Discussion of "Productivity and Potential Output before, during, and after the Great Recession" by John Fernald

Discussion by Bob Hall

NBER CRIW Meeting
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WHAT CONCEPT OF PRODUCTIVITY?

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Thus TFP seems the main object of interest in terms of measurement

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Adjustments also imply a substantial cost of using capital apart from depreciation over time—depreciation from use (odometer effect)

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Utilization adjustments knock this idea out

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Some combination of the various measures of output may be the best

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ECONOMETRIC FRAMEWORK

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Nonlinear analysis-of-variance model

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Cyclical variables

Quarterly data on annualized rates of change of

- ▶ Hours, business sector
- ▶ Labor composition/quality
- ▶ Capital input
- ▶ Utilization of capital and labor
- ▶ Utilization-adjusted TFP

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OTHER CYCLICAL VARIABLES

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Unemployment is closely related to labor hours

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CYCLICALITY, SINCE 1947

	Hours	1	
γ, weight of cycle	Labor quality	-0.08	(0.08)
	Capital	0.04	(0.08)
	Utilization	0.95	(0.11)
	TFP	-0.19	(0.08)

Cyclicality, since 1983

	Hours	1	
γ, weight of cycle	Labor quality	-0.08	(0.11)
	Capital	0.22	(0.11)
	Utilization	0.46	(0.12)
	TFP	0.14	(0.11)

PHASE SLOPES, SINCE 1947

Expansions			Contractions		
Start quarter	*Slope*	*Standard error*	*Start quarter*	*Slope*	*Standard error*
1945:Q1	-0.94	(0.74)	1948:Q4	-4.85	(0.94)
1949:Q4	1.53	(0.50)	1953:Q2	-6.22	(0.97)
1954:Q2	0.69	(0.51)	1957:Q3	-6.15	(1.10)
1958:Q2	1.49	(0.65)	1960:Q2	-3.29	(1.06)
1961:Q1	0.37	(0.32)	1969:Q4	-3.34	(0.92)
1970:Q4	1.68	(0.54)	1973:Q4	-3.71	(0.83)
1975:Q1	1.05	(0.42)	1980:Q1	-2.37	(1.28)
1980:Q3	1.26	(0.90)	1981:Q3	-3.12	(0.83)
1982:Q4	0.92	(0.34)	1990:Q3	-2.14	(1.28)
1991:Q1	0.39	(0.30)	2001:Q1	-2.80	(1.05)
2001:Q4	-0.07	(0.38)	2007:Q4	-4.86	(0.79)
2009:Q2	0.50	(0.53)			

PHASE SLOPES, SINCE 1983

Expansions			*Contractions*		
Start quarter	*Slope*	*Standard error*	*Start quarter*	*Slope*	*Standard error*
1982:Q4	0.90	(0.36)	1990:Q3	-3.40	(1.27)
1991:Q1	0.71	(0.30)	2001:Q1	-3.65	(1.04)
2001:Q4	-0.34	(0.37)	2007:Q4	-6.03	(0.79)
2009:Q2	-0.36	(0.52)			

Major lesson

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Projections of future TFP growth are particularly noisy

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