

<u>CONTENTS</u>	<u>PAGE</u>
ORGANISED RENTAL IN INDIA	1
LAUNCH OF KAWASAKI LOADERS BY DOZCO	4
OEMs USING LOCALLY MANUFACTURED ENGINES FOR INDIAN MARKET	6
L&T-KOMATSU STARTS PC450LC-7 PRODUCTION	8
INDIA: ECONOMIC UPDATE	11
HYUNDAI STARTS EXCAVATOR PRODUCTION IN INDIA	16
CATERPILLAR TO EXPAND MANUFACTURING CAPACITY IN INDIA	18
INDIAN ARMY ORDER FOR SKID-STEER LOADERS	20

ORGANISED RENTAL IN INDIA

Construction equipment rental is a very old and well established concept in India, but one that has been dominated by small plant hirers renting their machines in limited geographic locations. The most common rental equipment includes backhoe loaders, hydraulic excavators, mobile cranes, compaction equipment, wheeled loaders and motor graders. More recently transit mixers and concrete pumps have also become popular.

Since cranes are perceived as utility equipment with low utilisation rates rather than production machines, many contractors/companies prefer to hire them when needed as against buying them. This is one of the reasons for the early growth of crane hire companies, and why companies such as Sanghvi Movers and ABG Group started renting their machines on a national basis. Large crane rental operators are based around the hubs of industrial activity in Delhi, Mumbai, Pune, Bangalore, Chennai, Kolkata and Hyderabad. Small plant hirers, however, continue to dominate the rental business for other construction equipment, which are considered production machines.

Until recently, the equipment pool owned by a contractor/company was considered as the most important criterion determining the capability of the contractor to execute the job. As a result, most contractors preferred to buy machines to build their equipment resources.

As the equipment pool of the large construction companies grew to hundreds of machines, however, they realised that the fleets were becoming unmanageable. At any given time, many machines were idle and huge resources in terms of parts inventory, workshops and manpower were dedicated to maintaining and managing their fleet, while equipment utilisation remained low.

The creation of rental companies was seen as an ideal solution as they would not only take responsibility for managing the equipment fleet, but would also generate additional revenue by renting machines to other contractors when they were idle. Reliance, L&T and Punj Lloyd were among the first companies to venture in this direction and initiate organised rental in the country.

The above concept was not very successful for the following major reasons, however:

- It was difficult to guarantee the availability of a machine for rent, as the parent company always retained priority and therefore did not generate customer trust.
- It was difficult to compete with small plant hirers who had a low cost structure and were also able to avoid taxation through cash transactions.

- Since it was not a core business for the company, it lacked focus and as a result customer service suffered.

Quipo Infrastructure Equipment Limited, a company sponsored by SREI Infrastructure Finance Ltd., was the first specific equipment rental company and started operations in early 2002. It is the largest equipment rental company in India, and has an asset base of over US\$200 million, which it plans to increase to over US\$1.0 billion by 2012. Gemini, Brahamputra Consortium and Era Group have also started organised rental operations in India. These companies are able to compete with small local plant hirers as they operate throughout the country, have large fleets and a good selection of reliable machines with trained manpower and efficient systems in place to provide better customer service.

Table 1. India: Average Rental Rates for Construction Equipment, 2008
(Rupees)

Equipment	Service Weight (Tonnes)	Rate Per Hour	Rate Per Month
Backhoe Loader	7-8	450-550	65,000-80,000
Pick-and-Carry Crane	11 (Lift Capacity)	275-325	38,000-45,000
Crawler Excavator	6-8	600-750	90,000-110,000
	10-11	750-900	110,000-130,000
	13-14	900-1,100	125,000-150,000
	19-21	1,250-1,450	180,000-210,000
	20 and Hydraulic Breaker	2,100-2,300	300,000-330,000
Soil Compactor	10-11	550-650	80,000-95,000
Wheeled Loader	10	600-750	90,000-110,000
Motor Grader	12-15	1,600-1,800	230,000-260,000

Source: Off-Highway Research

Typical hire rates are indicated in the table above, which excludes fuel costs but includes the cost of an operator, maintenance and lubricants. Rental rates per month are the minimum payable and are based on 260 hours' usage, but extra usage is payable on an hourly pro-rata rate. Rental rates may vary depending on the application, expected usage and length of the contract, and one/two way transportation charges may be waived for longer duration contracts. Smaller machines such as backhoe loaders and pick-and-carry cranes are frequently rented for small jobs of just a few hours, in which case the rate would be much higher and may be on an hourly basis or a flat rate for the job, but this would include fuel as well.

Equipment rental is becoming a popular option with many contractors due to the variety of their projects and the number of projects they are executing simultaneously. Due to a limited buying capacity, they have become interested in alternative solutions to meet their needs, of which hiring machines is a preferred option. Sometimes the contractor wants to try out new equipment before buying and therefore rents the equipment for a trial period. Joint ventures formed for executing a particular project also prefer to hire equipment as it eliminates the problem of machine disposal after the project is complete.

OEMs have also started offering equipment to rent to their customers. Rental operations form an integral part of Caterpillar's strategy throughout the world, and as a result, its dealers GMMCO and TIL also started equipment rental in 2002 and 2003 respectively. Today there are 11 Cat Rental stores in India for renting Caterpillar equipment. Sany also offers its equipment on rent to its customers. Volvo has started rental operations through its dealers in 2007.

