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THE BIG SECRET ON WALL STREET

The Apple of Agriculture

- A Fail-Safe Way to Play the Artificial Intelligence Bonanza
- The "New Malthusians"... Foiled Again

FROM THE DESK OF PORTER STANSBERRY

SPECIAL REPORT

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The Apple of Agriculture

A Fail-Safe Way to Play the Artificial Intelligence Bonanza

The "New Malthusians"... Foiled Again

Charles Parker was starving. And all he had to eat was bones.

It was 1845, and Parker was an inmate at the brutal Andover workhouse in England – a grim brick building where pauper families were separated (males on one side, females on the other) and set to back-breaking labor. Entrance into the workhouse was "voluntary," but for desperately poor people, it was often their only choice – the law didn't allow any other type of aid. Once you were in, you lost rights to vote and became, effectively, a prisoner.

And a chain-gang laborer, at that. Inmates at Andover spent long hours crushing animal bones with heavy mallets, to create nutrient-rich "bone meal" fertilizer for the agriculture industry. (Of course, the profits all went to the workhouse overseers.)

Inmates weren't fed, either – or at least, not very much. Colin McDougal, the crooked superintendent at Andover, routinely docked workers' rations in order to pad his own pockets. Grown men had to get by every day on just a hunk of bread and a bowl of gruel. And so eventually, Andover workers started gnawing on the bones in the fertilizer room.

As the Victorian public discovered when the "Andover scandal" made headlines in 1845, the starving men assigned to "bone-crushing" duties would fight over fresh bones, and even suck the marrow out of rotten ones. Charles Parker – who later gave testimony in court – said he was "extremely hungry," but couldn't eat the bones because his "stomach wouldn't take it." The smell, he explained, was "very bad."

Outrage notwithstanding, bleak conditions at workhouses like Andover – said to be the inspiration for Charles Dickens' dark novel Oliver Twist – were largely by design...

THE POOR PICKING THE BONES TO LIVE

England's stringent 1800s "Poor Laws" – which broke up poor families and locked them in institutions, simply for being destitute – were directly inspired by the population-control theories of doomsday economist Thomas Malthus. In Malthus's seminal 1798 An Essay on the Principle of Population, he argued that exponential population growth would soon outstrip Earth's natural resources, leading to famine, starvation, and death. Supporting his argument at the time was the fact that the amount of arable land available for crop production was shrinking measurably.

Malthus's solutions to overpopulation were bleak. He suggested that only "misery," war, and artificially lowering the birth rate could keep numbers in check. These ideas eventually spurred England's legislators to create the "workhouse" – a cruelly effective way to starve the "less-desirable" population, keep them from breeding, and save resources for worthier people. (Sounds a bit like eugenics? You're not wrong.)

Dickens' most famous character, the notoriously stingy Ebenezer Scrooge in A Christmas Carol, expresses classic Malthusian philosophy (before he encounters the true spirit of Christmas, that is). On hearing that many poor people would rather die than enter workhouses, Scrooge retorts, "If they would rather die, they had better do it, and decrease the surplus population."

Viewed through the lens of today – as well as of the times – Malthus's ideas are abhorrent. And (surprise) they don't work...

England's draconian Poor Laws (and its workhouses) did nothing to improve the country's economy. A 2018 academic **study** concluded,

> *"This deliberately induced suffering gained little for the land and property owners who funded poor relief. Nor did it raise wages for the poor, or free up migration to better opportunities in the cities. ... [T]he Poor Laws ... consequently had no effects on economic growth and economic performance in Industrial Revolution England."*

What does improve economic performance? Human ingenuity and intelligence. (Oh, and capitalism.)

Mechanized farming… not eugenics… eventually solved the "shrinking farmland" problem. Throughout the 1800s, a growing array of new tools and machinery – the mechanical reaper, the grain elevator, the mowing machine – enabled farmers to produce more crops per acre of land with each passing year. And as farmers spent less time hunched over plows and rakes, labor moved from the fields to the factories and fueled the Industrial Revolution.

Two centuries after An Essay on the Principle of Population first appeared, the world has ample crops, shelter, and resources to support an additional 7 billion people. Sorry, Malthus. We are not running out of food.

