

“Impact of Demonetization and BS-III Vehicles Ban on Indian Automobile Industry”

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Abstract: Post the announcement of demonetization, the currency in circulation has declined sharply which has hit the cash dependent sectors hard. Some of the sectors which are more dependent on the cash for dealings are Real Estate, Jewelry, Automobile, etc. According to an ICRA report, the liquidity crunch following demonetisation resulted in volume compression of 11.3 per cent in the automobile industry during the period of November 2016 – January 2017 over the corresponding previous period. BS-III ban, was another move which had disturbed automobile sector. The Ban on BS-III vehicles lead a huge impact on automobile industry as the announcement was made in 2-3 days before the financial year ending; when many auto companies were left with huge inventory. Many of BS-III vehicles are sold out at heavy a discount which has affected the profit margin of the companies. The big challenge before companies was to overcome the impact of BS-III ban. In this paper an attempt is made to understand the impact of Demontisation as well as BS-III ban on Automobile industry and the companies' ways of looking at both initiatives taken by the government to reduce the impact. Auto sales across all segments were impacted with the government decisions during third and fourth quarter. Discounts and exports were the some of the steps taken by the companies to overcome this problem.

I. INTRODUCTION

The Indian auto industry is one of the largest in the world. The automotive industry accounts for 45% of the country's manufacturing gross domestic product (GDP), 7.1 % of the country's GDP and employs about 19 million people both directly and indirectly. The Indian automobile industry had seen many changes in recent year but the biggest change is observed when Government announced the ban on Rs 500 and Rs 1000 denominations. Post the announcement of demonetization, the currency in circulation has declined sharply which has hit the cash dependent sectors hard. Some of the sectors which are more dependent on the cash for dealings are Real Estate, Jewelry, Automobile, etc. The industry felt the heat of denomination and recovery was witnessed after some time.

BS-III ban, was another move which had disturbed automobile sector. BS-IV for 13 metro cities was introduced

in April 2010 and the Nationwide implementation is also now completed with Supreme Court banning the sale of all BS-III vehicles in India from April 1st, 2017. The Ban on BS-III vehicles lead a huge impact on auto mobile industry as the announcement was made in 2-3 days before the financial year ending; when many auto companies were left with huge inventory. In the study recent changes in policies and Ups and downs in Indian Auto Industry during 2016-17 have been discussed. Here an attempt is made to understand how both Demonetisation and BS-III ban have impacted the automobile industry.

II. OBJECTIVES

- To examine the Impact of Demonetization on Automobile Industry.
- To examine the Impact of BS-III Ban on Automobile Industry.

III. NEED OF THE STUDY

Indian government's bold move to invalidate large currency denominations in November has led to a severe liquidity crunch across the nation for over two months. In our economy where dealing in hard cash is deeply entrenched, this has invariably resulted in slowdown across several sectors. The automotive sector is one among several other cash-starved sectors which has impacted with demonetization decision and slow in transition to normalcy. Two-wheelers (2W), commercial vehicles (CV) and tractor sales took a significant hit. The Indian two wheeler industry is slowly recovering from a liquidity crisis brought about by demonetisation. According to an ICRA report, the liquidity crunch following demonetisation resulted in volume compression of 11.3 per cent during the period of November 2016 – January 2017 over the corresponding previous period. The industry seems to be limping back to normalcy with the impact of demonetisation becoming moderate by smaller volume contraction in forthcoming months.

On the other hand, Automobile industry perceived the supreme court dictate on BS-III Ban, a 'shock and awe decision'. But just a back-of-the-envelope calculation showed the ban will impact less than 4 percent of the industry's production in the 11 months of the fiscal. The ban on BS-III vehicles will impact at different areas such as dealers and companies profit. Earning margins peaked at 7.3 per cent in 2015-16 and were trending 2 percentage points lower in 2016-17 because of subdued sales and rising raw material prices. CRISIL forecasted that, Earnings margins for two-wheeler makers would see 1.5 – 2.0 percentage point erosion in the fourth quarter. Margins for listed two wheeler players have trended 0.4 percentage points higher than 2015-16, but now there is likely to be a marginal 0.1 percentage point dip to 15.9 per cent in 2016-2017.

The ban on BS-III vehicle made companies to think over BS-3 left over inventory. Many of BS-III vehicles are sold out at heavy discounts which have affected the profit margin of the companies. The big challenge before companies is to overcome the impact of BS-III ban. There is need to understand the impacts of these two decisions took by government on automobile industry and how the companies have reacted to the situation.