However there are a few issues that are currently hampering rental business growth as detailed below:

- Logistics problems due to different laws in different states governing transport, tax and octroi (local taxes on movement) hampering smooth operations on interstate movements.
- Duty exemption that applies to contractors but not to rental companies makes puts them at a competitive disadvantage.
- A 10 per cent tax deduction at source affects the cash-flow of rental companies.
- With increased sophistication and technological improvements, the availability of trained manpower to operate and maintain equipment is very limited. Another major issue is the absence of operator training centres in the country.
- Lenient implementation of laws and lengthy legal processes increase the risk of rental operations.

Various state governments are taking steps to smooth the interstate movement of equipment and rental companies are collaborating with equipment suppliers for equipment maintenance. OEMs also realise the need for creating training facilities for operation and maintenance personnel for their customers, and are working towards establishing training schools that may also certify the skills of the trained personnel.

The Public Private Partnership (PPP) concept being promoted by the government is another factor that is promoting equipment rental in India as the concessionaires want to finish the

project as soon as possible and want minimum capital investment. The use of rental equipment helps them deploy large numbers of highly productive, modern technology equipment as and when required, with minimal cash-flow problems. This helps the concessionaire to concentrate on their core construction activity and not worry about equipment maintenance.

Currently the total rental market for construction equipment in the country is estimated to be around US\$1,200 million or 17 per cent of the estimated construction equipment industry in 2008 of US\$7.2 billion. In China this is 35 per cent, in the USA 65 per cent and in Japan 80 per cent. The construction industry is expected to increase to around US\$17 billion by 2012 and the share of the rental market in India is expected to grow to 35 per cent or US\$6 billion.

Organised rental business is estimated to be 10 per cent of the total rental industry or US\$120 million in 2008. Its share of the total rental industry is expected to grow to around 20 per cent or US\$1.2 billion by 2012.

Due to these reasons and the anticipated growth of construction activity due to the planned infrastructural investments of US\$494 billion in the 11th five year plan, the organised rental business in India is poised for rapid growth. Further, many new participants including international rental companies are expected to enter the market.

LAUNCH OF KAWASAKI LOADERS BY DOZCO

Dozco was incorporated in 1983 at Dhanbad, as a trading company dealing in general engineering items with a focus on mining machinery spare parts. The company today has a nationwide network of 14 branches including its registered office at Kolkata and corporate office at Vishakhapatnam.

Table 2. Dozco: Branch Network Locations, 2008

<ul style="list-style-type: none">• Kolkata• Bhubaneswar• Vishakhapatnam• Udaipur	<ul style="list-style-type: none">• Guwahati• Satna• Bangalore• New Delhi	<ul style="list-style-type: none">• Dhanbad• Nagpur• Chennai	<ul style="list-style-type: none">• Bilaspur• Hyderabad• Ahmedabad
--	--	--	--

Source: Company Information

All the branches have parts warehouses with sales and service personnel to provide support to the company's customers. It also has two sales and service training centres at Dhanbad and Vishakhapatnam. The company enjoys a good reputation among its customers and over the

years has developed relationships with many international suppliers of spare parts (as detailed below) for whom it is their distributor in India.

Table 3. Dozco: Parts Distribution Agreements for India, 2008

International Supplier	Components
ITM, Italy	Complete Undercarriage and Parts
Italricambi S.R.L., Italy	Ground Engaging Tools and Wear Parts
Taiheiyo Seiki K.K., Japan	Track and Carrier Rollers
Daechang Forging Co. Ltd (DCF), South Korea	Undercarriage Parts
ND – DPIL, India	Ground Engaging Tools, Adaptors, Undercarriage and Wear Resistant Parts
Tong Myung Heavy Industries Co. Ltd, South Korea	Hydraulic Pump, Swing Motor, Travel Device and Parts
Mann + Hummel, Germany	Air, Oil and Fuel Filters
Hallite Seals International Ltd, UK	Seals and Sealing Solutions
Ajax Engineered Fasteners, Australia	Fasteners for Plow and Track Parts
Officine Meccaniche GNL, S.p.a., Italy	Floating Seals for Undercarriage Parts
Solideal	OTR and Fork Lift Tyres
SHIN-IL Precision Co. Ltd, South Korea	Slew Bearings
Soosan, South Korea	Rock Breakers and Parts

Source: Company Information

To make the best of its relationship with its customers in the mining and infrastructure industries and to open up new business opportunities, Dozco broadened the scope of its offerings and started selling construction equipment in 2003. Currently it is the sole distributor in India for Shantui of China for its range of bulldozers and motor graders, Yanmar of Japan for mini and midi excavators and Sumitomo of Japan for hydraulic excavators.

This year, the company is celebrating its 25th anniversary, and as a part of its silver jubilee celebrations it launched the Kawasaki 90ZIV-2 wheeled loader on 30 June, at Vishakhapatnam. For Kawasaki this was a first opportunity to enter the growing Indian market through Dozco, which would be its sole distributor in the country. The launch function at the Taj Residency, Vishakhapatnam was attended by Dozco’s customers, media personnel and representatives of Kawasaki. The key for the first machine was handed over to M/S Bothra Shipping, Vishakhapatnam, which has ordered six machines.

The Kawasaki 90ZIV-2 wheeled loader is a 256 horsepower machine having an operating weight of 21 tonnes. The machine is supplied with a bucket capacity range of 3.2-4.2 m³ and standard specification includes general purpose bucket of 3.7 m³ with bolt-on teeth. The machine is fitted with a Nissan PE6T diesel engine, which is Tier-II compliant and is the only out-sourced

component. Standard fittings also include computer controlled automatic transmission and torque-proportioning differentials.

