

# Cyclical Beta Study across Sectors in India

Beta analysed across all major sectors in India in the **past 20 years at quarterly intervals** and mapped against business cycles to analyse mean reversion trends and suggested adjustments for computing Beta for business valuations

January 2020



## Foreword

Assessment of systematic risk of a company in the form of Beta, an essential determiner in the capital asset pricing model, tends to be generated by valuers based on current conditions prevailing during last 1-3 years and occasionally up to five years without accounting for conditioning information.

In this paper, we have presented a study of Cyclical Beta to account for conditioning information, given that the relationship of stock returns and economic variables is not constant over time. The study analyses the Beta for various sectors in India in the past 20 years in conjunction with the business cycle – expansionary or contractionary - at that point-in-time.

Through this Cyclical Beta Study, we note that Beta for stocks (primarily cyclical stocks) have shown higher Beta in expansionary cycles and lower Beta in contractionary periods. Consequently, this study draws three main observations, conclusions and suggestions:

1. Ready reckoner for sectoral Beta across sectors and business cycles between 1999-2019
2. Discovery of median values for the expansionary cycle and contractionary cycle Betas in specific sectors
3. Beta adjusted for sectoral 'mean reversion':  $\frac{2}{3}$ rd x observed Beta +  $\frac{1}{3}$ rd x median cyclical sectoral Beta\*

Median cyclical sectoral Beta can be used based on the long-run Beta values for the sector based on valuer's judgement of whether the economy is in expansionary or contractionary cycle after analysing the macroeconomic indicators and state of the economy.

Beta may vary across different business cycles and economic conditions. If the observed Beta for a specific stock /industry is 1.2; further analysis and slicing of data might suggest that Beta for this specific stock/industry is 1.3 in economic expansion and 1.1 in recessions.

Hence, depending on the valuation objective (strategic investment, acquisition, or short-term portfolio investment), a valuer may choose to condition the Beta by adjusting it with the cyclical trend for determining the forecast Beta.



**CA Punit Khandelwal**  
Co-founder  
Incwert, Mumbai



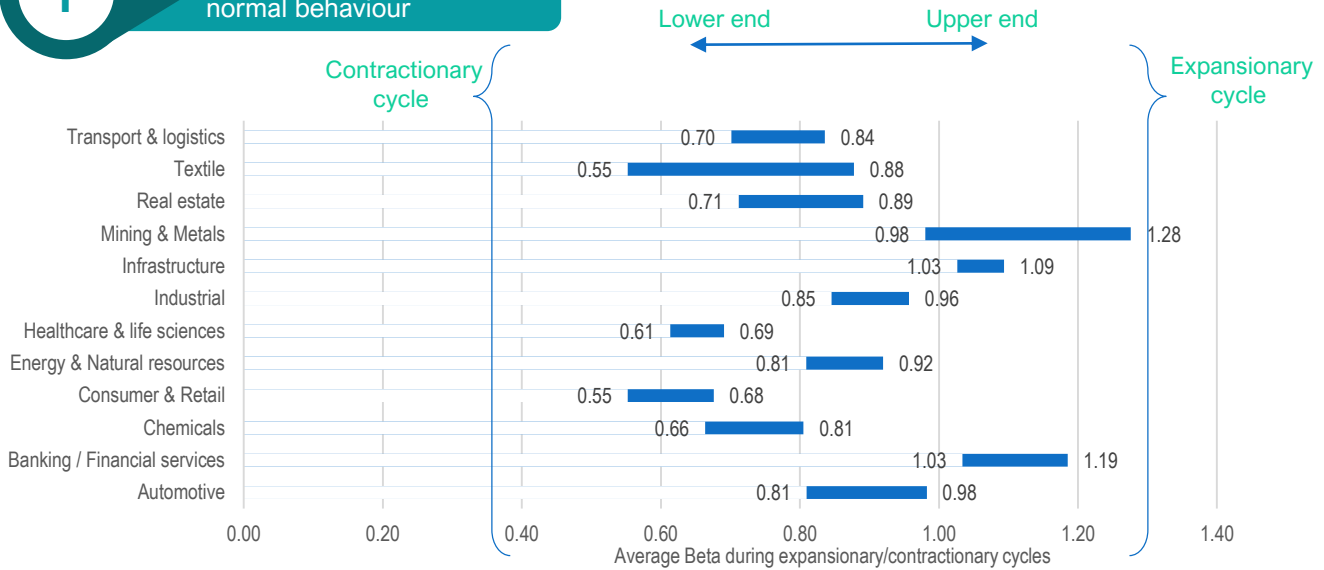
**CA Sunit Khandelwal**  
Co-founder  
Incwert, Gurgaon

<http://www.incwert.com/>



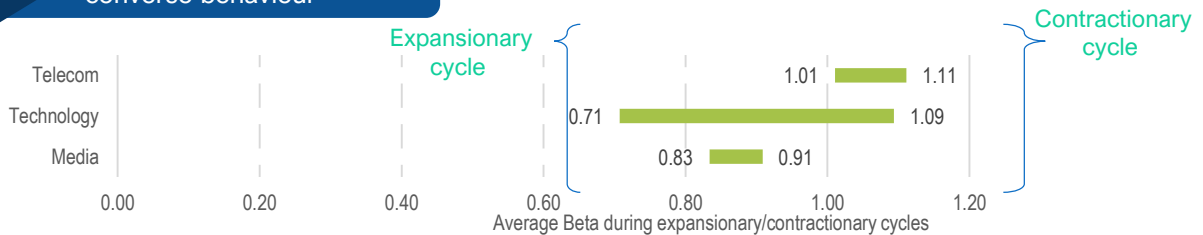
# Beta exhibited during contractionary cycle is lower compared to the expansionary cycle for most of the sectors

## 1 Sectors that exhibited normal behaviour



Note: 1) The Beta presented in the graph above is average of sector Beta at each quarter through the expansionary/contractionary cycle

## 2 Sectors that exhibited converse behaviour



### Key observations

- Consumer & Retail and Healthcare & Lifesciences which are defensive sectors compared to others, exhibited Beta during the expansionary and contractionary cycle of approx. 0.7 and 0.6, respectively.
- Infrastructure with an overall average Beta of 1.06 appears to be highly correlated to the equities, albeit dispersion by cycles within the extended time series of 20 years exhibits a directional step-up in the level of volatility from period 1 to 3, a reflection of the financial stress the sector underwent during the last decade.
- Highest positive swing (% higher expansionary cycle Beta vs contractionary cycle Beta) has been observed in textiles sector (59%).
- Mining & Metal and Banking/Financial Services sector Beta have the highest volatility with contractionary cycle Beta closer to 1.0 and expansionary cycle Beta around 1.2 to 1.3. As such, these sectors tend to move higher than the market.
- Media, Technology and Telecom sectors have exhibited converse behaviour where median Betas during the contractionary cycle in India were observed to be higher than the median Betas during the expansionary cycle.

#### Possibility of substitution

In the contractionary cycle, cheaper local entertainment possibly substitutes discretionary expense on holidays/travel. As such, the media sector is more volatile during the contractionary cycle

#### Global market dependency of the Technology sector

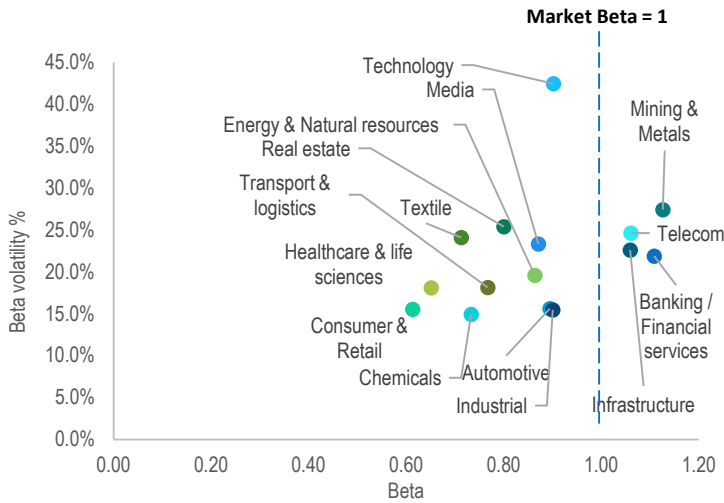
IT & ITeS service companies display much larger dependence on the global markets than the domestic markets. Outlining the Beta for this sector on the domestic market cycles may not therefore correctly reflect the cyclical trending

#### Regime change and market disruption

Regulatory changes, technological disruptions, change in customer preferences and competition winding has possibly led to an unexplained trend behaviour in the Telecom sector.

