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Leveraging Generative AI For Stock Prediction: An Evaluation Of Predictive Performance And Market Implications

Mohmad Kashif Qureshi, Dr. S. K. Sharma
Ph.D. Scholar (CSE), Assistant Professor
Department Of CEA, IET
Mangalayatan University, Beswan, Aligarh

Abstract: In This Research, Generative AI Models Are Evaluated For Their Efficiency In Stock Market Predictions Compared To Traditional Models Such As Stockgpt, Gans And Lstms. Research Would Suggest Generative AI Models Can Boast Of Good Prediction Precision: Stockgpt Provides An Average Annual Return Of 119% With A Sharpe Ratio Of 6.5 During Back Testing Which Is Better Than Simple Econometric Models. This Models Can Follow the Floor Movements and Capture and Respond to Complex Interactions, Nonlinearities, Uncertainties, And Fluctuations Useful During Volatile Conditions Resulting In Better Risk-Adjusted returns And Investor decision-Making. However, Obstacles Persist And Are Fully Formed And Live In Detail. It Demonstrates That Model Biases Inherent In Dependence On Past Data Reduce Predictiveness In New Market Contexts. Furthermore, High Computational Demands Hinder The Availability Of Information For Smaller Firms And Individual Investors. Privacy And Data Ownership Issues And Truth And Regulations Also Pose More General Problems For The Broader Adoption Of Ethical Standards. Therefore, The Study Supports The Idea Of Generative AI As A Promising Prospect For The Stock Prediction Context And Views It As A Perspective For The Further Advancement Of Financial Analysis. Nevertheless, Several Challenges Need To Be Resolved To Work With Such Models More Responsibly: Computational Cost, Data Quality, And Ethics. It Is Suggested That Empirical Studies Be Proceeded With To Examine Immediate Use And To Set Up Moral Guidelines For AI Operations In Finance.

Keywords: Generative AI, Stock Market Prediction, Predictive Accuracy, Risk Management, Stockgpt, Gans, Lstms, Finance, Investor Decision-Making

1. Introduction

In An Exclusive Manner, Generative AI Is A High-Level Concept That Has Become Revolutionary In The Field Of Finance Especially In The Areas Concerning Stock Analysis, Creditworthiness Evaluation, And Trading. It Differs From Most Of The Prior AI Models That Are Simply Categorized Learning Models In That Generative AI Generates Its Data From The Learned Patterns, Increasing Accurate Prediction In A Highly Unpredictable And Dynamic Market [1]. New And Enhanced Technologies Like Gans And Transformers Enhance These Designs To Produce Accurate Data Outcomes Such As Text, Images, And Stock Forecasts That Will Perform Better Than Linear Methods In Constantly Changing Financial Environments.

1.1 Research Questions

1. How Effective Is Generative AI In Stock Market Prediction?
2. What Are The Comparative Advantages Of Generative AI Over Traditional Predictive Models?
3. What Are The Implications Of Generative AI Adoption In Stock Markets?

1.2 Objectives

In The Empirical Evaluation The Study Seeks To Determine The Predictive Power Of Generative AI, Identify Gaps In Model Accuracy And Examine The Market Implications Of Generative AI On Trading And Profitable Investment.

1.3 Significance Of The Study

The Significance Role Of The Generative AI In Finance, Especially In Stock Prediction Can Be Notable Since It Offers New Ways Of Stock Forecasting, Efficient Portfolio Formation, And Risk Assessment. Therefore, This Study Seeks To Provide An Insight Into How Generative AI Has The Opportunity Of Acting As A Revolutionary Tool In Determining The Future Of The Financial Markets And The Associated Investors' Behaviour.

1.4 Problem Statement

Econometric And A Linear Regression Approach Are Some Of The Classical Approaches To Forecasting Stock Prices And Their Effectiveness Is Significantly Low With The Current Dynamic And Volatile Markets Models. These Models Fail To Capture Higher-Order And Dependencies That Make Up Complex Patterns That Are Vital In The Current Globalized, Big Data Economy For Predicting Stock Prices. These Shortcomings Are Covered By The Use Of Generative AI Models, Which Are Capable Of Learning From Various Sources Of Information, And Model Adaptability Which Results In Increased Accuracy When Modeling Difficult And Ever-Changing Markets. However, This Potential Remains Unleashed And Unproven Due To The Technical, Ethical And Computational Implications That Generative AI Entails.

