

# “Diving into the Swadesi and Videsi Brands”

## Analyzing and comparing of Revenue of India Brands and International Brands

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**Abstract** - This research paper summarizes Indian and international within top 3 sectors of the market and formulating their mathematical equation. The data has been taken from official websites. For this we have used mathematical equations and analyzed it graphically and structured in the form of research paper. This research paper is systematic study of using mathematical techniques to the revenue of brands available. We also added. We concluded what will be the revenue of brands in the coming years using exponential, quadratic, cubic and Bi-quadratic equations. In the end, India brands are race for top economies and revenue being one of the most crucial part of it. India geographic location and population sector makes it one of the most important country with international brands coming to do business.

### 1. Introduction:

#### 1.1 Economy and Brand:

"Economy" can refer to different aspects of economic activity, including the overall state of a country's economic system, a specific sector or industry, or even the economic practices of a household. Brands are integral to various aspects of the economy, so I'll provide information on different types of brands in relation to the economy:

1. Corporate Brands: These are the brands associated with companies or corporations. These brands encompass everything from multinational conglomerates like Apple or Amazon to local businesses. Corporate brands play a vital role in the economy, as they often represent the health and competitiveness of the private sector.
2. Consumer Brands: Consumer brands are products or services that consumers purchase and use in their daily lives. These can range from household goods like Procter & Gamble's Tide detergent to personal electronics like Samsung smartphones. The success of consumer brands is closely tied to consumer spending, which is a significant driver of economic growth.
3. Economic Indicator Brands: Certain brands or companies have become indicators of economic health. For example, the stock performance of companies listed on major stock indices (like the Dow Jones or S&P 500) can be seen as barometers of the broader economy.
4. Government Brands: Governments also have brands, which encompass their economic policies, stability, and reputation. A government's brand can significantly influence foreign investment and trade relationships.
5. Start-Up and Tech Brands: Innovative startups and tech companies, often known for their disruptive technologies, can have a significant impact on the economy. Companies like Tesla and Uber have transformed traditional industries and created new economic opportunities.
6. Retail Brands: Retail brands, including online and physical stores, are a key component of the consumer-driven economy. Companies like Walmart, Amazon, and Alibaba are influential retail brands that can impact consumer spending patterns and distribution channels.
7. Financial Services Brands: Financial institutions, including banks, insurance companies, and investment firms, have their own brands. These brands can influence consumer confidence and investment choices, affecting the overall economy.

8. **Automotive Brands:** Automotive companies such as Ford, Toyota, and BMW are critical to the manufacturing sector and have a significant impact on economic growth and employment in various regions. **Fast Food Brands:**
9. Fast food chains like McDonald's, KFC, and Starbucks play a role in the food service industry, contributing to the economy through job creation and consumer spending.
10. **Tourism and Hospitality Brands:** Brands associated with hotels, airlines, and tourism destinations contribute to the economic health of the travel and hospitality industry.
11. **Technology Brands:** Technology giants like Google, Microsoft, and Apple influence various aspects of the economy, including the tech sector, innovation, and job creation.
12. **Energy Brands:** Companies in the energy sector, including oil and gas companies like ExxonMobil and renewable energy companies, impact energy prices, supply, and sustainability efforts.

These are just a few examples of brands across different sectors that play a role in the economy. The strength and performance of these brands can have a significant influence on economic growth, job creation, and consumer behavior.

## 1.2 Market and Sectors:

Markets are typically divided into different sectors, each representing a distinct area of economic activity or industry. These sectors are often used to classify and analyze the various components of an economy. The specific sectors can vary depending on the classification system and the country, but the following are some common sectors in a market economy:

1. **Primary Sector: Agriculture:**
  - Involves activities related to farming, crop production, livestock raising, and other agricultural practices.
  - **Mining:** Involves the extraction of natural resources like minerals, metals, and fossil fuels.
  - **Forestry:** Encompasses the harvesting of timber and forest products.
2. **Secondary Sector:**
  - **Manufacturing:** This sector includes activities where raw materials are processed, transformed, or assembled into finished products. It involves industries like automotive manufacturing, electronics, and textiles.
  - **Construction:** Involves the construction of buildings, infrastructure, and other physical structures.
3. **Tertiary Sector:**
  - **Services:** The tertiary sector includes a wide range of service industries, such as retail, healthcare, education, entertainment, banking, and hospitality. It is the largest sector in many modern economies.
  - **Information Technology (IT):** IT services and technology companies provide software development, consulting, and hardware solutions.
4. **Quaternary Sector:**
  - **Knowledge-based Services:** This sector involves industries that rely heavily on intellectual and information-based activities. Examples include research and development, information technology, and education.
  - **Information Services:** Companies that deal with data analysis, research, and information dissemination fall into this category.
5. **Quinary Sector:**
  - **High-level Decision-Making Services:** This sector comprises top-level services like government, healthcare, scientific research, and cultural institutions. It involves decision-making at the highest levels of society.

