OLD AND NEW CHALLENGES FOR FORECASTING: RECESSIONS, BOOMS, AND BIG DATA

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ECONOMIC FORECASTS
*FAIL MISERABLY*
AT KEY TIMES

Example: US Employment Forecasts

Source: U.S. Bureau of Labor Statistics and Philadelphia Fed Survey
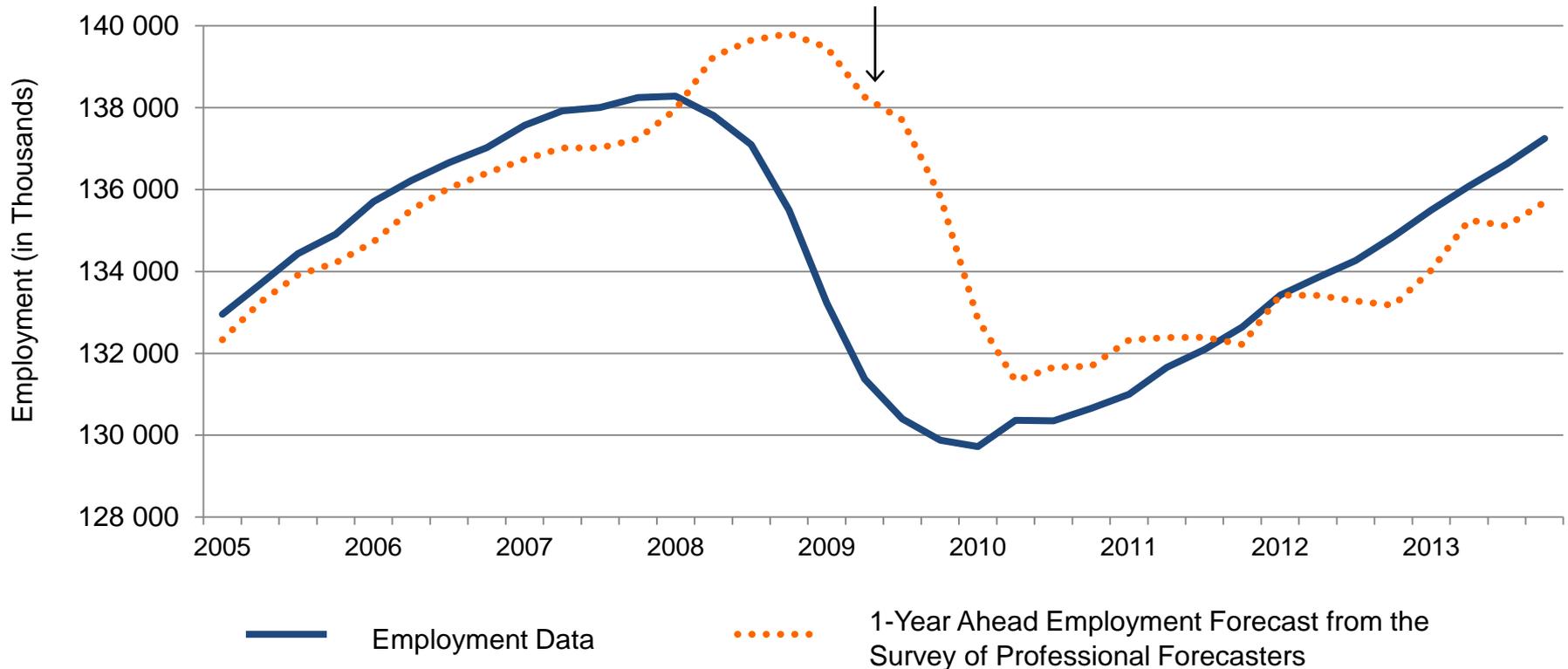
Real GDP Forecasts

Source: U.S. Bureau of Economic Analysis, Philadelphia Fed Survey, and Fed Greenbooks

Real GDP Growth (%)

