MARKET DATA: NOVEMBER 2017

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

$32,243,091,936

RESALE
$32,056,457,914
399,214 Assets

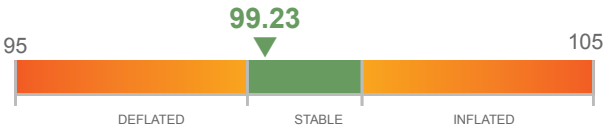
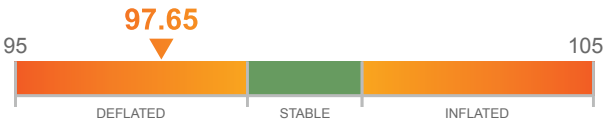
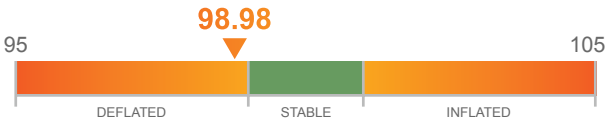
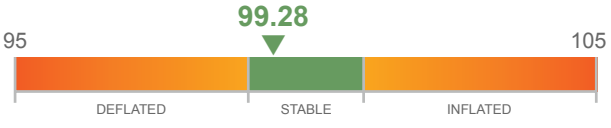
AUCTION
$186,634,022
6,941 Assets

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?

MARKET SUMMARY

For more detailed articles, visit *EquipmentWatch* Intelligence online.

MARKET ACTIVITY	YEAR OVER YEAR MARKET METRICS	MONTH OVER MONTH MARKET METRICS	PRICE STABILITY INDEX ™
CONSTRUCTION $19,106,977,771 MARKET VALUE 233,155 ASSETS	VALUES ▼ 3.6% FMV ▼ 5.2% FLV VOLUME ▲ 12.9% RESALE ▲ 88.2% AUCTION	VALUES ▲ 0.8% FMV ▲ 1.0% FLV VOLUME ▼ 7.0% RESALE ▲ 39.2% AUCTION	
LIFT/ACCESS $1,131,763,350 MARKET VALUE 38,324 ASSETS	VALUES ▼ 11.7% FMV ▼ 12.4% FLV VOLUME ▼ 6.1% RESALE ▲ 21.4% AUCTION	VALUES ▼ 3.7% FMV ▼ 3.7% FLV VOLUME ▼ 22.5% RESALE ▲ 7.6% AUCTION	
AGRICULTURE $11,324,239,933 MARKET VALUE 129,920 ASSETS	VALUES ▼ 3.4% FMV ▼ 3.5% FLV VOLUME ▼ 46.6% RESALE ▲ 10.9% AUCTION	VALUES ▼ 1.5% FMV ▼ 36.6% FLV VOLUME ▼ 27.2% RESALE ▲ 48.7% AUCTION	
COMMERCIAL TRUCK $1,801,492,480 MARKET VALUE 42,349 ASSETS	VALUES ▼ 2.4% FMV ▲ 1.2% FLV VOLUME ▼ 29.9% RESALE ▲ 125.8% AUCTION	VALUES ▼ 0.6% FMV 0.0% FLV VOLUME ▼ 11.3% RESALE ▲ 116.9% AUCTION	

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Subtype Trends • Brand Analysis • Regional Price Stability

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CONSTRUCTION

How is the Price Stability INDEX calculated?

MARKET ACTIVITY

$19,106,977,771
MARKET VALUE

233,155
ASSETS

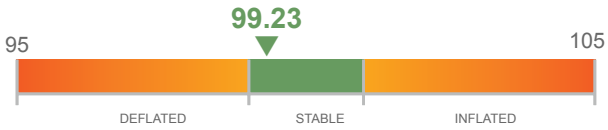
YEAR OVER YEAR MARKET METRICS

VALUES	▼ 3.6% FMV	▼ 5.2% FLV
VOLUME	▲ 12.9% RESALE	▲ 88.2% AUCTION

MONTH OVER MONTH MARKET METRICS

VALUES	▲ 0.8% FMV	▲ 0.1% FLV
VOLUME	▼ 7.0% RESALE	▲ 39.2% AUCTION

MONTH OVER MONTH PRICE STABILITY INDEX ™



MARKET PERFORMANCE

As predicted in the last market report, FMVs remained at stable levels in November 2017 with an increase of 0.8%, which is consistent with a Price Stability Index™ of 99.23. Market activity on the resale channel went up by 12.9% in November 2017 from November 2016. Perhaps sellers saw an opportunity from the heightened demand in Texas and Florida for construction equipment and listed more assets for sale.

