





JULY -SEPT UPDATE

The Official Newsletter of **JST INVESTMENTS**



Performance

	July 2020 to September 2021 (15M)	July to September 2021 (3M)
 JST High Conviction PF Return	107.0%	23.0%
 Nifty 50 Return	66.2%	11.5%
 BSE 500 Return	74.0%	11.1%
 Churn	8%	8%

A MESSAGE FROM OUR CIO



What a rally it has been!

Markets have relentlessly risen from a low of 7700 to 18000 since the COVID-19 pandemic.

Business momentum across the economy is beginning to improve. The economy is poised to recover led by the banks pushing credit into the system.

Easing of lockdown restrictions and rapid vaccinations thanks to the government should mean the probable third wave will not be as deadly as the second wave!

However markets have priced in a lot of positive news in the near term. Valuations in the near term leave no margin of safety across a lot of sectors!

Its time to keep the near-term return expectations in check!

However we continue to remain bullish on India.

As we had advised in the last letter –

WHEN THE MARKET MOVES IRRATIONALLY DOWN, DO NOT PANIC.

WHEN THE MARKET MOVES IRRATIONALLY UP, DO NOT CELEBRATE.

ALWAYS BE HUMBLE - THERE IS A LONG WAY TO GO!

In this newsletter we talk about the disruption that is Electric Vehicles!

Thanks & regards,

Aditya Shah, CFA

Chief Investments Officer (CIO), JST Investments

Portfolio Update

A lot of our portfolios are now aligned to the worst-performing sectors this year where there is definite value.

1. Financial Services Space

2. Auto Ancillaries

While these may lead to underperformance in the near term.

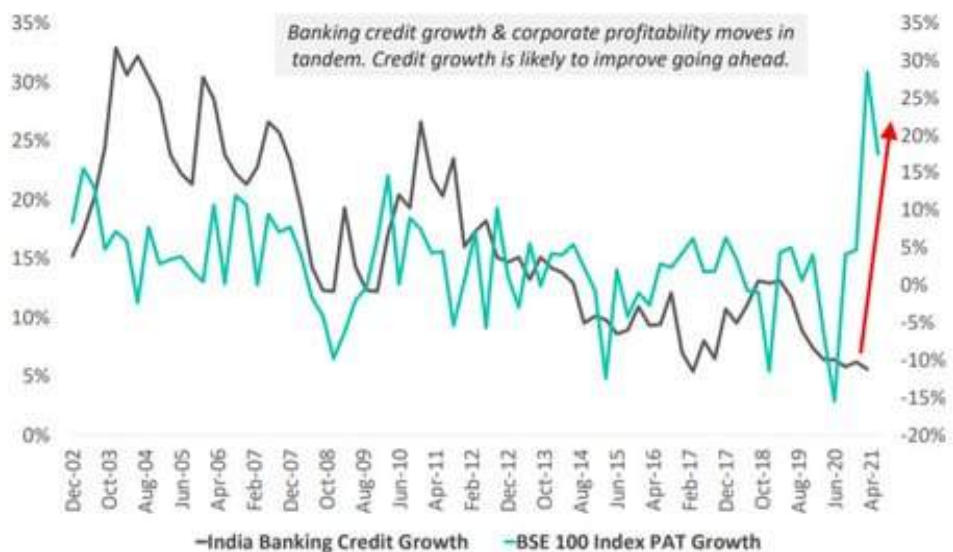
Sane valuations mean there is a lot of margin of safety in these pockets and therefore the chance of loss of capital is extremely less.

Financials

Banking credit growth set to rebound

Corporate profitability is clocking excellent growth. Banking credit & corporate profitability move together over time.

Expect banking credit growth to revert to normalcy, as the Indian economy recovers & corporate profitability stabilizes at healthy levels.



DSP

Source: Bloomberg; Data as on Sep 30, 2021

Banks are set to rebound!

Credits: DSP Mutual Fund (Sahil Kapoor)

After 3 years of pain , for the first time we are set to see credit expansion!

All large lenders are set to push credit growth into the economy!

FMCG

The Valuations across the sector continue to be really expensive with many of the company valuation multiples at peaks or life time highs!

Companies are expected to report single digit to a high double digit volume growth with few companies reverting to their average volume growths as seen in recent results and Q2 previews. Margins for all these companies will be under pressure as input cost inflation hits a host of key raw materials

In the near term we tend to be cautious on these companies

Information Technology (IT)

IT businesses are continuing to see strong business momentum across all geographies and verticals!

Attrition is a major problem for all IT companies

However near-term valuations have priced in a lot of this good news!

Pharmaceuticals

The transfer of share from China to India in APIs continues, augmented by the supply due to the power shortages in China; CDMOs will face increased enquiries due to the same & other structural reasons.

Formulation players (selling to India or the world) will face the brunt of increased RM (APIs, Intermediates, Packaging) & operational costs (freight & fuel).

A healthy goodbye to COVID rev from most India focused companies (hopefully, an endemic is near), however, export opportunities still remain.

