

SUMMARY

CONSTRUCTION

LIFT/ACCESS

AGRICULTURE

COMMERCIAL TRUCK

MARKET DATA: SEPTEMBER 2016

EquipmentWatch remains the largest sales database on the planet with 20x the sales data of any other source.

\$32,065,192,041

RESALE

\$31,796,669,820

400,021 Assets

AUCTION

\$268,522,221

8,977 Assets

The *EquipmentWatch* **Market Report**[™] is a monthly resource for the construction, lift/access, agriculture and commercial truck industries to make better-informed decisions by leveraging key **equipment values, market activity, age and usage metrics**.

How is the Price Stability INDEX calculated?

For more detailed articles, visit EquipmentWatch Intelligence online. **MARKET SUMMARY** MONTH OVER MONTH YEAR OVER YEAR MARKET ACTIVITY PRICE STABILITY INDEX TO **MARKET METRICS MARKET METRICS ▲** 0.5% **T** 1.9% **V** 0.9% **V** 0.3% CONSTRUCTION **VALUES VALUES** 99.50 FLV FMV FLV 95 105 \blacksquare \$16,240,027,221 184,247 **19.9%** 12.1% **▲ 11.2% ▲** 137.3 % VOLUME **VOLUME** MARKET VALUE **ASSETS** STABLE DEFLATED INFLATED RESALE RESALE **AUCTION AUCTION** 0.0% **T** 1.2% **V** 0.6% **V** 0.5% LIFT/ACCESS **VALUES VALUES** 99.52 FIV FLV FMV FMV 95 105 \$1,246,995,160 39,443 **7** 2.9% **7** 9.3% MARKET VALUE ASSETS VOLUME **VOLUME ▲ 1.5% ▲** 95.9% DEFLATED STABLE INFLATED RESALE **AUCTION** AUCTION RESALE **▼** 7.1% **7.5%** 0.0% 0.0% 99.96 **AGRICULTURE VALUES VALUES** FMV FIV FMV FIV 95 105 \$12.251.693.060 136.086 **22.8% V** 49.7% **18.0% V** 6.8% MARKET VALUE ASSETS VOLUME **VOLUME** DEFLATED STABLE INFLATED RESALE **AUCTION RESALE AUCTION** 95.79 **V** 6.5% **1.6% VALUES 7** 8.6% **T** 1.6% COMMERCIAL TRUCK **VALUES** 95 105 FMV FLV FMV FLV \$2,326,476,600 49,222 **18.6% T** 13.2% VOLUME **▲** 32.0% **▲** 185.8% MARKET VALUE ASSETS DEFLATED STABLE INFLATED **VOLUME** RESALE **AUCTION** RESALE **AUCTION**



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REGIONAL TRENDS

How is the Price Stability INDEX calculated?



MARKET PERFORMANCE

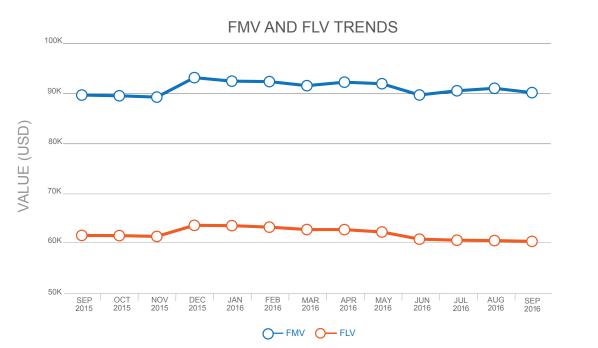
After a steep inflation in values in August, average FMV and FLV declined amidst an increase in market activity to bring the Price Stability Index™ in North America back to stable levels in September. Auction market activity climbed over 100% from August to September, largely on the back of several large Ritchie Brothers auctions.

MARKET HIGHLIGHTS

- Compared to September 2015, average age on the resale channel dropped approximately 5.4%, even as average usage increased by 1.9%. This is continued evidence that economic life for construction equipment continues to expand.
- Although fair market values declined 0.9% in September, they remained 0.5% higher than the average in September 2015.
- Interestingly, the average usage for construction equipment at auction increased 17.6% in September, even though it was still 13.9% lower than September last year.

MARKET FORECAST

With the exception of 2015, auction activity has declined in October every year since 2013. A return to that trend in 2016 would imply that increases in average usage and age, alongside decreases in average FLV, will follow next month.