Table 4. Kawasaki Wheeled Loader Range, 2008

Model	Bucket Capacity (m ³)	Engine		Service Weight (Tonnes)	Product Source
		HP	Manufacturer		
50ZIV-2	1.2-1.6	89	Cummins	7	Japan
60ZIV-2	1.5-1.8	110	Cummins	9	Japan
65ZIV-2	1.9-2.2	118	Isuzu	11	Japan
70ZIV-2	2.0-2.7	158	Isuzu	13	Japan
80ZIV-2	2.4-3.2	177	Nissan	16	Japan
85ZIV-2	2.8-3.7	216	Nissan	20	Japan
90ZIV-2	3.2-4.1	256	Nissan	22	Japan
95ZV	4.2-5.0	340	Cummins	33	Japan
115ZV	5.9-6.8	469	Cummins	48	Japan
135ZV	9.2	730	Cummins	80	Japan

Source: Company Information

The table above gives the details of the range of wheeled loaders currently manufactured by Kawasaki. The company is to focus on mid to large size machines – the market for smaller wheeled loaders is dominated by low priced, locally produced machines. It plans to position its machines as a reliable, productive and premium priced product comparable with Caterpillar and Volvo.

Targeted applications are mining, stevedoring and rake loading applications. Other applications where the company may promote its loaders include heavy construction projects such as highways, tunnels and dams, and also for quarry applications in marble, granite and lime stone.

OEMs USING LOCALLY MANUFACTURED ENGINES FOR INDIAN MARKET

In construction equipment the engine used plays a major role in the end-customer’s purchase criteria as it relates directly to equipment performance and fuel consumption, which is the largest component of the operating cost. Further, the machine cannot work without an engine, hence support network and parts availability are also critical. As a result, the choice of the engine is of paramount importance to OEMs, since it is a reflection of machine quality and performance.

Many international suppliers use imported engines in their machines, for which support is generally provided by their dealers or the dealer of the engine supplier. However, imported parts

are generally considered to be very expensive, and support capability often remains a concern in the mind of the end-customer. This is sometimes the deciding factor in a purchase decision.

Local engine manufacturers generally have very good support networks all over India that ensure quick parts availability and prompt service. Since the engines are locally manufactured with most of the parts sourced locally, the price of the engine and parts is very competitive. The engine quality is also good and meets all the statutory requirements. As a result, most OEM's prefer to use locally manufactured engines in their equipment, since they are able to offer competitive prices for their machines and also lower maintenance costs.

The most prominent domestic engine manufacturers are Kirloskar Oil Engines Ltd. (KOEL), Cummins India Ltd., Ashok Leyland, Simpson and Caterpillar, which account for nearly 48,000 units or over 90 per cent of the engines used in locally manufactured construction equipment. The use of imported engines in locally manufactured machines totals only about four per cent. Barring Simpson, all other engine manufacturers have very strong support networks, which cater to the end-customer's requirements directly.

Table 5. India: Support Network of Local Engine Manufacturers, 2008

	Offices/ Branches	Dealers	Service Outlets
Cummins	41	45	212
Kirloskar	15	57	140
Ashok Leyland	16	100	100
Simpson	8	-	-

Source: Off-Highway Research

The most prominent international engine manufacturers supplying imported engines to the Indian construction market include Isuzu and Komatsu, with their engines being used mostly on select models of hydraulic excavators being manufactured by Telcon, Komatsu and JCB. Cummins India also supplies a small number of imported engines for some machines. Kirloskar is the largest supplier of engines for construction equipment in the country, due to its dominance in backhoe loaders, which is the largest selling construction machine. It is followed by Simpson, Ashok Leyland and Cummins India.

International companies, which are in the process of setting up domestic manufacturing plants, also prefer to use locally manufactured engines. Hyundai will be sourcing its engines from Cummins India for the R210-7 and R220LC-7 models that it plans to manufacture in India.

Liugong is also exploring options for using indigenous engines and is testing the available options on its machines. Fellow Chinese company Sany, on the other hand is currently sourcing engines from Kirloskar, which exports the engines to China for fitment to its concrete pumps prior to them being sold in India. The company will continue to source its engines from Kirloskar once its plant near Pune is commissioned.

This situation may however change with the introduction of Bharat Stage III emission norms, which are equivalent to US Tier III emission norms from April 2011. All the local engine manufacturers are investing heavily in developing emissions compliant engines, but their performance and cost competitiveness as compared to imported engines are not yet known. Although this may be a great opportunity for imported engines to grab a larger share of the Indian construction equipment industry, the preference of OEMs would be for locally manufactured engines meeting all statutory and performance criteria at a competitive cost.

The Indian construction equipment industry has grown at a phenomenal average rate of 37 per cent over the last five years and Off-Highway Research expects it to grow at an average rate of 22 per cent for the next five years, exceeding 130,000 units by 2012. Such a growing market, along with the use of technically advanced engines, mandated by stricter emission norms, could be a good opportunity for international engine manufacturers to set up manufacturing facilities in the country and take a share of this growing construction equipment market.

L&T-KOMATSU STARTS PC450LC-7 PRODUCTION

Table 6. India: Production of Crawler Excavators, 2003-2007

(Units)

	2003	2004	2005	2006	2007
Total	2,195	2,902	3,598	4,757	7,832
L&T-Komatsu	705	910	1,115	1,725	2,840
% Share	32	31	31	36	36

Source: Off-Highway Research

The crawler excavator market in India is the second largest in unit terms after backhoe loaders, and one that has been growing at around 37 per cent per year over the last five years. In 2007, the market witnessed a record growth of 63 per cent with sales of 9,606 units making it the largest growing construction equipment sector in the country. Off-Highway Research believes that this strong pattern of growth will continue well into the future as excavators are key to

infrastructure development. The excavator market in India is still much smaller than that of China, but its growth rate is impressive, and it is a sector that is attracting many new suppliers.

