

Can India Mobilize its Middle Class and Reduce Emissions?



The Challenge

Tata Motors, an Indian automobile manufacturer has pulled off what was always thought to be impossible - to manufacture a car at below \$2500. This has resulted in joy and hope amongst India's huge middle class population (currently comprising of about 40% of India's estimated 1.1 billion population, of whom 50 million households have incomes between 200,000 and 500,000 rupees or \$4,376- \$10,941)¹.

These developments have caused a lot of heart burn amongst environmental groups who fear the Tata Nano could create an explosive growth in the automobile population. The sheer size of the Indian middle class would only compound the problems of greenhouse emissions and lack of proper transport infrastructure in Indian cities. This apprehension is largely due to the large majority of those now mobilized who are two-wheeler motor-bike owners and many of whom will be expected to upgrade to the Nano which can be easily financed by loans offered by many banks.

The pro-Nano lobby however counters these concerns as being a little preposterous and hypothetical. The basic model of the car when a buyer owns it will cost around \$3300. Also, they blame the environmentalists of being "pro-West" and point out that the West creates a larger carbon footprint with frequent airline travels, households having more than one cars (most of which are fuel-guzzling) and wouldn't want developing economies to reach on par with them through the same route they took.

The Growth of India's Middle Class...and Car Market

Throughout India's history, the vast majority of its people have lived in desperate poverty. As recently as 1985, more than 90 percent of Indians lived on less than a dollar a day. Yet within a single generation, India --and its growing middle-class households in particular-- is poised to undergo a remarkable transformation. This dramatic transformation will touch Indians up and down the income pyramid, from the poorest rural farmer to the wealthiest IT entrepreneur.

India's "seekers and strivers" middle class will potentially reach 583 million from the current 50 million by 2025 if high economic growth (8 to 9 per cent) holds and the government undertakes reforms.

¹ *BusinessWeek* By Diana Farrell and Eric Beinhocker; May 19, 2007

Incomes could triple over this period making India the fifth-largest consumer market by 2025². McKinsey defines this “seekers and strivers” middle class as households with annual disposable income of \$4,380-21,890, which totalled 13 million households in 2005.

Of course, many of India's new consumers still have relatively modest means. Despite rapidly rising incomes, average spending will still lag behind countries such as Indonesia. Like China's, India's market will be based more on volume than on per capita spending. While luxury-goods makers may be able to sell to India's global consumers with little modification to their products, those selling to India's new middle class will need to be innovative to square the difference between the rising aspirations of consumers and their still-modest pocketbooks.

One such company that is squaring the difference is Tata Motors, India's leading auto manufacturer, which intends to introduce the Nano, the world's first "Rs. One lakh" (\$2,100) car. Historically, a new car was out of reach of the vast majority of Indian households. But as incomes rise, car prices fall and financing becomes available to more people, a huge pool of pent-up demand will be released. In a tie-up with the State Bank of India, car manufacturer Maruti (majority-owned by Suzuki) is now offering customers the chance to buy one of its cars with lower monthly payments than if they were buying a motorbike.

From Two to Four Wheels

With a growing economy and the basic standards of living being accessible to more Indian people, it is only a natural consequence that people would prefer to upgrade to a better quality of life. Such folks naturally see the Nano as a panacea to their everyday transport problems. Lack of an effective, mass public transport system, shelter from the elements (rain, sun, wind, etc.), and the option of commuting with kids, spouse in addition to comfort of ride are the many reasons cited to upgrade to a car instead of the ubiquitous motor-bike. The automobile market segment that Tata Motors will be primarily targeting the 2-wheeler motor bike segment which comprises of more than half of the vehicular population in India and continues to grow by 15% every year. Over the next 20 years, we expect to see spending on cars growing by 12 percent per year. To put it in perspective, domestic car sales topped 1 million units in 2006/07. Initial reports suggest that a minimum of 10% of this segment would move to purchase a Nano, but even that remains a gross under-estimation considering the easily availability of loans which finance vehicle purchases is in India.

The Nano and India's Energy Needs and Environmental Challenges

While more Indians will enjoy the freedom of their own transport, it's not hard to imagine the impact on the nation's need for energy and on the environment, including on global greenhouse gas levels. India currently ranks sixth in terms of primary energy consumption, accounting for 3.5% (2.7M barrels per day) of the global commercial energy demand with an ever rising demand. This in turn has led to energy related CO₂ emissions which have been estimated at 1,112.8 million metric tons (mmt) compared to the US' 5984 mmt in 2007³.