## 3

### Average sector Beta and volatility in Beta



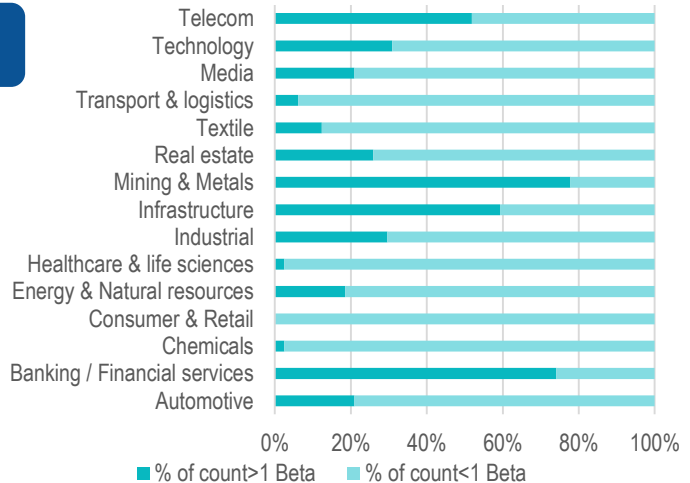
### Key observations

- Banking/financial services, Telecom, Infrastructure and Mining & Metal sectors exhibit average Beta of more than 1.0
- Volatility of Beta in the Technology sector appears to be an outlier compared to other sectors.

Note: 1) The Beta presented in the graph set opposite is average of sector Beta at each quarter as observed in the entire period

## 4

### Beta counts

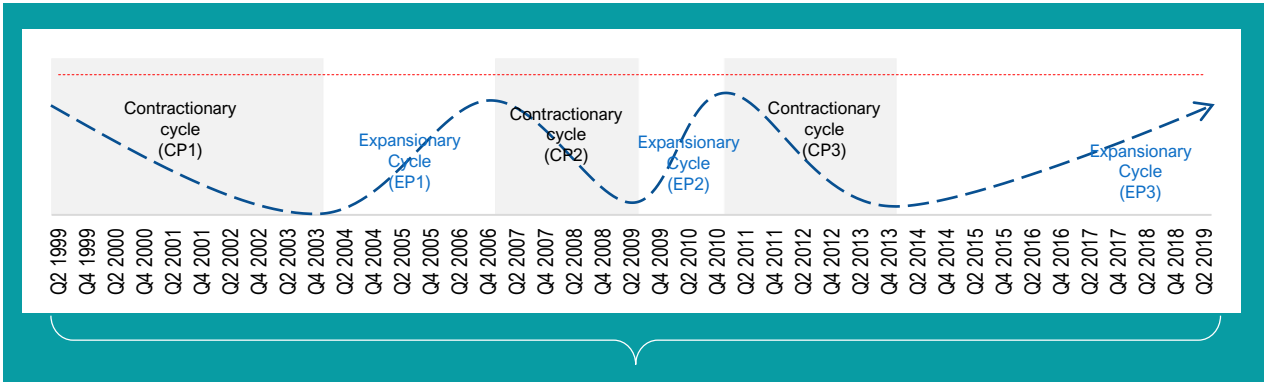


- Consumer & Retail sector is the only sector to have a Beta of less than 1.0 in all the observable quarters (81 in number).
- Healthcare & life sciences and Chemicals are the other two sectors that exhibit Beta of less than 1.0 in 95% counts.

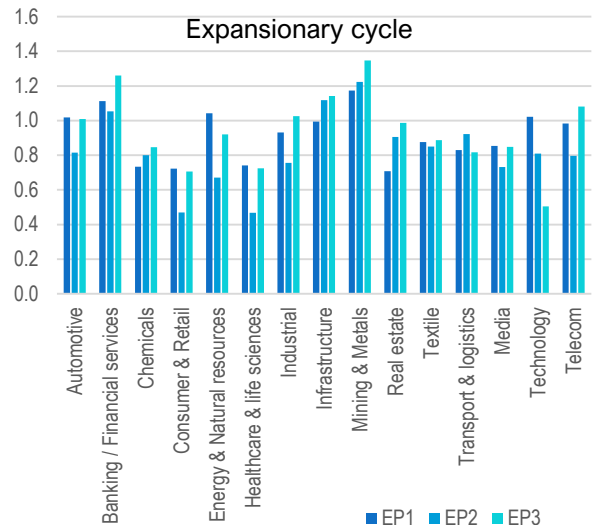
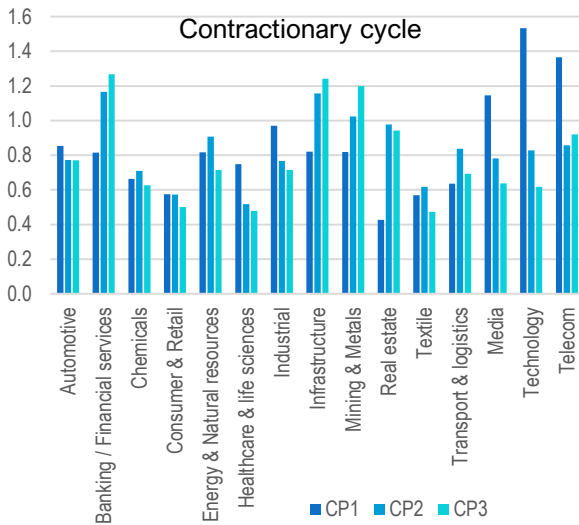
# Summary observations

5

Performance across the cycle



Note: 1) Business cycles have been identified as a contractionary or expansionary cycle based on the paper 'Measuring business cycle conditions in India' dated 27 May 2019 by the National Institute of Public Finance and Policy



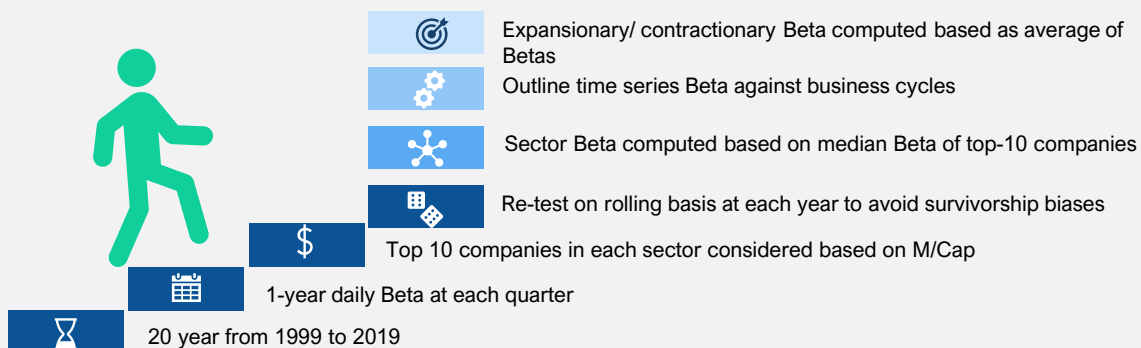
Note: 1) The Beta presented in the graph above is average of sector Beta at each quarter through the selective time period in the expansionary/contractionary cycle. For example, CP1 represents the average Beta observed during the period Q2 1999 to Q4 2003.

