

# News shocks and the slope of the term structure of interest rates: Comment\*

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# A brief overview...

- Comment to the *American Economic Review* paper Kurmann and Otrok (2013)
- The authors show that news shocks and shocks to the slope of the term structure are highly correlated and produce nearly identical responses
- Connects these two literatures by an ‘active monetary policy channel’ of a news shock on the slope
- **This paper:** After an update in the utilization-adjusted TFP series, these results change drastically – the correlation drops substantially and the impulse responses are not similar anymore

# News and slope shocks

## News shock

- Shock on the future total factor productivity (TFP) that is foreseen by the economic agents (Beaudry and Portier, 2006; Barsky and Sims, 2011)
- Future technological improvements take time until they have an impact on the economy
- Agents can foresee this technological impact and react to it now

# News and slope shocks

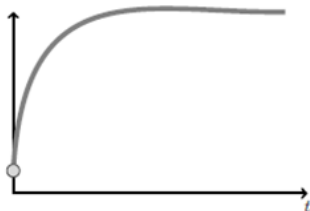
In practical terms: how does a news shock 'look like'?

According to Portier (2014):

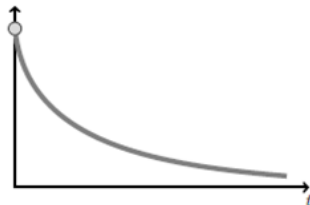
- A basic assumption is that it does not effect TFP instantaneously
- These are **not** identified as news shocks:

Figure 1: Possible path for TFP that will not be identified as a "news" shock

*(a) Impact effect  
and long run effect*



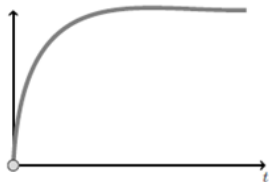
*(b) Impact effect  
and no long run effect*



# News and slope shocks

Possible path for TFP following an identified news shock:

*(a) News with short run response and long run effect*



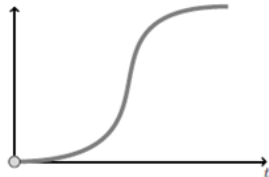
*(b) News with short run response and no long run effect*



*(c) Not a news*



*(d) Diffusion news*



## Slope of the term structure

- Commonly defined as the spread between the yield on a long-term treasury bond and a short-term bill rate
- Carries information that helps to predict macroeconomic activity
- Plays a role for the transmission of monetary policy
- A shock to the slope of the term structure can be understood as an uneven response of the short and the long-term components of the spread

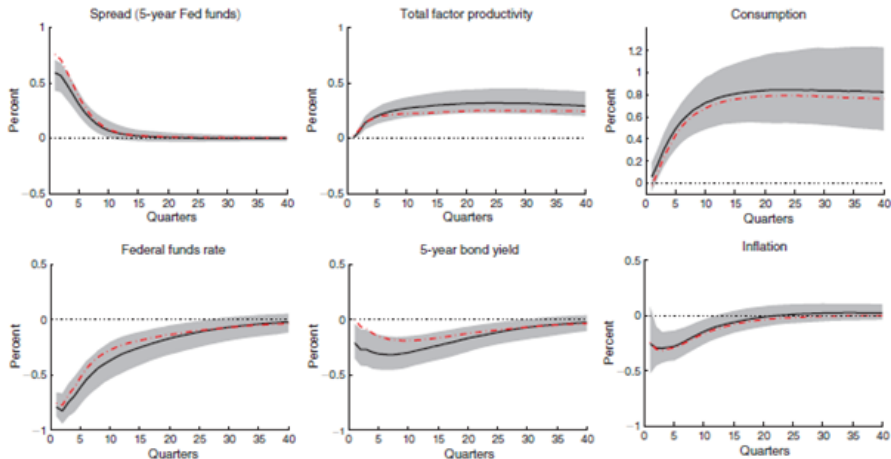


## **Bridging these two literatures:** Kurmann and Otrok (2011)

- the link between monetary policy transmission and economic activity is the relation between news shocks and the slope of the term structure
- A positive **slope shock** foresees smooth future growth in consumption and utilization-adjusted TFP, and a drop in inflation – similar to a **news shock**
- The uneven effect between the short and long run rates is the *endogenous* response of the monetary policy to a news shock

