Indian monsoon

Don't take a call too soon…

We believe taking a call now on the fate of India's monsoon is a shot in the dark. While risks have seemingly increased, past data does not support this conclusion: overall monsoon performance does not have too much linkage with either June month or necessarily occur in the case of El Nino.

- **A call on current data is a gamble; its early days for all forecasts**
  The monsoon has actually been normal for five out of the past six times in 88 years when June rainfall has been deficient (less than 70%). Coming to El Nino episodes, we raise two pointers: (1) technically, it can be 'confirmed' only in October 2009 and (2) Indian monsoons have not been bad for all El Nino years (eight out of 17 occurrences, 1950 onwards. Moreover, JAMSTEC, which relies on the Indian Ocean Dipole (IOD) phenomenon, has moved from a forecast of negative IOD, which is bad for the Indian monsoon, to a weak positive IOD.
- **If bad monsoon, ITC, Marico will be relative bets on lower rural exposure**
  ITC (~25% rural exposure) and Marico (~25%) will be relatively more insulated versus HUL (~50%), Colgate (~35%) and Dabur (~45%) given their lower rural exposure. While a bad monsoon may affect the rural economy significantly, we believe it will be not be as bad as 2001-04 as unlike in the past, sachetisation or affordable price point SKUs would aid consumption.
- **Derivative impacts: Palm oil price surge and margin pressure**
  Malaysian palm oil prices have shown a surge during El Nino years. A surge in palm oil prices will lead FMCG companies like HUL taking price hikes on soaps. In terms of sensitivity, a 10% increase in palm oil prices requires a 3% price increase on soaps to neutralise margin impact. Given the recent backtracking on price hikes, we believe FMCG companies will find it difficult to increase prices again leading to possible margin pressure. Moreover, one also needs to see how government intervenes if there is a bad monsoon: doles for rural India, NREGS spends, etc.

FMCG

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Risks of a bad monsoon

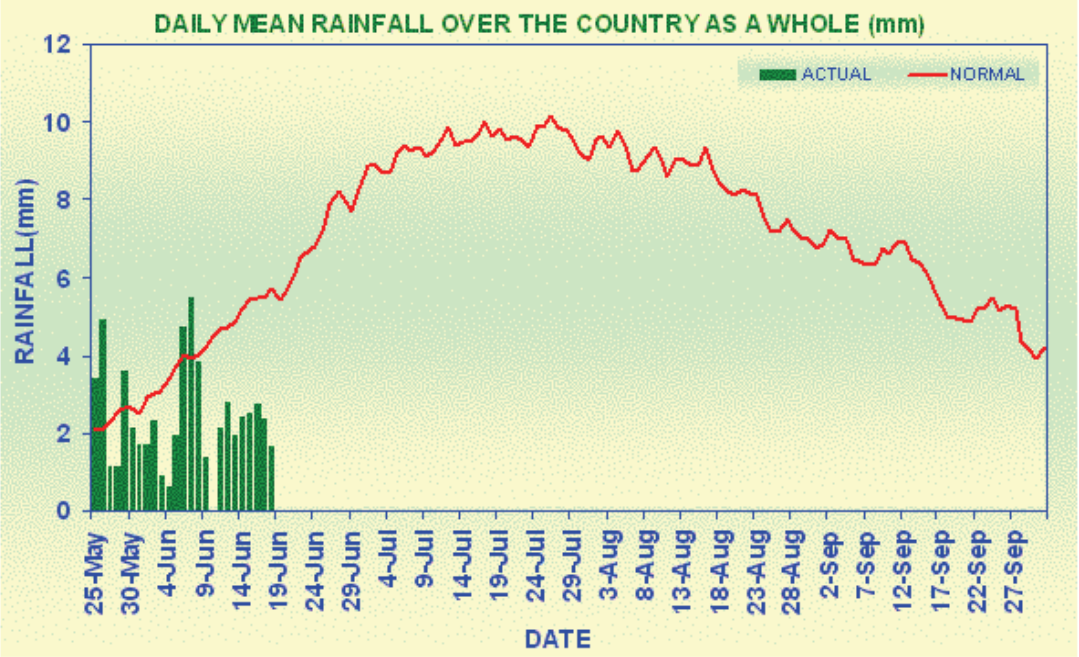
Although the IMD's forecast is near normal…

The Indian Meteorological Department (IMD), referring to the nation's most important event, stated: "The IMD's long range forecast for the 2009 south-west monsoon season (June to September) is that the rainfall for the country as a whole is likely to be near normal.

"Quantitatively, monsoon season rainfall is likely to be 96% of the long period average with a model error of ± 5%. The long period average rainfall over the country as a whole for the period 1941-1990 is 89 cm."

That was the official version. However, the dry spell that has persisted till date in the month of June increases the general concern on this year's monsoon.

