

**EQUIPMENT ANALYSIS: CHINA**

**BACKHOE LOADERS**

**APRIL 2010**

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**INTRODUCTION**

This report examines in detail the Chinese market for backhoe loaders, or ‘busy at two ends’ as the machine is popularly referred to in Chinese. It is an update of the subject which was last covered in Off-Highway Research’s Chinese Service in October 2008. The findings presented in this report are based on the existing database of Off-Highway Research, and on an interview programme that was undertaken in China with the leading manufacturers and importers in the first quarter of 2010.

The report includes those machines with rigid and articulated frames, ranging from 68 to 110 horsepower. It assesses the market for purpose-built backhoe loaders, but excludes those machines built on a tractor chassis.

Some notes regarding Chinese size classifications might be useful to readers unfamiliar with the domestic industry. Backhoe loaders produced by domestic manufacturers often have the same model designations, with the two letters ‘WZ’, which refer to the digging and loading functions, followed by two numbers; the first of these indicates the backhoe bucket capacity while the second specifies the minimum rated lifting force of the front loader. For example, a WZ30-25 model refers to a backhoe loader with a backhoe bucket of 0.3 m<sup>3</sup>, and a lifting force of over 25kN. However, an increasing number of manufacturers have adopted new company-specific designations as they extend their range across various products.

**SUMMARY**

Just when many suppliers started to believe that backhoe loaders were finally beginning to take off after two years of improved sales during 2007 and 2008, the market experienced a dramatic fall of 37 per cent in 2009 when only 400 units were sold. Suppliers have had once again to contemplate the future of this product and re-evaluate their strategies in this market.

There are currently 16 suppliers, including 11 domestic manufacturers; far too many for such a small market. **Xugong Compact** remains the largest domestic manufacturer of backhoe loaders, but only by an insignificant margin over **Liugong**. About 63 per cent of total domestic

production was exported in 2009, indicating the heavy reliance of indigenous backhoe loader manufacturers on overseas sales.

**Table 1. China: Statistical Summary of Backhoe Loaders, 2009**

<b>Number of Suppliers</b>	16
<b>Number of Domestic Manufacturers</b>	11
<b>Market Leader</b>	
– Rigid	Case
– Articulated	Xugong Compact
<b>Production (Units)</b>	810
<b>Sales (Units)</b>	
– Rigid	243
– Articulated	157
<b>Importers' Penetration (%)</b>	47
<b>Population (Units)</b>	3,000
<b>Sales Forecast 2014 (Units)</b>	850

Source: Off-Highway Research

Demand is still characterised by a mixed requirement for rigid and articulated machines, although the former has expanded its market share to 61 per cent, meaning for the first time demand for rigid backhoe loaders has exceeded that for articulated products. The market continues to show a strong preference towards more powerful machines, and in 2009 85 per cent had engines of 80 horsepower or more.

This is a market where state-owned enterprises had a monopoly in the earliest days, but have seen their market shares constantly fall. In 2009, international suppliers won 47 per cent of sales, an increase of 27 per cent since the time of the last report in 2008. Among the 243 rigid units sold last year, 77 per cent were imported. **Case** significantly expanded its presence and became the largest supplier by increasing its market share from 19 per cent in 2008 to 26 per cent. **Xugong Compact** secured leadership in the articulated category, but saw its market share decline to 20 per cent.

The outlook for backhoe loaders is for a doubling of sales in five years, given the small volume at present, and an increasing interest from parts of the public works industry. There is little expectation that sales will exceed 1,000 units within the period, however. The main buying force still lies in the public sector for niche applications, while most private buyers still regard the mini excavator as being a much more profitable tool than the backhoe loader. Indeed, the use of mini excavators is already so pronounced that backhoe loaders might have lost forever the opportunity to achieve significant volumes of sales.

## ECONOMIC BACKGROUND

**Table 2. China: Key Economic Indicators, 2005-2009**

(% Annual Change)

	2005	2006	2007	2008	2009
<b>Real GDP Growth</b>	10.4	11.6	13.0	9.6*	8.7
<b>Industry Value-added</b>	11.6	12.9	13.5	12.9	11.0
<b>Construction Output</b>	19.1	20.3	20.4	19.8	22.3
<b>Gross Fixed Investment</b>	26.0	23.9	24.8	25.5	30.1
<b>Exports</b>	28.4	27.2	25.7	17.2	-16.0
<b>Imports</b>	17.6	20.0	20.8	18.5	-11.2
<b>Consumer Price Index</b>	1.8	1.5	4.8	5.9	-0.7

\* Revised

Source: National Bureau of Statistics (NBS)

Despite the severe impact of the global recession on foreign trade, China maintained strong economic growth in 2009 as a result of the huge investment made by the government's financial stimulus package. With a growth rate of 8.7 per cent, China's total GDP output was close to that of Japan; continuing high rates of growth in 2010 means China's economy is set to become the second largest in the world after the United States, even though income per capita remains very low.

During the fourth quarter of 2008 the Chinese government began to implement a proactive fiscal policy, and began to ease control of the money supply. This resulted in substantial investment growth into a broad range of infrastructure and construction projects, and there was a strong surge in economic growth. Indeed, by the last quarter of 2009, the rate of GDP growth had already recovered to over ten per cent. As a result of the RMB4 trillion investment plan for 2009-2010, and some RMB10 trillion of additional loans in 2009, public investment further increased its contribution to economic growth, although the level of consumer demand remained low, and exports declined. There is, however, the risk that this investment-driven economy might cause a rise in inflation, a feature of the economy just two years ago.

So the key aim of current economic policy is to balance the need for growth against concerns about inflation. It is the commonly held belief that, in order to sustain economic growth, which is a prerequisite for reducing unemployment and improving living standards, the government should maintain its current policy. To realise its RMB4 trillion investment plan, however, the central government may have to increase its financial contribution in an effort to limit the

pressure on local governments to match these funds (without which they would have to apply for bank loans).

On the other hand, excessive money supply needs to be controlled, particularly given the rapid rise in the consumer price index, which rose to 1.5 per cent in January 2010. Economists agree that China is now on an inflationary trend, although it is still too early to implement measures to counter the problem. In the first two months of 2010, the central bank doubled the deposit-reserve rate, and it is expected that interest rates may be raised by the middle of the year.

It is hoped that government investment can stimulate an increase in non-government investment, although it is anticipated that the government will continue to represent the main stimulus for 2010-2011. The priority target for investment, apart from infrastructure development, will be the improvement of the rural economy and the living standards of low income people to give them an incentive to increase their consumption. To cope with the steady move towards urbanisation, construction activity will remain a main priority of the economic plan in the future.

### CONSTRUCTION AND MINING ACTIVITY

**Table 3. China: Investment Plan for Stimulating Domestic Demand, 2009-2010**  
**(RMB Billion)**

<b>Target of Investment</b>	<b>Total Package</b>	<b>%</b>	<b>Input of Central Government, 2009</b>	<b>%</b>
<b>Transport and Power Transmission Networks</b>	1,500	38	213.4	24
<b>Post-Disaster Reconstruction</b>	1,000	25	130.0	14
<b>Housing Provision</b>	400	10	49.3	5
<b>Rural Development and Infrastructure</b>	370	9	252.2	28
<b>Industrial Innovation and Structural Regulation</b>	370	9	63.3	7
<b>Ecological Environment Protection</b>	210	5	69.6	8
<b>Medical, Cultural and Education Programmes</b>	150	4	92.6	10
<b>Other Central Projects</b>	-	-	37.6	4
<b>Total</b>	<b>4,000</b>	<b>100</b>	<b>908.0</b>	<b>100</b>

Source: National Development and Reform Commission

Construction has traditionally played an important role in China's fast growing economy, and the sector continued to boom in 2009, driven to a large extent by the stimulus package that was launched in the fourth quarter of 2008 and is set to be continued in the 2009-2010 period of the plan. The surge in investment has resulted in a very strong recovery in demand for most types of construction equipment from the second half of 2009, and as more construction projects are planned in the short term, the market is expected to enjoy further growth well into 2010. Given

that the majority of the centrally controlled budget for the next two years will have been used up in fiscal 2009, the central government will probably need to add to its budget allocation for 2010, if it is thought to be necessary. Over the long term, however, investment growth is likely to be curbed by fears over inflation.

