



# Heavy Equipment Pricing

## and Parts Pricing in China



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## With the economy going on a sluggish curve, the market demand for new heavy equipment has been greatly influenced last year into this year.

According to statistics from the China Construction Machinery Industry Association, from January to July 2024, domestic excavator sales were 59,461 units, a year-on-year increase of 6.23%; except for February in 2024, sales in each other month increased. With this positive trending, the pricing of the equipment however, is still seeing a weak momentum.

- The transaction price of new machines continues fluctuating: Since the launch of the NR4 machines at the end of 2022 with pricing significantly marked up, the transactional price has thus kept falling bit by bit. At present, the transaction price of medium and large excavators of NR4 has gradually approached the price of NR3, see Figure 1 below
- The rental (Taiban price) keeps weak: According to Construction Machinery Today's statistics, the Taiban rental price of small, medium, and large excavators fell by 1.07%, 1.38%, and 2.13% respectively in the first half of 2024
- The operational rate has slightly declined compared with last year: The construction machinery operational % in 2023 was 58%, and 54% in the first half of 2024. See Figure 2 below

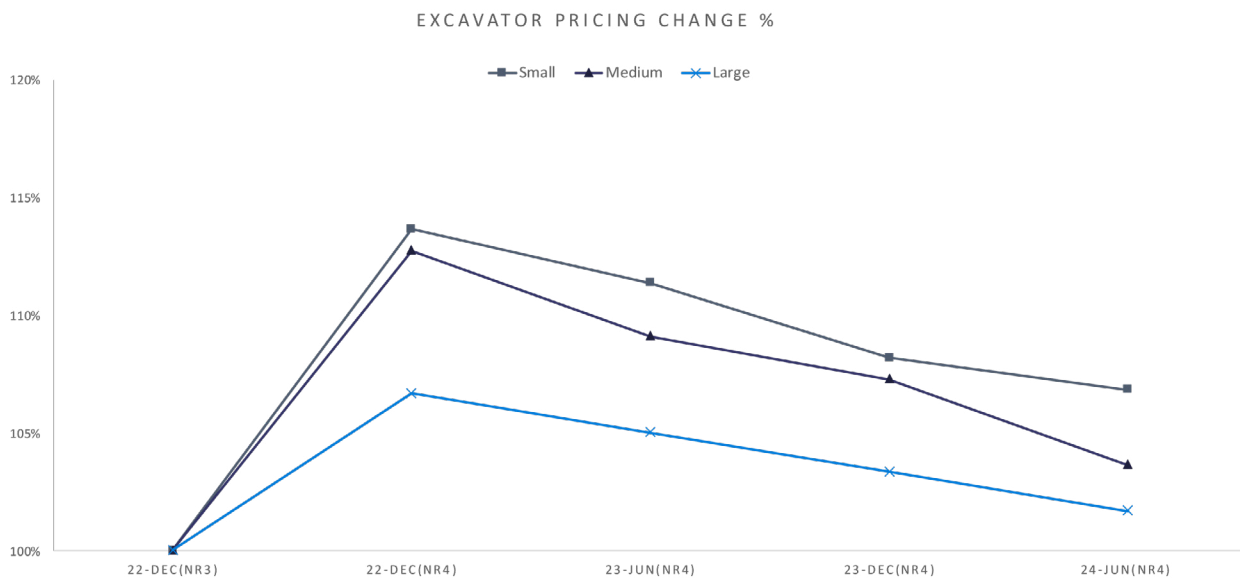


Figure 1: The pricing change % of a specific domestic brand in the certain region of China