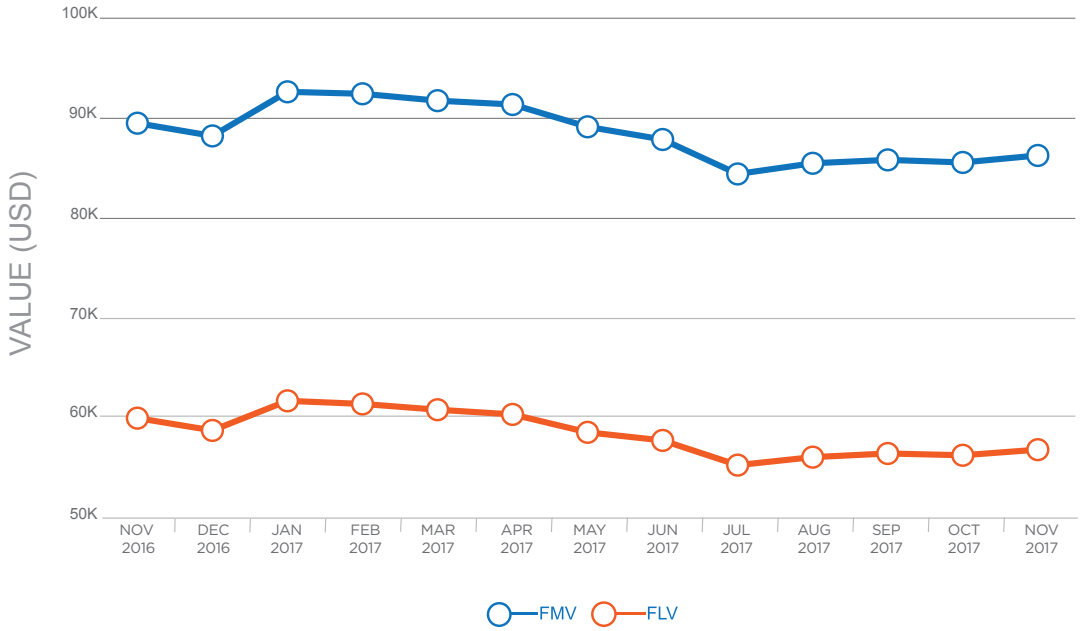
MARKET HIGHLIGHTS

- Auction market activity rose by 39.2% in November 2017 from October 2017.
- FMVs and FLVs decreased by -3.6% and 5.2% in November 2017 compared to the same month last year.
- Average age increased by 8.5% on the resale channel in November 2017 from November 2016.

MARKET FORECAST

Given the market disruption caused by hurricanes Harvey and Irma, we expect December 2017 to have higher than typical increases in market activity, but expect meter reads and values to remain stable.

FMV AND FLV TRENDS



	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	▼ 7.0% RESALE	▲ 39.2% AUCTION	▼ 2.8% RESALE	▲ 3.7% AUCTION	▲ 1.2% RESALE	▼ 0.6% AUCTION
YEAR OVER YEAR	▲ 12.9% RESALE	▲ 88.2% AUCTION	▲ 8.5% RESALE	▼ 6.1% AUCTION	▼ 2.2% RESALE	▲ 2.0% AUCTION

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LIFT/ACCESS

OVERALL | TYPE TRENDS | BRAND TRENDS | REGIONAL TRENDS

How is the Price Stability INDEX calculated?

MARKET ACTIVITY

$1,131,763,350
MARKET VALUE

38,324
ASSETS

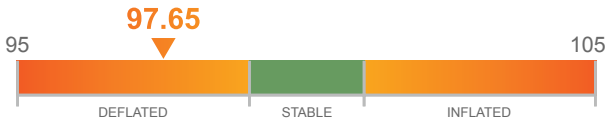
YEAR OVER YEAR MARKET METRICS

VALUES	▼ 11.7% FMV	▼ 12.4% FLV
VOLUME	▼ 6.1% RESALE	▲ 21.4% AUCTION

MONTH OVER MONTH MARKET METRICS

VALUES	▼ 3.7% FMV	▼ 3.7% FLV
VOLUME	▼ 22.5% RESALE	▲ 7.6% AUCTION

MONTH OVER MONTH PRICE STABILITY INDEX ™



MARKET PERFORMANCE

Average FMV and FLV in the Lift/Access market in November 2017 continued the declines observed in October by decreasing approximately 3.7%. Resale market activity decreased substantially in November, although auction market activity increased by nearly 8% in the same time frame.