Valuations are reasonable across subsegments (ex of ancillaries like Hospitals & Diagnostics) given the growth potential in the next 2-3 years.

Cyclicals

There has been a massive rally across the metals and the steel part of the cyclicals!

Chinese production cuts have meant that prices for most cyclicals are at a life time high!

It is time to be careful on the entire pack!

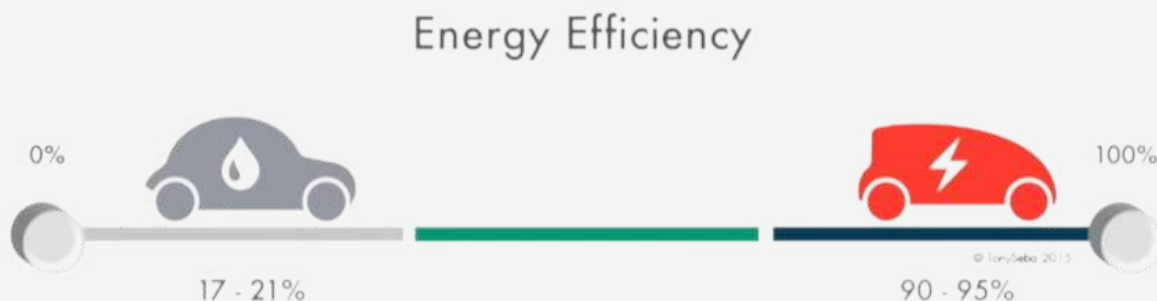
Internal combustion engines (ICEs) to electric vehicles (EVs), An inevitable value migration?

"The automotive industry is now hurtling into an era of profound transformation, the likes of which come only once every 100 years. With even our rivals and the rules of competition also changing, a life-or-death battle has begun in a world of unknowns.

Technology companies, who are our new rivals, with speed many times greater than our own and backed by abundant funding, are continuing to aggressively invest in new technologies." ~ President Akio Toyoda, Toyota Motor Corporation (World's largest car company by sales)

Are EVs really disruptive technology?

-Electric cars are 3-to-10 times cheaper on a per km basis (depending on location) compared to conventional cars, largely because electric motors are much more energy-efficient (3-5x) than ICEs. Any business model where the cost of fuel is more important than the cost of equipment will benefit from the onset of EVs for example fleet operators which have cars driving long distances throughout the year.



-Enhanced power and handling are other attractions of EVs. One of the key features of an electric motor is its ability to deliver almost instant torque, making EVs very punchy to drive compared to high octane gas engines.

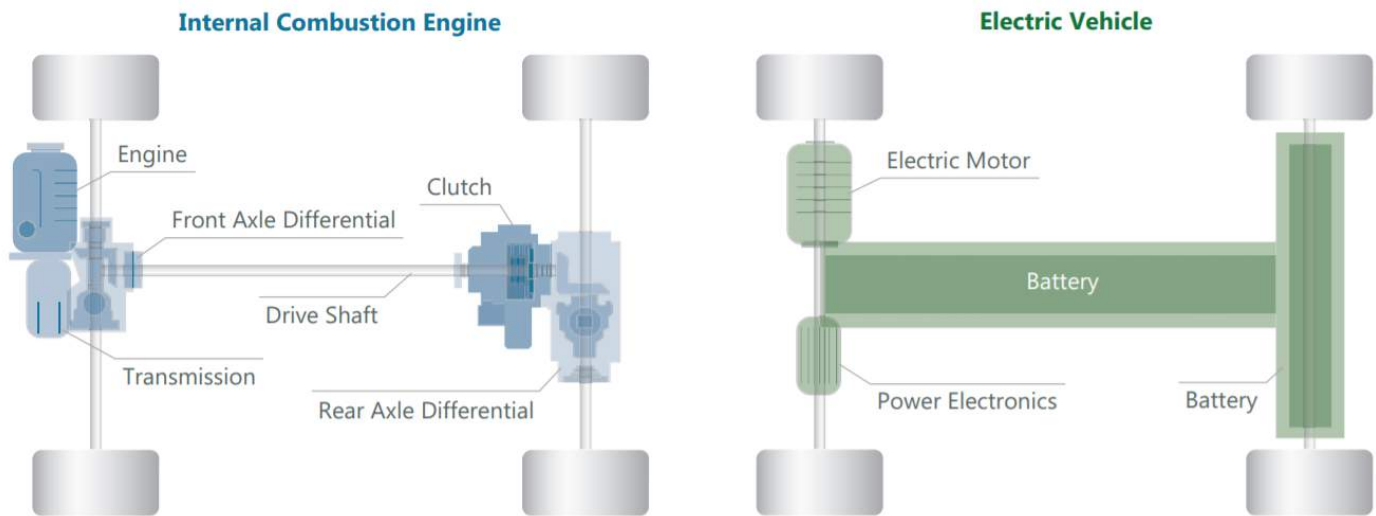
-The Tesla 90PD accelerates faster than \$1m+ gas supercars like McLaren, Ferrari, etc.

