The Productivity Paradox:
Evidence from Indirect Indicators of Service Sector Productivity Growth

Edward N. Wolff
October 1997

Abstract. Whereas difficulties in measuring the output of service sectors have been well documented, input measures are reasonably accurate. Using U.S. input-output data for the period 1958-87 and a number of indices of skill and occupational change derived from the Dictionary of Occupational Titles and decennial census data covering the period 1960-1990, I find strong evidence that among all industries in the economy industry productivity growth is positively related to R&D intensity and knowledge spillovers from other industries but negatively related to major restructuring of technology, as reflected in changes in the occupational composition of industry employment. However, the degree of computerization and both the level and change in occupational skills are not significant, with the sole exception of the share of administrators and managers in total employment, which has a positive effect on productivity growth. Moreover, regressions among service industries by themselves yield very different coefficients than those among all industries -- in particular, knowledge spillovers and computerization have significant negative effects on productivity growth. I interpret the latter results to provide circumstantial evidence of mismeasurement of service output.

JEL Codes: O30, O32, O47, O51, C67

Keywords: Services, Input-output, Productivity, R&D, Skills, Computerization

* Department of Economics, 269 Mercer Street Room 700, New York University, New York, NY 10003. An earlier version of this paper was presented at the CSLS Conference on Service Sector Productivity, And the Productivity Paradox, Ottawa, Canada, April 11-12, 1997. I would like to express my gratitude to the C.V. Starr Center for Applied Economics at New York University and the Alfred P. Sloan Foundation which provided financial support for this work.