Chasing the truth: magnitude, frequency, and possible effects of macroeconomic data revisions on monetary policy

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Introduction

Macroeconomic data is often revised over time as more information becomes accessible and measurement errors are corrected. Even the latest available data are subject to uncertainty, and at some point, they may be replaced by more accurately measured observations. Therefore, the data policymakers observe when deciding about economic policy might be inexact. Policy measures taken based on data available at the time may differ from recommendations based on revised data.

Thus, policy actions that seemed appropriate when they were made may be regarded as mistakes when viewed with the revised data. Therefore, to understand the policy concerns of the past, it is important to know the data policymakers were observing at the time.

The main objective of this project was to create a database of data revisions for a set of key Macroeconomic variables (unemployment, inflation, and GDP) that are relevant for Monetary policy decisions in the U.S. and Canada.

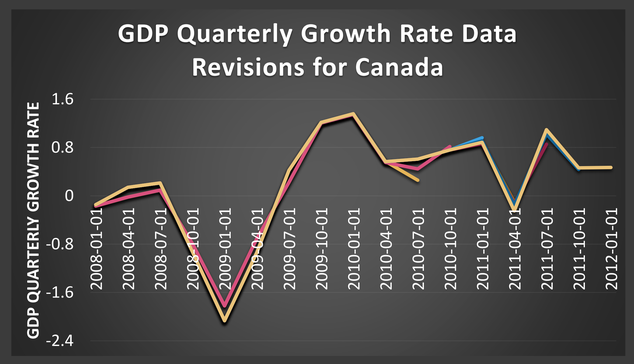
The goal was to create an up-to-date Excel file encompassing all data revisions that happened in the last 40-50 years for the major macroeconomic variables in order to be able to describe the magnitude and frequency of those data revisions.

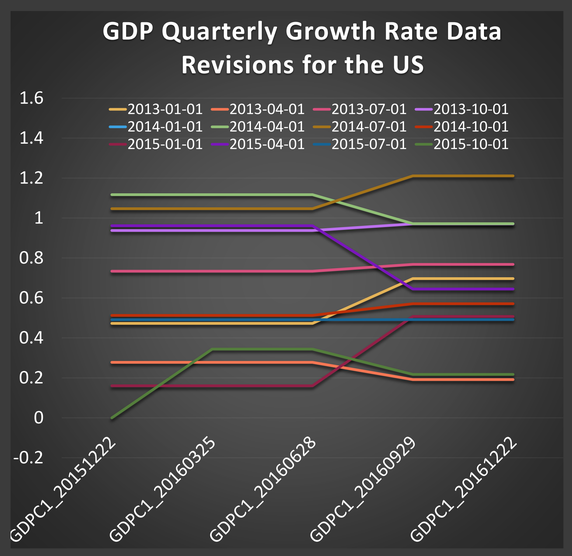
We also implemented a simple policy exercise using a "Taylor" Monetary policy rule. The aim of this exercise was to measure how different the interest rate would have been, had the policymaker observed the correct data at the time of the policy decision.

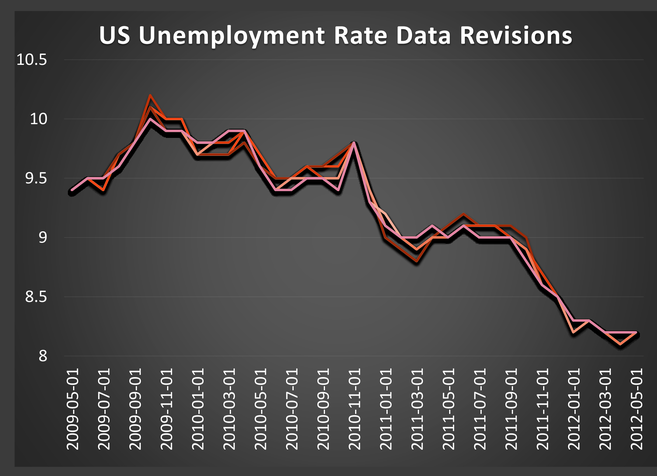
Methodology

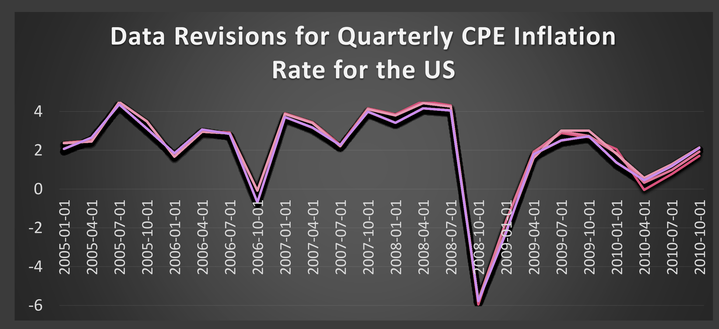
- The required data was first gathered about the different macroeconomic variables, namely the GDP, the inflation rate and the unemployment rate for both the USA and Canada, using data directly retrieved from the Federal Reserve Bank of St-Louis website which allows the general public to retrieve vintage versions of economic data that were available on specific dates in history.
- The data was then processed using Excel in order to better describe the magnitude and the frequency of data revisions across different time periods.
- Finally, we applied a modified version of the Taylor Monetary policy rule to measure how different the interest rate would have been in the case where the policymaker would have observed the correct data at the time of the policy decision.

Results









Discussion and Conclusion

The results found confirm the hypothesis that data revisions can be significant in their magnitude as well as in their frequency. This appears in the fact that there can be very important differences between the macroeconomic variables data revisions from different periods.

Moreover, these differences can lead to policy regret; instances where revised data may suggest alternative actions would have been preferable to those taken based on the available data of the time.

As an illustration of this argument, we used a modified version of the Taylor rule, which states that the interest rate of a certain period should equal one and a half times the inflation rate of the same period.

For April 2011 for example, we found that the interest rate in the United States before the revised data was 4.64%, but that after the release of the data revision of January 2017, it would have been 6.03%, which is a 30% difference.

This research showed that data revisions of macroeconomic variables can lead to a different picture than the unrevised, older data, which can have a substantial impact on policy making and on the economic landscape at large.

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For further information

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