-Higher Safety: better handling comes due to the lower centre of gravity in EVs, as electric batteries are located at the bottom of the car. This feature may also reduce the risk of rollovers and makes EVs safer to drive.

-Maintenance costs go down by 10-100x: No need to change engine oil, air filters, or transmission fluid.

-Additionally, a conventional car has anywhere between 2000 moving parts compared to a Tesla Model S which has only 18!

Exhibit 1: Comparing ICE and EV Powertrains



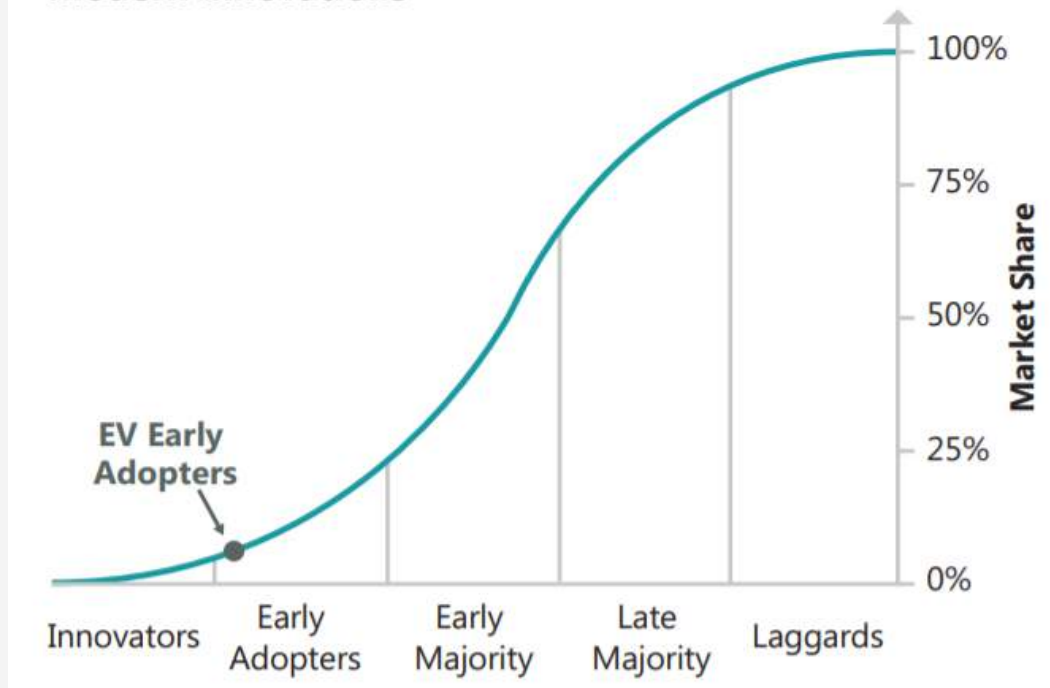
- EV has modular design architecture which means endless possibilities: basically, one can park their car sideways & many more.
- EV Lifetimes range from 2.5-5x that of ICE cars: EV powertrains can last up to 10 lakh miles (compared to ICE which is 1.5-2 lakh miles)
 - This makes a lot of sense for fleet operators like Amazon, Uber, FedEx to upgrade to EVs.

To summarise the above, yes, the future of mobility is skewed towards EV. This is also visible in the electrification targets by global OEMs that plan to sell 30-50% of incremental cars as EVs between 2025 to 2030.

EV adoption is also supported by national policies, targets, and tax breaks around the world. Governments in both developed and emerging markets have implemented tax breaks, rebates, and stringent tailpipe emissions standards designed to get manufacturers and consumers to switch to EVs.

Nonetheless, the point to note here is that with any disruptive technology, there is a tipping point when its path towards market dominance is a certainty.

Exhibit 4: Technology Adoption Curve for Modern Innovations



Currently, as per the adoption S-curve, we still are at the early adopter's phase, what are the issues that need to be addressed to make EV's market share to the next level from a consumer point of view?