Though improved quality of life is a legitimate aspiration, the cost to the global environment in terms of greenhouse emissions isn't small with India's energy demand projected to double in 2030 from its present levels. It is also a matter of concern cause India along with the US, China and Russia will contribute to nearly two-thirds of increased CO₂ emissions by 2030⁴. Also, India's rate of CO₂ emissions output is projected to grow faster than any other region.

² BusinessWeek By Diana Farrell and Eric Beinhocker; May 19, 2007

³ Economic times: Meeting India's crude oil need; Deepti Sethi; 29 Apr, 2008 and the website of Energy Information Administration Official Energy statistics from the US government <http://www.eia.doe.gov/environment.html>

⁴ World Energy Outlook 2007

http://www.climateactionprogramme.org/features/article/world_energy_outlook_2007_china_and_india_insights/

Statistics from the Indian Automobile Association rate India as the second fastest growing market for cars (14% CAGR) globally which will lead to an incredible surge in fuel consumption and CO₂ emissions in the next few years⁵. Currently transportation accounts for a fourth of greenhouse emissions in India⁶

However, the Tata Nano, which uses a diesel engine of 30 hp (the same output as the legendary PSA Peugeot Citroën 2CV, but with much lower CO₂ emissions), could transport four passengers with per capita emissions of about half those of its nearest European or Japanese rivals, and at less than half the price⁷. A small car produces an average of 140g/km of CO₂ emissions.

Ready Reckoner (Source: CSM Worldwide, April 3, 2008, Global Analysis)

India's economy will continue to grow at a brisk rate as its per-capita GDP increases 286 percent, to \$2,900, by 2030. Wealth will be comparable to today's Russia or Turkey. The key considerations: population and middle class will expand, driving demand for an additional 200 million vehicles over the next 20 years and triggering light-vehicle production growth of 16 percent per year.

-- Low-cost, low-content mini-cars and subcompacts (A and B segments) will dominate the market as consumers move up from scooters and motorcycles into their first cars. A contributing factor is the lower excise tax on small cars - 12 percent, compared to 24 percent for larger vehicles.

-- Vehicle penetration is expected to reach 166 vehicles per thousand people by 2030.

-- India's working-class population group is growing at twice the rate of China's.

-- Domestic production for light vehicles is likely to cross five million by 2014; Tata, with its much-heralded \$2,500 Nano mini-car, will challenge Maruti Suzuki for market leadership.

-- Diesel engines will gain market share as new technology is adopted to take advantage of India's high price differential for diesel fuel.

-- Economies of scale, coupled with a well-developed supplier base featuring a competitive cost structure and quality meeting international standards, will position India to become a global centre for the design, development and export of small cars and components.

-- The success in using India as a small-car export hub enjoyed by Suzuki and Hyundai is encouraging other OEMs, including General Motors, Nissan and Toyota, to move more small-car, design, development and production there.

On its part through carbon trading projects under the Clean Development Mechanism (a market driven device under the UN Framework on Climate Change that allows industries in developing countries to get funds to make their plants and production facilities a bit greener), India can avoid more than 5 million tonnes of carbon by 2012 —cutting down 10 per cent of the country's greenhouse gas emissions every year.

The Indian government on its behalf has already introduced stringent norms (Bharat Stage IV which is more stringent than the Euro IV norms) for new and existing vehicles, but it definitely cannot bring in legislations which restrict a car manufacturer to limit production to only a certain number or restrict its citizens to buy a car (or in many cases more than one car), especially in a nation where populist policies are the norm. Despite these road blocks from various ends, the Tata Motors have gone ahead with production in addition to exploring other alternative technologies for its automobiles and have also signed an agreement with MDI, France towards manufacturing eco-friendly cars that run on compressed air with zero emissions⁸.

⁵ Need of the hour! <http://www.greenpeace.org/india/press/releases/fuel-efficiency-law-need-of-th>

⁶ <http://www.rediff.com/money/2007/dec/26debate.htm>

⁷ <http://www.ethicalcorp.com/content.asp?ContentID=5480>

⁸ <http://news.bbc.co.uk/2/hi/science/nature/7243247.stm>

Thus, in spite of assurances by the Tata Motors that the car adheres to Euro IV norms, there has been skepticism whether the Euro IV norms will be adhered to after a few thousand kilometers of driving, especially with the conditions of Indian roads and the near-zero maintenance of Indian car-owners.