6. Retail Sector:
  - This sector focuses on the sale of goods and services directly to consumers. It includes various types of stores, e-commerce, and other retail outlets.
7. Finance Sector:
  - Financial institutions such as banks, insurance companies, and investment firms play a significant role in managing and allocating capital and risk.
8. Healthcare Sector:
  - This sector encompasses healthcare providers, pharmaceutical companies, and medical equipment manufacturers.
9. Transportation Sector:
  - Transportation services, including road, rail, air, and maritime transport, facilitate the movement of goods and people.
10. Energy Sector:
  - Energy production, distribution, and services are essential for powering the economy. This sector includes oil and gas companies, renewable energy providers, and utilities.
11. Real Estate Sector:
  - This sector deals with the development, sale, purchase, and management of real estate properties, including residential, commercial, and industrial properties.
12. Agriculture and Food Sector:
  - Beyond primary agriculture, this sector includes food processing, distribution, and restaurant and catering services.
13. Tourism and Hospitality Sector:
  - This sector involves travel, accommodations, and related services, including hotels, airlines, and travel agencies.

These sectors can overlap and have interdependencies. For example, the technology sector plays a role in various other sectors, and financial services are integral to many industries. The classification of sectors can also evolve over time as new industries emerge, and traditional ones decline or transform due to technological advancements and changing consumer preferences.

## 2. International market vs Indian markets:

Expanding into international markets can be a significant step for Indian businesses. When Indian companies decide to enter international markets, they need to consider various factors and challenges:

1. Market Research: Conduct thorough market research to understand the target international market, including customer preferences, competition, and cultural differences.
2. Regulatory Compliance: Ensure compliance with the regulatory and legal requirements of the target country, such as import/export regulations, tax laws, and intellectual property rights.
3. Cultural Sensitivity: Be aware of cultural nuances, social norms, and language differences. Tailor marketing and business strategies accordingly.
4. Product/Service Adaptation: Assess whether your products or services need modification to meet the demands and preferences of the international market.
5. Distribution and Supply Chain: Establish a reliable distribution and supply chain in the target market, which may involve partnerships or local manufacturing.
6. Market Entry Strategy: Decide on the entry mode, which could include exporting, franchising, joint ventures, or setting up subsidiaries.
7. Competitive Analysis: Analyze local and global competitors to understand their strengths and weaknesses.
8. Marketing and Branding: Develop a marketing strategy that resonates with the international audience and creates brand awareness.

9. Pricing Strategy: Determine competitive pricing strategies based on local market conditions and your costs.
10. Risk Management: Understand and manage risks, including currency exchange rates, political instability, and economic fluctuations.
11. Customer Support: Provide effective customer support and after-sales service to build trust and loyalty.
12. Financial Planning: Secure financing, assess investment needs, and create a budget for the international expansion.
13. Partnerships and Alliances: Form strategic partnerships or alliances with local businesses, distributors, or suppliers.
14. Intellectual Property Protection: Safeguard your intellectual property through patents, trademarks, and copyrights.
15. Talent and Workforce: Recruit and train a workforce that understands the target market and can adapt to different cultural environments.
16. Logistics and Shipping: Coordinate logistics and shipping to ensure smooth transportation of goods.
17. Market Entry Timing: Consider the right time to enter the market, taking into account economic conditions and seasonality.
18. Adaptability and Flexibility: Be prepared to adapt your strategies as the international market evolves and changes. It's crucial for Indian businesses to engage in meticulous planning and research before venturing into international markets.

Additionally, seeking assistance from trade organizations, government agencies, and professional advisors can provide valuable support and guidance throughout the process.

### **3. Indian Brands in Automobile Industry:**

India has several automobile brands that have made a significant impact both in the domestic market and internationally. Here are some prominent Indian automobile brands:

1. Tata Motors: Tata Motors is one of India's largest automobile manufacturers, producing a wide range of vehicles, including passenger cars, commercial vehicles, and utility vehicles. The Tata Nano was one of their notable projects.
2. Mahindra & Mahindra: Mahindra is known for its utility vehicles, including SUVs and tractors. They also have an electric vehicle division.
3. Maruti Suzuki: Maruti Suzuki is a subsidiary of Suzuki Motor Corporation, and it's the largest car manufacturer in India. They produce a variety of popular models, such as the Maruti Suzuki Swift and Maruti Suzuki Alto.
4. Bajaj Auto: Bajaj is known for its motorcycles and three-wheelers. They have a significant presence in the two-wheeler market.
5. Royal Enfield: Royal Enfield is renowned for its classic-style motorcycles, which are popular among motorcycle enthusiasts. Their iconic model is the Royal Enfield Bullet.
6. Ashok Leyland: Ashok Leyland primarily focuses on commercial vehicles, including trucks and buses. They are one of the leading manufacturers in this segment.
7. Hero MotoCorp: Hero is one of the largest two-wheeler manufacturers in the world and produces motorcycles and scooters. Their Splendor and Passion series are popular models.
8. Eicher Motors: Eicher Motors owns the Royal Enfield brand and also produces commercial vehicles in collaboration with Volvo.
9. Force Motors: Force Motors manufactures a range of vehicles, including commercial vans, utility vehicles, and tractors.
10. Hindustan Motors: Hindustan Motors is known for the iconic Ambassador car, which was a staple in the Indian automotive industry for many decades.