But try telling that to the climate change zealots…

Today, you can spot Malthusian ideology coming from organizations like the World Economic Forum (WEF). Made up of today's global elite, the WEF argues that traditional agricultural production consumes too much land, water, and fuel. And this excess resource consumption is contributing to climate change, which will supposedly also reduce future agricultural output. The WEF website claims that the world will fall short of traditional crop and animal-based proteins by 2050:

> *"We're actually running out of protein. By 2050, the earth will have nearly 10 billion people. The demand for protein will exceed our ability to procure it. That's a scary thought."*

Their solution? Let them eat bugs. No, seriously, that's an official recommendation from the WEF, which advocates insects as an alternative food source to fight climate change:

Internationally funded climate organizations are making their way into the policy discussion at the local level. The C40 Cities Climate Leadership Group, which includes 14 U.S. cities, is advocating restrictions in meat consumption, private clothing, and personal transportation. A 2019 press release from the C40 group states:

> *"Cities, businesses, restaurants, farmers and citizens need to work together to help people cut their meat consumption by two-thirds, for example eating meat just two days per week rather than every day."*

The idea that humans must cut back on their living standards in the name of "climate change" is the same scarcity mindset the Malthusians introduced more than 200 years ago. It assumes that human beings can't devise new methods of energy and crop production that increase output while minimizing environmental impact.

Call us optimists, but we're taking the other side of that bet.

Porter Stansberry has been betting against the Malthusian mindset for more than two decades. Perhaps most famously, he predicted the fallacy of peak oil as far back as 2006. Back then, the consensus on Wall Street said that the world was running out of fossil fuels. Meanwhile, Porter was writing about the incredible new shale drilling technology that would unleash an unprecedented boom in American oil and gas production.

Subscribers who followed his work reaped a windfall as America became one of the world's largest exporters of cheap shale oil and gas.

In this report, we're introducing a business poised for similar upside by unleashing the next agricultural revolution: the rise of autonomous, precision farming.

This company's game-changing new artificial-intelligence (AI) technology will transform the productivity and resource management of modern-day farms. This tech will not only help farmers become more productive, but it will dramatically reduce the environmental impact of crop production. (Perhaps most importantly, this means we won't have to resort to eating bugs to feed the world's growing population.)

For close to two centuries, this company has led its industry in delivering productivity-boosting technology on American farms. It's the dominant market leader today, with premium pricing power and best-in-class profit margins. Shares of this business have consistently compounded capital at 15% to 20% annually for decades. And we see even more upside ahead, as the company benefits from higher-margin software sales that will transform the modern-day farm.

Unlike most AI-focused stocks in today's market, investors have largely ignored this opportunity. This world-class business today trades at just 13x earnings – compared with nearly 50x earnings multiple for Nvidia (NVDA), the epicenter of today's AI enthusiasm.

To begin, let's rewind the clock to see how the company first established what became one of the most enduring brands of all time.

Planting the Seeds for Long-Term Profits

In 1837, John Deere was facing the prospect of debtor's prison.

The Vermont blacksmith had lost two shops to devastating fires. Then came the Panic of 1837, a real-estate bubble that burst and took the economy down with it. The downturn hit hardest in the northeast, pushing the young businessman over

the financial brink. With just $73 to his name, he ventured west for a fresh start in Grand Detour, Illinois.

Upon his arrival in Illinois, Deere soon spotted an opportunity to help local farmers. The sticky midwest prairie soil was clinging to their iron plows, forcing them to stop every few feet to scrape off the clogged dirt. Despite sitting atop some of the richest soil in America, the sticky earth was depressing farming productivity.

Deere saw a solution. He envisioned a polished steel plow that would make for a less adhesive surface. He also pictured a plow blade with a curvature that would naturally shed soil as farmers moved through the field. With limited resources, he crafted the first prototype using only a broken saw blade.

Hundreds of locals gathered at the Crandall Farm in Grand Detour to see the unveiling of the world's first self-scouring steel plow. Deere wowed spectators as his invention seamlessly churned through the rugged prairie soil without clogging. The new device freed farmers from constantly stopping to unclog their plows, unleashing a productivity boom across the region. Orders came in faster than Deere could produce the new device. Deere invested into a factory and additional workers, and by 1849 he was producing 2,000 plows each year.

A Plow That Never Cut Corners

The revolutionary plow design attracted many imitators, but the competition failed to keep up with Deere's relentless pace of new product design. He routinely solicited customer feedback and invested heavily into improving the performance and durability of the plows. This caused a rift with his original partners, who believed the business could make more money without investing in new designs.

But Deere insisted on delivering ever-increasing product quality. "I will never put my name on a product that does not have in it the best that is in me," he said, outlining the company's enduring philosophy.

While these investments may have stymied short-term profits, they paid off in, ahh, spades over the long run. Even as more competitors entered the market, Deere's order book grew consistently every year. By 1857, he was producing 10,000 plows annually. The constant investment into improved designs cemented the Deere brand as synonymous with high-quality products.

