

Final Report: Impact of Weather on Inflation in Nordic Countries (2015-2019)

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1 Introduction

This report investigates the influence of weather on inflation rates in Finland, Norway, and Sweden from 2015 to 2019. By examining weather data, such as temperature and precipitation, alongside global inflation data, the study aims to uncover any significant correlations between climatic conditions and economic indicators. The goal is to determine whether weather patterns directly affect the economic stability of these Nordic countries.

2 Used Data

The analysis utilizes two primary datasets sourced from Kaggle. The first dataset, provided by Adam Wurdits, contains comprehensive weather information for Finland, Norway, and Sweden from 2015 to 2019. The second dataset, compiled by Sazidthe1, offers annual inflation rates for various countries, including the Nordic nations.

2.1 Data Structure and Content

- **Nordic Weather Data (2015-2019):** This dataset includes variables such as average, maximum, and minimum temperatures, precipitation, and snow depth. Each entry is associated with a specific country and year.
- **Global Inflation Data:** This dataset provides annual inflation rates, capturing economic fluctuations over the years. It is structured with columns representing country names, inflation indicators, and yearly inflation rates.

2.2 Data Licensing

- **Nordic Weather Data:** Sourced from Kaggle, provided by Adam Wurdits, and licensed under CC BY-SA 4.0. The dataset URL is <https://www.kaggle.com/adamwurdits/finland-norway-and-sweden-weather-data-20152019>.
- **Global Inflation Data:** Sourced from Kaggle, compiled by Sazidthe1, under a standard open-data license such as the World Bank Terms of Use. The dataset URL is <https://www.kaggle.com/sazidthe1/global-inflationdata>.

3 Analysis

The analysis aims to understand the relationship between weather conditions and inflation rates in Finland, Norway, and Sweden from 2015 to 2019. The following steps were undertaken to achieve this:

3.1 Method

First, weather data and inflation data were extracted from Kaggle and loaded into DataFrames. The weather data was cleaned by converting dates to datetime format and extracting the year. The inflation data was reshaped to a long format and filtered to include only the years 2015-2019. Both datasets were then merged based on country and year, resulting in a combined dataset that includes weather parameters and inflation rates for the specified countries and years.

3.2 Results

The combined dataset was analyzed to identify any correlations between average temperature and inflation rates. Statistical analysis revealed that the correlation coefficients between these variables are close to zero. This indicates a very weak or negligible linear relationship between weather conditions and inflation rates in the Nordic countries during the studied period.

3.3 Interpretation

The results suggest that weather conditions, specifically average temperature, do not have a significant linear impact on inflation rates in Finland, Norway, and Sweden from 2015 to 2019. This implies that other factors likely

play a more substantial role in influencing inflation rates in these countries. The complexity of economic systems requires a comprehensive approach to understand all contributing factors.

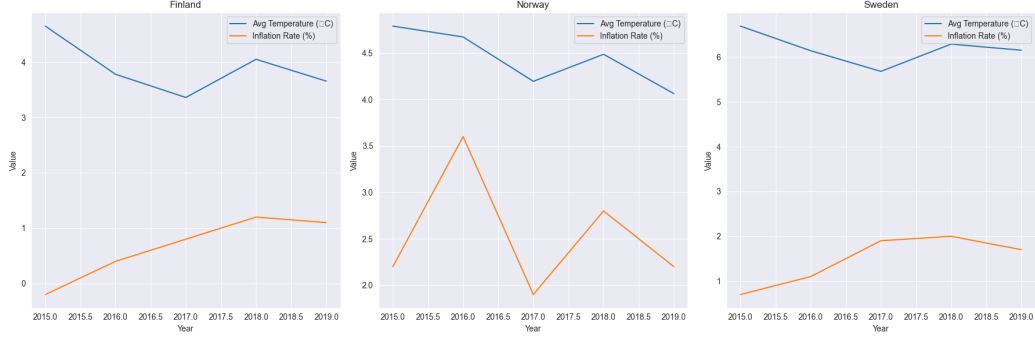


Figure 1: Average Temperature and Inflation Rate in Finland, Norway, and Sweden (2015-2019)

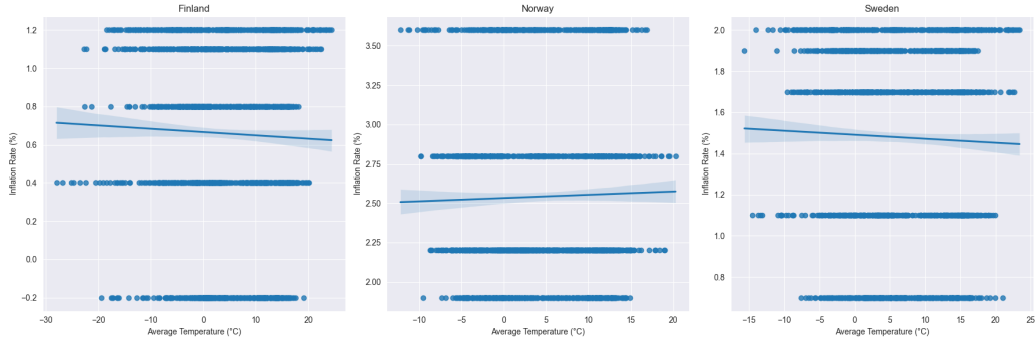


Figure 2: Average Temperature vs. Inflation Rate in Finland, Norway, and Sweden (2015-2019)

4 Conclusions

The question posed in this study was: "How can weather influence Nordic countries' inflation between 2015-2019?" Based on the analysis conducted, the answer is that weather conditions, particularly average temperature, do not have a significant linear influence on inflation rates in Finland, Norway, and Sweden during this period. The correlation between these variables was found to be weak or negligible.

4.1 Critical Reflection

While the study provides valuable insights, it is important to critically reflect on its limitations and the remaining uncertainties. The analysis focused on a linear relationship between temperature and inflation, which may oversimplify the complex interactions within economic systems. Other weather variables, such as extreme weather events or precipitation, were not analyzed in depth. Additionally, inflation is influenced by a multitude of factors, including political, social, and global economic conditions, which were not considered in this study.

Further research could expand on this work by exploring non-linear relationships and including a broader range of economic and environmental variables. This would provide a more comprehensive understanding of the factors influencing inflation in the Nordic countries.