### **4. India Brands in Pharmaceutical industries:**

India is home to numerous pharmaceutical companies that are known for their significant contributions to the global pharmaceutical industry. Some prominent Indian pharmaceutical companies include:

- Sun Pharmaceutical Industries Ltd.
- Dr. Reddy's Laboratories

- Cipla Ltd.
- Lupin Limited
- Aurobindo Pharma
- Biocon
- Cadila Healthcare (Zydus Cadila)
- Glenmark Pharmaceuticals
- Torrent Pharmaceuticals
- Divi's Laboratories
- Wockhardt
- Alkem Laboratories
- Jubilant Life Sciences
- Ipca Laboratories
- Natco Pharma

These companies are involved in the development, manufacturing, and marketing of a wide range of pharmaceutical products, including generic drugs, innovative medicines, active pharmaceutical ingredients (APIs), and more. They play a crucial role in supplying affordable medicines both within India and for export to various parts of the world.

### 5. India Food Processing industries:

India has a robust food processing industry, and there are numerous companies that play a significant role in this sector. Some examples of food processing companies in India include:

1. ITC Limited (Food Division): ITC is a diversified conglomerate with a substantial presence in the food processing industry, offering products like Aashirvaad Atta, Sunfeast biscuits, and Bingo snacks.
2. Amul (Gujarat Cooperative Milk Marketing Federation): Amul is known for its dairy products, including milk, butter, cheese, and ice cream. It is one of India's most recognized food brands.
3. Parle Products Pvt. Ltd.: Parle is renowned for its biscuits, including Parle-G, one of India's most beloved biscuit brands.
4. Britannia Industries Limited: Britannia manufactures a wide range of food products, including biscuits, bread, cakes, and dairy items.
5. Hindustan Unilever Limited (HUL): HUL offers a variety of food and beverage products, including Knorr, Kissan, and Brooke Bond.
6. Mother Dairy: Mother Dairy produces and sells a range of dairy products, including milk, yogurt, and ice cream.
7. MTR Foods: MTR is known for its ready-to-eat Indian food products, such as masalas, instant mixes, and frozen foods.
8. Dabur India Limited: Dabur is primarily a health and wellness company but also produces a range of food products like juices, honey, and chyawanprash.
9. Adani Wilmar Limited: Adani Wilmar is known for its edible oil brands, including Fortune, which is a prominent cooking oil brand in India.
10. Tata Consumer Products: Tata Consumer Products offers a variety of food and beverage products, including Tata Tea, Tata Salt, and Tetley Tea.
11. Marico Limited: Marico is known for its edible oils, haircare products, and other consumer goods.
12. FieldFresh Foods (Del Monte): FieldFresh Foods is a joint venture between Bharti Enterprises and Del Monte Pacific Limited, producing canned fruits, juices, and processed food products.
13. Bambino Agro Industries: Bambino specializes in ready-to-cook and ready-to-eat food products, including pasta, vermicelli, and more.
14. Patanjali Ayurved: Patanjali offers a wide range of Ayurvedic and natural food products, including herbal teas, spices, and health supplements.

These companies cover a wide range of food products, from dairy and beverages to snacks, condiments, and ready-to-eat meals, contributing to India's food processing industry's growth and diversity.

## 6. Why I chose this Topic?

I have experienced both Indian and Canadian culture so I decided to take a topic which is blend of Indian and international brands, for which combination of methods and techniques from mathematics, economics and finance are used. This research paper enables me to achieve in depth knowledge and skills to proceed to a successful career in finance, brand marketing, economics, business management etc.

## 7. Revenue earned by Indian vs International Companies in following financial years:

### a. Automobile Market:

Indian Company- Maruti Suzuki Ltd.

International company- Hyundai (South Korea)

Year	Maruti	Hyundai
2012	38614.1	12600
2013	48114.7	13372
2014	47822.8	14067
2015	53768.5	15458
2016	63957.7	17811.37
2017	76140.8	18735.6
2018	80336.5	22672.4
2019	83026.5	22128.95
2020	71690.4	12801.28
2021	66562.1	b.47378
2022	83798.1	60307

*All data in Rupees Crores*

### b. Pharmaceutical Market:

Indian Company- Cipla Ltd.

