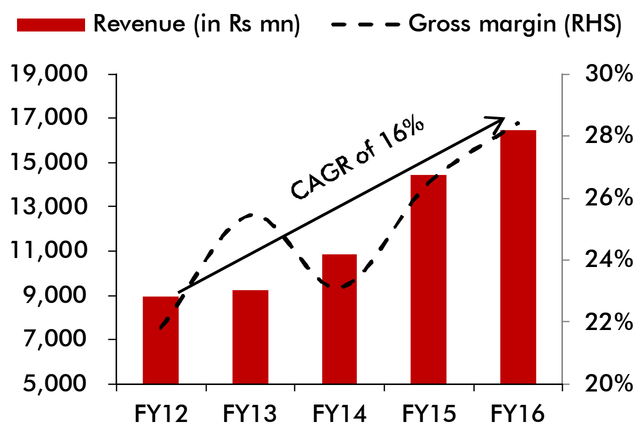
Parag Milk Foods Limited was incorporated in 1992 are engaged in manufacturing and marketing of dairy-based branded foods. Its product range includes long shelf-life food like cheese, curd etc and beverage products that enable it to sell its products to retail and institutional customers across India. The Company's brands include Go, Gowardhan, Pride of cows and Topp up. It derives all of its products only from cows' milk. Its manufacturing facilities are located at Manchar in the Pune district of Maharashtra and Palamaner in the Chittoor district of Andhra Pradesh.

**Exhibit 69: PMF is focusing more on value-added dairy products**



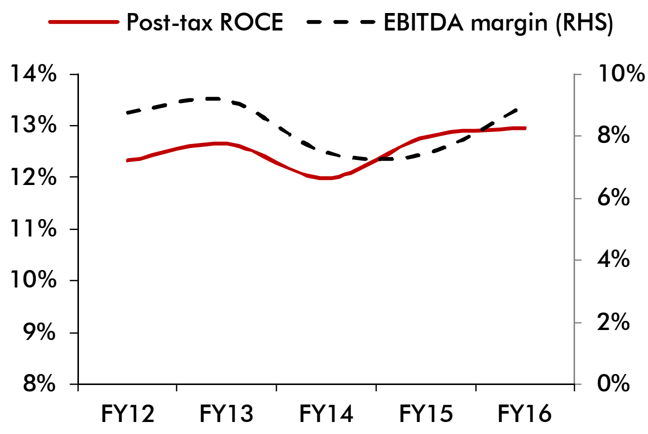

*Source: Company, Ambit Capital research Note: Product portfolio as per FY15*

**Exhibit 70: Revenue and gross margin over FY12-16**



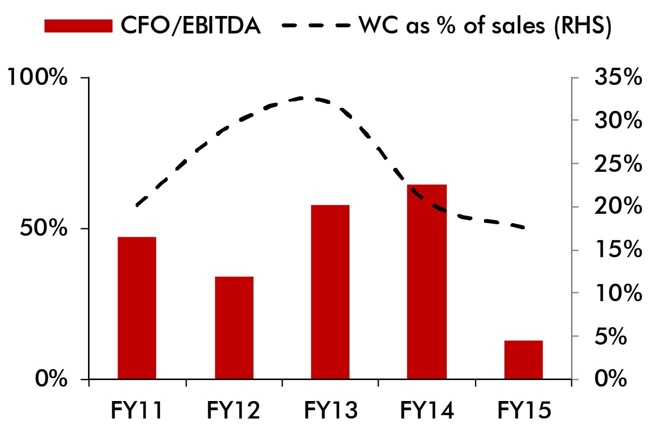

*Source: Ambit Capital research*

**Exhibit 71: ROCE and EBITDA margin**



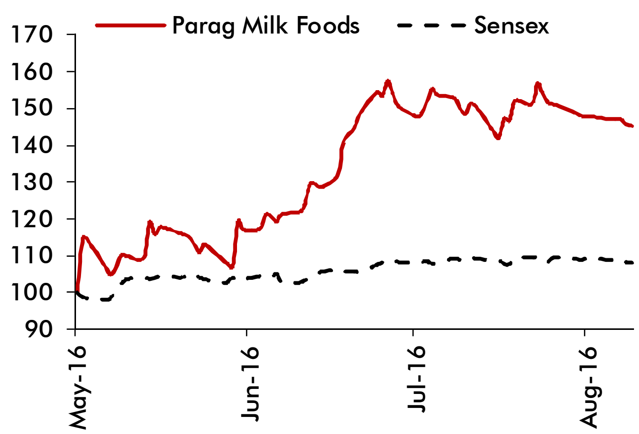

*Source: Ambit Capital research*

**Exhibit 72: CFO/ EBITDA and high working capital as % of sales**




*Source: Ambit Capital research*

**Exhibit 73: PMF outperformed market by ~37% since listing**




*Source: Ambit Capital research*

## Balance sheet

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Worth | 552 | 798 | 944 | 1,239 | 3,619 |
| Total Debt | 4,125 | 4,908 | 5,561 | 4,198 | 3,607 |
| Deferred Tax Liability | 100 | 75 | 38 | 60 | 110 |
| Current Liabilities | 1,247 | 1,121 | 1,659 | 3,743 | 2,575 |
| **Total Liabilities** | **6,024** | **6,901** | **8,202** | **9,239** | **9,910** |
| Fixed Assets | 2,532 | 2,496 | 2,790 | 3,194 | 3,726 |
| Investments | 0 | 3 | 3 | 3 | 0 |
| Current Assets | 3,492 | 4,403 | 5,409 | 6,043 | 6,184 |
| **Total Assets** | **6,024** | **6,901** | **8,202** | **9,239** | **9,910** |

*Source: Company, Ambit Capital research*

## Exhibit 74: Income statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Income | 8,960 | 9,264 | 10,870 | 14,441 | 16,451 |
| % Growth | 36% | 3% | 17% | 33% | 14% |
| Gross Profit | 1,954 | 2,357 | 2,512 | 3,825 | 4,676 |
| EBITDA | 785 | 848 | 811 | 1,072 | 1,476 |
| PBIT | 568 | 608 | 548 | 812 | 1,158 |
| PBT | 168 | 204 | 109 | 343 | 668 |
| PAT | 152 | 220 | 146 | 322 | 473 |
| EPS | 2 | 3 | 2 | 4 | 6 |
| EPS Growth | 2317% | 45% | -34% | 121% | 47% |

*Source: Company, Ambit Capital research*

## Cash flow statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| PBT | 168 | 204 | 109 | 353 | 668 |
| Non-cash adjustments | 649 | 715 | 745 | 780 | 808 |
| Change in working capital | (447) | (630) | (386) | (442) | (1,286) |
| Tax paid | (30) | (129) | (5) | (6) | (195) |
| Cash flow from operations | 339 | 160 | 463 | 685 | (5) |
| Cash flow from investments | (695) | (570) | (592) | (248) | (234) |
| Cash flow from financing | 360 | 408 | 145 | (423) | 10 |
| Change in cash | 4 | (2) | 16 | 14 | (229) |
| Free cash flow | (365) | (400) | (122) | 434 | (255) |

*Source: Company, Ambit Capital research*

## Ratio analysis / Valuation parameters

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Gross margin (%) | 21.8% | 25.4% | 23.1% | 26.5% | 28.4% |
| EBITDA margin (%) | 8.8% | 9.2% | 7.5% | 7.4% | 9.0% |
| Net profit margin (%) | 1.7% | 2.4% | 1.3% | 2.2% | 2.9% |
| Net debt: equity (x) | 7.5 | 6.1 | 5.9 | 3.4 | 1.0 |
| RoCE (%) | 12.3% | 12.6% | 12.0% | 12.8% | 13.0% |
| RoE (%) | 31.8% | 32.7% | 16.7% | 29.5% | 19.5% |
| P/E (x) | | | 118 | 76 | 66 |
| Price/Sales (x) | 3.1 | 3.0 | 2.5 | 1.9 | 1.7 |
| EV/EBITDA (x) | 40.0 | 38.0 | 40.5 | 29.4 | 20.9 |