## **Roads**

**Table 4. China: Investment in Intercity and Rural Road Construction, 2005-2009**

	2005	2006	2007	2008	2009
<b>RMB Bn</b>	548	623	649	688	960
<b>% Growth</b>	+17	+14	+4	+6	+40

Source: Ministry of Transport

Following relatively low growth for the three years prior to 2008, road investment underwent a sharp increase in 2009, with a large number of new projects being implemented as a result of massive government input. Rural roads, and in particular access roads to the earthquake-affected regions, were given tremendous support, while the construction programme of the major road network was accelerated.

**Table 5. China: Road System Development, 2005-2009**

('000 Kilometres)

	2005	2006*	2007	2008	2009
<b>Total Length</b>	1,930	3,457	3,584	3,730	3,828
<b>– Expressways</b>	41	45	54	60	65

\* In 2006 the length of village roads, totalling 1,532,000 kilometres, was included in the statistics.

Source: Ministry of Transport

The total road length had reached over 3,800,000 kilometres by the end of 2009, of which expressways were more than 65,000 kilometres. While the National Expressway Network Plan, launched in 2005, requires the national expressway system of 85,000 kilometres to be completed by 2020, this is likely to be brought forward, while local governments have launched a number of additional main road projects. In addition, a total of 381,000 kilometres of rural roads were built or improved in the year, and the eight eastern provinces have now completed their plans for rural road improvement. It is estimated that investment in road programmes will remain at this level for the next two years on account of the easy money supply and on-going construction projects;

in the meantime, there is growth in maintenance and reconstruction work, which will further stimulate demand for construction equipment.

### Real Estate Development

**Table 6. China: Real Estate Development, 2005-2009**

	2005	2006	2007	2008	2009
<b>RMB Bn</b>	1,591	1,938	2,528	3,120	3,623
<b>% Change</b>	+21	+22	+30	+23	+16

Source: National Bureau of Statistics

Real estate development has grown at a massive annual rate of over 20 per cent since 2001, but growth fell to below five per cent in the first quarter of 2009, as a result of the squeeze on credit in 2008. However, with the change in policy to encourage domestic consumption, investment accelerated from the second quarter and growth is expected to continue to recover in 2010; although commercial investment may fluctuate due to the current flat level of sales, the government is increasing its investment in housing projects for low income people. Construction work in this sector has a direct bearing on demand for all types of lifting and earthmoving equipment. While there was lower equipment demand from the sector in 2009, it is expected to improve this year

### Urban Construction

**Table 7. China: Key Statistics – Urban Utilities, 2004-2008**

	<b>Developed Area (Km<sup>2</sup>)</b>	<b>Length of Urban Roads ('000 Km)</b>	<b>Area of Urban Roads (Mn m<sup>2</sup>)</b>	<b>Length of Gas Pipelines ('000 Km)</b>	<b>Length of Sewer Pipelines ('000 Km)</b>
<b>2004</b>	30,406	223	3,530	148	219
<b>2005</b>	32,520	247	3,922	162	241
<b>2006</b>	33,660	241*	4,114*	189	261
<b>2007</b>	35,470	246	4,237	221	292
<b>2008</b>	36,295	260	4,520	258	315

\* There was a change in road statistical accounting in 2006.

Source: National Bureau of Statistics

Urban infrastructure, such as roads, bridges, subways, water supply and sewage systems, telecom conduits and energy pipelines, has seen substantial development in central cities. With the ongoing trend of urbanisation and the pursuit of better living conditions, there will be an

increasing emphasis on urban utilities in the future. The increasing population in urban areas has intensified the pressure on the capacity of public utilities. In central cities, there has been a boom in the construction of mass transport projects, especially metro systems. Following the international events of the Beijing Olympic Games in 2008, the Shanghai World Expo and the Guangzhou Asian Games in 2010, urban development will continue to expand at a great pace, not only in the major urban areas but also secondary cities throughout the country.

## MARKET SIZE AND TRENDS

**Table 8. China: Sales of Backhoe Loaders, 2005-2009**

	Units	% Change
<b>2005</b>	352	(3)
<b>2006</b>	295	(16)
<b>2007</b>	590	100
<b>2008</b>	630	7
<b>2009</b>	400	(37)

Source: Off-Highway Research

After remaining below 400 units for the previous decade, demand for backhoe loaders accelerated to 590 units in 2007 and soared to a record level of 630 in 2008. Few suppliers then expected to see a steep fall of 37 per cent over the last 12 months. Such a decline was particularly distressing to all stakeholders in this market because during the same period the market for construction equipment as a whole sustained an exceptional growth rate of 12 per cent; furthermore, the market for mini excavators, the main competitive machine to the backhoe loader, grew by 17 per cent to over 22,000 units.

Nevertheless, a backhoe loader is considered to offer great flexibility, in terms of its manoeuvring ability on roads, and its multiple functions are much appreciated by road authorities. Therefore, applications in road and highway maintenance remain the main drivers of demand. This is limited, however, by the escalating budget pressure on local governments as they have to fill the gap between the total expenditure of RMB4 trillion in the stimulus package and the money provided by the central government (RMB1.18 trillion). As a result, many local road authorities with limited financial resources, who have been the major buyers of articulated machines in the past, have reduced sharply, or stopped altogether, their orders. Meanwhile, the purchasing power of the more frequent buyers of the rigid product – highway authorities with fewer budget constraints – was also affected, but to a much lesser extent.



In comparison with a crawler mini excavator, a backhoe loader offers better manoeuvrability both in built up areas and on rough terrain; its ability to access difficult terrain has proved to be very effective in disaster rescue operations. Also, to break-up cement pavement, a mini excavator installed with a hydraulic breaker very often cannot accomplish the task effectively, whereas a breaker mounted on a backhoe loader, with its rigid frame and its more powerful engine, is arguably the ideal combination. Consequently, 30 to 50 per cent of backhoe loaders work with hydraulic breakers, which is the most popular working attachment. In addition, the traditional applications associated with utility works, such as cabling, tree planting and oilfield development, have remained important factors in the growth of this market sector. Moreover, for a private buyer, the backhoe loader is a multipurpose machine which can be operated fairly profitably if he is adept at finding work. This product enables him to work on a greater variety of job sites, thus offering better earning potential.

Despite all these benefits, backhoe loaders have not accounted for more than 0.31 per cent of the total construction equipment market in the last decade. There are several reasons for this lack of popularity that have been identified during the research programme.

Firstly, the lack of acceptance of the backhoe loader concept in China has meant that the product has effectively been ignored by the large contingent of indigenous manufacturers, who understandably prefer to focus on volume products such as wheeled loaders, hydraulic excavators and mini excavators. Until recently, those who did decide to enter this market did so in the belief that the backhoe loader was an ideal product for export. Therefore, most of them placed the greatest priority on export and paid scant attention to its domestic potential.

Secondly, the jobs undertaken by a backhoe loader tend to be divided between those usually undertaken by the ubiquitous compact wheeled loader and the mini excavator. The average price of a backhoe loader is now roughly equivalent to that of a high specification 220 horsepower wheeled loader, or a 5.5 tonne mini excavator, in the case of the articulated type, or 40 to 60 per cent higher in the case of a rigid machine. The sheer volume of sales accounted for by these competitive products has inevitably acted as a significant brake on sales of backhoe loaders.