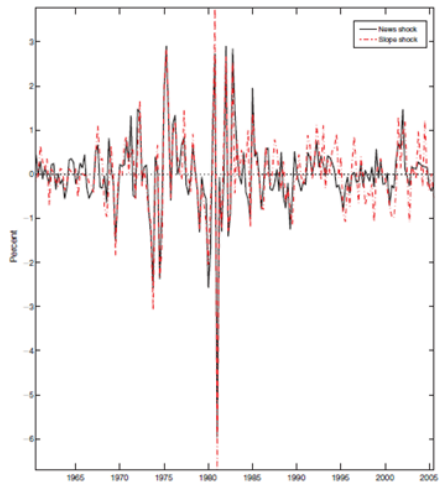
# Kurmann and Otrok (2013)

Impulse responses of a news shock (solid) and a slope shock (dashed)



Recovered news and  
slope shocks

Correlation of **0.86**

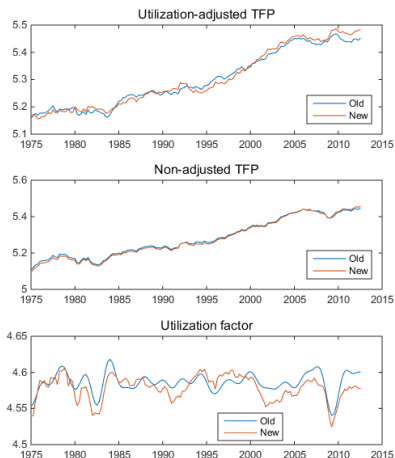


# What happened since Kurmann and Otrók (2013)?

# Revisiting the Kurmann and Otrok (2013) results

The news shock literature usually relies on quarterly utilization-adjusted TFP series from Fernald (2014)

This series went through severe revisions in 2013/14, resulting in substantial changes in the utilization factor



*Note: Calculation from the series available at Federal Reserve Bank of San Francisco (new utilization-adjusted TFP) and from Beaudry and Portier (2014) database (old utilization-adjusted TFP)*

# Revisiting the Kurmann and Otrok (2013) results

**Question:** Are the results from Kurmann and Otrok (2013) robust to these changes in the utilization-adjusted TFP?

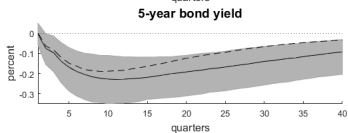
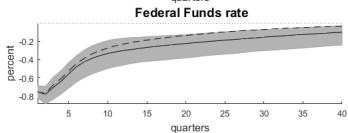
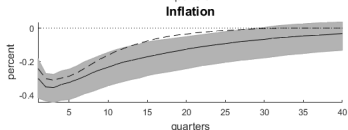
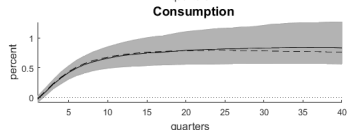
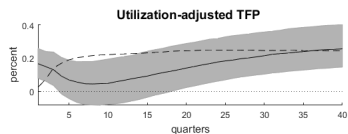
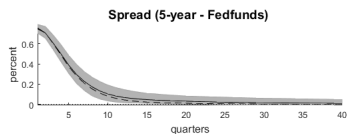
# Revisiting the Kurmann and Otrok (2013) results

**Question:** Are the results from Kurmann and Otrok (2013) robust to these changes in the utilization-adjusted TFP?

**No.** Evidence from an exercise of replicating Kurmann and Otrok (2013) with the same dataset, time span and code provided by the authors, but adopting the updated version of utilization-adjusted TFP