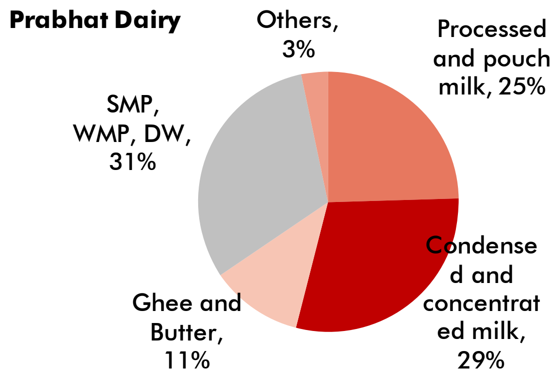
*Source: Company, Ambit Capital research*

# Prabhat Dairy

**Background**

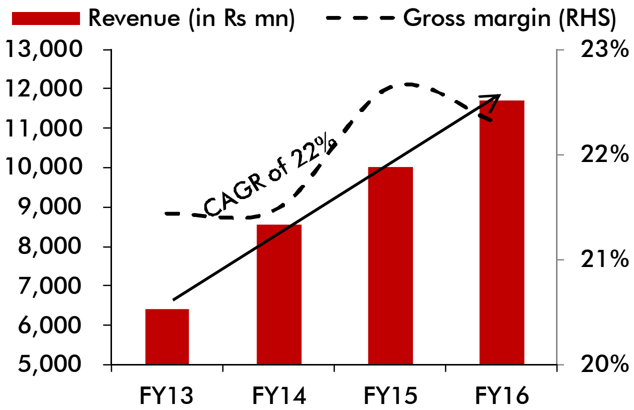
Prabhat Dairy Limited is an integrated milk and dairy products company incorporated in 1998. The Company operates through processing, manufacturing and sale of milk and dairy products segment. It sells it product under the brand name of Prabhat, Flava and Milk Magic. Its product portfolio includes retail consumer products, including pouch milk, UHT milk, flavoured milk, sweetened condensed milk, dairy whitener, milk powder, lassi, curd, chaas and ghee.

**Exhibit 75: Prabhat Dairy has been driving a shift from B2B to B2C; B2C is currently ~30% of sales**



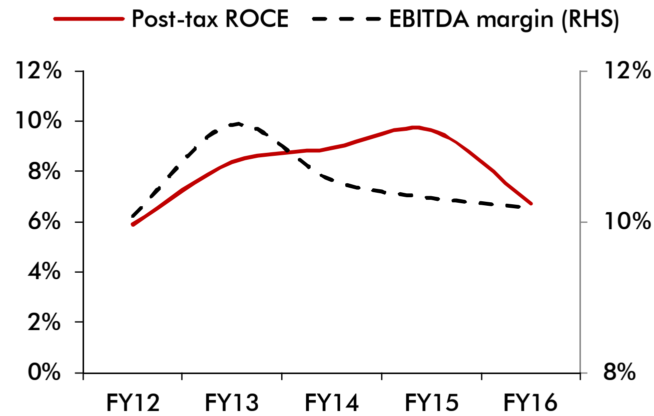

*Source: Company, Ambit Capital research Note: Product portfolio as per FY15*

**Exhibit 76: Revenue and gross margin over FY12-16**



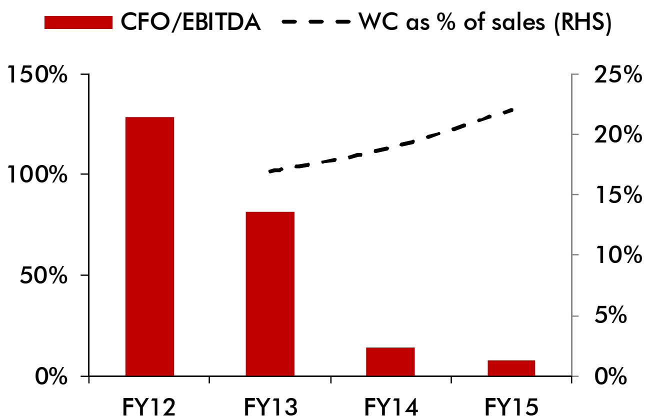

*Source: Ambit Capital research*

**Exhibit 77: ROCE and EBITDA margin**



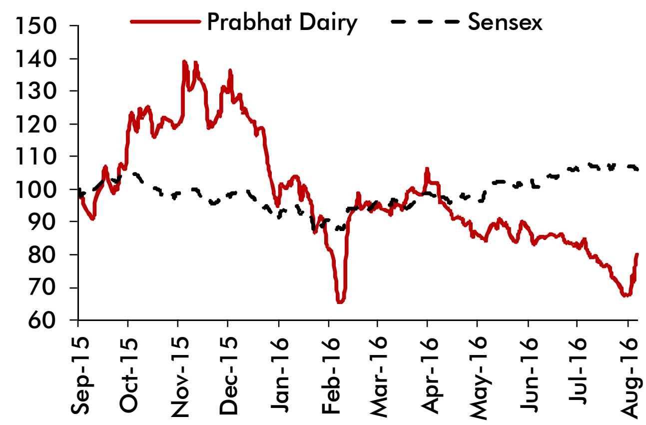

*Source: Ambit Capital research*

**Exhibit 78: Deteriorating CFO/ EBITDA and high working capital as % of sales**




*Source: Ambit Capital research*

**Exhibit 79: Prabhat Dairy underperformed market by ~26% since listing**




*Source: Ambit Capital research*

### Balance sheet

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Worth | 1,134 | 2,372 | 3,173 | 3,516 | 6,549 |
| Total Debt | 2,517 | 2,417 | 2,574 | 3,815 | 1,582 |
| Others | 127 | 149 | 181 | 178 | 236 |
| Current Liabilities | 1,014 | 812 | 1,131 | 1,126 | 732 |
| **Total Liabilities** | **4,792** | **5,750** | **7,059** | **8,635** | **9,099** |
| Fixed Assets | 3,039 | 3,416 | 4,109 | 4,649 | 4,542 |
| Investments | 0 | 0 | 1 | 1 | 1 |
| Current Assets | 1,754 | 2,334 | 2,949 | 3,986 | 4,556 |
| **Total Assets** | **4,792** | **5,750** | **7,059** | **8,635** | **9,099** |

*Source: Company, Ambit Capital research*

### Income statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Income | 4,830 | 6,411 | 8,567 | 10,034 | 11,705 |
| % Growth | 0% | 33% | 34% | 17% | 17% |
| Gross Profit | 1,011 | 1,375 | 1,841 | 2,272 | 2,608 |
| EBITDA | 487 | 724 | 904 | 1,035 | 1,192 |
| PBIT | 322 | 479 | 569 | 691 | 793 |
| PBT | 146 | 191 | 249 | 289 | 381 |
| PAT | 95 | 138 | 202 | 260 | 245 |
| EPS | 1.0 | 1.4 | 2.1 | 2.7 | 2.5 |
| EPS Growth | | 45% | 47% | 28% | -6% |

*Source: Company, Ambit Capital research*

### Cash flow statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| EBIT | 330 | 488 | 579 | 701 | NA |
| Depreciation | 165 | 244 | 335 | 344 | NA |
| Others | 30 | (4) | (4) | (6) | NA |
| Change in working capital | 102 | (137) | (780) | (940) | NA |
| Cash flow from operations | 535 | 557 | 86 | 14 | NA |
| Cash flow from investments | (1,171) | (1,102) | (611) | (533) | NA |
| Cash flow from financing | 648 | 574 | 503 | 691 | NA |
| Change in cash | 12 | 29 | (23) | 173 | NA |
| Free cash flow | (557) | (578) | (587) | (521) | NA |