Larsen & Toubro (L&T) pioneered local excavator production, when it took a licence to produce Poclain hydraulic excavators in 1976. After the expiry of this agreement in 1989, L&T began manufacturing the product under its own name at its plant in Bangalore. In 1997, the joint venture **L&T-Komatsu** was formed between L&T and Komatsu, after Komatsu withdrew from its long collaboration with Beml. Today, it is the second largest manufacturer of hydraulic excavators in the country after Telcon. Other manufacturers include JCB and Beml.

The company's current production range of crawler excavators is made up of competitively priced old technology L&T models (the L&T 72, L&T 90 and L&T 300), and the more advanced L&T-Komatsu models. The L&T-Komatsu PC200 entered production in 1998 and in 2007 accounted for 68 per cent of output. Further models followed:

- 2001 – PC71.
- 2004 – PC300LC-7.
- 2006 – PC130 model.

The company produced a total of 2,840 machines in 2007, 36 per cent of the national total.

For the PC models all important components are imported from Komatsu of Japan, except the PC71, which uses a Kirloskar engine. The L&T range of models, based on the old licence from Poclain of France, uses components produced either in-house or sourced locally. Ashok Leyland engines are used on the L&T72 and L&T90 models while the L&T300 uses a Cummins engine. Hydraulic components for L&T models are manufactured in-house, while undercarriages are sourced from TENGL. Cabs are sourced from local suppliers and steelwork is done in-house.

Table 7. Production of Crawler Excavators by Weight Class, 2007

(Units)

Tonnes	6.1-8.0	8.1-12.0	12.1-18.0	18.1-22.0	22.1-32.0	32.1-50.0	Over 50	Total
L&T-Komatsu	250	-	275	1,940	345	-	30	2,840
% Distribution	9	-	10	68	12	-	1	100
India Total	1,650	730	376	4,551	383	95	47	7,832
% L&T-Komatsu	15	-	73	43	90	-	64	36

Source: Off-Highway Research

L&T-Komatsu has aspirations to become the largest manufacturer of crawler excavators in India. As can be seen from the above table, however, it has no presence in 32.1-50.0 tonne class machines, nor in 8.1-12.0 tonne class machines. The company seems to be focussing on its PC71 and PC130 models to address the midi excavator market, and hence has no plans to manufacture a 10 tonne machine currently.

The company caters for the 30-35 tonne class machines market with its PC300-7 machine, however it has also imported the PC400 machines to compete in the 40-50 tonne class market. The market in this class of machines in 2007 was 182 units, and there is a notable shift towards 45-50 tonne operating weight machines with all suppliers promoting machines in this class: Telcon ZX450H, Caterpillar 345CL, Doosan S500LC-5, Hyundai R500LC-7, Kobelco SK480LC-8 and Volvo EC460B. Further, Telcon is already manufacturing the ZX450H in India and has stopped production of its EX400 model.

L&T-Komatsu has enlarged its manufacturing range by starting assembly of the PC450LC-7 excavator at its plant in Bangalore. Like all PC models, the critical components are being imported from Komatsu, Japan, whereas fabricated components are manufactured in-house and the cabin is locally sourced. The company is currently manufacturing four to five machines per month.

This class of machines is a good match for 35 tonne trucks and is generally used for overburden removal in coal and iron ore mines and also in the construction of large hydro-electric power projects. Volvo FM400 trucks and now Scania trucks, which are being marketed by L&T are the compatible on-off road trucks that have become very popular in the 35 tonne class trucks even for off-highway applications.

L&T is the sole distributor for L&T-Komatsu and Komatsu machines in India sells through its network of 31 offices as detailed below:

- Delhi
- Jaipur
- Kota
- Udaipur
- Lucknow
- Chandigarh
- Bangalore
- Pune
- Mumbai
- Goa
- Ahmedabad
- Vadodara
- Rajkot
- Nagpur
- Bhopal
- Durg
- Ranchi
- Jamshedpur
- Dhanbad
- Kolkata
- Durgapur
- Guwahati
- Bhubaneswar
- Rourkela
- Kochi
- Hyderabad
- Vishakhapatnam
- Vijayawada
- Chennai
- Madurai
- Coimbatore

The company plans to sell its locally manufactured PC450LC-7 and Scania truck together as a complete system and expects good sales. With the award of mining blocks, an increase in coal and other mineral mining activity is expected, and the 45-50 tonne class market is expected to grow at a high rate which explains the local manufacture of the machine.

INDIA: ECONOMIC UPDATE

Table 8. India: Basic Economic Indicators, 2003-2007

	2003	2004	2005	2006	2007
Gross Domestic Product (Rs Bns)	25,494	28,559	32,509	37,174	43,037
Real GDP Growth (%)	8.1	7.5	9.0	9.6	9.0
Consumer Price Inflation (%)	3.8	4.6	5.4	6.7	7.9
Industrial Production (%)	6.0	10.3	10.1	11.6	8.1
Exports (\$ Bns)	63.5	76.2	102.7	122.0	155.5
Imports (\$ Bns)	77.0	83.4	149.2	187.9	235.9
Trade Balance (\$ Bns)	-13.5	-7.2	-46.5	-75.9	-80.4
Gross External Debt (\$ Bns)	111.6	133.0	138.1	169.6	201.5
Foreign Currency Assets (\$ Bns)	107.4	135.6	145.1	191.9	299.2
Average Exchange Rate (Rs/US\$)	45.08	43.69	44.48	44.03	40.26

Source: Government Statistics

India continues to remain one of the fastest growing economies in the world and has been growing at over nine per cent for the last three years. As a result business confidence also remains at a high level. Growth in the country's gross domestic product has averaged 7.8 per cent during the 10th five year plan, and the economy is expected to sustain a growth rate of around nine per cent due to expansion in the mining, manufacturing, construction and services sectors.