The growing business, now established as Deere & Company, introduced its leaping deer trademark in 1873 to distinguish it from the long list of competitors. With minor modifications over the next 150 years, the visual play on words is now the longest-running logo of any Fortune 500 corporation:

Backed by its leading brand power and a growing profit stream, Deere & Company successfully launched new product lines over the next several decades. This included wheeled plows, cultivators, planters, and soil tillers. Deere reached $1 million in annual sales by 1879 and crossed $3 million annually by 1895 – equivalent to about 100 million of today's dollars.

In the 1900s, the company made a series of shrewd acquisitions that fueled the next leg of its growth. Deere's most transformative purchase was of the Waterloo Gasoline Traction Engine Company in 1912 – Waterloo developed one of the world's first gasoline-powered tractors. Deere spent more than a decade refining the technology it acquired from Waterloo.

The Tractor Powers Deere's Future

By the time the company perfected its first tractor design in the early 1920s, Deere was late to the booming market for tractors. The company faced a crowded field of well-heeled competitors vying for market share. This included the Ford Motor Company – the manufacturing behemoth that produced half of America's automobiles at the time.

But Deere's long-term focus on quality and innovation paid off. Deere introduced the Model D in 1923, featuring a powerful 30-horsepower motor that wowed farmers and won business. Deere's engineers also designed the tractor for bestin-class reliability, while ensuring it was easy to operate and to maintain. The "D" in Model D grew to represent "dependable." This reliability proved a critical selling feature for farmers, since minimizing equipment downtime meant greater productivity and higher earnings.

The company sold over 160,000 Model Ds, making it one of the best-selling tractors in America. Deere produced it for the next 30 years – the longest-running production model in company history.

By 1932, Deere had become one of the top three U.S. tractor suppliers, which collectively controlled 50% of the market. The other two of the trio included International Harvester (now "CNH Industrial") and Allis-Chalmers (now "AGCO"). These remain Deere's key rivals today.

Deere also played the long game when it came to supporting its customers. During the Great Depression, plunging crop prices put roughly 40,000 American farmers out of business. Many of Deere's customers were unable to repay the loans used to finance Deere equipment. But instead of repossessing their tractors and plows and forcing its customers into bankruptcy, Deere offered generous financing extensions and delayed payment options in order to help keep them in business.

While these Depression-era payment deferrals pinched the company's near-term earnings, it helped struggling farmers ride out the tough economic times. This further solidified Deere's brand loyalty, and it set up the company for decades of future success.

By 1963, Deere had surpassed its rivals to become the world's largest manufacturer of farm equipment. And its leading competitive position only expanded further from there.

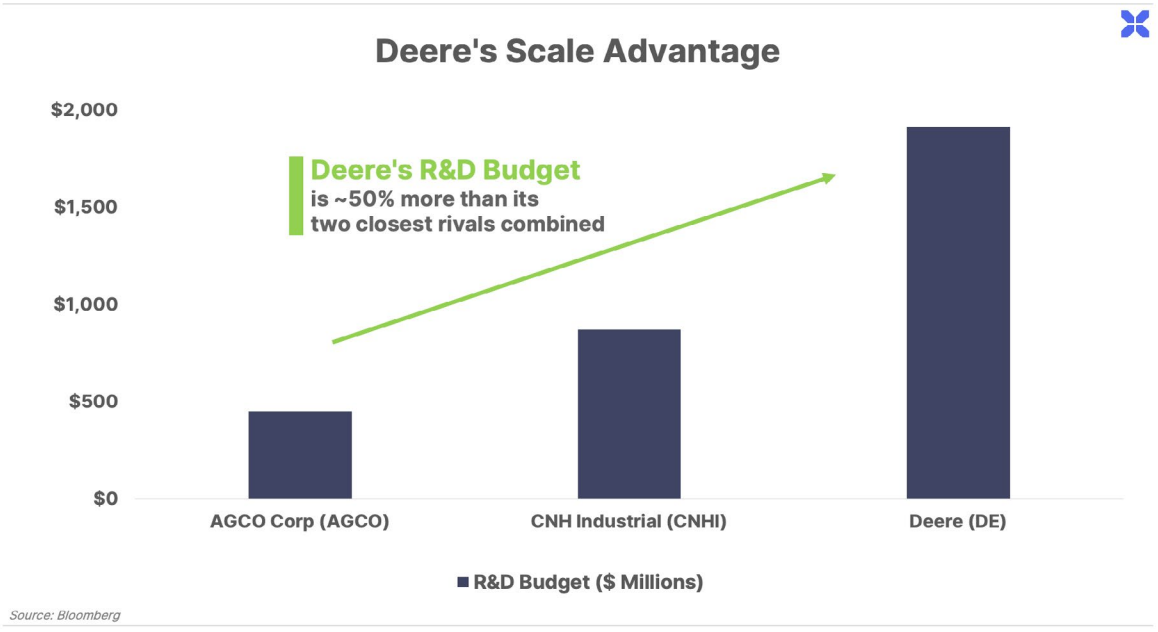
Deere's Sheer Size Steamrolls the Competition