*Source: Company, Ambit Capital research*

### Ratio analysis / Valuation parameters

| Year to March | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Gross margin (%) | 20.9% | 21.4% | 21.5% | 22.6% | 22.3% |
| EBITDA margin (%) | 10.1% | 11.3% | 10.6% | 10.3% | 10.2% |
| Net profit margin (%) | 2.0% | 2.2% | 2.4% | 2.6% | 2.1% |
| Net debt: equity (x) | 2.2 | 1.0 | 0.8 | 1.0 | 0.2 |
| RoCE (%) | 5.9% | 8.4% | 8.9% | 9.6% | 6.7% |
| RoE (%) | 8.4% | 7.9% | 7.3% | 7.8% | 4.9% |
| P/E (x) | 100.5 | 69.4 | 47.3 | 36.8 | 39.0 |
| Price/Sales (x) | 2.0 | 1.5 | 1.1 | 1.0 | 0.8 |
| EV/EBITDA (x) | 24.8 | 16.5 | 13.4 | 12.7 | 9.3 |

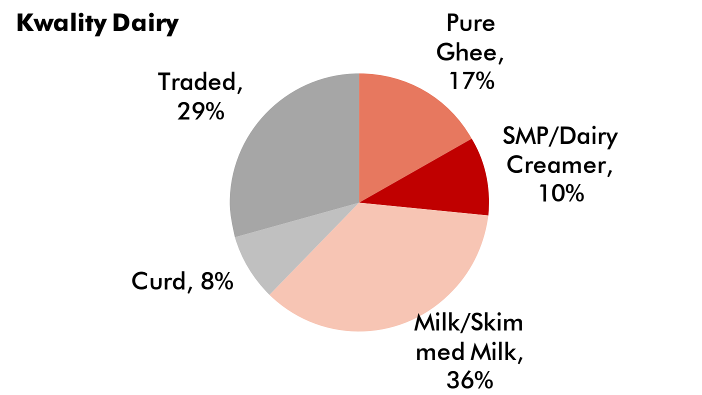
*Source: Ambit Capital research*

# Kwality Dairy

**Background**

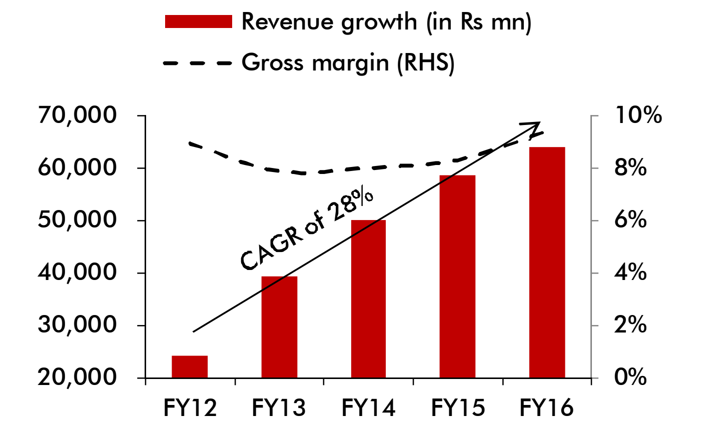
Kwality Ltd. (Kwality) was incorporated in 1992 as Kwality Dairy (India) Ltd. The company was set up as a backward integration unit of Kwality Ice Creams India Ltd and was acquired by Dhingra Family in 2002. The Company's brands include Dairy Best, Good-Health, Kream-Kountry and LivLite. The Company's manufacturing units are located at Palwal, Bulandsahar, Saharanpur, Sitapur, Agra and Ajmer.

**Exhibit 80: Kwality derives only ~18% of its sales from retail segment**



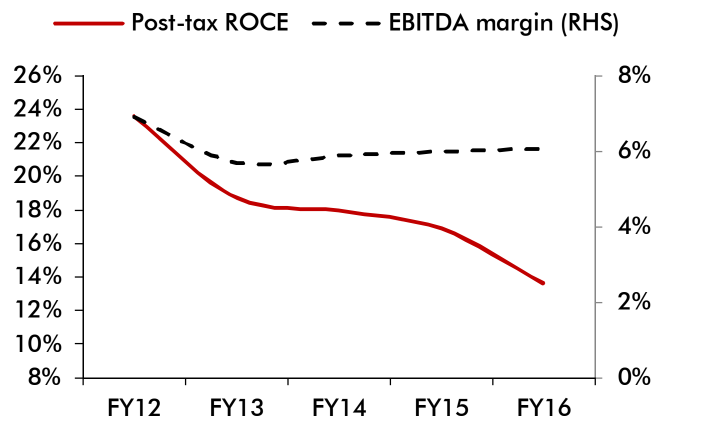

*Source: Company, Ambit Capital research Note: Product portfolio as per FY15*

**Exhibit 81: Revenue and gross margin over FY12-16**



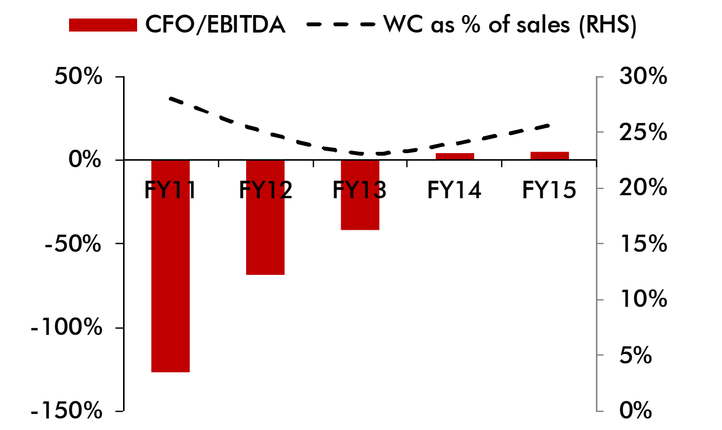

*Source: Ambit Capital research*

**Exhibit 82: ROCE and EBITDA margin**



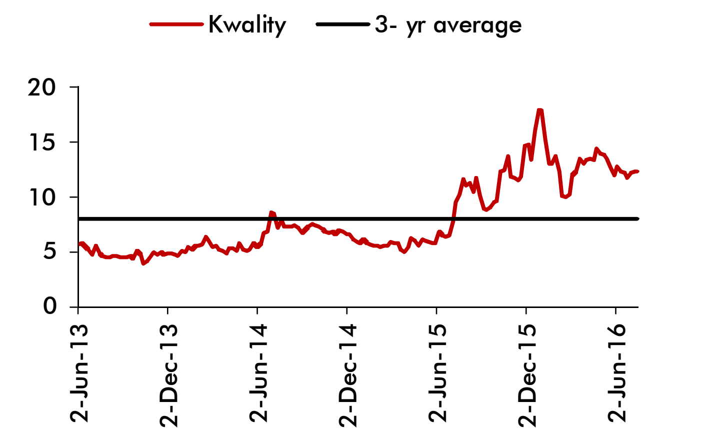

*Source: Ambit Capital research*

**Exhibit 83: Negative CFO/ EBITDA and high working capital as % of sales**




*Source: Ambit Capital research*

**Exhibit 84: Kwality Dairy trailing 12-month PE bandchart**




*Source: Ambit Capital research*

## Balance sheet

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Worth | 1,810 | 2,845 | 4,284 | 6,649 | 8,642 |
| Total Debt | 6,525 | 9,441 | 10,773 | 12,366 | 14,706 |
| Others | 5 | (12) | (8) | (15) | (118) |
| Current Liabilities | 686 | 1,452 | 2,479 | 1,644 | 2,158 |
| **Total Liabilities** | **9,025** | **13,726** | **17,528** | **20,644** | **25,388** |
| Fixed Assets | 641 | 817 | 1,278 | 1,857 | 2,674 |
| Investments | - | - | - | - | - |
| Current Assets | 8,384 | 12,909 | 16,250 | 18,788 | 22,714 |
| **Total Assets** | **9,025** | **13,726** | **17,528** | **20,644** | **25,388** |