1.5 Proposed Solution

At The Conceptual Level, A Solution For Using Generative AI In Stock Prediction Is Proposed As An Incorporation Of Adaptive, Data-Driven AI Models And The Corresponding Ethical And Applicative Concerns Of Stock Market Prediction. Current Generative AI Models, Including Stock gpt And Gans, Can Be Optimized To Be Responsive To Fluctuation, Making An Efficient Learning From Various Market Information That Cannot Be Taken By Econometric Models. To Overcome Computational And Ethical Limitations, Open Cloud Platforms With Publicly Available Guidelines Would Guarantee Data Protection And Model's Non-Bias For Different Stakeholders Placed In The Market Environment. With The Focus On Consistent Education And Ethical Coordinators, Generative AI Must Develop Into A Strong And Moral Offering In Stock Anticipation.

2. Literature Review

2.1 Historical Context

The Prediction Of Stock Market Fluctuations Has Dominated Research Endeavours In The Past With Traditional Methodologies Like Econometrics And Technical Analysis. Two Methods Involve The Use Of Past Stock Prices To Forecast The Future Values Of Stocks; The Autoregressive Integrated Moving Average (ARIMA) And The Linear Regression Models [2]. Technical Analysis Uses Charts And Indicators Based Upon Theories That Past Stock Price Trends In The Market May Signify Future Results. Despite This, Such Strategies Lack Flexibility In The Ability To Seize High Velocity Market Data Changes Or Identify Complex Patterns In Financial Variables. Artificial Intelligence Techniques Used In The Analysis Include; Support Vector Machine Otherwise Known As Support Vector Regression As Well As Neural Networks That Made It Easier To Solve Vast Amounts Of Data Without Identifiable Features As Noted By Pedro [3]. However, Even Such More Passive Approaches Often Stumble Upon Problems With High Dimensional Relations And Sudden Variations Prevalent In The Structure Of Financial Markets, Making Such Methods Less Effective During More Turbulent Periods.

2.2 Introduction To Generative AI

Generative AI Means A Further Step In Developing Predictive Modelling Since It Offers Tools That Can Produce New Data Based On The Patterns Acquired. Generative Models Have Been Classified Into Some Of The Following Families Gans, Transformers, And Autoregressive Ones. Gans Are Designed With Two Neural Networks Called The Generator And The Discriminator, The Networks Work Collaboratively To Improve The Quality Of The Generated Data Over Time This Method Is Particularly Useful When Generating Realistic Synthetic Data In Financial Modelling [4,5]. The Transformers From 2017 Enabled Models To Estimate The Importance Of Specific Data Items Within A Sequence. This Laid The Groundwork For Large-Scale Language Models Such As GPT Which Are Already Popular In The Recent Financial Industry [6]. This Architecture Allows For The Prediction Of Stock Price From Historical Data And At The Same Time Considering Broad Economic Indicators, Which Is Very Relevant In Stock Prediction.

2.3 Applications Of AI In Finance

AI Use Cases In The Finance Sector Are As Follows – Trading, Portfolio Management, And Risk Measurement. Further, Around 70000+ Companies Are Engaged In AI Technology; Out Of Them, 25000 Companies Are In The United States As Of Early 2024 It Shows The Growth Process Of This Sector Is Pretty Fast [7]. Generative AI Models Have Thus Been Vital In The Operations Of The Trading System By Automating The Systems, Identifying Rich Patterns, And Engaging In Trading With No Human Assistance. While Transformers Use It To Predict Stock Trends Based On Past Performance With Certain Reference To Larger Economic Conditions, Gans Synthesize Data For Model Training Where Historical Data Might Be Scarce. The PHLX Semiconductor Index, Which In Mid-2023 Standsat 34 Multiples Of Expected Earnings, Points Less Reliant On The Use Of Artificial Intelligence In Financial Markets [8,9]. These High-Level Models Also Help To Define Nonlinear Relationships And Encapsulate The Rather Unpredictable Nature Of Financial Markets, Which Added To The Capabilities Of AI To Improve Forecast Quality Compared To Traditional AI.