Today, Deere is the largest seller of agricultural equipment in the world, with 18% global market share. In its key U.S. geography, Deere controls roughly 60% of the market in tractors and combines. And its leading brand power developed over the last two centuries has translated into unmatched customer loyalty. Deere consistently ranks at the top of the brand-loyalty rankings from Progressive Farmer – one of America's longest-running agricultural magazines. Survey results from the publication indicate 52% of Deere customers are brand loyal, compared with 42% for its next closest competitor.

Historically, Deere's esteemed name and customer loyalty provided its greatest leg up. But today, the company's sheer size compounds that competitive advantage.

Deere currently generates $61 billion in annual sales – more than double the $24 billion in sales from its next closest competitor, CNH Industrial (CNHI), and more than four times its next closest rival AGCO (AGCO), with $14 billion in sales.

This larger revenue allows Deere to invest more in research and development (R&D) – following the philosophy articulated by its founder nearly 200 years ago. Deere currently plows about $2 billion into R&D, or roughly 50% more than the combined R&D budget of CNH and AGCO.



In the past, Deere's product development centered around larger engines and bigger equipment. In the age of mechanized farming, covering more ground faster was the name of the game. But since the turn of this century, digitization and automation have become the new frontier in boosting productivity.

These early technologies have set the foundation for Deere's more recent push into AI and fully autonomous farming equipment. And along the way, they've transformed Deere's business from a pure hardware manufacturer into a highermargin technology company, while cementing its competitive edge against rivals.

Let's take a look at how these early forms of advanced technology have set the stage for Deere's future trajectory.

How Deere Is Becoming a "Stealth" Software Company

In 2002, Deere introduced Autotrac, one of the world's first self-steering features for commercial crop equipment. Self-guidance is now standard across today's modernday farms. This technology helps machine operators maintain precise row formations and more efficient application of sprays, to name a few cost-saving benefits.

Deere developed its own StarFire GPS (global positioning system) network with NASA engineers at the space agency's Jet Propulsion Laboratory in California. StarFire has evolved over time to become one of the most sophisticated GPS systems in the world. The current version can position Deere's equipment to within 5 centimeters of precision.

In 2002, Deere introduced the IOT age (internet of tractors), when it began installing telematic devices across its full line of large machinery. These devices allow machines to synchronize with one another using Deere's Machine Sync technology. As one example, during harvest time, this software coordinates the movement of harvesters with loading trucks. During the critical harvest season when every second counts, this coordinated movement saves farmers significant time and money.

Deere has also invested heavily into data-management systems, including the John Deere Operations Center, opened in 2013. This Center compiles data from Deere's machines in the field, which analysts use to help farmers optimize operations. First it was efficient plows. Then faster tractors. Now, data gathering and analysis have become key drivers of boosting productivity on modern farms.

These technologies are part of Deere's evolution from a hardware manufacturer to a technology company. Fun fact: Today, Deere employs more software engineers than mechanical engineers. And some of its equipment contains more lines of software code than NASA space crafts. The company is even investing in designing its own semiconductors.

