



July 19, 2016

## **Productivity and Growth in CBO's Forecasts**

NABE Foundation, 13th Annual Economic Measurement Seminar  
Four Seasons Hotel, Washington, D.C.

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What is CBO and why does it produce an economic forecast?

How do CBO's forecasts differ from others?

How does CBO prepare its economic forecast?

# **The Purpose of CBO's Macroeconomic Forecast**



The forecast is used primarily as an input to CBO's federal budget projections and analysis of legislative proposals.

It is a 10-year forecast based on current law.

*Current* law may involve major changes in *future* policy. For example, in past years, current law implied a major shift in fiscal policy in 2013, with the scheduled expiration of certain tax cuts.

# **CBO's Approach to Forecasting**



CBO's approach involves projections of both **potential** (maximum sustainable) output and **actual** output.

The long-term projection of potential output is based on a neoclassical growth model, coupled with a near-term business-cycle projection using a standard macroeconomic model.



The estimate of potential output is based mainly on estimates of the **potential labor force**, the **flow of services** from the capital stock, and **potential total factor productivity**.

CBO uses data from a wide variety of sources to form its estimates.


$$Q_{NFB} = F[L_{NFB}, K_{NFB}, TFP_{NFB}]$$

Where

$Q_{NFB}$  = Real GDP in the nonfarm business sector (NFB)

$L_{NFB}$  = Index of hours worked

$K_{NFB}$  = Index of real capital services from nine different types of capital assets

$TFP_{NFB}$  = Total factor productivity (a residual)