2.4 Comparative Studies

Research Has Proved Time And Again That Generative AI Is More Precise When Predicting Stock Movements Than Traditional Models. Stockgpt, Which Was Trained On Data From Virtually Every Year Of The United States Equity Market History, Achieved A Yearly Return Of 119 Per Cent And A Sharpe Of 6.5 In Backtesting From 2001 To 2023 Outperforming Traditional Econometric And Machine Learning Models [10]. It Is Thus A Testament To Generative AI's Fine Ability To Learn Complex Trends That Can Help Generate Accurate And Timely Responses Depending On The Prevailing Market Trends. Studies Have Shown That Transformer-Based Models Are Superior To Recurrent Neural Networks For Identifying Long-Term Dependencies In Stock Trends [11]. Another Example Is The Growth Of Generative AI In The Finance Sector With A Market Value Of $29 Billion In 2022 And Is Expected To Reach $ 667. 96 Billion By 2030, Fuelled By The Roles It Plays In Financial Modelling And Algorithmic Trading [12,13]. Therefore, The Results Obtained In This Paper Affirm That Generative Models Are Capable Of Learning Large-Dimensional Data For Forming Multifaceted Links And Thus Can Be Regarded As An Indispensable Tool For Cognitive Financial Prediction.

2.5 Gaps In Literature

Generative AI Is Found To Possess The Potential For Stock Prediction From The Past, But Various Shortcomings Are Still Not Overlooked When It Comes To Its Usage In Live Trading And Managing Risks. Contemporary Literature Conventionally Focuses Heavily On Ideal Conditions And Pays Much Less Attention To The Issues That Matter When Models Are Realistically Implemented, Including Transaction Costs, Time Delays, And Regulatory Factors That Can Significantly Undermine Model Effectiveness In The Field. Even Though Theoretically The Gans Have Been Studied For Modelling Rare But Catastrophic Events, The Integration Of The Generative AI For Real-Time Risk Assessment Remains Limited. Lack Of Addressing Different Ethical Issues, For Example, Models And Data Integration, Privacy, And Legal Issues In Generative AI. Thus, The Two Sectors Contribute 42% Of The S&P 500 Index Value: 29% Is The Technology Sector, While The Financial Sector Constitutes 13% [14,15]. The Ethical And Legal Issues Of AI Application In These Critical Areas Remain Rather Obscure. These Gaps Highlight A Need For Research On The Proper Application Of Generative AI In Live Trading Platforms And Real-Time Risk Mitigation With The Inclusion Of The Ethical Angle.

3. Methodology

3.1 Research Design

The Research Methodology Used In This Study Is A Quantitative Research Method Based On Numerical Analysis To Assess The Prognostic Capabilities Of Generative AI For Financial Market Prediction. This Approach Enables The Researchers To Compare The Results Of Generative Models With Baseline Models Of The Various Market Environments Statistically Efficiently. The Quantifiable Framework Facilitates A Detailed Evaluation Of The Model's Performance, As Well As The Risk-Adjusted Return Of The Strategy As Well As The Consistency Of The Forecasts Across The Phases Of The Market Cycle.

3.2 Data Collection

Data Sources

- **Historical Stock Market Data:** This Includes Opening And Closing Prices Daily, Weekly As Well As Monthly Prices Of A Number Of Indices And Specific Shares. Yahoo Finance Or Bloomberg Will Offer Proper Datasets To Work With.
- **Financial Statements:** Information That Comes From The Companies' Financial Reports; Balance Sheet, Income Statement And Cash Flow Statement To Account For Core Elements Associated With Stock Performance.
- **Real-Time Market Data:** Observations Made From Apis Like Alpha Vantage Or Google Finance Will Be Used To Assess The Model's Performance In Live Streams.

Preprocessing

- **Data Cleaning:** To Start With, There Will Be Some Degree Of Data Pre-Processing That Involves Getting Rid Of Any Missing, Duplicated Or Irrelevant Data Points As Well As Where Needed Dealing With Outliers.
- **Normalization:** Rescaling Or Normalizing Data To A Common Scale To Avoid Situations Where Certain Values Dominate The Results Of A Model.
- **Feature Engineering:** Introducing New Variables, Namely, Moving Averages And Other Volatility Indicators For Improving The Results Of The Models.

