

Services and the New Capitalism

C.P. Chandrasekhar

Centre for Economic Studies and Planning

Jawaharlal Nehru University

New Delhi 100 067

The now-ended long boom in the US, which combined high GDP growth, low unemployment, low inflation and a surplus on the government's budget, provided the basis for "new economy" theorists to argue that technological change is transforming the nature of current day capitalism. According to them, economists who believed that a capitalist economy couldn't sustain strong growth, a low jobless rate and stable prices for long, "miss the mark because of sweeping changes in the U.S. economy." Those changes, over the past two decades, resulting from a spurt of invention and innovation, "led by the microprocessor", are seen to have generated a new economy, in which "knowledge is more important to economic success, than money or machinery". Since this opened all sectors of the economy to productivity gains, rapid productivity growth was no more "the province of manufacturing, a shrinking segment of the economy for four decades" (Cox and Alm 2000: 4-5).

The spread of productivity increases to sectors outside manufacturing, particularly services, is of significance because of the transformation in the commodity composition of output brought about by the new technologies. *The computing revolution, it is argued, leads to a dramatic expansion of the size and scope of the services sector (across a wide spectrum including finance, banking, trade, entertainment and education).* This results partly from associated technological developments that find new uses for the massive computing power that is cheaply available and partly from the fact that the increasingly ubiquitous PC becomes the vehicle to deliver a range of services, besides being a device in its own right. The lagged effect of a stream of innovations that have occurred over several decades,¹ has not

¹ These are seen to include "the impact of sharply lower prices and increased efficiency in computers, cell phones, and the Internet; a host of other new goods and services, innovation in financial markets, and new methods of payment; and reductions in costs and improvements in quality and efficiency associated with the

merely raised productivity and reduced prices in the information economy, but generated a host of new products and services elsewhere. The microprocessor is not just the core of the IT revolution, but stands at the centre of the convergence of the information, communication and service sectors. Its transforming role, therefore, is reflected in an expansion of the services sector as well.

The Growth in Services

This argument about the new economy is being advanced in a context where the structural composition of output in most developed and some developing countries reflects a setback to commodity production and a burgeoning of services. An often noted but relatively ignored feature of the global economy, is the rapid change in structural composition away from commodity production and in favour of services. As Table 1, taken from a recent report of the OECD shows, this shift has continued through the 1990s, despite the extremely high share of services in gross value added in some of the industrial countries at the end of the 1980s.

Table 1: Share of services in total gross value added in selected OECD countries

	1989	1994	1999	Difference		
	%	%	%	1989-94	1994-99	1989-99
United States	71.1	73.5	75.4	2.4	1.9	4.3
France	65.9	69.5	72	3.6	2.5	6.1
Denmark	68.2	71.2	71.9	3.1	0.6	3.7
Belgium	63.9	68.6	70.8	4.6	2.2	6.8
Australia	66	69.3	70.7	3.3	1.3	4.7
United Kingdom	61.8	66.8	70.3	5.1	3.4	8.5
Germany	60.7	64.4	67.7	3.7	3.3	7
Italy	61.5	65.3	67.3	3.8	2	5.8
Mexico	62.9	67.4	66.3	4.5	-1.1	3.4
Austria	62.2	65	64.9	2.8	-0.1	2.7

use of these technologically based changes in other goods and services." (Landefeld and Fraumeni 2000).

Canada	62.9	65.7	64.7	2.7	-1	1.7
New Zealand	62.5	63.7	64.5	1.3	0.8	2
Finland	57.9	62.8	63.3	5	0.5	5.5
Japan	56.5	59.5	62.2	3	2.7	5.7
Iceland	57.5	59.6	60.5	2.1	0.9	3
Poland	49.3	54.9	60.2	5.5	5.4	10.9
Norway	60.7	63	59.6	2.3	-3.4	-1.2
Turkey	47.7	49.6	54.8	1.8	5.2	7
Czech Republic	42.9	51.1	52.8	8.3	1.7	9.9
Korea	45.8	49.1	49.9	3.2	0.8	4.1

Source: OECD, "Services: Statistics on Value Added and Employment", 2001

An examination of the relative ranks of the selected group of OECD countries shows that it is indeed influenced by relative levels of income, with the United States at the top of the table. Yet there are exceptions, as suggested by the position of a relatively less developed economy like Mexico, where the composition of economic activity has changed dramatically, even though income still lags. In fact, the experience across the developing world does suggest that liberalisation, which allows market signals to direct investment and reduces restrictions on the entry and nature of activity of foreign investors, encourages 'premature' diversification into services.

The relation between the level of development and the degree of diversification of economic activity in favour of services is much more clearly defined when we examine figures on the share of services employment in total employment (Table 2). Here, not only do countries like the US and UK head the league table, with similar shares of income and employment being generated by services, but Mexico with a 66 per cent share of services in income drops way down in the league table with just 54 percent of employment being in the services sector.