## Key observations

- Sector Betas in Contraction period 2&3 exhibit certain level of directional bonding and proximity when compared to Contraction period 1
- Sector Betas in the Expansionary period 1&3 exhibit similarities in the range of systematic risk



# Overview of our methodology



- We have analysed the Beta for all the listed companies in India at each quarter for an extensive 20-year period from Q2 1999 to Q2 2019.
- Beta has been calculated at each quarter-end using 1-year daily prices.
- Sensex has been used as a benchmark of the Indian economy and has been used for regression of returns.
- For sector analysis, we have considered the top 10 companies in each sector based on their market capitalisation. This exercise has been carried out on a rolling basis as at every year-end (i.e. 31 March 20xx) to ensure that survivorship biases do not mar the data. Such bias would have crept into our analysis if historical Beta for a specific sector would have been computed based on a static list of top 10 companies identified today because over such long term period (in our case 20 years), many companies which were going concern in the past would have exited the market. Similarly, many new companies would be a part of the sector that may not have been existing several years back.
- Business cycles have been identified as a contractionary or expansionary cycle based on the paper 'Measuring business cycle conditions in India' dated 27 May 2019 by the National Institute of Public Finance and Policy. Year on year growth in net sales of non-oil, non-financial firms was considered as basis of identification of the business cycle in this paper. This paper has identified the business cycles until 2017. Though macro indicators like GDP have been weakening since 2018; however, such data will require monitoring for longer period of time to conclude if the business cycle has entered a contractionary phase. Accordingly, we have assumed that the business cycle is not in contraction cycle currently.
- Beta for expansionary cycle and contractionary cycle has been computed for every sector based on the above methodology of business cycle identification and average of Beta across the selected time series.



## What Is Beta?

A Beta coefficient is a measure of the volatility, or systematic risk, of an individual stock in comparison to the unsystematic risk of the entire market. In statistical terms, Beta represents the slope of the line through a regression of data points from an individual stock's returns against those of the market. The Beta calculation is used to help investors understand whether a stock moves in the same direction as the rest of the market, and how volatile or risky it is compared to the market.

$$\text{Beta coefficient}(\beta) = \text{Covariance}(R_e, R_m) / \text{Variance}(R_m)$$

where:

$R_e$  = the return on an individual stock

$R_m$  = the return on the overall market

Covariance = how changes in a stock's returns are related to changes in the market's returns

Variance = how far the market's data points spread out from their average value

Knowledge refresher

- Beta is an essential input for computing cost of equity under the capital asset pricing model.
- The study shows that Beta exhibits differently in an expansionary cycle versus a contractionary cycle.
- In the long term, Beta in a specific sector tends to revert to mean; This leads to the idea of weighting schemes which assumes there is long-run average Beta which could be given some weight. Accordingly, depending on the economic cycle prevalent (expansionary and contractionary), a weight of 1/3 on long-run Beta may be considered.

$$2/3\text{rd} \times \text{observed Beta} + 1/3\text{rd} \times \text{cyclical Beta}$$

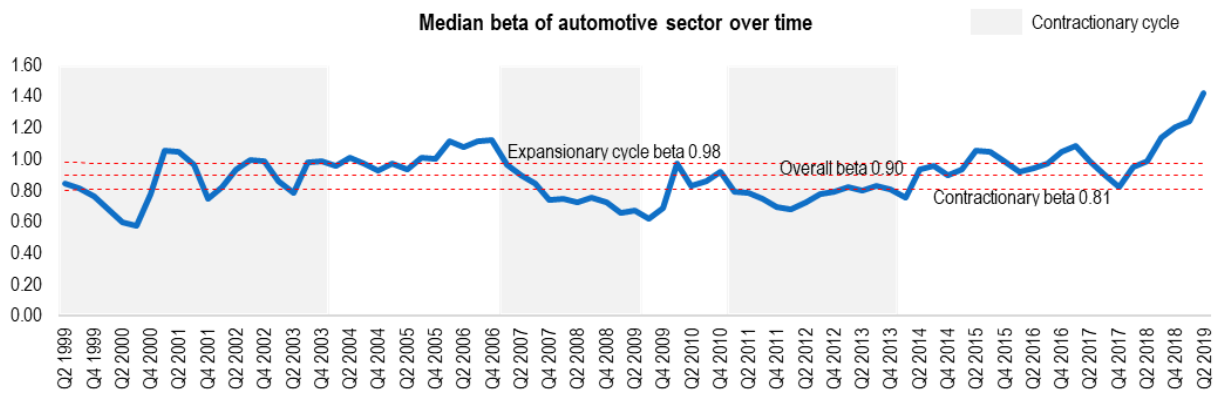
- On an average, after considering all the sectors discussed in this study, expansionary cycle Beta is ~12% higher than contractionary cycle Beta.
- Selection of companies is limited to top 10 under each category. For companies of smaller size, volatility of return could be higher and risk exhibited in their Beta could embed some component of diversifiable risk towards their size.
- Roll-over test of companies has been carried out at each year-end only.
- Beta considered is computed based on 1-year daily returns and is hence, likely to reflect the systematic risk as prevailing at that point in time only.

Beta's importance

Limitations

# Analysis by sector





### Summary of beta for automotive sector

#### Average of the median

Expansionary cycle Beta	0.98
Contractionary cycle Beta	0.81
Overall Beta	0.90

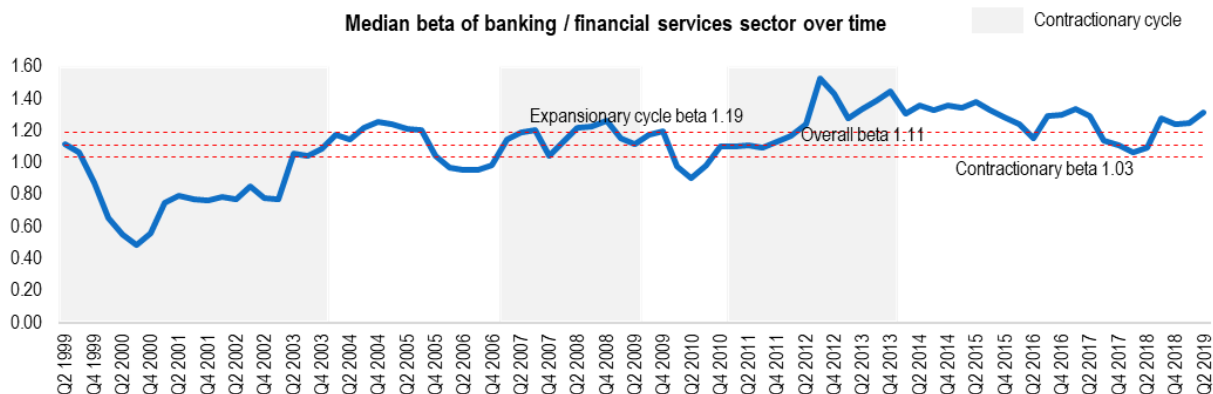
### List of all time large listed companies in automotive sector

Ashok Leyland Ltd.  
 Hero MotoCorp Ltd.  
 Mahindra & Mahindra Ltd.  
 Tata Motors Ltd.  
 Maruti Suzuki India Ltd.

### List of most recent top 10 companies

Ashok Leyland Ltd.  
 Bajaj Auto Ltd.  
 Bosch Ltd.  
 Eicher Motors Ltd.  
 Hero MotoCorp Ltd.  
 Mahindra & Mahindra Ltd.  
 Maruti Suzuki India Ltd.  
 Motherson Sumi Systems Ltd.  
 MRF Ltd.  
 Tata Motors Ltd.

- Standard deviation of empirical Beta for automotive sector is 15.6% and 13.9% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 21% higher than contractionary cycle Beta.
- For automotive sector, during contractionary cycle, Beta almost always stood below average Beta of expansionary cycle.