Thirdly, the prevailing philosophy among private buyers in need of earthmoving machines was that the best solution was served by the use of a dedicated machine for each task. Furthermore, the cost penalties incurred by purchasing a wheeled loader and a mini excavator in preference to a single backhoe loader were, and still are, largely ignored. Private buyers will argue that separate machines represent a more viable proposition since they are able to undertake two jobs simultaneously, a luxury not available with the backhoe loader.

The general opinion about the backhoe loader is that it is not as powerful as either a mini excavator or a wheeled loader, though this is in part because most operators, who are trained in the operation of an excavator or a wheeled loader, still do not know how to operate a backhoe loader sufficiently well to exploit its full capabilities. An example given by a supplier was that it took his customer a whole morning to break a piece of 2 m<sup>2</sup> pavement, while his well trained operator finished 12 m<sup>2</sup> on the same piece of pavement within two hours. Although major importers have introduced machines installed with the latest technology, such as servo-controls, to create an operating environment similar to that of a mini excavator, only modest success has been achieved.

On the other hand, it should be noted that an experienced backhoe loader operator can command a wage premium of 30 per cent over the operator of a wheeled loader or excavator. It is difficult and expensive to train a backhoe loader operator; but it is more difficult and expensive to keep a good one, who is the critical element in bringing out the multiple functionality, manoeuvrability and efficiency of the product. These costs need to be taken into account when the purchase of a backhoe loader is being considered.

The ability to exploit the multiple functionality of this product is also compromised by the limited number of attachments that a customer can afford. Except for the popular hydraulic breaker, only a small percentage of buyers purchase a second bucket and even fewer consider other options such as a compactor or a trencher. Most customers, whose primary interest lies in digging applications, choose the cheaper, two-wheel steer machines as opposed to an all-wheel steer model, while without a hydraulically operated quick attach system, and the versatility of a backhoe loader is further compromised.

Size is also an issue. Compared to a mini excavator, a backhoe is wider and usually needs a large radius within which to work. It cannot work on soft ground. In terms of its excavating capabilities, there is continuing prejudice against the restricted 180° swing of the backhoe, which is not as versatile as the 360° arc of a mini excavator. The use of more efficient cold planers, which are increasingly popular in asphalt pavement renovation, is also slowing down further expansion of backhoe loaders in this sector.

Last but not least, a private buyer who purchased a backhoe loader as his first machine will be well aware of the availability of alternative products, particularly mini excavators. Even for someone who has recouped his investment on a backhoe loader within a satisfactory time horizon, his next investment will almost certainly be a mini excavator rather than another backhoe loader. The niche applications of the latter make him realise that one machine of this type is enough for

his fleet, particularly if he is a subcontractor in the municipality sector where there is little certainty and assurance in future projects.

**Developments by Type and Horsepower Category**

**Table 9. China: Sales of Backhoe Loaders by Type, 2005-2009**

Type	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
<b>Rigid</b>	161	46	141	48	286	49	306	49	243	61
<b>Articulated</b>	191	54	154	52	304	51	324	51	157	39
<b>Total</b>	<b>352</b>	<b>100</b>	<b>295</b>	<b>100</b>	<b>590</b>	<b>100</b>	<b>630</b>	<b>100</b>	<b>400</b>	<b>100</b>

Source: Off-Highway Research

This is a market where state-owned enterprises had a monopoly from the earliest days with their articulated products, but have seen their market shares constantly decline to the low of 53 per cent experienced in 2009. In parallel with such a decline, and indeed partly a cause of it, is the increasing popularity of backhoe loaders with rigid frames.

The ratio between the rigid and articulated machines was relatively steady until 2008. In 2009, however, those customers who were still able to add new machines to their fleets were those who had more fully appreciated the concept of backhoe loaders. Very often these customers were from the public sector, had fewer financial constraints, and had started to realise the advantages of rigid machines over articulated models. As a result, the demand for rigid backhoe loaders has for the first time exceeded that for articulated products. Although most of the recent Chinese entrants to the market offer rigid models, they have made little penetration in the domestic market compared to their modest success in overseas markets. Among the 243 units of rigid products sold in last year, 77 per cent was supplied by international suppliers.

It is believed that a rigid backhoe loader with its better breakout force, greater digging depth and higher horsepower rating will continue to be increasingly preferred over the articulated type in the future.

**Table 10. China: Sales of Backhoe Loaders by Horsepower Category, 2005-2009**

Horsepower	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
<b>60-79</b>	150	43	104	35	156	26	113	18	59	15
<b>Over 79</b>	202	57	191	65	434	74	517	82	341	85
<b>Total</b>	<b>352</b>	<b>100</b>	<b>295</b>	<b>100</b>	<b>590</b>	<b>100</b>	<b>630</b>	<b>100</b>	<b>400</b>	<b>100</b>

Source: Off-Highway Research

The industry divides the products according to engine horsepower, and on this basis around 85 per cent of sales in 2009 were of machines with engines larger than 79 horsepower, a very significant increase over five years ago.

The **under 60 horsepower** products that are built on tractor chassis have now been completely abandoned by construction equipment manufacturers. Although suppliers of agricultural machinery continue to offer these so-called ‘economic’ products, which are priced in the region of RMB80,000-120,000 per unit, these machines are of little interest to the buyers of standard backhoe loaders, and so are not included in the statistics above. Eventually the existing purchasers of ‘economic’ backhoe loaders may move towards to buying the more sophisticated type of machine.

The **60-79 horsepower** machines, featuring articulated bodies, have played a declining role in the market. Their annual sales fluctuated between 100 and 160 units between 2003 and 2008. When the overall market experienced a fall of 37 per cent in 2009, demand in this category dropped by 48 per cent and reduced its significance in the market to 15 per cent. Machines sold in this category are mainly used for light maintenance work, basic trenching and site clearance.

The **over 79 horsepower** products, mostly falling in the range of 80-100 horsepower, have steadily increased their percentage of total sales. Such a growth is partially attributed to the product upgrades undertaken by many Chinese manufacturers offering articulated backhoe loaders, with the engine outputs of their products having been raised to the region of 80-100 horsepower. Another reason for this increase in popularity is because larger engines are needed to ensure better performance, safety and operator comfort of the hydraulic breakers that are the most popular attachment for backhoe loaders. This sector is made up of both rigid and articulated machines, and the ratio between imported and domestic products has fluctuated between 45 to 55 per cent over the last three years.

## Regional Sales

As indicated by the regional sales results of various suppliers in 2009, the most important market areas were the eastern, north and northeast provinces, while the northwest and southwest regions have both experienced increases in demand. The level of regional sales reflects the applications of backhoe loaders in the different provinces, and it also depends on the level of promotion the distributors might have carried out in specific areas.

**Table 11. China: Sales of Backhoe Loaders by Region, 2009**

<b>Region</b>		<b>Units</b>	<b>%</b>
<b>East</b>	Anhui, Jiangsu, Shandong, Shanghai, Zhejiang	130	33
<b>North</b>	Beijing, Hebei, Inner Mongolia, Shanxi, Tianjin	75	19
<b>Northeast</b>	Heilongjiang, Jilin, Liaoning	70	18
<b>Central</b>	Henan, Hubei, Hunan	30	8
<b>Southwest</b>	Chongqing, Guizhou, Sichuan, Tibet, Yunnan	30	8
<b>Northwest</b>	Gansu, Ningxia, Qinghai, Shaanxi, Xinjiang	30	8
<b>South</b>	Guangdong, Guangxi, Hainan	20	5
<b>Southeast</b>	Fujian, Jiangxi	15	4
<b>Total</b>		<b>400</b>	<b>100</b>

Source: Off-Highway Research

Imported products are more popular in Beijing, Shanghai, Shandong, Zhejiang and Heilongjiang, while domestic products saw better results in Jiangsu, Inner Mongolia, Hubei and Xinjiang. Such disparity reflects the compatibility of customer need and the product quality, as well as the purchasing power of customers. For example, customers choose imported machines for use in disaster rescue because of their higher reliability; but, given their budget constraints, a considerable percentage of machines bought by local road maintenance divisions are articulated types.

