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# Predicting Inflation With Machine Learning

by

Ben M. Taylor

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# Abstract

In October 2022, the UK hit an inflation rate of 11.1%, the country's highest in over 40 years. Now more than ever, the ability to accurately predict inflation and other financial indicators is a crucial skill required by the government and the individual to prepare themselves for the future financially. In a time where Artificial Intelligence and Machine Learning are ever flourishing, it is only natural to attempt to use these tools at our disposal to predict and combat the issues we face.

In this paper I will attempt to predict inflation through the use of machine learning eventually presenting my findings and evaluations.

**Keywords:** Inflation, Artificial Intelligence, Machine Learning

# Acknowledgements

Acknowledgement chapter

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# References

[1] Honglak Lee, Roger Grosse, Rajesh Ranganath, and Andrew Y. Ng. Convolutional deep belief networks for scalable unsupervised learning of hierarchical representations. In *Proceedings of the 26th Annual International Conference on Machine Learning*, ICML '09, page 609–616, New York, NY, USA, 2009. Association for Computing Machinery.

# Chapter 1

# Introduction

Main goals and define all the terms in the thesis title

## 1.1 Motivation

## 1.2 Aims and Objectives

## 1.3 Potential Risks and Constraints

## 1.4 Methodology

# Chapter 2

# Literature Review

## 2.1 Motivation

Embarking on a literature review before developing our project offers numerous benefits. Understanding existing knowledge in Machine Learning, specifically when used to predict financial indicators, helps to contextualise our research, positioning it within the existing field. Reviewing previous literature also provides the benefits of identifying gaps in current research and finding supporting arguments that can guide our work and help us to avoid, as much as possible, redundancy in our and others' works. Having completed the literature review, we should have a strong foundation to start and guide our project.

## 2.2 Available Literature

Machine Learning is a 'hot topic' that is to say there is an abundance of fresh papers constantly being put out within the field. This bodes well for our project as it means that we should have plenty of guidance on the options available to conduct and develop our predictive models.

Additionally, there is a strong monetary incentive to produce research on how best to predict financial time series both for corporations and for the individual. This results in a large assortment of papers written experimenting with a variety of techniques, most of which we can learn from to help structure our model.

## 2.3 Problem Domain

There are many FTS prediction methods both theoretical and practical that have attracted attention. Among these is the trading discipline of technical analysis. Technical analysis uses a variety of technical indicators and patterns in market

data to evaluate and make predictions on investments and FTS. There are three main categories of technical analysis which are statistical models, Machine Learning (ML) models, and hybrid models. Statistical models Machine learning models Hybrid modelsfds[1]

## 2.4 Problem Solution

# Chapter 3

# Main chapters

# Chapter 4

# Conclusion

# Chapter 5

# References