APRIL 19, 2016 VERSION: PREMIUM | UPDATED MONTHLY

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MARKET PERFORMANCE

After a very slight increase in values last month, September saw values decrease slightly by about 0.5%. Resale volume decreased by almost 3% over the past month, while auction volume almost doubled.

MARKET HIGHLIGHTS

- Resale activity decreased for the first time in three months, dropping almost 3% from the previous month.
- Auction volume almost doubled from August to September. This could be the start of the fall season disposition, with equipment owners beginning to list their machinery in hopes of selling before the busy season starts again.
- Lift values dropped by about 0.5% across both channels, showing a trend of declining values usually seen in the fall months.

MARKET FORECAST

We should continue to see drops in lift values, while seeing an increase in activity across both channels next month.









	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	V 2.9%	▲ 95.9%	▲ 1.2 %	▲ 7.6%	▲ 0.6%	▼ 5.6%
MONTH OVER MONTH	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION
YEAR OVER YEAR	▼ 12.9%	▼ 9.3%	▼ 1.1%	▲ 3.7%	▲ 27.2 %	▼ 0.2%
	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION

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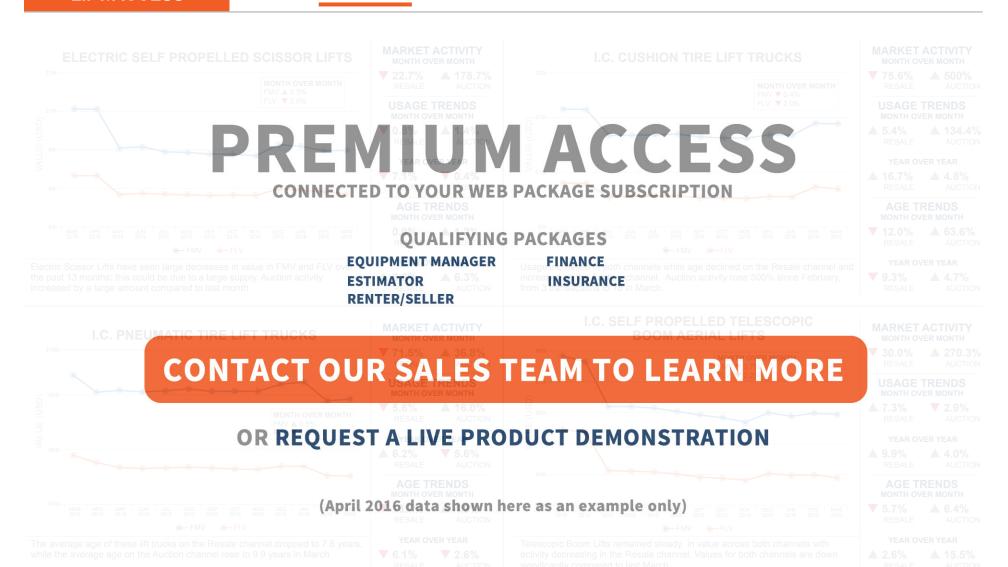
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How is the Price Stability INDEX calculated?



MARKET PERFORMANCE

FMV and FLV showed almost no change from August, but compared to last September both channels were down. There were large increases on resale volume both month over month and year over year, yet auction volume was down significantly from last September and only 6.8% from last month.

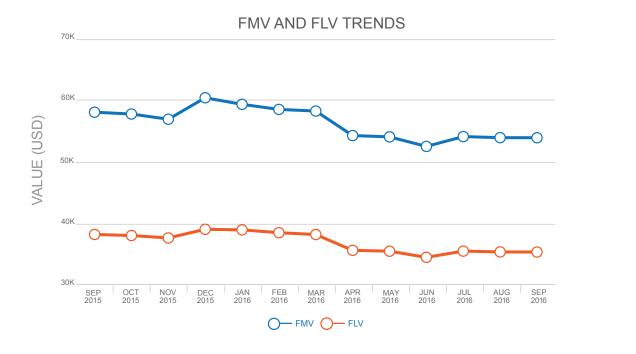
MARKET HIGHLIGHTS

- With the 46.1% increase in resale volume year over year and 49.7% drop in auction, there is a clear indication of a shift in preferred channels this year versus last
- Even though the average age on the resale channel dropped from August, the average usage increased 3.9%.
- As volume dropped from last September on the auction channel, both average age and usage increased year over year.