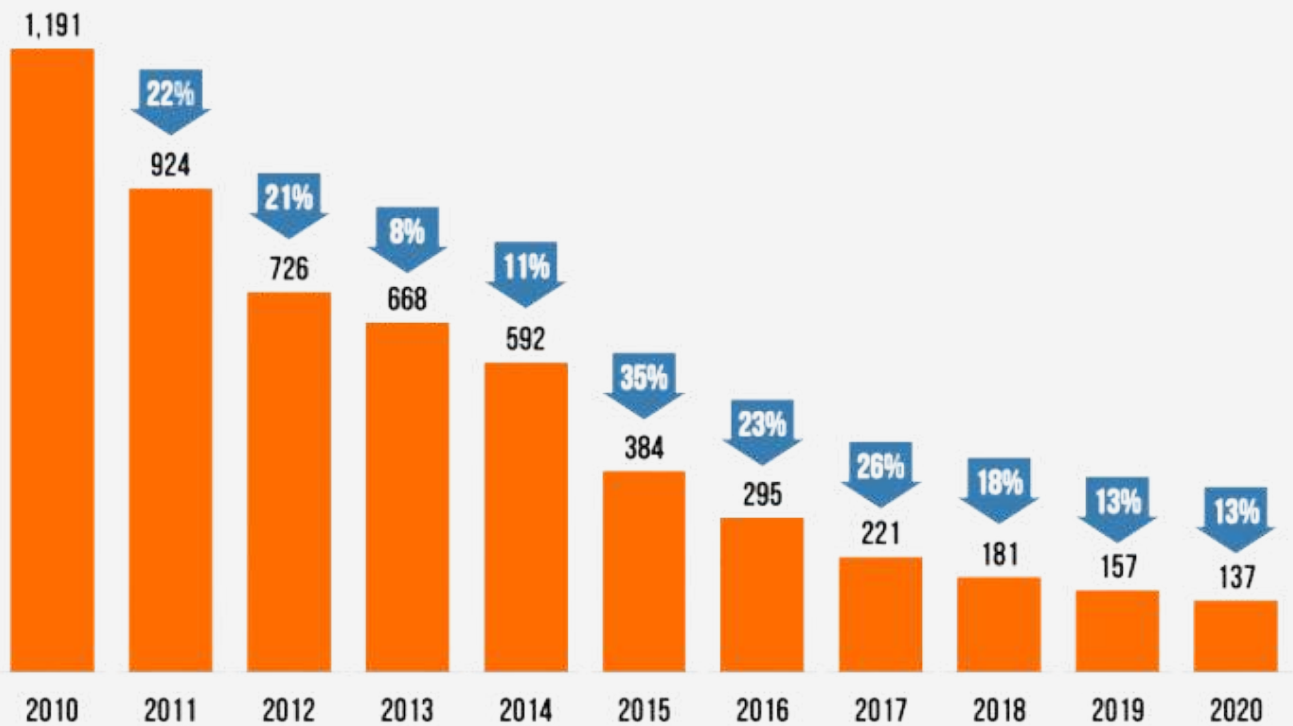
Too Expensive:

-The battery is the single largest cost of an EV and that's why the industry is focused on innovating and scaling to lower the cost of EV batteries: Battery costs per \$/kWh have been on a consistent downtrend.

-At \$100/kWh, EVs reach a pricing parity.

-At \$80/kWh, it likely satisfies consumer preferences for higher ranges & heavier vehicles which are prevalent in western economies.

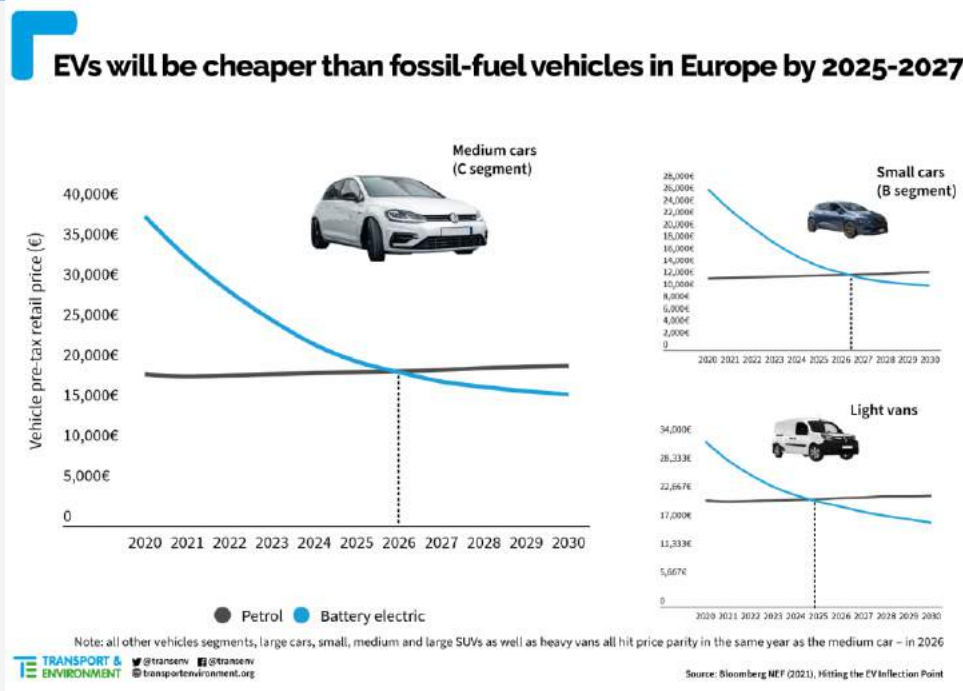
-At \$60/kWh, EVs are cheaper than combustion vehicles in all segments and countries.



Too Short ranged with respect to the pricing

-One of the biggest remaining fears is that of running out of juice between Point A and Point B.

-For all it's worth, according to current estimates, Electric vehicles should be cheaper to buy on average than combustion vehicles in about five years, without subsidies for a similar range.