International company- Pfizer (USA)

Year	Cipla	Pfizer
2012	1058.32	160.58
2013	995.09	160.58
2014	1057.43	9931.06
2015	1900.76	10929.56
2016	2093.69	11825.2
2017	2041.85	12639.61
2018	1980.15	13952.5
2019	2081.42	15781.91
2020	2151.51	17402.96
2021	2238.48	19927.56
2022	2610.55	22513.55

*All data in Rupees Crores*

c. Food Processing Market:

Indian Company- Amul

International company- Nestle (Switzerland)

Year	Amul	Nestle
2012	11668	8581.88
2013	13735	9379.87
2014	18143	10129.5
2015	20733	8430.44
2016	22972	9491.72
2017	27043	10135.11
2018	29225	11216.23
2019	33150	12295.27
2020	38550	13290.16
2021	61000	14633.72
2022	72000	16789.53

All data in Rupees Crores

**8. Calculations and Graphs:**

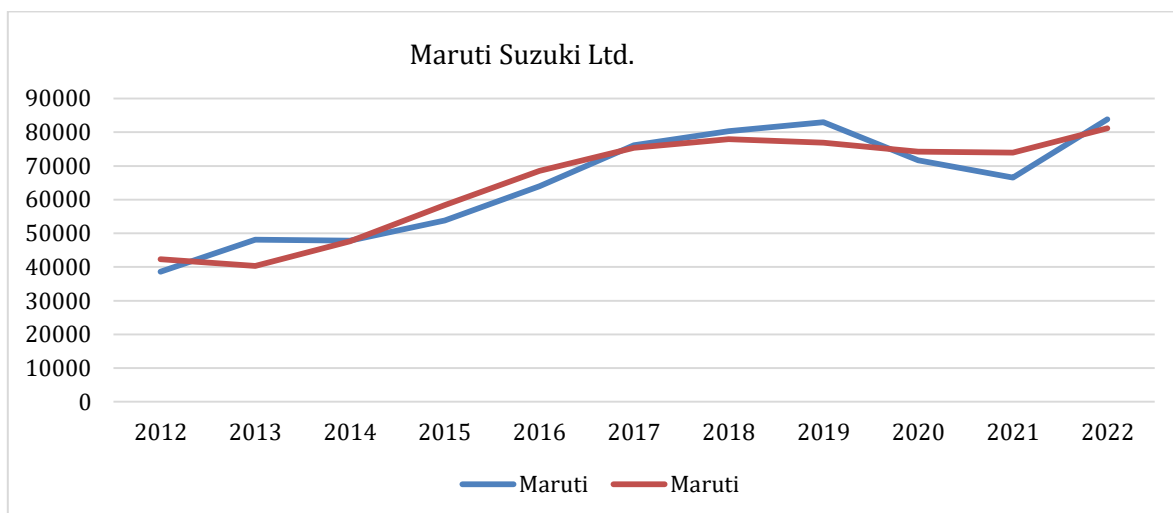
a. Revenue of Maruti Suzuki Ltd

In graph, x-axis as years from 2012 to 2022 and Y-axis show revenue earned by the company (in crores rs.)

Let's consider 2012 as 1, 2013 as 2.....2022 as 11.

After manually drawing graph an on excel.

We concluded biquadratic equation covers maximum number of plots considering  $y = Ax^4 + Bx^3 + Cx^2 + Dx + E$ .



**Formula:  $y = 66 \cdot x^4 - 1619 \cdot x^3 + 12691.84 \cdot x^2 - 29714.2 \cdot x + 60893.6$**

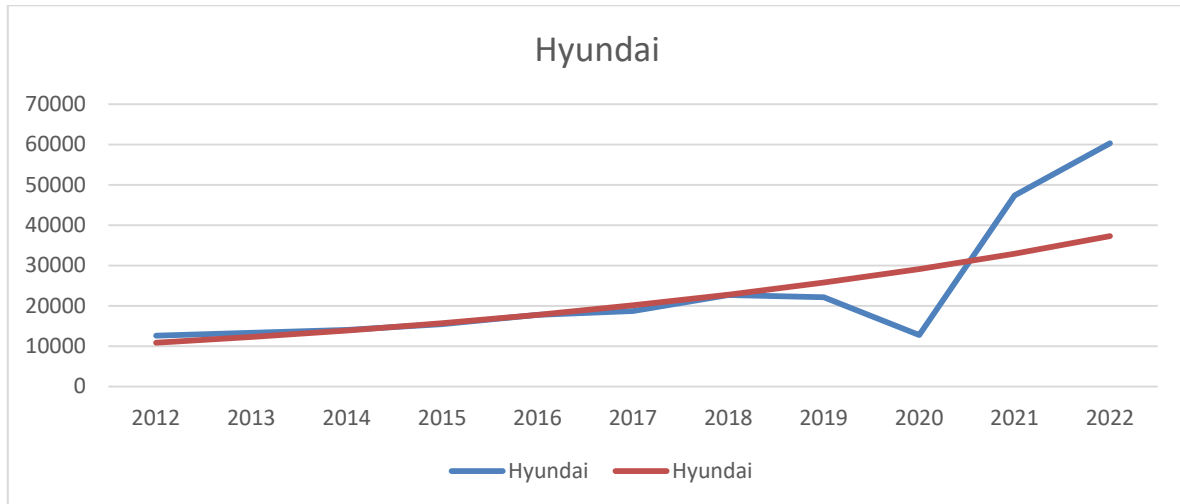
Where "y" revenue of Maruti Suzuki Ltd. (in crores rs.), and "x" represents 1, 2, 3.....(1 represents 2012, 2 represents 2013 and so on.

b. Revenue of Hyundai:

In graph, x-axis as years from 2012 to 2022 and Y-axis show revenue earned by the company (in crores rs.)  
Let's consider 2012 as 1, 2013 as 2.....2022 as 11.