MARKET FORECAST

As volume dropped from last September on the auction channel, both average age and usage increased year over year.

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	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	▲ 22.8%	V 6.8%	▼ 0.1%	▲ 6.4%	▼ 3.9%	▼ 80.7%
MORTH OVER MORTH	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION
YEAR OVER YEAR	▲ 46.1%	4 9.7%	▲ 3.8%	▲ 29.2 %	▲ 45.5%	24.8%
	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION

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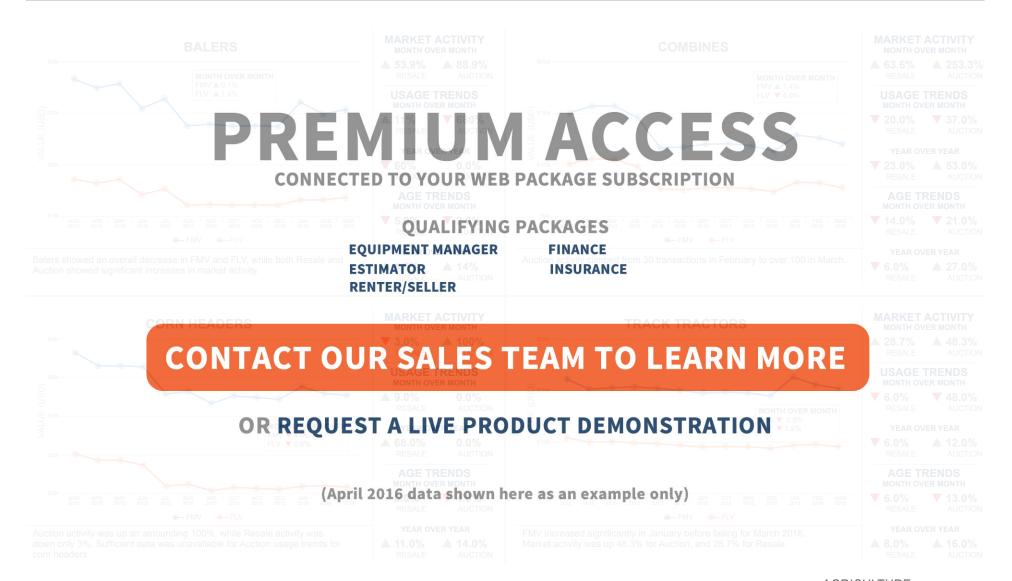
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How is the Price Stability INDEX calculated?



MARKET PERFORMANCE

Both FMV and FLV were down for the month as volume increased over August. The overall average age and usage was up for auction and resale channels both month over month and year over year, which certainly influenced the price changes.

MARKET HIGHLIGHTS

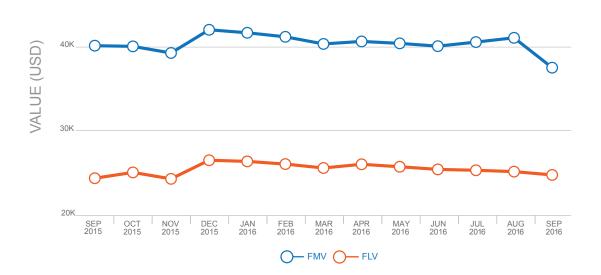
- The resale channel average usage increased well above last September, yet auction only increased 0.6%
- The only decline in volume during September was the auction channel from last year despite the large month over month increase over August.
- As was expected with the usage increases for the month, the average age on the market increased for both the auction and resale channels year over year and over August.

MARKET FORECAST

The past three years have shown large drops in auction activity for October after increases between August and September, so prepare for less truck sales at auction before the large increases at the end of the fourth quarter.

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	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	▲ 18.6%	▲ 185.8%	▲ 14.1%	▲ 28.5 %	▲ 7.3%	▲ 23.3%
	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION
YEAR OVER YEAR	▲ 1.4%	T 13.2%	▲ 3.5%	▲ 15.1%	▲ 25.3	▲ 0.6%
	RESALE	AUCTION	RESALE	AUCTION	RESALE	AUCTION

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NEXT TYPE TRENDS

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APPENDIX

INTRODUCTION

The EquipmentWatch Market Report is a compilation of a wide array of EquipmentWatch's data, designed to bring you an in-depth look at used equipment markets over the last month.