Table 2: Share Of Services In Total Employment In Selected OECD Countries

1989	1994	1999	Difference		
			1989-94	1994-99	1989-99

United States	73.1	75.2	76.3	2.1	1.1	3.2
United Kingdom	68.7	73.3	75.3	4.6	2	6.6
Belgium	70.4	72	74.2	1.7	2.2	3.8
Canada	70.6	74	74.1	3.5	0	3.5
Australia	69.2	72	73.9	2.8	1.9	4.7
Denmark	69.2	71.4	73	2.2	1.6	3.8
Norway	67.7	71.2	71.2	3.5	0	3.6
France	64.8	68.7	70.6	3.9	1.9	5.8
Germany	59.2	63.6	67.5	4.4	3.8	8.2
New Zealand	64.2	64.6	67.5	0.4	2.9	3.3
Finland	60.5	64.7	65.6	4.2	0.9	5.1
Italy	60.1	62.7	64.9	2.6	2.2	4.8
Iceland	59.9	63.9	64.7	4	0.8	4.8
Korea	46	54.4	61.3	8.4	7	15.3
Japan	56.5	58.3	60.5	1.8	2.3	4.1
Austria	52.7	56	59.2	3.3	3.1	6.4
Czech Republic	41.9	50.8	54.1	8.8	3.3	12.1
Mexico	52.4	54.3	53.9	1.9	-0.4	1.5
Poland	41.5	42.2	45	0.8	2.8	3.5
Turkey	30.4	32.3	34.4	2	2	4

Source: OECD, "Services: Statistics on Value Added and Employment", 2001

The US Experience

This process of diversification in favour of services has been most marked in the principal home of the new economy, the US. There, in fact, the process has quickened in recent years (Table 3). Between 1980 and 2000, for example, the share of private services producing industries in the National Income of the US rose by close to 14 percentage points, from 50.8 to 64.3 per cent, while the increase over the more than three decades between 1948 and 1980 was 7.4 percentage points.

This growth in services has been primarily at the expense of the share of manufacturing in national income and not the result of the shrinkage of the

private agricultural sector, whose share in private sector income stood at less than 5 percent even by 1960 (Table 4). However, the share of manufacturing income from private industries, that fell by little over 5 percentage points between 1948 and 1980, collapsed by a further 10.2 percentage points between 1980 and 2000.

Table 3: Sectoral Shares in National Income in the US

	1948	1960	1970	1980	1985	1990	1995	2000
Private Goods Industries	47.0	39.9	35.5	33.1	29.3	26.7	24.8	23.1
Private Services Industries	43.4	46.9	47.9	50.8	54.9	58.0	60.9	64.3
Government	8.9	12.5	15.8	14.5	15.0	14.7	14.0	12.7

Source: US Government, Department of Commerce, Bureau of Economic Analysis

Table 4: Shares of Private Gross Product in the US by Industry Group

	1948	1960	1970	1980	1985	1990	1995	2000
Agric., fores., and fishing	10.8	4.8	3.7	2.7	2.5	2.3	1.7	1.7
Mining	2.6	1.5	1.2	2.4	1.4	1.0	0.9	0.8
Construction	5.3	6.0	6.8	6.3	6.1	5.9	5.3	6.1
Manufacturing	33.3	33.7	31.0	28.0	24.7	22.4	21.0	17.8
Services	48.0	54.1	57.4	60.6	65.2	68.5	71.1	73.6

Source: US Government, Department of Commerce, Bureau of Economic Analysis

To quote a study by economists from the Bureau of Economic Analysis of the US Department of Commerce (Jiemin and Planting 2000: 2), "As the U.S. economy has grown, its structure has changed. Using very broad measures, the U.S. economy has moved from an economy dominated by manufacturing to one where services play a major role. For example, over the 1972 to 1996 period nominal GDP grew at an average annual rate of 8 percent, but contributions by manufacturing to GDP grew at an average of 6.5 percent annually."

The main results of that analysis were that:

- In 1972, the strongest influence on U.S. economic activity was concentrated in manufacturing. In the quarter century since then, manufacturing's influence has gradually decreased.
- Over the 1972 to 1996 period, much of the decline in manufacturing's influence on the domestic economy is explained by leakages from U.S. imports.
- Over the same period, non-manufacturing industries - particularly construction, real estate, and fast growing services - have gained in influence on the U.S. domestic economy.

Till some time back, this trend would have been considered an infirmity, since barring a few productive services, the strength of an economy was seen to be reflected by the expansion of and productivity increase in the commodity producing sectors. Further, given the fact that the services sector is conventionally considered as one in which there are substantial barriers to productivity increases, this pattern of structural change hardly ties in with the optimistic view of contemporary capitalism espoused by the new economy theorists.

The Nature of the New Services

But this is what new economy theorists challenge, by providing two arguments to counter the "productivity pessimism" that the evidence on the importance of services generates. First, there is reason to believe that the available evidence exaggerates the expansion of services. Precisely during the years when the new economy has allegedly emerged, a part of the rise in the share of services appears more statistical rather than real. It is not just that during these years the growth of manufacturing industries' GDP lagged behind that of services, resulting in a fall in manufacturing's share of GDP from 24 percent to 18 percent. Within manufacturing, while the share of intermediate transactions or costs paid out by individual activities remained constant at 43 per cent of industry gross output, the share of manufacturing intermediates declined from 22 per cent to 17 per cent and that of services rose from 21 per cent to 27 per cent (Jiemin and Planting 2000).