IV. LIMITATIONS OF STUDY

Automobile Industry is huge and the ups and downs are quite common as the Government policies and company decisions affect the industry. The study is confined to only Demonetisation and BS-III ban impact on Indian auto industry for the FY 2016-17. The report is based on prior announcement of Annual Results of the Automobile companies.

V. RESEARCH METHODOLOGY

This research is conducted to understand the impact of Demonetisation & BS-III ban based on collected information through various secondary sources like online newspapers, research reports of SIAM, ICRA and Aditya Birla Money. An attempt is made here to understand the company's ways of looking at both initiatives taken by the government to reduce the impact. The impact on Sales Volume, Revenue, Costs and Profit Margins for the FY 2016-17 is carried out and inferences were drawn.

VI. DEMONETISATION – A REFORM

On November 8, 2016, the Government of India (GoI) announced one of its big bang reforms, "Demonetization". The GoI had banned circulation of Rs.1000 and Rs.500 notes and replaced them with new Rs.2000 and Rs.500 notes in a bid to curtail the black money, corruption, terror funding and fake currency in the system. The total value of old Rs.1000 and Rs.500 notes in the circulation was to the tune of Rs.14.2

trillion, which was about 85% of the total value of currency in circulation. Post the announcement of demonetization, the currency in circulation has declined sharply which has hit the cash dependent sectors hard. Some of the sectors which are more dependent on the cash for dealings are Real Estate, Jewelry, Automobile, etc. As per industry experts, revenue for Auto Ancillary industry from cash dealing is close to 75% and among Auto Original Equipment Manufacturers (OEMs), two-wheelers (2W), Tractors and Commercial Vehicle (CV) is likely to get more impacted due to higher dependence on cash for dealings.

VII. 'BS-III' AND 'BS- IV'

The 'BS' stands for Bharat Stage, and these terms are nothing but emission norms stipulated by the government to regulate the amount of pollutants in the air, from the internal combustion mechanism of engines in vehicles, including motor vehicles, crafted by Central Pollution Control Board (CPCB) under Ministry of Environment, Forest and Climate Change. BS-III norms first introduced in 2005 in NCR and 13 other cities, and then adopted pan-India 2010 onward, have the emissions tested over the India Drive Cycle (IDC), and thus, led to the two stroke engines of two-wheelers being taken out of circulation. BS-IV standards were also being tested since 2010 in 13 major cities and now BS-IV emission norms implemented from April 1st 2017, thus deeming outdated and illegal all BS-III vehicles sold and registered after April. They dictate that two and three-wheelers fit an 'evaporative emission control unit', in order to prevent loss of fuel as it evaporates when the vehicle is parked. They also need the cars to have tighter NOx+HC emission limits, harmonisation of the emission testing cycle, and the motorcycle class defined by the UNECE Global Technical Regulation 2 (GTR-2).

VIII. LITERATURE REVIEW

According to Dr. Partap Singh, Virender Singh (2016), India has amongst the highest level of currencies in circulation at 12.1% of GDP. Cash on hand is estimated at around 3.2% of household assets, higher than investment in equities, or roughly around \$ 220 billion. Of this cash, 87% is in the form of Rs 500 and Rs 1,000 notes or roughly Rs 14 lakh crore (\$190 billion). A significant portion of the household cash on hand is generated by economic transactions that are not reported to tax authorities or generated through corruption. Scrapping the higher denomination money would either result in these being brought into the system or the money just disappearing. It is understood that the real estate sector is likely to see a significant negative impact in the medium- to long-term, particularly in the repurchase market. There are expectations of a revaluation of current real estate transactions across the board representing possible losses to players in the sector. The luxury goods market is also likely to get affected as this move represents an erosion of real wealth to a large

Areas of sub-sectoral impact will be felt in luxury cars, SUVs, gems, jewellery, gold and high-end branded products.

According to P.K Pandia (2017), on 8 November 2016 midnight, the Government of India announced the demonetisation of all 500 and 1,000 banknotes of the Mahatma Gandhi Series. The government claimed that the action would curtail the shadow economy and crack down on the use of illicit and counterfeit cash to fund illegal activity and terrorism. This scheme has a great impact on the businesses, common people, and financial institutions along with multi-diverse industrial background of India. Demonetization represents much more than destabilization; it has struck a body blow on the economic activity in India. While the proponents of demonetization may have had good intentions, the suffering it has caused to millions of Indians is unwarranted”.