# Revisiting the Kurmann and Otrok (2013) results

## Responses to a slope shock – updating Kurmann and Otrok (2043)

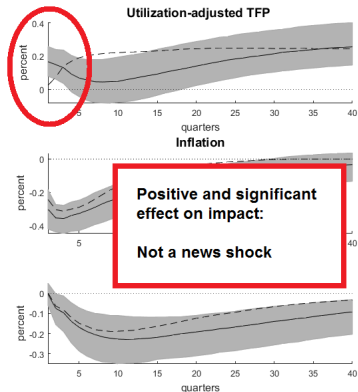
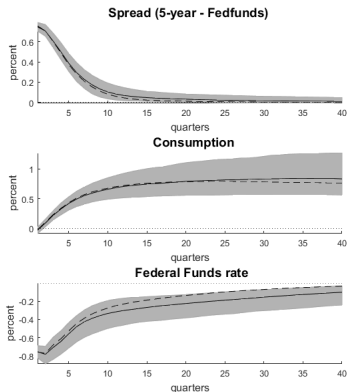


*Note: The solid line is the median effect with the revised TFP series, and the dashed is with the old TFP series. The grey area corresponds to the 16%-84% error bands of the model considering the new TFP series.*



# Revisiting the Kurmann and Otrok (2013) results

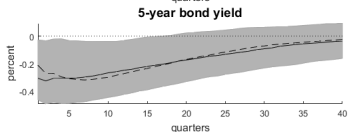
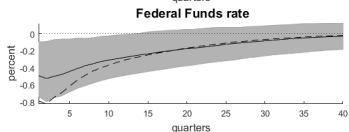
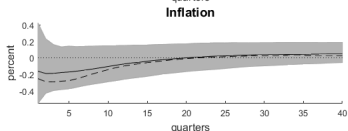
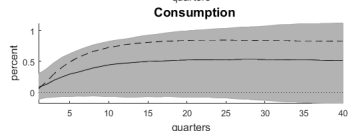
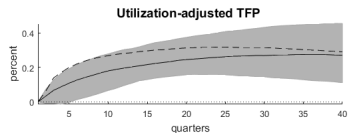
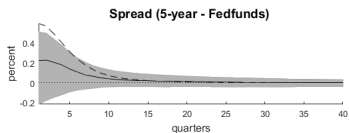
## Responses to a slope shock – updating Kurmann and Otrok (2043)



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# Revisiting the Kurmann and Otrok (2013) results

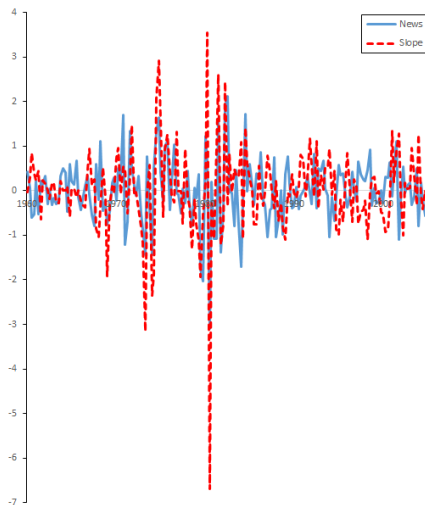
## Responses to a news shock – updating Kurmann and Otrok (2013)



*Note: The solid line is the median effect with the revised TFP series, and the dashed is with the old TFP series. The grey area corresponds to the 16%-84% error bands of the model considering the new TFP series.*

# Revisiting the Kurmann and Otrok (2013) results

**Result:** The correlation between news and slope shocks drops from 0.86 to **0.40**



# Revisiting the Kurmann and Otrok (2013) results

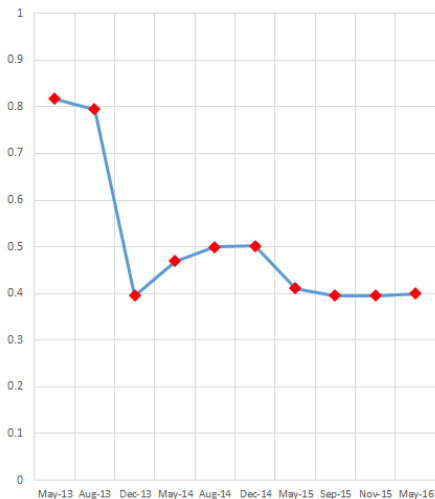
Is this drop in the correlation between news and slope shocks robust to different utilization-adjusted TFP vintages?