*Source: Company, Ambit Capital research*

## Income statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Net Income | 24,162 | 39,297 | 50,110 | 58,783 | 64,141 |
| % Growth | 50% | 63% | 28% | 17% | 9% |
| Gross Profit | 2,164 | 3,101 | 4,020 | 4,890 | 6,046 |
| EBITDA | 1,666 | 2,238 | 2,943 | 3,522 | 3,887 |
| PBIT | 1,591 | 2,135 | 2,813 | 3,269 | 3,654 |
| PBT | 940 | 1,206 | 1,688 | 1,961 | 2,377 |
| PAT | 923 | 1,086 | 1,449 | 1,665 | 1,736 |
| EPS | 3.9 | 4.6 | 6.2 | 7.1 | 7.4 |
| EPS Growth | 101% | 18% | 33% | 15% | 4% |

*Source: Company, Ambit Capital research*

## Cash flow statement

| Year to March (₹ mn) | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| EBIT | 1,592 | 2,142 | 2,855 | 3,386 | NA |
| Depreciation | 75 | 103 | 130 | 253 | NA |
| Others | 0 | 27 | (13) | 31 | NA |
| Change in working capital | (2,804) | (3,194) | (2,842) | (3,478) | NA |
| Cash flow from operations | (1,345) | (1,097) | (136) | 170 | NA |
| Cash flow from investments | (309) | (281) | (586) | (1,085) | NA |
| Cash flow from financing | 1,761 | 1,988 | 161 | 1,042 | NA |
| Change in cash | 107 | 610 | (561) | 126 | NA |
| Free cash flow | (1,654) | (1,381) | (727) | (924) | NA |

*Source: Company, Ambit Capital research*

## Ratio analysis / Valuation parameters

| Year to March | FY12 | FY13 | FY14 | FY15 | FY16 |
|---|---|---|---|---|---|
| Gross margin (%) | 9.0% | 7.9% | 8.0% | 8.3% | 9.4% |
| EBITDA margin (%) | 6.9% | 5.7% | 5.9% | 6.0% | 6.1% |
| Net profit margin (%) | 3.8% | 2.8% | 2.9% | 2.8% | 2.7% |
| Net debt: equity (x) | 3.5 | 3.0 | 2.4 | 1.8 | 1.6 |
| RoCE (%) | 23.6% | 18.7% | 17.9% | 16.9% | 13.6% |
| RoE (%) | 67.9% | 46.7% | 40.7% | 30.5% | 22.7% |
| P/E (x) | 27.7 | 23.5 | 17.6 | 15.3 | 14.7 |
| Price/Sales (x) | 1.1 | 0.6 | 0.5 | 0.4 | 0.4 |
| EV/EBITDA (x) | 19.2 | 15.2 | 12.2 | 10.6 | 10.1 |

*Source: Company, Ambit Capital research*

# Annexure

## History of India dairy industry: From importer to self-sufficient in 40 years

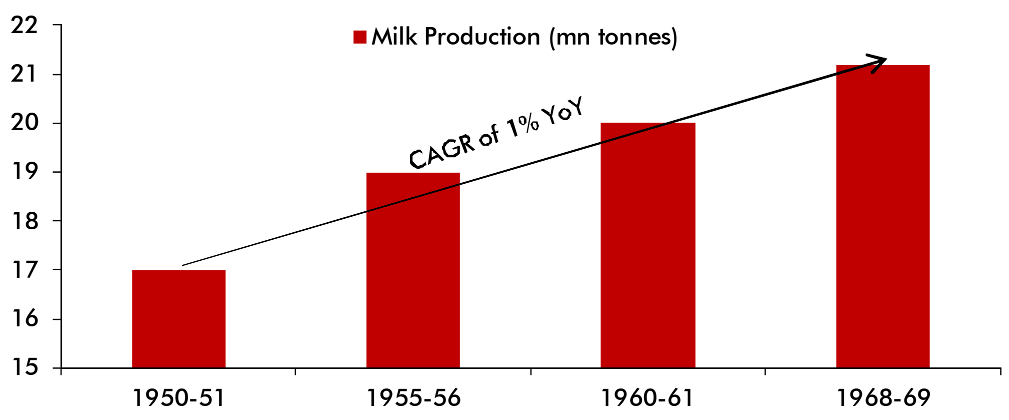
"If our cooperatives had not been around, we would still be importing baby food, condensed milk and sundry other dairy products…" – Dr. Verghese Kurien, Author - *I Too Had A Dream*

## 1946 to 1970: Establishment of co-operative model in Gujarat

The first dairy co-operative was setup in Anand in Gujarat when local farmers incensed by the extremely low price paid for the milk they sold to middle men, decided to take the control of milk procurement, processing and marketing in their own hands. This co-operative owned by farmers, under the leadership of a professional manager Dr. Verghese Kurien, saw success with farmers getting higher realisation for the milk they sold. Since mid-1950s, the products from this dairy co-operative were being sold under the brand name 'Amul'. Soon few more district co-operatives were setup in the state of Gujarat. To save on the admin and marketing expenses, even they sold products under the Amul brand name. India's milk production increased at 1% CAGR during this period, largely led by the success of Gujarat's co-operatives. This partially helped India to reduce its dependence on imports of milk powder and other milk products.

*"I ensured from the start, therefore, that Amul always operated as a business enterprise – but at all times keeping in mind that the business was to maximise the price paid for the milk, not in order to maximise the dividend, as is the case in the private sector. We did this by manufacturing value-added products which allowed us to give farmers a higher milk price every year. From liquid milk we went into the production of milk powder and very soon into butter." - Dr. Verghese Kurien, Author - I Too Had A Dream*

**Exhibit 85: Milk production increased at 1% CAGR over 1950-1969 driven by the growth of Amul**




*Source: NDDB*

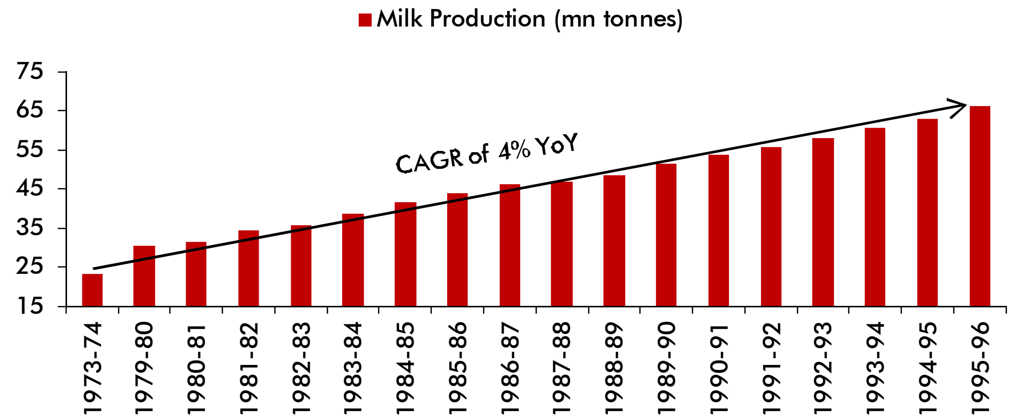
## 1970-1996: Operation Flood – replicating the Anand model across the country

Seeing the success of the Anand model, it was decided to replicate the Anand pattern to increase milk production across the country. The National Dairy Development Board was setup in 1965 and Operation Flood (OF) was launched under its aegis in 1970. OF helped increase India's milk production at 4% CAGR over 1970-96 thus completely stopping India's reliance on dairy imports.

However, co-operatives in other states haven't had as much success as Gujarat's co-operatives have had.

