The Henry Fund
Henry B. Tippie College of Business
Matthew Hodges [matthew-hodges@uiowa.edu]

Agricultural Equipment Manufacturing

April 16, 2021

Industrials

Industry Rating Market Weight

Investment Thesis

We recommend a market weighting for the agricultural equipment manufacturing industry. Though farm commodity prices are rising and growth forecasts are positive, the prospects for the industry do not justify overweighting. Input prices are also rising, which offsets the gains of prices received, and there are still trade and international concerns that pour cold water on the industry.

Drivers of Thesis

- Depending on the analysis, the industry is expected to grow between 4% and 9% CAGR for the next few years. We land on the more conservative side of this group but do agree with all of them that the industry will grow.
- Technological advances have historically played a key role in productivity gains for farmers and will continue to do so. Over the last five years, major players have increased their R&D investments by nearly $1 billion.
- Governments are expected to continue to support farm producers, which in turn should provide stability that will allow for capital investments. Governments need to be careful, however, as is attested in the farmer protests in India. Disruptions like this slow growth and hurt prospects.

Risks to Thesis

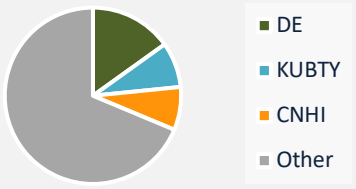
- Though crop prices are up, input prices for other commodities that farmers use for production are rising too. Wheat, corn, and soybeans are all seeing double-digit growth, but so is oil, so gains from the former are offset by the latter. Total prices received will need to surpass prices paid to flip this.
- It is unclear whether the market has already priced in any upside, especially for US-based companies. AGCO Corporation and Deere & Company are up 48.2% and 43.1% respectively on the year. This is not true of the foreign or small cap companies in this report, whose growth is between 11% and 28%.

Key Industry & Major Company Statistics

Industry Estimates – 2019-27	
Growth Rate (CAGR)	4 to 9%
2027 Global Market (B)	$166.5 to $244.2+
US Farm Establishments	-0.4% Est. Growth
Product Segmentation	
Tractors & Attachments	35%
Harvesting Machinery	17%
Planting & Fertilizing	7%
Haying	6%
Livestock	6%
Plowing & Cultivating	5%
Market Cap (B)	
AGCO Corp. (AGCO)	$11.4
CNH Industrial (CNHI)	$21.2
Deere & Co. (DE)	$119.8
Alamo Group (ALG)	$1.9
Kubota Corp. (KUBTY)	$28.9
P/E Ratios (TTM)	
AGCO Corp. (AGCO)	26.73x
CNH Industrial (CNHI)	N/A
Deere & Co. (DE)	35.0x
Alamo Group (ALG)	33.2x
Kubota Corp. (KUBTY)	24.7x

Source: *FactSet/Mergent*

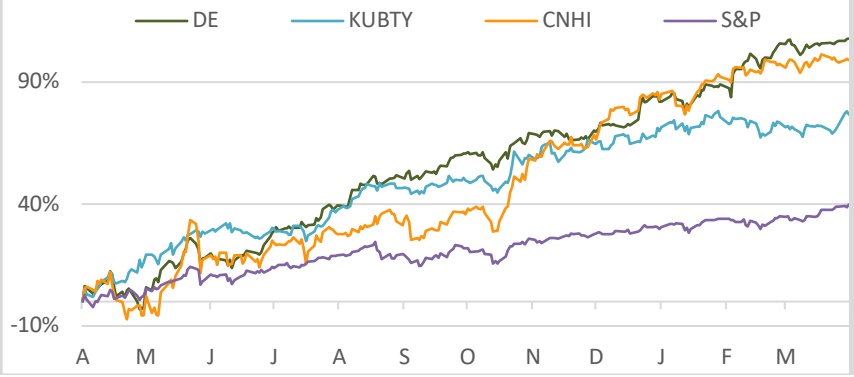
Global Market Share



Farm Price Index (FPI) – Yearly High Prices Paid/Received

Year	2015	2016	2017	2018	2019	2020
Paid	112.2	107.3	107.3	109.8	111.2	112.2
Received	107.9	94.8	99.5	95.0	93.6	93.0
Difference	-4.3	-12.5	-7.8	-14.8	-17.6	-19.2

12-Month Performance



Industry Description

The agricultural equipment manufacturing sector consists of equipment manufacturers producing machinery for crop planting, growing, and harvesting, along with many other activities for the farming economy. Three companies—Deere & Co, Kubota Corp., and CNH Industrials—account for 31% of the global market, which is expected to see a compound annual growth rate of 3.9% from 2019 to 2024. The Asia/Pacific and non-US/Europe markets should post the largest demand gains, 41% and 23% respectively.

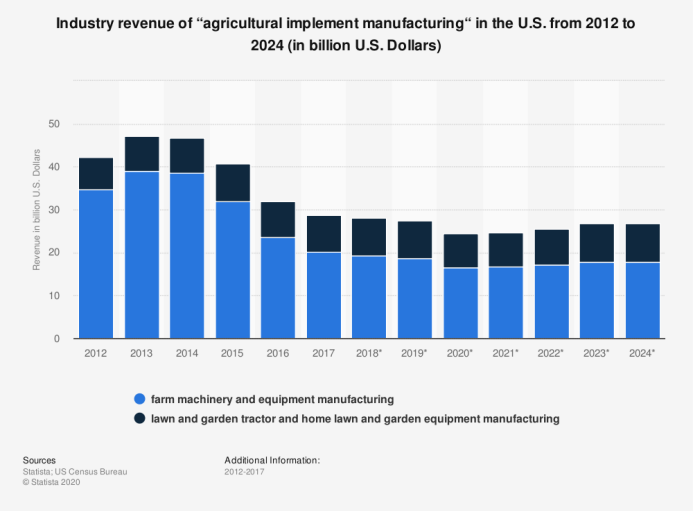
EXECUTIVE SUMMARY

We recommend a market weighting for the agricultural equipment manufacturing industry. Though farm commodity prices are rising and growth forecasts are positive, the prospects for the industry do not justify overweighting. Input prices are also rising, which offsets the gains of prices received, and there are still trade and international concerns that pour cold water on the industry. A changing US presidential administration may ultimately be good news, especially considering the previous administration's trade war with China caused price reductions and volatility, but that relationship has not been completely mended. Similarly, farm protests in India show the struggles of a farm economy in flux.