Too slow to charge:

- Problem is, most public charging stations now fill cars much too slowly, requiring hours — not minutes — to provide enough electricity for an extended trip.
- Automakers are trying to cut charging times to something close to the 5 or 10 minutes of a conventional gasoline fill-up & they have succeeded to some extent where if DC chargers are used, EVs can be filled up to 80% in less than an hour. However, the challenge that we are dealing with here is very expensive DC chargers ranging from 10s of lakhs to a crore.
- The continued investments in super-fast chargers & the technology surrounding them are the key.
 - Only 5K DC fast chargers exist even in the USA at the current juncture & is projected to take it to 100x of this by 2030. Explained well in this video - [The Electric Vehicle Charging Problem](#)
- Additionally, the high cost and heavy load on utility grids likely will limit the number of fast chargers to areas where they're needed for quick fill-ups. The infrastructure improvements required are massive in terms of cost & time even for western countries which must be funded by their governments, otherwise, it's unviable.

Overall, with enough capitalism-fuelled innovations & government support, EVs do have a bright future across the developed economies.

However, we have never been bullish on the Electric Vehicles prevalence in India, & to date, we have been right, Here's why?

1. Starting with the biggest bottleneck of Affordability:

-Indian GDP per capita is still at \$2000, about 5% of that of Europe or Japan; This reduces the ability of a large number of people to buy expensive cars. This is also visible in the size of cars sold in India; where 77% of cars sold are less than 4 meters in length and much lower in cost relative to developed countries.

-Only 5% of cars sold in India have been priced at Rs.15 lakh or more, note that Tata Nexon is the highest seller in Passenger EV & its cheapest variant comes at an on-road price of 15 lakhs. The Addressable market size seems very limited at the current juncture.

2. The sheer lack of sufficient charging infrastructure.

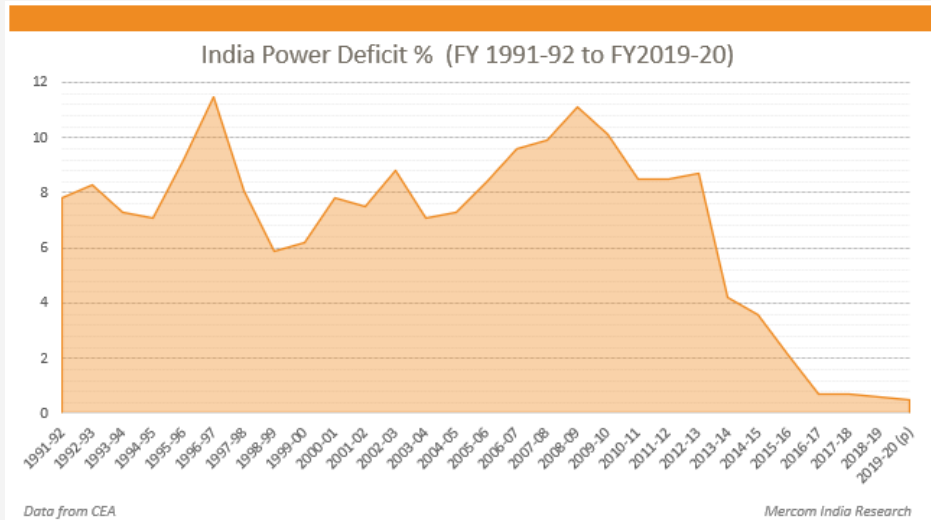
-A report was released recently which claimed that India would need 4 lakh EV charging stations to support 20 lakh electric vehicles on road by 2026.

-A normal DC EV charger only makes money when the utilization on a daily basis exceeds 5 times. In India, the current utilization is anywhere between 1 & 1.5 times. At the current juncture, setting up a charging station is like doing social service. Thus, it is irrational to expect investments from the private sector in setting up EV charging stations.

3. Where is the electricity?

-The Indian subcontinent has continually faced a power deficit for decades on end; even when the deficit % is decreasing for a few years, it raises a big question that will the power sector capacity (skewed towards renewable) be able to keep pace with a burgeoning economy & rising power-intensive sectors like EVs, Datacentres, etc. The continuous supply of electricity in most rural areas is uncommon.

- Currently, As China experiences severe power shortages, the EV sector is struggling to keep pace with the hype around the booming sector.
- Moreover, most of the electricity across the world (more so in India) is generated by burning Coal & Natural Gas; this has to shift gradually to cleaner ways of electricity generation.



4. High dependence on Government subsidies which are limited, however, the latest Fame II subsidies are highly skewed towards only 2W & 3Ws.

-Additionally, in a price-conscious & high-volume nation like India, this is not enough as subsidies will get exhausted much faster than expected & long-term economics will take the driver seat.

Vehicle Segment	Total Funds (₹ Crs)	Max Ex-Factory Price	Incentive per KWh	Max Incentive per Vehicle	Max No. of Vehicles
2 Wheelers	₹ 2,000.00	₹ 150,000.00	₹ 15,000.00	₹ 60,000.00	1,000,000
3 Wheelers	₹ 2,500.00	₹ 500,000.00	₹ 10,000.00	NA	500,000
4 Wheelers	₹ 530.00	₹ 1,500,000.00	₹ 10,000.00	NA	35,000
4W Hybrids	₹ 30.00	₹ 1,500,000.00	₹ 10,000.00	NA	20,000
Electric Bus	₹ 355.00	₹ 20,000,000.00	₹ 20,000.00	NA	7,000

Fame II subsidies.

