

Rising debt

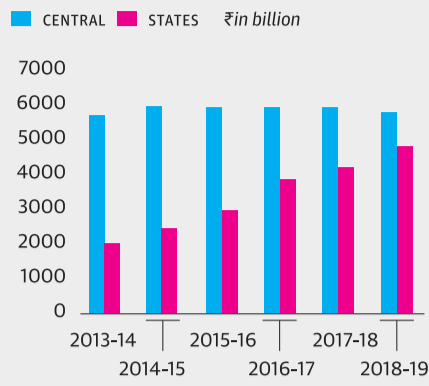
Government borrowing has steadily increased over the last five years. Cumulative borrowing by the Centre and the States has risen from ₹7,601 billion in FY14 to ₹10,493 billion in FY19. While the Centre's share has remained fairly constant during this period, borrowings by State governments have risen with each passing fiscal year.

By **Sumanth Sen**

Source: RBI, CARE Ratings

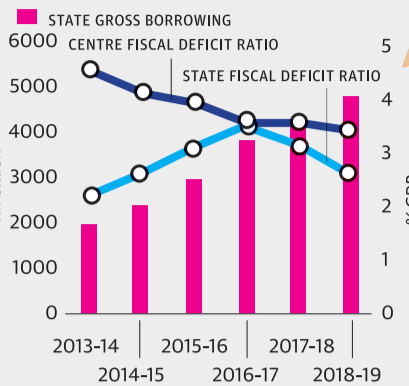
LION'S SHARE

The rise in government borrowing can be attributed to the States since their share in total borrowings has grown successively from FY14 to FY19. In this period the amount borrowed by the States has jumped by 143%



CHANGING FORTUNES

The State fiscal deficit levels increased until FY17 and declined subsequently in the next two years. However, their gross borrowings increased continuously over this period. Fiscal deficit of the Centre has seen a steady fall



HOW MUCH?

The 15 States in the table account for 90% of the total State borrowings. While Maharashtra's share fell sharply, the proportion of borrowings by Gujarat and Chhattisgarh grew the most

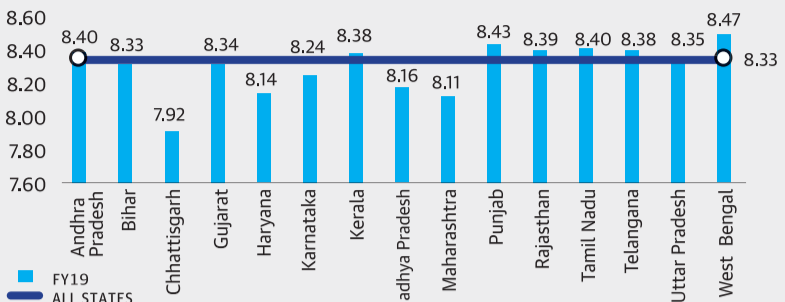
Borrowings by select States (% share)

State	2016-17	2017-18	2018-19
U.P.	10.7	9.6	9.6
T.N.	9.8	9.7	9.0
W.B.	9.0	8.2	9.0
Karnataka	7.3	7.8	8.3
Gujarat	6.5	6.9	7.7
Rajasthan	4.2	7.4	6.9
A.P.	5.1	7.3	6.3

Telangana	5.7	5.9	5.6
Punjab	3.6	4.7	4.6
Maharashtra	4.1	4.1	4.4
M.P.	10.5	5.0	4.4
Kerala	4.2	4.2	4.3
Bihar	4.5	4.6	4.1
Chhattisgarh	1.6	2.2	2.7

COST OF BORROWING

In FY19, the average cost of borrowing for all States was 8.33%. Chhattisgarh saw the lowest weighted average yield among all other States at 7.92% while West Bengal had the highest at 8.47%



Singapore transport has an electric future with a hybrid twist

The city state is working with Volvo Buses on a technological leap that will lead to the roll-out of driverless buses

G. ANANTHAKRISHNAN

Singapore is famed both for its car-lite approach that discourages ownership of personal vehicles, and the steady expansion of its public transport system over the past three decades. The city state is now working on the next big technological leap that will potentially lead to the roll-out of driverless, fully autonomous buses in partnership with Volvo Buses.