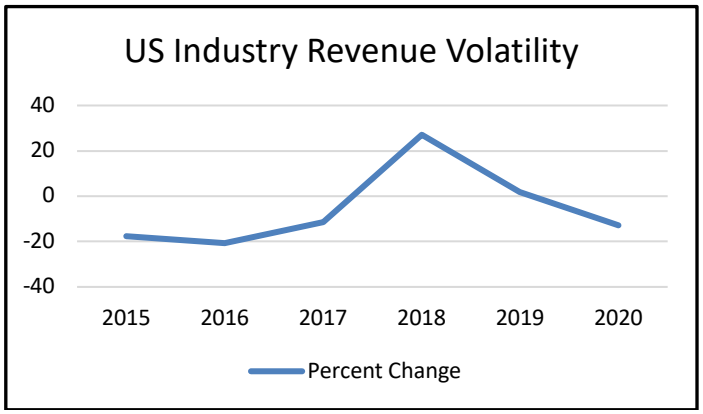
Some players are better positioned than others, particularly those with more presence in markets with higher expected growth. Kubota Corporation and CNH Industrials, who have significant holdings in Asia/Pacific and other regions outside the US and Western Europe, can leverage this advantage to gain global market share over the coming years. Other firms like AGCO are doubly disadvantaged, having large holdings in low growth regions and products lines. Governments are still expected to support producers over consumers, with a couple exceptions, and trends toward farm consolidation should continue. Technology holds promise for continued productivity improvements, and there are disruptive projects in the works but nothing that will upset the market to any substantial extent in the next few years.

INDUSTRY DESCRIPTION

The agricultural equipment manufacturing sector consists of original equipment manufacturers (OEM) who produce machinery for the planting, growing, and harvesting of crops, along with many other activities for the farming economy. Tractors and combines, along with their implements, represent the larger scale of this equipment, with consumer lawn and landscaping machinery on the lower end. The industry employs roughly 70,000 workers in the US, with high productivity but low wage growth. While the industry has 1,123 businesses in the US, three major players account for half of the industry's annual sales. US revenue, profits, and profit margin have seen an annualized decline of 4.6%, 5.4%, and 0.2%, respectively, from 2015 to 2020.[1] International performance has not fared much better during this period, but there is optimism that the winds of change are blowing.



Data Source: *Statista*

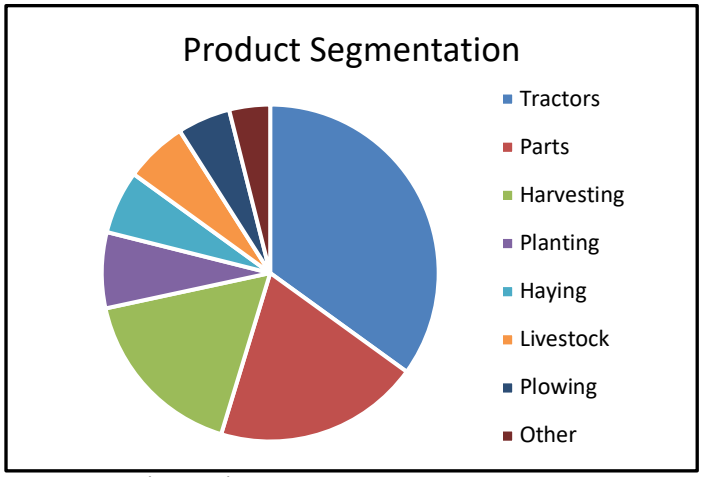


Data Source: IBIS*World*

This industry is mature with cyclical revenues vulnerable to commodity price volatility. This is true of both inputs such as the steel used to manufacture their products and external factors such as the price of corn (or any farm good) that determines their customers' income. The barrier to enter this industry is quite high, with major players having decades (or even well over a century) of experience under their belts and staunch customer loyalty. Additionally, most product lines have full-market saturation, at least in the US, and manufacturing facility capital investments are substantial, to put it mildly.

There are six major product categories: tractors, harvesting machinery, planting and fertilizing machinery, haying machinery, livestock machinery, and plowing and cultivating machinery, with each holding a progressively smaller share of the market in the order listed here. Tractors represent the largest share of the market because there are a variety of types of tractors with versatile abilities to perform a myriad of tasks. Most tractors a wheeled, but there are a fair share of crawler tractors,

ones that run on tracks similar to tanks. Demand for smaller specialized tractors for precise applications has recently grown. These tractors can more easily fit into tighter quarters, such as vineyard or orchard rows, and can maneuver steep inclines due to their low center of mass.[2]



Data Source: *The Freedonia Group*

Deere & Co. (DE) is by far the largest operator in this industry, nearly doubling the next largest company by market share. Kubota Corporation, CNH Industrials, and AGCO are other well-known brands, at least in the US market. Here is a breakdown of key financial metrics for the industry's large players (in billions):

2020 Fiscal Year	Mrkt Cap	Revenue	Income
Deere & Co.	84.3	35.5	2.8
CNH Industrials	17.4	26.0	0.17
Kubota Corp.	25.0	17.8	1.8
Mahindra & Mahindra	12.0	11.0	0.96
AGCO Corp.	7.7	9.1	0.57
CLAAS Group	-	4.8	0.13
Manitou Group	1.2	2.2	0.08
Alamo Group	1.5	1.2	0.06
Shandong Foton	-	1.0	-
YTO Group	-	0.9	-

Source: *FactSet*, IBIS*World*, and companiesmarketcap.com

Information on private and foreign companies can be tough to come by, but revenue in the graph above is the best comparison for the group. This graph is not completely representative of the industry, as all numbers but the bottom two companies represent all revenue segments for each company, but it does give a picture of each company's presence in the overall economy. Deere & Company, Kubota Corporation, and CNH Industrials, like in the graph, do represent the largest agricultural equipment manufacturers, holding 31% share of the global market in 2019. AGCO Corporation, CLAAS Group, and Alamo Group primarily specialize in agriculture equipment, but Mahindra & Mahindra and Manitou Group have significant revenue segments in other products (automotive for the former, heavy equipment the latter).

Globally, Asia/Pacific, North America, and Western Europe represent the largest markets by demand, with other regions making up about the size of Western Europe. The market breakdown is slightly different by shipments, with Asia/Pacific extending its lead in the market and North America and Western Europe drawing even. North America and the other regions are net importers, making Asia/Pacific and Western Europe net exporters. The following table delineates the numbers:

2019 ($B)	Demand	Percent	Shipments	Percent	Net
Asia/Pacific	45.9	34.6%	48.2	36.4%	5.2%
North America	34.9	26.3%	32.3	24.4%	-7.4%
Western Europe	26.9	20.3%	33.7	25.4%	25.0%
Other Regions	24.8	18.7%	18.2	13.8%	-26.4%
Total	132.5	100%	132.5	100%	-

Source: *The Freedonia Group*

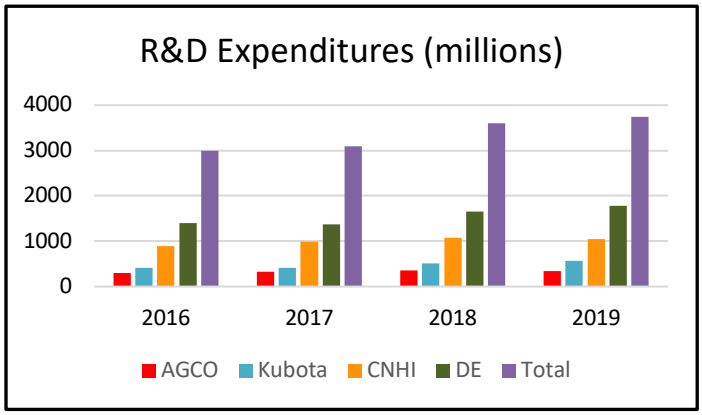
INDUSTRY TRENDS

Technology

Advances in technology proliferate through the economy at large, and the agricultural equipment manufacturing industry is not sitting by idly. GPS capability, connectivity, and autonomy hold a lot of promise to maximize land use, track costs and yields, and increase productivity. Because this industry is mature with full-market saturation, technology is an important way to increase already slim margins and offers those who can afford it a competitive advantage. All the major players are investing to develop the latest technologies, including robotic sprayers that can differentiate weeds from crops, battery powered drones with wide applications, and software that connects the farmer to all aspects of his or her operations.[3] From equipment automation to data collection and analysis, the digital evolution of agriculture is already a fact of life on farms across the United States.[4, 5]

The agriculture sector offers an interesting case study for autonomous driving technologies. With lighter regulation across the industry, agriculture is poised to be the first sector of the economy to scale up the technology.