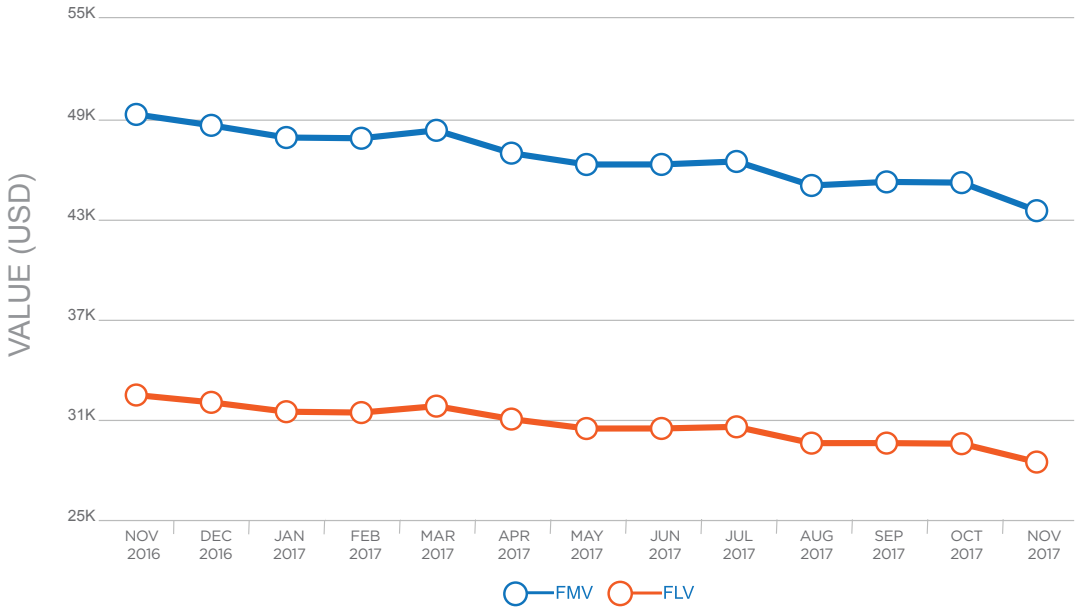
MARKET HIGHLIGHTS

- A significant decline in the total number of assets available on the Resale channel led to increased variance in the reported metrics for Lift/Access equipment.
- The auction channel displayed increased market activity alongside lower average age and usage in November, a sign that higher-quality assets reached the auction channel than in previous months.
- There were nominal changes in average age and usage on the Resale channel in November relative to October levels even with the sharp decline in market activity.

MARKET FORECAST

Although this market earned a Deflated status in November 2017, December should see some stabilization in prices without significant increases in average FMV. Resale market activity is likely to increase, but should remain in total count lower than peak summer months until February/ March 2018.

FMV AND FLV TRENDS



	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	▼ 22.5% RESALE	▲ 7.6% AUCTION	▼ 1.2% RESALE	▼ 3.7% AUCTION	▲ 0.7% RESALE	▼ 15.7% AUCTION
YEAR OVER YEAR	▼ 6.1% RESALE	▲ 21.4% AUCTION	▲ 5.4% RESALE	▲ 9.7% AUCTION	▲ 7.8% RESALE	▲ 1.9% AUCTION

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AGRICULTURE

OVERALL | TYPE TRENDS | BRAND TRENDS | REGIONAL TRENDS

How is the Price Stability INDEX calculated?

MARKET ACTIVITY

$11,324,239,933
MARKET VALUE

129,920
ASSETS

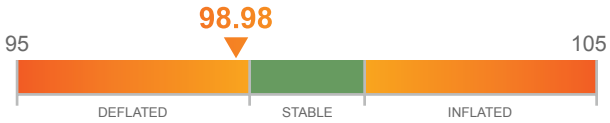
YEAR OVER YEAR MARKET METRICS

VALUES	▼ 3.4% FMV	▼ 3.5% FLV
VOLUME	▼ 46.6% RESALE	▲ 10.9% AUCTION

MONTH OVER MONTH MARKET METRICS

VALUES	▼ 1.5% FMV	▼ 36.6% FLV
VOLUME	▼ 27.2% RESALE	▲ 48.7% AUCTION

MONTH OVER MONTH PRICE STABILITY INDEX ™



MARKET PERFORMANCE

Although FMVs and FLVs in agriculture usually do not see large changes; towards the end of the fourth quarter it is not uncommon to see a marginally deflated market. Overall there was a decrease in market activity on the resale and increase on market activity auction market.