After manually drawing graph and on excel.

We concluded exponential equation covers maximum number of plots considering  $y=Ae^x$ .



**Formula:  $y = 9626.55 * 1.131^x$**

Where “y” revenue of Hyundai (in crores rs.), and “x” represents 1, 2,3.....(1 represents 2012, 2 represents 2013 and so on).

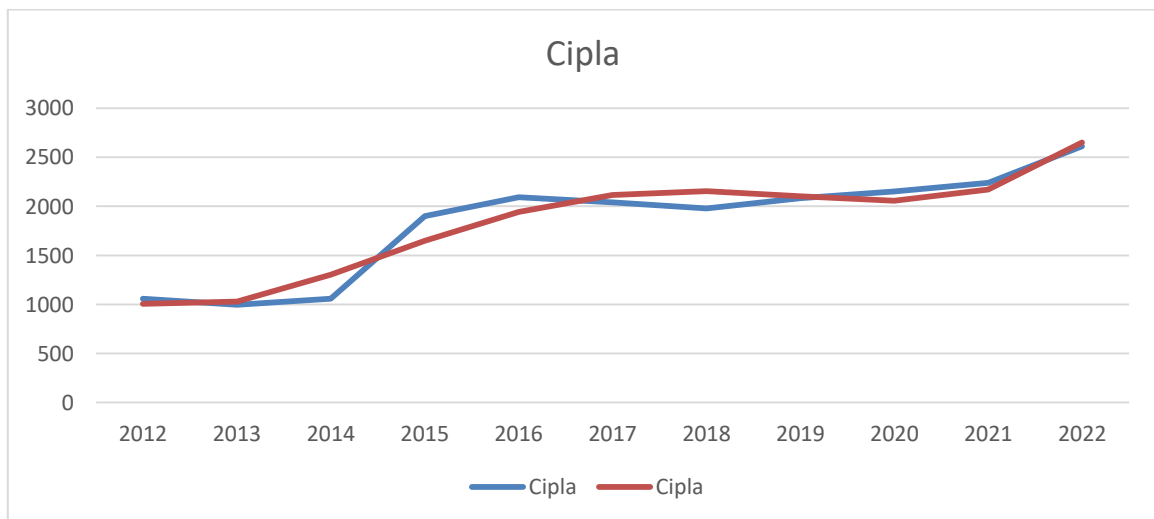
c. Revenue of Cipla:

In graph, x-axis as years from 2012 to 2022 and Y-axis show revenue earned by the company (in crores rs.)

Let's consider 2012 as 1, 2013 as 2.....2022 as 11.

After manually drawing graph and on excel.

We concluded biquadratic equation covers maximum number of plots considering  $y=Ax^4+Bx^3+Cx^2+Dx+E$ .



**Formula:  $y = -2.308 * x^4 - 52.98 * x^3 + 385.9 * x^2 - 799 * x + 1470.4$**



Where “y” revenue of Cipla (in crores rs.), and “x” represents 1, 2,3.....(1 represents 2012, 2 represents 2013 and so on).

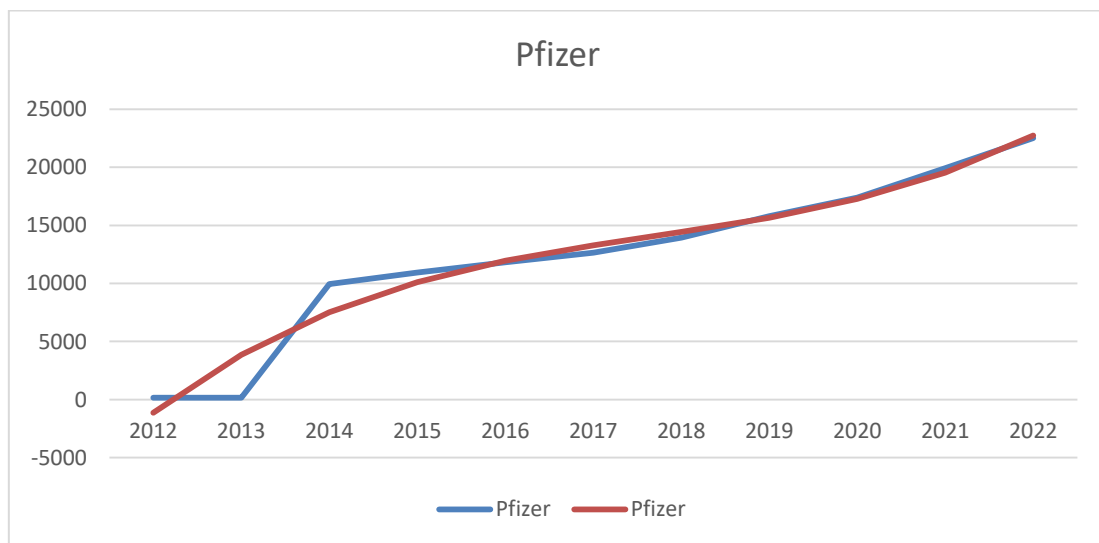
d. Revenue of Cipla:

In graph, x-axis as years from 2012 to 2022 and Y-axis show revenue earned by the company (in crores rs.)