# Revisiting the Kurmann and Otrok (2013) results

Is this drop in the correlation between news and slope shocks robust to different utilization-adjusted TFP vintages?

**Yes.**

Correlations with different TFP vintages



# Revisiting the Kurmann and Otrok (2013) results

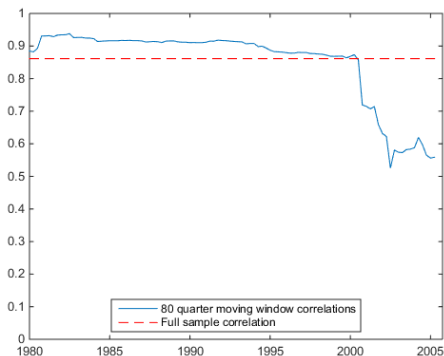
Is the 0.86 correlation invariant across time in the original results from Kurmann and Otrok (2013)?

# Revisiting the Kurmann and Otrok (2013) results

Is the 0.86 correlation invariant across time in the original results from Kurmann and Otrok (2013)?

**No.**

Correlations of Kurmann and Otrok (2013)  
in an 80-quarter rolling window



# Robustness check



# Robustness check (1)

**Alternative VAR model** incorporating additional forward looking variables

Differs from Kurmann and Otrok (2013) in the:

- variables considered (includes financial variables);
- the time span (1975:I to 2007:IV, instead of 1959:I to 2005:I); and
- the measure of the slope of the term structure (long-term as the 10-year Treasury yield, instead of the 60-month Fama-Bliss unsmoothed zero-coupon yield)

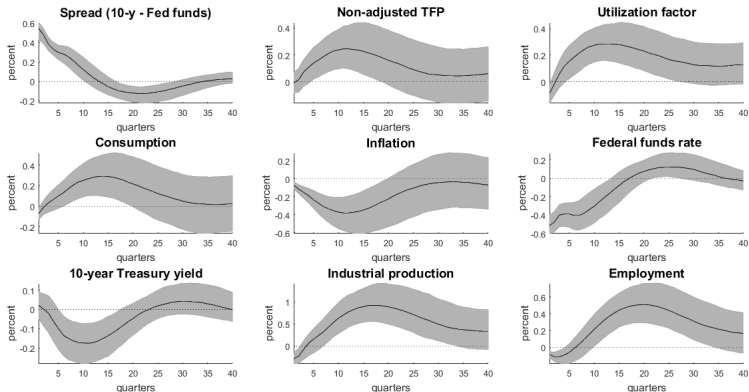
**Result:** Correlation drops from 0.48 (old utilization-adjusted TFP vintage) to -0.33 (Nov/2015 vintage)

## Effects of a slope shock on the utilization factor

- Check if the relation between news and slope shocks using the older version of the utilization-adjusted TFP series comes from some remaining utilization factor
- Alternative VAR model with non-adjusted TFP and augmented by the utilization factor

# Robustness check (2)

## Effects of a slope shock on the utilization factor



Note: The grey area corresponds to the 16%-84% error bands after 1000 replications.

# Conclusion

# Conclusion

- Evidence that the methodology of extracting the utilization factor from TFP influences the correlation between news and slope shocks
- After an update in the TFP series the correlation between news and slope shocks drops substantially, and the impulse responses are not similar anymore
- It is no longer possible to conclude that systematic monetary policy is a channel linking macroeconomic news shocks and term structure dynamics

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