The Apple of Agriculture

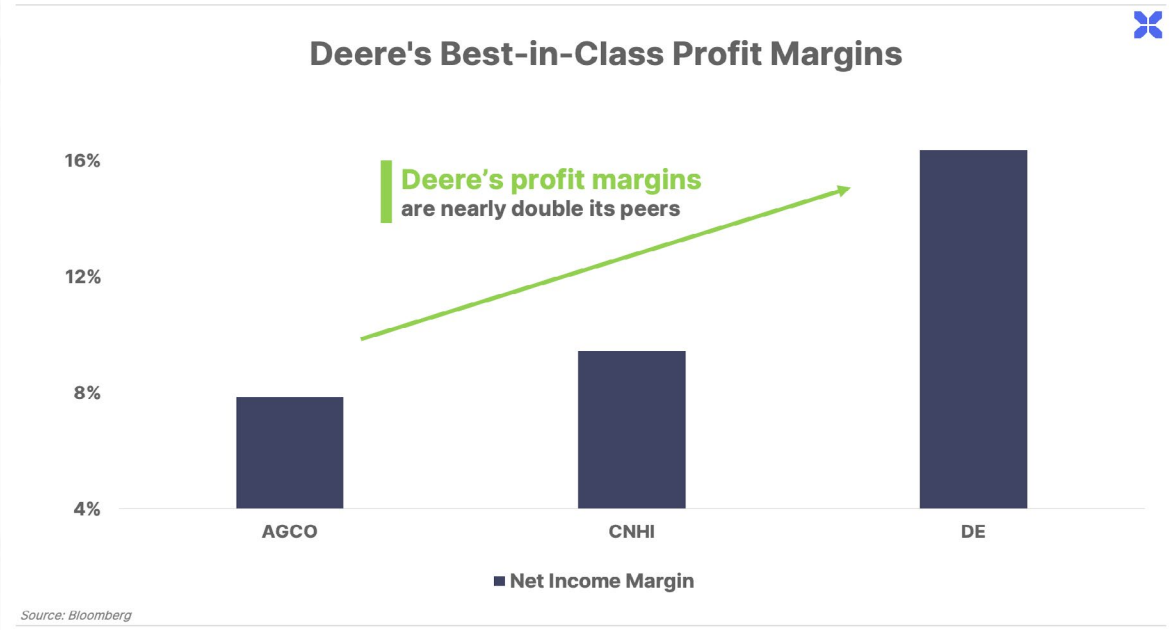
Deere's data-centric approach is further cementing its already-wide competitive moat. When farmers employ Deere's connected equipment and information

management system, it creates a natural incentive to choose Deere for their next equipment purchase. That's because each added Deere machine can work in concert with the rest of a farmer's connected fleet, and it contributes field data into its sophisticated Operations Center for analysis and optimization.

Over time, this creates a stickiness to the Deere brand because of the tremendous cost of switching to alternative equipment providers. If farmers move away from Deere's ecosystem, they lose access to the precious data they've collected to optimize operations.

In this way, Deere is following the Apple (AAPL) playbook. iPhone users get locked into the Apple ecosystem after they've uploaded their photos and purchased their libraries of music through the computer giant. As a result, switching devices becomes more expensive with each passing year.

And like Apple, Deere's widening competitive moat translates into unmatched pricing power. Deere's products command a premium over its competitors, and the company routinely raises prices even when the industry enters a downcycle – including during 2014-2016. During the good years, Deere raises prices well above rates of inflation, including a 12% average increase across its product portfolio in 2023. Deere's pricing power translates into industry-leading 16% profit margins, or nearly double those of its top rivals.



So even though Deere is the largest and oldest player in the industry, its dominant competitive position means it consistently grows revenues and profits faster than its peers. And the company continues solidifying its industry leadership by developing or acquiring the latest cutting-edge technology.

The automatic-guidance and data-management systems Deere invested into over the last two decades provided the foundation for its next big technological push – into AI, starting in 2017.

Deere jump-started its AI trajectory with two key acquisitions, including the $305-million purchase of Blue River Technology that year and the $250-million purchase of Bear Flag Robotics in 2021. Both of these Silicon Valley-based companies had developed cutting-edge, AI-based software designed to enable autonomous farming equipment. The technology Deere acquired enabled the company to make the leap from limited self-guidance systems to today's new era of fully autonomous agriculture.

The Roomba of Tractors

One hundred years after ushering in the era of mechanized farming with the iconic Model D, in January 2022 Deere unveiled the Model 8R – the world's first fully autonomous, self-driving tractor:

The 8R comes with 12 360-degree cameras that feed images into a neural network, a form of AI software modeled after the human brain. In approximately 100 milliseconds, the 8R's neural network classifies each image pixel from its cameras, allowing the tractor to make instantaneous decisions about whether it should stop, keep moving, or change directions. The system is linked to a live GPS feed, which farmers can monitor from the Deere Operations Center.

The 8Rs neural network makes the tractor smarter over time. Incoming data trains the algorithm, which constantly learns through pattern recognition to improve its

capabilities through trial and error. The 8Rs AI software is designed to learn the smallest details of a farm's fixed terrain, distinguishing between trees, fences, and road boundaries. The software is also built to adjust the tractors' operations with changing conditions, like dealing with puddles formed from excess rainfall.

The 8R is just one part of Deere's growing portfolio of AI-based, autonomous technology. In the coming years, Deere plans to roll out automation across its full portfolio of large machinery including combines, planters, and fertilizer sprayers. This is all in pursuit of its bold 2030 objective: to create the world's first fully autonomous farming system.