## **PRODUCTION**

The recession of the last 12 months has resulted in production volumes falling by 25 per cent, down to 810 units in 2009. The structure of the industry has also changed dramatically. First, production is now dominated by the rigid type, which accounted for around eight per cent of output five years ago but rose to over 60 per cent in 2009. Second, there was no production in the range of over 79 horsepower machines prior to 2002, but last year this category accounted for 75 per cent of output. Finally, every backhoe loader manufactured since 2003 has been installed with an engine with an output of 60 horsepower or more.

**Table 12. China: Production of Backhoe Loaders by Manufacturer, 2005-2009**

	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
Xugong Compact	65	26	70	27	300	31	330	31	200	25
Liugong	-	-	-	-	20	2	113	11	187	23
Foton Lovol	1	0	2	1	112	12	120	11	110	14
Changlin	19	8	30	12	150	16	90	8	102	13
SDLG	15	6	17	7	100	10	105	10	50	6
Weimeng	-	-	-	-	-	-	50	5	50	6
Yangong	50	20	60	23	40	4	70	7	45	6
Chaogong	55	22	40	16	10	1	35	3	40	5
Xiagong	1	0	5	2	100	10	10	1	20	2
JCB	-	-	-	-	119	12	150	14	-	-
SEM	39	16	28	11	5	1	-	-	-	-
Others	6	2	6	2	-	-	2	-	6	1
<b>Total</b>	<b>251</b>	<b>100</b>	<b>258</b>	<b>100</b>	<b>956</b>	<b>100</b>	<b>1,075</b>	<b>100</b>	<b>810</b>	<b>100</b>

Source: Off-Highway Research

**Table 13. China: Production of Backhoe Loaders by Manufacturer and Horsepower, 2009**

	60-79 Hp		Over 79 Hp		Total	
	Units	%	Units	%	Units	%
Xugong Compact	-	-	200	32	200	25
Liugong	-	-	187	30	187	23
Foton Lovol	-	-	110	18	110	14
Changlin	-	-	102	16	102	13
SDLG	50	26	-	-	50	6
Weimeng	50	26	-	-	50	6
Yangong	45	24	-	-	45	6
Chaogong	40	21	-	-	40	5
Xiagong	-	-	20	3	20	2
Others	6	3	-	-	6	1
<b>Total</b>	<b>191</b>	<b>100</b>	<b>619</b>	<b>100</b>	<b>810</b>	<b>100</b>

Source: Off-Highway Research

There are now 10 domestic manufacturers of backhoe loaders that produce them on a full time basis. In addition, **Chengong** is testing its centre-post 866H model, which was first seen during the BICES exhibition last year; **Shantui** has already developed a prototype backhoe loader, but has yet to commit itself to the sector; **Sany** will probably launch its backhoe loader this year but not necessarily in China, with India being a much talked about possibility; while some other manufacturers, such as **Degong** and **Yuchai**, have continued to suspend their production.

As part of the core operation of XCMG Construction Machinery (XCMG CM), **Xuzhou Xugong Compact Machinery** (also known as XCMG Compact) has developed a relatively

comprehensive range of compact machines, and last year it upgraded its current range of backhoe loaders. It now offers the articulated WZ30-25 and the rigid XT870 models for the domestic market, and it also promotes the keenly priced XT860 model for the Indian market. In addition, it offers the rigid frame XT876 model, with a side-shift backhoe and a Euro III engine, for other overseas markets. This company is the only supplier that offers both articulated and rigid types in its efforts to attract a broad customer base.

In 2009, its output fell by almost 40 per cent to 200 units, which makes its plan to produce 500 units this year seem to be very ambitious. Nevertheless, the company started construction of its new factory with an area of 175,000 m<sup>2</sup> in January 2010. Upon the completion of this project, which is scheduled in November this year, it will have a total annual capacity of 10,000 units including 2,000 backhoe loaders.

**Liugong**, the largest wheeled loader manufacturer in China, developed its own backhoe loaders in 2004 and launched them in 2007. Since then, it has made an intensive engineering input on this product. Production takes place in Jiangsu Liugong in Zhenjiang, where there is an installed total capacity of 12,000 units, including 1,000 backhoe loaders.

Over the last two years, Liugong has been concentrating on improving the quality and reliability of its two models, the CLG766 with a centre post and the CLG777 featuring a side shift backhoe. Its product strategy is for simplicity and to reduce the number of components employed in each machine. Over a dozen attachments have been developed. Liugong has increased its contribution to the total sector output from two per cent to 23 per cent over the last three years, with its output volume rising from 20 units to 187 units. Liugong has now become the largest manufacturer of rigid products. For 2010, Jiangsu Liugong plans to produce 400 backhoe loaders.

**Foton Lovol** is a leading domestic manufacturer of agricultural machinery, and entered the construction equipment industry in 2004 when it launched a range of wheeled loaders. Backhoe loaders were introduced in 2006 with two models: the FL468 featuring a centre post backhoe, and the FL468A with a side shift. The company is better known on export markets than at home, where it has minimal sales, and it is its success abroad that helped sustain its respectable production level of 110 units in 2009. Foton does not think that domestic demand in the next 12 months will be able to justify the resources required to promote the product in China, as a result of which it will still focus on exports, and devote few resources to selling in the domestic market.

**Changlin** was the first Chinese manufacturer to focus on the rigid type of backhoe loader. Production of backhoe loaders has been taken out of its Special-Purpose Vehicle Division and put into the Pavement Machinery Division. Its first product, the WZ30-25 was launched in 2002, and has evolved into two centre-post models: the WZ30-25 with a Cummins engine of 95 horsepower, principally for export; and the WZ30-25C with a Weichai engine of 101 horsepower for the domestic market. Lately, the side-shift WZC20 model has been added and has just started to see some success in the market. Changlin gives equal priority to both local and overseas markets, which is quite unusual for a Chinese manufacturer. In recent years, the company has significantly improved the reliability of its backhoe loaders by utilising internationally sourced key components, and has thoroughly re-engineered the product. However, its production has never exceeded 150 units, which is less than 30 per cent of its installed capacity. Its planned output for 2010 is 120 units, representing a growth of 18 per cent over 2009.

**SDLG** is a major manufacturer of wheeled loaders, now 70 per cent owned by Volvo. The company began production of backhoe loaders with a single 79 horsepower model, the LGB680, in 2003. It is an articulated model featuring a centre post, which is believed to be a copy of Yangong's WZ25-20. During 2007 and 2008, it made strong progress and won considerable market share from Yangong thanks to its extensive domestic distribution network, but last year saw its production drop to 50 units. It would seem difficult for SDLG to return to its peak level of 2008 given the trend among customers to prefer more powerful, rigid machines rather than its 79 horsepower articulated model.

**Shandong Weimeng Construction Machinery Co. Ltd** used to be a division of Shandong Engineering Machinery (SEM), supplying steel fabrications to SEM's main factory, and became an independent operation in March 2008, after Caterpillar completed its purchase of SEM. After this spin-off, Weimeng took over the production of backhoe loaders and also launched its own range of wheeled loaders and industrial forklift trucks. Production has focused on one articulated side shift model, the name of which was changed to the WZ30-25 from the former SEM302, and is now branded as Shanmon. Output has remained at the same level during the last two years, although the management is quite optimistic about this year.