### Summary of beta for banking / financial services sector

#### Average of the median

Expansionary cycle Beta	1.19
Contractionary cycle Beta	1.03
Overall Beta	1.11

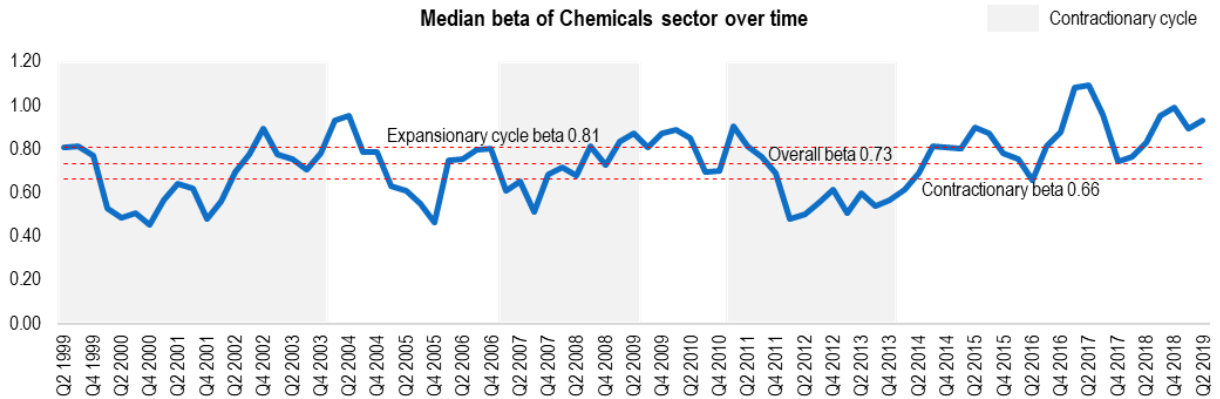
### List of all time large listed companies in banking / financial services sector

State Bank Of India  
 ICICI Bank Ltd.  
 Housing Development Finance Corporation Ltd.  
 HDFC Bank Ltd.

### List of most recent top 10 companies

Axis Bank Ltd.  
 Bajaj Finance Ltd.  
 Bajaj Finserv Ltd.  
 HDFC Bank Ltd.  
 HDFC Life Insurance Co Ltd.  
 Housing Development Finance Corporation Ltd.  
 ICICI Bank Ltd.  
 IndusInd Bank Ltd.  
 Kotak Mahindra Bank Ltd.  
 State Bank Of India

- Standard deviation of empirical Beta for banking / financial services sector is 21.9% and 9.3% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 15% higher than contractionary cycle Beta.
- Beta of banking / financial services sector has been greater than 1 post 2003, indicating more volatility than overall markets.



### Summary of beta for chemicals sector

#### Average of the median

Expansionary cycle Beta	0.81
Contractionary cycle Beta	0.66
Overall Beta	0.73

#### List of all time large listed companies in chemicals sector

Asian Paints Ltd.  
 Pidilite Industries Ltd.  
 Tata Chemicals Ltd.  
 Godrej Industries Ltd.

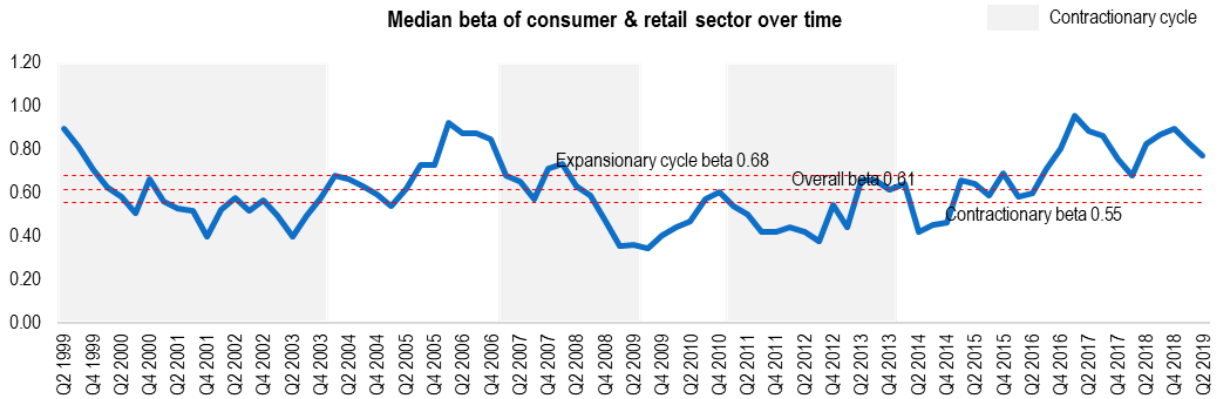
#### List of most recent top 10 companies

Asian Paints Ltd.  
 Bayer CropScience Ltd.  
 Berger Paints India Ltd.  
 Coromandel International Ltd.  
 Godrej Industries Ltd.  
 Kansai Nerolac Paints Ltd.  
 PI Industries Ltd.  
 Pidilite Industries Ltd.  
 Tata Chemicals Ltd.  
 UPL Ltd.

- Standard deviation of empirical Beta for chemicals sector is 14.9% and 11.2% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 21% higher than contractionary cycle Beta.
- According to Blume method of adjusting the estimated market Beta, it is an observed tendency of an estimated Beta to revert to a value of 1.0 over time but for chemicals sector overall average historical Beta is 0.75 and, Beta trendline has mostly remained below 1.



# Consumer & Retail (Non-cyclical)



## Summary of beta for consumer & retail sector

### Average of the median

Expansionary cycle Beta	0.68
Contractionary cycle Beta	0.55
Overall Beta	0.61

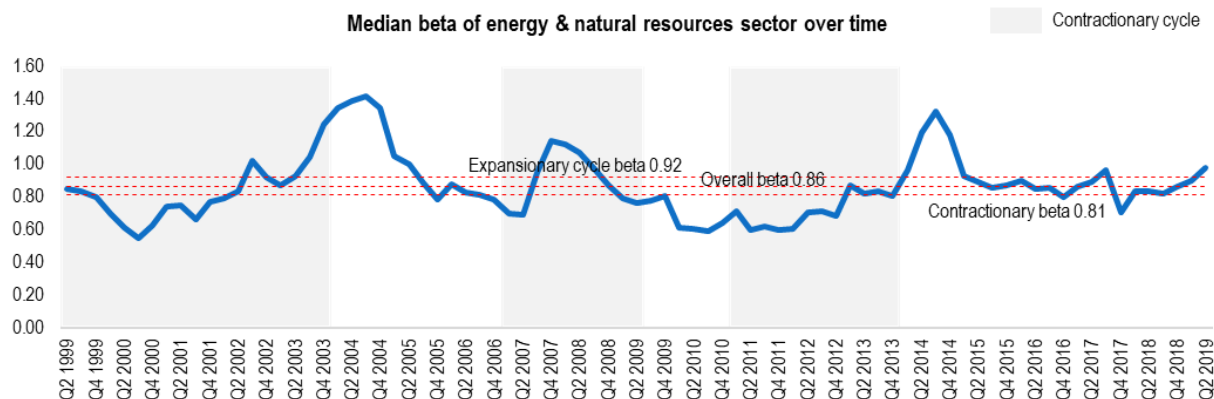
### List of all time large listed companies in consumer & retail sector

Colgate-Palmolive (India) Ltd.  
Dabur India Ltd.  
ITC Ltd.  
Marico Ltd.

### List of most recent top 10 companies

Avenue Supermarts Ltd.  
Britannia Industries Ltd.  
Dabur India Ltd.  
Godrej Consumer Products Ltd.  
Hindustan Unilever Ltd.  
ITC Ltd.  
Marico Ltd.  
Titan Company Ltd.  
United Breweries Ltd.  
United Spirits Ltd.

- Standard deviation of empirical Beta for consumer & retail sector is 15.5% and 14.3% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 22% higher than contractionary cycle Beta.
- According to Blume method of adjusting the estimated market Beta, it is an observed tendency of an estimated Beta to revert to a value of 1.0 over time but for consumer & retail sector overall average historical Beta is 0.61 and, Beta trendline has mostly remained below 1.