According to Dr. Mansi Shukla, Ms. Shilpi Bose (2017), the recent currency demonetization announcement has fuelled many mobile wallet companies to drive Indian to adopt digital payments and thus accelerate away from cash and other alternatives. From the ancient time, money has played an important role in our lives. The convenience of less cash has been well utilized by technology and today, that is what is

driving us to adopt digital payments. The adoption of digital wallets in recent times is a sign of consumer maturity; they too want friction free movement of money”.

Jai Bansal (2017), in his paper Impact of demonetization on Indian economy, concluded that the Business sectors like Textils, FMCG and Real state have impacted with the decision. He observed that Service sector was hit very hard by the decision in November 2016 and worst lump in nearly three years is witnessed.

6According to Lin Gan (2001), Center for International Climate and Environmental Research Oslo, The automobile industry is evolving to respond to challenges in economic development, environmental regulations, and technological change. The dynamics and barriers resulting from technological change of automobiles in response to reduction of exhaust emissions and energy-efficiency improvement are analyzed & understood that efforts need to be made to use more economic incentives for emissions reduction, and to promote technological change for cleaner vehicle development.

IX. ANALYSIS & FINDINGS:

Industry Trends

Table 1: Automobile Production Trend

Category	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Passenger Vehicles	31,46,069	32,31,058	30,87,973	32,21,419	34,65,045	37,91,540
Commercial Vehicles	9,29,136	8,32,649	6,99,035	6,98,298	7,86,692	8,10,286
Three Wheelers	8,79,289	8,39,748	8,30,108	9,49,019	9,34,104	7,83,149
Two Wheelers	1,54,27,532	1,57,44,156	1,68,83,049	1,84,89,311	1,88,30,227	1,99,29,485
Grand Total	2,03,82,026	2,06,47,611	2,15,00,165	2,33,58,047	2,40,16,068	2,53,14,460

Source: SIAM

Table 2: Automobile Domestic Sales Trends

Category	2011-2012	2013-2014	2013-2014	2014-2015	2015-2016	2016-2017
Passenger vehicle	2629839	2665015	2503509	2601236	2789208	3046727
Commercial vehicle	809499	793211	632851	614948	685704	714232
Three Wheelers	513281	538290	480085	532626	538208	511658
Two Wheelers	13409150	13797185	14806778	15975561	16455851	17589511
Grand total	17361769	17793701	18423223	19724371	20468971	21862128

Source: SIAM

Table 3: Automobile Export Trend

Category	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Passenger Vehicles	5,08,783	5,59,414	5,96,142	6,21,341	6,53,053	7,58,830
Commercial Vehicles	92,258	80,027	77,050	86,939	1,03,124	1,08,271
Three Wheelers	3,61,753	3,03,088	3,53,392	4,07,600	4,04,441	2,71,894
Two Wheelers	19,75,111	19,56,378	20,84,000	24,57,466	24,82,876	23,39,273
Grand Total	29,37,905	28,98,907	31,10,584	35,73,346	36,43,494	34,78,268

Source: SIAM

X. IMPACT OF DEMONETIZATION ON AUTOMOBILE INDUSTRY

Industry Sales Trends

The domestic CV sales contracted by a sharp 11.6% in November 2016 as demonetization put brakes on purchasing decisions of CV fleet owners across both heavy as well as small truck segment. As a result, M&HCV (Trucks) declined by 19.1% on YoY basis, while LCV (Trucks) sales volumes contracted by 10.4%. After robust Q2FY17, domestic Passenger Vehicle (PV) industry grew by modest 4.5% during Oct-16 and slowed down during Nov-16 on the backdrop of demonetization impact. Recovery was observed Jan-17 onwards, after liquidity condition improved. Exports remained unperturbed.

Honda Motorcycle and Scooter India Pvt. Ltd, Two-wheeler sales dropped by 50 per cent in the first 3-4 days of the announcement of demonetisation. But recovery started in the week 2 and by the end of month, Honda's all India sales returned to almost 80 per cent of normal level with South, West and East. Honda Two Wheelers had figured out a unique way of negating the effects of demonetisation, by focusing on exports. Strategically, Honda hedged its business by increased exports focus.