The Indian economy surpassed the US\$ one trillion mark in 2007, and is expected to exceed US\$2 trillion by 2012. Reports also suggest that India is now second only to China as a favoured location for global foreign investment, ahead of the USA, Russia and Brazil and its foreign exchange reserves have also soared to nearly US\$300 billion.

The fear of a global downturn resulting from the sub-prime crisis in the USA is expected to have minimal effect on the Indian economy. However, the rise in the rate of inflation (which stood at 11.63 per cent) reported in the week ending 21 June 2008, primarily due to increases in food and crude oil prices, as well as global demand raising steel and coal prices and an increase in interest rates may have some effect on the growth of construction equipment industry sales temporarily. However, there are signs the inflation rate may come down in the last quarter of this year, and

planned investments in infrastructure, estimated at US\$494 billion over the next five years, are expected to ensure continued growth.

Industrial production grew by 8.1 per cent in 2007 and capital goods production grew at 16.5 per cent. Imports grew by 25.5 per cent, while exports grew at 27.5 per cent. The negative trade balance grew by 5.9 per cent over 2006. The rupee, which strengthened against the US dollar until February 2008, has since weakened and the current US dollar exchange rate is Rs43.10, a drop of over nine per cent. This weakening of the rupee, although good for exports, is fuelling inflation.

Table 9. India: Origins of Gross Domestic Product 2003-2007

(%)

	2003	2004	2005	2006	2007
Agriculture, Forestry and Fishing	10.0	0.0	6.0	2.7	4.5
<u>Industry</u>	7.4	9.8	9.6	10.9	8.9
– Mining and Quarrying	3.1	7.5	3.6	5.1	4.7
– Manufacturing	6.6	8.7	9.1	12.3	8.8
– Electricity, Gas and Water Supply	4.8	7.5	5.3	7.4	6.3
– Construction	12	14.1	14.2	10.7	9.8
<u>Services</u>	8.5	9.6	9.8	11.0	10.7
– Trade, Hotels, Transport and Communication	12.1	10.9	10.4	13.0	12.0
– Financing, Insurance, Real Estate and Business Services	5.6	8.7	10.9	10.6	11.8
– Community, Social and Personal Services	5.4	7.9	7.7	7.8	7.3
Gross Domestic Product	8.5	7.5	9.0	9.4	9.0

Source: Government Statistics

Almost all sectors showed impressive growth in 2007 except agriculture and mining. Mining is however expected to get a big boost in the near future due to the government's focus on infrastructure development and an increase in the global demand for steel and ore. The government has also awarded mining rights for many blocks of coal last year, which would further fuel mining growth and also give an impetus to the electricity sub-sector. Manufacturing and construction continue to be the largest contributors to industry growth, although the growth rate fell slightly in 2007.

Table 10. India: Share of Gross Domestic Product 2003-2007

(%)

	2003	2004	2005	2006	2007
Agriculture, Forestry and Fishing	21.7	20.2	19.7	18.5	20.9
Industry	25.6	26.1	26.2	26.6	26.0
– Mining and Quarrying	2.2	2.2	2.1	2.0	2.1
– Manufacturing	15.0	15.1	15.1	15.5	14.8
– Electricity, Gas and Water Supply	2.3	2.3	2.2	2.2	2.2
– Construction	6.1	6.5	6.8	6.9	6.9
Services	52.7	53.7	54.1	54.9	53.1
– Trade, Hotels, Transport and Communication	25.0	25.8	26.1	27.0	25.9
– Financing, Insurance, Real Estate and Business Services	13.4	13.5	13.8	13.9	13.6
– Community, Social and Personal Services	14.3	14.4	14.2	14.0	13.7
Gross Domestic Product	100.0	100.0	100.0	100.0	100.0

Source: Government Statistics

An analysis of the origins of India's GDP indicates that services and industry are the growth drivers, and the dependence on agriculture is decreasing, although its influence remains significant. The contribution of agriculture to the economy increased to 20.9 per cent in 2007, from 18.5 per cent in 2006, while services reduced to 53.1 per cent from 54.9 per cent, and industry to 26.0 per cent from 26.6 per cent.

Table 11. India: Production in Infrastructure Industries, 2003-2007

		Production					% Growth				
		2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Coal	mn tonnes	361.1	375.0	401.4	425.1	450.5	5.8	3.6	6.6	5.9	6.0
Electricity Generation	'000 Gwh	558.3	587.4	617.5	662.5	704.5	5.0	5.2	5.1	7.3	6.3
Crude Petroleum	mn tonnes	33.4	34.0	32.2	34.0	34.1	1.0	1.8	-5.3	5.6	0.4
Petroleum Products	mn tonnes	113.3	118.2	121.0	136.3	145.2	8.2	4.3	2.4	12.6	6.5
Finished Steel	mn tonnes	37.0	38.3	44.5	50.2	52.8	9.8	3.7	11.2	12.7	5.1
Cement	mn tonnes	123.4	131.6	147.8	161.3	174.3	6.1	6.6	12.4	9.1	8.1
Overall Growth Rate							6.2	4.4	6.2	9.2	5.6

Source: Government Statistics

The government's focus on infrastructure has proved to be a catalyst for steady growth in related industries, although there was something of a surge to 9.2 per cent in 2006. Infrastructure industry growth in 2007 was 5.6 per cent and is expected to pick up again following the award of private coal mining concessions. A significant number of cement manufacturers are also enhancing their production capacities or setting up greenfield projects, boosting the growth rate in this sector.