—— Real GDP Growth Data ······ SPF One Year Ahead Forecasts
－－－ Fed Staff One Year Ahead Forecasts
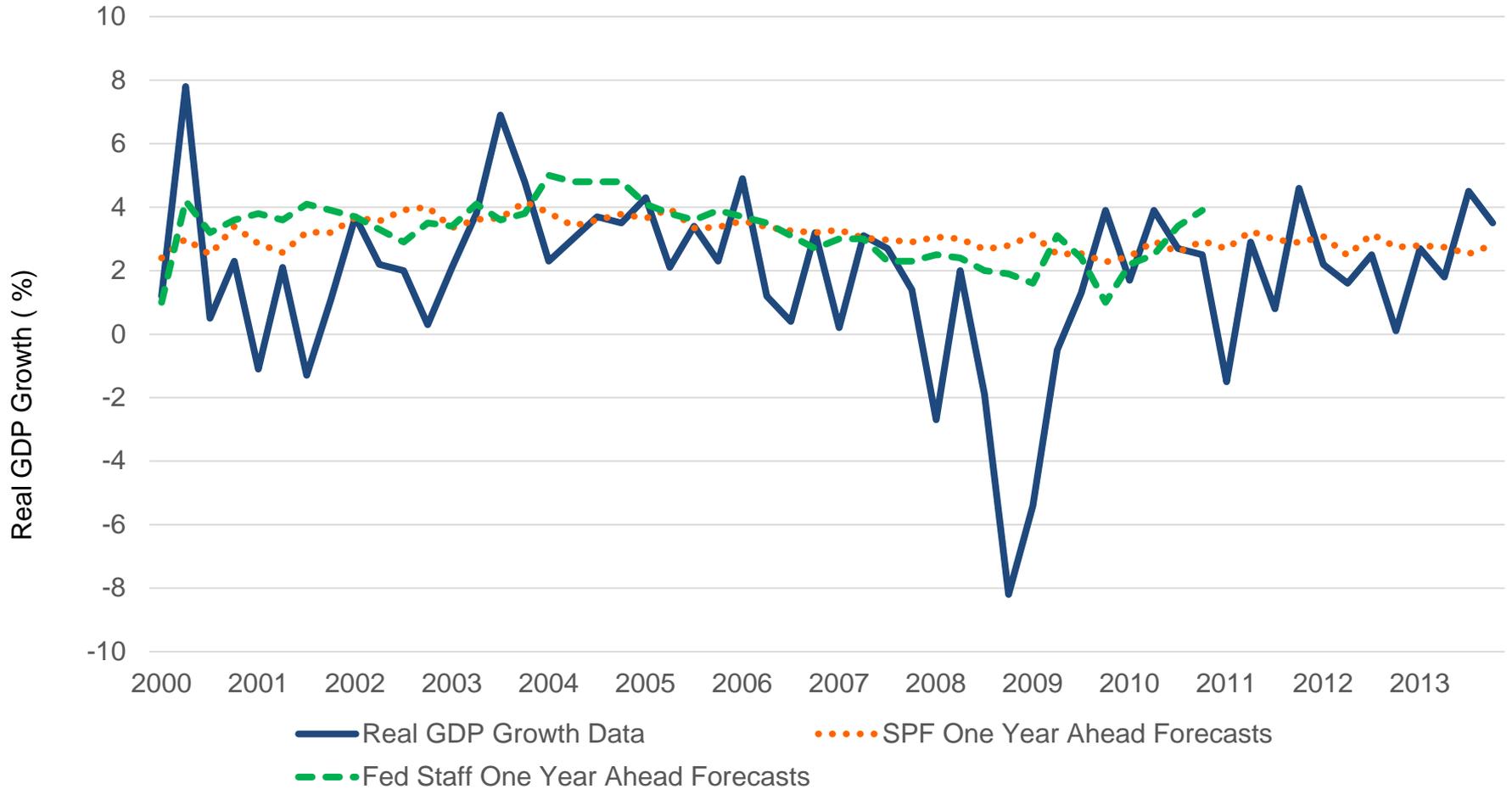
PCE Inflation Forecasts