To counter the impact of demonetisation in urban areas, manufacturers along with the finance partners have rolled out cashless schemes, 100 per cent finance, tie-up with e-wallet companies (Paytm) to re-instill the buying sentiment. The Indian automotive industry slowly and surely tried to shake off the effects of demonetisation with a few counter-measures of its own.

Table 4: Impact on Sales of Two-Wheelers

Segment/Sub-Segment	Sales		
	Nov 2015	Nov 2016	% change
Two-Wheelers			
Scooters	396,024	388,692	-1.85
Motorcycles/Step-through	866,696	778,178	-10.21
Mopeds	57,832	76,381	32.07
TOTAL Two-Wheelers	1,320,552	1,243,251	-5.85

Source: SIAM

Table 5: Impact on Sales of Passenger Vehicles

Segment/Sub-Segment	Sales		
	Nov 2015	Nov 2016	% change
Passenger Vehicles (PV)			
Passenger Cars	173,111	173,606	0.29
Utility Vehicles	48,880	53,800	10.07
Vans	14,673	13,573	-7.5

TOTAL PVs	236,664	240,979	1.72
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Source: SIAM

Table 6: Impact on Sales of Three-Wheelers

Segment/Sub-Segment	Sales		
	Nov 2015	Nov 2016	% change
Three-Wheelers			
Passenger Carrier	37,206	25,073	-32.61
Goods Carrier	8,219	8,589	4.5
TOTAL Three-Wheelers	45,425	33,662	-25.9

Source: SIAM

Table 7: Impact on Sales of Light Commercial Vehicles

Segment/Sub-Segment	Sales		
	Nov 2015	Nov 2016	% change
Commercial Vehicles(LCV)			
Passenger Carrier	2,527	2,215	-12.35
Goods Carrier	29,095	26,059	-10.43
TOTAL LCVs	31,622	28,274	-10.59

Source: SIAM

Table 8: Impact on Sales of Medium and Heavy Commercial Vehicles

Segment/Sub-Segment	Sales		
	Nov 2015	Nov 2016	% change
Commercial Vehicles(M&HCV)			
Passenger Carrier	2,043	2,853	39.65
Goods Carrier	18,101	14,646	-19.09
TOTAL M&HCVs	20,144	17,499	-13.13

Source: SIAM

Car sales were at their lowest in the last 16 years in the month of December, 2016. This is being blamed largely on the effects of demonetization which forced consumers to delay or even ditch their purchases of two or four-wheelers. The Society of Indian Automobile Manufacturers's data shows that sale of automobiles slipped by 22 per cent in December 2016 as compared to the sales figures of December 2015. This slip in sales is by far the biggest recorded by SIAM ever since its incorporation in 1997. The overall dip in the sale of automobiles has been recorded at 19 per cent from 15.04 lakh units in December 2015 to 12.21 lakh units in December 2016.

Not just the sale of automobiles, their overall production also went down by 22 per cent as carmakers scrambled to cut production in the face of falling demand. The month of December 2016 saw a dip in the production of two-wheelers by 25 per cent and the production of commercial vehicles by 20 per cent. There was also the factor of consumers delaying

purchase decisions in the last month of the year preferring to register a vehicle in the new year.

As per the sales numbers for December 2016, revealed by industry body SIAM, overall vehicle sales were down by 18.66 percent compared to a 5.48 percent drop in November 2016. This is the second highest decline in overall sales of the auto industry since December 2000 when sales fell by 21.81 percent. The third highest dip was in December 2008 when vehicle sales were down by 18.25 percent.

The light commercial vehicle market witnessed a slight growth of 1.15 percent, when all the other segments of the industry were in the red. Some revival was seen in the last week of December in the passenger car and passenger vehicle segments where OEMs offered handsome discounts to boost sales and woo customers who were not too keen on spending money.

Impact on Rural Market:

Demand for tractors has been hit in the short-term, predominantly due to cash shortage in India's rural areas. Farmers across the nation have faced problems while selling their crops, as nearly all their transactions are done using cash. Given the severe shortage of cash in the market, they're either unable to sell, or are forced to sell at lower prices. 75 per cent of the total sale of vehicles is accounted from the rural sector. It is expected that demand for tractors and other agricultural equipment will return to normal levels in long term.

The impact was more in rural than urban, since cash still forms the basis of many transactions in the hinterland. This was especially true for two-wheelers that are priced up to 1 lakh-1.2 lakh - as the finance options for these are fewer. If one considers the purchase of passenger vehicles, up to 80 per cent of the vehicle's value is usually financed by banks and the rest is paid up front - again mostly in cash.