This growing services-intensity of manufacturing input can be interpreted in two ways. On the one hand, it can be taken to reflect the growing productive role of services activity in the US economy. On the other, it can be seen to be a reflection of a growing trend towards outsourcing of services by US

corporations. "Surveys conducted in the United States by the Outsourcing Institute show that companies with over USD 80 million in annual revenues increased outsourcing by 26% in 1997 to USD 85 billion. IT was the fastest growing activity being outsourced, accounting for 30% of total outsourcing expenditures. Human resources was the second largest (16%), followed by marketing/sales (14%) and finance (11%). Manufacturers accounted for nearly two-thirds of the outsourcing, with information and professional services each accounting for 13% of the total." (OECD 2000). If the latter were true, it would imply that the rise in the share of services and decline in that of manufacturing is in part a statistical rather than a real phenomenon, reflecting the splicing out of services that were earlier part of the value of manufacturing output. In France, for example, the combined contribution of manufacturing and industry-related services has increased only marginally from 27 to 29 per cent between the 1980s and 1990s, indicating that restructuring rather than expansion accounts for the significant share of the growth in services (OECD 2000).

Table 5: Distribution of National Income from Private Services

	1948	1960	1970	1980	1985	1990	1995	2000
Transp., Comm. and public utilities	19.0	17.8	16.1	15.4	14.0	12.3	12.3	10.9
Wholesale trade	13.9	12.4	11.9	12.3	10.9	9.9	9.2	9.4
Retail trade	26.6	20.8	20.1	16.6	16.5	14.3	13.4	13.0
Finance, insurance, and real estate	20.3	25.6	24.4	25.9	26.6	27.5	28.3	28.9
Other Services	20.2	23.4	27.5	29.7	32.0	36.0	36.8	37.9

Source: US Government, Department of Commerce, Bureau of Economic Analysis

The role of outsourcing in explaining the rise in services sector GDP is also partly corroborated by the structure of growth in the services sector. Table 5 presents the shares of the principal service sector activities in the gross product of the service sector as a whole in the US. What emerges is that conventional service sector activities like Transportation, Communication and Public Utilities, the Wholesale Trade and Retail Trade have shrunk in relative terms, with their relative decline being particularly sharp after 1970. The two sectors that have gained have been Financial and Real Estate Services and 'Other Services', with the increase in share being particularly marked in the latter.

In fact, the contribution of "finance, insurance, real estate and business services" to GDP has registered noticeable increases in all major OECD economies. Value added as a share of GDP in this group of services has risen between 1987 and 1997 from 20.4 to 22.9 per cent in France, 11.3 to 14 per cent in Germany, 18.8 to 22.3 per cent in the UK and 25.5 to 28.6 per cent in the US (Table 6).

A major source of growth of the "finance, insurance, real estate and business services" group was the separation of a range of service activities from manufacturing activities, leading to the growing importance of what are termed "strategic business services" by protagonists of the new economy. Strategic business services are defined to include computer software and information processing services, research and development and technical services, marketing services, business organization services and human resource development services.

Table 6: Structure of Services in Selected OECD Economies

	Wholesale & Retail Trade, restaurants and hotels		Transport, storage and communication		Finance, insurance, real estate and business services		Community, social and personal services		Producers of government services	
	1987	1997	1987	1997	1987	1997	1987	1997	1987	1997
France	14.9	14.7	6	5.7	20.4	22.9	5.2	6.2	16.4	17.4
Germany			5.4	5	11.3	14			11.1	10.8
UK	11.7	12.5	7.1	7.3	18.8	22.3	4.9	9.6	12.6	9.7
US	16.9	16.8	6.3	5.9	25.5	28.6	9.8	5.6	11.8	11.4

Source: OECD (2000). Table A4, p. 42.

Table 7: Share of Selected Services in Full Time Equivalent Employment in the US

	1948	1960	1970	1980	1985	1990	1995	2000
Transportation and public utilities	8.6	6.9	6.1	5.6	5.3	5.2	5.2	5.3
Wholesale trade	5.4	5.5	5.4	5.9	5.9	5.7	5.6	5.5
Retail trade and automobile services	12.2	12.5	13.1	14.2	15.5	15.8	16.2	16.2
Finance, insurance, and real estate	3.4	4.4	4.9	5.8	6.1	6.2	5.9	5.7

Services	12.9	14.1	15.8	19.3	22.0	24.9	27.8	30.4
Government	14.0	18.8	20.6	18.7	17.7	17.5	16.5	15.3
Total services	56.5	62.4	65.9	69.5	72.6	75.3	77.3	78.3

Source: US Government, Department of Commerce, Bureau of Economic Analysis

Tables 7 provides a picture of trends in the share of different services in total full-time equivalent employment in the US. Here again the picture is quite clear, though slightly in variance with the trends in distribution of gross product. Conventional services have tended to decline in relative terms. In the case of full-time equivalent employment, the gainers are the Retail Trade (which includes the all important automobile services), Finance and other general "services". The last of these has recorded a remarkable 14.6 percentage points gain in relative share in full-time equivalent employment between 1970 and 2000.