Innovation also offers space for start-ups or smaller players to make a mark in a mature industry. For instance,

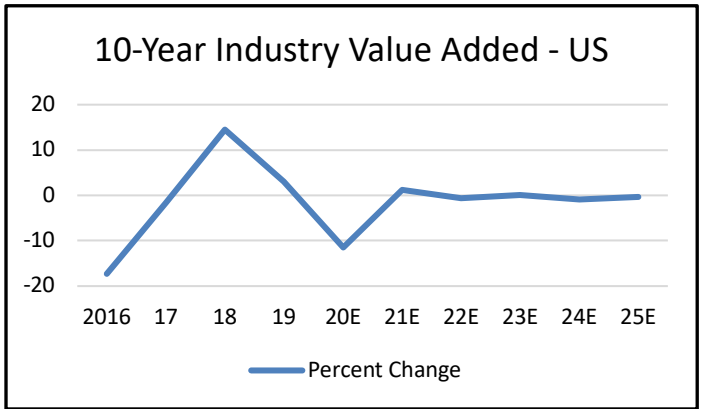


Data Source: *Statista*/AGCO 10-K reports

John Deere acquired Blue River Technology for $300 million in 2017, for their See & Spray artificial intelligence software referenced above that kills weeds but not crops.[6] Research and development expenditures across the four largest companies in this report have grown by nearly a billion dollars from 2016 through 2019 (see above).

Industry Value Added (IVA)

Industry Value Added (IVA) is a measure of the difference between an industry's total revenue and the total cost of its inputs from other businesses, and the agricultural equipment manufacturing sector's IVA does not look great. For the 10-year period leading up to 2025, this industry's annualized IVA is expected to decrease by 1.6%. Given that the US GDP is projected to grow annually by 1.9%, the industry consistently underperforming the broader economy.[1]



Data Source: IBIS*World*

Trade and Other International Concerns

Though there is a new administration in the White House, there is still much work to be done to fix US trade issues. The former president's trade war with China is a prime example of the externalities that can effect this industry. In mid-2018 when tariffs were announced against Chinese goods, the price of soybeans contracts quickly dropped more than 10%, from around $10.25 to $8.75 a bushel. Soybean prices did not recover to until nearly two and a half years later as America was electing a new president.[7]



Data Source: *The Wall Street Journal*

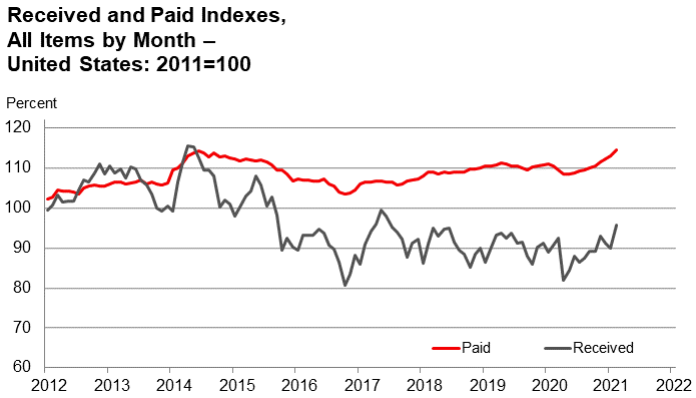
Another example of the vacillation of international concerns is the current agricultural protests in India. Granted, the Indian agriculture sector is much different than the US's, with nearly 60 percent of the country's population still dependent on agriculture to make a living, but the situation shows the delicate balance policy, prices, the climate, and consolidation trends can have on any sector as subject to volatility as agriculture.[8]

ECONOMIC OUTLOOK

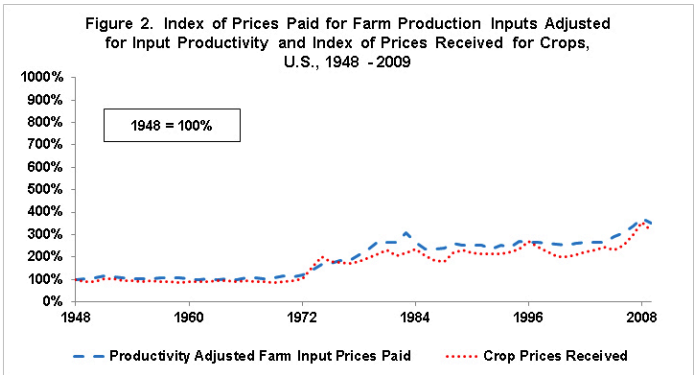
Farm Price Index (FPI)

The Farm Price Index (FPI), also known as the Agricultural Price Index, is a lagging indicator that has broader economic significance beyond this industry. Many analysts see it as a bellwether for capital expenditures, which is the direct effect the indicator has on equipment purchases. The FPI is measured monthly by the US Department of Agriculture's National Agricultural Statistics Service (NASS), taking into account price movements in crops, livestock, and other related products. USDA NASS also tracks prices paid for the inputs used for production, both capital inputs (land, equipment, buildings, etc.) and variable inputs (labor, chemicals, fertilizer, fuel, services, etc.). The common nomenclature for these two categories is prices RECEIVED and prices PAID.

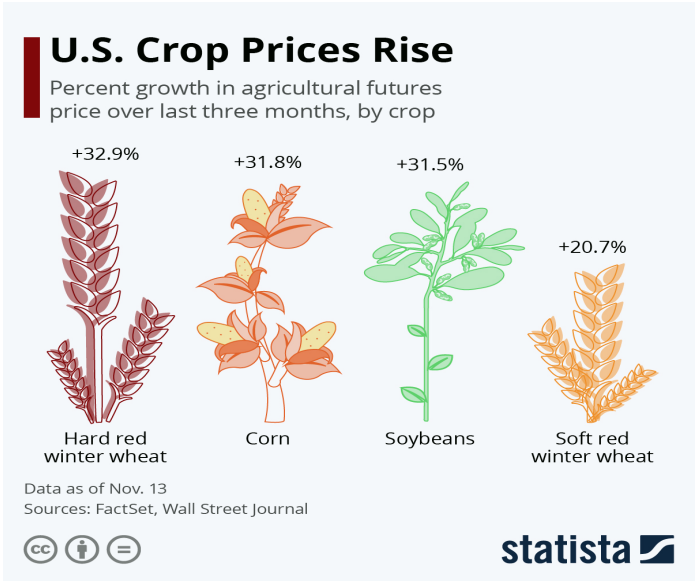
Both historically and recently, prices paid have had the edge over prices received. In fact, the last time prices received topped prices paid was in 2014. In real terms, prices for inputs far outstrip output prices paid to farmers, but the prices paid metric is adjusted for productivity gains.[9] Here are two charts that track recent and historic FPI, with a small gap between 2008 and 2012:



Source: *USDA NASS*



Source: *farmdoc daily*

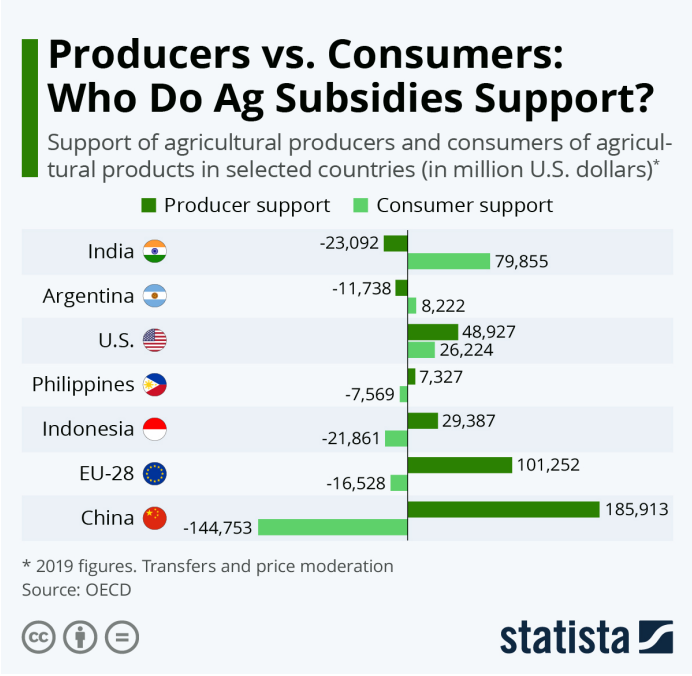


Source: *Statista*

Though prices received have begun to increase (see chart below to the left), realizing their highest level since mid-2017, input prices are also rising, driven largely by the rebounding cost of fuel. The trailing 5-year CAGR of received prices is expected to be 2.09%, with the index reaching 99.4 this year. Forecasted over the next six years, the index is expected to reach 104.4 at a CAGR of 0.89%. The question is, however, will input prices come down and can productivity gains be realized enough to boost farm income and buying power, so much so that farmers invest in new equipment.[10, 11, 12]

Government Subsidies

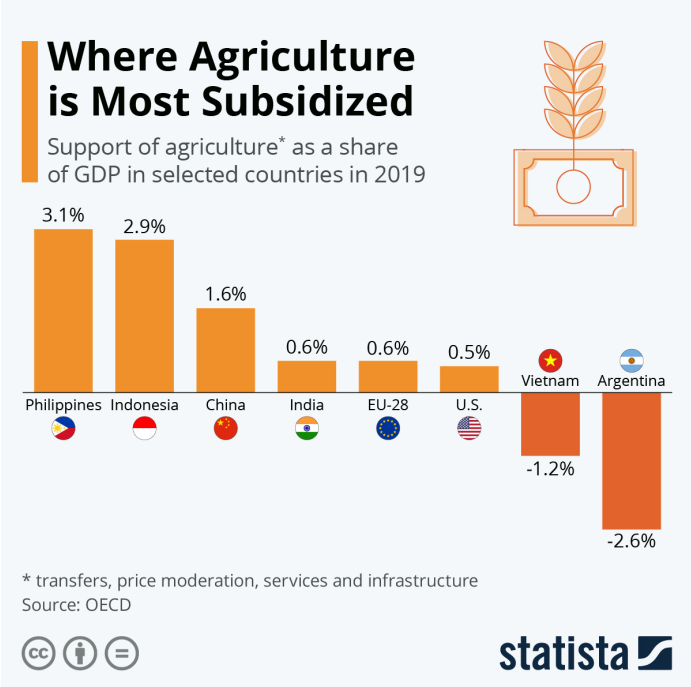
Given that prices paid usually outpace prices received, governments tend to support the agriculture industry through subsidy programs that bolster against too many losses. The US version of this legislation is colloquially called the farm bill, the most recent iteration being the *Agriculture Improvement Act of 2018*. It was signed into law at the end of that year and largely reauthorized expenditures from the previous bill. The US first adopted this type of policy about a hundred years ago, with the express intent of bringing greater stability to the farming economy, as well as to address issues around end use of farming products, namely food assistance programs.[13] Similar dynamics play out in economies around the world, pitting producers against consumers to some degree in most markets. The following chart tells some of that story:



Source: *Statista*

It is no surprise that India's farmers are protesting when seeing their top position on this chart. Their prices are suppressed by the government, to an estimated tune of $23.1 billion in 2019. They also tip roughly $80 billion on the demand side of the scale as well, so farmers are taking it on the chin twice. Argentina is in a similar situation but to a lesser extent. The US is in the unique position, at least among those on this chart, that support both producers and consumers, and the rest tip in favor of producers. Essentially, the latter dynamic asks consumers and tax-payers to support the farm economy, effectively redistributing assets from wealthier citizens to poorer ones. The US's peculiar position might be explained by federal government budget deficits.[14]

As far as how most of those countries fare when comparing GDP to subsidies, this chart delineates:

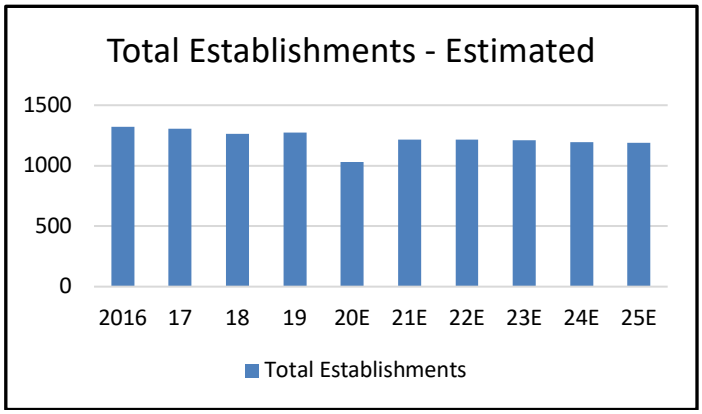


Source: Statista

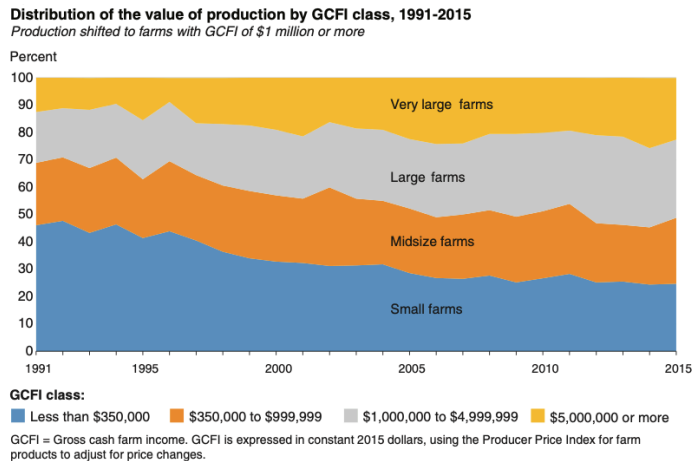
The OECD found that between 2017 and 2019 governments in 54 countries helped producers with a net $619 billion. India and Argentina again were pointed out to be essentially net taxers of producers, although India's total subsidies turn positive as a result of their high subsidies for consumers.[15] The total US farm bill, which appears to not be completely represented in the first chart above, is $867 billion and expires in 2023, so there will at least be some stability for a couple years with the current iteration of the policy. Perhaps stability can boost farmer confidence to purchase new equipment.