*"Unfortunately, as things stand today, many Indian co-operatives do not function efficiently because they have been made official, bureaucratized, politicized and therefore, they have been effectively neutralized." - Dr. Verghese Kurien, Author - I Too Had A Dream*

**Exhibit 86: Operation Flood drove the milk production increase of 4% CAGR over 1970-1996**




*Source: NDDB*

## 1992-93 onwards: Entry of private players helped maintain milk production growth

Following the de-licensing of the dairy sector in 1992-93, private players were allowed to freely establish dairy processing plants subject to registration under the Milk and Milk Products Order (MPMO), 1992. Amendments made to MPMO in 2002, further eased the entry of private players into the dairy industry. During this period several private dairies started operations – Hatsun Agro, Heritage Foods, Tirumala in the South, Schrieber Dynamix, Prabhat Dairy, Parag Milk Foods in West, Kwality Dairy, Bhole Baba in North. According to NDDB's 2010-11 annual report, - "It is estimated that the capacity created by them (private dairy players) in the last 15 years equals that set up by cooperatives in over 30 years." While the dairy co-operatives didn't accelerate the pace of milk production since the 1990s, the involvement of private dairy companies helped increase milk production during 1992-2015 at 4% CAGR. With a total milk production of ~146mn tonnes in 2015, India is now the single largest milk producing country in the world.

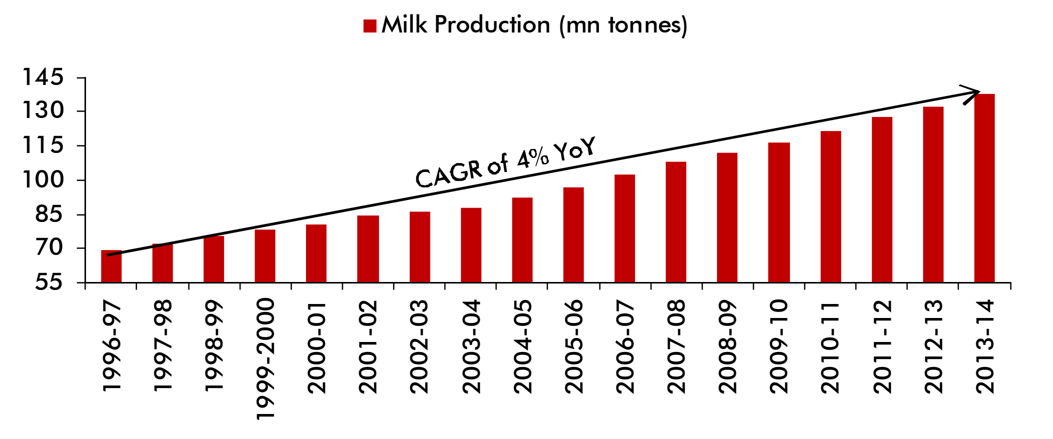
As shown in the exhibit below, Private Equity players also started funding some of these private dairy companies particularly those companies which produce value-added dairy products (VADP).

**Exhibit 87: Private Equity and dairy companies have invested in domestic dairy companies over the last decade**

| Year | Buyer | Target | Amount | Comments |
|---|---|---|---|---|
| 2008 | Motilal Oswal PE | Parag Milk Foods | 0.6bn | |
| 2010 | Carlye Asia Growth | Tirumala Milk Products | 1.1bn | Funds used to upgrade manufacturing plants and technology and increasing the number of chilling centres |
| 2011 | IFC | Parag Milk Foods | 1.0bn | |
| 2012 | Ambit Pragma | Neo Anurena Tristar | NA | |
| 2012 | IDFC PE | Parag Milk Foods | 1.6bn | |
| 2012 | Abraaj Capital and Rabo Equity | Prabhat Dairy | 1bn | |
| 2012 | Cargill Ventures | Dodla Dairy | 1.1bn | Acquisition |
| 2013 | Hatsun Agro | Jyothi Dairy | 0.7bn | Acquired at 0.7x of sales |
| 2014 | Lactalis | Triumala Milk | 17.5bn | Acquired at 1.0x of sales |
| 2015 | Godrej Agrovet Ltd | Creamline Dairy | 1.5bn | Acquired additional 25% at 1.5x of sales |
| 2016 | Lactalis | Anik Industries | 4.7bn | Acquired at 0.5x of sales |

*Source: Ambit Capital research*

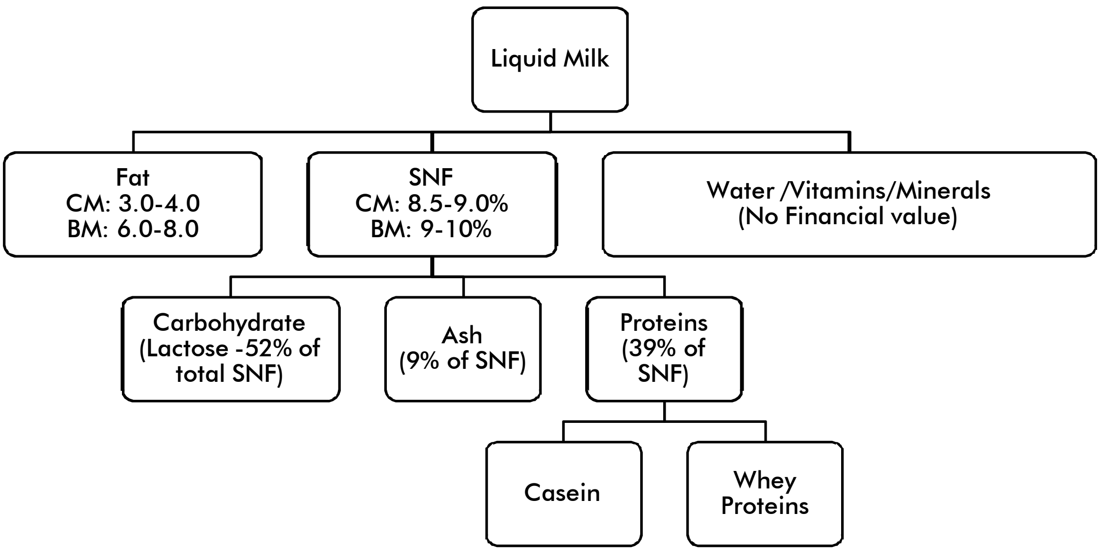
**Exhibit 88: Helped by private dairies, milk production increased at 4% CAGR over 1997-2014**




*Source: NDDB*

## Understanding the building blocks of milk

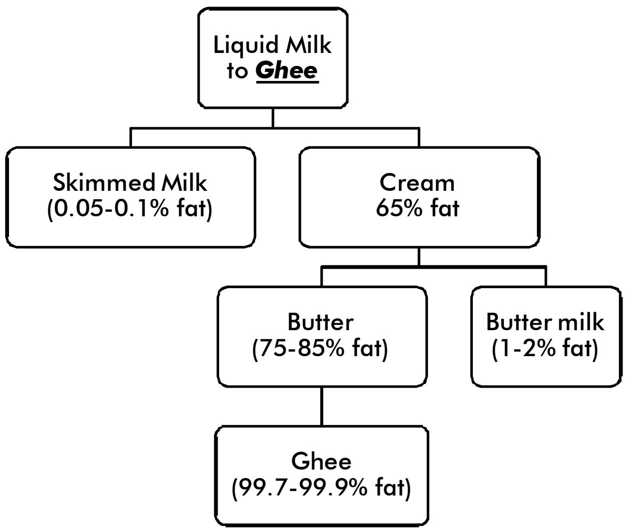
**Exhibit 89: Composition of milk**




*Source: Ambit Capital research; CM denotes cow milk, BM denotes buffalo milk*

## Conversion processes for basic dairy products

**Exhibit 90: Process of milk to ghee**




*Source: Ambit Capital research*

**Exhibit 91: Process of milk to Cheese**

Milk to ***Cheese*** ⇨ Dahi ⇨ Curd/Coagulation ⇨ Pressing ⇨ Cheese/Paneer ⇨ Curing (Incubation) ⇨ Processing ⇨ Processed cheese

*Source: Ambit Capital research*

**Exhibit 92: Process of milk to paneer**

Milk to ***Paneer*** ⇨ Heated to 80-90 degree C ⇨ Coagulation ⇨ Hooping ⇨ Pressing ⇨ Dipping in chilled water ⇨ Cutting Paneer