Source: U.S. Bureau of Economic Analysis, Philadelphia Fed Survey, and Fed Greenbooks
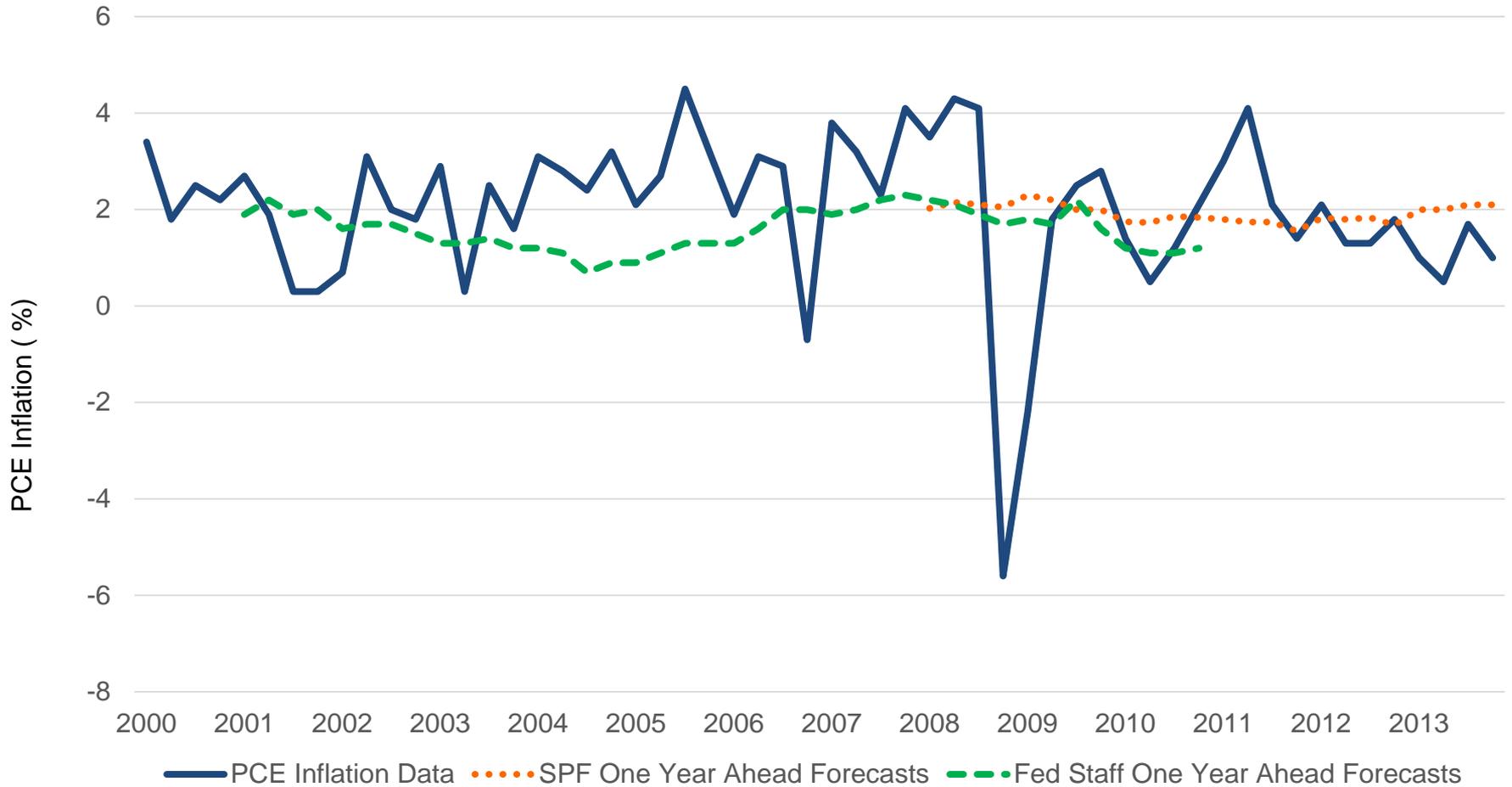
Forecasts fail particularly at recessions

- Even for the Fed
  - Systematic bias when recessions added in ex post: Sinclair, Joutz, and Stekler, *Economics Letters* (2010)
  - Systematic bias where recessions identified by the bias: Ericsson et al, JSM Proceedings (2015)
- And even for the latest recession
  - US: Culbertson and Sinclair, *Challenge (2014)*
  - International: Ahir and Loungani , *VOX* (2014)

BUT *WHY* DO FORECASTS MISS TURNING POINTS?

The Old Challenges

1. Not enough data in real time.

2. Not enough data on turning points.

3. Not enough data, period.

1. Data Revisions

U.S. Real GDP Growth Estimates

	SPF Nowcast	Advance Estimate	Second Estimate	Third Estimate	Annual Revision
1st Quarter 2015 (Jan – Mar)					

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1st Quarter 2015 (Jan – Mar)	2.7% 2/13/15				

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U.S. Real GDP Growth Estimates

	SPF Nowcast	Advance Estimate	Second Estimate	Third Estimate	Annual Revision
1st Quarter 2015 (Jan – Mar)	2.7% 2/13/15	0.2% 4/29/15	-0.7% 5/29/15	-0.2% 6/24/15	0.6% 7/30/15

~ 40% of advance numbers
are from "trend" models!