**Yantai Engineering Machinery**, or **Yangong** as an abbreviation of its Chinese name, was one of the earliest domestic suppliers of backhoe loaders. Its first model, the WZ16-15E, was developed on the chassis of a compact loader in 1985. Yangong replaced this with the larger WZ25-20 in 1999, and this remains the only model in its backhoe loader range. The company produced 45 backhoe loaders in 2009 and hopes to increase its output by at least 35 per cent in 2010, even though it admits that an articulated model with such a small engine, at 68 horsepower,



is losing its appeal. To increase volumes it could develop a larger, articulated model (WZ30-25) or a rigid type. However, either project will be quite a challenge given the company's limited technical capability and lack of funds. Consequently, it is highly unlikely that Yangong will make any investment into product development in the next six months.

**Chaogong** has been a traditional major domestic producer of backhoe loaders, and after its privatisation in 2002 it continued to focus on compact equipment. At the end of 2007, it moved to a new 120,000 m<sup>2</sup> factory with an installed annual capacity of 3,000 units. The production of the old WZ25-20 model was phased out in 2007, and it now focuses on the larger WZ30-25C model that was launched in 2008. It has developed a rigid model, the CG875, which is believed to be a copy of Changlin's WZ30-25C, but as yet there has been no production. Its volume remains low, with only 40 units produced in 2009.

**Xiagong** is another major wheeled loader manufacturer that entered the backhoe loader industry five years ago. It produces a single model (XG765) through a subsidiary company called **Xiagong Compact Machinery Co. Ltd** on its huge premises in Xiamen. This product is equipped with an imported Cummins engine and features a rigid body design. Volumes surged in 2007 thanks to large overseas orders, but these have proved to be unsustainable. As a result, its output dropped to 10 units in 2008 from 100 units in the previous year, and only expanded to 20 units last year.

## COMPONENT SOURCING

The component sourcing policies for backhoe loaders show a clear difference between the traditional articulated type and the more advanced rigid type. The former almost completely relies on domestic sources for key components such as engines, axles, transmissions and hydraulic parts, while the latter is invariably made up of components from international sources. However, in both cases, the low technology fabrications are made either in house or sourced locally.

In particular, machines destined for export use engines supplied by Cummins, Tianjin Lovol and Perkins. The choice of a Tier-III engine is new to the sector, and Xugong Compact is the first among its Chinese rivals to install a Tier-3 Cummins engine in its XT876 model. However, its main Chinese competitors in overseas markets, Foton Lovol and Liugong, have begun to prepare for the Tier-IV emission regulations which will take effect in some of the markets targeted for their products in the near future.

The dominant supplier of axles and transmissions is Carraro for rigid machines and Feicheng for articulated models. Hydraulic pumps and valves are either supplied by the local factories of international suppliers, such as Parker and Husco, or imported from Italy such as loading valves from Walvoil, gear pumps from Casappa and brake pumps from Vimoter.

**Table 14. China: Component Sourcing for Backhoe Loaders, 2010**

	<b>Xugong Compact</b>	<b>Liugong</b>	<b>Foton Lovol</b>	<b>Changlin</b>
<b>Engines</b>	Yuchai, Cummins USA	Weichai, Perkins, Cummins USA	Tianjin Lovol	Cummins, Weichai
<b>Axles</b>	In-house, Carraro	Carraro	Carraro	Carraro
<b>Transmissions</b>	Shantui, Carraro	Carraro	Carraro	Carraro
<b>Pumps and Valves</b>	Qingzhou, Linhai, Casappa, Walvoil, Vimoter	Permco, Husco, Eaton	Permco, Husco	Parker
<b>Cylinders</b>	Zhangjiakou, In-house	Wuxi Hengli	Wuxi Hengli	Hyundai
<b>Undercarriages</b>	In-house	In-house	In-house	In-house
<b>Buckets</b>	In-house	In-house	In-house	In-house
<b>Seats</b>	Local	Tiancheng	Tiancheng	Tiancheng, Grammer
<b>Tires</b>	Local	Guizhou, Tianjin	Guizhou, Tianjin	Local
<b>Cabs</b>	Local	In-house	Local source	In-house
<b>Booms and Arms</b>	In-house	In-house	In-house	In-house
<b>Steelwork</b>	In-house	In-house	In-house	In-house
	<b>Weimeng</b>	<b>Yangong</b>	<b>Xiagong</b>	<b>Chaogong</b>
<b>Engines</b>	Weichai	Chaochai, Yunei	Cummins	Yituo
<b>Axles</b>	Feicheng	Feicheng	Carraro	Feicheng
<b>Transmissions</b>	Qingzhou	In-house	Carraro	Hangzhou Gear
<b>Pumps and Valves</b>	Jinan, Qingzhou,	Xuzhou Keyuan	Casappa, Walvoil, Vimoter	Jining
<b>Cylinders</b>	Changjiang Hydraulic	Wuxi, Parker	Wuxi Hengli	Changjiang Hydraulic
<b>Undercarriages</b>	In-house	In-house	In-house	In-house
<b>Buckets</b>	In-house	In-house	In-house	In-house
<b>Seats</b>	Tiancheng	Tiancheng	Tiancheng	Local
<b>Tires</b>	Weihai, Henan	Local source	Guizhou, Tianjin	Henan
<b>Cabs</b>	In-house	In-house	Local source	In-house
<b>Booms and Arms</b>	In-house	In-house	In-house	In-house
<b>Steelwork</b>	In-house	In-house	In-house	In-house

Source: Company Information

For most indigenous manufacturers, reducing overall costs is not their first priority given the fact that, above all, they need to improve their product reliability and performance. Furthermore, achieving cost reductions may present a major challenge given the small production volumes, and the resulting limited bargaining power of these manufacturers with specialist component suppliers.

## FOREIGN TRADE

**Exports** have been the main driver behind the growth in Chinese production. Without exception, the major domestic manufacturers that have broadened their product lines to include backhoe loaders over the last decade decided to do so mainly on the basis of anticipated large export volumes.

**Table 15. China: Exports of Backhoe Loaders by Manufacturer, 2005-2009**

(Units)

	2005	2006	2007	2008	2009
<b>Liugong</b>	-	-	26	95	165
<b>Xugong Compact</b>	24	30	180	120	110
<b>Foton Lovol</b>	-	-	112	121	100
<b>Changlin</b>	-	5	80	105	53
<b>Weimeng</b>	-	-	-	-	45
<b>SDLG</b>	-	-	-	12	15
<b>Xiagong</b>	-	-	50	20	11
<b>Yangong</b>	10	2	18	15	8
<b>SEM</b>	-	5	20	30	-
<b>Others</b>	8	3	34	2	3
<b>Total</b>	<b>42</b>	<b>45</b>	<b>520</b>	<b>520</b>	<b>510</b>
<b>% of Domestic Production</b>	<b>17</b>	<b>17</b>	<b>54</b>	<b>48</b>	<b>63</b>

Source: Off-Highway Research

Exports have remained remarkably stable in terms of units sold over the last three years, despite the general malaise in the global market since 2008. In particular, the level of exports exceeded 63 per cent of total output in 2009, reflecting the export orientation of production. Overseas sales during 2008 and 2009 held up well, partially due to the fact that the main destinations of these exported machines have been the Middle East, North Africa, South America, and Central Asia, rather than the hardest hit regions of Europe and North America. These will continue to be the regions where most Chinese exporters will be focusing in the future. India has been thought to be a promising market, but there Chinese exporters are faced with the strong domination of international suppliers and a wariness of Chinese products by end-users. For example, Xugong Compact launched its XT860 for this market, but so far has met with little success.