The first trials in this race to autonomy are taking place on the smooth macadam of CETRAN, a comprehensive test centre for autonomous vehicles operated by Nanyang Technological University (NTU Singapore). Here, a Volvo 7900 series electric bus equipped with light detection and ranging sensors (LIDARS), stereo-vision cameras to capture 3D images, and a global navigation satellite system moves along test 'roads' with 'hands-free' technology in the driver's seat. It effortlessly turns at curves, and stops at traffic lights.

There are two Volvo autonomous electric buses in the trials conducted by NTU scientists. The second one is undergoing tests at a bus depot managed by local transport operator SMRT.

Smart nation status

The quest to develop autonomous vehicles is global. NTU President Prof. Subra Suresh told journalists invited by Volvo in Singapore that the country is working to be a leader in the development of autonomous vehicles, and is best placed to do so because of its goal to be a smart na-

tion, its advanced infrastructure and commitment to smart technologies.

The NTU president said many companies were actively working on autonomous vehicles. "Mercedes Daimler, BMW, Tesla have sophisticated technology, and there is Waymo [Google's project]. There are even discussions about Apple in this technology. Many universities do research. Uber and Lyft are both developing technologies for autonomy," said Prof. Suresh.

Akash Passey, senior vice president, Region International, Volvo Buses, said "Volvo is proud to have launched the world's first full-size autonomous electric bus. It represents the future of mobility."

Volvo's partnership with NTU and SMRT to test AV technologies stands out because it is a setting far from Sweden. It was made possible by the seamless links that exist in Singapore between academic institutions and the country's Land Transport Authority. There is also a strong electricity grid and an Information Technology backbone.

"There are significant challenges to the development of fully autonomous vehicles not just from a technological viewpoint, but on questions such as liability, insurance and social consequences

for countries with large disparities and inequalities," according to Prof. Suresh.

For Volvo, Singapore offers not just the test bed for new autonomous vehicle technologies but represents a market for development of the entire transport core.

Hybrids shine

"While the bus undergoes trials in Singapore, we have also delivered hybrid buses in keeping with Singapore's well-thought out e-mobility journey," Mr. Passey said.

The company has delivered 50 hybrid buses that run on both electricity and diesel, bringing down emissions and noise, cutting operating costs and raising efficiency.

Singapore has a 198.6 km urban rail network and an organised taxi fleet of 23,410 vehicles.

Its Land Transport Authority is looking ahead with Transport Master Plan 2040. New generation buses made up of a mix of clean diesel single and double deckers

and e-mobility is expanding with a small fleet of hybrid buses. Electromobility, comprising full electric and, potentially, autonomous vehicles is on the cards.

India is evolving its own public transport system, and Singapore provides a comparison at some levels. Here, Mr. Passey thinks there is an opportunity to dramatically expand India's infrastructure using urban bus systems: using clean diesel BS VI buses, hybrid buses that run on both electricity and diesel, and full electric buses as islands of excellence.

Welcoming the outlay under the FAME-II plan (Faster Adoption and Manufacture of Hybrid and Electric Vehicles), which, among other things, would help acquire over 7,000 full electric buses using the outlay of ₹10,000 crore, he said the right outcomes would come with a roadmap in place.

"From expe-

rience, I think [the shift to] BS VI fuel is good. We should not write off hybrids, because there is no infrastructure required for hybrids. While Singapore has recently inducted hybrid buses, many countries including India want to skip hybrids, and everybody wants to jump to electric. In India we are still going for BS VI and electric, but in many countries they don't have even Euro 3 but they say we will put in an electric bus. You cannot jump from 0 to 100," Mr. Passey said.

The economics of hybrid buses make them comparable to those running on clean diesel.

"Till about four years ago, the hybrid bus also had to be subsidised. Today, around the world, the hybrid is a commercial success. Fuel efficiency, based on how you drive, is 35-40% over diesel, and the price can be 1.5 times that of a

conventional bus, or 30 to 50% higher. But it pays back early because of the fuel efficiency. An electric bus is still an expensive proposition and is not a business model in itself without significant government subsidies. Almost 50% or more can be the cost of the battery. Meanwhile, the scope for buses running on clean diesel as per BS VI norms continues to be significant," according to Mr. Passey.