Deere envisions creating a full suite of fully autonomous machinery for every stage of crop production, from planting to harvest. The first iteration of the 8R requires a human in the tractor to oversee its operation. But the company is aiming for a future where its equipment can operate completely free of human operators.

Precision Farming Software That Trains Itself

Deere's AI technology is also unleashing a new era of precision farming designed to transform the industry from the management of crop fields to managing individual crops.

This includes Deere's See & Spray technology that combines high-resolution cameras with AI-based image recognition to identify weeds among crops. This enables crop sprayers to only deploy herbicides onto individual weeds, instead of indiscriminately blanketing entire fields. The image-recognition software also comes equipped with AI-based machine-learning algorithms. The AI-based image recognition constantly learns to more accurately distinguish weeds from crops, designed to enhance accuracy with each pass.

Deere estimates See & Spray can help farmers reduce herbicide use by two-thirds. The system comes with a camera mounted every three feet across a 120-foot boom, scanning more than 2,100 square feet at a time. The fast-processing AI imaging system enables operating speeds of up to 12 mph.

Deere's ExactShot technology uses the same high-resolution cameras paired with robotic seed planters to provide precise fertilizer applications. The cameras detect the exact moment when each individual seed gets inserted into the soil, triggering the robotic sprayer to apply an "exact shot" of fertilizer. Compared with the traditional process of spraying a continuous stream of fertilizer during the planting process, ExactShot will reduce fertilizer use by roughly 60%, Deere says.

In addition to saving farmers money, Deere's precision farming technology dramatically reduces runoff pollution from excess fertilizer and herbicide use.

The other key benefit of these new technologies lies in the immense amount of data gathered from Deere's modern equipment.

A Big Opportunity With Deere's Big Data

The high-resolution cameras in Deere's equipment provide an increasingly valuable trove of data that can be analyzed to optimize every aspect of crop production. Deere feeds this data through its Deere Operations Center, which uses machine learning to provide valuable insights into everything ranging from yields, performance of herbicides and fertilizers, and moisture levels. For years, this has been part of Deere's long-term vision. As far back as 2018, Deere's Vice President of technology John Stone explained:

> *"We've got computer-vision systems now, internally developed, on basically all of our large ag equipment… It's on tractors, on our sprayers, on our harvesters. These vision systems have deep neural nets underneath them. That is definitely the future of our equipment. I think machine learning is going to be as core to John Deere as the diesel engine."*

As the industry's largest provider of agricultural equipment, Deere produces machines that cover one third of Earth's land surface each year. The company currently has over 500,000 connected machines feeding data to its Operations Center. This provides an unmatched set of data containing billions of measurements on soil, crop, and weather conditions. Deere's machine-learning software can draw critical insights from this data to help farmers optimize every part of their operation.

And this unmatched fleet of connected machines will create an ever-expanding competitive advantage over Deere's rivals. As more Deere machines connect to Deere's network, the more powerful its insights will become from the growing source of data feeding into its network. The more valuable those insights become, the more incentive farmers will have to enter into Deere's ecosystem of connected machines and software.

Deere already has a wide lead over its rivals, with the largest connected fleet in the industry at over 500,000 connected machines. The company is planning to rapidly expand the number of connected machines to 1.5 million by 2026. Over time, it plans to introduce a growing array of software-based data management tools to help farmers improve their efficiency. By 2030, Deere aims to generate 10% of sales from high-margin, recurring software sales.

This will greatly improve the company's profitability and further cement Deere's advantage over its rivals, who simply can't compete with the company's unmatched installed base of data-gathering equipment.