*Source: Ambit Capital research*

## Ice cream – modest margin but require investment in production and supply chain

**Exhibit 93: Companies can make >20% profit margin on ice creams**

| **Vanilla Ice cream** | **₹/ltr** |
|---|---|
| MRP | 70 |
| Retailer margin @ 20% | 12 |
| Ex-Retailer margin | 58 |
| ex-VAT @ 5% | 56 |
| Distributor margin @ 5% | 3 |
| ex-factory price | 53 |
| **Milk cost for Ice cream having 71gm of Fat and 47gm SNF per ltr (₹.)** | **32** |
| Sugar cost (₹.) | 3.2 |
| Manufacturing & Transport cost | 6 |
| Ice cream gross profit (₹/kg) | 12 |
| **Profit margin** | **21.9%** |

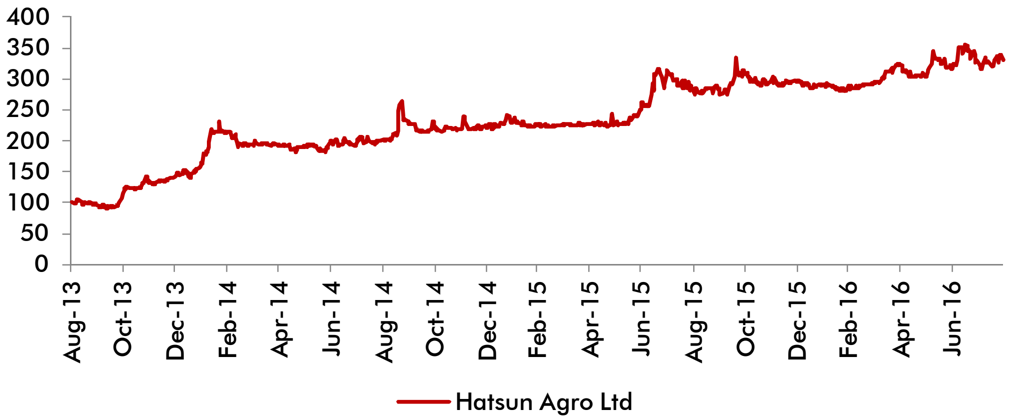
*Source: Ambit Capital research*

As shown above, ice cream can make at least 20% profit margin. However, the demand for this product peaks in Apr-Jun with companies making ~75% of their annual profit during this quarter. The under-utilization of the manufacturing facilities in the lean season acts as a drag on the profitability of the business. Investment in world-class freezers is needed to ensure production of ice-creams through the year and then storing them for consumption in the peak season. This category is dominated by Amul, Kwality Walls, Vadilal and Mother Dairy. Due to the requirement of a cold chain, major brands are mostly present only in urban India. Hatsun with its Arun branded ice cream is the market leader in Tamil Nadu. It has been making investments in freezers and technology to produce high quality ice creams throughout the year.

# Institutional Equities Team

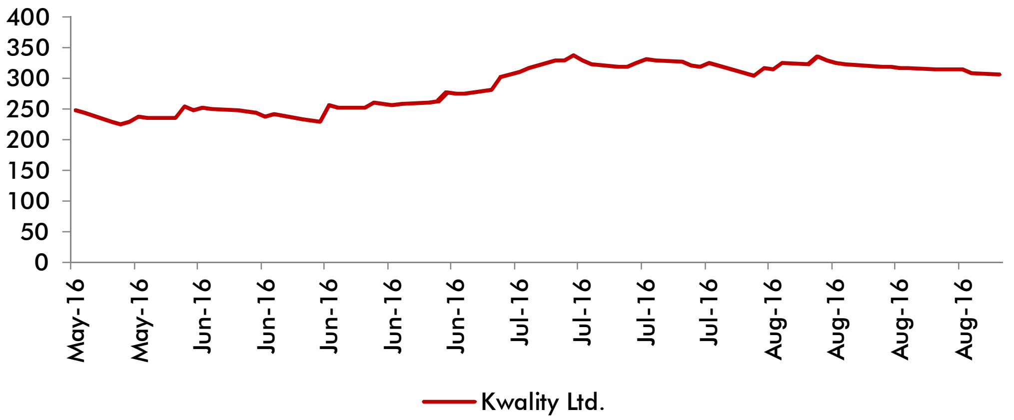
| | | | |
|---|---|---|---|
| **Saurabh Mukherjea, CFA** | **CEO, Institutional Equities** | **(022) 30433174** | **saurabhmukherjea@ambitcapital.com** |
| **Research Analysts** | | | |
| **Name** | **Industry Sectors** | **Desk-Phone** | **E-mail** |
| Nitin Bhasin - Head of Research | E&C / Infra / Cement / Industrials | (022) 30433241 | nitinbhasin@ambitcapital.com |
| Aadesh Mehta, CFA | Banking / Financial Services | (022) 30433239 | aadeshmehta@ambitcapital.com |
| Abhishek Ranganathan, CFA | Retail | (022) 30433085 | abhishekr@ambitcapital.com |
| Achint Bhagat, CFA | Cement / Home Building | (022) 30433178 | achintbhagat@ambitcapital.com |
| Anuj Bansal | Mid-caps | (022) 30433122 | anujbansal@ambitcapital.com |
| Ashvin Shetty, CFA | Automobile | (022) 30433285 | ashvinshetty@ambitcapital.com |
| Bhargav Buddhadev | Power Utilities / Capital Goods | (022) 30433252 | bhargavbuddhadev@ambitcapital.com |
| Deepesh Agarwal, CFA | Power Utilities / Capital Goods | (022) 30433275 | deepeshagarwal@ambitcapital.com |
| Dhiraj Mistry, CFA | Consumer | (022) 30433264 | dhirajmistry@ambitcapital.com |
| Gaurav Khandelwal, CFA | Automobile | (022) 30433132 | gauravkhandelwal@ambitcapital.com |
| Girisha Saraf | Mid-caps / Small-caps | (022) 30433211 | girishasaraf@ambitcapital.com |
| Karan Khanna, CFA | Strategy | (022) 30433251 | karankhanna@ambitcapital.com |
| Pankaj Agarwal, CFA | Banking / Financial Services | (022) 30433206 | pankajagarwal@ambitcapital.com |
| Paresh Dave, CFA | Healthcare | (022) 30433212 | pareshdave@ambitcapital.com |
| Parita Ashar, CFA | Metals & Mining / Aviation | (022) 30433223 | paritaashar@ambitcapital.com |
| Prashant Mittal, CFA | Strategy / Derivatives | (022) 30433218 | prashantmittal@ambitcapital.com |
| Rahil Shah | Banking / Financial Services | (022) 30433217 | rahilshah@ambitcapital.com |
| Rakshit Ranjan, CFA | Consumer | (022) 30433201 | rakshitranjan@ambitcapital.com |
| Ravi Singh | Banking / Financial Services | (022) 30433181 | ravisingh@ambitcapital.com |
| Ritesh Gupta, CFA | Oil & Gas / Chemicals / Agri Inputs | (022) 30433242 | riteshgupta@ambitcapital.com |
| Ritesh Vaidya, CFA | Consumer | (022) 30433246 | riteshvaidya@ambitcapital.com |
| Ritika Mankar Mukherjee, CFA | Economy / Strategy | (022) 30433175 | ritikamankar@ambitcapital.com |
| Ritu Modi | Automobile | (022) 30433292 | ritumodi@ambitcapital.com |
| Sagar Rastogi | Technology | (022) 30433291 | sagarrastogi@ambitcapital.com |
| Sumit Shekhar | Economy / Strategy | (022) 30433229 | sumitshekhar@ambitcapital.com |
| Utsav Mehta, CFA | E&C / Industrials | (022) 30433209 | utsavmehta@ambitcapital.com |
| Vivekanand Subbaraman, CFA | Media | (022) 30433261 | vivekanands@ambitcapital.com |
| **Sales** | | | |
| **Name** | **Regions** | **Desk-Phone** | **E-mail** |
| Sarojini Ramachandran - Head of Sales | UK | +44 (0) 20 7614 8374 | sarojini@panmure.com |
| Dharmen Shah | India / Asia | (022) 30433289 | dharmenshah@ambitcapital.com |
| Dipti Mehta | India / USA | (022) 30433053 | diptimehta@ambitcapital.com |
| Hitakshi Mehra | India | (022) 30433204 | hitakshimehra@ambitcapital.com |
| Krishnan V | India / Asia | (022) 30433295 | krishnanv@ambitcapital.com |
| Nityam Shah, CFA | USA / Europe | (022) 30433259 | nityamshah@ambitcapital.com |
| Parees Purohit, CFA | UK / USA | (022) 30433169 | pareespurohit@ambitcapital.com |
| Praveena Pattabiraman | India / Asia | (022) 30433268 | praveenapattabiraman@ambitcapital.com |
| Shaleen Silori | India | (022) 30433256 | shaleensilori@ambitcapital.com |
| Vishal Mehta | India / Asia | (022) 30433198 | vishalmehta@ambitcapital.com |
| **Singapore** | | | |
| Pramod Gubbi, CFA – Director | Singapore | +65 8606 6476 | pramodgubbi@ambitpte.com |
| Shashank Abhisheik | Singapore | +65 6536 1935 | shashankabhisheik@ambitpte.com |
| **USA / Canada** | | | |
| Ravilochan Pola - CEO | Americas | +1(646) 361 3107 | ravipola@ambitpte.com |
| **Production** | | | |
| Sajid Merchant | Production | (022) 30433247 | sajidmerchant@ambitcapital.com |
| Sharoz G Hussain | Production | (022) 30433183 | sharozghussain@ambitcapital.com |
| Jestin George | Editor | (022) 30433272 | jestingeorge@ambitcapital.com |
| Nikhil Pillai | Database | (022) 30433265 | nikhilpillai@ambitcapital.com |