### Summary of beta for energy & natural resources sector

#### Average of the median

Expansionary cycle Beta	0.92
Contractionary cycle Beta	0.81
Overall Beta	0.86

### List of all time large listed companies in energy & natural resources sector

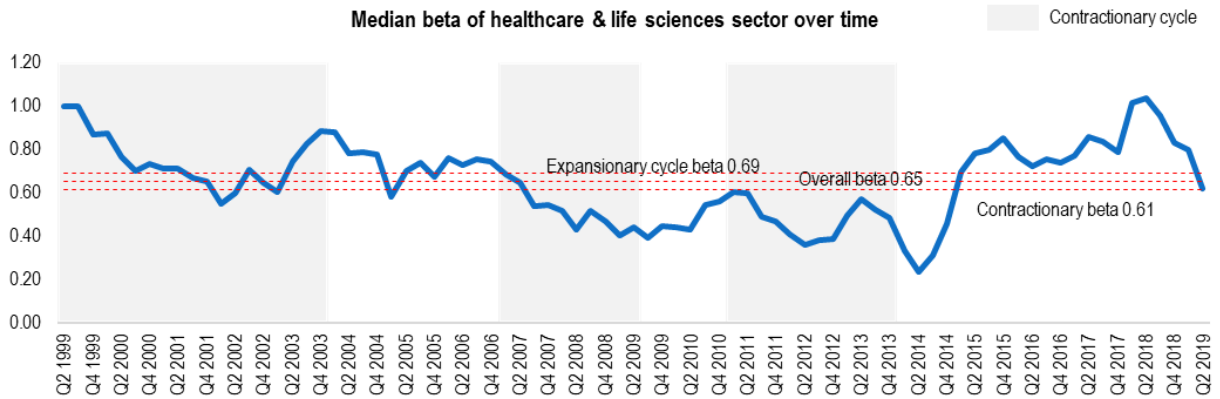
GAIL (India) Ltd.  
 Indian Oil Corporation Ltd.  
 Oil & Natural Gas Corporation Ltd.  
 Reliance Industries Ltd.

### List of most recent top 10 companies

Bharat Petroleum Corporation Ltd.  
 GAIL (India) Ltd.  
 Hindustan Petroleum Corporation Ltd.  
 Indian Oil Corporation Ltd.  
 NHPC Ltd.  
 NTPC Ltd.  
 Oil & Natural Gas Corporation Ltd.  
 Petronet LNG Ltd.  
 Power Grid Corporation Of India Ltd.  
 Reliance Industries Ltd.

- Standard deviation of empirical Beta for energy & natural resources sector is 19.6% and 13.4% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 14% higher than contractionary cycle Beta.
- Energy & natural resources sector is highly dependent on movement in international oil prices, hence looking at relationship just with domestic market index will not show entire picture.

# Healthcare & life sciences (non-cyclical)



## Summary of beta for healthcare & life sciences sector

### Average of the median

Expansionary cycle Beta	0.69
Contractionary cycle Beta	0.61
Overall Beta	0.65

## List of all time large listed companies in healthcare & life sciences sector

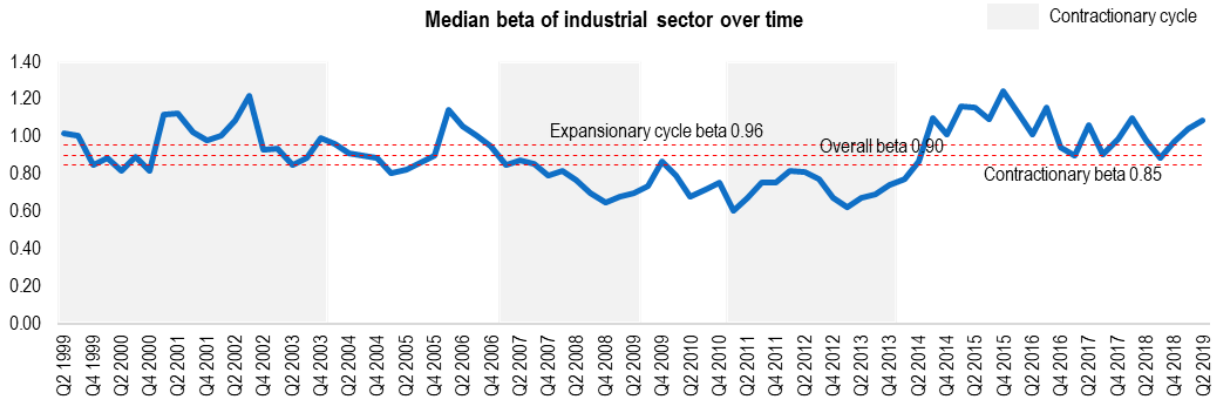
Cipla Ltd.  
 Dr. Reddys Laboratories Ltd.  
 Piramal Enterprises Ltd.  
 Sun Pharmaceutical Industries Ltd.

## List of most recent top 10 companies

Aurobindo Pharma Ltd.  
 Biocon Ltd.  
 Cadila Healthcare Ltd.  
 Cipla Ltd.  
 Divis Laboratories Ltd.  
 Dr. Reddys Laboratories Ltd.  
 Lupin Ltd.  
 Piramal Enterprises Ltd.  
 Sun Pharmaceutical Industries Ltd.  
 Torrent Pharmaceuticals Ltd.

- Standard deviation of empirical Beta for healthcare & life sciences sector is 18.1% and 16.7% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 13% higher than contractionary cycle Beta.
- According to Blume method of adjusting the estimated market Beta, it is an observed tendency of an estimated Beta to revert to a value of 1.0 over time but for healthcare & life sciences sector overall average historical Beta is 0.65 and, Beta trendline has mostly remained below 1.
- Beta of healthcare & life sciences sector remained low during contractionary cycle and increased during expansionary cycle.





### Summary of beta for industrial sector

#### Average of the median

Expansionary cycle Beta	0.96
Contractionary cycle Beta	0.85
Overall Beta	0.90

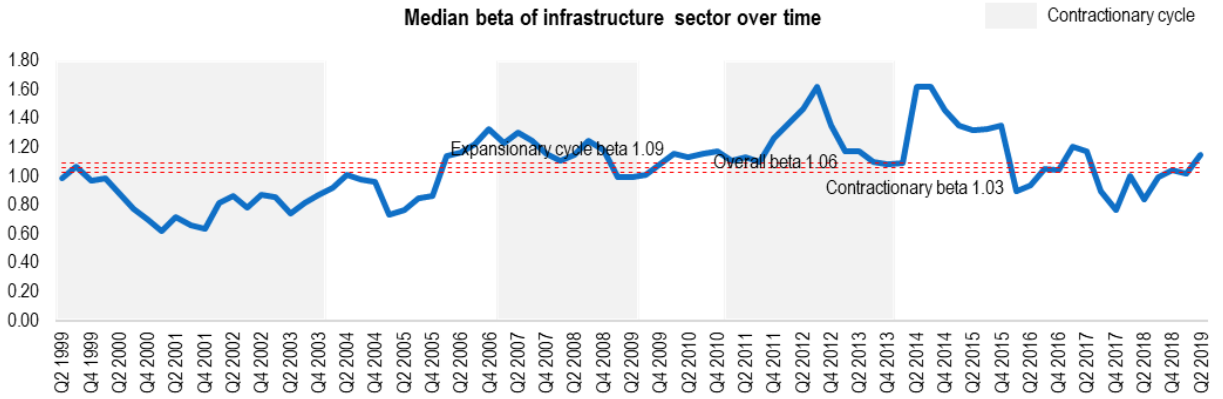
### List of all time large listed companies in industrial sector

Bharat Heavy Electricals Ltd.  
 Bharat Electronics Ltd.  
 Engineers India Ltd.  
 Thermax Ltd.

### List of most recent top 10 companies

AIA Engineering Ltd.  
 Bharat Electronics Ltd.  
 Bharat Heavy Electricals Ltd.  
 Graphite India Ltd.  
 Havells India Ltd.  
 HEG Ltd.  
 L&T Technology Services Ltd.  
 Sterlite Technologies Ltd.  
 Thermax Ltd.  
 V-Guard Industries Ltd.

- Standard deviation of empirical Beta for industrial sector is 15.5% and 9.9% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 13% higher than contractionary cycle Beta.
- Beta for industrial sector kept in range from 0.7 to 1.1 with lower volatility as compared to other sectors.