Let’s consider 2012 as 1, 2013 as 2.....2022 as 11.

After manually drawing graph and on excel.

We concluded cubic equation covers maximum number of plots considering  $y = Ax^3 + Bx^2 + Cx + D$ .



**Formula:  $y = 47.84 * x^3 - 960.55 * x^2 + 7554.01 * x - 7790$**

Where “y” revenue of Pfizer (in crores rs.), and “x” represents 1, 2,3.....(1 represents 2012, 2 represents 2013 and so on).

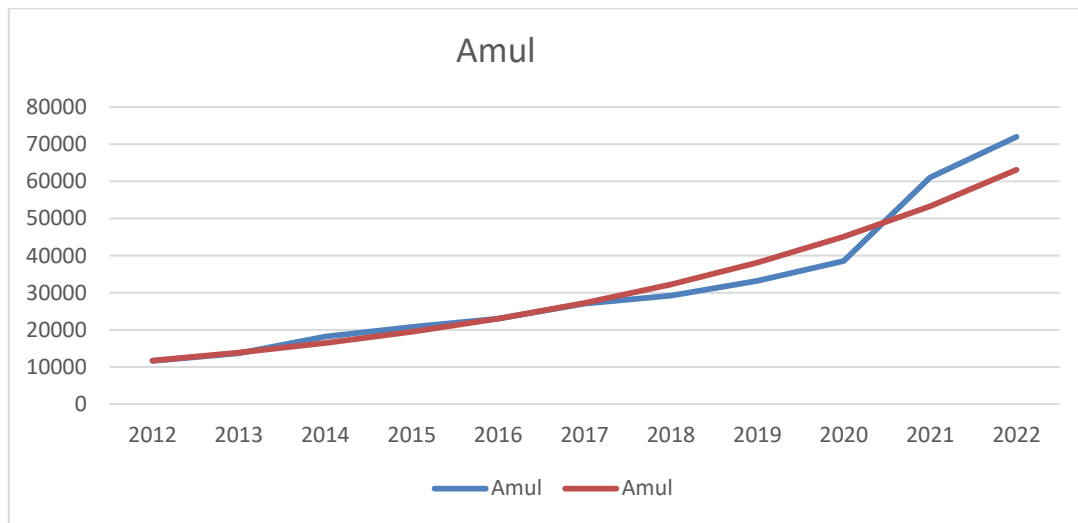
e. Revenue of Amul:

In graph, x-axis as years from 2012 to 2022 and Y-axis show revenue earned by the company (in crores rs.)

Let’s consider 2012 as 1, 2013 as 2.....2022 as 11.

After manually drawing graph and on excel.

We concluded exponential equation covers maximum number of plots considering  $y = Ae^x$ .



**Formula:  $y = 9930.91 * 1.183^x$**

Where “y” revenue of Amul (in crores rs.), and “x” represents 1, 2,3.....(1 represents 2012, 2 represents 2013 and so on)

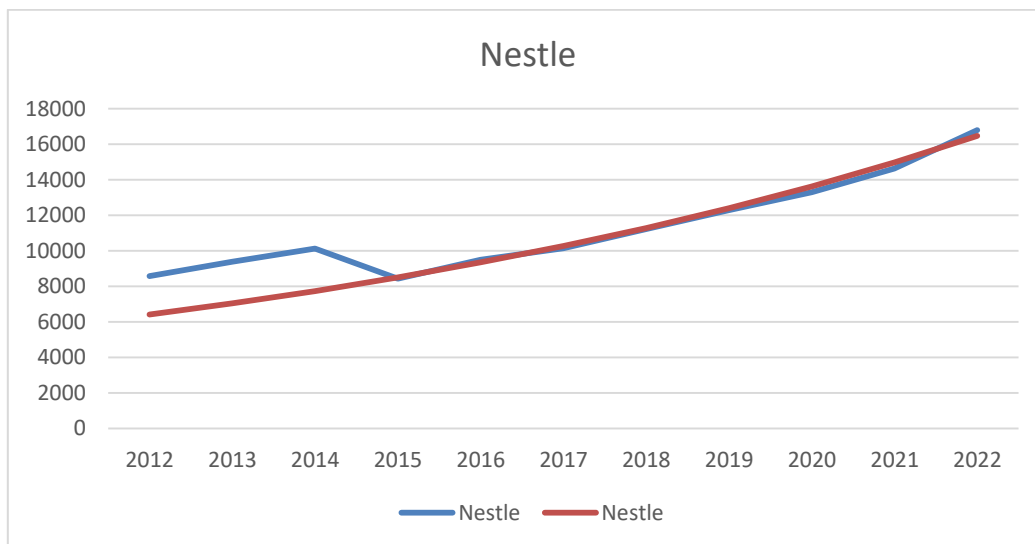
f. Revenue of Nestle:

In graph, x-axis as years from 2012 to 2022 and Y-axis show revenue earned by the company (in crores rs.)