Other recent developments as explained below are adversely affecting the construction equipment market in India, however:

- The tightening of credit norms by finance companies on account of high failure levels from first time users/buyers of backhoe loaders, who were the growth drivers of the market, has led to a decline in sales;
- Rising inflation is also resulting in a hardening of interest rates, hence increasing financing costs for end-customers;
- The early onset of the monsoon has slowed down construction activity;
- Rising inflation, fuel, steel and cement prices have resulted in large variations in project costings and have had an adverse impact on the profitability of contractors;
- The weakening of rupee against US dollar is also making imported equipment more expensive;
- The farm loan waiver of US\$15 billion and the implementation of the recommendations of the 6th Pay Commission, although budgeted, will result in an enormous drain on government resources, and may affect cash flows resulting in project implementation delays;
- Government instability and the announcement of a general election in the country may have an adverse effect on the market, as the law does not permit the announcement or awarding of any new projects after the notification of elections;
- Most contractors in India have political links, meaning resources can be diverted once the election process has started.

Due to these factors, many customers are deferring purchases and the decline in growth which started with backhoe loaders is now being observed in other equipment.

However, this effect is expected to be temporary as the government is taking steps to keep the inflation under control through fiscal measures as well as policy measures such as an export duty on iron ore and the announcement of a new mineral policy.

Further, ongoing projects are not affected and generally the incumbent government ensures that all possible contracts are announced or awarded before notification of an election to gain political mileage. Even with a change in government, no major shift in policy is expected, and the country's infrastructure development will continue.

Infrastructure development remains the key focus for the government to sustain the economic growth rate and it has planned infrastructural investments of US\$494 billion in the 11th five year

plan (2007-2011). This is an increase of 130 per cent over the 10th plan when the government invested US\$215 billion.

Table 12. India: Projected Yearly Infrastructure Investments in 11th Plan, 2007-2011
(US\$ Billions)

	2007	2008	2009	2010	2011	Total
Electricity	18.1	22.6	28.4	35.8	45.4	150.4
Roads	12.5	13.2	14.3	16.6	19.4	76.1
Telecom	8.1	9.7	12.3	15.5	19.6	65.1
Railway	8.1	9.7	11.9	14.6	18.7	62.9
Irrigation	6.6	8.3	10.4	13.2	16.0	54.4
Water Supply and Sanitation	6.3	7.6	9.2	11.4	14.1	48.6
Ports	2.4	2.9	3.5	4.2	5.1	18.0
Airports	1.5	1.6	1.7	1.8	1.9	8.5
Storage	0.9	1.0	1.1	1.2	1.3	5.5
Gas	0.7	0.8	1.0	1.1	1.3	5.0
Total	65.2	77.5	93.7	115.3	142.8	494.4

Source: Government Statistics

The table above gives the projected yearly investments by sector in infrastructure development during the 11th five year plan. It may be noted that yearly investments are more than doubling from US\$65.2 billion in 2007 to US\$142.8 billion in 2011. This trend can be observed for most of the sectors barring airports, storage and gas.

It may also be noted that nearly 30 per cent of the above investment will be through Public Private Partnership (PPP); 30 per cent will be by state governments and the remaining 40 per cent will be made by central government. Concessionaires executing projects under PPP are interested in more efficient, modern technology machines as they are reliable and highly productive, and help finish the project and therefore begin the revenue stream as soon as possible.

With most broad economic factors being positive and huge infrastructural investments planned by the government, which are not expected to change even with a change in government, the decline in growth being observed in the market is expected to be a temporary phenomenon. It is anticipated that the market will again start to grow in the last quarter of the year and the long term forecast of Off-Highway Research of over 130,000 units in 2012 will still be achieved, although 2008 sales may be lower than the forecast of 65,000 units.

HYUNDAI STARTS LOCAL PRODUCTION OF HYDRAULIC EXCAVATORS

Established in 1985, the construction equipment division of Hyundai Heavy Industries (HHI) has grown into a world class manufacturer with a diverse range of products including mini excavators, crawler excavators, wheeled excavators, wheeled loaders, skid-steer loaders and forklift trucks. Hyundai is currently the largest supplier of excavators in China and has manufacturing plants in Korea and China. It is now finishing the building of a plant in India.

The operation in India is a wholly owned subsidiary of Hyundai Heavy Industries (HHI), in Korea. Currently the company has four regional offices in Hyderabad, Delhi, Mumbai and Kolkata, and has its head office at Pune. It also has parts warehouses at Hyderabad, Delhi, Kolkata and Pune.

Table 13. Hyundai HI :Dealer Network for Construction Equipment in India, 2008

Dealer Name	Location	Dealer Name	Location
Shri Venkatesha Heavy Equipments	Thiruvananthapuram	NexGen Sales & Services	Dhanbad
DRD Earth Equips	Hyderabad	Tribeni Engineers	Barbil
Muneer Motors	Bellary	Vertex Engineering	Udaipur
SSS Equipments	Chennai	URSS Tech Services	Jaipur
Ramcor	Vijayawada	Automobile Sterling	Noida
JR Sales & Services	Kolkata	Voltas	Mumbai
Dada Motors	Chandigarh	Nitin Engineering	Jammu
JR Equipments	Chhattisgarh	Sanghi Brothers	Indore

Source: Company Information

There are currently around 300 Hyundai machines operating in the country, which were in the past supported by only one dealer. However, with the growth plan of the company in India and the start of manufacturing operations, it has appointed additional dealers to strengthen its distribution and create a nationwide network: it has already appointed 16 dealers covering 19 states, and is in the process of appointing five more dealers to cover the whole of the country.