**Hatsun Agro Ltd (HTSMF IN, NOT RATED)**



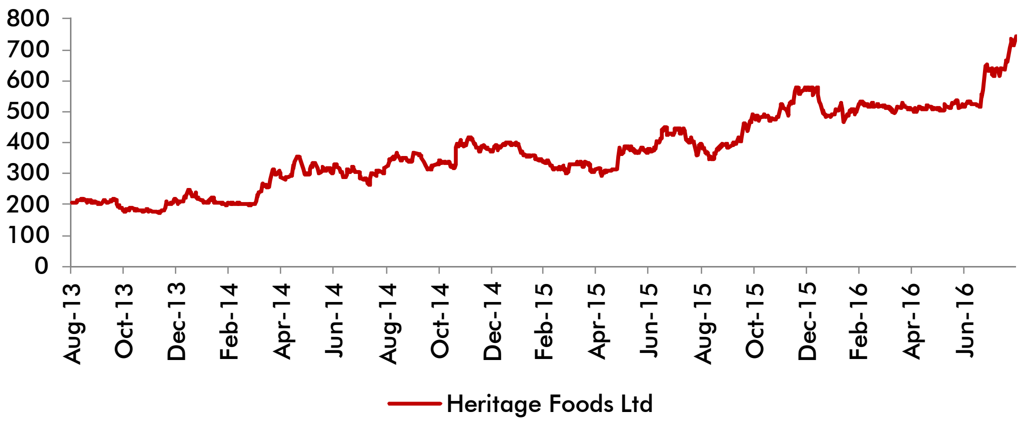

*Source: Bloomberg, Ambit Capital research*

**Kwality Ltd. (KWALITYIN, NOT RATED)**



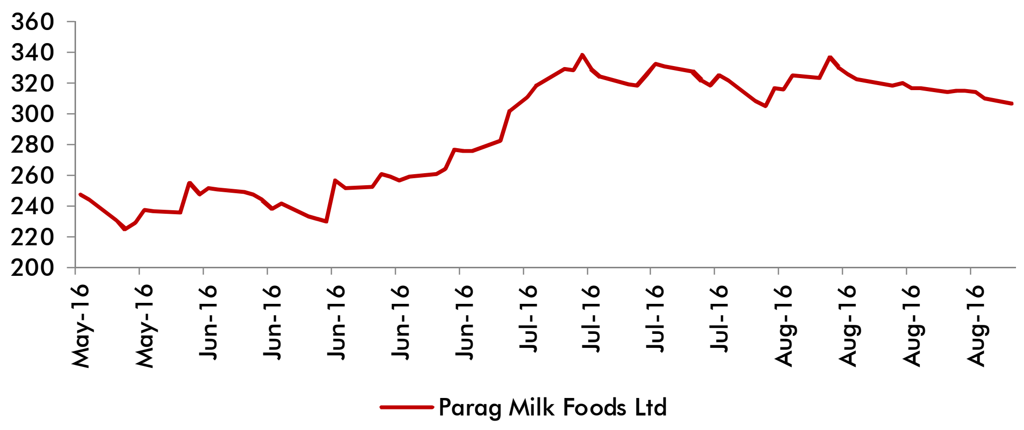

*Source: Bloomberg, Ambit Capital research*

**Heritage Foods Ltd (HTFL IN, NOT RATED)**



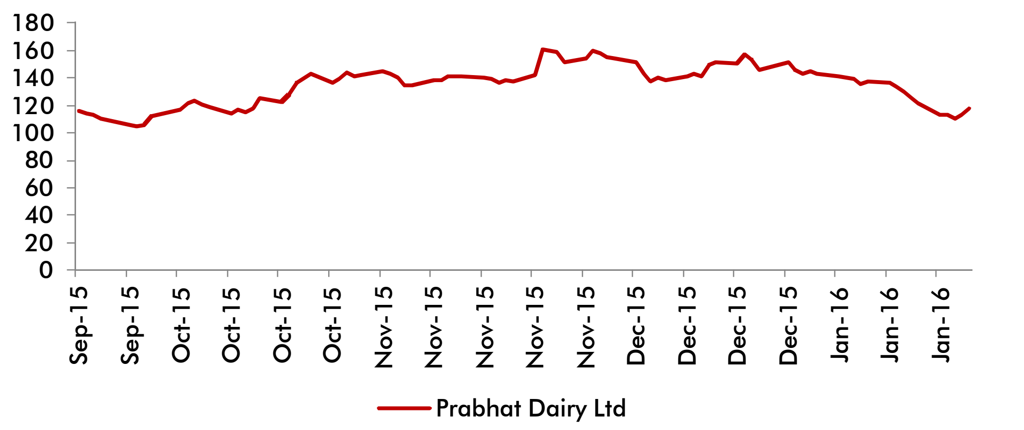

*Source: Bloomberg, Ambit Capital research*

**Parag Milk Foods Ltd (PARAG IN, NOT RATED)**




*Source: Bloomberg, Ambit Capital research*

**Prabhat Dairy Ltd (PRABHAT IN, NOT RATED)**




*Source: Bloomberg, Ambit Capital research*

## Explanation of Investment Rating

| Investment Rating | Expected return (over 12-month) |
|---|---|
| BUY | >10% |
| SELL | ≤10% |
| NO STANCE | We have forward looking estimates for the stock but we refrain from assigning valuation and recommendation |
| UNDER REVIEW | We will revisit our recommendation, valuation and estimates on the stock following recent events |
| NOT RATED | We do not have any forward looking estimates, valuation or recommendation for the stock |
| POSITIVE | We have a positive view on the sector and most of stocks under our coverage in the sector are BUYs |
| NEGATIVE | We have a negative view on the sector and most of stocks under our coverage in the sector are SELLs |

## Disclaimer

This report or any portion hereof may not be reprinted, sold or redistributed without the written consent of Ambit Capital. AMBIT Capital Research is disseminated and available primarily electronically, and, in some cases, in printed form.