Figure 1: Rainfall actual versus normal



Source: IMD, Reliance Equities research.

…statistics show a deficiency of 45% in June

Actual rainfall for India as a whole is 39.5 mm against a normal of 72.5 mm with a deficiency of 45%. To find out whether this is cause for worry, we looked at historical data showing the actual rainfall in June and for the whole monsoon.

The findings were reassuring: there have been years in the past when June has seen weak rainfall (like 1995, 1958, 1969) but the annual monsoon was normal.

Between 1920 and 2008, there were six years when the country received less than 70% of the normal rainfall in June. Of these, the average rainfall for the full season turned out to be normal on five occasions. **This data indicates that deficient rainfall in June does not actually indicate conclusively whether the monsoon is going to be good or bad.**

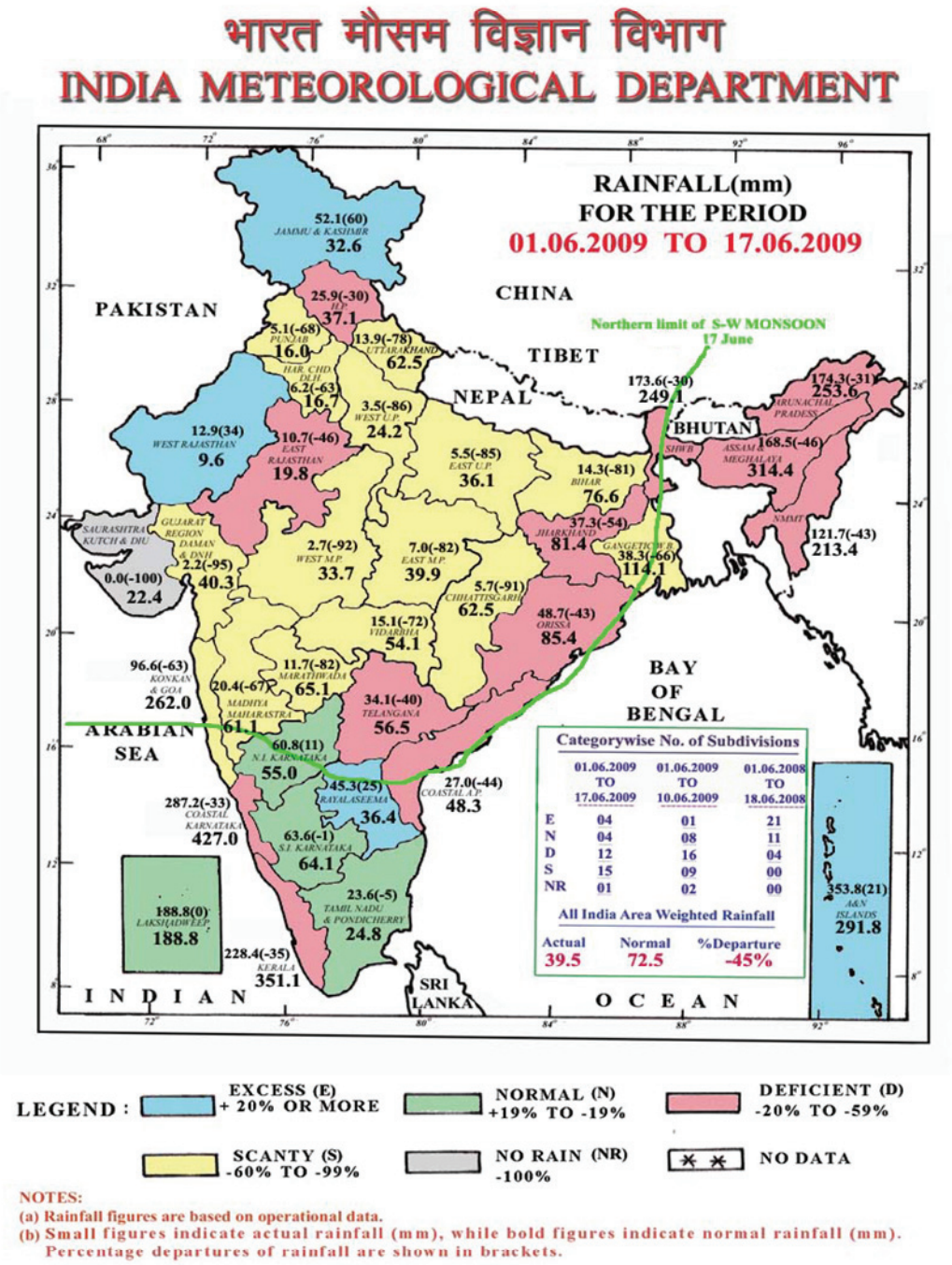
Figure 2: Historical rainfall data

%

Year	June	Overall	Year	June	Overall
1921	105%	104%	**1965**	**67%**	**82%**
1922	115%	104%	**1966**	104%	**87%**
1923	**57%**	98%	**1967**	87%	100%
1924	**69%**	104%	**1968**	88%	**90%**
1925	125%	97%	**1969**	77%	100%
1926	**52%**	107%	**1970**	131%	112%
1927	97%	102%	**1971**	143%	104%
1928	98%	91%	**1972**	73%	**76%**
1929	110%	94%	**1973**	92%	108%
1930	108%	95%	**1974**	74%	**88%**
1931	**68%**	103%	**1975**	105%	115%
1932	73%	96%	**1976**	90%	103%
1933	129%	115%	**1977**	114%	104%
1934	121%	105%	**1978**	131%	109%
1935	83%	97%	**1979**	85%	**81%**
1936	149%	106%	**1980**	138%	104%
1937	97%	98%	**1981**	96%	100%
1938	157%	105%	**1982**	83%	**86%**
1939	92%	91%	**1983**	93%	113%
