



An econometric model of potential output, productivity growth, and resource utilization

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Abstract

This paper specifies a macroeconometric model providing a simultaneous framework for estimating the natural rate of unemployment, the full-employment (FE) labor force and hours of work, the FE productivity growth rate, and the growth path of potential (FE) output during 1960–2000. The estimated output and unemployment gaps are consistent with Okun’s Law. Historical perspective is provided on the expansion of the nineties by comparing it with those of the three previous decades in terms of growth and utilization of potential output. Factors accounting for the growth of potential output, productivity and labor supply are identified and compared.

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1. Introduction

The strong performance of the US economy during the latter 1990s spawned both popular visions of a transcendent future for the “New Economy” and careful empirical studies

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Nomenclature

Abbreviations

NFB	non-farm business sector
HP	Hodrick–Prescott
FE	full-employment

Variables names

A	level of technology (exogenous)
AH	hours per worker = $H/ENFB$
CAP	contribution of capital deepening to the growth of FE productivity
δ	depreciation rate (exogenous)
E	employment, total economy
EF	FE employment = $(1 - UN) * LF$
$EFDIF$	employment outside NFB = $(E - ENFB)$ (exogenous)
$ENFB$	employment, NFB
$ENFBF$	FE employment, NFB
$EFRAT$	ratio of NFB employment to total employment (exogenous)
H	hours worked, NFB
HF	FE hours worked, NFB
I	index of labor quality reflecting changing composition of workforce (exogenous)
K	real net capital stock
L	labor force
LA	armed forces (exogenous)
LF	FE labor force
LP	labor force participation rate
LPF	FE labor force participation rate
LWF	FE proportion of women in the labor force
MU	markup of price on unit labor cost (exogenous)
$MUHP$	HP-filtered value of MU (exogenous)
N	non-institutional population (exogenous)
P	output price index, NFB
PI	investment goods price index
$PXPI$	ratio of the output deflator to the investment deflator (exogenous)
Q	rental price of capital
r	normal or target rate of return on capital (exogenous)
S	Solow residual, NFB (not in model; A is HP trend of cumulated S)
TX	summary measure of tax factors affecting the rental price of capital (exogenous)
U	unemployment rate
UN	natural unemployment rate
W	wage per hour, NFB
WRC	real after-tax consumption wage (ratio of after-tax wage to consumption deflator)

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