

COUB01
F014621

Predicting Inflation With Machine Learning

by

Ben M. Taylor

A Project Report

Submitted in partial fulfilment
of the requirements for the award of

B.Sc.

in

Computer Science

of

Loughborough University

2nd December 2024

Copyright 2024 Ben M. Taylor

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

Contents

Abstract	ii
Acknowledgements	iii
1 Introduction	1
1.1 Motivation	1
1.2 Aims and Objectives	1
1.3 Potential Risks and Constraints	1
1.4 Methodology	1
2 Literature Review	2
2.1 Motivation	2
2.2 Available Literature	2
2.3 Problem Domain	2
2.4 Problem Solution	2
3 Main chapters	3
4 Conclusion	4
5 References	5

List of Figures

List of Tables

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 us contextualise our research positioning it within the existing field. Reviewing previous literature also gives us the benefits of identifying gaps in current research; finding supporting arguments that can help guide our work and helping us to avoid, as much as possible, redundancy produced by our efforts. Having completed the literature review, we should have a strong foundation to start and complete 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 plenty of monetary incentive to produce research on how best to predict various financial time series. This results in a variety of papers written with a variety of techniques used, most of which we can learn from to help structure our model.

2.3 Problem Domain

2.4 Problem Solution

Chapter 3

Main chapters

Chapter 4

Conclusion

Chapter 5

References