Comments on

A State Space Approach to Extracting the Signal from Uncertain Data

by Venetia Bell
(Bank of England)

and by

Cunningham, Eklund, Jeffery, Kapetanios and Labhard
(Bank of England and Queen Mary University and ECB)

25 October 2007.

Overview

Introduction

What should Policy Makers learn from this?

Comments on Bell

Comments on Cunningham et al.

Summary

Introduction

Measurement Error is not New

- Persons (1919)
- Kuznets (1948)
- Zellner (1958)
- Denton and Kuiper (1963) - Canadian national accounts!

Latest wave dates from Croushore and Stark (1999)

- release of Philadelphia FRB real-time data set for US.

See also products from St. Louis FRB (ALFRED and FRASER) and OECD.

What Should Policymakers Learn from the Measurement Error Literature?

1) This is not going to help predict data revisions.

Sargent (1989): statistical agencies as rational forecasters.

- revisions *should be* news (a.k.a. unpredictable.)
- why would we expect past autocorrelations, biases, etc. to continue?
- this is precisely analogous to arguments about weak-form effeciency in asset market returns.

Cunningham et al. explicitly assume that the statistical agency is a rational forecaster.

Some studies find a bit of revision predictability *ex post*.

- I presume that the statistical agency will learn from them.

What Should Policymakers Learn from the Measurement Error Literature?

2) This is *probably* not going to help Forecast Accuracy *much*.

Using multiple data vintages can help accuracy *in theory.*

The degree of improvement depends on the extent to which measurement errors are news or noise.

- improvement is zero if it is all news.
- news => latest vintage has all relevant information

Cunningham et al. assume latest vintage is all you need.

Even if you find noise, statistical agencies will probably change their procedures to eliminate it.

- their improved series might help forecasters, though!

What Should Policymakers Learn from the Measurement Error Literature?

3) It's the confidence intervals, Stupid!

If we're trying to monitor or forecast "true" or "final" values, our standard errors may be much bigger than we thought.

- Ignoring measurement error *may* seriously overstate the reliability of our models.
- This in turn may make policy makers react inappropriately.

Why is the BoE the industry leader in this field? => Fan Charts.

- You'll look bad if you get the standard errors wrong.

The importance of measurement errors seems to vary considerably.

Financial prices < Consumer prices < GDP < Invest. < Prod. < Deficit/Surplus

- Cayen et al.: not that big for output gaps
- van Norden: worrisome for productivity growth
- O'Neil: very worrisome for fiscal projections

Thoughts on Bell (2007)

Are Past Revisions a Good Indicator of Uncertainty?

These are **underestimates**.

Revisions are not a bad thing.

- Statistical agencies are trading off timeliness and accuracy.
- China national accounts don't get revised!

Modeling judgements matter!