Establishment Consolidations

The corporatization and consolidation of farms has increased over the past few decades, leading to larger economies of scale and heightened demand for heavier, more technically savvy equipment. The trend is expected to continue slowly over the coming 5-year period but will not likely be enough of a countervailing factor to price volatility and the broader economic hardships of the COVID-19 pandemic.[1]



Data Source: IBIS*World*



Source: USDA, MacDonald

This trend appears to be spurred on heavily by technological advancements. Larger and faster machines allow more acreage to be farmed with lower input costs (less labor, more fuel efficiency). Likewise, precision agriculture—GPS-assisted vehicle guidance systems, yield and soil mapping, and variable-rate applications of inputs—has had a similar effect on farm consolidation, allowing fewer people to manage more and more acres. Though just in its infancy in agriculture and yet to make a major impact, robotics could spur on or reverse the consolidation trend. Equipment design changes radically

when no driver is needed, allowing for smaller and lighter machines that improve efficiency and cut labor costs. These gains can be realized across farm sizes, allowing smaller farmers to take advantage of advancements that were previously only realized by "the big guys".[16]

Information on global farm characteristics is tough to find, but if the US is any indication of the rest of the world, trends will tilt toward consolidation. US farm policy explicitly favored consolidation in the mid-twentieth century, expressly seeking to reduce the number of farm families and increase the industrial labor pool. Though the farm bill has become less explicitly biased to large farms, the lobbying power of Big Ag, including all the tangential players (OEMs, seed companies, etc.), has sought the favor of continuing legislation.[17] This is certainly happening in India, where small farmers are protesting policy changes they say will advantage large agricultural players. It is our estimation that the trend of this indicator, whether farms become more or less consolidated, is less important than the rate of change. Faster movements in the rate of consolidation or fractionalization of farms likely requires equipment investments, which would be good for equipment manufacturers.

COVID-19 Impact

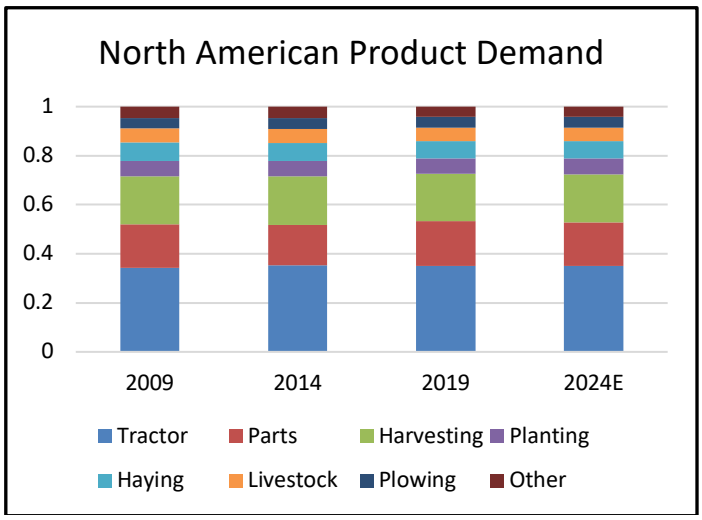
Any time there is general uncertainty in the economy, capital expenditures receive extra scrutiny. The COVID-19 pandemic brought more economic volatility than this country and the world has seen in decades. Commodity price swings and supply chains disruptions have and will likely continue to dampen confidence and delay equipment purchases. The industry's anticipated 12.8% reduction in revenue in 2020, along with a 23% rise in farm bankruptcies, do not bode well for the immediate horizon. If the economy rebounds quickly, however, and consumer confidence along with it, the farm operations that survive could be looking at cheap cash, large savings, and high demand. This would be good for OEMs.

PRODUCTS AND MARKETS

Developed countries have the most advanced markets, with growth limited to the margins of technology, M&A activity, and broader economic factors. Immerging markets present higher advantages for technological and consolidation trends, as well as progressive farming policy, but India serves as a current cautionary tale of the risks accompanying the returns.[1]

North America

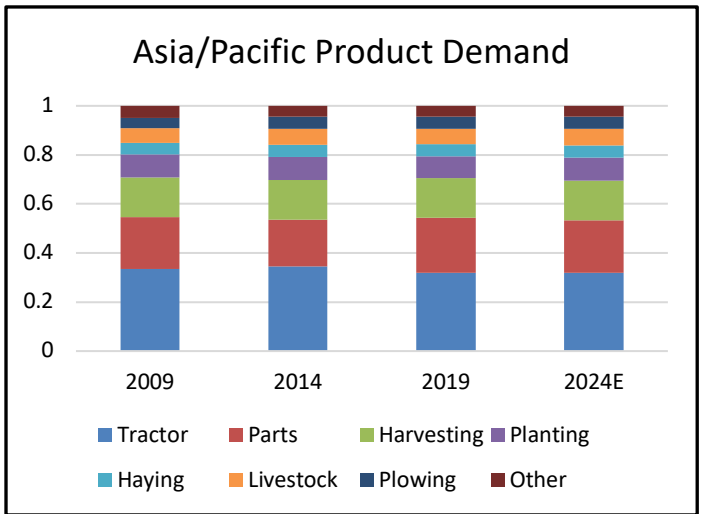
Demand for farm equipment in this region (the US, Canada, and Mexico) is expected to increase annually by 3.4% to $41.2 billion by 2024, primarily as a result of rising crop production, farm commodity demand increases, and commodity price recovery. Technological advancements in equipment are expected to contribute to this increased demand as well, as farmers will seek to find gains wherever possible, and all product segments are expected to fare well due to the diversified nature of North American crop and livestock production. Market saturation is a possible risk to this gain, but the overall outlook remains positive.[2]