This Appendix is designed to answer your questions regarding this report. Here we define and illustrate how we think about values, market activity, age, Usage, and regional influence for the most common types of equipment seen on used markets across North America.

OUR DATA

Selection Criteria for OEMs and Subtypes

EquipmentWatch tracks Resale and Auction prices and activity for over 15,000 models across 389 manufacturers throughout North America. With over \$800 billion in collected equipment transactions, EquipmentWatch is your primary source for intelligence regarding used equipment markets.

The data in this report is divided into four distinct equipment markets: Construction, Lift/Access, Agriculture, and Commercial Trucks. For each market, we selected the top equipment types based on their market share from January 2015 to December 2015. They're listed in the table to the right.

Construction	Lift/Access	Agriculture	Commercial Trucks	
4-Wd Articulated Wheel Loaders	Electric Self Propelled Scissor Lifts	Track Tractors	Heavy Duty: Conventional - Sleeper (Heavy Tractor)	
Articulated Frame Graders	I.C. Pneumatic Tire Lift Trucks	Balers	Heavy Duty: Conventional - Day Cab (Heavy Tractor)	
Articulated Rear Dumps	I.C. Self Propelled Telescopic Boom Aerial Lifts	Combines	Heavy Duty: Conventional - Day Cab (Heavy Cab Chassis)	
Compact Track Loaders	I.C. Self-Propelled Articulating Boom Aerial Lifts	Corn Headers	Medium Duty: Conventional - Day Cab (Cab Chassis)	
Crawler Mounted Compact Excavators	Telescoping Boom Rough Terrain Lift Trucks	Wheel Tractors	Medium Duty: Cabover - Day Cab (Cab Chassis)	
Crawler Mounted Hydraulic Excavators	I.C. Cushion Tire Lift Trucks	Planters	Medium Duty: Crew (Cab Chassis)	
Large Generator Sets				
Single Drum Vibratory Compactors				
Skid Steer Loaders				
Standard Crawler Dozers				
Tandem Vibratory Compactors				
Tractor-Loader- Backhoes				



APPENDIX

We have also limited the scope of the EquipmentWatch Market Report to the following brands in each market:

Construction	Lift/Access	Agriculture	Commercial Truck	
Bobcat	Caterpillar	Deere	International	
Case	Genie	Case IH	Freightliner	
Caterpillar	JLG	New Holland	Volvo	
Deere	Sky Trak	Massey Ferguson	Kenworth	
Komatsu	Skyjack	Challenger	Peterbilt	
Volvo	Hyster	Kubota	Hino	

THE EQUIPMENTWATCH PRICE STABILITY INDEX™

Academic justification

The EquipmentWatch Price Stability Index™ is a new metric for understanding used equipment markets for used heavy equipment. It measures resale price capacity based on the movement of market prices and market activity among the equipment types and manufacturers presented above.

Methodology and Calculation

The EquipmentWatch Price Stability Index™ is based on the Laspeyres Index, one of the many economic indices used to monitor changes in prices over time. To calculate it, we use the framework provided by the Laspeyres Index:

$$P_{L} = \frac{\sum (p_{c,t_{n}}) * (q_{c,t_{0}})}{\sum (p_{c,t_{0}}) * (q_{c,t_{0}})}$$

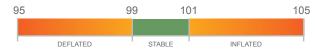
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This equation sums the product of prices in the current month and quantity of the previous month and divides that by the product of prices in the previous month and quantity in the previous month.

We have modified this method to track the change in prices for each equipment type from month-to-month against the change in market activity for each equipment type month to month.

Interpretation

The EquipmentWatch Price Stability Index[™] can be thought of as an index of price capacity. In more formal terms, it measures how efficiently used markets adjust to equilibrium given previous adjustments in prices and market activity. There are three primary ranges in the EquipmentWatch Price Stability Index[™], as noted below:



When the EquipmentWatch Price Stability Index™ is higher than 101, that indicates that equipment is valued at a higher level than expected, given last month's prices and amount of market activity. We categorize this range as "Inflated".

When the EquipmentWatch Price Stability Index[™] is lower than 99, it indicates that equipment is valued at a lower level than expected, given last month's prices and market activity. We categorize this range as "Deflated".