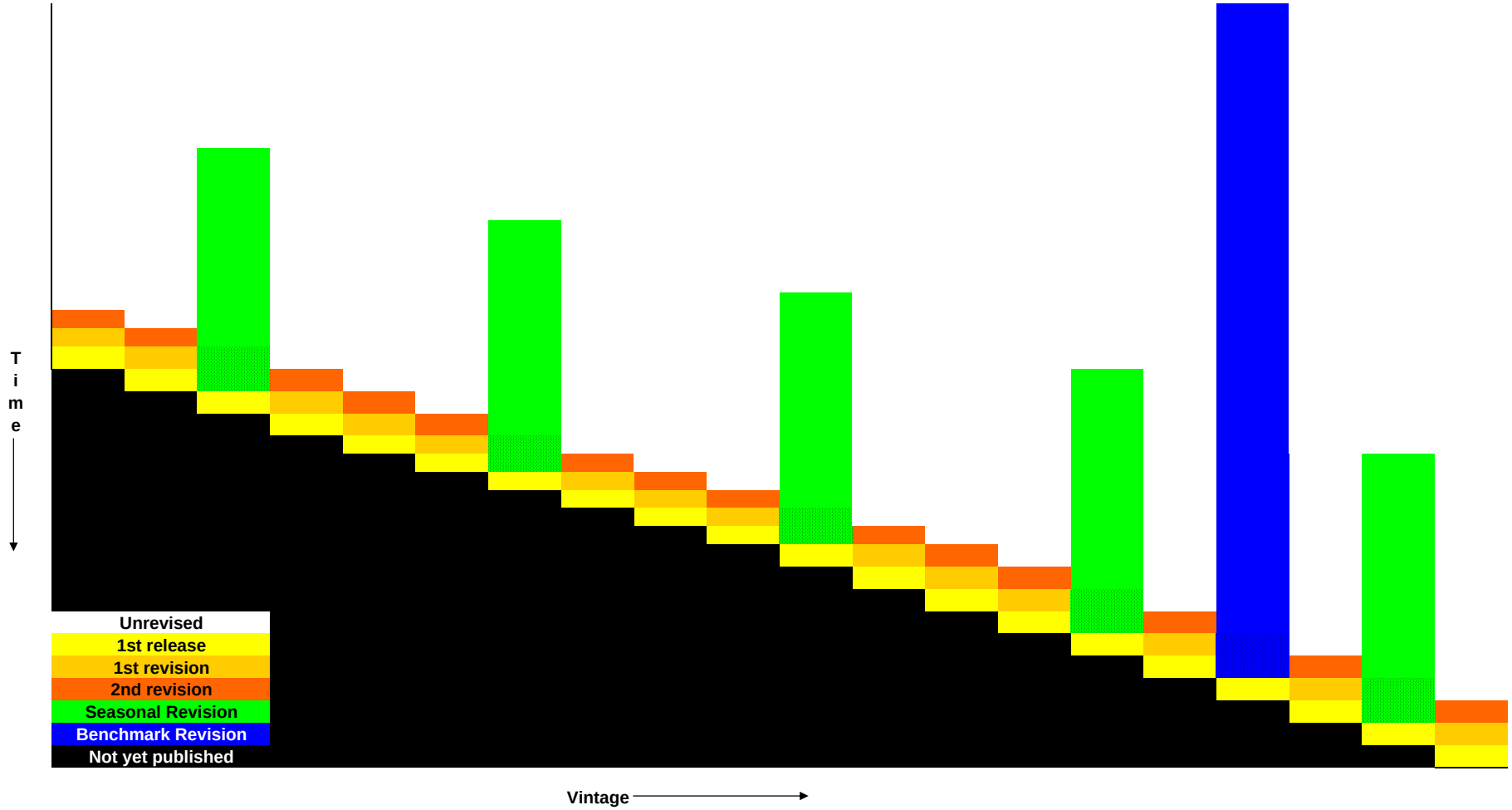
1) Changes in statistical practices might matter.

- After reforms, data releases may become more reliable. (Overestimates!)

2) What to do with Benchmark revisions? (see figure)

- Their dynamics appear to be different.
- Are benchmark revisions "similar"? How many will there be?
- Do benchmark revisions count towards "true" uncertainty?

Revision Patterns in Macroeconomic Series



Thoughts on Cunningham et al. (2007)

Modeling only the last vintage is inefficient if noise is present.

Decay rate of revisions: Two figures

Stationary series: What about cointegration?

- What about equilibrium levels and “gaps”?
- Does this mean levels of different vintages are not cointegrated?