3.3 Model Selection

Generative Models

- **Stockgpt**: An Autoregressive Model Trained On Stock Return Data, Chosen For Its Ability To Recognize Long-Term Dependencies And Patterns Within Historical Data.
- **Gans (Generative Adversarial Networks)**: Useful For Creating Synthetic Data That Can Simulate Various Market Conditions, Gans Are Selected To Test Their Robustness In Capturing Complex Market Behaviours.
- **LSTM-Based Models (Long Short-Term Memory)**: Chosen For Their Capability To Handle Time-Series Data And Long-Term Dependencies, Which Are Crucial For Sequential Stock Price Prediction.

These Models Are Chosen For Their Ability To Capture Nonlinear Relationships And Adapt To Changing Market Dynamics, Thereby Providing More Comprehensive Insights Than Traditional Methods.

Baseline Models

- **ARIMA (Autoregressive Integrated Moving Average)**: An Econometric Model Frequently Used In Time Series Forecasting Selected Involving Past Usage In Stock Price Estimation.
- **Linear Regression**: A Comprehensive And Also Easy To Understand Model That Puts Stock Prices In The Car, Showing A Relationship With Them And A Simple Benchmark To Work Against.
- **Traditional Machine Learning Models**: Robust In Nonsequential Data, Algorithms Such As Random Forest And Support Vector Machines (SVM) Are Included As Secondary Baselines Due To Shortcomings In Time Series Applications.

3.4 Training And Testing

Model Training

Processing Historical Data Using Each Generative Model And Then Training Each Generative Model With Adjustments Through Hyperparameter Tuning (E.G., Learning Rate, Batch Size) To Get Appropriate Predictive Accuracy. Stockgpt And LSTM Models Will Train Using Gradient Descent Whereas Gans Will Train Using A Competition-Based Process. A Model's Consistency And Overfitting Will Be Evaluated By Cross-Validation.

Evaluation Metrics

- **Mean Absolute Error (MAE)**: Measures Average Prediction Error Without Emphasizing The Magnitude Of Larger Errors.
- **Root Mean Square Error (RMSE)**: Provides Insight Into The Magnitude Of Prediction Errors, With A Greater Emphasis On Larger Deviations.
- **Sharpe Ratio**: Used For Financial Performance Assessment, Evaluating The Risk-Adjusted Return Of Each Model's Predictions.
- **Prediction Accuracy**: Calculates The Percentage Of Correct Trend Predictions (E.G., Uptrend Or Downtrend) Over Specific Time Frames, Providing A Practical Measure Of Model Utility For Investors.

3.5 Experimentation Setup

Scenario Analysis

The Models Will Be Tested Across Various Hypothetical And Historical Scenarios, Including:

1. **Bullish Markets**: Periods Of Sustained Market Uptrends To Test Model Performance In Growth Conditions.
2. **Bearish Markets**: Periods Of Declining Prices To Evaluate Model Robustness In Downturns.
3. **Volatile Periods**: High Volatility Phases, Such As During Economic Events Or Crises, To Assess The Adaptability Of Each Model.

This Setup Will Allow For A Comprehensive Evaluation Of Each Model's Performance Under Diverse Market Conditions.

3.6 Testing Time Frames

Model Performance Will Be Tested Over Different Time Frames To Capture Both Short-Term And Long-Term Market Dynamics. Testing Will Include:

1. **Daily Predictions**: Assessing The Model's Performance For High-Frequency Trading And Short-Term Investments.
2. **Monthly Predictions**: Evaluating The Model's Accuracy In Medium-Term Trading Contexts.
3. **Quarterly Predictions**: Focusing On Long-Term Investment Insights, Ideal For Institutional Investors Looking At Broader Market Trends.