The car is expected to deliver a mileage of 20 kms/litre (the maximum quoted in the small car segment in India- Maruti Suzuki gives ~14 kms/litre), but considering that a motorbike gives an average of 60 kms/litre, would this be a valid proposition for a person shifting from the two-wheeler segment to four-wheeler? Car-pooling may be an option, perhaps taking off two to three 2- wheeler riders for a Nano which could seat four people or five at the most. Though in today's Indian cities, with each individual having varied work schedules, the concept of car-pooling, to save fuel-costs and lessen the traffic on the roads, is still in its nascent stages. Another spin-off from car-pooling would also be that the per-capita emissions of CO2 would definitely be lower when compared to two to three 2-wheelers on the roads. Thereby, comparing a motor-bike with a car may not be entirely unfair when the segment shift is targeted at a 2 to 4 wheeler segment.

Another aspect of the debate, accuses the environmental groups of being partisan to the West, most of whose households have at least two cars and can afford cars and fuel-guzzling SUVs. Dismissing the debate as one of conflict between idealism and pragmatism, the pro-Nano lobby points to the USA not having ratified the Kyoto protocol, the airline industry contributing most to pollution and unjustly making scapegoats of the automobile industries in developing nations as well acting elitist. The argument thus condones developing countries like India and China, suggesting that even if a moderate percentage of their population begins driving cars, their economy would blossom. Not only would this create a huge number of jobs via car manufacturers (cars which they would eventually export), but would enable jobs in every market to expand their search for employees, eventually leading to the suburban style cities like those in the U.S.

According to this argument, mass production and usage of cars in India may cause a short term rise in environmentally unfriendly gases, it is a necessary shift in the development of the economies.

Other Social and Economic Impacts of the Tata Nano

The new manufacturing facility of the Tata Nano, at Singur, West Bengal has been at the center of an intense war of words between the government and the opposition over compensation given to the farmers from whom the land was bought to build the facility. Chiding the government for compensating the farmers with less than commensurate market prices for the land and not allocating alternative lands, the opposition blames the government for displacement of entire families to inhospitable places. The government, on its part, refutes all the claims.

Unfortunately, the agitations and protests which arose due to the above issues, forced the Tatas to shut down the facility indefinitely fearing the safety of their work force.

Karnataka, the state for which Bangalore is the capital, now seems to be the alternative location for the Tatas who already have an automobile manufacturing facility here in Dharwad. Currently talks are on between the State Government and the Tatas with it looking more likely with every passing day that Karnataka will be the state from where the first Nano rolls out. Bengal's loss might just be Karnataka's gain.

Another factor acting as a catalyst towards people leaning towards buying a Tata Nano is the condition of infrastructure across India, especially its cities. Despite the government setting up many infrastructure financing companies (Infrastructure Development Finance Corporation (IDFC), Infrastructure Leasing and Financial Services (ILFS)) and earmarking huge amounts (to the tune of millions of dollars as well as ensuring credit from the World Bank and other monetary agencies) in the yearly budgets, the projects (Metro Rail, Mono Rail, etc..) have seemed to take decades to near completion (projects which would

take less than a couple of years in the West). This is largely due to a single most distinguishing factor in India- its bureaucracy which is deep into red-tape and inefficiency. Thus, with no other reliable and good public transport system from the government, it is inevitable that citizens will buy the Nano, despite clogged city roads and choc-a-bloc traffic.

Thus, there are lots of uneasy questions that need to be answered

- how can the vast middle class be dissuaded from shifting to more polluting means of transport?
- could one be persuaded to car-pool?
- lobby for better mass public transport systems?(their timings, reliability and efficiency always remain in question going by experiences of cities having Metro rails and public transport)
- persuade the government to provide better road and rail infrastructure?
- could Tata Motors be persuaded to look towards developing the compressed air car in quicker time?
- would the quality of air and life get worse with the exponential rise in car emissions that will be seen in a few months?
- would money and financial security override care towards the environment and protection of the future generations?

These are just a few of the many questions that continue to remain unanswered in the run-up to the Tata Nano hitting the Indian roads later this year.

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