### Summary of beta for infrastructure sector

#### Average of the median

Expansionary cycle Beta	1.09
Contractionary cycle Beta	1.03
Overall Beta	1.06

### List of all time large listed companies in infrastructure sector

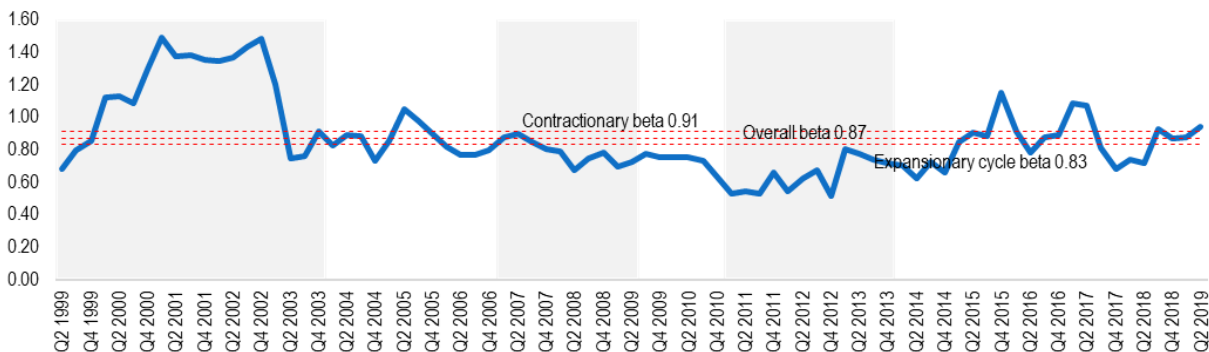
Larsen & Toubro Ltd.  
 Shree Cement Ltd.  
 Ultratech Cement Ltd.  
 GMR Infrastructure Ltd.

### List of most recent top 10 companies

Dalmia Bharat Ltd.  
 GMR Infrastructure Ltd.  
 Kajaria Ceramics Ltd.  
 Kalpataru Power Transmission Ltd.  
 KEC International Ltd.  
 Larsen & Toubro Ltd.  
 NCC Ltd.  
 Shree Cement Ltd.  
 The Ramco Cements Ltd.  
 Ultratech Cement Ltd.

- Standard deviation of empirical Beta for infrastructure sector is 22.6% and 22.5% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 7% higher than contractionary cycle Beta.
- Beta for industrial sector has trended in range from 0.6 to 1.6 with higher volatility as compared to other sectors.

**Median beta of media sector over time**



**Summary of beta for media sector**

**Average of the median**

Expansionary cycle Beta	0.83
Contractionary cycle Beta	0.91
Overall Beta	0.87

- Standard deviation of empirical Beta for media sector is 23.3% and 13.2% for last 20 years and 5 years respectively.
- Contractionary cycle Beta is 9% higher than expansionary cycle Beta.

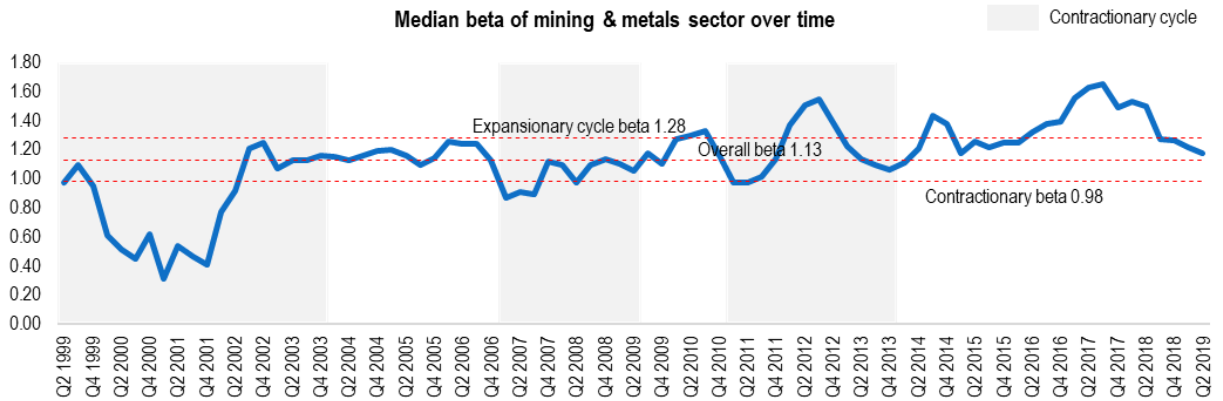
**List of all time large listed companies in media sector**

Zee Entertainment Enterprises Ltd.  
 Dish TV India Ltd.  
 Jagran Prakashan Ltd.  
 Sun TV Network Ltd.

**List of most recent top 10 companies**

DB Corp Ltd.  
 Den Networks Ltd.  
 Dish TV India Ltd.  
 Inox Leisure Ltd.  
 Jagran Prakashan Ltd.  
 Network 18 Media & Investment Ltd.  
 PVR Ltd.  
 Sun TV Network Ltd.  
 TV18 Broadcast Ltd.  
 Zee Entertainment Enterprises Ltd.





### Summary of beta for mining & metals sector

#### Average of the median

Expansionary cycle Beta	1.28
Contractionary cycle Beta	0.98
Overall Beta	1.13

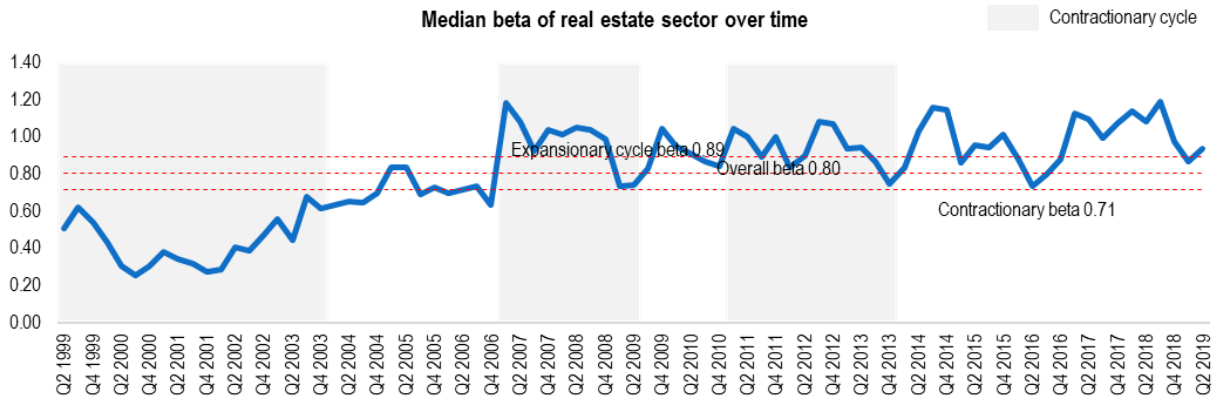
### List of all time large listed companies in mining & metals sector

Hindalco Industries Ltd.  
 Hindustan Zinc Ltd.  
 JSW Steel Ltd.  
 Steel Authority Of India Ltd.  
 Tata Steel Ltd.  
 Vedanta Ltd.

### List of most recent top 10 companies

Coal India Ltd.  
 Hindalco Industries Ltd.  
 Hindustan Zinc Ltd.  
 Jindal Steel & Power Ltd.  
 JSW Steel Ltd.  
 National Aluminium Company Ltd.  
 NMDC Ltd.  
 Steel Authority Of India Ltd.  
 Tata Steel Ltd.  
 Vedanta Ltd.

- Standard deviation of empirical Beta for mining & metals sector is 27.4% and 15.1% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 30% higher than contractionary cycle Beta.