While nobody exported any rigid machines before 2006, only 35 per cent of exports were made up of articulated types in 2009. Exports tend to be made up of sales to Chinese contractors working on overseas projects, to overseas dealers of Chinese manufacturers or to trading houses. Among the leading three exporters, Xugong Compact has traditionally accounted for the greatest share of the market but Liugong assumed the lead in 2009. Foton Lovol has maintained its export levels in recent years, although it witnessed a small decline last year.

The major challenges in the short to medium term will be the declining overseas demand in most volume markets for backhoe loaders except India, the pressure on the appreciation of RMB, and the Tier IV regulations set to come into effect in mature markets.

**Imports** accounted for 47 per cent of all backhoe loaders sold last year, representing a sharp increase of 27 per cent. The main reason is that JCB has resumed its status as an importer, having stopped its production in Pudong, and added an 18 per cent share to the importers' penetration. In addition, Case expanded its presence in the market by seven per cent. Unlike wheeled loaders and hydraulic excavators, locally manufactured backhoe loaders with rigid frames have little price advantage over imported machines. On one hand, international manufacturers like JCB and Case capitalise on their economies of scale through their large production volumes worldwide. On the other hand, the modest volumes of domestic production do little to help local manufacturers reduce their sourcing costs, especially if they intend to manufacture products to international standards.

The import tax on backhoe loaders is the same as that of hydraulic excavators, which is eight per cent (MFN).

## MARKET SHARES

**Table 16. China: Suppliers of Backhoe Loaders and Their Market Shares, 2005-2009**

Manufacturer	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
Case	104	30	60	20	92	16	119	19	105	26
Xugong Compact	33	9	40	14	110	19	180	29	80	20
JCB	35	10	60	20	110	19	104	17	71	18
SDLG	2	1	12	4	90	15	68	11	30	8
Changlin	12	3	25	8	60	10	59	9	27	7
Yangong	44	13	42	14	36	6	45	7	26	7
Chaogong	35	10	35	12	37	6	26	4	25	6
Liugong	-	-	-	-	-	-	7	1	11	3
New Holland	-	-	-	-	-	-	2	-	10	3
Weimeng	-	-	-	-	-	-	10	2	5	1
Xiagong	-	-	2	1	20	3	-	-	3	1
SEM	39	11	7	2	10	2	-	-	-	-
Others	48	14	12	4	25	4	10	2	7	2
<b>Total</b>	<b>352</b>	<b>100</b>	<b>295</b>	<b>100</b>	<b>590</b>	<b>100</b>	<b>630</b>	<b>100</b>	<b>400</b>	<b>100</b>

Source: Off-Highway Research

In 2009, the market leader was Case in the rigid category and Xugong Compact in the articulated category. Together with JCB, the third largest supplier in the market, these three companies have maintained a combined market share of around 64 per cent over the last two years.

**Table 17. China: Sales of Backhoe Loaders by Manufacturer and Horsepower Category, 2009**

Manufacturer	60-79 Hp		Over 79 Hp		Total	
	Units	%	Units	%	Units	%
Case	-	-	105	33	105	26
Xugong Compact	-	-	80	25	80	20
JCB	-	-	71	23	71	18
SDLG	30	35	-	-	30	8
Changlin	-	-	27	9	27	7
Yangong	26	30	-	-	26	7
Chaogong	25	29	-	-	25	6
Liugong	-	-	11	4	11	3
New Holland	-	-	10	3	10	3
Weimeng	5	6	-	-	5	1
Xiagong	-	-	3	1	3	1
Others	3	3	4	1	7	2
<b>Total</b>	<b>89</b>	<b>100</b>	<b>311</b>	<b>100</b>	<b>400</b>	<b>100</b>

Source: Off-Highway Research

**Case**, as one of the major traditional suppliers of backhoe loaders, was market leader with 105 units in 2009. Its seven models provide the widest spectrum of engine outputs, ranging from 85 to 110 horsepower. In particular, its 580M model has won solid approval from buyers in the road and utility sectors by accounting for over one third of all rigid machines sold last year. Its distribution network is mature and stable, and dealers have been constantly educated about the product. At its premises in Shanghai, this company has built up both the infrastructure and the capability to meet the various needs for sales, service, spare parts, and training. It has made tremendous efforts to promote this product, including two dedicated demonstration teams equipped with its own engineers and personnel from dealers who travel across the country and visit the job sites of potential customers.

**Xugong Compact** had a difficult year in 2009 when its revenues fell by nearly 20 per cent to RMB190 million. In particular, its backhoe loader sales experienced a striking decline of 56 per cent. As a result, its market share fell by nine per cent and lost its market leadership. It believes that this poor result was caused by the overall decline in domestic demand. Although the traditional articulated machines still dominate its current sales, accounting for 90 per cent, it has an important strategy to meet the demands of different customers by offering both rigid and articulated machines. After making some good headway into some of the traditional markets of international suppliers, it is confident that should indigenous suppliers be admitted to all tendering processes, further penetration can be achieved. The marketing efforts in 2010 will still focus on its WZ30-25, which accounted for 45 per cent of total demand in this segment in 2009.

**JCB** (Shanghai) is the company's first manufacturing operation in China, and was opened in 2006 with the intention of producing backhoe loaders and mini excavators. Since then, JCB has made substantial efforts to educate the market into the advantages of the backhoe loader and has undertaken some vigorous marketing. After its decision to stop the manufacture of backhoe loaders at its Pudong factory at the end of 2008, it witnessed a drop in sales of 30 per cent but nevertheless secured third position in the market in 2009. The introduction of its standard excavators and their future localisation plan has been warmly welcomed by its dealers in China. JCB has also been able to recruit additional dealers, which now total 27.

**SDLG** focuses on an articulated design that was adopted from other Chinese manufacturers. It first penetrated this market with a very competitive pricing policy, and finally achieved substantial growth in 2007. Sales in the following two years declined dramatically and ended up at one third of its peak level in 2009. The main reason for its deteriorating market share is believed to be its single model product range, which has been losing its appeal to customers. Yet it still remains the leader in the 60-79 horsepower sector, and the second most important supplier of articulated models.

**Changlin** was the first domestic manufacturer to offer a 'western' design. It achieved much improved sales between 2006 and 2008 with an average nine per cent market share, largely as a result of its new rigid designs. It has also managed to improve its backhoe loaders in terms of their reliability, which has helped to improve the confidence of its distributors when marketing to end-users. However, it is now facing challenges from recent entrants such as Liugong, with similar if not better products, as well as ongoing price competition from incumbents in the articulated segment. Meanwhile, its less than satisfactory performance on its core product, wheeled loaders, is affecting its distribution network. Its sales target for 2010 is 120 units, which is a huge jump from its volume in 2009.

**Yangong** secured its market position despite a 42 per cent decline in sales. The most important regional market for Yangong has been Inner Mongolia, where it has sold over 60 units of backhoe loaders to the road sector over the years. The municipalities in north China are also major customers, but it admits that with its current product it cannot penetrate into the highway sector, where customers have much higher requirements in terms of machine specifications. Over 80 per cent of its backhoe loaders are sold with hydraulic breakers sourced from Korean suppliers that produce in Yantai. Some 50 per cent of machines are sold with snow ploughs.

Whilst the backhoe loader is offered as a complement to **Liugong's** mainline range of construction equipment, it is nevertheless not a product which can be easily targeted at the

company's traditional customer base. But the company has a long term strategy in this market, even though its market share is still relatively small. **Xiagong** has made its entry with an offering of one rigid model (XG765), but it faces significant challenges in marketing it.

