

A comment on "The New Growth Theories and Their Empirics after Twenty Years"

Rosa Capolupo's survey of empirical work on the New Growth Theories is an outstanding effort. She does an excellent job of summarizing and evaluating a vast literature. The survey's main limitation is that it restricts attention mostly to tests of first-generation growth models, especially to tests sifting through the long list of possible variables to include as explanations of growth rates. Several major topics have been omitted. A survey with as sweeping a title as this one has needs to cover them. I offer the following suggestions for extending the survey's coverage.

(1) The focus of the review as it now stands is almost completely restricted to first-generation models of endogenous growth, yet the survey does not mention the scale effect, which is one of the most serious issues concerning first-generation models. Discussion of the scale effect's implications and the tests of its presence need to be added. In terms of empirical work, Capolupo could start with the famous article by Backus, Kehoe, and Kehoe (JET 1992) that found scale effects in the manufacturing sector but not in the economy as a whole. The latter result rejects the first-generation models. The former result then is puzzling (though the puzzle has been resolved in second-generation models; see below).

(2) The discussion of international issues omits several important articles. Coe, Helpman, and Hoffmeister (NBER working paper #14069, Jun. 2008) that purports to reaffirm the findings of the original Coe and Helpman article on international spillovers. Concerning trade and growth, there are, Alcalá and Ciccone (QJE, May 2004) Dollar and Kraay (EJ, Feb. 2004), and the unpublished but widely cited paper by Wacziarg and Welch (NBER working paper 10152, Dec. 2003).

(3) There is almost no mention of the considerable literature on skill-biased technical change. Acemoglu (JEL, Mar. 2002) offers a good summary and a long list of references.

(4) More recent versions of growth theory are ignored. Neither semi-endogenous growth nor second-generation fully endogenous growth is mentioned. For example, Jones's (JPE, Aug. 1995) article is cited, but only in passing in discussing some empirical work and with no mention at all of the main contribution of that article, the theory of semi-endogenous growth. Given that quite a few recent theoretical and empirical articles on growth are cast in the semi-endogenous framework, discussion of it would be worthwhile. The second-generation endogenous growth models of Howitt (JPE, Aug. 1999) and Peretto (JEG, Dec. 1998) are ignored entirely. Peretto has published a large number of extensions of his early work. Both semi-endogenous growth theory and second-generation fully endogenous growth theory eliminate the scale effect and any conflict with the facts that results from it. Peretto (JEG 1998) discusses how his model resolves both aspects of the Backus, Kehoe, and Kehoe (JET 1992) finding mentioned above that scale effects are absent at the aggregate level but present at the industry level.

More important for Capolupo's survey, there is an important empirical literature that tests semi-endogenous growth versus second-generation fully endogenous growth but that Capolupo does not discuss. See Laincz and Peretto (JEG, Sep. 2006), Ha and Howitt (JMCB, Jun. 2007), Madsen (JEG, Mar. 2008), and several other papers cited therein. The evidence mostly rejects the implications of semi-endogenous growth theory and confirms the implications of second-generation fully endogenous growth theory. Given the popularity of semi-endogenous growth and the sharp theoretical contrasts between it and fully endogenous growth theory, a thorough discussion of the relevant empirical literature belongs in a survey of the evidence concerning New Growth Theory.

(5) Finally, there is a small literature on a new line of endogenous growth theory that may be worth discussing. It is one to which I myself have contributed. Zeira (QJE 1998; Hebrew University working paper Jan 2006), Zuleta (Rev. Econ. Dynamics 2008), (Peretto & Seater, NC State U. working paper Jun 2008, under revision for resubmission to JEG) have developed a line of theory in which technical change alters the production function in ways not considered heretofore. In virtually all other growth theory, technical progress augments non-reproducible factors and thereby produces perpetual growth. In the new line of work, another kind of technical change gradually eliminates the non-reproducible factors. For example, with a Cobb-Douglas functions, this alternative kind of technical change alters the exponents (the output

elasticities) rather than the coefficient.(total factor productivity). Existing evidence is consistent with several implications of the theory: Gollin (JPE, Apr 2002), Caselli and Feyrer (QJE, May 2007), Zuleta (working paper, Universidad del Rosario, Feb 2008), and Zuleta and Garcia (working paper, Sep. 2008).