Data Source: *The Freedonia Group*

Asia/Pacific

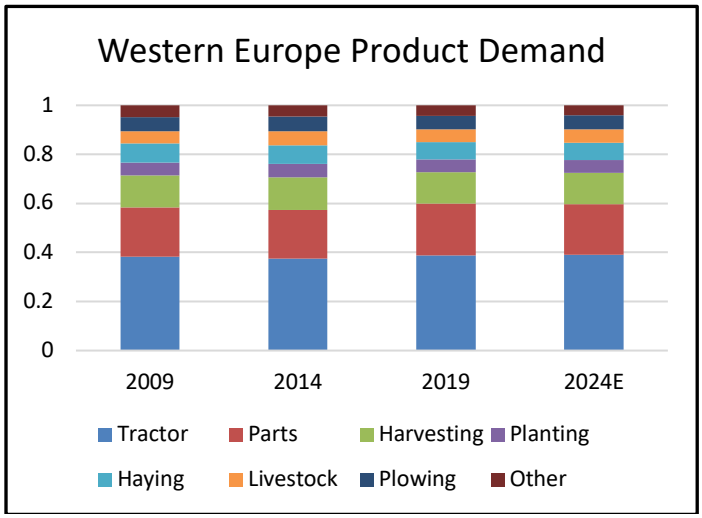
Of the three major regions, Asia/Pacific demand is expected to grow the most in the next few years at an annual rate of 4.5% to $57.2 billion. The same factors listed above for the North American market will contribute to this increase, as well as an improving subsidy environment for producers and investments from governments and private companies to improve the standard of living for broad swaths of the population. Tractor and harvesting equipment purchases are expected to outpace other product lines, although all are expected to rise, and the pandemic recovery is expected to be lopsided as well, with larger economies (China, Australia, Japan, and South Korea) in favor here.[2]



Data Source: *The Freedonia Group*

Western Europe

Western European demand is forecast to grow below average, expanding at just 2.8% to $30.9 billion by 2024. Drags on demand include an already large stock of advanced equipment in the field, previous gains due to favorable regulation in 2018, reforms to farm subsidies expected to hurt producer income, and Brexit. Planting, fertilizing, plowing, and cultivating equipment is expected to have better gains than other product lines, mainly due to technological advancements in these products.[2]



Data Source: *The Freedonia Group*

Other Regions

This segment includes Central and South America, Eastern Europe, and Africa/Mideast, each of which are expected to grow 5.1%, 4.1%, and 4.8% respectively. Establishment consolidation and commercialization, which drives demand for mechanized and advanced equipment, are expected to drive growth in these regions, along with changing food environments (increases in processed food demand) and increased government intervention. The pandemic recovery is expected to be weaker in these regions, especially in Eastern Europe, but not enough to completely dampen equipment sales.[2]

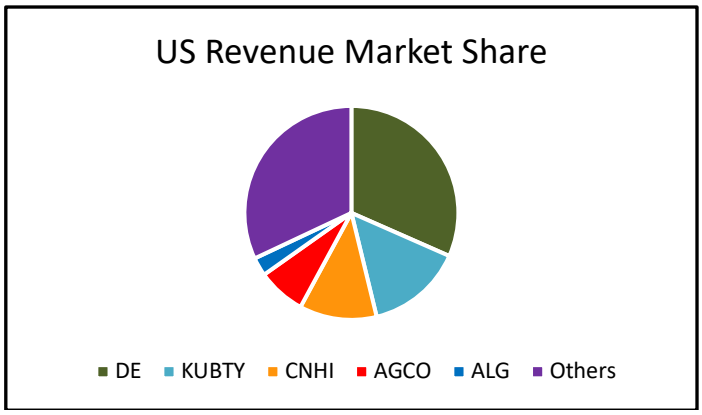
The following heat map illustrates the varying demand by product line for each geographical region, represented by estimated CAGR . Of note, larger pieces of equipment like tractors and harvesters are lagging to middling in each section, planting equipment being the only exception

2019-24 CAGR	North America	Asia/Pacific	Western Europe	Other Regions
Tractors	3.5%	4.6%	2.8%	4.9%
Harvesting	3.6%	4.6%	2.8%	4.9%
Planting	4.1%	5.5%	3.4%	5.4%
Haying	3.1%	4.5%	2.8%	4.8%
Livestock	3.7%	5.5%	3.2%	5.2%
Plowing	3.8%	5.5%	3.2%	5.3%

Data Source: *The Freedonia Group*

MAJOR COMPANIES

The major players all have either a substantial or majority presence in foreign markets outside the US and Canada, ranging from just under 20% abroad with ALG to about 76% with AGCO. US revenues are dominated by the following five companies, who in the aggregate have about two-thirds market share.

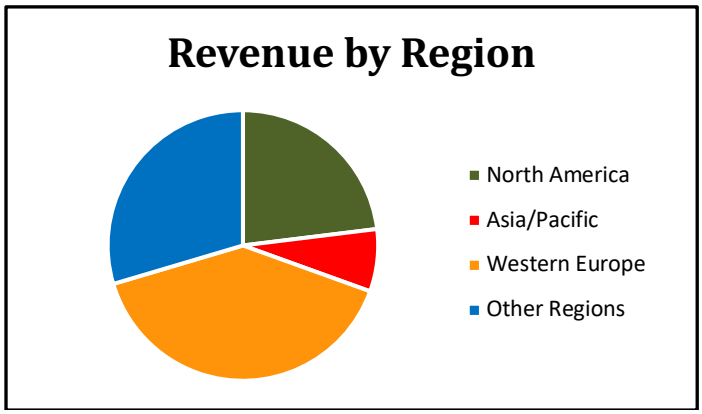


Data Source: IBIS*World* and 10-K Reports

AGCO Corporation - $151.88 (+48.2% YTD)

AGCO Corporation manufactures heavy agricultural equipment and distributes their products through a range of over 3000 dealers and distributors in nearly 140 countries. Many of their brands—including Challenger, Fendt, and Massey Ferguson—are well-known with loyal

customer bases. In addition to farm equipment, they offer both retail and wholesale financing to their wholesale and retail partners through a joint venture with Rabobank, a Dutch banking and financial services company. The company is headquartered in Duluth, Georgia, and was formed in the early 1990s through buy-outs and mergers. Contrary to intuition, the "AG" in AGCO does not stand for agriculture but rather is an acronym from Allis-Gleaner, two of the players in this consolidation.

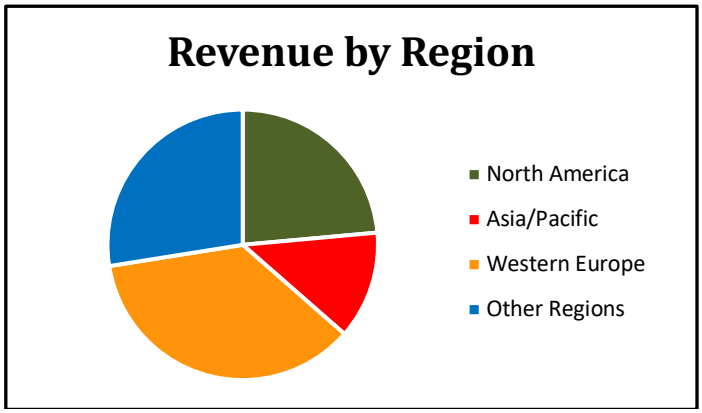


Source: AGCO 2020 10-K

AGCO ended 2020 with a positive fourth quarter. At just over 8% year-over-year growth, net sales reached $2.7 billion for the quarter, and earnings per share were reported at $1.78. The company also released their fiscal year 2020 numbers, which also saw a revenue and EPS increase year-over-year. At $9.1 billion for the year, revenue gained 1.2%, and EPS was up to $5.65 from $1.63 in 2019. The company attributed this success to a combination of leveraging improving market conditions, overcoming supply chain challenges, maintaining production levels, and reducing both company and dealer inventories.[18]

CNH Industrials - $15.97 (+27.9% YTD)

The second largest manufacturer of US agriculture equipment, CNH Industrials is an Italian-Anglo-American conglomerate offering a broad product line that includes construction equipment, industrial vehicles, and powertrains. Case IH (International Harvester) and New Holland are their largest and eponymous brands and are sold through a network of approximately 2,300 full-line dealers and distributors. Like other industrials of their size, they too offer retail and wholesale financing for their products and services. CNHI is headquartered in The Netherlands, with its strongest manufacturing presence in Europe, the US, and South America, though they are globally represented.