Table 14. Hyundai HI India: Construction Equipment Products Available, 2008

	Model	Engine		Service Weight (Tonnes)	Product Source
		HP	Manufacturer		
Wheeled Excavators	Robex 140W-7	115	Cummins	14.0	Korea
	Robex 170W-7	116	Mitsubishi	17.5	Korea
	Robex 200W-7	166	Cummins	20.5	Korea
Crawler Excavators	R80-7	58	Yanmar	7.8	Korea
	R110-7	85	Mitsubishi	11.2	Korea
	R210-7	140	Cummins	20.3	India
	R220LC-7	150	Cummins	21.7	India
	R300LC-7	197	Hyundai	29.6	Korea
	R320LC-7	259	Cummins	32.2	Korea
	R370LC-7	261	Hyundai	36.9	Korea
	R500LC-7	325	Cummins	48.8	Korea
	R800LC-7	490	Cummins	82.3	Korea
Wheeled Loaders	HL760-7	205	Cummins	17.9	Korea
	HL770-7	266	Cummins	22.8	Korea
	HL780-7A	320	Cummins	29.3	Korea

Source: Company Information

The company's current product offerings include indigenous as well as imported machines.

The new manufacturing plant is on the outskirts of Pune, in Maharashtra state. The plant is built on a plot area of 20 hectares, and has a covered area of 80,000 m². It has been set up with an investment of US\$50 million, and has a manufacturing capacity that can be scaled up to 10,000 units. The major facilities developed in the plant include an assembly shop, fabrication shop, repair shop, training facility, parts warehouse, display/demonstration ground, testing ground, administration building, and employee recreation area. The current plant manpower is 200 employees, and is expected to grow to around 400 by the end of 2008.

Hyundai has started commercial production of its 20 tonne class excavators, the standard undercarriage model R210-7 and long undercarriage model R220LC-7, while other models continue to be imported. It is estimated that the local content of the above machines is 40 per cent and 30 per cent respectively, and comprises components such as boom, stick and other fabricated items. The engine for the R210-7 is also being sourced locally from Cummins India, while all other critical components are being imported from Korea. The company plans to enhance indigenisation gradually up to 80 per cent to become competitive with other locally produced excavators.

The company plans to expand its range made in India to include an eight tonne excavator (model R80-7) and an 11 tonne model (R110-7) by 2010, by when the production of the 20 tonne models will have stabilised.

CATERPILLAR TO EXPAND LOCAL MANUFACTURING CAPACITY

Caterpillar sold its first machine in India in the 1930s and ever since then its involvement with the market has been steadily increasing. The historical highlights of the company’s development in the country are summarised in table 15.

Table 15. Caterpillar: Historical Highlights in India

1930s	First Caterpillar machine sold in India. Caterpillar’s first dealership, TIL, opens in India.
1971	Production begins at Thiruvallur as Hindustan Motors.
1985	Licensing agreement with Hindustan Motors for manufacturing Caterpillar products. GMMCO appointed as a Caterpillar dealer.
1988	Hindustan Powerplus Ltd in Hosur incorporated, production begins in 1989.
1995	First Cat branded engines produced in Hosur. Caterpillar opens its representative office in India.
1999	Genset facility inaugurated in Hosur. CCPL established in Bangalore.
2001	HMEED acquired, becomes Caterpillar India Private Limited (CIPL).
2002	Engineering Design Centre – India established in Chennai.
2002	6 Sigma deployed in India.
2003	First ‘Cat’ branded machine manufactured by CIPL, “Cat 424 Series I”, launched in India.
2004	Caterpillar Logistics Services India formed.
2005-2006	First Cat Rental Store opened in India.
2006	Asia Pacific Shared Services formed, operations commence. HPL acquired, becomes Caterpillar Power India Pvt. Ltd (CPIPL).
2007	CPIPL integrated into Caterpillar India Pvt. Ltd. (CIPL).

Source: Company Information

At present, Caterpillar has three registered companies in India. **Caterpillar Commercial Private Limited (CCPL)** is the marketing and distribution company, **Caterpillar India Private Limited (CIPL)** the manufacturing arm, and **Caterpillar Logistics Services (CLS)** develops logistics technologies and provides logistics services for the company in India. Together, Caterpillar and its two dealers GMMCO and TIL have nearly 4,500 employees in the country.

Table 16. Caterpillar: Manufacturing Plants in India, 2008

Location	Employees	Area (000 m ²)	Products	2007 Production (Units)
Thiruvallur, Tamil Nadu	998	740	Backhoe Loaders Wheeled Loaders Rigid Dump Trucks	700 846 270
Hosur, Tamil Nadu	339	130	Bare Engines Diesel Generator Sets	1,303 456

Source: Company Information

Caterpillar currently has two manufacturing plants in the country. The large Thiruvallur plant is located 45 kilometres west of Chennai, in Tamil Nadu province, where it produces construction equipment and components. It also houses the administration and training centres as well as a large warehouse, storage facilities and demonstration areas. The Hosur plant is located 45 kilometres south of Bangalore in Tamil Nadu, and is engaged in the assembly of diesel engines and generator sets.

