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Can Artificial Intelligence Manage a Pension Portfolio?

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The broad reach of Artificial Intelligence's impact can be felt across many sectors including education, business, manufacturing, and healthcare, with the list growing daily. AI uses technology to design and build machines and computers resulting in creating human-like cognitive functions. Instead of being a system, AI is an integration of technologies in a system. AI takes large amounts of data and constructs algorithmic models based upon strict instructions to achieve automated decision making. AI is already working in the manufacturing process to drive efficiency and in science and medicine to solve complex problems.

Can these same principles of AI apply to asset management? Trading algorithms have been in place for many years and are often incorporated with high-frequency trading operations. With quantitative asset management, researchers attempt to correlate factors to stock price behavior. Retail investors have also gravitated toward "robo-advisors". These approaches, quantitative management and robo-advisors, attempt to use statistics, not AI, to achieve better investment performance.

Building an appropriate asset allocation model does not rely upon AI. Instead, simulations that combine thousands of return possibilities for each asset class may be used to determine return probabilities for various time periods. Monte Carlo simulations (analysis) use estimated value ranges to achieve a probability distribution of outcomes or expected investment returns. This approach is widely used today in building asset allocation models.

At a macro level, the factors that influence investor behavior and equity performance are numerous. Beyond the fundamentals associated with security selection and asset allocation, the forces of economic policies, disruptive inventions, new technology, pandemics, wars, political misfortunes, and even weather all weigh on investor behavior and investment outcomes.

Stock selection remains the key driver to performance. In today's top-heavy, cap-weighted equity benchmarks, the manager's decision process to outperform may come down to just a few stocks. AI decision making has yet to prove it can exceed active manager performance and lead the charge in beating benchmarks.