1940	105%	97%	**1984**	113%	96%
1941	97%	**87%**	**1985**	94%	93%
1942	104%	114%	**1986**	111%	**87%**
1943	94%	104%	**1987**	78%	**81%**
1944	84%	105%	**1988**	107%	119%
1945	94%	104%	**1989**	119%	101%
1946	127%	107%	**1990**	112%	106%
1947	71%	105%	**1991**	109%	91%
1948	91%	102%	**1992**	78%	93%
1949	85%	101%	**1993**	104%	99%
1950	82%	104%	**1994**	129%	113%
1951	86%	**81%**	**1995**	76%	98%
1952	103%	92%	**1996**	115%	103%
1953	101%	110%	**1997**	106%	102%
1954	87%	103%	**1998**	96%	104%
1955	110%	110%	**1999**	105%	96%
1956	127%	114%	**2000**	115%	92%
1957	89%	98%	**2001**	136%	92%
1958	72%	110%	**2002**	109%	**81%**
1959	96%	114%	**2003**	110%	102%
1960	92%	101%	**2004**	99%	**86%**
1961	111%	122%	**2005**	91%	99%
1962	**66%**	97%	**2006**	88%	101%
1963	88%	98%	**2007**	122%	106%
1964	95%	110%	**2008**	127%	98%

Source: IMD, Reliance Equities research.
Note: Rainfall is considered less than normal if it is 90% or under for the overall category.

Figure 3: Monsoon rainfall map



Source: IMD, Reliance Equities research.

- Till 17 June 2009, only parts of Karnataka , Tamil Nadu, Pondicherry and Lakshadweep had received normal rainfall.
- Most of the country has received either deficient (20% to 59% lower) or scanty (60% to 99% lower) than normal rainfall while Gujarat is dry.

Risk of El Nino

Global media have been carrying news about more than 60% of global weather prediction models suggesting an El Nino episode by November 2009.

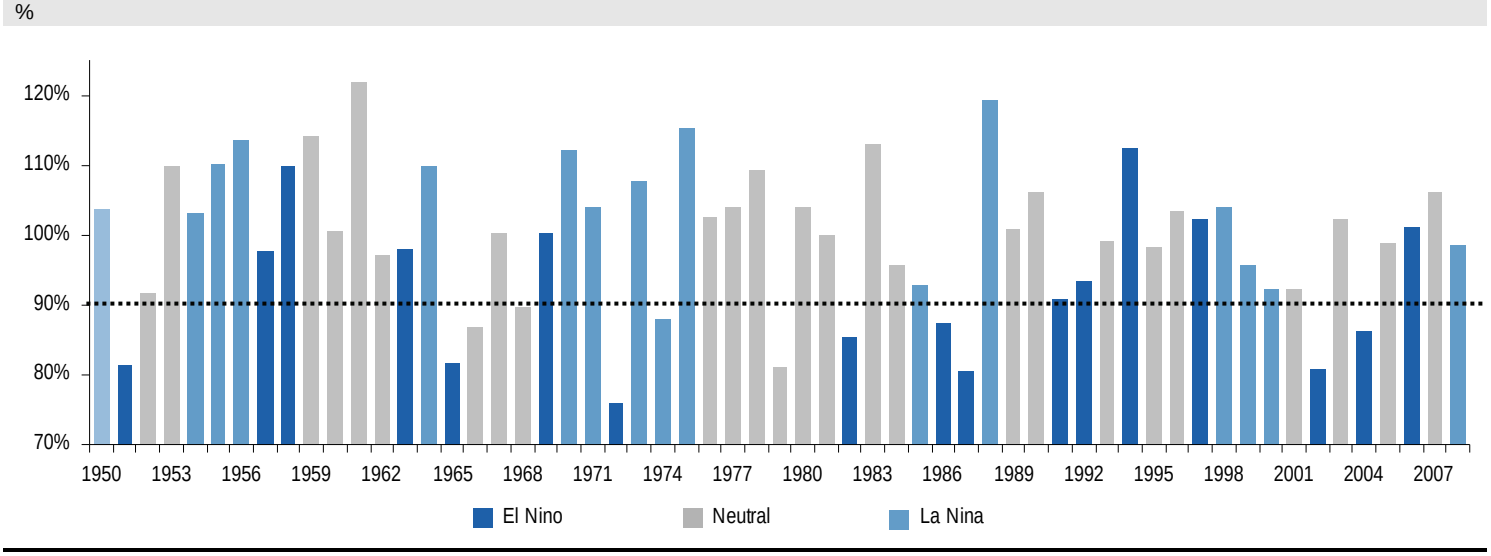
El Nino is a Pacific Ocean phenomenon. In simple terms, a strong El Nino is bad news for the Indian monsoon while the reverse phenomenon, La Nina, augurs well.