Source: CNHI 2020 20-F

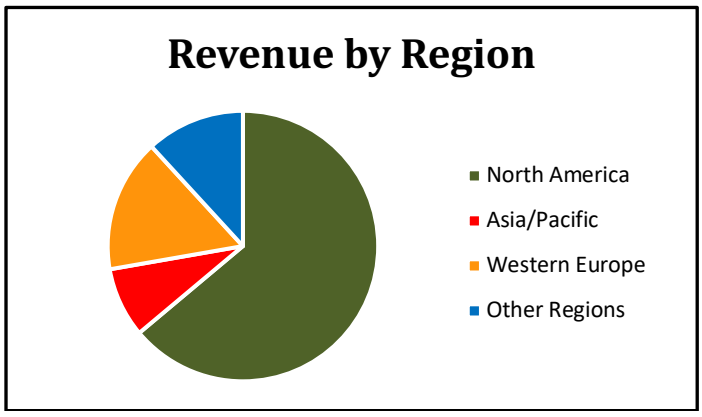
Though the fourth quarter was positive for CNHI, the year as a whole ended in the red. Revenue saw a YoY Q4 increase of 10% to $8.5 billion. Net income rose by 56% to $187 million, giving a diluted EPS of $0.12 for a 50% YoY increase. The company's agriculture segment played a big role in these gains, improving 17% over the previous year, only coming in behind powertrain's 19.4% growth but still more significant because agriculture represents a substantially larger portion of CNHI's business. For the year, revenue decreased by 7%, the company had a net loss of $438 million, and the diluted loss per share was down 134% to negative $0.36.[19]

Deere & Company - $383.07 (+43.1% YTD)

Deere & Company is the behemoth in this space, with a market cap 5-times the next largest player. They too have a broad product offering, which includes construction, lawn & turf, and forestry equipment, in addition to agricultural equipment. A third of their manufacturing facilities are in the US and Canada, with the rest widely distributed globally. Headquartered in Moline, Illinois, they are the most recognizable agricultural equipment brand in the US and enjoy intense brand loyalty. Agricultural sales make up slightly more than half of Deere's $35.5B total revenue reported on their 2020 10-K. Again, as such a large producer, they provide financing options to customers at all levels of the market.

With a fiscal year that ends October 31st, DE is the only company that current has a Q1 2021 earnings release. They saw gains in total revenue and across all division revenues but financial services, which saw a slight decrease of 9% but a net income gain of 69%. All sales for

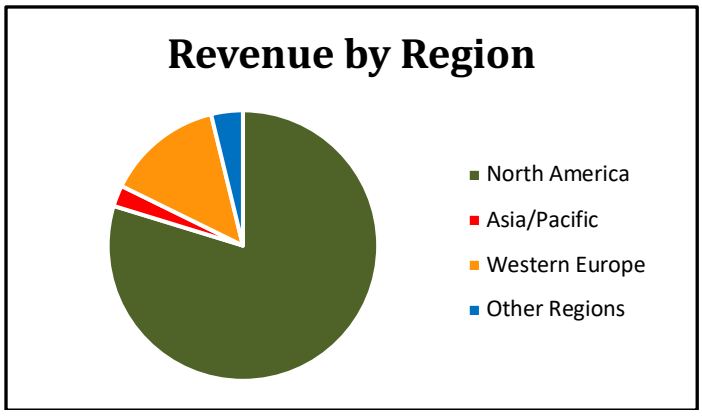
the quarter topped $9.1 billion for a 19% gain and an increase in net income of 137% to $1.2 billion. Diluted EPS more than doubled for the quarter YoY. This is good news for DE, since 2020 was not a great year in total, with revenue and net income dipping 9% and 15% respectively for the year.[20]



Source: DE 2020 10-K

Alamo Group Inc. - $159.04 (+15.5% YTD)

Alamo Group (ALG) produces a wide variety of agricultural and ag-adjacent equipment. They are the smallest company compared in this report, with a market cap of $1.8 billion and total annual sales of $1.1 billion. The company has 30 manufacturing facilities globally and uses independent dealers and distributors to move their product. As their name indicates, they are headquartered in Texas and have been manufacturing since the mid 1950s. Since the early 2000s, ALG has grown substantially through purchases and acquisitions, averaging over an acquisition a year between 2000 and 2020. The US represents the lion's share of their total revenue, with just under 70% gained domestically. Unlike the large players, ALG does not offer financial services to their customers.

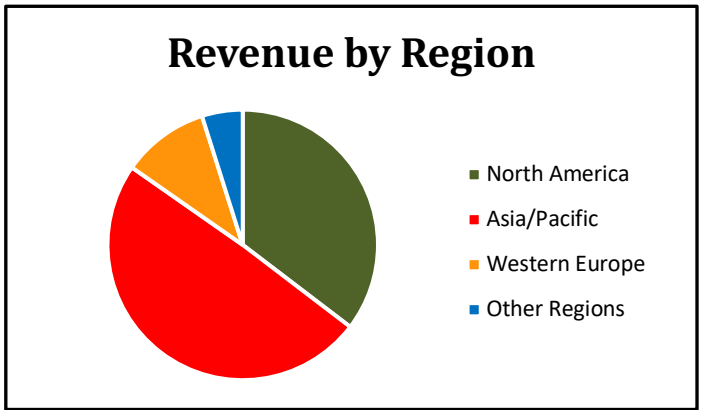


Source: ALG 2020 10-K

Alamo Group ended 2020 in the opposite manner than Deere, with revenue underperforming for the quarter but up for the year. Numbers were down across the board in Q4, with revenue of $288.6 million, net income of $8.1 million, and diluted EPS of $0.68 for 3.8%, 15.6%, and 16% decreases respectively. The numbers for the year were mixed, with record high sales of $1.16 billion but a decrease in net income of 10% to %56.6 million. One notable metric from ALG's earnings report is a $354.1 million order backlog. This represents a 35.6% increase YoY and is a combination of growth and complications from pandemic production and supply chain disruptions. This presents both a logistical challenge and an opportunity for growth.[21]

Kubota Corporation - $118.87 (+11.4% YTD)