5. Range anxiety (could only be used for the intracity commute as of now) & charging time (5-10 mins for ICEs vs 4-6 hours for EV) are common problems with respect to global consumers.

6. No captive sourcing of lithium-ion batteries.

Electric vehicles run on lithium-ion or Li-ion batteries that store energy and can be recharged.

When OEMs are betting thousands of crores on setting up an EV manufacturing plant, they want to ensure stable access to good quality cells at the right price & the reliability of the international supply chain is doubtful after the recent semiconductor debacle.

7. The traditional financiers are skeptical about EV financing as it cannot be done in a conventional way.



Key challenges & underlying causes in EV finance.

8. The battery technology that will be used for mass adoption in the future is anything but an enigma at the current juncture.

- Would it be fixed batteries where a charging network will be required?**
- Would it be swappable batteries where one will work on a subscription basis?**
- Will it be a lithium-ion, Sodium-ion, Solid State, or a Hydrogen fuel cell?**

9. Recycling batteries which is the end part of the supply chain needs a lot more research.

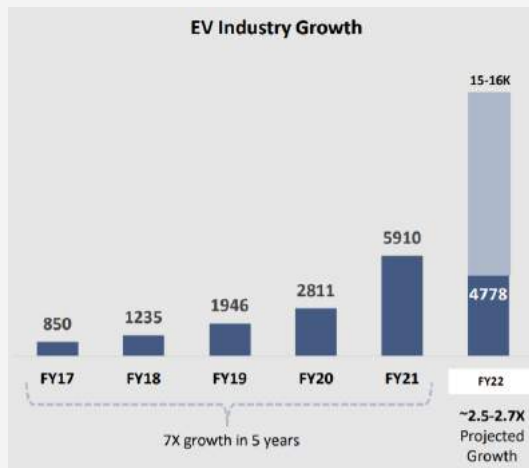
- The battery packs within EVs will make use of lithium-ion cells. If not properly managed or subject to environmental stresses, lithium-ion cells can rapidly release the energy they contain by venting smoke and flames in a manner that can ignite nearby materials as well as other lithium-ion cells.**
- As the penetration of hybrids and EVs is currently low in India, infrastructure and regulations on Li-ion battery recycling are in a nascent stage.**

10. The threat of substitutes like the fast-growing CNG, other bio-fuels, Hybrid technologies.

CNG as a fuel for cars is gaining traction where Maruti Suzuki is growing at 60-70% on a base of lakhs (FY20: 11k, FY21: 1.71k, FY22e: 31k) with pricing similar to conventional cars & operational costs being a 1/3rd of what it costs to run a petrol car. Additionally, the government is making concerted efforts to augment the infrastructure nationwide in the decade to come.