Small scale manufacturers of articulated products, such as **Chaogong**, have all realised that demand for their less sophisticated products will sooner or later move towards rigid machines. Nevertheless, they have not been able to upgrade their current product range in view of budget constraints and a lack of confidence in the future volumes of the backhoe loader market. It is sufficient challenge for them just to survive, especially when lower volumes ensure that each sale will be increasingly hard fought over. Among other importers, only **New Holland** and **Caterpillar** had sales in 2009.

## DISTRIBUTION AND MARKETING

**Table 18. China: Distribution Systems of Backhoe Loader Suppliers, 2010**

Suppliers	Sales Management	Local Branches	Independent Dealers
<b>Case</b>	Case Construction Machinery (Shanghai)	-	28
<b>Changlin</b>	Sales Company	15	60+
<b>Chaogong</b>	Sales Department	19	20
<b>JCB</b>	JCB Construction Equipment (Shanghai)	-	27
<b>Liugong</b>	Sales Company	49	33
<b>SDLG</b>	Sales Company	10	110
<b>Weimeng</b>	Marketing Department	-	45
<b>Xugong Compact</b>	Marketing and Distribution Company	30	40
<b>Xiagong</b>	Sales Company	30	110+
<b>Yangong</b>	Sales Department	18	70

Source: Company Information

The distribution and marketing of backhoe loaders is unique and challenging in many ways. First, to develop a specialised network for backhoe loaders cannot be justified on grounds of the current limited demand. Second, a specialised dealer cannot survive solely by selling backhoe loaders. Third, a dealer's natural inclination is to focus on those products that are the easiest to sell, which is certainly not the case for backhoe loaders. Fourth, educating dealers, customers and end-users has been the main theme of all marketing activity and will remain so for many years to come. Last but not least, the direct involvement, heavy input, and strong support of suppliers remain indispensable, since over 95 per cent of sales are achieved through tender procedures and many dealers have limited knowledge or experience with regards to the product's applications and relevant service skills.

The two major importers, **Case** and **JCB**, have done a much better job in marketing and distributing backhoe loaders than any other company. But their recent introduction of other products, mainly standard excavators, is likely to result in a partial dilution of their marketing focus which has been given in the past to the backhoe loader. Having said that, a wider product range including the hydraulic excavator, which has still has much potential in the country, will no doubt help both companies to secure and develop their distribution networks.

**Liugong**, **SDLG**, **Changlin** and **Xiagong** are long established suppliers in the wheeled loader market, and they jointly sold over 69,000 wheeled loaders in 2009. Their dealers have been good at selling specialist machines with high volumes, but how to sell multi-purpose backhoe loaders into a niche market where total annual demand has never exceeded 700 units is a great challenge for both parties. In response, companies like Liugong and Changlin only select some dealers from their existing networks to take the backhoe loader franchise. For example, Liugong has 64 dealers selling wheeled loaders but only 33 of them have backhoe loader franchises. In the case of **Xugong Compact**, it has chosen 40 dealers from the dealer pool of XCMG CM, although it can also develop its own dealers. The three small manufacturers, **Chaogong**, **Weimeng** and **Yangong**, who can neither afford national coverage nor attract exclusive dealerships, have real concerns about their distribution networks.

## PRICING

**Table 19. China: Retail Prices of Backhoe Loaders, 2010**

Horsepower	Type	RMB'000	Product Source
60-79	Articulated	240-280	Local Manufacturers
80-100	Articulated	260-300	Local Manufacturers
	Rigid	300-500	Local Manufacturers
	Rigid	450-850	International Manufacturers

Source: Off-Highway Research

Due to the escalating costs of purchasing steel and components, major domestic manufacturers have increased their list price by 10 to 15 per cent compared to two years ago. The articulated type of backhoe loader is priced in the range of RMB240,000-RMB280,000, or around half the price of an imported machine. In the context of rigid machines, Chinese manufacturers are not particularly competitive in price. Although their products are built with structural parts that are either manufactured in house or locally sourced, they have to use a high proportion of internationally sourced key components. International suppliers do have significant advantages



in their volume production, but they have to bear the costs of extra transportation and import tariffs.

It is interesting to note that most backhoe loaders are paid for in full at the time of delivery, a result of the majority of customers being from the public sector, where there is little appeal in instalment payments or financing. But competition on price can be brutal in some tendering processes when clients award orders on the basis of the lowest price among all the qualified candidates,

It is widely known that the average gross margin on a backhoe loader is better than that of a wheeled loader. Unfortunately, however, this seems to have triggered more questions and a desire to bargain by sophisticated customers who already want to buy the machine, rather than a stronger motivation for dealers to make an effort to sell it.

## POPULATION AND END-USERS

**Table 20. China: Population of Backhoe Loaders by End-User, 2009**

	Units	%
<b>Roads and Highways</b>	1,400	47
<b>Utility Works</b>	1,100	37
<b>Rental</b>	150	5
<b>Others</b>	350	12
<b>Total</b>	<b>3,000</b>	<b>100</b>

Source: Off-Highway Research

In this market, the annual utilisation of a backhoe loader is low and 500 to 700 hours is now the industry standard, with some machines recording less than 300 hours a year. On the assumption that articulated machines have an average service life of five to seven years and the rigid backhoe loaders from mature suppliers last eight to 10 years, it is estimated that the total backhoe loader population was around 3,000 units at the end of 2009. Of this volume, 70 per cent are less than five years old and 50 per cent have been supplied by importers. Second ownership virtually does not exist.

Nearly 50 per cent of backhoe loaders have been sold into the **road and highway** sector, where the roadability and multi-functionality are greatly appreciated, particularly in maintenance. This has become the principal market in recent years. **Utility works**, such as the laying of water pipes, telecom cables, and disaster rescue, has the second largest population. Many suppliers, however,

suggest that machines sold into this sector tend to have a higher utilisation rate compared to those used elsewhere.

**Rental** has not really advanced at all in this market. Rental operators, very often private machine owners, have never been an important group of customers in this market. Moreover, none of the major suppliers has plans to promote this machine to rental companies.

There are also a number of specialist users working on such projects as oilfields, power transmission facilities, landscaping, gardening, and residential and non-residential construction. The army is also an important buyer of backhoe loaders, although this report does not cover the machines sold into the military.

## FORECAST

**Table 21. China: Forecast Sales of Backhoe Loaders, 2010-2014**

(Units)

2010	2011	2012	2013	2014
500	580	700	830	950

Source: Off-Highway Research

All major suppliers believe that demand for backhoe loaders in 2010 will represent a trough in the current cycle, but many of them are very conservative when it comes to predicting future growth. It is true that the network of roads is very large indeed, and this is now beginning to require greater maintenance. As a result, road authorities will increase their machine fleets. It is also fair to assume that economic development, particularly urbanisation, will encourage the use of earthmoving machines as well as compact equipment to replace manual labour. The question is how much and how quickly these factors can be translated into real demand for the unique functions offered by the backhoe loader.

While the backhoe loader still has many attributes well suited to certain applications, demand in the future will come from a hard core of public users who will continue to buy the product and to renew their existing machines. But unless there is considerable and sustainable need emerging from the private sector, it is less likely to see radical changes to the overall market size in the years to come.

The greatest hope for backhoe loaders will be an increasing number of suppliers promoting the product for its higher gross margin than that of a wheeled loader, and for its better cash flow and lower capital requirement compared to those of a standard or mini excavator. Luckily, most suppliers in this market have already learned over the years that lowering prices will not help them generate more sales in the retail sector.