The ONI (Oceanic Nino Index) is based on sea surface temperature (SST) departures from average in the Nino 3.4 region, and is a principal measure for monitoring, assessing, and predicting El Nino or La Nina. It is defined as the three-month running-mean SST departures in the Niño 3.4 region. Departures are based on a set of improved homogeneous historical SST analyses. El Nino is characterized by a *positive* ONI greater than or equal to +0.5°C, while La Nina is characterized by a *negative* ONI less than or equal to -0.5°C.

By historical standards, to be classified as a full-fledged El Nino or La Nina **episode**, these thresholds must be exceeded for a period of at least five consecutive overlapping three-month seasons. (For example: April May June (AMJ), MJJ, JJA, JAS, ASO.)

*CPC considers El Nino or La Nina **conditions** to occur when the monthly Niño 3.4 SST departures meet or exceed +/-0.5°C along with consistent atmospheric features. These anomalies must also be forecasted to persist for three consecutive months.*

Figure 4: India's monsoonal rainfall and El Nino or La Nina conditions



Source: IMD, Reliance Equities research.

Does El Nino mean a bad monsoon?

Historical data suggests that, in the recent past, El Nino existed in 2006 but India received good rainfall (99% of its long-term normal). However, in 2002 and 2004 (also El Nino years) the rainfall during the monsoon was about 81% and 87% respectively of its long-term normal.

We note from the past 58 years of rainfall data that bad monsoon years have primarily coincided with El Nino years, but *all* El Nino years have not resulted in a bad monsoon. In fact, in 1994 (an El Nino year), the Indian monsoon received 113% of normal average rainfall.

Note that by technical definition an El Nino episode can be 'confirmed' only by October 2009 at the earliest.

JAMSTEC has identified another phenomenon: IOD

The Indian Ocean Dipole (IOD) is a coupled ocean-atmosphere phenomenon in the Indian Ocean. It is normally characterized by anomalous cooling of sea surface temperature (SST) in the south eastern equatorial Indian Ocean and anomalous warming of SST in the western equatorial Indian Ocean. With these changes, the normal convection warm pool situated over the eastern Indian Ocean shifts to the west. This changes the weather pattern.

A positive IOD brings heavy rain to East Africa and droughts to Indonesia and parts of Australia. Usually, parts of East Asia, including Japan, suffer from dry, hot conditions during a positive IOD event whereas Southeast Asia suffers from floods. As a whole, during a positive IOD year, the summer monsoon remains above normal while a negative IOD results in sub-normal monsoon rainfall.

Japan Agency for Marine-Earth Science and Technology (JAMSTEC)'s prediction has moved from negative IOD in May 2009 to weak positive IOD in the June 2009 forecast. However, it still predicts a bad monsoon.

FMCG take-aways

What is the impact if there is a strong El Nino?

Fears of an El Nino episode this year, coupled with JAMSTEC's prediction that the monsoon will not be very good, has caused us to examine how FMCG stocks will be affected if the India monsoon turns out to be less than normal.

Given the dominance of Malaysia and Indonesia on palm oil production, historically, palm oil prices have jumped during El Nino years. The following chart illustrates that the peak of palm oil prices have coincided with El Nino conditions (circled in chart).