# Key Estimates in CBO's Projection of Potential GDP, January 2016

Percent, by Calendar Year

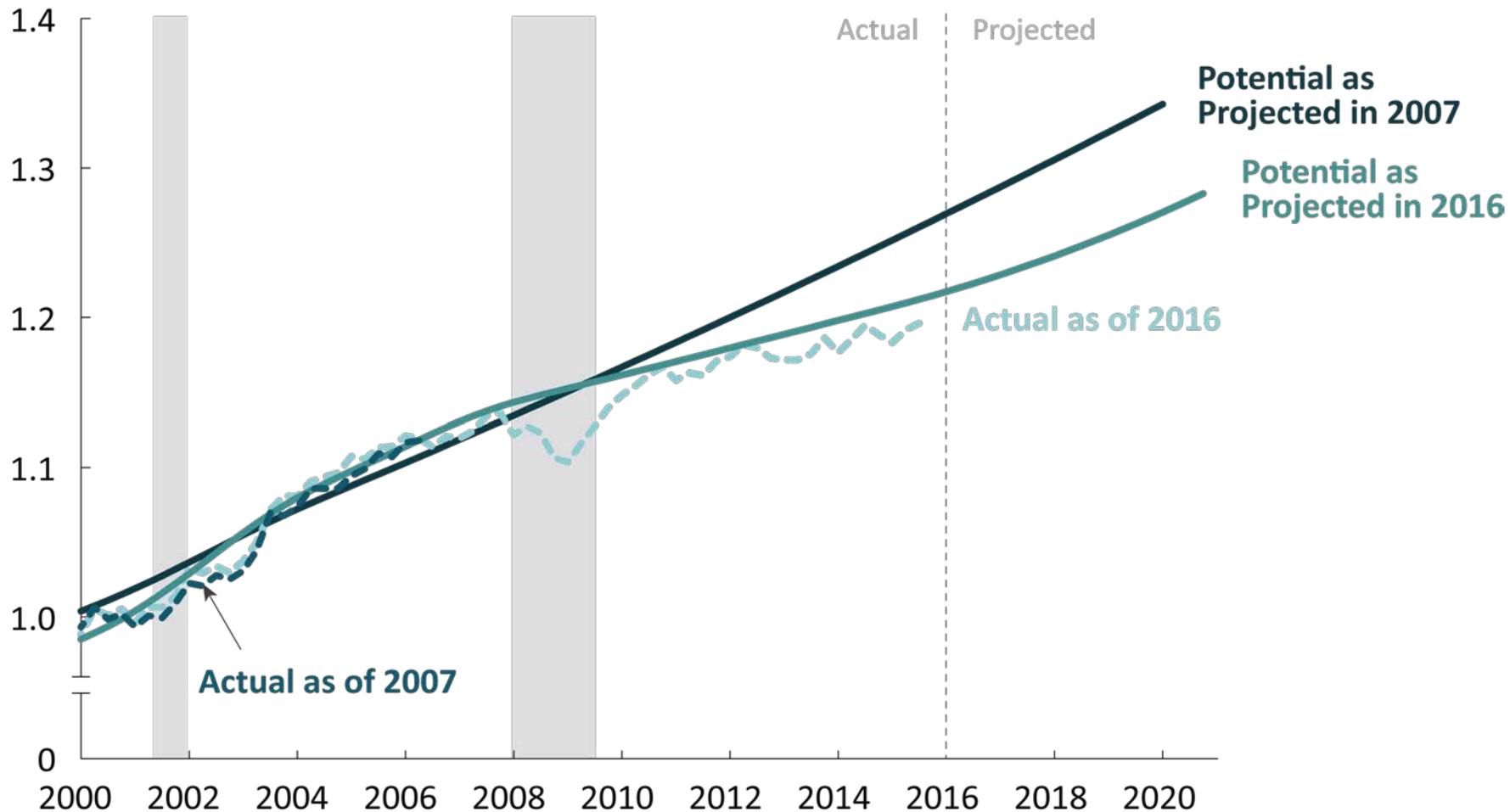
	Historical Periods						Projection
	1950-2015	1950-1973	1974-1981	1982-1990	1991-2001	2002-2015	2016-2026
<b>Overall Economy</b>							
Potential Output	3.2	4.0	3.2	3.2	3.3	1.9	1.9
Potential Labor Force	1.5	1.6	2.5	1.6	1.3	0.7	0.5
Potential Labor Productivity	1.7	2.4	0.7	1.5	2.0	1.2	1.4
<b>Nonfarm Business Sector</b>							
Potential Output	3.5	4.1	3.6	3.3	3.7	2.2	2.3
Potential hours	1.3	1.4	2.3	1.5	1.5	0.4	0.5
Capital services	3.4	3.8	3.8	3.5	3.8	2.2	2.4
Potential total factor productivity	1.5	1.9	0.9	1.1	1.5	1.3	1.2
Potential Labor Productivity	2.1	2.7	1.3	1.7	2.2	1.8	1.8
Capital-Labor Ratio	2.1	2.4	1.4	2.0	2.3	1.8	1.9
<b>Memorandum:</b>							
Potential Output of Other Sectors	2.5	3.7	2.1	2.7	2.0	1.2	0.9



# Nonfarm Business Total Factor Productivity

## Since 1990: Changes Since 2007

2000 = 1.000



Vertical bars indicate the duration of recessions.



# Revisions to Projected Potential GDP in 2017 From 2007 to 2014

Percentage Points

Reason for Change	Recession and Weak Recovery	Reassessment of Trends	Revisions to Prerecession Data	Fiscal Policy and Other Factors	All Sources
Nonfarm Business Sector					
Potential labor hours	-0.7	-3.0	-0.3	1.2	-2.7
Capital services	-0.6	-0.7	0.2	-1.3	-2.4
Potential total factor productivity	-0.5	-0.7	-0.6	0.4	-1.4
Other Sectors	n.a.	-0.3	0.7	-1.0	-0.7
<b>Total (Percent)</b>	<b>-1.8</b>	<b>-4.8</b>	<b>-0.1</b>	<b>-0.7</b>	<b>-7.3</b>

# Other Considerations



Are there problems with the measurement of productivity growth (for example, computers, health care)?

How do public expenditures influence private-sector productivity and productivity growth?



How do changes in labor composition contribute to productivity growth?

How does productivity growth contribute to income growth, income shares, and the federal budget?