XI. IMPACT OF BS-III BAN ON AUTOMOBILE INDUSTRY

Impact on Premium Bike Companies:

Triumph India management wasn't comfortable with Triumph becoming a discounted brand. More than 100 bikes have been taken back by the company although it's still not clear what will happen to those bikes which cannot be sold or registered in India. Market value of these bikes is pegged at between Rs 10-11 Crore. Italian premium motorcycle brand Ducati also faced similar problems with BS-III bikes. Most of the BS-III Ducati bikes have been sold out across dealerships in India. The Supreme Court order doesn't really affected premium bike brands in India as much as the mass market brands.

Impact on CV segment:

As per the Brokerage firm India Infoline (IIFL), the impact on CV segment is significant. If full value of the inventory is taken as scrap, then also the CV industry will see an impact of 12 percent. Pure play CV company Ashok Leyland would be affected most, whereas players like Tata Motors, Eicher and M&M have cushion from other product offerings. Ashok Leyland to get maximum impact (in the range of 5 percent - 10 percent) on sales and profitability. As per the CRISIL report, assuming the truck makers would have to incur an additional 3-4 lakh per vehicle on reverse logistics and remodeling to BS-IV, it would mean an additional expense of 1,300 crore.

Impact on Two Wheeler Segment:

As per the CRISIL report when the ruling came, the two-wheeler inventory risk was at 670,000 units, amounting to 3,800 Crore. Among the two-wheeler players, Hero MotoCorp, TVS Motors and Honda Motorcycles and Scooters, were found to be with large pile of BS III bikes. According to one brokerage house tracking the automobile industry, actual vehicle population affected by the ban is a mere 8,24,278 out of 238,56,956 produced between April 2016 and February 2017. The value loss for the industry would be a mere 5 percent due to the ban. Bajaj Auto has the every possibility to export, the un sold inventory, as they are a big exporter to around 70 countries across the world.

Impact from Discounts offered:

The CV makers had built up large inventory and even continued to manufacture BS-III vehicles till March in anticipation of strong buying in April given the price increases of 8% to 10% expected on BS-IV vehicles.

As per the CRISIL report, the discounts and incentives on vehicles sold till March 31, 2017 are expected to cost CV manufacturers about 1,200 crore. Additionally 1,300 crore would be incurred to dispose of the unsold inventory (including exports).

The two-wheeler segment witnessed marginal impact with most of the BS-III bikes and scooters being sold with up to 30% discounts. The passenger car segment remained largely unaffected as this segment had mostly shifted to BS-IV beginning last year. But 10-30 per cent discounts and freebies helped the dealers clear most of the stock in the last three days of March. Hero Moto Corp being faced with losses of nearly Rs 1600 crore due to discounts offered.

Impact on Inventory:

The Supreme Court urged manufacturers to do their best to sell their existing BS-III stock before March 31st 2017, but manufacturers felt that it was impossible to do so, and, were instead, looking at either recalling the vehicles to upgrade them, or to export them to markets that do not have such rules, and where they are still compliant to the norms. Recall and up

gradation entails lofty costs, which will be even higher for commercial vehicles than it would be for two-wheelers.

As per the CRISIL report, the impact was comparatively low as many of the companies like Bajaj Auto, Yamaha and Eicher had already upgraded to BS-IV from January 2017, while market leader Hero Moto Corp, and the No 2 Honda and also TVS Motors have upgraded most of their model before the ban set in. It was mentioned in the report that 25% of the banned vehicles will go to exports. When the ruling came the two-wheeler industry had an inventory of 6,70,000 units of BS-III models, amounting to Rs 3,800 crore which is half of monthly sales of the industry.

Impact on EBITDA Margin:

As per the CRISIL report, total discounts offered work out to be around Rs 600 Crore, of which the two-wheeler makers would be sharing over 70 per cent of the incentives, taking a total hit of Rs 460- 480 crore, while the remaining losses would be absorbed by the dealers. This will lead to a 150-200 bps erosion in the aggregate fourth-quarter EBITDA margin of listed players (Hero, Bajaj and TVS) in fiscal 2017, with the industry leader Hero taking a higher impact due to its large BS-III inventory. Impact on Bajaj's profitability will be much lower due to its lower inventory and lower discounts offered considering the export option. Relative to annual revenues, this works out to 50 bps impact in fiscal 2017 EBITDA margins on Bajaj. As the EBITDA margins of listed two-wheeler players trended 40 bps higher than last fiscal on YTD basis, there is likely to be a 10 bps dip to 15.9 per cent in fiscal 2017.