DE: The Safe Way to Play the AI Boom

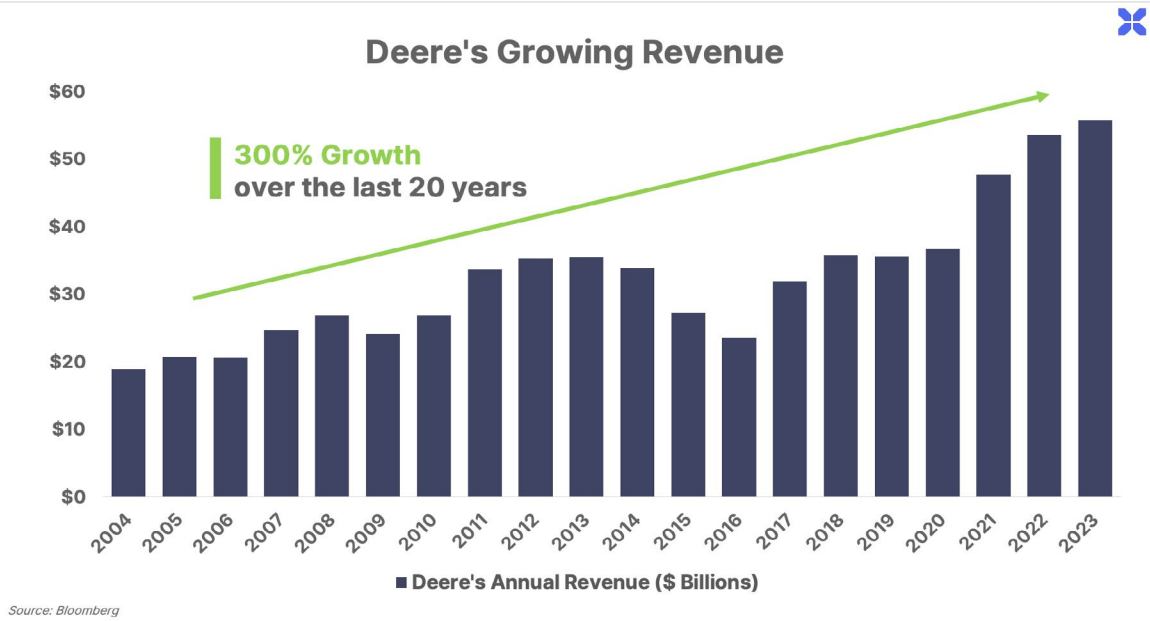
Deere is the ultimate forever stock. Over the last two centuries, the company has established one of the most enduring brands in history. Because of the company's

long-term focus on superior quality, the iconic brand has earned the trust of farmers around the world.

Thanks to its number-one position in the industry, Deere enjoys a tremendous scale advantage. It can invest more in R&D and acquisitions than its competitors. As the business of farming evolves into the new era of autonomous and precision agriculture, optimized by big data and machine learning, Deere will only strengthen its position.

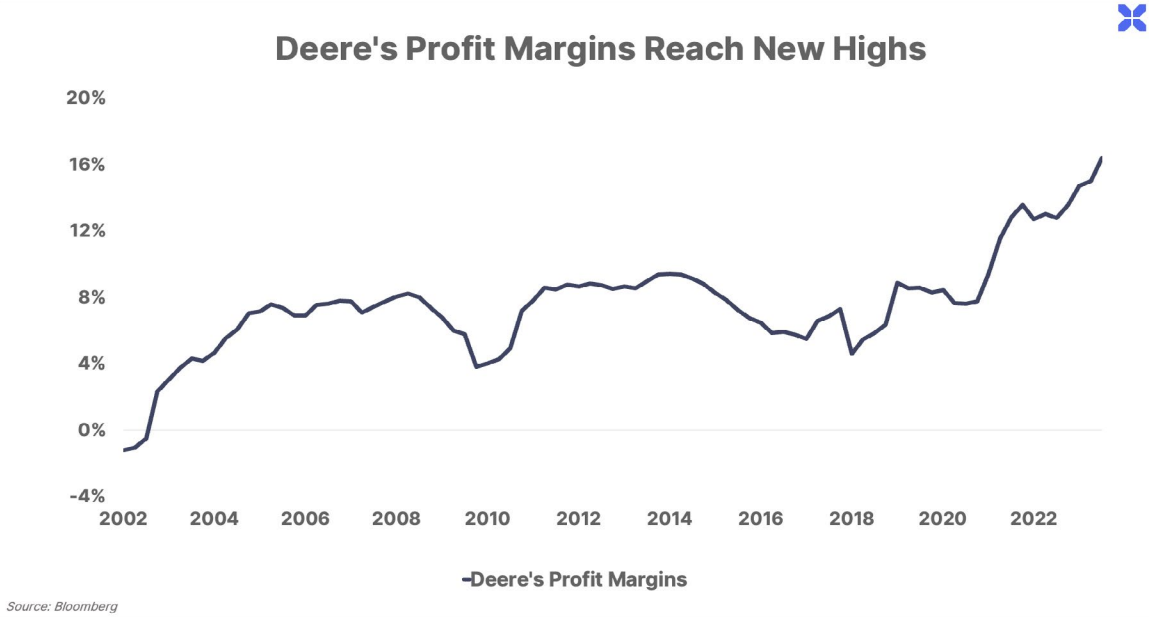
As Deere presses its advantage with an unmatched connected fleet of datagathering machines, the company will be able to offer increasingly more valuable insights to farmers. As Deere's data advantage grows, it will become increasingly more attractive for new customers to enter its ecosystem. It will also become more difficult for existing customers to leave.