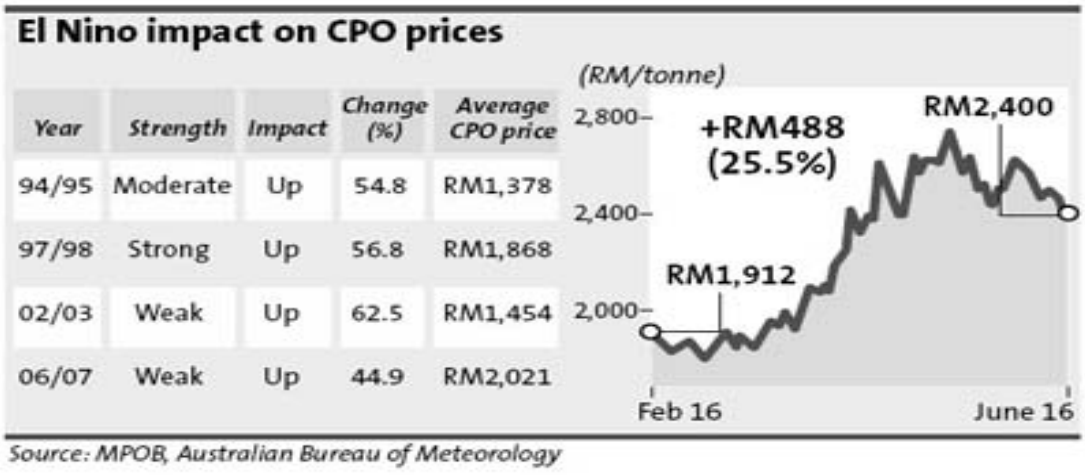
Figure 5: Malaysia palm oil price trend—Prices peak during El Nino years

MYR/metric tonne

Source: Bloomberg, Reliance Equities research.

Figure 6: CPO prices jumped up in El Nino years, despite the differing strengths

Units as shown



Source: Malaysian Palm Oil Board (MPOB), Australian Bureau of Meteorology, Reliance Equities research.

Even if the Indian monsoon turns out to be good (as it has been in the past despite the El Nino effect), a strong El Nino episode could result in palm oil prices spiking. This is because both Malaysia and Indonesia account for 90% of the world's palm oil produce, and they are heavily impacted by El Nino, which in turn, results in palm oil prices surging.

We believe that, in such a scenario (palm oil prices surging) soap manufacturing companies such as HUL will be significantly impacted. Having recovered from the cycle of price hikes and then price cuts to drive volume growth, it will be difficult for such companies to raise prices again, in our opinion. We believe this will push up downtrading, again.

Impact of a bad monsoon will vary

About 40% of FMCG revenues come from rural India, which is primarily dependent on agriculture. If the monsoon is bad, impacting agri produce, rural demand may see a slowdown. With all companies increasing their focus on rural demand, given the urban slowdown in sales over the past year, any dent in rural demand will be a shock. Having said that, we believe a consumer demand slowdown will show up with a lag effect of 4-6 months.

To be fair, it is way too early to assess the quantum of impact on rural demand if there is a bad monsoon. It really depends on the gravity of the bad monsoon, and what action the government takes to mitigate its impact. Just as a hypothetical case, if there is a bad monsoon, and the government increases the working days in the National Rural Employment Guarantee Scheme (NREGS) from 100 or doles out more for the rural populace, its impact may be reduced.

FMCG categories' exposure to rural India

Figure 7: Category exposure to rural India

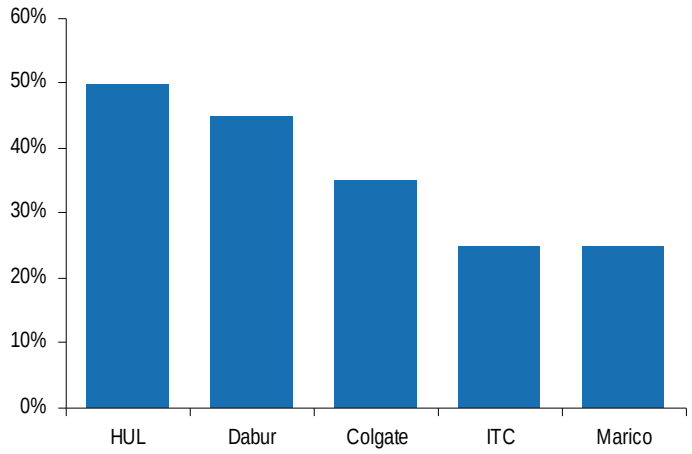
%

	2008E	Value		Volume	
		Urban	Rural	Urban	Rural
Soaps	**Split**	**58%**	**42%**	**55%**	**45%**
3-year CAGR	*Growth*	*14%*	*10%*	*3%*	*-1%*
Detergents	**Split**	**53%**	**47%**	**47%**	**53%**
	Growth	*14%*	*14%*	*-1%*	*-1%*
Toothpastes	**Split**	**66%**	**34%**	**64%**	**36%**
	Growth	*13%*	*16%*	*9%*	*12%*
Shampoos	**Split**	**66%**	**34%**	**54%**	**46%**
	Growth	*15%*	*16%*	*11%*	*14%*
Hand dishwash	**Split**	**72%**	**28%**	**72%**	**28%**
	Growth	*19%*	*21%*	*5%*	*11%*
Skin care	**Split**	**73%**	**27%**	**71%**	**29%**
	Growth	*16%*	*15%*	*5%*	*7%*

Source: Industry data, Reliance Equities research.

Figure 8: Company exposure to rural India

%



Source: Industry data, Reliance Equities research.

