How can artificial intelligence (AI) shape the mission of the Bank of England?

The mission of the Bank of England, the ensuring of monetary and financial stability in an **ever-changing** financial world. Artificial intelligence offers **several** solutions to the challenges that the Bank of England **faces** in its mission of achieving economic stability.

AI refers to a machine being able to **perceive**, **infer** and to synthesise conclusions from data. AI is becoming **further** integrated into finance, with use cases in **data analysis** and prediction modelling.

The volume of data is growing **exponentially**. Data that must be **cleansed, transformed,** and modelled for use in identifying trends and patterns —. This data allows for insight into macroeconomic health to make **informed** monetary policy decisions. The **strength** of AI algorithms, lies in its ability to **process** data at higher precision and **frequency** than humans, allowing for **prediction modelling** via causal inference. AI prediction models **could** predict economic instability **before** it occurs, allowing the Bank of England to preemptively tackle threats.

For example, an AI-generated - *statistical* model created from credit data **could** indicate a trend of unsustainable credit growth **in real time**, predicting instability **before** it occurs. The Bank of England **could** then implement contractionary monetary policy **or** implement regulation to prevent a future credit crunch, solving a problem **before** it even happens.

AI algorithms **can be** similarly deployed in financial markets to **ensure** stability. Data such as trading volumes and **price** movements can be used **alongside** market sentiment data to predict trends in financial markets. AI analysis is becoming **more** commonplace in finance. BlackRock's Aladdin network and Tradeweb - handle **trillions** in asset volume, **predicting** and minimising exposure

to risk. AI of a similar vein **could** assist with risk mitigation for the Bank of England such as - predicting risk in asset management strategies **or** predicting overexposure in regards to the Bank of England's balance sheet.

There are **unique challenges** in the adoption of AI. The primary weakness of AI is in its inability to handle abstract concepts **such as** morality. A statistical model may, for example, infer that a rise in the base rate **is necessary** for financial stability. The failing, **however**, is the inability to recognise the **emotional** or **political** cost of policy. Credibility determines the influence a central bank can wield, **particularly** in the face of inflation. A central bank must maintain credibility via minimising the felt cost of inflation or monetary policy on UK citizens. AI may fail to recognise this opportunity cost.

Statistical models do not **always** fully represent an economy. AI models **must be** based on historical relationships, **relationships** that may not remain true as economics changes. As a result, the ability of AI to offer **perfect** solutions, **especially** in unpredictable times is *questionable*. Model risk is perhaps the **biggest** challenge facing AI adoption, but this **can be** mitigated with validation checks, **such as** testing the algorithm's performance under different scenarios **or** via the use of **sensitivity** analysis.

AI technology has **great** potential to **shape** the Bank of England's mission of financial stability. AI **can be** used to supplement the Bank of England in **data analysis, risk management** and policy making to ensure long term **stability** of the UK economy. Challenges **do** exist in its adoption, such as in its failure to recognise **qualitative** concepts and model risk, **but** these issues **can be** managed with human overwatch and testing. Integration of AI solutions - alongside data scientists and economists will **greatly** strengthen the Bank of England's position in ensuring stability **for the good** of the people of the UK.

Thank you very much for watching.