### Summary of beta for real estate sector

#### Average of the median

Expansionary cycle Beta	0.89
Contractionary cycle Beta	0.71
Overall Beta	0.80

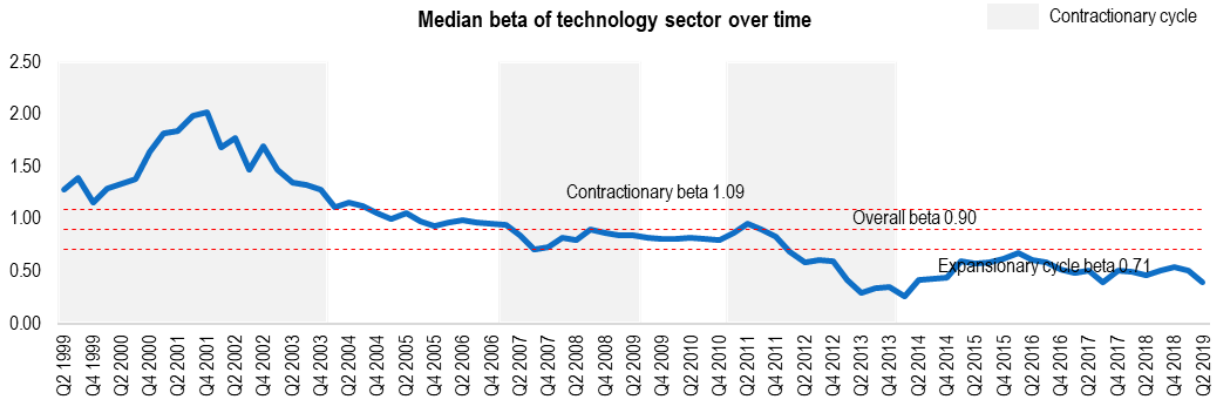
#### List of all time large listed companies in real estate sector

DLF Ltd.  
 Godrej Properties Ltd.  
 EIH Ltd.  
 The Indian Hotels Company Ltd.

#### List of most recent top 10 companies

Dilip Buildcon Ltd.  
 DLF Ltd.  
 EIH Ltd.  
 Godrej Properties Ltd.  
 NBCC (India) Ltd.  
 Oberoi Realty Ltd.  
 Phoenix Mills Ltd.  
 Prestige Estate Projects Ltd.  
 The Indian Hotels Company Ltd.  
 Thomas Cook (India) Ltd.

- Standard deviation of empirical Beta for real estate sector is 25.4% and 13.0% for last 20 years and 5 years respectively.
- During expansionary cycle real estate sector has shown higher cyclicity as compared to contractionary cycle. Expansionary cycle Beta is 25% higher than contractionary cycle Beta.



### Summary of beta for technology sector

#### Average of the median

Expansionary cycle Beta	0.71
Contractionary cycle Beta	1.09
Overall Beta	0.90

### List of all time large listed companies in technology sector

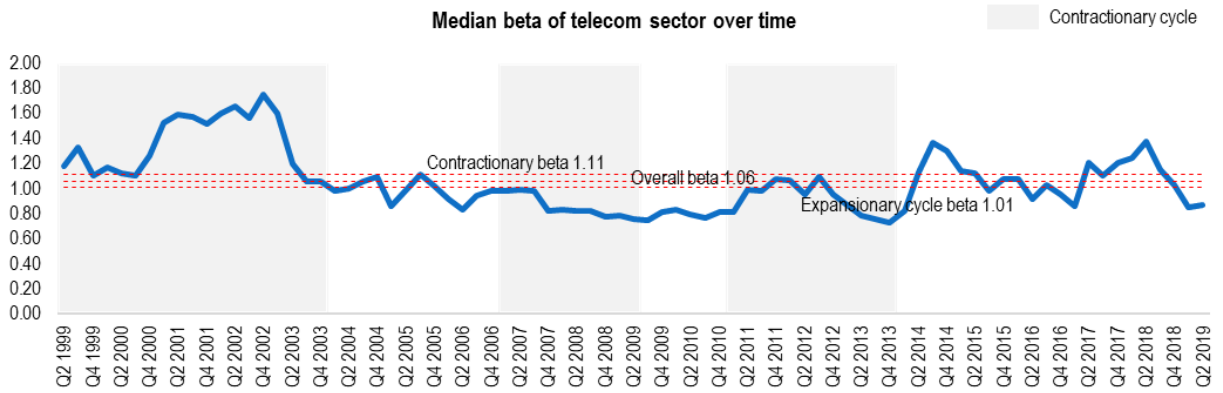
Infosys Ltd.  
Wipro Ltd.  
Tata Consultancy Services Ltd.

### List of most recent top 10 companies

HCL Technologies Ltd.  
Info Edge (India) Ltd.  
Infosys Ltd.  
Larsen & Toubro Infotech Ltd.  
Mindtree Ltd.  
Mphasis Ltd.  
Oracle Financial Services Software Ltd.  
Tata Consultancy Services Ltd.  
Tech Mahindra Ltd.  
Wipro Ltd.

- Standard deviation of empirical Beta for technology sector is 42.5% and 7.6% for last 20 years and 5 years respectively.
- Contractionary cycle Beta is 55% higher than expansionary cycle Beta.
- Technology sector Beta has been on a declining trend since 2001 making sector less volatile to market movements.
- Large part of the technology sectors derives its revenue from exports and hence the computed Beta (from domestic stock exchange) may be less meaningful





## Summary of beta for telecom sector

### Average of the median

Expansionary cycle Beta	1.01
Contractionary cycle Beta	1.11
Overall Beta	1.06

## List of all time large listed companies in telecom sector

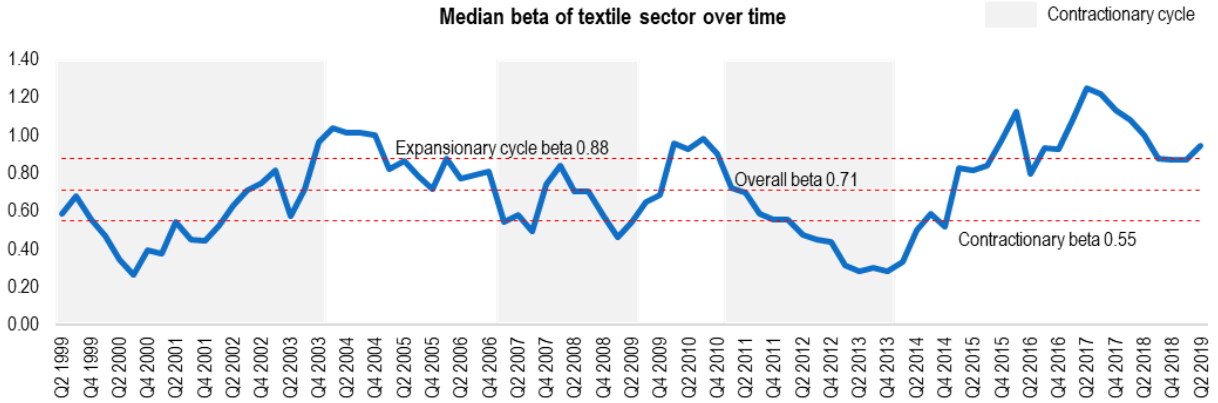
Bharti Airtel Ltd.  
 GTL Infrastructure Ltd.  
 HFCL Ltd.  
 Tata Communications Ltd.  
 Vodafone Idea Ltd.

## List of most recent top 10 companies

Astra Microwave Products Ltd.  
 Bharti Airtel Ltd.  
 Bharti Infratel Ltd.  
 GTL Infrastructure Ltd.  
 Hathway Cable & Datacom Ltd.  
 HFCL Ltd.  
 ITI Ltd.  
 Reliance Communications Ltd.  
 Tata Communications Ltd.  
 Vodafone Idea Ltd.

- Standard deviation of empirical Beta for telecom sector is 24.6% and 15.9% for last 20 years and 5 years respectively.
- Contractionary cycle Beta is 10% higher than expansionary cycle Beta.
- Historical Beta for telecom sector kept in range from 0.75 to 1.75.