Table 8: Distribution of Full-Time Equivalent Employment in General Services

	1950	1960	1970	1980	1985	1990	1995	2000
Services	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hotels and other lodging places	6.7	5.9	6.3	5.9	5.9	5.7	4.9	4.6
Personal services	12.8	9.7	7.6	4.9	4.8	4.1	3.7	3.2
Business services	5.1	9.0	13.6	16.5	19.6	18.3	20.6	24.8
Auto repair, services, and parking	3.1	3.2	3.2	3.5	3.8	3.7	3.4	3.5
Miscellaneous repair services	1.7	1.6	1.6	1.7	1.5	1.4	1.1	0.9
Motion pictures	3.3	1.8	1.4	1.0	0.9	1.2	1.3	1.3
Amusement and recreation services	3.7	3.3	3.2	3.7	3.4	3.6	4.0	4.0
Health services	14.2	17.7	22.4	29.0	28.4	27.2	27.5	24.7
Legal services	1.8	1.9	2.0	3.0	3.5	3.5	3.0	2.7
Educational services, n.e.c.	6.6	6.8	8.0	6.7	6.5	5.8	5.8	5.7
Social services and membership organizations	11.4	15.0	15.5	13.5	11.9	12.5	12.7	12.7
Miscellaneous professional services	2.7	4.0	5.0	6.1	6.2	9.8	9.1	9.5
Private households	26.8	20.0	10.3	4.5	3.6	3.1	2.7	2.2

Source: US Government, Department of Commerce, Bureau of Economic Analysis

Table 8 disaggregates the distribution of full-time equivalent employment in the general "Services" category covered by the data. The results are striking indeed. Services employment in the private household sector has collapsed. Health and Social Services that expanded during the first two to three decades after 1950, has since been on the decline in terms of their relative share in employment. So has the personal services sector. The two major gainers in relative share in employment have been Business Services and Miscellaneous Services. Thus the evidence points to a growing corporatisation of service sector employment, with a market shift in favour of business services of the kind discussed above.

These sectors reportedly have shown rapid growth and strong employment generation in recent years in OECD countries. Total turnover in these services is estimated to have exceeded \$1.1 trillion for 19 OECD countries in 1995. These sectors are also estimated to have employed 11 million persons in 1995 or 2.4 per cent of total employment in 21 OECD economies (OECD 2000: 14). However, given the fact of substantial outsourcing of services by manufacturing firms mentioned earlier, much of this growth in services may not be a net expansion but a mere restructuring of aggregate employment and production in the manufacturing and services sectors put together.

Altogether, it is clear that the process of "servicisation" not only has a longer history than that attributed to the new economy, but that the more rapid recent increase in the share of services can be more statistical than real.

"Productivity Skepticism"

This possibility notwithstanding, there are sound grounds to argue that the evidence of diversification in favour of services does reflect an actual tendency on the ground, even if it exaggerates the growth in the share of services. But this is where the second challenge to "productivity skepticism" comes in. Advocates of that challenge suggest that in the new environment, service sector growth is as good as growth in the commodity producing sectors. According to them there is no paradox here whatsoever. A retreat of manufacturing and a growth in services, it is being argued, is one other aspect of the new paradigm in economic progress. A report prepared on the basis of a Business and Industry Policy Forum organized by the OECD summarized the position as follows: "The relative importance of

manufacturing and services to economies, and the inter-relationship between the two have been the subject of much discussion through the years. Some have argued that the decline in manufacturing and the corresponding shift to services is unsupportable in the long run, since services depend critically on manufacturing for their existence. In the absence of manufacturing, service sectors are seen as collapsing. On the other hand, a forceful case was made at the Forum that services have become a major driving force in economic growth. Rather than services following and supporting manufacturing, manufacturing is seen as flowing to those countries and areas where the services infrastructure is efficient and well developed." (OECD 2000: 9).

This position that service sector expansion drives economic growth stems from a reinterpretation of the nature and role of services in modern economies. It requires making a distinction between services as they prevailed in the earlier decades of post-war capitalist expansion and their nature and role in more recent times. Services, it is being argued are increasingly resembling commodities. The conventional idea that services differ from commodities because they cannot be stored, that they have to be consumed at the point of production and that their consumption requires the direct interaction of service providers and consumers is no more true of a range of services, the argument goes.

To quote the OECD study referred to earlier: "Copies of movies and most other performances can be recorded and mass-produced for future consumption, like manufactured products. Software is developed and boxed like any other manufactured product, and is considered, for all intents and purposes, a good - albeit with a high service-related content. In these instances services have, in a sense, taken on the characteristics of commodities - one provider is mass-producing a common product for many people." (OECD 2000: 7)

Technology, in particular the revolution in information and communication technologies (ICT), is seen to play a crucial role here, providing a material link between the new economy argument and the evidence on the growth of services. The ICT revolution, it is argued, helps transform a service produced for a single or few consumers, to one that is produced for mass consumption. This allows the service 'industry' to exploit economies of scale just as manufacturing has been doing ever since the industrial revolution. A service, such as an online database for example, produced and placed on the

internet, can be accessed by a large number of consumers. The revolution in ICT also changes the relationship between providers and consumers, with the latter being able to access services like health, banking and financial services and entertainment without personal onsite contact with the provider. Easier access, which implies easier delivery, also allows for growing differentiation and rapid diversification of the services 'products' offered to consumers, as has indeed been true.