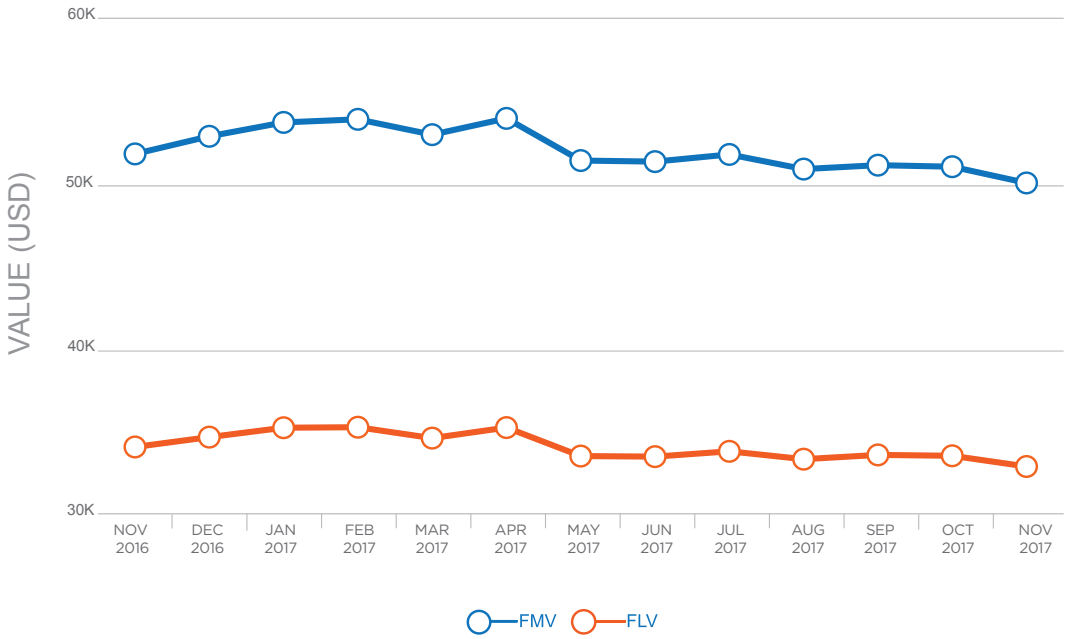
MARKET HIGHLIGHTS

- Though average FMVs were stable in November, values have dropped 3.5% since November 2016.
- Average usage increased across both channels, with emphasis on the auction channel.
- The average age increased on the auction and the resale channels. On the resale channel the year over year change is heavily impacted by the average age of track tractors increasing.

MARKET FORECAST

If past years' trends continue, we should expect an increase in average FMV and FLV in the upcoming months, despite the slightly-deflated market.

FMV AND FLV TRENDS



	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	▼ 27.2% RESALE	▲ 48.7% AUCTION	▲ 8.1% RESALE	▲ 12.8% AUCTION	▲ 8.3% RESALE	▲ 193.9% AUCTION
YEAR OVER YEAR	▼ 46.6% RESALE	▲ 10.9% AUCTION	▲ 22.2% RESALE	▲ 9.8% AUCTION	▲ 0.9% RESALE	▲ 103.6% AUCTION

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COMMERCIAL TRUCK

OVERALL | TYPE TRENDS | BRAND TRENDS | REGIONAL TRENDS

How is the Price Stability INDEX calculated?

MARKET ACTIVITY

$1,801,492,480
MARKET VALUE

42,349
ASSETS

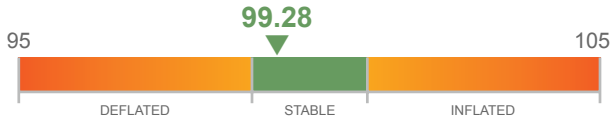
YEAR OVER YEAR MARKET METRICS

VALUES	▼ 2.4% FMV	▲ 1.2% FLV
VOLUME	▼ 29.9% RESALE	▲ 125.8% AUCTION

MONTH OVER MONTH MARKET METRICS

VALUES	▼ 0.6% FMV	0.0% FLV
VOLUME	▼ 11.3% RESALE	▲ 116.9% AUCTION

MONTH OVER MONTH PRICE STABILITY INDEX ™



MARKET PERFORMANCE

As FMV dropped 0.6% for the month, the FLV did not show any significant changes despite a large increase in market activity. With more assets available on the auction channel, FLV remained strong landing 1.2% above last year.