With strong competition from alternative machines such as mini excavators and compact wheeled loaders, the outlook for the market is less optimistic than many suppliers had previously anticipated. Even the most ardent supporter of the backhoe loader realises that a living cannot be made out of selling only them, and other products need to be sold alongside them. More importantly, all major suppliers of backhoe loaders are able to offer one or more of these alternative machines; this will inevitably result in a greater focus of marketing resources towards the volume product sectors. Meanwhile, their dealers will not necessarily market the backhoe loader as forcefully as they once may have done. Therefore, the great challenge for every supplier is how to motivate its dealers to actively go out and promote backhoe loaders.

In fact there are an increasing number of suppliers believing that this product has permanently lost the majority of its market potential to the overwhelmingly popular mini excavators and wheeled loaders. Sales are expected to increase to 850 units by 2014 at an average growth rate of 15 per cent, but in overall terms it is unlikely to be anything more than a niche sector.

## **MACHINES AVAILABLE**

The table below shows the ranges available from established suppliers in China, and the types of machine in the table are as follows:

- A – Articulated chassis
- R – Rigid chassis

**Table 22. China: Backhoe Loaders Available, 2010**

Manufacturer	Type	Model	Engine		Operating Weight (Tonnes)	Product Source
			HP	Manufacturer		
<b>Case</b>	R	580M-T-2WD	85	Case	7.5	USA
	R	580M-T-4WD	85	Case	7.5	USA
	R	580SM 2WD	97	Case	8.0	USA
	R	580SM 4WD	97	Case	8.0	USA
	R	590SM 2WD	110	Case	8.9	USA
	R	590SM 4WD	110	Case	8.9	USA
	R	695SR	110	Case	8.8	USA
<b>Caterpillar</b>	R	420E	89	Caterpillar	7.0	USA
	R	430E	97	Caterpillar	7.3	USA
<b>Changlin</b>	R	WZ30-25	95	Cummins, USA	7.0	Jiangsu
	R	WZ30-25C	101	Weichai	7.4	Jiangsu
	R	WZC20	100	Cummins, USA	7.4	Jiangsu
<b>Chaogong</b>	A	WZ30-25	88	Yituo	7.6	Liaoning
<b>Foton Lovol</b>	R	FLB468	93	Tianjin Lovol	8.3	Shandong
	R	FLB486A	93	Tianjin Lovol	8.3	Shandong
<b>JCB</b>	R	3CX-2T	92	JCB	7.0	UK
	R	3CX-4T	92	JCB	7.0	UK
	R	4CX	100	JCB	7.5	UK
<b>SDLG</b>	A	LGB680	79	Weichai, Yuchai, Yituo	8.5	Shandong
<b>Liugong</b>	R	CLG766	100	Weichai, Perkins, Cummins	7.2	Jiangsu
	R	CLG777	100	Weichai, Perkins, Cummins	7.2	Jiangsu
<b>New Holland</b>	R	LB95B	95	CNH	8.5	Italy
<b>Volvo</b>	R	BL61 Plus	94	Volvo	8.2	Poland
	R	BL71 Plus	100	Volvo	8.6	Poland
<b>Weimeng</b>	A	WZ30-25	90	Weichai	7.6	Shandong
	A	WZY30-25	90	Yituo	7.6	Shandong
<b>Xugong Compact</b>	A	WZ30-25	88	Yuchai	9.5	Jiangsu
	A	XT860	82	Yituo	8.4	Jiangsu
	R	XT870	100	Cummins	7.3	Jiangsu
	R	XT876	100	Cummins	7.3	Jiangsu
<b>Xiagong</b>	R	XG765	95	Cummins, USA	7.5	Fujian
<b>Yangong</b>	A	WZ25-20	68	Chaoyang	6.4	Shandong

Source: Company Information

## DOMESTIC MANUFACTURERS

### **Changlin Co. Ltd**

10 Changlin Road  
Changzhou City  
Jiangsu Province 213002

Tel: +86 (0) 519 6781 288  
Fax: +86 (0) 519 67781 387  
[www.changlin.com.cn](http://www.changlin.com.cn)

### **Foton Lovol International Heavy Industries Co. Ltd**

No.206 Beihai Road  
Weifang City  
Shandong Province 261206

Tel: +86 (0)536 760 8388  
Fax: +86 (0)536 760 6293  
[www.fotonlovol.com](http://www.fotonlovol.com)

### **Shandong SDLG Construction Machinery Co. Ltd**

SDLG Industrial Park  
Linyi City  
Shandong Province 276000

Tel: +86 (0) 539 878 5688  
Fax: +86 (0) 539 878 5698  
[www.sdlg.com.cn](http://www.sdlg.com.cn)

### **Xiamen Xiangong Compact Machinery Co. Ltd**

No.668 Guankou South Road  
Jimei District  
Xiamen City  
Fujian Province 361023

Tel: +86 (0)592 638 9500  
Fax: +86 (0)592 638 9503  
[www.xiangonggroup.com](http://www.xiangonggroup.com)

### **Yantai Engineering Machinery Co. Ltd**

No.4 Fenghuangtai Road  
Yantai City  
Shandong Province 264002

Tel: +86 (0) 535 6531 416  
Fax: +86 (0) 535 6533 136  
[www.yangong.com.cn](http://www.yangong.com.cn)

### **Chaoyang Chaogong Construction Machinery Co. Ltd**

Longcheng Industrial Zone  
Chaoyang City  
Liaoning Province 122000

Tel: +86 (0)421 3815 012  
Fax: +86 (0)421 3814 602  
[www.chaogong.com.cn](http://www.chaogong.com.cn)

### **Jiangsu Liugong Machinery Co. Ltd**

No.1 Ningzhen Highway  
Zhenjiang City  
Jiangsu Province 212005

Tel: +86 (0) 511-85727003  
Fax: +86 (0) 511-85727150  
[www.liugong.com](http://www.liugong.com)

### **Weimeng Engineering Machinery Co. Ltd**

Qingzhou City  
Shandong Province 262500

Tel: +86 (0) 536 3818 379  
Fax: +86 (0) 536 3818 008  
[www.sdwm.cc](http://www.sdwm.cc)

### **Xugong Compact – Xuzhou Xugong Special Construction Machinery Co. Ltd**

No.58 Kuangshan West Road  
Xuzhou City  
Jiangsu Province 221151

Tel: +86 (0)516 8575 4200  
Fax: +86 (0)516 8575 4756  
[www.xcmgtg.com](http://www.xcmgtg.com)

## **IMPORTERS**

### **Case**

Case Construction Machinery (Shanghai) Co. Ltd  
No.29 Industrial Premises  
No.376 Debao Road  
Waigaoqiao Free Trade Zone  
Pudong  
Shanghai 200131

Tel: +86 (0)21 5048 1306  
Fax: +86 (0)21 5048 1822  
[www.casece.com](http://www.casece.com)

### **JCB**

JCB Construction Machinery (Shanghai) Co. Ltd  
No.3698 Xiuyan Road  
Kangqiao Industrial Zone  
Nanhui District  
Shanghai 201319

Tel: +86 (0)21 3811 3000  
Fax: +86 (0)21 3811 3001  
[www.jcb.com.cn](http://www.jcb.com.cn)

### **Caterpillar**

Caterpillar (China) Investment Co. Ltd  
Room 1701, China Life Tower  
No. 16 Chaoyangmenwai Avenue  
Beijing 100020  
P.R China

Tel: +86 (0)10 8525 3636  
Fax: +86 (0)10 8525 1829  
[www.cat.com](http://www.cat.com)

### **Volvo**

Volvo Construction Equipment (China) Co. Ltd  
Room 1608, Tian'an Centre  
No.338 Nanjing West Road  
Shanghai 200003

Tel: +86 (0)21 6358 8999  
Fax: +86 (0)21 6358 8908  
[www.volvoce-china.com](http://www.volvoce-china.com)