Passenger EV Industry in India

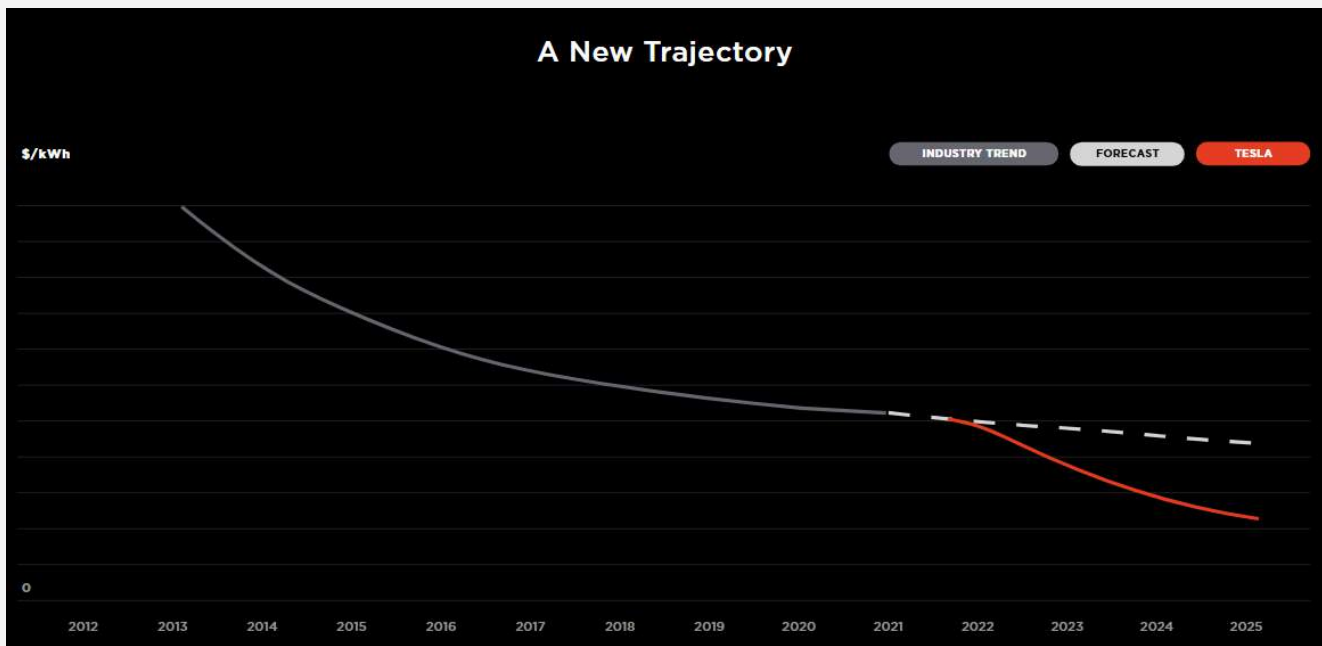


By FY21, it makes up 0.2% of the Indian PV industry growing at 60%.

To reach 10% of the Indian PV industry by FY30, the EVs would have to grow at 75% CAGR from FY21-30.

As Amara's law rightly states, "We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run."; some Anti-thesis pointers (when can we be wrong?)

1. EV pricing goes down at a much higher pace than anticipated.



Efforts to half the cost per kWh for a lithium-ion battery pack by Tesla as presented in its 2020 Battery Day presentation.

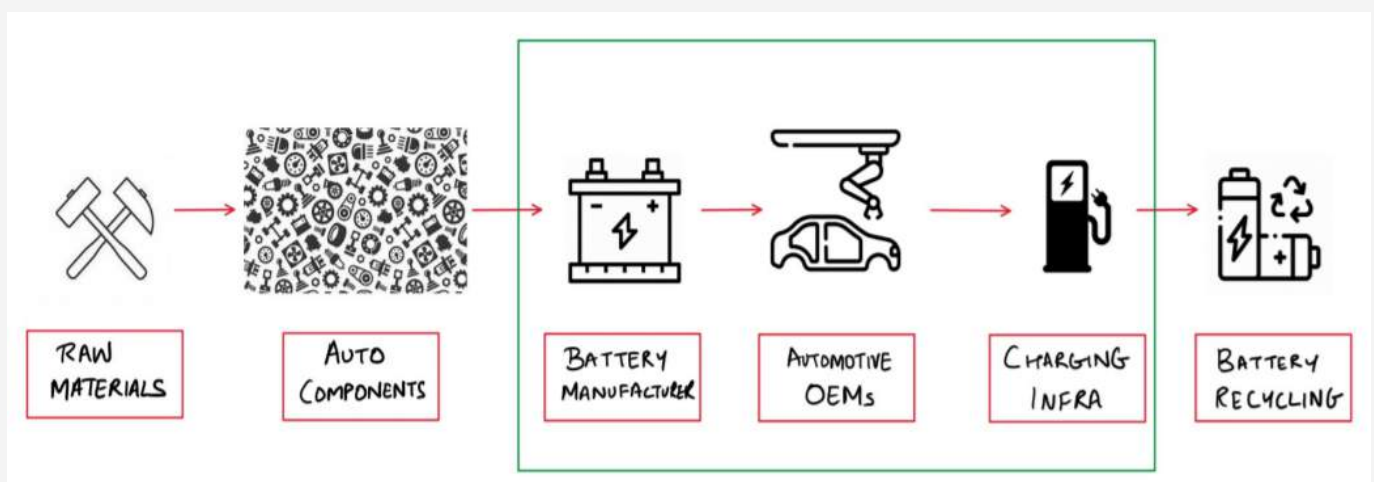
2. Government investments in EV infrastructure become serious in line with the ambitious goals of 15% EV on road by 2030. Good public charging infrastructure is a necessity if the government wants to actually increase EV adoption and, change the perception of people that an EV may leave them stranded.

3. EV financing becomes popular and allows one to convert the whole cost of the EV into monthly payments; even if it is with a higher interest rate, it could make economic sense to go for an EV compared to an ICE.

4. Consumer range anxiety easing as mileage range increases (from improvements to the battery management system, battery density, cost of battery cells, etc).

5. Fleet operators (private & public) start preferring EVs over ICEs due to the cost advantages over the long run.

Finally, Summarising everything, as an investor, where can one bet across the EV ecosystem?



Src- PPFAS

With respect to Raw material providers, Manufacturing OEMs, Battery manufacturing, charging infrastructure; we would go for a cautious view owing to the infinite permutations & combinations that could take place in the years to come. The bankruptcy risk across all companies in this space will be very high, more so in the start-ups as the technology is still in the nascent stage.

“We are very excited about the future of electrified mobility, and the tremendous new products and business opportunities that the green economy will create as we make progress towards achieving our goal of Carbon Neutrality. However, no single company, including Toyota, can accomplish this goal alone.” ~ Toyota Motor Corporations' FY21 AGM.