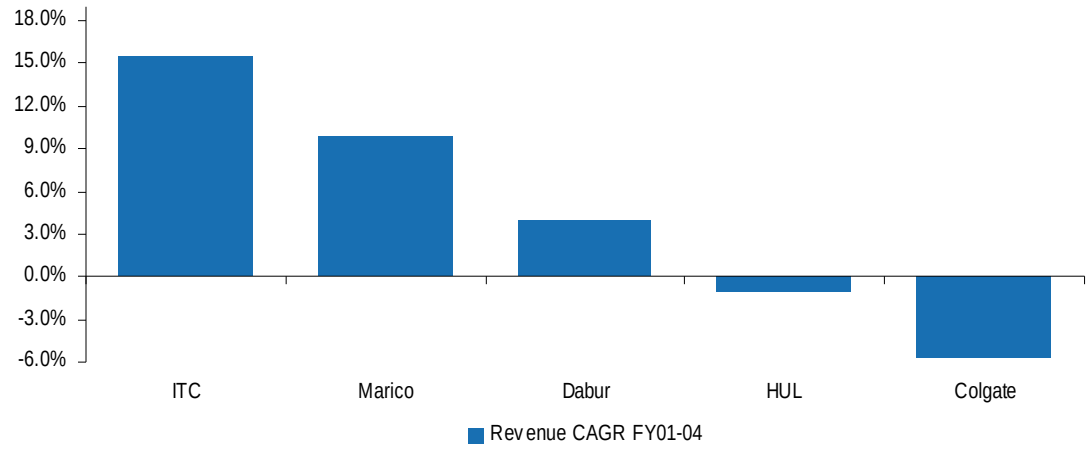
Soaps and detergents, which have about 42-47% of their sales coming from rural India and which have seen three years of volume decline, may find volumes declining further if there is a bad monsoon. However, categories like toothpastes—where the rural market contributes just 34% of sales but which is driving the category growth—would see a slowdown in growth. But, we would like to add that the impact of a bad monsoon on consumption would be seen

only with about a 4-6 months lag effect, and it will depend on the quantum of monsoon weakness and government actions.

However, we are sure that the negative impact would not be to the extent of 2001-2004, primarily because FMCG companies are better focused in rural markets with products available in affordable packs and at smaller price points.

Figure 9: 2001-2004 sales CAGR

%



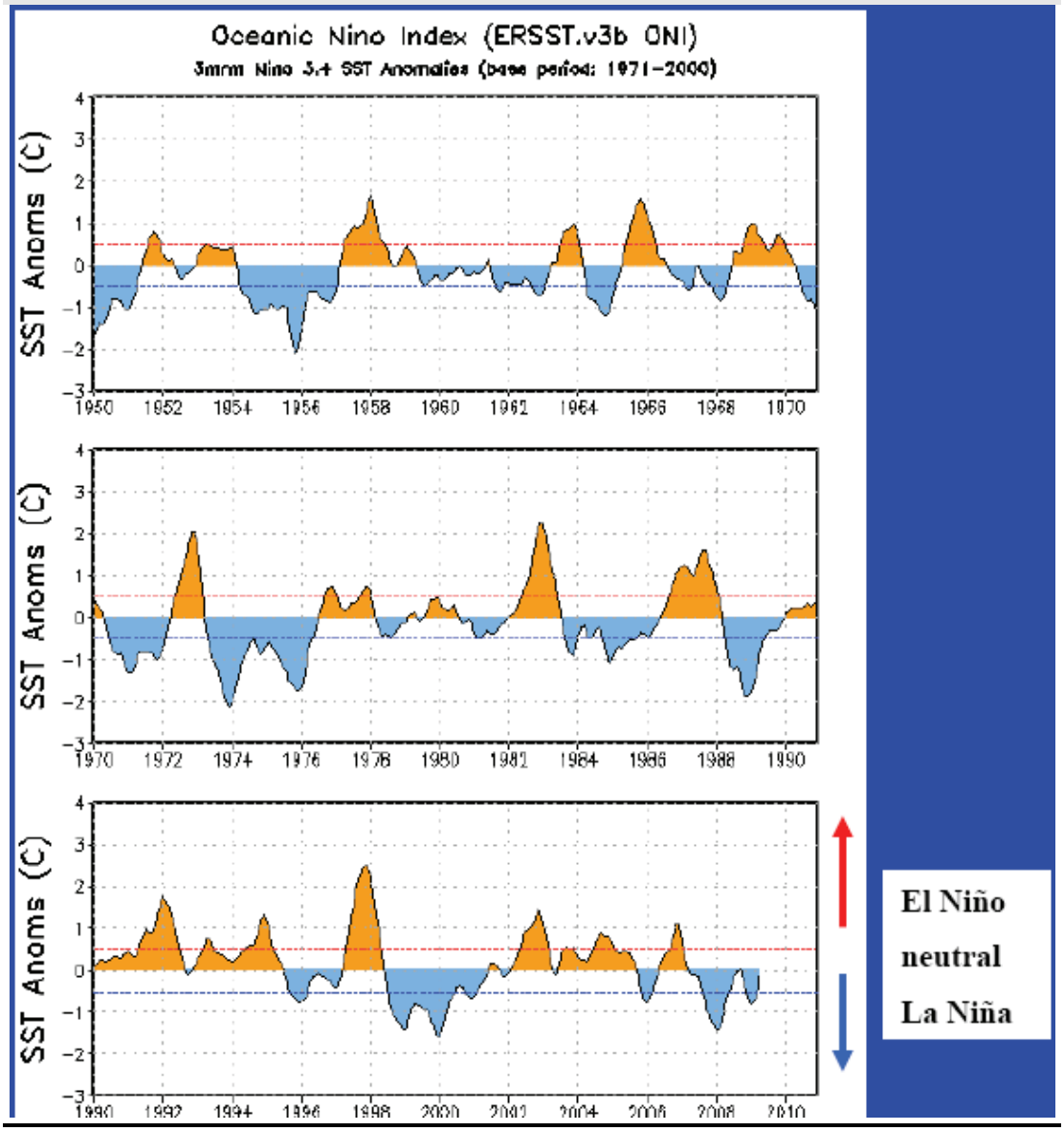
Source: Company data, Reliance Equities research.