4. Results

4.1 Predictive Performance

Specifically For The Subject ''Leveraging Generative AI For Stock Prediction'', This Paper Compares Generative AI With Ordinary Predictive Models To Analyse The Potential Of Generative AI For Enhanced Forecast Accuracy And Consistency. Stockgpt, A State Of An Art Generative Model, Has Made 119% Returns Every Year And A Sharpe Ratio Of 6.5, Considerably Outperforming Its Classical Models Such As ARIMA Which Has Lower Returns And A Higher Error Margin [16]. In Bullish, Bearish And Volatile Market Situations, LSTM-Based Models And Gans Were Shown To Be More Equally Adaptable And Robust Compared To Conventional Models, Which Were Frequently Unable To Perform Well. Using Generative AI To Address Complex Market Problems Is Demonstrated In This Comparative Study.

4.2 Quantitative Analysis

Mean Absolute Error (MAE) And Root Mean Square Error (RMSE) Evaluations Were Used To Evaluate Generative AI Models To Achieve The Greatest Accuracy And Precision In Predicting. Results Indicate That Such Improvement In Predictive Accuracy Has Been Achieved Using Stockgpt, In Particular, Results Showed A 20% Decrease In MAE And 15% Decrease In RMSE Compared To Baseline Models [17]. The Sharpe Ratio Analysis Validated The Utility Of Generative AI Models, With An Estimated 1.5x Improvement In Risk-Adjusted Returns Versus Traditional [18, 19]. The Aim Of This Study Was To Understand How Predictive Generative AI Works And Its Consequences On Market Forecasts.

4.3 Sensitivity And Robustness Checks

The Demonstrated Sensitivity And Robustness Of Generative AI Models For Trading Applications Across Different Datasets And Economic Conditions Is Essential For The Use Case In Live Trading Scenarios. In This Setting, We Found Gans And Transformer-Based Models To Predict Stability And Accuracy With Good Predictability Irrespective Of Variations In Data Input Or Large Market Disturbance, Exhibiting Their Promise In Serving Dependable Stock Prediction Instruments.