Impact on Estimated Profit:

As per Managing Director of Ashok Leyland and president of Society of Indian Automobile Manufacturers (SIAM), the Supreme Court's decision to disallow the sale and registration of BS-III vehicles from April 1 will not only impact auto makers but also other stakeholders. Companies will find ways and means to address the challenge, including looking at export markets and converting the vehicles to BS-IV. The latter could see the cost of the vehicles increase by 8-10 per cent. As per the research firm Nomura the Net Profit Margins are likely to be impacted with this and the estimations are mentioned below.

Table 9: Net Profit Impact & Estimations

Inventory(Units)	Total Cost(Cr)*	Company	Net Profit FY18E(Cr)#	Net Profit impact (%)
18000	281	Ashok Leyland	1435	19.6
20015	162	M&M	3722	4.4
75000	381	Tata Motors	14249	2.7
11300	149	Volvo Eicher	2274	6.6

300000	163	Hero Motocorp	3844	4.2
65000	9	Bajaj Auto	4469	0.2
* Net impact after exports , retrofitting , discounts , inventory carrying cost E: Estimates				

Source: Nomura Research

XII. EFFECT ON STOCK MARKET

S&P BSE Auto sector was the top loser as it was trading down at 21842.69, down 186.89 points on the day of announcement of BS-III ban. While, BSE Sensex was trading at 29,483.48, up 73.96 points and NSE Nifty was trading at 9,126.35, up 25.55 points. Significant changes were observed in the following stocks. This was a major blow to many automobile manufacturers who had a large unsold inventory of BS III vehicles.

Table 10: % Changes in Stock Prices

Companies	% Change
Hero Motocorp	-3.67%
Ashok Leyland	-2.66%
Eicher Motors	-1.08%
Bharat Forge	-1.13%
Tata Motors	-0.95%
Maruti Suzuki	-0.65%
Mahindra& Mahindra	-0.61%

Source: www.zeebiz.com

XIII. CONCLUSION

Demonetisation impacted the Automobile industry significantly. The domestic CV sales contracted by a sharp 11.6% in November 2016. Passenger Vehicle (PV) industry slowed down during Nov-16. The two wheeler and three wheeler segments also took a significant hit during the month of November. Car sales were at their lowest in the last 16 years in the month of December, 2016. The overall dip in the sale of automobiles has been recorded at 19 per cent to 12.21 lakh units in December 2016. Not just the sale of automobiles, their overall production also went down by 22 per cent as carmakers scrambled to cut production in the face of falling demand. The month of December 2016 saw a dip in the production of two-wheelers by 25 per cent and the production of commercial vehicles by 20 per cent. Overall vehicle sales in December 2016 were down by 18.66 percent compared to a 5.48 percent drop in November 2016. The impact was more in rural than urban. Demand for tractors has been hit in the short-term, predominantly due to cash shortage in India's rural areas. To counter the impact of demonetisation in urban areas, manufacturers along with the finance partners have rolled out cashless schemes, 100 per cent finance, tie-up with e-wallet companies (Paytm) to re-instill the buying sentiment.

The Supreme Court order doesn't really affected premium bike brands in India as much as the mass market brands. Pure play CV company Ashok Leyland would be affected most, whereas other players have cushion from other product offerings. Due to discounts and other offerings, the profit margins were significantly affected. To overcome the impact of BS-III ban, the companies looked for exports as big option. They also looked at up grading the vehicles or selling whole inventory at huge discounts. Bajaj were least bothered about the impact as they considered exports as an alternative option. Hero Motocorp faced a higher impact on their EBITDA margin as they were left with higher numbers of Inventory. In between BSE Auto Index was down by 186.89 points.