**Additional information on recommended securities is available on request.**

**Disclaimer**

1. AMBIT Capital Private Limited ("AMBIT Capital") and its affiliates are a full service, integrated investment banking, investment advisory and brokerage group. AMBIT Capital is a Stock Broker, Portfolio Manager and Depository Participant registered with Securities and Exchange Board of India Limited (SEBI) and is regulated by SEBI
2. AMBIT Capital makes best endeavours to ensure that the research analyst(s) use current, reliable, comprehensive information and obtain such information from sources which the analyst(s) believes to be reliable. However, such information has not been independently verified by AMBIT Capital and/or the analyst(s) and no representation or warranty, express or implied, is made as to the accuracy or completeness of any information obtained from third parties. The information, opinions, views expressed in this Research Report are those of the research analyst as at the date of this Research Report which are subject to change and do not represent to be an authority on the subject. AMBIT Capital may or may not subscribe to any and/ or all the views expressed herein.
3. This Research Report should be read and relied upon at the sole discretion and risk of the recipient. If you are dissatisfied with the contents of this complimentary Research Report or with the terms of this Disclaimer, your sole and exclusive remedy is to stop using this Research Report and AMBIT Capital or its affiliates shall not be responsible and/ or liable for any direct/consequential loss howsoever directly or indirectly, from any use of this Research Report.
4. If this Research Report is received by any client of AMBIT Capital or its affiliate, the relationship of AMBIT Capital/its affiliate with such client will continue to be governed by the terms and conditions in place between AMBIT Capital/ such affiliate and the client.
5. This Research Report is issued for information only and the 'Buy', 'Sell', or 'Other Recommendation' made in this Research Report such should not be construed as an investment advice to any recipient to acquire, subscribe, purchase, sell, dispose of, retain any securities and should not be intended or treated as a substitute for necessary review or validation or any professional advice. Recipients should consider this Research Report as only a single factor in making any investment decisions. This Research Report is not an offer to sell or the solicitation of an offer to purchase or subscribe for any investment or as an official endorsement of any investment.
6. This Research Report is being supplied to you solely for your information and may not be reproduced, redistributed or passed on, directly or indirectly, to any other person or published, copied in whole or in part, for any purpose. Neither this Research Report nor any copy of it may be taken or transmitted or distributed, directly or indirectly within India or into any other country including United States (to US Persons), Canada or Japan or to any resident thereof. The distribution of this Research Report in other jurisdictions may be strictly restricted and/ or prohibited by law or contract, and persons into whose possession this Research Report comes should inform themselves about such restriction and/ or prohibition, and observe any such restrictions and/ or prohibition.
7. Ambit Capital Private Limited is registered as a Research Entity under the SEBI (Research Analysts) Regulations, 2014. SEBI Reg.No.- INH000000313.

**Conflict of Interests**

8. In the normal course of AMBIT Capital's business circumstances may arise that could result in the interests of AMBIT Capital conflicting with the interests of clients or one client's interests conflicting with the interest of another client. AMBIT Capital makes best efforts to ensure that conflicts are identified and managed and that clients' interests are protected. AMBIT Capital has policies and procedures in place to control the flow and use of non-public, price sensitive information and employees' personal account trading. Where appropriate and reasonably achievable, AMBIT Capital segregates the activities of staff working in areas where conflicts of interest may arise. However, clients/potential clients of AMBIT Capital should be aware of these possible conflicts of interests and should make informed decisions in relation to AMBIT Capital's services.
9. AMBIT Capital and/or its affiliates may from time to time have or solicit investment banking, investment advisory and other business relationships with companies covered in this Research Report and may receive compensation for the same.

**Additional Disclaimer for U.S. Persons**

10. The research report is solely a product of AMBIT Capital
11. AMBIT Capital is the employer of the research analyst(s) who has prepared the research report
12. Any subsequent transactions in securities discussed in the research reports should be effected through Enclave Capital LLC. ("Enclave").
13. Enclave does not accept or receive any compensation of any kind for the dissemination of the AMBIT Capital research reports.
14. The research analyst(s) preparing the email / Research Report/ attachment is resident outside the United States and is/are not associated persons of any U.S. regulated broker-dealer and that therefore the analyst(s) is/are not subject to supervision by a U.S. broker-dealer, and is/are not required to satisfy the regulatory licensing requirements of FINRA or required to otherwise comply with U.S. rules or regulations regarding, among other things, communications with a subject company, public appearances and trading securities held by a research analyst account.
15. This report is prepared, approved, published and distributed by the Ambit Capital located outside of the United States (a non-US Group Company"). This report is distributed in the U.S.by Enclave Capital LLC, a U.S. registered broker dealer, on behalf of Ambit Capital only to major U.S. institutional investors (as defined in Rule 15a-6 under the U.S. Securities Exchange Act of 1934 (the "Exchange Act")) pursuant to the exemption in Rule 15a-6 and any transaction effected by a U.S. customer in the securities described in this report must be effected through Enclave Capital LLC (19 West 44th Street, suite 1700, New York, NY 10036). In order to receive any additional information about or to effect a transaction in any security or financial instrument mentioned herein, please contact a registered representative of Enclave Capital LLC., by phone at 646 361 3107.
16. As of the publication of this report Enclave Capital LLC, does not make a market in the subject securities.
17. This document does not constitute an offer of, or an invitation by or on behalf of Ambit Capital or its affiliates or any other company to any person, to buy or sell any security. The information contained herein has been obtained from published information and other sources, which Ambit Capital or its Affiliates consider to be reliable. None of Ambit Capital accepts any liability or responsibility whatsoever for the accuracy or completeness of any such information. All estimates, expressions of opinion and other subjective judgments contained herein are made as of the date of this document. Emerging securities markets may be subject to risks significantly higher than more established markets. In particular, the political and economic environment, company practices and market prices and volumes may be subject to significant variations. The ability to assess such risks may also be limited due to significantly lower information quantity and quality. By accepting this document, you agree to be bound by all the foregoing provisions.

**Additional Disclaimer for Canadian Persons**

18. AMBIT Capital is not registered in the Province of Ontario and /or Province of Québec to trade in securities and/or to provide advice with respect to securities.
19. AMBIT Capital's head office or principal place of business is located in India.
20. All or substantially all of AMBIT Capital's assets may be situated outside of Canada.
21. It may be difficult for enforcing legal rights against AMBIT Capital because of the above.
22. Name and address of AMBIT Capital's agent for service of process in the Province of Ontario is: Torys LLP, 79 Wellington St. W., 30th Floor, Box 270, TD South Tower, Toronto, Ontario M5K 1N2 Canada.
23. Name and address of AMBIT Capital's agent for service of process in the Province of Montréal is Torys Law Firm LLP, 1 Place Ville Marie, Suite 1919 Montréal, Québec H3B 2C3 Canada.

**Additional Disclaimer for Singapore Persons**

24. This Report is prepared and distributed by Ambit Capital Private Limited and distributed as per the approved arrangement under Paragraph 9 of Third Schedule of Securities and Futures Act (CAP 289) and Paragraph 11 of the First Schedule to the Financial Advisors Act (CAP 110) provided to Ambit Singapore Pte. Limited by Monetary Authority of Singapore.
25. This Report is only available to persons in Singapore who are institutional investors (as defined in section 4A of the Securities and Futures Act (Cap. 289) of Singapore (the "SFA")." Accordingly, if a Singapore Person is not or ceases to be such an institutional investor, such Singapore Person must immediately discontinue any use of this Report and inform Ambit Singapore Pte. Limited.

**Disclosures**

26. The analyst (s) has/have not served as an officer, director or employee of the subject company.
27. There is no material disciplinary action that has been taken by any regulatory authority impacting equity research analysis activities.
28. All market data included in this report are dated as at the previous stock market closing day from the date of this report.

**Analyst Certification**

Each of the analysts identified in this report certifies, with respect to the companies or securities that the individual analyses, that (1) the views expressed in this report reflect his or her personal views about all of the subject companies and securities and (2) no part of his or her compensation was, is or will be directly or indirectly dependent on the specific recommendations or views expressed in this report.



AMBIT
Acumen at work

**Ambit Capital Pvt. Ltd.**
Ambit House, 3rd Floor. 449, Senapati Bapat Marg,
Lower Parel, Mumbai 400 013, India.
Phone: +91-22-3043 3000 | Fax: +91-22-3043 3100
CIN: U74140MH1997PTC107598
www.ambitcapital.com