The blurring of the distinction between goods and services is seen to be true in the financial services area as well. To quote the OECD study referred to above: "There was a time when a bank would lend to a business or provide a mortgage, would take the asset and put it on their books much the way a museum would place a piece of art on the wall or under glass - to be admired and valued for its security and constant return. Times have changed. Banks now take those assets, structure them into pools, and sell securities based on those pools to institutional investors and portfolio managers. In effect, they use their balance sheets not as museums, but as parking lots - temporary holding spaces to bundle up assets and sell them to those investors who have a far greater interest in holding those assets for the long term. *The bank has thus gone from being a museum where it acquired only the finest assets and held and exhibited them in perpetuity into a manufacturing plant which provides a product for the secondary market. Just as Henry Ford did 80 years ago, banks today are focusing on producing a standardised product at a predictable rate, under standard norms of quality, and are teaching their workforces to produce that product as quickly and as efficiently as possible.*" The implicit premise here is that the fact that there is no production process, does not make a difference to the productive nature of the operation. This renders the distinction between the generation of surplus and redistributing it immaterial by definition. Few can deny that the financial buoyancy of the 1990s, triggered by the process of financial liberalization worldwide, had embedded in it a major role for speculation, rendering the productive implications of such growth suspect. However, even this development, where financial buoyancy results from creating new "products" for speculative activity, in the form of derivatives for example, is being provided as evidence of the conversion of the financial sector into a productive sector like manufacturing.

The principal argument is that the 'industry of origin' of GDP matters less today. If commodity production recedes and service activities burgeon, that is just one more reflection of the new capitalism that has put paid to all

orthodoxies, whether radical or mainstream, regarding the crises- and stagnation-prone character of capitalism.

The Productivity Conundrum

The real difficulty these advocates of services growth face is that the little evidence that exists points to a slowdown in productivity growth in services after 1973. To quote a study by economists at the Brookings Institution (Triplett and Bosworth 1999: 2): "From 1949 to 1973, the Bureau of Labor Statistics (BLS) estimates that U.S. non-farm multifactor productivity grew at 1.9% per year. After 1973, multifactor productivity grew only 0.2% per year. Despite a 20-year intensive research effort to find the cause, no convincing explanation of the post-1973 productivity slowdown exists.

Whatever the ultimate cause, circumstantial evidence suggests that services industries play some important role in the slowdown. In the first place, the aggregate numbers indicate that the productivity slowdown is greater in the non-goods producing portions of the economy. While no official estimate of productivity in services is published by the Bureau of Labour Statistics, nonfarm multifactor productivity slowed by 1.7 percentage points (from 1.9% per year to 0.2%), and manufacturing productivity fell by 0.6 percentage points (from 1.5% per year to 0.9%). Because manufacturing accounts for about 22% of non-farm business, this implies a two-percentage point slowdown in the non-manufacturing sector.

If the data are right, one might infer, as did Baumol many years ago, that productivity improvements in services are harder to achieve than in goods producing industries. If so, the shift of the economy toward a larger share of services implies a reduction in the national rate of productivity improvement."

In fact the role of information and communication technologies in triggering productivity increases in a wide range of areas outside the information and communications hardware sectors has been questioned. It is undoubtedly true that there has been a sharp increase in the installed base of computers in countries like the US. American households with computers rose from less than one percent in 1980 to 53 percent in 1999. This, together, with business investment in computerization and growing exports took shipments of US computers from less than 500,000 in 1980 to 43 million in 1999. Final sales of computers rose from less than a quarter of one per cent of GDP in

1987 to close to 3 per cent in 1999 (Table 9). Much of this growth was on account of private investment in computerization.

Yet, the evidence of productivity increases elsewhere in the economy is limited. According to Robert Gordon (1999: 1) of Northwestern University, a new economy skeptic: "When the period since 1995:4 is compared to 1950-72 and 1972-95, growth in output per hour in the most recent (third) period has recovered more than two-thirds of the productivity growth slowdown registered between the first and second periods. *All* of this productivity rebound can be explained by three factors, (1) improved methods for measuring price deflators, (2) the normal procyclical response of productivity in periods like 1997-99 when output grows faster than trend, and (3) the explosion of output and productivity growth in durable goods, entirely due to the production of computers.

There has been *no* productivity growth acceleration in the 99 percent of the economy located outside the sector which manufactures computer hardware, beyond that which can be explained by price remeasurement and by a normal (and modest) procyclical response. Indeed, far from exhibiting a productivity acceleration, the productivity slowdown in manufacturing has gotten worse; when computers are stripped out of the durable manufacturing sector, there has been a further productivity slowdown in durable manufacturing in 1995-99 as compared to 1972-95, and no acceleration at all in nondurable manufacturing."