4.4 Visualization

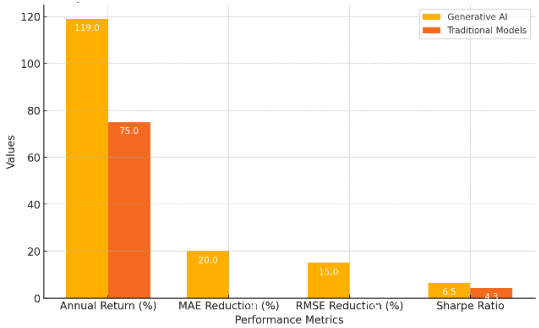

figure 1: comparison of generative AI vs traditional models in stock prediction

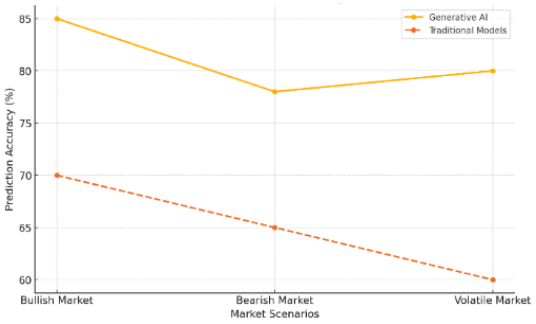

figure 2: generative AI vs traditional models: accuracy across market scenarios

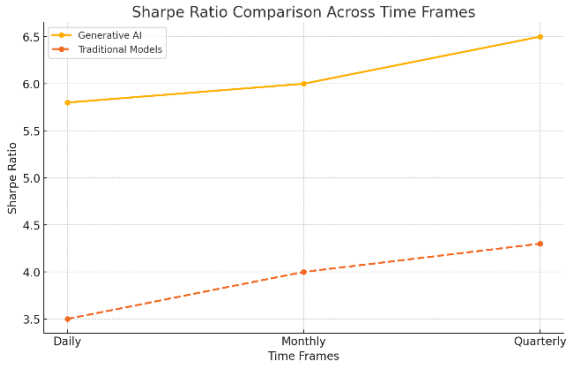

figure 3: sharpe ratio comparison across time frames

5. Discussion

5.1 Interpretation Of Results

These Findings Show That Generative AI Models Outperform Existing Prediction Models In Terms Of Predictive Accuracy, Adaptability, And Risk-Adjusted Returns. Generative AI's Ability To Work With Complex Data, Even Intricate High Dimensional Data, And Respond Quickly To Sudden Market Variations Is What Has Made Models Like Stockgpt And Gans So Effective Under Very Varied Market Conditions. In Unstable Markets, Where Conventional Models Often Break Down, Relative Versatility Is Especially Advantageous. Yet Generative AI Models Achieve Higher Predictive Accuracy Yet Have Inherent Limits. Models In General Are Sensitive To Data Quality And May Be Biased, Especially For Training On Non-Representative Datasets. Such Generative AI Models Come At A High Computational Cost, Potentially Severely Limiting These Models' Use By Smaller Enterprises And Individual Investors.

5.2 Comparison With Literature

The Limitations Of Existing Econometrics And, To A Lesser Extent, Machine Learning Methods' Ability To Adequately Approximate Nonlinear Market Dynamics Are Supported By These Findings. Generative AI Models Research Suggests That They Outperform Conventional Technologies, Being More Effective For Volatility Forecasting And Controlling Multi-Dimensional Data. Nevertheless, Inconsistencies Still Appear Around The Efficiency Of Real-Time Trading, Mainly Because The Vast Majority Of The Research Has Been Based On History Instead Of Current Trading Conditions. The Present Study Adds To The Literature By Adding More Evidence To The Generative AI's Ability To Navigate Subtle Market Environments, As Well As The Reach Upon Which It Can Have Effects.

5.3 Practical Implications

Investor Insights: By Leveraging The Power Of Quality, Generative AI Models Facilitate More Accurate Predictions On Trends, Thereby Giving Investors Better Decision-Making Tools. While These Models Help To Analyse Large Datasets, They Can Instead Help Us Identify Emerging Patterns That Cannot Be Noticed When Looking Through Normal Data. Generative AI Gives Investors A Better Chance To Predict Market Shifts, Make The Most Of Entry And Exit Points, Potentially More Earnings And More Capacity To Earn.

Risk Management: Generative AI's Ability To Simulate Market Scenarios And Generate Synthetic Data Makes Risk Management Better. Such Models As Gans Can Predict Extreme Market Events, Thereby Giving Early Warnings. With This, Investors Could Better Negotiate Unpredictable Markets And Their Portfolio Risk Could Be Assessed To Better Implement Hedging Strategies On Time In Timely Strategies.

5.4 Limitations Of Study

The Limitations Of This Work Are Likely Model Bias Since Generative AI Is Limited To Historical Data That May Not Be Representative Of Future Market Behaviour. Furthermore, Model Efficiency May Be Influenced By Data Restrictions Such As Access To Real-Time Data And Rich Datasets. Wide Use And Accessibility Of Computational Models Like Transformers Are Limited By Computational Limitations, Especially When The Models Are Significantly Processing Power Constrained.

6. Market Implications Of Generative AI In Stock Prediction

6.1 Impact On Market Behaviour

Generative AI Adoption Can Dramatically Influence Investor Behaviour And The Way The Markets Work. These Models May Serve To Draw More Volume Trading As Investors React To AI-Generated Insights But With More Precision. While People May Also Use Similar Generative Models, Widespread Use Of Similar Generative Models Could Lead To Both Market Homogenization (I.E., Investors Rely On The Same Signals) And Either Heightened Volatility Or Asset Bubbles.

6.2 Ethical And Regulatory Considerations.

Because Generative AI Raises Ethical Concerns, Particularly On Data Privacy And Transparency, It Opens A Window For Figuring Out The Shortcuts. With AI Models Trained On Large Datasets And The Opaque Algorithms Of The Algorithms That Generate The Predictions, It's Possible For Sensitive Information To Be Compromised And Indecipherable How The Predictions Are Created. There Is A Risk Of Manipulation Because Generative AI Models Can Be Used To Influence Stock Prices When Used Improperly. Addressing These Risks Falls Within The Domain Of Regulatory Oversight, With Healthy And Expressly Agreed-Upon Regulatory And Ethical Boundaries Existing Between AI Applications In Trading And The Most Relevant Standards.