Revisions Between Quarterly Annualized Percent Changes of U.S. Real GDP

Revision	Average	Absolute Average
Advance to Second	0.1	0.5
Advance to Third	0.1	0.6
Second to Third	0.0	0.2
Advance to Latest	-0.1	1.2

Based on the period from 1993 through 2013.
The average growth rate in this period (based on today's data) was 2.6%.

"Economists put decimal points in their forecasts to show they have a sense of humor."

- William Gilmore Simms

2. Turning Points

2.a. Why aren't we *over-predicting* recessions?

Josh Zumbrun @JoshZumbrun · Nov 27

Why recessions are so hard to predict:

think of recessions as acc
natic about them; even we
that a particular accident i
d policy makers will take
appen. For recessions to h
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ent that will bring about the
nlikely to be the one. Howev
ions where such accidents an

Goodbushel @Goodbushel

Good paragraph from JP Morgan on predicting recessions.

RETWEETS   LIKES
2   4

12:37 PM - 27 Nov 2015 · Details

Goodbushel
@Goodbushel

⚙ + Follow

Good paragraph from JP Morgan on predicting recessions.

- Foremost, we need to think of recessions as accidents or misjudgments. There is nothing automatic about them; even we consider them part of the cycle. If we all agree that a particular accident is coming our way, then market participants and policy makers will take evasive action and the accident thus won't happen. For recessions to have their well-own non-linear impact on economies and markets, they need to be a surprise. We thus can't forecast the accident that will bring about the recession and the one we have in mind is thus unlikely to be the one. However, what we can do is to define times and conditions where such accidents are more likely to happen.

RETWEETS LIKES
52   70

8:54 AM - 27 Nov 2015

If central banks were changing economic outcomes based on their forecasts, I would expect **over-prediction of recessions.**

2.b. What about **booms**?

Credible forecasts of **booms** should become **self-fulfilling prophesies**.

3. Lack of Data

Will **Big Data** solve our problems?

The Big Data Revolution

More Maze

Than Map?
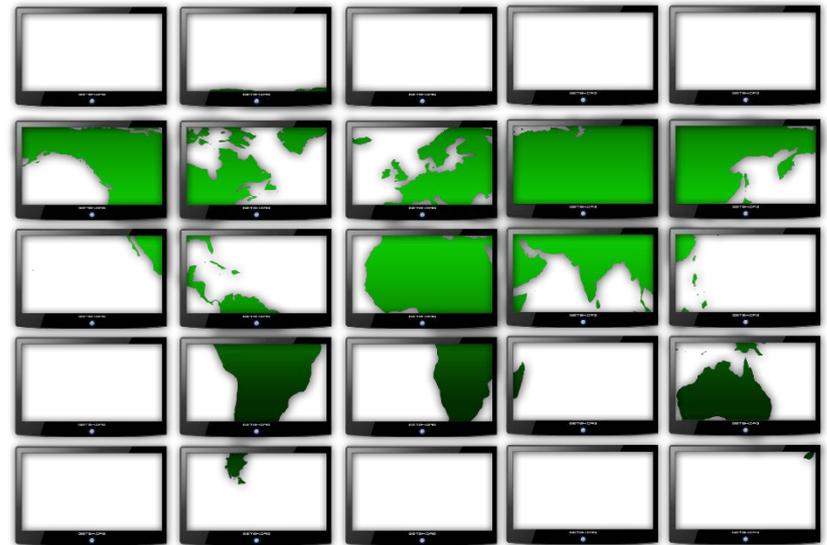
The world is shifting from **too little data, too late** to **too much data, all the time.**

The New Challenges

- We have too much data with too few economists looking at it.

- We need to identify good forecasters.

- We need to think about the value of economic forecasts.

1. Data scientists are coming for *our* jobs!

"Data Scientist:
The Sexiest Job of the 21st Century"

2. Are there *any* good forecasters?

Bürgi and Sinclair, 2015 WP

- "A Nonparametric Approach to Identifying a Subset of Forecasters that Outperforms the Simple Average"
  - Forecasters often beat the survey mean by chance, but there are some that have better forecasts, especially for less-watched variables.

3. Do forecasts even really **matter**?

Tien, Sinclair, and Gamber, 2015 WP

- "Do Fed Forecast Errors Matter?"
  - SGSR (IJoF 2012): Fed forecast errors are *frequent* and *big* (in MAE sense)
  - But, they may not have large economic costs.
  - So what does that suggest about policy?

FINAL THOUGHTS

1. Forecasts fail
when we need them most.

2. We should think more about booms.

3. Big data brings new challenges.

THANK YOU!

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