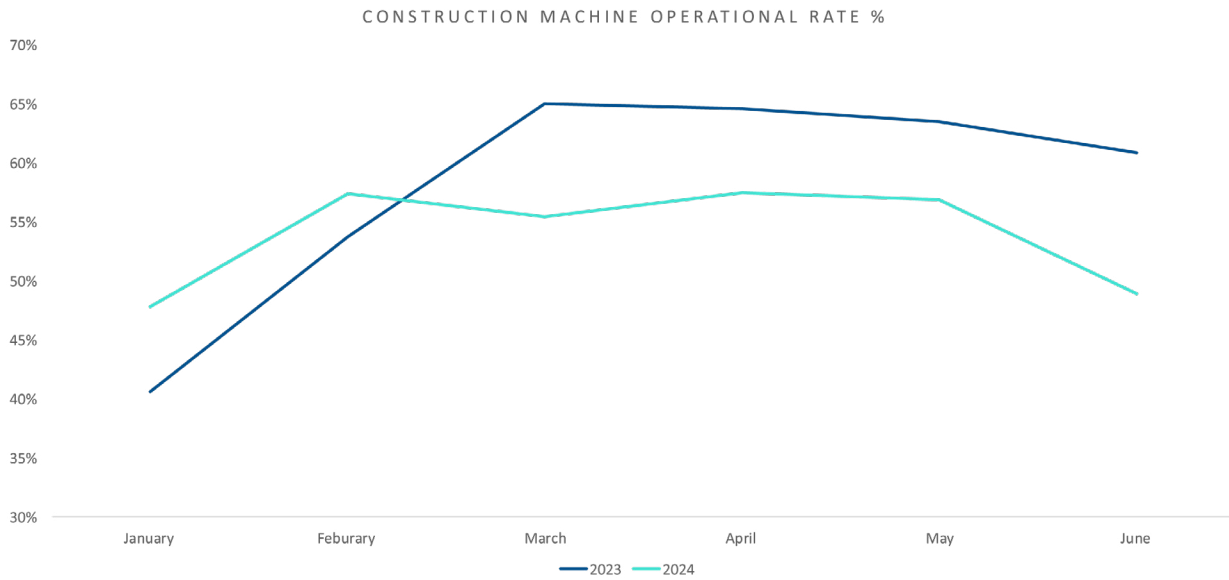


Figure 2

**Visiting frontline sales** in many provinces pointed to mixed feedbacks that new equipment sales remain challenging. The pricing changes in excavator prices over the years have witnessed a rather downward trend, except for a small rebound in 2023 during the transition between NR3 to NR4. We take a 6-ton small excavator as reference to compare the details. Before 2015, the price of a domestic brand 6-ton small excavator could be as high as over 300,000 RMB. Then, as market supply and sales grew rapidly, prices fell significantly. By 2021, a 6-ton small excavator could be bought at as low as 120,000 to 130,000 RMB. In 5 years, the price has been reduced by more than a half. From 2015 to 2020, the national real estate project openings showed an upward trend, increasing by 45% in 5 years, nevertheless the sales of excavators increased by 513%. This huge ramp up led to an overheated market. To some degree, the sales also has been stimulated by lower prices, attracting many irrational buyers investing into this business that further dragged down the Taiban rental price as the providers appeared to be too many in a short time.