Impact of Services: The Reassessment

Despite this evidence on productivity, there are a number of arguments adduced to support the view that the impact of services on the pace and nature of economic growth is such as to impart a new dynamism. The first is that the specialization that results from the outsourcing of services has resulted in far greater value addition to manufactured goods through the incorporation of a range of "intangibles" provided by intellectual capital, such as design features and technical inputs that enhance product quality. If such "intangibles" play a role, it should be reflected in a higher value for the product and, in particular, a rise in value added per worker. The evidence on this count is by no means clear.

This, however, is attributed to measurement problems. A Report prepared at the Brookings Institution argues that: "As the United States and other developed economies move into the 21st Century, the factors that have

become most important to economic growth and societal wealth are "intangible" or "non-physical," such as intellectual capital, research and development (R&D), brand names, and human capital. By their nature, intangibles are harder to measure, harder to quantify, often harder to manage, and harder even to define than tangibles. For the most part, they do not appear on the balance sheets of corporations, nor are they recorded in the National Accounts as part of our national wealth.

We define intangibles as non-physical factors that contribute to or are used in producing goods or providing services, or that are expected to generate future productive benefits for the individuals or firms that control the use of those factors. Evidence that intangibles are growing in importance in the economy include the growth in services as a share of total economic activity, the rapid climb in the value of financial assets in the last decade and a half, despite relatively low growth in physical assets (such as property, plant, and equipment), and a growing body of anecdotal evidence about what firms say is important to them and the need they have for new measurement and management information tools." (Blair and Wallman 2000).

Needless to say, if output is not measured to take account of intangibles, then productivity is likely to be underestimated. Hence, the available evidence notwithstanding, it is argued that the specialization in services has been accompanied by technological changes, especially those resulting from the role of information and communication technologies in the services sector, that have substantially enhanced labour productivity. This either increases value added per worker in the services area or it reduces the cost of service inputs into manufacturing and therefore increases value added per worker in the latter area. The reason advanced for the fact that this does not show up is that in "services industries, conceptual and empirical problems in measuring output and prices are notorious: For example, an economic consulting firm is part of the business services industry. How do we measure the output of an economic consulting firm? How would we construct a price index for economic consulting? And how would we compute the productivity of economists? The science of economics is no closer to developing methods for measuring the output of economists' own activities than it is for measuring the output of banks, law firms, and insurance agents. All of these services pose difficult problems for constructing price indexes and real output measures and therefore for measuring productivity." (Triplett and Bosworth 2000: 3).

Third, some service activities, especially research and development activities that are outsourced, are seen as spurring innovation in the commodity producing sectors leading to productivity increases and growth. Unfortunately, there is little evidence quoted to establish that the volume of R&D has grown just because of the outsourcing of services.

Finally, there is the argument that specialization into services generates new products the demand for which results in an induced demand for manufactures. Thus, just as the growth of the transportation sector results in increased demand for trucks, buses, ships and airplanes, an increase in demand for new forms of information and entertainment is expected to spur demand for printing presses, televisions, audio equipment and computers. This begs the question of the source of the income increases needed to stimulate the demand for services, which in turn stimulate the demand for various manufactures.

Thus, all told, the argument that the service sector has become a major driving force for economic growth is suspect. Since the jury is still out on whether this sales effort in favour of services is just an apology for the odd combination of a rapid expansion of GDP and a hollowing out of manufacturing in an era of high innovation in the US, we turn to alternative ways of explaining the current conjuncture.

Reexamining Orthodoxy

But first we have to revert to an examination of the more orthodox notion that the erosion of a nation's manufacturing base combined with an expansion of its services sector is a sign of weakness. That judgment stemmed from the view that particular economic activities can be classified as "productive" and unproductive". Starting with the writings of the classical economists, there have been two different ways in which this division of activities is arrived at.

One of these was an effort to identify grounds on which the labour employed in particular activities can be identified as being productive or unproductive, leading to a similar classification of the activities themselves.

To start with, capitalist orthodoxy believes that the characteristics of services as products meant that as outputs they were only marginally involved in sustaining accumulation. The fact that services, unlike material products cannot be stored at all, and are most often consumed at the point of production, seemed reason enough to believe they that could not

contribute to growth. By their very nature, they appeared to be products that were directed at consumption rather than investment. Their 'productive' role really lay in the requirement of certain forms of services as support for production - the most obvious being certain financial activities and transportation and distribution services. The large range of public and private services aimed at supporting the daily existence of and providing entertainment to individuals and households, while possibly necessary, were not seen as being on par with material production from the point of view of growth. To quote Marx on the matter, it was a given for the classical economists starting with the Physiocrats that only that labourer is productive, "who produces surplus value for the capitalist, and thus works for the self-expansion of capital." (Marx 1954: 477). However, this definition does not permit the classification of a part or the whole of the services sector as being unproductive, since it is not the nature of the activity but the relations of production within which it occurs that matters. Thus Marx argued: "If we may take an example from outside the sphere of production of material objects, a schoolmaster is a productive labourer, when, in addition to belabouring the heads of his scholars, he works like a horse to enrich the school's proprietor. That the latter has laid out his capital in a teaching factory, instead of a sausage factory, does not alter the relation."