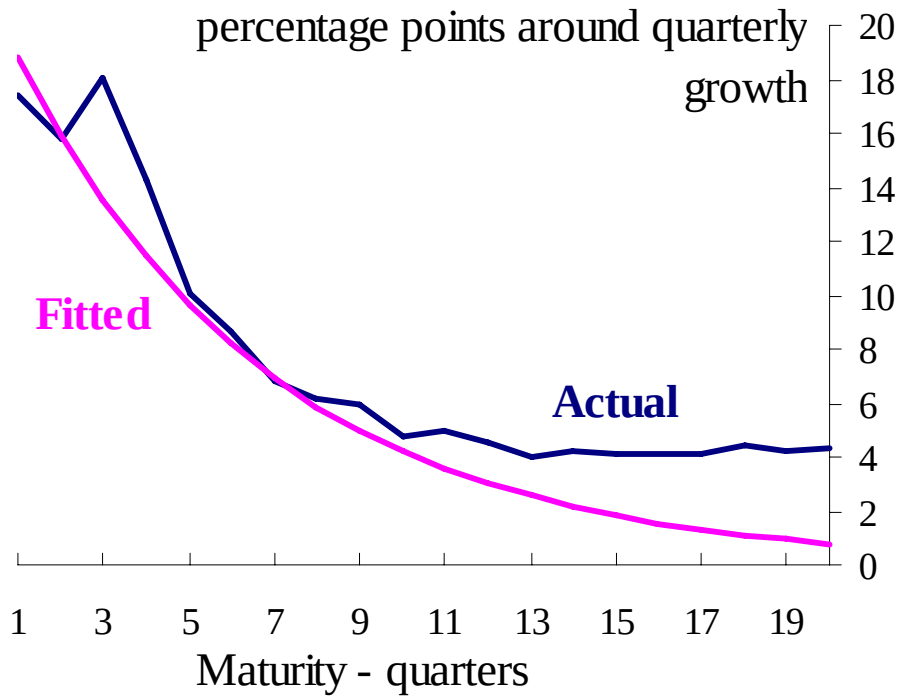
Independence assumptions: Implications for accounting identities noted

We need a more flexible framework!

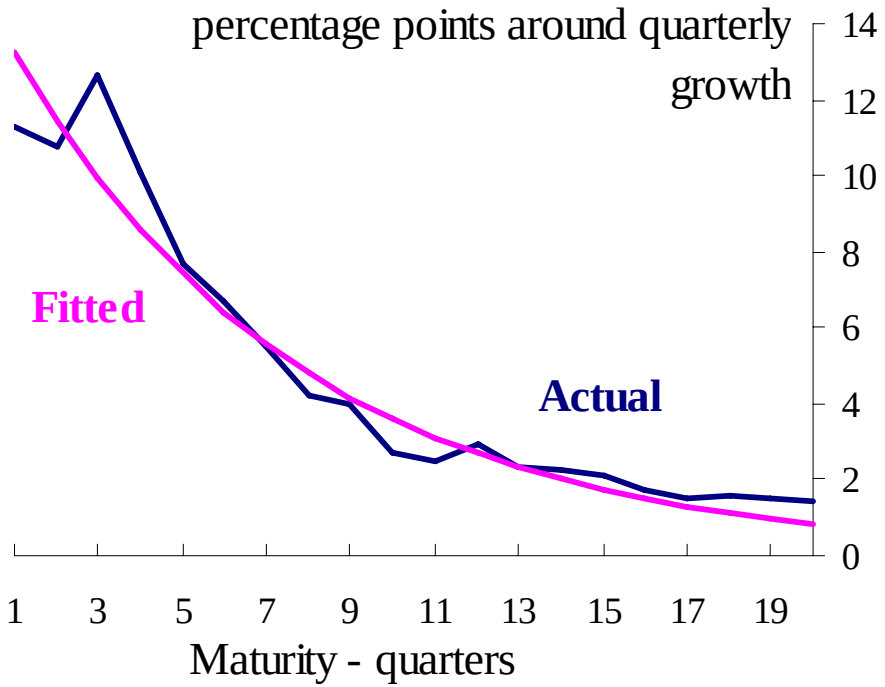
- multiple vintages
- variable κ, decay rate
- handle benchmarks separately (seasonals too!)
- stationary or nonstationary
- work in progress.....