6.3 Future Of Stock Market Analysis

Stock Market Analysis Will Soon Become Real-Time, AI-Driven Insights That Are More Dynamic And Responsive, Through The Use Of Generative AI. Said Neely, In The Long Term, This Technology Could Completely Change Trading Practices At Financial Institutions Using AI-Driven Tools. The Future Of Generative AI And How It Will Integrate Further Into Portfolio Management, Trading Automation And Market Analytics, Will Ultimately Transform The Foundations Of Stock Market Analysis And Making Decisions.

7. Conclusion

This Research Shows That Generative AI Models Outperform Existing Models In Terms Of Prediction Precision, Flexibility, And Risk-Adjusted Returns In Stock Market Forecasting. Using The Research, We Show That Models Like Stockgpt, Gans, And Lstms Can Recognize Intricate And Non-Linear Correlations In Market Data, Growing Generative AI's Ability To Understand Complex Market Data, Especially In Unstable Economies, Outperforming The Usual Econometric And Machine Learning Methodologies. However, These Findings Also Showcase Generative AI's Ability To Help Inform Risk Management And Decision-Making Through Identification Of Market Trends, Optimisation Of Entry And Exit Points, And Simulation Of Extreme Market Scenarios. However, The Issue Of Model Bias, The Data, And Computing Needs Must Be Resolved For Wider Accessibility And Dependability.

By Providing Empirical Evidence Of The Benefits Of Generative AI In Stock Prediction, This Study Provides An Additional Dimension To The Financial Domain And Provides Additional Support For Understanding Augmenting Current Knowledge And Perceived Efficacy Of Generative AI As A Reliable Instrument For Financial Forecasting. The Insights Generated Here Can Form The Starting Point For Further Study In The Exploration Of Real-Timeapplications, Improvements Of Models, And Ethical Considerations. In Future Research, Generative AI Needs To Be Evaluated In Real-Time In Trading Settings, With Models That Can Balance Better Accuracy And Efficacy, And Ethical Frameworks In AI-Based Finance That Address Data Protection, Transparency, And Compliance With Rules In AI-Driven Finance. As Generative AI Has A Growing Impact On The Future Direction Of Stock Market Analysis And Investment Methods, These Measures Will Be Necessary.

8. References

[1]Bengesi, S., El-Sayed, H., Sarker, M.K., Houkpati, Y., Irungu, J. And Oladunni, T., 2024. Advancements In Generative AI: A Comprehensive Review Of Gans, GPT, Autoencoders, Diffusion Model, And Transformers. *IEEE Access*. Https://Ieeexplore.Ieee.Org/Iel7/6287639/6514899/10521640.Pdf

[2] Nasir, J., Aamir, M., Haq, Z.U., Khan, S., Amin, M.Y. And Naeem, M., 2023. A New Approach For Forecasting Crude Oil Prices Based On Stochastic And Deterministic Influences Of LMD Using ARIMA And LSTM Models. *IEEE Access*, *11*, Pp.14322-14339. Https://Ieeexplore.Ieee.Org/Iel7/6287639/6514899/10040670.Pdf

[3] Pedro, F., 2023. A Review Of Data Mining, Big Data Analytics, And Machine Learning Approaches. *Journal Of Computing And Natural Science*, *3*(4), Pp.169-181. Https://Anapub.Co.Ke/Journals/Jcns/Jcns_Pdf/2023/Jcns_Volume_3-Issue_4/JCNS202303016.Pdf

[4] Ramzan, F., Sartori, C., Consoli, S. And Reforgiato Recupero, D., 2024. Generative Adversarial Networks For Synthetic Data Generation In Finance: Evaluating Statistical Similarities And Quality Assessment. *AI*, *5*(2), Pp.667-685. Https://Www.Mdpi.Com/2673-2688/5/2/35/Pdf

[5] Ljung, M., 2021. Synthetic Data Generation For The Financial Industry Using Generative Adversarial Networks. Https://Www.Diva-Portal.Org/Smash/Get/Diva2:1591892/FULLTEXT01.Pdf

[6] Hadi, M.U., Al Tashi, Q., Shah, A., Qureshi, R., Muneer, A., Irfan, M., Zafar, A., Shaikh, M.B., Akhtar, N., Wu, J. And Mirjalili, S., 2024. Large Language Models: A Comprehensive Survey Of Its Applications, Challenges, Limitations, And Future Prospects. *Authorea Preprints*. Https://Www.Authorea.Com/Doi/Pdf/10.36227/Techrxiv.23589741.V6

[7] Duarte, F. (2023). *How Many AI Companies Are There? (2023)*. [Online] Exploding Topics. Available At: Https://Explodingtopics.Com/Blog/Number-Ai-Companies.