The second way of characterizing an activity as unproductive, which also stems from the classical economists, is to assess whether the existence of that activity is a response to demands generated by the diversification of surpluses that could have been directed into investments towards consumption. To revert to Marx: "Just as little as the commodities that the capitalist buys with a part of the surplus value for his own consumption, serve the purpose of production and of creation of value, so little is the labour that he buys for the satisfaction of his natural and social requirements, productive labour. Instead of converting surplus value into capital, he, on the contrary, by the purchase of those commodities and that labour, consumes or expends it as revenue." (*Ibid*: 551-2). In such a perspective, there is cause for skepticism about the services sector from the point of view of accumulation and growth, not because service sector workers are by definition 'unproductive', but because the growth of a range of services reflects a growing diversion of surpluses that could be used for accumulation to their expenditure as 'revenue', by those to whom such surpluses accrues.

There is an ambiguity here that makes services akin to a historically defined set of inessential consumption goods, which needs to be noted. Inasmuch as services are commercialized and produced within a capitalist firm, just as those consumption goods are, the capitalist earns a surplus, which comes from the 'productive' activity of service sector workers who help generate surpluses for accumulation. But inasmuch as a range of services, just as a range of consumption goods, emerge and exist because those garnering a part of the surplus choose to expend it on 'unnecessary' consumption rather than accumulation, there is an unproductive aspect to the growth of services which is inimical from the point of view of accumulation.

This similarity is of some significance. A fundamental problem of capitalism is that surpluses generated need to be realized. The commodities in which those surplus values are embodied need to be sold and surpluses monetised. It is for this reason that the underconsumption theorists emphasized the role of purchasing power outside the realm of capitalist production *per se*. Neither can investment goods be produced without limit to service the investment goods requirements of other investors, nor can capitalists in the consumption goods sectors produce only to meet the needs of workers and of themselves and other capitalists alone. State expenditures, external markets and the investment that technological change spurs play a role here. So does the consumption of rentiers and others who skim off or are paid out a part of the surplus and divert it to consumption to generate the demand that inadequate investment does not provide. The 'others' in the case of the US and many other developed capitalist countries include the white collared workers and the self-employed, who, in return for the provision of services, are paid out a part of the surplus.²

This role of certain kinds of activities in providing the demand to solve the realisation problem under capitalism was emphasized by Baran and Sweezy (1966) in their analysis of monopoly capitalism in the US. The transition from

² According to estimates made by the US Council of Economic Advisors and the US Department of Labour, some 20 million jobs (net) were created in the US during 1993-99, close to 90% of which were in service-related areas (including public utilities and government). Eighty one percent of these new jobs were in categories paying above-median wages, with 65 per cent in job categories with wages in the highest-paying third of industry/occupation categories. Clearly a part of the surplus is being distributed to workers as well. (Quoted in OECD 2000, p.20).

competitive to monopolistic capitalism they argued, replaces the law of the falling tendency of the rate of profit with the law of rising surplus, defined as the excess of the value of what society produces and the cost of producing it. The economic surplus includes besides profits, interest and rent (included by Marx in surplus value), other items such as the revenues of state and church, the expenses of transforming commodities into money, and the wages of unproductive workers. It tends to rise because while competition between monopolistic firms results in innovation and cost reduction over time, prices tend to be sticky downwards in the main. The rise leads to a situation where capitalists' consumption and accumulation prove inadequate to preempt in full society's surplus product, making other modes of surplus utilization quite crucial. There were four such modes that Baran and Sweezy focused on: the sales effort, civilian government, militarism and imperialism. Many analysts of capitalism before Baran and Sweezy had emphasized the role of the last three of these in helping the realization of surplus, and their role even today is well established. What was novel in the Baran and Sweezy formulation was the importance they gave to the sales effort and the manifold role it played under monopoly capitalism. Competitively employed, it was another means of profit maximization and served "as a formidable wall protecting monopolistic positions." Secondly, "just as advertising and related policies can create an attachment in buyers to a given product, it is also possible to generate demand for a new, or apparently new, product." And third, "the more intense the newly created wants are, the higher can be the price of the products and the larger the profits of the firm which caters to these wants." (Baran and Sweezy 2000: 117),

The novelty was not merely that of recognizing this role of the sales effort. It was in spotting the fact that a phenomenon that flowed out of the violent forms of non-price competition under monopoly capital, becomes a factor whose economic importance "lies not primarily in its causing a reallocation of consumers' expenditures among different commodities but in its effect on the magnitude of aggregate effective demand and thus on the level of income and employment." (p. 124), This feature of advertising, of being one mode of utilizing the economic surplus, was according to Baran and Sweezy obscured by the manner in which it is treated in business accounting. "This segment of surplus is marked by certain peculiarities. For one thing, it is a composite of two heterogenous elements. The first element is that part of society's aggregate advertising and other selling expenses which is paid for

by an increase in the price of consumer goods bought by productive workers. Their real wages are reduced by this amount, and the surplus, which is the difference between the aggregate net output and the aggregate real wages of productive workers, is correspondingly increased. The other element is more complicated. It is the remainder of advertising and selling expenses that are borne by the capitalists themselves and by unproductive workers in the form of increased prices of the goods which they purchase. This component of the outlays on advertising and the sales effort, not being borne by the productive workers, does not constitute an increase of the surplus but does cause its redistribution: some individuals living off the surplus, namely, those who derive their incomes from wages, salaries and profits generated by the selling 'industry' itself." (p. 125)