Sensitivity to modelling choices
Measurement error variance

All revisions

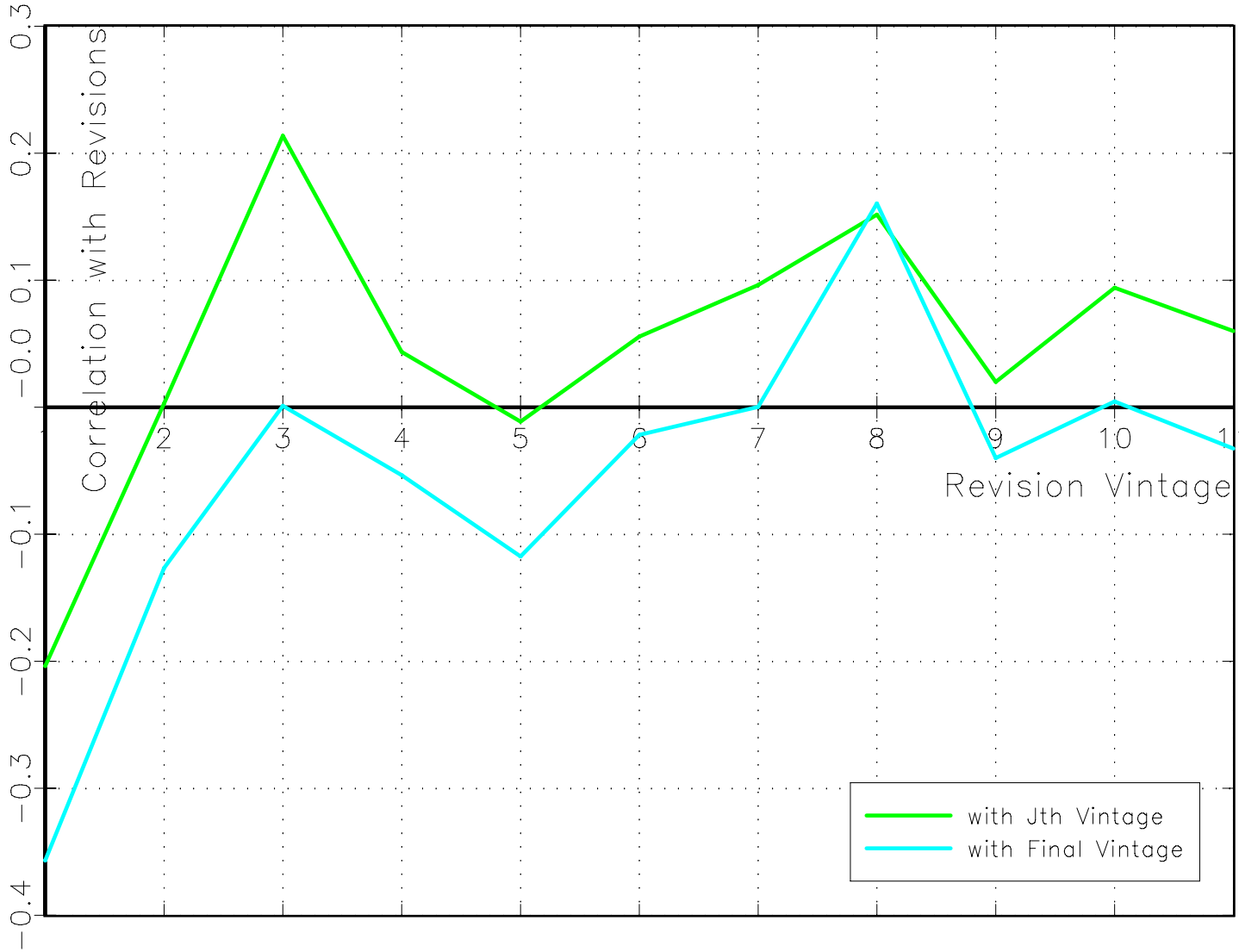


Excluding 1998, 2001 Blue Books



- Exclusions improve fit of model

News and Noise in US GDP Growth?



Zymurgy's First Law of Evolving System Dynamics:

Once you open a can of worms, the only way to recan them is to use a larger can!