Volvo launched hybrids over a decade ago and has sold more than 4,000 electrified buses globally. E-mobility requires a collaboration that includes the government, traffic authorities, bus manufacturers, operators and charging system providers, besides the real estate sector and academic experts, he added.

Singapore operates over 19,000 buses, of which about 6,000 are public, each averaging 227 km per day. This represents the second highest fleet utilisation worldwide. The small nation with distances that do not exceed 40 km has 2,200 double deckers, the majority of them supplied by Volvo, including its newest B8L model.

(The writer was in Singapore at the invitation of Volvo Buses)



Coffee Board takes tech route to help growers boost yield

Apps fed with data help forecast weather, predict leaf rust

M. SOUNDARIYA PREETHA

For the 3.5 lakh coffee growers in India, 98% of whom are small-scale, challenges affecting production include labour shortage, climate change and pest attacks.

One way to manage these is by adopting technology, which the Coffee Board is trying to bring about for the growers.

Last year, Eka Software Solutions took up a pilot project for the Coffee Board of India on machine-learning based applications. According to Shuchi Nijhawan, vice president - agri business for Eka Software, the Board and the company took up three areas to try machine learning based apps. One was addressing the white stem borer problem, another was weather forecasting, and the third, predicting leaf rust.

Machine-learning

"Based on the data, photos provided, we created a machine learning algorithm to forecast each of these issues (for a grower). We worked with 20 liaison officers of the Board and they coordinated with the growers.

"The success of the app depends on the data fed in. In the case of white stem borer, the growers and the Board have validated 90%



App-solutely smart: In the case of white stem borer, growers and the Board have validated 90% accuracy. ■ REUTERS

accuracy," she says. Eka's digital platform for agriculture aggregates data from different sources and applies the algorithm to provide insight to the coffee growers.

GREEN SHOOTS

Srivatsa Krishna, chairman of the Coffee Board, adds that though there is no exact data, it is learnt that in the last 10 to 15 years white stem borer would have brought down Arabica production by 25-30%. "The growers do need solutions for such issues."

"Despite the Coffee Act having been around for more than seven decades, farmers have zero technology. The only way to increase productivity is by bringing in technology," he says. Even before smartphones became

popular, coffee growers had checked prices on the London and New York exchanges almost on a daily basis. Hence, adopting technology should not be difficult for them. The Board has plans to scale up the analytics technology for adoption by more farmers.

Currently, 90% of the estates depend on labourers for most of the work and there is not much technology adoption among coffee growers in cultivation or to increase production.

"If someone is ready to do it [technology] for us, we will adopt it. It will help increase yield," says Sundar Subramanian, executive director of Mother Mirra Coffee Plantations. Ms. Nijhawan says the company is exploring partnerships for other crops too.

INTERVIEW | DHEERAJ HINDUJA

'Liquidity must be strengthened for NBFCs'

Search for CEO is on, the board should decide on this in a few months, says Ashok Leyland chairman

K. T. JAGANNATHAN
K. BHARAT KUMAR

The Hinduja group's flagship company Ashok Leyland Ltd.'s (ALL) search for a CEO continues. Meanwhile, chairman Dheeraj Hinduja says things are in control. In an interview, he also dwelt on the challenges facing the commercial vehicles industry. Excerpts:

When can we expect a new CEO for Ashok Leyland?

■ Our objective is to ensure that the transition is smooth. Whilst the search for a CEO is on, we are not rushing it because the team is well structured; the business leaders are good, the functional leaders are good. Seeing where the organisation is today, we said we'd do the external search, look at internal candidates and as and when we find the right candidate, we will go ahead.

That does not mean that this is a never-ending process. The board is very much on to this. I hope within the next few months, we should have someone in place.

Isn't a CEO's absence constraining your firm?

■ Not at all. We have our business heads, we have the operations supported very strongly by the back end and product development. They report directly to me. I am familiar with the objectives we have for the company. So, I do not see any disruption as far as the organisation is con-

cerned and the direction we are taking, as well.

What do you find attractive in Jet Airways to consider acquiring it?