Let’s consider 2012 as 1, 2013 as 2.....2022 as 11.

After manually drawing graph and on excel.

We concluded exponential equation covers maximum number of plots considering  $y = Ae^x$ .

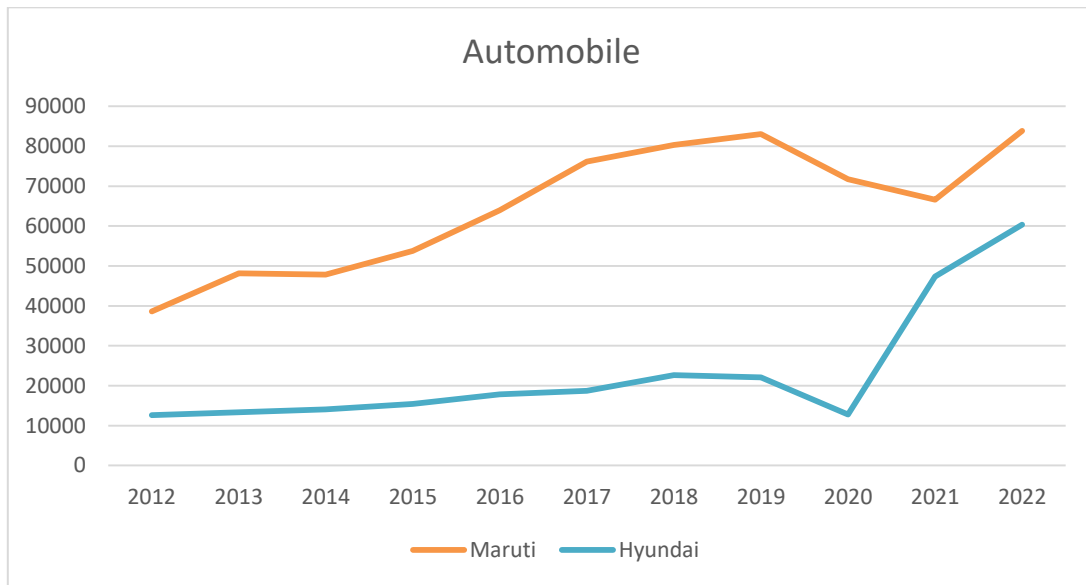


**Formula:  $y = 5827.5 * 1.099^x$**

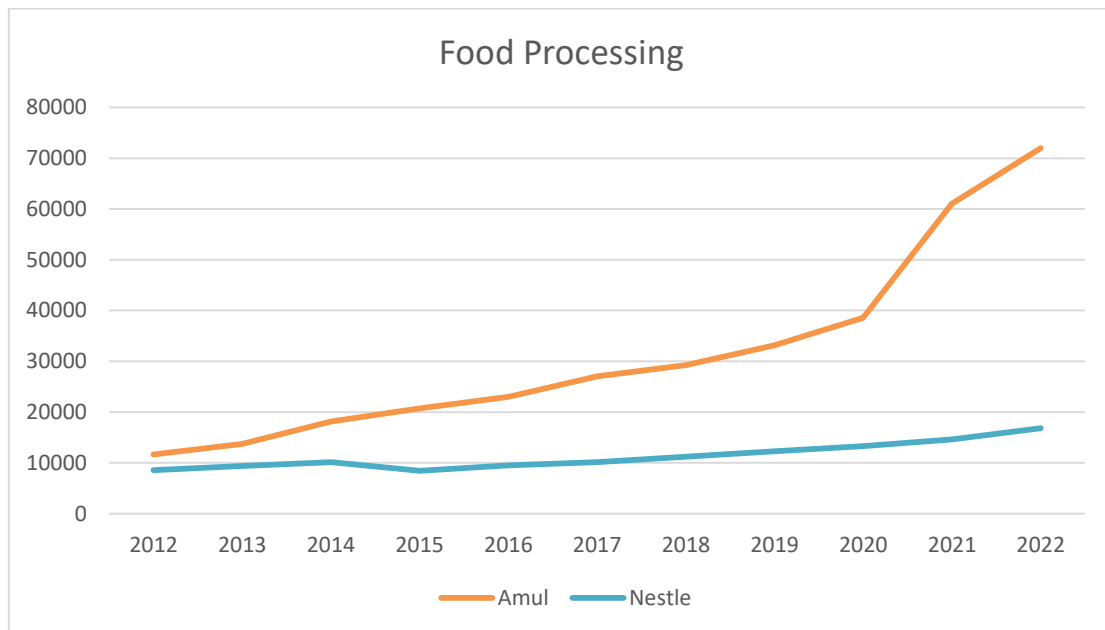
Where “y” revenue of Nestle (in crores rs.), and “x” represents 1, 2,3.....(1 represents 2012, 2 represents 2013 and so on).