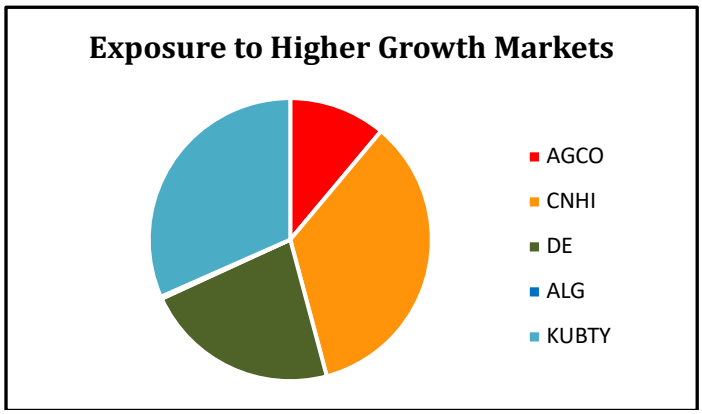
Like the other major companies in this sector, Kubota Corporation (KUBTY) offers a wide variety of products, with farm and construction equipment providing the overwhelming majority of their revenue. The company started in 1890 as a pipe manufacturing company and still today has substantial business in water and environmental products. KUBTY is based in Japan but also has a large presence the US, European, and other Asian markets.



Source: KUBTY 2020 Annual Report

Unlike the other companies in this report, Kubota does not report quarter four numbers, but rather just year-end figures. The company saw losses across the board, with negative 3.5% revenue growth to $17 billion and net income fell by 11.1% to $1.3 billion on the year. Basic EPS was down 12.9% to $0.97. The decrease was more pronounced for Kubota domestically, with a 4.8% decrease to a 2.8% decrease abroad. The company attributes most of this to production and supply chain shocks from the pandemic, particularly in their farm and industrial machinery segments.[22]

Though the accompanying charts above show the regional revenue breakdown for each company, further analysis can illuminate how each company might fare under expected growth conditions. The following chart shows the relative revenue exposure each company has to the higher growth markets (Asia/Pacific and Other Regions identified in the Freedonia report):



Source: *The Freedonia Group* and Company Reports

ALG has such little exposure to these markets they are not even registering on the chart. Kubota has high revenues throughout Asia/Pacific and CNHI is strong in Other Regions. With higher forecasted CAGR in these regions, these two companies are better positioned than the others to realize growth over the coming years. For AGCO, the story gets even worse, considering that 40.2% of their total sales comes from tractor sales in Europe, a product category and region that has the lowest forecasted CAGR of any subsection of the industry at 2.8%.[2, 18-22]

KEYS TO MONITOR

The following should be monitored to gauge the performance and prospects of this industry:

- International concerns and government policies: the farm protest in India and the US/China relationship are examples of intra- and intergovernmental concerns that effect the farm economy. Governments need to get both domestic and trade policies right if they expect to really support farmers and the industries that surround the farm economy.
- Sales growth: if the outlook for growth is realized, there are opportunities for certain companies in certain markets to capture global market share. CAGR for this industry is expected to be between 4% and 9% in the handful of coming years. In our estimation, this is positive but does not tip the scale into an overweighting for the industry.
- Prices: the key to prices is whether prices paid dips below prices received. Historically, prices paid outpace prices received, but it is not unheard of that farmers can gain the right advantage. Technology can help here, so it too should be considered, especially if there is a new product that helps farmers increase productivity.
- Establishment consolidation: to a lesser extent, consolidation or fragmentation can effect this industry. The main thing to watch here is major swings in either direction, which could be realized as a result of the pandemic. Technology again may be a disrupter here, allowing smaller farmers to find the same gains as large ones at the same level of capital investment.

There is nothing in the analysis above that gives us confidence beyond a market weighting recommendation. We believe this industry will hold its own over the coming years, with some risks but a general positive outlook.

REFERENCES

1. Butler, Brenna. *Tractors and Agricultural Machinery Manufacturing in the US*, IBIS*World*. October 2020.
2. *Global Agricultural Equipment*, The Freedonia Group. October 2020.
3. Delbert, Caroline. "Here's John Deere's Cropdusting Drone," Popular Mechanic. November 7, 2019. – Link Source – Link Source
4. Mayersohn, Norman. "How High Tech is Transforming One of the Oldest Jobs: Farming," The New York Times. September 6, 2019. – Link Source
5. Kessler, Sarah. "Swarms of Teeny Robo-Tractors Will Outmaneuver Tesla's Driverless Cars," One-Zero, January 13, 2020. – Link Source
6. Gershgorn, Dave. "John Deere spent $300 million on a company that murders weeds with AI," Quartz. September 6, 2017. – Link Source
7. McCormick, John and Jesse Naranjo. "Iowa's Farmers Remain Loyal to Trump Despite Trade War's Toll," The Wall Street Journal. August 15, 2019. – Link Source
8. Mashal, Mujib, Emily Schmall and Russell Goldman. "Why Are Farmers Protesting in India?" The New York Times. January 27, 2021. – Link Source
9. USDA National Agricultural Statistics Services – Link Source
10. *Agricultural price index*, IBIS*World*. October 2020.
11. Zulauf, Carl and Nick Rettig. "Prices Paid for Farm Inputs vs. Prices Received for Crops: Implications for Managing Risk

and Farm Policy," *farmdoc daily* (3):48. March 13, 2013. – Link Source
12. USDA Economic Research Service – Link Source
13. Wikipedia – "United State farm bill" – Link Source
14. Buchholz, Katharina. "Producers vs. Consumers: Who Do Ag Subsidies Support?," *Statista*. Dec. 9, 2020.
15. Buchholz, Katharina. "Where Agriculture is Most Subsidized," *Statista*. March 15, 2021.
16. MacDonald, James M., Robert A. Hoppe, and Doris Newton. "Three Decades of Consolidation in U.S. Agriculture," *USDA Economic Research Service*. March 2018. – Link Source
17. "The Economics of Food and Corporate Consolidation," *FoodPrint*. – Link Source
18. Company 2020 Q4 Release – Link Source; Wikipedia "AGCO" – Link Source; 2020 10-K Report – Link Source
19. Company 2020 Q4 Release – Link Source; Wikipedia "CNH Industrials" – Link Source; 2020 20-F Report – Link Source
20. Company 2021 Q1 Release – Link Source; Wikipedia "John Deere" – Link Source; 2020 10-K Report – Link Source
21. Company 2020 Q4 Release – Link Source; "Our History" Company Website – Link Source; 2020 10-K Report – Link Source
22. Company 2020 Q4 Release – Link Source; Wikipedia – Link Source

DISCLAIMER

Henry Fund reports are created by graduate students in the Applied Securities Management program at the University of Iowa's Tippie College of Business. These reports provide potential employers and other interested parties an example of the analytical skills, investment knowledge, and communication abilities of our students. Henry Fund analysts are not registered investment advisors, brokers or licensed financial professionals. The investment opinion contained in this report does not represent an offer or solicitation to buy or sell any of the aforementioned securities. Unless otherwise noted, facts and figures included in this report are from publicly available sources. This report is not a complete compilation of data, and its accuracy is not guaranteed. From time to time, the University of Iowa, its faculty, staff, students, or the Henry Fund may hold an investment position in the companies mentioned in this report.