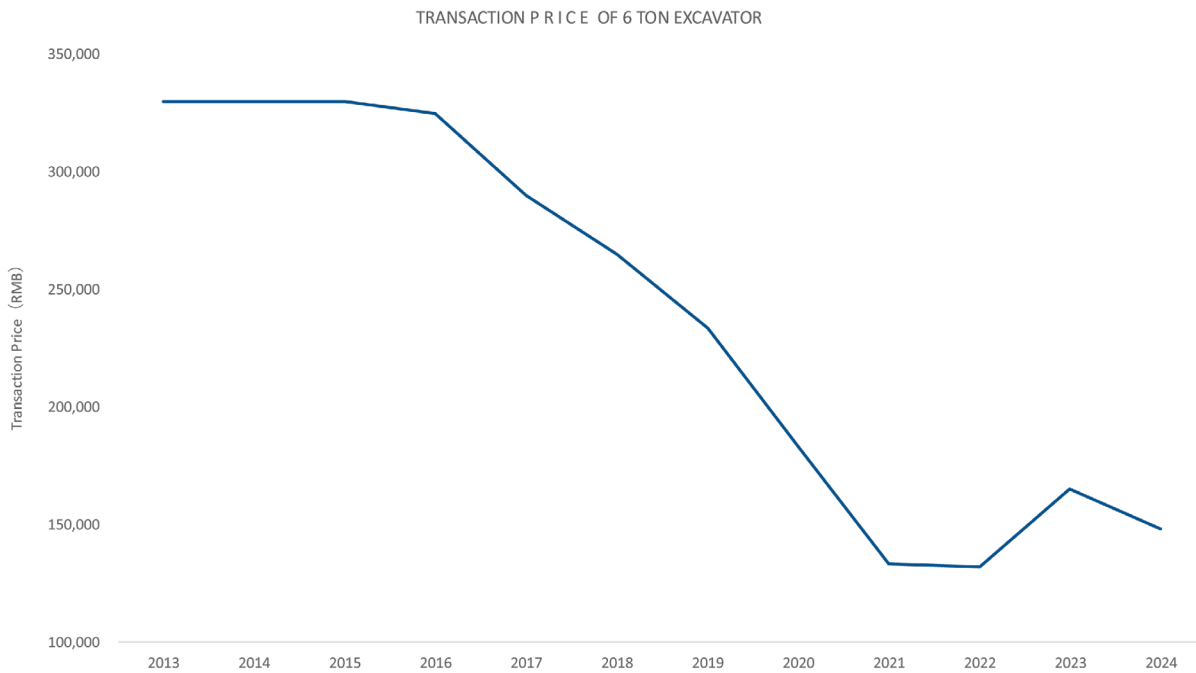


Figure 3: The actual transaction price of specific domestic brand in a certain region of China

**The impact of price competition has spread to the entire value chain.**

Manufacturers and dealers have repeatedly issued notices of price increases, minimal price restrictions, and other measures, including price adjustments when switching from NR3 to NR4. The result there was not sustainable or even effective. Many Chinese OEMs still follow the production-oriented strategy. Measure to reducing production means idle production capacity, investment failures, reduced revenue, reduced profit margins, and employee layoffs, which implies the company is going downhill. These things are what a company is most reluctant to face and experience. Instead of slowing down the production, OEMs chose to take other measures such as going overseas for new business growth, meanwhile still using sales volume and market share as the most important factors to measure local dealer performance. Dealers are required to fulfill sales targets through machine buyouts only. This will add to the pressure of keeping price low to sell more, rather than producing more and sell high.



On the other hand, the weaker market drove end customers to use more used machines and the demand for heavy equipment parts will keep stable when the repair and maintenance needs rise.

## 01

**Heavy equipment parts have a large number of suppliers, depending on multiple factors**

- a) **The market size of the specific parts and how frequently it wears out and needs to be replaced;**

On the China market, a lot of times one can get different quotes for OE parts and will-fit parts. For specific wearable parts that need to be replaced frequently, there are a few replacement brands with good awareness. For example, there are many excavator bucket tooth manufacturers. Hardly anybody would use tooth from original manufacturer. The will-fit tooth does not last as long as the original ones, but they have fairly good quality and the price is less than 30% of the original part. One well-known local brand is “Diamond” which has very good reputation on the market. Many other tooth manufacturers are active in the aftermarket, with most located in Zhejiang Province. “Diamond” brand is 30-40% more expensive than the other local competitors

- b) **The market ownership of relevant equipment for popularly bought heavy equipment,** there are more parts manufacturers to compete.

Some parts manufacturers focus on offering parts that are compatible with popular excavator models. They normally specify the parts with each exact machine model. Some even can be found and sell under the same OE part numbers. Among the competitors, large players use their own brand names. However, some smaller competitors don't even have their own brand names. They are simply private labels and can be identified as “compatible with XXX (OEM brand)”.



**c) The technical difficulty of the parts and how critical it is to the operations.** For specific core parts, which undertake difficult jobs, customers incline to buy from original manufacturers or dealers. For example, there are dozens of drill manufacturers in China. For deep mining applications that need to cut through hard rocks, only original parts can perform. And for smaller parts like spark plug, there are a number of spark plug manufacturers on the market. But for specific spark plug products, there are no substitutes found in the market. Likewise, special adaptors, bulldozer end bits, and motor grader edges had nearly none competitor brands. Out of all the numerous parts, the key important parts are often produced by the original manufacturer, e.g. motor, engine, main pump, etc. These parts play a key role in the machine and seldomly break down. A lot of the core parts need to last for over 10 years. So customers do not want to take the risk of using any cheaper substitutes. Even if a part of customers hope to save cost, they would rather buy the original parts, and just install it by themselves to save labor fee.

**d) Patents**

A number of different part types have patents from the original manufacturers. For specific bucket tooth, which are designed for special purpose machines, there are no competitors that manufacture the same type of tooth. Competitors are aware of the patents issue, and will stay away from the legal issues. Patents are an effective way found in the practices to protect the intellectual property rights.



## 02

### Heavy equipment parts pricing influential factors

#### a) VAT

A lot of heavy equipment are privately owned. The private customers do not have a company license, or just have a micro business. They need no VAT invoices for the parts they purchase. They usually are interested in a quotation without tax. The VAT is normally 13% for regular size companies or 3% for small scale companies. And in the case of no invoice required, tax is zero for those private businesses.