g. Comparison between Indian and International brands Revenue:

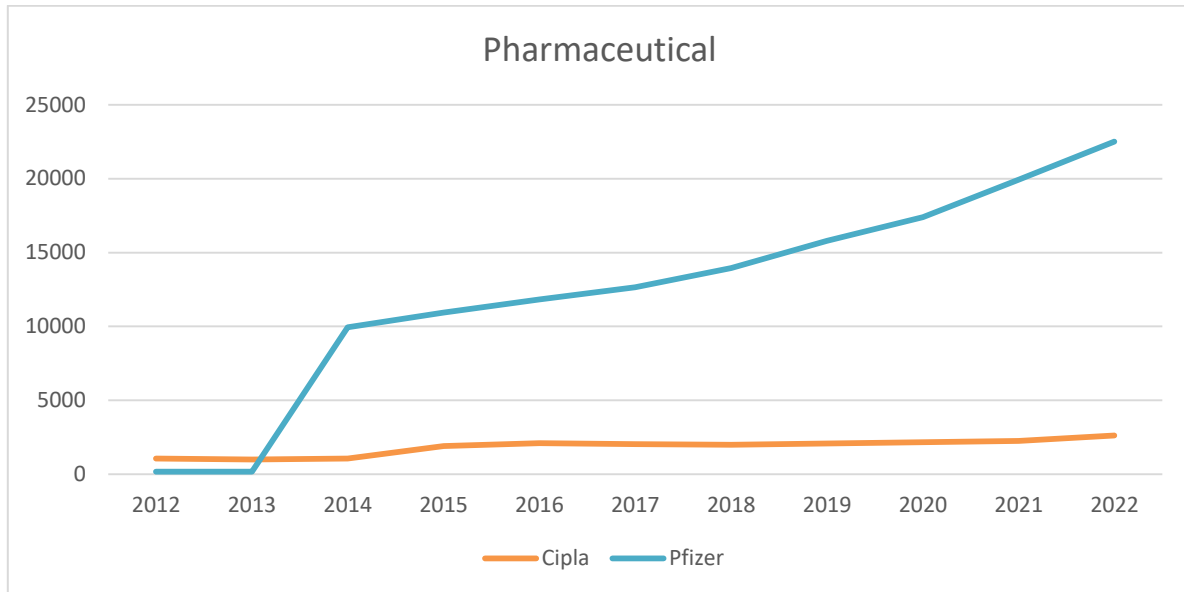
1. Automobile:



2. Food Processing:



3. Pharmaceutical:



**9. Conclusion:**

By analysis growth curves of various Indian vs international brands and comparing them. We concluded that though international brands are making their share in Indian market but Indian brands are consistently outperforming international brands. Sentiments attached to ‘swadeshi’ and ‘make in India’ may be the one of the reason. Consumers are very conscious now a days and before going for any purchase, they look for quality, brand value, value for money.

Concluding this paper with the quote

“Your brand reflect your culture, purpose and identity”

**10. References:**

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## 11. Biographies:

### *Vanya*

- Academic Award 2018-19.
- Participated in various Olympiad.
- Took YLE (Cambridge young learner English movers) in Jan 2015.
- Participated in LSCC Badminton Competition in 2017 and 2019.
- Participated in Shri. HL Arneja Memorial Open Badminton championship in 2020.
- Participated in various competition and art related workshop at state level.
- Cleared Level 1 proficiency test from National institute of educational and vocational training.
- Participated in animation and vfx workshop.
- Successfully completed DV Program with Cue Maths.
- Completed one year course on speech and drama program offered by Heller and Gradey International.
- Certificate of internship as a campus ambassador intern for international model united nation.
- Certificate of commendation for valuable contribution towards social service.
- Completed community service program at animal protection welfare society.
- Passed certificate A exam under authority of ministry of defense, Govt. of India.

### Under the guidance of:

#### *Dr. Mamta Jain*

- M.Sc (Mathematics) (Double gold medalist)
- M.Phil (Computer Applications) with honors From University of Roorkee (now IIT Roorkee)
- PhD (Mathematics) -Various papers published in international journals
- Former Lead Auditor ISO 9001,ISO -22000 School Accreditation Examiner by QCI
- 26 years of teaching experience
- Various Research Paper Published

#### *Er. Raunaq Jain*

- B.E Mechanical Engineering From Thapar Institute of Engineering and Technology
- District Physics Topper
- Content Writer and graphic designer
- Mechanical Mentor from session 2019-2020
- Upcoming Data Analyst at Deloitte