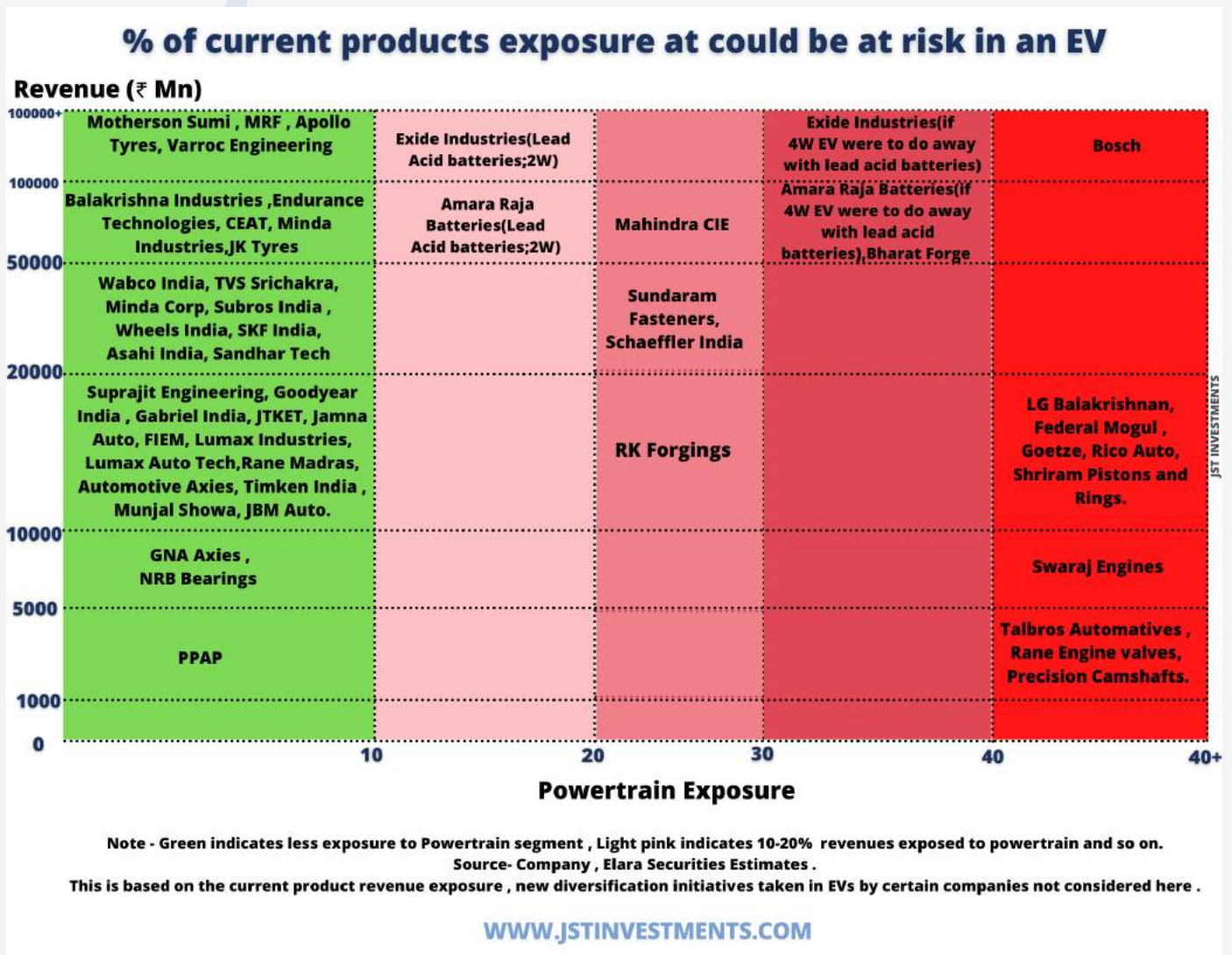
However, when it comes to the auto component manufacturers, they are the real riskless bets when it comes to the onset of EVs; we continue to bet on auto ancillaries that are EV agnostic or do get the benefit of EV due to increased volumes. Most are also available at a reasonable valuation which increases the margin of safety.

	Light weighting	Active Safety	Connected	Electrification
Auto electronics	↔	↑	↑	↑
Lead acid batteries	↔	↔	↑	↓
Bearings	↑	↔	↔	↓
Engine components	↑	↔	↔	↓
Castings	↑	↔	↔	↓
Forgings	↑	↔	↔	↓
Lighting	↑	↑	↔	↔
Suspension & brakes	↑	↑	↔	↔
Tyres	↔	↑	↔	↔

Trends playing out on the Auto Ancillary businesses & how it affects different segments.

(Red: negative, green: positive & yellow: not a substantial effect)

“Though electric mobility is a new technology, apart from cell technology, 75% of the components is an age-old technology with manageable changes in materials and powertrain. India has the expertise in developing electric motors, drive-train components, electronics, and software components, including battery management systems and charging infrastructure. India also has the ability to develop world-class products with the help of global licensing technology transfer to Indian companies or partnership with global technology leaders.” ~ Mr Anil Srivastava Former Principal Adviser, NITI Aayog



Finally, we believe that the above chart is one of the most helpful to any investor in the Automobile Ancillary space, so happy hunting!



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