The growing role of recurring software and data-management subscriptions in Deere's business could smooth out the cyclical nature of the agricultural cycle. Even through the ups and downs of the crop cycle, Deere's revenues have steadily increased over the long run – up 300% in the last two decades:



Over the same period, Deere's net income has risen 6.5x, or more than double the rate of revenue growth. This is a result of Deere's steadily growing profit margins, driven by the company's investments into new technology and its premium pricing power versus the competition.

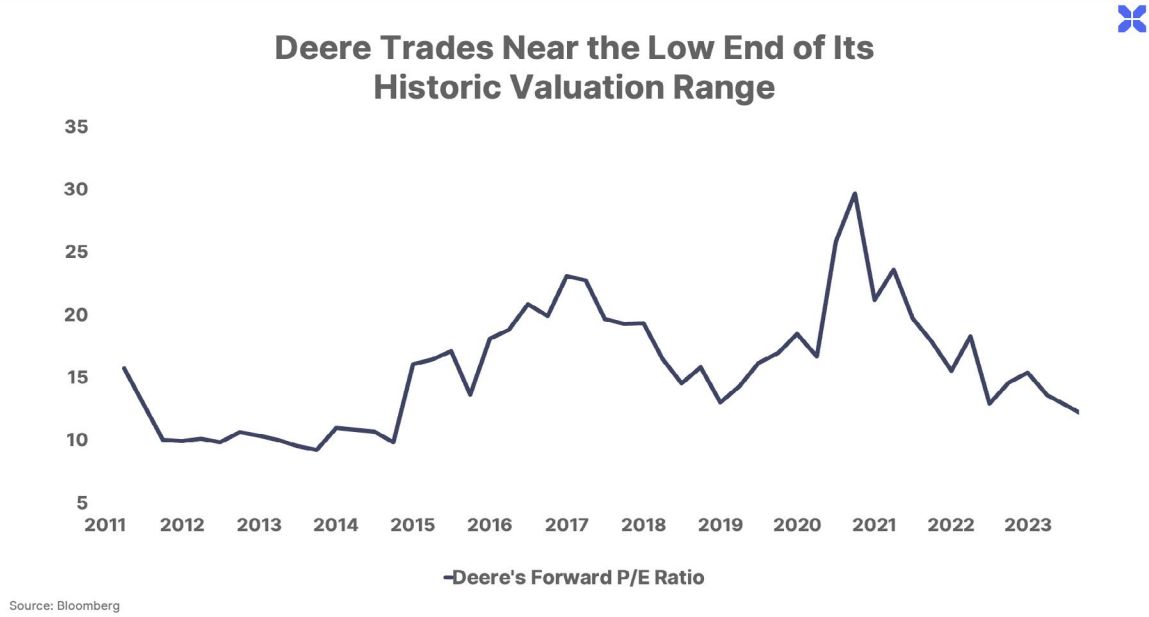
We believe this trend toward margin expansion will continue as the company introduces the next generation of AI-based farming equipment and software. Deere's profit margins reached new all-time highs of 16% in 2023, with current analyst estimates indicating more upside ahead in 2024:



Deere's business is very capital efficient, generating 14% free cash flow margins and 30% returns on equity. This high capital efficiency allows the company to return substantial profits to shareholders. Over the last 20 years, the company increased its dividend 10-fold from $0.11 per share to $1.25 in 2023. Over the same period, consistent buybacks have reduced the share count by 40% from 500 million to 300 million.

The combination of growing revenues, expanding profit margins, and a shrinking share count has fueled a rapid rise in earnings per share (EPS). Over the last two decades, Deere's EPS has increased more than 10-fold, from $2.78 to $33. That's how the company has delivered world-class 17% annualized returns for investors over the last two decades – compared with 10% annualized returns in the overall market (S&P 500).

While many of today's tech stocks associated with AI trade at sky-high valuations (like NVDA's 50x price-to-earnings ratio), as of 2023, Deere trades at a bargain price of less than 12x expected 2023 earnings – near the low end of its historic range of 10x to 30x:



Deere offers one of the few “safe” ways to play the coming AI boom. This is not a speculative business model with unproven AI technology or an uncertain path to profitability. AI-infused technology will reduce farmers’ operating costs, increase efficiencies, and ultimately boost Deere’s sales and profit margins. AI will add to the company’s already world-class business model and brand, while further cementing its dominant competitive position.

Normally, the market would command a premium for this kind of business. Buttrading at a discount to its historic valuation today, Deere offers substantial upside from its new AI technologies, with a wide margin of safety.

We suggest watching Deere closely in the near future.

Action to Take: For the latest updates on our open positions, please visit our live portfolio **here.**

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