Net-net, a bad monsoon will have a negative impact on companies that derive higher sales from rural India like HUL, Colgate, Dabur.

ITC and Marico will be relatively preferred bets to play within FMCG if the monsoon turns out to be bad.

Annexure

Figure 10: Historical phases of El Nino and La Nina



Source: Climate Prediction Center/NCEP, Reliance Equities research.

Figure 11: Historical data on ONI temperature

Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
1950	-1.7	-1.5	-1.3	-1.4	-1.3	-1.1	-0.8	-0.8	-0.8	-0.9	-0.9	-1.0
1951	-1.0	-0.9	-0.6	-0.3	-0.2	0.2	0.4	0.7	0.7	0.8	0.7	0.6
1952	0.3	0.1	0.1	0.2	0.1	-0.1	-0.3	-0.3	-0.2	-0.2	-0.1	0.0
1953	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
1954	0.5	0.3	-0.1	-0.5	-0.7	-0.7	-0.8	-1.0	-1.2	-1.1	-1.1	-1.1
1955	-1.0	-0.9	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0	-1.4	-1.8	-2.0	-1.9
1956	-1.3	-0.9	-0.7	-0.6	-0.6	-0.6	-0.7	-0.8	-0.8	-0.9	-0.9	-0.8
1957	-0.5	-0.1	0.3	0.6	0.7	0.9	0.9	0.9	0.9	1.0	1.2	1.5
1958	1.7	1.5	1.2	0.8	0.6	0.5	0.3	0.1	0.0	0.0	0.2	0.4
1959	0.4	0.5	0.4	0.2	0.0	-0.2	-0.4	-0.5	-0.4	-0.3	-0.2	-0.2
1960	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	0.0	-0.1	-0.2	-0.2	-0.2
1961	-0.2	-0.2	-0.2	-0.1	0.1	0.2	0.0	-0.3	-0.6	-0.6	-0.5	-0.4
1962	-0.4	-0.4	-0.4	-0.5	-0.4	-0.4	-0.3	-0.3	-0.5	-0.6	-0.7	-0.7
1963	-0.6	-0.3	0.0	0.1	0.1	0.3	0.6	0.8	0.9	0.9	1.0	1.0
1964	0.8	0.4	-0.1	-0.5	-0.8	-0.8	-0.9	-1.0	-1.1	-1.2	-1.2	-1.0
1965	-0.8	-0.4	-0.2	0.0	0.3	0.6	1.0	1.2	1.4	1.5	1.6	1.5
1966	1.2	1.0	0.8	0.5	0.2	0.2	0.2	0.0	-0.2	-0.2	-0.3	-0.3
1967	-0.4	-0.4	-0.6	-0.5	-0.3	0.0	0.0	-0.2	-0.4	-0.5	-0.4	-0.5
1968	-0.7	-0.9	-0.8	-0.7	-0.3	0.0	0.3	0.4	0.3	0.4	0.7	0.9
1969	1.0	1.0	0.9	0.7	0.6	0.5	0.4	0.4	0.6	0.7	0.8	0.7
1970	0.5	0.3	0.2	0.1	0.0	-0.3	-0.6	-0.8	-0.9	-0.8	-0.9	-1.1
1971	-1.3	-1.3	-1.1	-0.9	-0.8	-0.8	-0.8	-0.8	-0.8	-0.9	-1.0	-0.9
1972	-0.7	-0.4	0.0	0.2	0.5	0.8	1.0	1.3	1.5	1.8	2.0	2.1
1973	1.8	1.2	0.5	-0.1	-0.6	-0.9	-1.1	-1.3	-1.4	-1.7	-2.0	-2.1
1974	-1.9	-1.7	-1.3	-1.1	-0.9	-0.8	-0.6	-0.5	-0.5	-0.7	-0.9	-0.7
1975	-0.6	-0.6	-0.7	-0.8	-0.9	-1.1	-1.2	-1.3	-1.5	-1.6	-1.7	-1.7
1976	-1.6	-1.2	-0.8	-0.6	-0.5	-0.2	0.1	0.3	0.5	0.7	0.8	0.7
