

# AMEDI Revisited

WITH EMMAAA RELEASING A NEW UPDATE TO THE INDIAN MARKET TWO-WHEELER FORECAST, WE DECIDED TO REVISIT ONE OF THE KEY CONSTITUENTS – THE AVERAGE MOTORCYCLE ENGINE DISPLACEMENT INDEX (AMEDI). WE HAD LAST VISITED AMEDI IN OUR ANALYSIS [HERE](#) AND YOU MAY WANT TO READ IT UP FIRST.

One of the key characteristics that suppliers of two-wheeler component modules should be watching keenly is the average engine sizes. Any change in engine capacities is not an isolated phenomenon. Even a slight jump in the market's average engine displacement by 2-3 cc over a period of time will have a major impact on other component modules. Larger engines will result in increased fitment rates of disc brakes, ~~larger diameter drum brakes~~ rear disc brakes, electric starters, alloy wheels, digital instrumentation, ~~fuel injection systems~~, multiple valves, multiple spark plugs, microprocessors, assorted sensors, headlamp fairings and tubeless tyres.

As we said, if you are a component manufacturer, you should be keeping a tab on the damn engines.

Over the last ten years we have noticed a marked move towards larger capacity motorcycles. Not only are sales of 150 cc segment motorcycles hot, smaller engine motorcycles have also been creeping up the engine size charts. So 97 cc motorcycles now have 110 cc cousins and Honda does not even eff around with 97 cc and the smallest bike with the Wing logo comes with

a 110 cc engine.

Even smaller trends indicate that manufacturers want to offer customers with products sporting slightly bigger engines, an indication that this is what customers wanted all along. So the Axtiva now has a 125 cc cousin, and all 150cc motorcycles are getting 160cc cousins / replacements.

A slightly larger engine is a win-win for both the manufacturers and the customers – the brand gets another model in its lineup while the customer gets a more capable machine, without sacrificing the mileage significantly. Moreover, developing a slightly larger engine is easier if it is limited to reboring an existing one.

## **EMMAAA'S AVERAGE MOTORCYCLE ENGINE DISPLACEMENT INDEX (AMEDI)**

This move towards larger capacity motorcycles is evident when we look at the average engine displacements of motorcycle two-wheeler engines during the time frame 2005-2014 using the Emerging Markets Automotive Advisors (EMMAAA) Average Motorcycle Engine Displacement Index (AMEDI).

Taking the engine displacement in 2005 as 100, EMMAAA indexes the average motorcycle engine displacement for every year subsequently. The AMEDI is calculated as the weighted mean of all motorcycle sales in a period. In simple terms, EMMAAA adds up the engine displacement of all motorcycle units sold in the market in a year and divides the same by the total number of motorcycle sales units in that year.

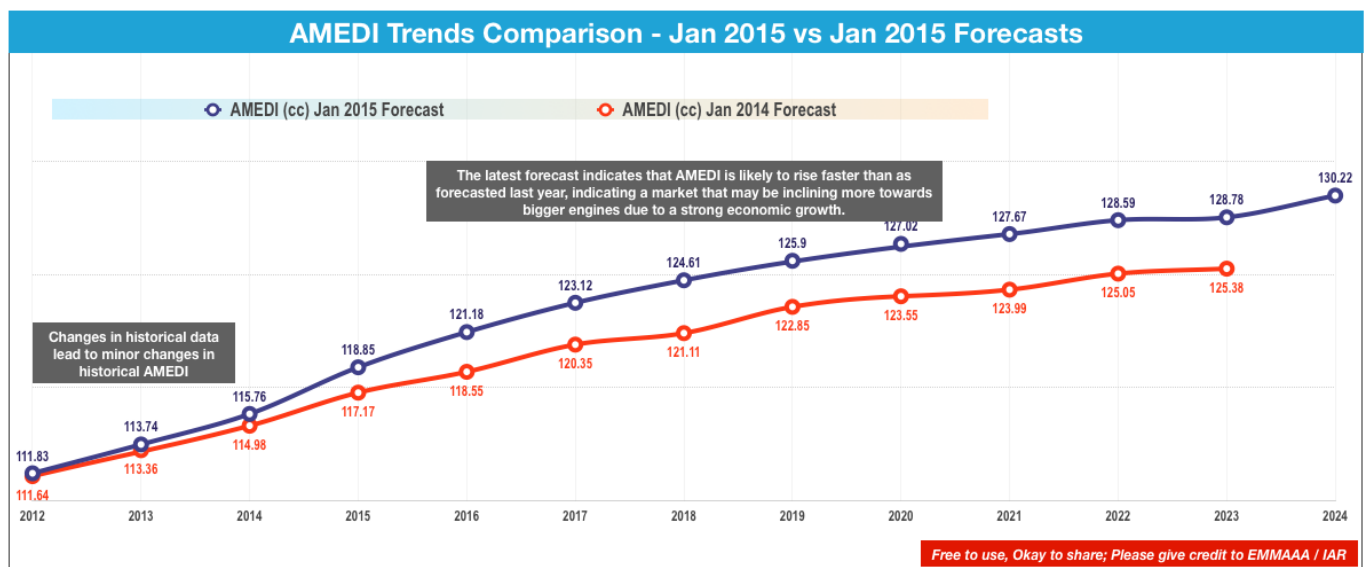
This is the most accurate indicator of customer preference to motorcycle engine size as it is a representative product of the engine displacement and the sales volume.