The company aspires to establish its leadership in every market and geographical area that it serves. As a part of its strategic plan to enlarge its manufacturing footprint in the rapidly growing Asia- Pacific region, Caterpillar has announced a four-year, US\$200 million investment to increase manufacturing capacity in India for machines and engines. The additional investment reiterates the company's commitment to the country and the importance of emerging markets in its strategic plans. The company already has 16 manufacturing plants in China, both joint ventures and wholly owned businesses, and now seems to be focussing on the rapidly growing Indian market.

Caterpillar plans to significantly increase production of off-highway trucks being manufactured at its Thiruvallur facility, which is already a global source for rigid dump trucks for the company, the only one outside the USA. It also plans to expand engine production at Hosur by adding production of the 3508 engine, which will be primarily used in trucks being manufactured by the company locally.

The company will also be investing to increase production capacity for backhoe loaders, which was the first Caterpillar branded product to be manufactured locally. The backhoe loader is the largest selling construction machine in India, which was also the product's largest market in the world in 2007. Caterpillar is also studying the possibility of widening the range of products manufactured in the country, and building additional manufacturing facilities to cater to the demands of other construction equipment.

With the additional manufacturing capacity, Caterpillar plans to serve the Indian as well as other markets in the Asia-Pacific region. Due to the investment in operations and anticipated increase in its business volume as well as supporting its growing customer base, the company plans to significantly increase employment in India over the next few years.

INDIAN ARMY ORDER FOR SKID-STEER LOADERS

In 2007, the Indian Army finalised an order for 120 units of skid-steer loaders from TEREX-Vectra. This was the first large order for skid-steer loaders in India – the order is over 50 per cent of the annual sales in 2007 and it is worthwhile to look at its significance.

With the easy availability of cheap manual labour, locally produced small tractors and the overwhelming popularity of backhoe loaders, it is very difficult to find many suitable applications for skid-steer loaders in agriculture, industry or construction. However, in the last few years sales have increased, with interest coming from glass and sugar cane factories, waste management, municipalities, road sweeping and construction, and the Indian Army.

Table 17. India: Skid-Steer Loader Market and Growth, 2003-2007

	2003	2004	2005	2006	2007
Sales (Units)	73	76	118	168	215
Growth (%)	-22	4	55	42	28

Source: Off-Highway Research

Sales grew last year by 28 per cent to reach the level of 215 units. Bobcat is by far the market leader.

Table 18. India: Suppliers of Skid-Steer Loaders and Their Market Shares, 2003-2007

	2003		2004		2005		2006		2007	
	Units	%	Units	%	Units	%	Units	%	Units	%
Bobcat	51	70	37	49	65	55	103	61	140	65
JCB	16	22	28	37	47	40	44	26	58	27
TEREX Vectra	-	-	8	10	2	2	11	7	17	8
L&T-Case	6	8	3	4	4	3	5	3	-	-
Caterpillar	-	-	-	-	-	-	5	3	-	-
Total	73	100	76	100	118	100	168	100	215	100

Source: Off-Highway Research

Bobcat, which pioneered the concept of skid-steer loaders in India in 1995, remains the leading supplier, achieving a market share of 65 per cent with sales of 140 units, followed by **JCB** with 27 per cent and **TEREX Vectra**, the only local manufacturer, at eight per cent.

It is estimated that the number of skid-steer loaders working in India is around 775 machines. The main users are industrial companies (especially paper mills), road maintenance, tunnelling and building contractors and city authorities.

Table 19. India: Population of Skid-Steer Loaders by End-User, 2008

	Units	%
Industry	282	36
Construction	176	23
Municipalities	99	13
Agriculture	78	10
Rental	77	10
Others	63	8
Total	775	100

Source: Off-Highway Research

A small number of machines are used by the agricultural or landscaping sectors and rental companies, with an overall hourly rental rate, including operator, being about Rs1,000.

Normally Indian customers do not buy attachments, which limits the versatility of the machine, but the army has ordered all the machines with a large number of attachments. The Army has ordered the following major attachments:

- Backhoe
- Snow Blower
- Tyre Chains (Rubber and Steel)
- Stump Grinder
- Ripper Tooth
- Five Buckets for different applications
- Auger Drill
- Hydraulic Rock Breaker

Apart from these attachments, the order's specifications include a turbo-charged engine with cold-start kit, front glass door with wiper for the operator cabin, cabin fan, additional lights and proprietary colouring. The machines have hydrostatic drive with joy-stick controls. Supply of the machines started in April 2008 and lasted until August. After receiving the initial machines, the Indian Army released another order for an additional 125 units along with one set of attachments for each machine, taking the total ordered quantity to 245 units, or more than the annual demand in 2007. The total value for both orders is estimated to be around Rs800 million.

Table 20. India: Forecast Sales of Skid-Steer Loaders, 2008-2012

(Units)

2008	2009	2010	2011	2012
420	500	625	750	1,000

Source: Off-Highway Research

Both the above orders have given a big boost to TEREX-Vectra's plans for manufacturing skid-steer loaders and the company now wants to sustain its manufacturing and sales efforts. It is expected that up to 180 units will be supplied to the army in 2008, which would give a big boost to the market, which is now expected to be around 420 units – higher than Off-Highway Research's forecast in the Annual Review published in April 2008.

Use of attachments by the army on its machines will be a big opportunity for all the suppliers of skid-steer loaders to demonstrate the versatility of the machine and to generate additional demand in the country. Off-Highway Research forecasts the market to be around 1,000 units by 2012.