1977	0.6	0.5	0.2	0.2	0.2	0.4	0.4	0.4	0.5	0.6	0.7	0.7
1978	0.7	0.4	0.0	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1
1979	-0.1	0.0	0.1	0.1	0.1	-0.1	0.0	0.1	0.3	0.4	0.5	0.5
1980	0.5	0.3	0.2	0.2	0.3	0.3	0.2	0.0	-0.1	-0.1	0.0	-0.1
1981	-0.3	-0.5	-0.5	-0.4	-0.3	-0.3	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1
1982	0.0	0.1	0.1	0.3	0.6	0.7	0.7	1.0	1.5	1.9	2.2	2.3
1983	2.3	2.0	1.5	1.2	1.0	0.6	0.2	-0.2	-0.6	-0.8	-0.9	-0.7
1984	-0.4	-0.2	-0.2	-0.3	-0.5	-0.4	-0.3	-0.2	-0.3	-0.6	-0.9	-1.1
1985	-0.9	-0.8	-0.7	-0.7	-0.7	-0.6	-0.5	-0.5	-0.5	-0.4	-0.3	-0.4
1986	-0.5	-0.4	-0.2	-0.2	-0.1	0.0	0.3	0.5	0.7	0.9	1.1	1.2
1987	1.2	1.3	1.2	1.1	1.0	1.2	1.4	1.6	1.6	1.5	1.3	1.1
1988	0.7	0.5	0.1	-0.2	-0.7	-1.2	-1.3	-1.2	-1.3	-1.6	-1.9	-1.9
1989	-1.7	-1.5	-1.1	-0.8	-0.6	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1
1990	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
1991	0.4	0.3	0.3	0.4	0.6	0.8	1.0	0.9	0.9	1.0	1.4	1.6
1992	1.8	1.6	1.5	1.4	1.2	0.8	0.5	0.2	0.0	-0.1	0.0	0.2
1993	0.3	0.4	0.6	0.7	0.8	0.7	0.4	0.4	0.4	0.4	0.3	0.2
1994	0.2	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.9	1.2	1.3
1995	1.2	0.9	0.7	0.4	0.3	0.2	0.0	-0.2	-0.5	-0.6	-0.7	-0.7
1996	-0.7	-0.7	-0.5	-0.3	-0.1	-0.1	0.0	-0.1	-0.1	-0.2	-0.3	-0.4
1997	-0.4	-0.3	0.0	0.4	0.8	1.3	1.7	2.0	2.2	2.4	2.5	2.5
1998	2.3	1.9	1.5	1.0	0.5	0.0	-0.5	-0.8	-1.0	-1.1	-1.3	-1.4
1999	-1.4	-1.2	-0.9	-0.8	-0.8	-0.8	-0.9	-0.9	-1.0	-1.1	-1.3	-1.6
2000	-1.6	-1.4	-1.0	-0.8	-0.6	-0.5	-0.4	-0.4	-0.4	-0.5	-0.6	-0.7
2001	-0.6	-0.5	-0.4	-0.2	-0.1	0.1	0.2	0.2	0.1	0.0	-0.1	-0.1
2002	-0.1	0.1	0.2	0.4	0.7	0.8	0.9	1.0	1.1	1.3	1.5	1.4
2003	1.2	0.9	0.5	0.1	-0.1	0.1	0.4	0.5	0.6	0.5	0.6	0.4
2004	0.4	0.3	0.2	0.2	0.3	0.5	0.7	0.8	0.9	0.8	0.8	0.8
2005	0.7	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.2	-0.1	-0.4	-0.7
2006	-0.7	-0.6	-0.4	-0.1	0.1	0.2	0.3	0.5	0.6	0.9	1.1	1.1
2007	0.8	0.4	0.1	-0.1	-0.1	-0.1	-0.1	-0.4	-0.7	-1.0	-1.1	-1.3
2008	-1.4	-1.4	-1.1	-0.8	-0.6	-0.4	-0.1	0.0	0.0	0.0	-0.3	-0.6
2009	-0.8	-0.7	-0.5	-0.1								

Source: Climate Prediction Center/NCEP, Reliance Equities research.

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