However, the absolute values of the AMEDI are of much more interest as it provides an estimate to where the motorcycle

busying masses are moving to. In 2012, AMEDI had a value of 111.64 cc. In 2013, the had improved to 113.36 cc and the same has been calculated at 114.98 cc for 2014.

## FORECASTING THE FUTURE

The market is shifting, slowly but steadily. Customers are moving away from smaller bikes (<125 cc or what SIAM fondly calls the B2/B3 segments) towards medium sized (B4-B6 segments) bikes. The B4-B6 segments represent bikes between 125cc-250cc-engine displacements. In 2014, the B4-B6 segments collectively grew by 12.68%, a healthy growth rate by any standard. In comparison, the B2-B3 segments collectively increased sales by only 3.7%.



As motorcycle buyers become aspirational, they demand more power, size, style and features and hence a natural migration is happening towards bigger engine bikes. The move is also driven by an increase in average speeds in urban centres and the improvement of road infrastructure, which mandates the use of motorcycles as transport between two neighbouring towns or between town centres and the outskirts.

The move to bigger capacity engines is also driven by the motorcyclist's desire of self expression, independence and a somewhat misplaced notion of appearing sexy to the opposite sex when astride a bigger engine bike. However, this is a trait more prevalent at the top-end of the market only.

EMMAAA's Indian market two-wheeler model-level forecast plots the AMEDI for the next ten years. Starting from 2012, it is interesting to note that the AMEDI moves in a constant upwards moving curve. There is not a single year between 2012 & 2024 when the AMEDI graph dips, indicating a constant trend of average engine sizes improving in the Indian market. Over the ten year horizon, EMMAAA forecasts that the average engine sizes would cross 125 cc in 2019 and would be more than 130 cc in 2024.

To visualise it better, the average bike in 2019 would be the size of the Honda Shine while that in 2024 would be approaching the Pulsar 135 size.

## HOW HAS THE FORECAST CHANGED

Over the last twelve months, the two-wheeler forecast has received four updates with minor revisions in every round. Plotting the January 2015 and January 2014 forecasts together on AMEDI, it is interesting to note that the current forecast is even more optimistic on AMEDI than the previous year's one. Over the forecast horizon, EMMAAA analysts now believe that average motorcycle engines would be nearly 3.5 cc bigger than forecasted earlier.

An expected stronger performance from the economy is the basis for the upwards revision of the forecast. As economies become stronger and grow faster, prospective customers have more disposable incomes and can splurge on higher capacity machines. The trend is not limited to just a handful of

customers buying niche, high powered machines but is a trend across the spectrum where the customers have a tendency of moving to the higher models because they are in a position to afford them.

## HOW BIGGER ENGINES IMPACT COMPONENT SUPPLIERS

It is easy to visualise how bigger engines change the overall shapes and component requirements of motorcycles. Compare a 97 cc, 125 cc and 150 cc machine today and we see different fitment rates of components like disc brakes, electric starters, alloy wheels, fuel injection systems, microprocessors, various sensors, multiple valves and multiple spark plugs. There are components like alloy wheels which have become nearly universal while electric starters have near 100% fitment rates in the 125+ cc segments. However, disc brakes on the front-end have comparatively low fitment rates in 125 cc segment and near 100% fitment in the 150 cc segment. Again, disc brakes have an almost zero fitment rate on 100 cc segment machines.

The same is the case with rear disc brakes, which make an appearance around 180 cc on the engine size spectrum.

Using the EMMAAA ten-year, model-level forecast of the Indian two-wheeler industry, fitment rates of important component modules can be forecasted confidently. This makes it a valuable planning & strategy tool for suppliers.