When the EquipmentWatch Price Stability Index™ is between 99 and 101, it is typically demonstrating that equipment prices and market activity are moving appropriately towards market equilibrium. We categorize this range as "Stable".

It is important to note that a higher rating on EquipmentWatch Price Stability Index™ does not necessarily imply that used markets are better than a lower rating. For some, price inflation is desirable; for others, it is undesirable. However, all parties involved in buying or selling equipment on used markets can use the EquipmentWatch Price Stability Index™ to easily understand how prices in a particular region or equipment channel are moving relative to the previous month.



APPENDIX

SECTION GUIDES

The Introduction

In the top left, we exhibit a tally of the estimated market value of market activity last month in the Resale channel and Auction channel.

In the main table, we display market activity and assets for each market, along with month over month and year over year changes in Fair Market Value and Forced Liquidation Value.

Overall Trends

This page is an overview of each channel. The graph highlights an overall FMV and FLV trend line for all of the equipment types and manufacturers in the report for the last 13 months. It also displays very general month over month and year over year trends across the entire channel.

Type Trends

This page subsets the analysis of the previous page across each of the key equipment types in this report.

Brand Trends

This page shows some of the key month over month trends for the manufacturers represented in this report, including equipment values, Usage, market activity, and age trends.

Regional Trends

This page shows the EquipmentWatch Price Stability Index™ for each of the 14 regions, using the same calculation method as the EquipmentWatch Price Stability Index[™] shown on the first page of the report. The states and provinces which make up each region are listed in the table to the right.

Note that due to regional disparity in market activity, some regions with very little or no market activity in the last month are excluded from the analysis. These are marked with "NA" on the map.

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Country	Region	State/Province
USA	Α	CT, DE, MA, ME, NH, NJ, MY, RI, VT
USA	В	MD, P, VA, WV
USA	С	AL, FL, GA, KY, MS, NC, SC, TN
USA	D	IL, IN, MI, OH, WI
USA	Е	IA, KS, MO, NE
USA	F	AR, LA, OK, TX
USA	G	AZ, CO, NM, UT
USA	Н	ID, MN, MT, ND, SD, WY
USA	I	CA, NV, OR, WA
USA	J	HI
USA	K	AK
CAN	L	NT, NU, YT
CAN	M	AB, BC, MB, SK
CAN	N	NB, NL, NS, ON, PE, QC

FAQS

Why did you limit the equipment types in this report?

EquipmentWatch tracks market activity for over a hundred unique equipment types each month. For each channel, we selected the most popular equipment types, based on the frequency of appearance on the resale and auction channels.

Why are there only 24 manufacturers in this report?

EquipmentWatch tracks market activity for almost 400 unique manufacturers each month. For each market, we selected the top 6 manufacturers. As the markets shift and prominence on used markets changes, we will adjust our selections accordingly.



APPENDIX

Why don't you use OLV?

Orderly Liquidation Value, or OLV, is a third major category of values. These are the values of an asset given a single seller and multiple potential buyers given a long or indefinite timeframe in which to dispose. Given the lack of clarity around the time dimension, we have chosen not to make assumptions about the orderly liquidation process. However, OLV is typically between FLV and FMV in gross value.

IMPORTANT DEFINITIONS

Fair Market Value (FMV): the value of an asset sold to a single buyer under no compulsion.

Forced Liquidation Value (FLV): the value of an asset sold at a properly advertised and conducted auction in which the seller is under compulsion to sell on an as-is, where-is basis as of a specific date.

Market Activity: A measure of the total number of observations collected by EquipmentWatch, including publicly-available dealer listings, auction results, and final sales data.

Meter Reads: A measure of Usage that varies by equipment market. For most equipment types, this represents engine hours at the time of observation.

Age: the age of an asset, based on model year and the year of observation.

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ABOUT EQUIPMENTWATCH

EquipmentWatch is the trusted source for heavy equipment data and intelligence. EquipmentWatch produces the leading database information products for the construction equipment industry and is the world leader in heavy construction research and serves more than 15,000 professional, high-volume users of construction and lift-truck data. Our online and print products are valuable tools in decisions surrounding the purchase, valuation, operation, and disposal of equipment.

For nearly 50 years, EquipmentWatch has served contractors, equipment manufacturers, dealers, rental companies, lenders and insurers, and government agencies involved in heavy civil construction.

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