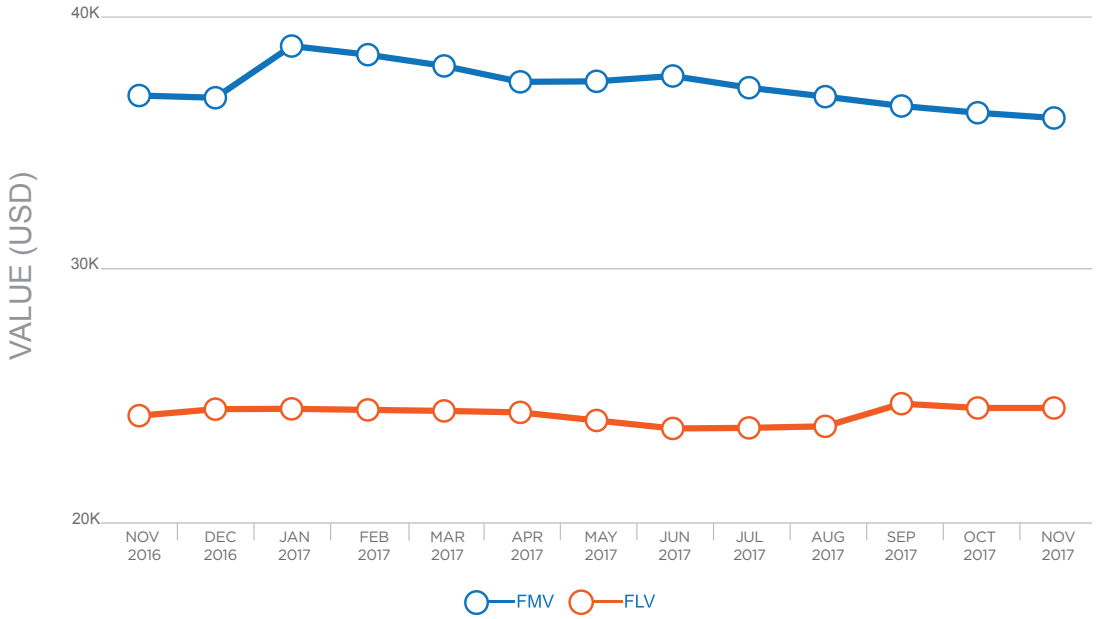
MARKET HIGHLIGHTS

- As the number of assets available on the auction channel increased, so did the average age and usage.
- The increase in average age had an opposite effect on the average usage for the month on the resale channel resulting in the drop in FLV by 0.6%.
- FLV did not have any significant changes last month with increases both month over month and year over year in activity which was expected this time of year and is expected to continue into next month.

MARKET FORECAST

It is expected that FMV remains relatively stagnant into December as the year comes to an end while FLV usually increases in December and continues through January.

FMV AND FLV TRENDS



	VOLUME CHANGE		AVERAGE AGE		USAGE	
MONTH OVER MONTH	▼ 11.3% RESALE	▲ 116.9% AUCTION	▲ 7.8% RESALE	▲ 1.3% AUCTION	▼ 5.9% RESALE	▲ 16.8% AUCTION
YEAR OVER YEAR	▼ 29.9% RESALE	▲ 125.8% AUCTION	▲ 15.8% RESALE	▲ 28.1% AUCTION	▼ 12.6% RESALE	▲ 16.3% AUCTION

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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			

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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:

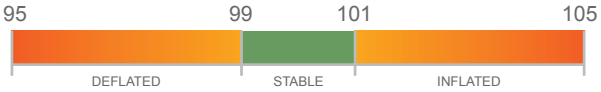
$$P_L = \frac{\sum(p_{c,t_n}) * (q_{c,t_0})}{\sum(p_{c,t_0}) * (q_{c,t_0})}$$

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.

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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.

Country	Region	State/Province
USA	A	CT, DE, MA, ME, NH, NJ, MY, RI, VT
USA	B	MD, P, VA, WV
USA	C	AL, FL, GA, KY, MS, NC, SC, TN
USA	D	IL, IN, MI, OH, WI
USA	E	IA, KS, MO, NE
USA	F	AR, LA, OK, TX
USA	G	AZ, CO, NM, UT
USA	H	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.

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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.

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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