

The Productivity Renaissance in the U.S. Service Sector

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Since 1995 productivity growth has accelerated in the United States. According to the most widely used aggregate productivity measure, the series on non-farm business sector output per hour produced by the Bureau of Labor Statistics (BLS), productivity advanced at a 2.9 per cent average annual rate from 1995 to 1999 and at a 4.3 per cent annual rate in the first half of 2000.

Unfortunately, the BLS does not provide data on productivity growth by industry so it is not possible to identify from this source which sectors are fueling the productivity revival. Such data can, however, be constructed from the real output and labor input series compiled by the Bureau of Economic Analysis (BEA) and publicly available on the BEA website (although this data series has only recently been updated to 1998). This article uses the BEA data to provide estimates of labour productivity growth on an industry basis in the post-1995 period, the period when the new economy appears to have flowered.

This article's key message is that after many decades of stagnant growth, there now appears to be a renaissance in service sector productivity. Real (1996\$) value added per person employed in the broadly defined service sector (transportation and public utilities, wholesale trade, retail

trade, finance, insurance and real estate, services, and government) advanced at a 2.4 per cent average annual pace in the 1995-98 period, up nearly five-fold from the 0.5 per cent rate of the 1981-89 and 1989-95 periods (see Table 1). It now appears that the service sector productivity drought is over, at least for the second half of the 1990s, and possibly into the future.

This development may come as a surprise. Economists have long deplored lagging productivity growth in the service sector, and have advanced numerous explanations, including measurement problems, and an intrinsic lack of dynamism in many service industries.¹

Service Sector Productivity

Growth by Industry

The productivity renaissance in the service sector is broadly based, with four of the six basic service sector industries showing at least a one percentage point increase in labour productivity growth between the 1989-95 and 1995-98 periods. The growth rate of output per worker in wholesale trade accelerated 6.4 points, in retail trade 4.8 points, in finance, insurance and real estate 1.3 points and in services (personal, busi-

Table 1: Value Added per Worker Employed, U.S. Estimates of GDP
per employed worker in constant 1996 dollars

Industry Title	% Average compound growth rates			
	1981-89	1989-95	1995-98	(1995-98)-(1989-95)
Total Economy	1.38	1.11	1.85	0.74
Goods Sector	3.18	2.20	2.79	0.59
Agriculture, forestry, and fishing	3.60	0.01	5.53	5.52
Mining	8.02	4.71	3.23	-1.48
Construction	0.64	-0.13	0.03	0.16
Manufacturing	3.74	3.14	3.50	0.36
Service Sector	0.48	0.54	2.41	1.88
Transportation and public utilities	2.21	2.59	2.03	-0.56
Wholesale trade	3.37	2.85	9.20	6.35
Retail trade	1.61	0.91	5.74	4.83
Finance, insurance, and real estate	-0.12	1.64	2.89	1.26
Services	-0.16	-0.79	0.19	0.99
Government	0.33	0.28	0.58	0.30

Source: Data for GDP and employment are obtained from the Bureau of Economic Analysis, 2000. Release date: June 2000.

http://www.bea.doc.gov/bea/uguide.htm#_1_14

Note: Because of the use of non-additive chain indices for real output, industries totals do not sum to the total economy total. This explains why the total economy productivity growth rate in the 1995-98 period is less than both the goods sector and service sector productivity growth rates.

ness and other services) 1.0 points. Even government enjoyed improved productivity growth, up 0.3 points, although the estimates of real output for government are not appropriate for productivity calculations as they are largely estimated on the basis of inputs. The only service sector industry that did not enjoy faster productivity growth after 1995 was transportation and public utilities, experiencing a 0.6 point fall-off.

The services industry accounts for 30 per cent of total employment. A more disaggregated analysis of this industry shows that the productivity growth acceleration was particularly strong in miscellaneous professional services (up 4.1 points), personal services (2.0 points), amusement and recreation services (1.6 points), and motion pictures (1.5 points).

The service sector productivity renaissance refers to the post-1995 acceleration of labour productivity growth, not the overall pace of this

growth in the service sector. Indeed, productivity growth in the goods sector continues to outperform that in the service sector at 2.8 per cent versus 2.4 per cent per year in the 1995-98 period. But goods sector productivity did not pick up after 1995 from its robust pace in the 1989-95 period, due to strong productivity growth in manufacturing and mining during the first half of the 1990s.

Not all service sector industries have experienced better productivity growth since 1995. Indeed, between the 1989-95 and 1995-98 periods, productivity growth actually fell 3.6 points in hotels and other lodging places, 2.8 points in social services and membership organizations, 1.3 points in educational services, and 1.0 points in auto repair, services and parking. Moreover, productivity growth rates continue to be negative in the 1995-98 period in the four industries mentioned above as well as for insurance carri-

ers; insurance agents, brokers and service; miscellaneous repair services; motion pictures; health services; and legal services. This suggests they may be still room for significant productivity improvement in a number of service industries.

What Explains the Renaissance?

A full explanation of what appears to be a productivity renaissance in the U.S. service sector is well beyond the scope of this article. One explanation is that better output measures are now capturing real output gains that eluded government statisticians in the past. And output gains translate on a one-for-one basis into productivity gains.

A second explanation is that the massive investment in information technology (IT) made in the service sector throughout 1990s is finally paying off in terms of increasing output. The Solow productivity paradox seems to be resolved as we are now seeing the impact of computers in the productivity statistics. The lags between IT investment and productivity appear to have ended as firms and workers have now learned to use these new technologies in an effective manner. The large IT investment in wholesale and retail trade and the very strong increases in productivity in these two industries support the IT story.

Of course, the two explanations outlined above are not mutually exclusive and both have probably contributed to the improvement in service sector productivity growth.

Implications for the New Economy Debate

It is now widely recognized that trend labour productivity growth has experienced a significant upward shift since 1995, and that this shift is more than just a cyclical development as it reflects the impact of the massive IT investment in the 1990s. Until recently, it was believed that most of the productivity gains were taking place in the IT-producing sector and that the productivity-enhancing impact of IT was not spreading to the IT-using sectors. With the renaissance of productivity growth in these IT-using service industries such as wholesale and retail trade, it now appears that the acceleration of productivity growth is broadly based.

The jury is still out on whether the silicon chip represents a general purpose technology (GPT) of the importance of past GPTs such as the steam engine, the internal combustion engine, and electricity. It is unclear whether productivity gains of the second half of the 1990s represent a transitory phenomenon or whether they will have some legs and continue for two or more decades. Certainly, such long-term productivity gains are within the realm of possibility and in my view the broadening of productivity gains to the IT-using service sector since 1995 augurs well for this view.

Notes

* This article is drawn from a longer article with the same title available under the International Productivity Monitor at www.csls.ca. Email: csls@csls.ca.

1 See, for example, the April 1999 special issue of the *Canadian Journal of Economics* edited by Erwin Diewert, Alice Nakamura, and Andrew Sharpe on service sector productivity and the productivity paradox. The papers are posted at www.csls.ca under publications.