#### b) Warranty

Some types of parts provide 1-5 years warranty, while others provide no warranty at all. This is normally offered from will-fit manufacturers. Different warranty is offered with different products. One local supplier offers 3 months warranty for cutting tools made of boron steel, but no warranty for cutting tools made of carbon steel. Buyers are aware of the warranty period. They will balance the quality, warranty, and cost in the selection and decision making. Part of customers are willing to trade off warranty for a lower price. Big customers pay more attention to a good warranty period. These are usually large companies, or state-owned companies, and therefore have less stress about the cost. Nowadays, local parts competitors started to care more about warranty and company reputation. They offer a warranty period, and parts broken during the warranty period can be sent back to the factory for inspection and repair or return without extra cost.

#### c) Logistics cost with importance vs. local manufactured import parts could be significantly more expensive, sometimes 4-5 times more expensive than local products. Now most parts, including international brands, are manufactured locally. Still there are limited number of key parts to be imported. The lead time often is unpredictable, when it comes to challenging times during the pandemic. The shipping plus the import duty tax added a lot to the cost, that further drove the need of setting up parts supply chain locally or regionally to ensure responsiveness.

#### d) Quality matters: international brands vs. local brands from recent hoses and couplings observations, international brands could be 1-15 times more expensive than local brands, with almost the same specs. For hoses, 90% of the select customer samples chose international brands in spite of the higher cost, as international brand hoses normally last 4-5 years, while domestic brand hoses only last for 2 years. Couplings is a different story. Almost all customers prefer domestic brands which are cheap alternatives. According to them the quality of the couplings does not vary a lot that could satisfy daily use.



## 03

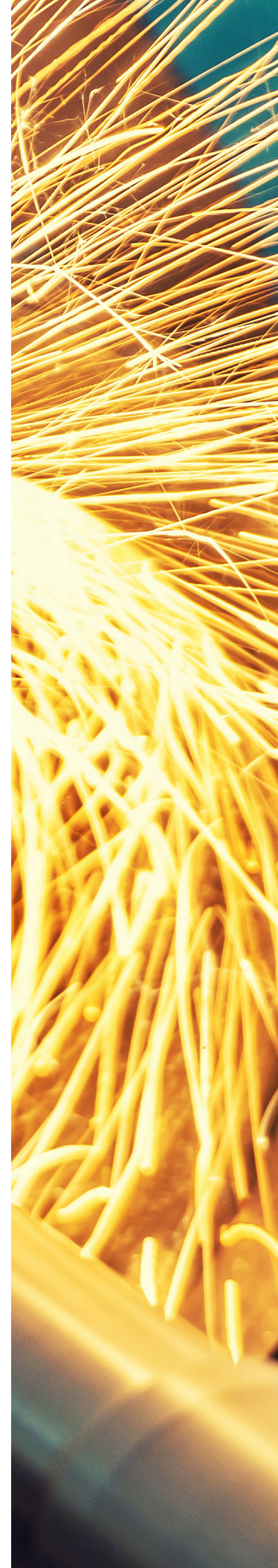
**Parts price also fluctuate with a number of reasons.**

**a) Raw material price change**

Parts price fluctuate with the raw material price change. Steel price went up and down and in 2024 the steel price dropped a lot. This is reflected into cutting-edge prices. Often the parts price resonates the raw material price. Parts price fluctuations is also determined by multiple factors like market demand as a key. When the market is sluggish, the price will not be able to follow the rising trend of raw materials price even if that cost rises obviously.

**b) Different raw material used**

Different types of steel are used in manufacturing. Among all steel types, boron steel is the most expensive, followed by carbon steel. High-carbon steel is the cheapest. Boron steel is about RMB 0.8/kg more expensive than carbon steel. In excavator and bulldozer cutting edges, normally 30MnB and 45# types of steels are used. Graders use 30MnB and 80# steel and track shoes normally use 25MnB. Local parts competitors often use a combination with different type of raw material to keep the cost low.





**In general, the pricing adjustment of equipment is more rigid than parts.**

When customers expect pricing at low range due to the lasting pricing competition, it'll take consistent mid-to-long term efforts to turn the expectation around and sell by value instead. Intense price competition can definitely be relieved by the recovery of demand, better managed supply, pursue of reasonable prices and profits, and healthier business growth models. Not only the off-highway equipment industry, but many industries are also facing similar problems. If companies can be more cautious and rational to invest in the expansion in the growth cycle, there will be more "leeway" in the downward cycle to still capture fair sales value and profitability.

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