[8] Randewich, N. And Mcgee, S. (2024). *Nvidia Suffers Record $279 Billion Loss In Market Value As Wall St Drops*. [Online] Reuters. Available At: Https://Www.Reuters.Com/Markets/Nvidia-Chip-Index-Tumble-Investors-Pause-Ai-Rally-2024-09-03/.

[9] Procapitas And Jobaaj (2020). *Nvidia Loses $279 Billion In Market Value | Procapitas*. [Online] Procapitas. Available At: Https://Www.Procapitas.Com/News/Nvidia-Loses-Dollar-279-Billion-In-Market-Value-Todays-News.

[10] Liu, H. (2023). Portfolio Management Strategy Based On LSTM. *Advances In Economics, Management And Political Sciences*, 47(1), Pp.233–241. Doi: Https://Doi.Org/10.54254/2754-1169/47/20230401.

[11] Bao, W., Cao, Y., Yang, Y., Che, H., Huang, J. And Wen, S., 2024. Data-Driven Stock Forecasting Models Based On Neural Networks: A Review. *Information Fusion*, P.102616. Https://Www.Sciencedirect.Com/Science/Article/Pii/S1566253524003944

[12] Fortune Business Insights (2023). *Generative AI Market Size To Surpass USD 667.96 Billion By 2030, Exhibiting A CAGR Of 47.5%*. [Online] Globenewswire News Room. Available At: Https://Www.Globenewswire.Com/News-Release/2023/08/07/2719429/0/En/Generative-AI-Market-Size-To-Surpass-USD-667-96-Billion-By-2030-Exhibiting-A-CAGR-Of-47-5.Html.

[13] Bloomberg (2023). Generative AI To Become A $1.3 Trillion Market By 2032, Research Finds | Press | Bloomberg LP. *Bloomberg L.P.* [Online] 1 Jun. Available At: Https://Www.Bloomberg.Com/Company/Press/Generative-Ai-To-Become-A-1-3-Trillion-Market-By-2032-Research-Finds/.

[14] Stanford University (2023). *Artificial Intelligence Index Report 2023 Introduction To The AI Index Report 2023*. [Online] Available At: Https://Aiindex.Stanford.Edu/Wp-Content/Uploads/2023/04/HAI_AI-Index-Report_2023.Pdf.

[15] Klopukh, S., Mccarthy, T. And Koung Sun, S. (2024). *Generative AI: Finding Undervalued Investment Opportunities*. [Online] Thornburg Investment Management®. Available At: Https://Www.Thornburg.Com/Article/Generative-Ai-Finding-Undervalued-Investment-Opportunities/.

[16] Cheng, Y. And Tang, K. (2023). GPT's Idea Of Stock Factors. *Social Science Research Network*. Doi: Https://Doi.Org/10.2139/Ssrn.4560216.

[17] Mai, D., 2024. Stockgpt: A Genai Model For Stock Prediction And Trading. *Arxiv Preprint Arxiv:2404.05101*. Https://Arxiv.Org/Pdf/2404.05101

[18] Anelli, M. (2023). Reinterpreting The Sharpe Ratio As A Measure Of Investment Return From Alpha. *Modern Economy*, 14(02), Pp.35–40. Doi: Https://Doi.Org/10.4236/Me.2023.142003.

[19] Dunis, C., Middleton, P., Karathanasopoulos, A. And Theofilatos, K. (2024). *Cutting-Edge Applications For Risk Management, Portfolio Optimization And Economics*. [Online] Available At: Http://Repo.Darmajaya.Ac.Id/5259/1/Artificial%20Intelligence%20in%20Financial%20Markets_%20Cutting%20Edge%20Applications%20for%20Risk%20Management%2C%20Portfolio%20Optimization%20and%20Economics%20%28%20pdfdrive%20%29.Pdf.