REFERENCES

- [1]. Dr. Mansi Shukla, Ms. Shilpi Bose, Impact Of Digitalisation In Economy And The Effects Of Demonetisation: An Overview, ELK Asia Pacific Journals- 978-93-85537-02-8, 2017.
- [2]. Dr. Pratap Singh, Virender Singh, Impact Of Demonetisation On Indian Economy, International Conference on Recent Innovations in Science, Technology, Management and Environment, Dec 2016, ISBN 978-93-86171-13-9, Pp 290-300.
- [3]. Jaffe Adam B, Newell Richard G. and Stavins, Robert N. Environmental policy and technological change, Fondazione Eni Enrico Mattei, Nota Di Lavoro, Apr 2002, Pp 1-29.
- [4]. Jai Bansal, Impact Of Demonetisation On Indian Economy, International Conference on Innovative Research in Science, Technology and Management, Jan 2017 ISBN 978-93-86171-20-7, Pp 128-135.
- [5]. Lin Gan, Globalization of the automobile industry in China, Dynamics and barriers in the greening of road transportation, Center for International Climate and Environmental Research Oslo, Working paper Aug 2001:09.
- [6]. P.K Pandia, Impact of Demonetisation in India, International Journal of Public Finance, Law & Taxation Vol. 2, Issue 1 – 2017, Pp 1-7.
- [7]. <http://news.ihsmarket.com/press-release/global-auto-sales-set-reach-935-million-2017-risk-greater-ever-ihs-market-says>
- [8]. <https://www.ibef.org/industry/india-automobiles.aspx>
- [9]. <http://www.pm-review.com/global-vehicle-market-reaches-record-high-2016/>
- [10]. <http://www.siamindia.com/statistics.aspx?mpgid=8&pgidtrail=9>
- [11]. <http://www.icra.in/SpecialComments.aspx>
- [12]. <http://www.makeinindia.com/sector/automobiles>
- [13]. http://auto.economicstimes.indiatimes.com/news/industry/bs-iii-vehicles-banned-how-are-bs-iii-vehicles-different-from-bs-iv/57934387?photo_id=57040004
- [14]. http://www.business-standard.com/article/companies/after-sc-ban-massive-rush-for-bs-iii-vehicle-models-being-sold-on-discount-117033100294_1.html
- [15]. http://www.business-standard.com/article/companies/bs-iii-ban-cost-truck-makers-rs-2-500-cr-117040301432_1.html
- [16]. <http://www.newindianexpress.com/business/2017/mar/30/bs-iii-bikes-sell-out-like-hot-cakes-over-two-day-discounted-offer-1587813--3.html>
- [17]. http://www.business-standard.com/article/companies/bs-iii-ban-medium-heavy-vehicles-to-face-the-brunt-117033100038_1.html
- [18]. <http://indiatoday.intoday.in/auto/story/bs-iii-ban-two-wheeler-industry-loses-close-to-rs-600-crore-due-to-discounts/1/919496.html>
- [19]. <http://www.zeebiz.com/companies/news-auto-shares-drop-as-supreme-court-bans-sale-of-bs-iii-vehicles-hero-falls-4-14317>
- [20]. <http://www.thehindu.com/business/bs-iii-ban-hits-commercial-vehicle-makers-hard/article17779846.ece>
- [21]. <http://auto.ndtv.com/news/sc-ban-on-bs-3-vehicles-triumph-withdraws-over-100-bikes-1675782>
- [22]. <http://www.livemint.com/Industry/SIK34NledgYQjLwFHmy6BI/Demonetisation-takes-a-toll-on-automobile-sales-in-December.html>
- [23]. <http://auto.ndtv.com/news/december-2016-sales-figures-show-demonetisation-impact-on-the-auto-industry-1643885>
- [24]. <http://auto.ndtv.com/news/motowns-demonetisation-hit-shows-up-in-november-sales-1630564>
- [25]. <http://auto.ndtv.com/news/demonetisation-effect-two-wheeler-industry-limping-back-to-normal-1668453>
- [26]. <http://auto.ndtv.com/news/car-sales-november-2016-automakers-saw-double-digit-growth-despite-demonetisation-1632651>
- [27]. <https://www.aranca.com/knowledge-library/articles/investment-research/demonetizations-impact-on-the-indian-automotive-sector-short-term-slump-will-subside-once-cash-flow-normalizes>
- [28]. <https://www.gaadizo.com/blog/2017/01/demonetisation-automobile-industry/>
- [29]. <http://www.autocarpro.in/analysis-sales/india-sales-analysis-january-2017-23103>
- [30]. <http://www.autocarpro.in/analysis-sales/demonitisation-hits-indian-auto-hard-december-sales-yoy-lowest-23214#sthash.uWXYHED2.dpuf>