**Median beta of textile sector over time**



**Summary of beta for textile sector**

**Average of the median**

Expansionary cycle Beta	0.88
Contractionary cycle Beta	0.55
Overall Beta	0.71

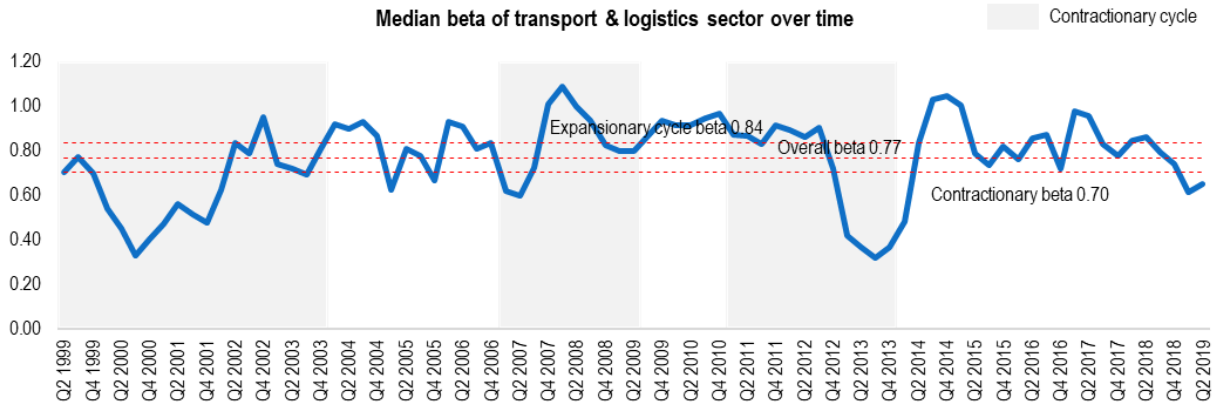
**List of all time large listed companies in textile sector**

Bombay Dyeing & Manufacturing Company Ltd.  
 Lakshmi Machine Works Ltd.  
 Raymond Ltd.  
 Vardhman Textiles Ltd.

**List of most recent top 10 companies**

Bombay Dyeing & Manufacturing Company Ltd.  
 KPR Mill Ltd.  
 Lakshmi Machine Works Ltd.  
 Lux Industries Ltd.  
 Page Industries Ltd.  
 Raymond Ltd.  
 TCNS Clothing Co Ltd.  
 Trident Ltd.  
 Vardhman Textiles Ltd.  
 Welspun India Ltd.

- Standard deviation of empirical Beta for textile sector is 24.1% and 18.7% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 59% higher than contractionary cycle Beta.
- For textile sector, during contractionary cycle, Beta almost always stood below average Beta of expansionary cycle.



### Summary of beta for transport & logistics sector

#### Average of the median

Expansionary cycle Beta	0.84
Contractionary cycle Beta	0.70
Overall Beta	0.77

### List of all time large listed companies in transport & logistics sector

Aegis Logistics Ltd.  
 Blue Dart Express Ltd.  
 Container Corporation Of India Ltd.  
 The Great Eastern Shipping Company Ltd.

### List of most recent top 10 companies

Adani Ports and Special Economic Zone Ltd.  
 Aegis Logistics Ltd.  
 Blue Dart Express Ltd.  
 Container Corporation Of India Ltd.  
 Gujarat Pipavav Port Ltd.  
 Hindustan Aeronautics Ltd.  
 Interglobe Aviation Ltd.  
 Mahindra Logistics Ltd.  
 Spicejet Ltd.  
 The Great Eastern Shipping Company Ltd.

- Standard deviation of empirical Beta for transport & logistics sector is 18.1% and 12.1% for last 20 years and 5 years respectively.
- Expansionary cycle Beta is 25% higher than contractionary cycle Beta.
- According to Blume method of adjusting the estimated market Beta, it is an observed tendency of an estimated Beta to revert to a value of 1.0 over time but for transport & logistics sector overall average historical Beta is 0.76 and, Beta trendline has mostly remained below 1.





Reference Material:

- NSE, BSE
- National Institute of Public Finance and Policy in paper Measuring business cycle conditions in India dated 27 May 2019
- Other publicly available information
- Incwert analysis

Photo credit:

- Unsplash.com



## Incwert Valuation Chronicles (click the image to download the file)

Equity risk premium  
in India  
- Jan 2019



Valuation challenges  
in AIF (Pg. 69-80)  
- Feb 2019



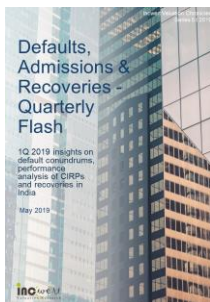
Perspective on  
valuation of DVRs  
- Mar 2019



Junk bond valuation  
- Apr 2019



IBC Quarterly Flash  
- May 2019



Rule 11UA valuation  
- Jun 2019



IBC Quarterly Flash  
- Aug 2019



AMC listing & valuation  
- Sep 2019



India Control Premium  
- Oct 2019



# Management | Advisory Board



**Sunit Khandelwal**  
Director

Sunit has worked across a range of sectors such as Infrastructure, real estate, FMCG, retail, engineering, clean energy, healthcare, IT/ ITeS, and other manufacturing industries.

**Qualifications:**

Chartered Accountant (ICAI)  
B.Com (Hon.) – St. Xavier's College  
Registered Valuer with IBBI

Sunit has an overall experience of over 13 years in valuation advisory, transaction advisory and M&A advisory.

As a valuation professional, Sunit has undertaken valuation of businesses for transactions, fund raising, strategic decision making, and corporate restructuring. He has also undertaken valuation of intangible assets, option valuation, litigation support, private equity portfolio valuation and valuation for reporting purposes such as purchase price allocation and impairment test under IFRS and Indian GAAP.

In past he has worked with KPMG India (as Associate Director), BDO, Grant Thornton, KPMG UK, and DBDBS a boutique M&A advisory firm.

Sunit is also an active speaker on valuation at National Institute of Finance Management (NIFM).



**Punit Khandelwal**  
Director

Punit has worked across leveraged loans, distressed debt, insolvency/ bankruptcy situations and high-yield asset classes.

**Qualifications:**

Chartered Accountant (ICAI)  
Chartered Financial Analyst (ICFAI)  
CFA Level 2 (US)  
MS in Finance (ICFAI)  
B.Com (Hons.) – St Xavier's College  
Registered Valuer with IBBI

Punit brings with him 15 years of experience in sell-side and buy-side advisory across equity and fixed income. He has worked on several bespoke valuations and lent research support to dozens of asset managers/investment bankers/brokers/consulting firms across the globe.

In the fixed income segment, he worked as a fundamental analyst across the capital structure: leveraged loans, distressed debt, insolvency/bankruptcy situations and high-yield asset classes. He has also helped sell-side & consulting firms increase their market presence by coming up with thematic and white label papers.

He started his career as an analyst with Zacks Investment Research & then was a part of a UK based CLO manager's research team. Then he moved on to set up research practices for couple of startups before moving onto become Global Head of Research at Southerland and then finally co-founded Incwert.

# Contact us

## Incwert India contacts

Delhi NCR:

**Sunit Khandelwal**

Mobile : +91 95606 80444

Board no: +91 124-4696689

Email: [sunitk@incwert.com](mailto:sunitk@incwert.com)

Mumbai:

**Punit Khandelwal**

Mobile: +91 98201 38274

Email: [punitk@incwert.com](mailto:punitk@incwert.com)

Website: <http://www.incwert.com>



## Our Offices

### Gurugram

**Platinum Towers,**  
507A, 5th floor  
Sohna Road  
Gurugram 122 018  
India

**Registered office:**  
F-1502,  
GPL Eden Heights,  
Sector 70,  
Gurugram 122101

### Mumbai

**Platina Building**  
Level 9, Regus Business  
Center,  
Bandra Kurla Complex  
(BKC)  
Mumbai 400 098  
India

© 2019 Incwert Advisory Private Limited, an Indian Private limited company having CIN U74999HR2018PTC075916 All rights reserved. Incwert and the Incwert logo are registered trademarks of Incwert Advisory Private Limited.

This publication has been carefully prepared only for education purpose and is not a research report or any kind of investment advice. Neither authors of this publication nor Incwert Advisory Private Limited have any kind of conflict of interest with any company / firm / entity which have been cited and have been used for the sole purpose of illustration. It has been written in general terms and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. It should be seen as broad guidance only and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice after a thorough examination of the particular situation. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this proposal, and, to the extent permitted by law, Incwert Advisory Private Limited ("Incwert"), its members, employees and agents accept no liability, and disclaim all responsibility, for the consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it. Without prior permission of Incwert, this publication may not be quoted in whole or in part or otherwise referred to in any documents.