■ I wouldn't comment on Jet, but as a family, we always look at different business opportunities across sectors. You will notice that many business families are geared towards one or two sectors. We are involved in 10 different sectors. We are constantly also looking at what the future businesses are going to be. In the last 2-3 years, we have got into cybersecurity, renewables...

So it's ever-evolving. As and when something new comes about, it's not that we will always invest in it, but we evaluate options and see if it makes sense. In that sense, some businesses are more visible and they come out more openly. Others are done more discreetly. So we may have a minority shareholding, but we will have shareholding.

We have remained a private group so not all of our investments are visible.

India is a destination - with a strong government today - that everyone is looking at.

How does the business environment look?

There is relief that there is a stable government. Every business wants stability. What a majority government brings is the ability to push through reforms faster.

In CVs, first and foremost, they must make sure that banks and NBFCs are put back [strongly]. They need to be strengthened in terms of liquidity. They have also talked about merging some of the stronger banks as well. Infusing liquidity into the economy is important.

Perhaps, along with this, reduction of interest rates will propel [liquidity]. There is a requirement for infrastructure in India. So if the government is able to attract

further FDI and keep projects available for bids, the whole process can be a lot quicker.

Of course, road construction has been happening - it has moved from 11 km a day to 25-odd km per day... immediately, the movement of traffic and the pace with which they can move back and forth, has increased. That has been a major relief.

One other thing that can help our industry is the scrappage scheme. I was pleased to see that already, there has been a discussion on the auto policy.

If scrappage comes in, it not only helps pollution, it eases fuel requirements. As a country, we are dependent on oil [imports], the scheme will improve fuel efficiencies of our products and reduce imports. That should give a fillip to this industry. They have talked about extending this to cars too so it would help the whole auto sector.

Should the government give industry more time with regard to policy changes?

■ In an ideal world, if we had the benefit of an auto policy which really laid out what changes the government requires - this is an area that SIAM has been working on as well - it would be a lot

Reliability is based on Excess Wait Time experienced by commuters

The bus network in Singapore aims to provide commuters a safe, reliable, convenient and comfortable service. This is made possible by adopting high maintenance standards under a regulated and collaborative model.

Volvo Buses, which has supplied about 2,000 buses to the city, geared itself to meet the high operating standards of the Land Transport Authority. Uptime, which is key to operations, is ensured through Volvo's service partner ComfortDelGro Engineering (CDGE), since July 2000.

CDGE has assembled about 1,800 bus bodies for Volvo, while SBS Transit, also part of ComfortDelGro's group operates buses of Volvo as well as other makes. CDGE uses a predictive protocol to prevent bus breakdowns. The legally mandated life of a bus in Singapore is 17 years.

There is a periodic upgrade of buses, and a life cycle curve tracks a vehicle's progress. CDGE services include warranty repair support, accident repair, parts sales and component re-manufacturing for all four bus companies in Singapore, the CDGE Chief Executive Officer Ang Soo Hock said.

In Singapore, a Bus Contracting Model (BCM) was first introduced in 2014 by the Land Transport Authority (LTA) to be more responsive to changes in ridership patterns and commuter needs. LTA owns all public buses and related infrastructure and retains fare revenues, while operators are paid to serve bus routes. Commercial vehicles in public transport go through two inspections a year and customer satisfaction is assessed through official surveys.

SMRT, another of Singapore's four public transport operators, highlights reliability as being key to its service standards. "SMRT is committed to deliver a positive experience to commuters - one that is safe, reliable and comfortable," said Tan Kian Heong, President, SMRT Roads.

Reliability is measured by Excess Wait Time which is the commuter's waiting time. The service is reliable if the bus arrivals at each stop become more regular and more evenly spaced, with less bunching.

As part of a planned transition, Mr. Tan Kian Heong said, "we will need to replace operator-owned buses that have reached end of life with new government-owned buses. As route packages get awarded, some of the buses operated by us may be transferred to other operators and vice-versa."

Another area is factory-built cabs, which has also been discussed. We are constantly under this uncertainty, whether the government would do it immediately. So you have to keep capacity and product plans ready. But if we are given a time frame, then we can optimise resources better, prioritise on other areas. It's like always being on your toes to make sure you meet up.