These excerpts have been quoted in detail to suggest that, differences notwithstanding, the whole of the services sector has characteristics similar to the sales effort. There are segments of the services sector which can be seen as a necessity for the commodity producing sectors and their burgeoning as a consequence of competition in the commodity producing sector that necessitates outsourcing of services as a cost cutting exercise. There are other segments that emerge and grow merely as means of offering "new products" to those with surplus incomes to spend. Those include not just capitalists and rentiers, but sections of skilled and white-collar workers and a new strata of surplus disposers who consist not only of "corporate and government bureaucrats, bankers and lawyers, advertising copy writers and public relations experts, stockbrockers and insurance agents, realtors and morticians" but also a whole new class of merchandisers of "intangibles" who grow without limit.

These merchandisers of intangibles survive off the surplus drawn from productive workers that are expended on services, part of which are expended on incomes of service sector workers who help the process of realization of surplus, and a part of which is converted into profits that once again need to be allocated between consumption and investment. Part of the proliferation of services, helped no doubt by the ICT revolution, is to ensure that more is diverted to consumption, helping sustain the process of realization.

This is not to dismiss the possibility of some 'productive' indirect effects of the growth of services such as triggering investment because of larger

demand or of spurring innovation through specialized R&D activities. In fact, one area where the growth of services has resulted in growing demand is the computer industry, since the desktop machine has become an important vehicle for delivering a range of services both at the workplace and at home. The PC being a vehicle of delivery, it is not surprising also that the evidence indicates that increases in productivity have occurred more within PC production rather than in sectors where its use has increased. What is important to note, however, is that the ICT revolution has helped the proliferation of a sector whose dominant role is that of offering a larger economic space in which the process of realization of surpluses generated by monopoly capital is ensured.

Surplus Generation and Growth

There remains one issue. This argument about the likely relationship between a rising surplus generated by monopoly capital primarily from commodity production and the growth of services as a means of realization seems, on the surface, irrelevant in the US which has been seeing a shrinkage and hollowing out of its manufacturing sector. It has been argued that this hollowing out is partly because of a relocation of capacity abroad by manufacturing firms in the US and partly because of a loss of competitiveness of manufacturing capacity based in the US. However, between 1982 and 1999 the gross product generated by US majority-owned foreign affiliates (MOFAs) abroad, which stood at \$561.2 billion in 1999, grew at an annual rate of 5.6 per cent. That rate in fact accelerated from 3.2 per cent during 1982-89 to 6.8 per cent between 1989 and 1999 (Mataloni and Yorgason 2002: 25).

In fact, data collated by the four benchmark surveys of the US Bureau of Economic Affairs on the operations of US multinationals relating to 1982, 1989, 1994 and 1999 do not tally with the view that the expansion of multinationals would be accompanied by a tendency where growth in the periphery would be at the expense of presence in the metropolis. The evidence shows that the acceleration in expansion of MNC operations has been as true of the parent firms as of their MOFAs (Table 9). This is true of both gross product and of employment. Further, there has been only one short span of time, 1989-94 when employment growth in US MNC parents was marginally negative. And these were years when growth in the US and the world had slowed, suggesting that employment movements during those

years were influenced more by macroeconomic trends than by firm-level strategies.

Table 9: Percent change in Gross Product of US MNCs at annual rates

	MNCs	Parents	MOFAs	
1982–99		5.1	4.9	5.6
1982–89		4.3	4	5.3
1989–99		5.7	5.6	5.8
1989–94		4.7	4.7	4.8
1994–99		6.6	6.6	6.8

Source: Mataloni (200) and Mataloni and Yorgason (2002)

Overall, the presence of parents in the global operations of MNCs still remains strong. As Table 10 shows, the share of MNC parents in the worldwide gross product of US MNCs has remained more or less constant during the years 1989-99. This is true in the case of all industries in which MNCs participated, and of manufacturing, finance, insurance and real estate (excluding depository institutions). It is only in services that there has been a significant decline in parent share of gross product during the latter half of the 1990s. This persisting presence of parents in the economic activity of US MNCs, has also meant that the contribution of US parent firms to US GDP has also remained relatively constant during the period 1989-99 (Table 11). Whether relocation occurred or not, the parents of US multinationals were making a significant and persisting contribution to overall US economic activity.

Table 10: Share of Parents in Gross Product of US MNCs by Sector (Per cent)

	1989	1994	1999
All Industries	76.6	76.5	76.3
Manufacturing	73.9	73.5	72.7
FIRE	80.5	74.9	79.5
Services	85.2	84.9	80.6

Source: Mataloni (200) and Mataloni and Yorgason (2002)

Table 11: Share of Gross Product of US Parents in GDP: All Industries and Manufacturing (Per Cent)

	1982	1989	1994	1999
--	------	------	------	------

All Industries	28	22	22	22
Manufacturing	67	59	58	58

Source: Mataloni (200) and Mataloni and Yorgason (2002)

However, there are two confusing aspects to these trends. Table 11, which examines the contribution of US parents to US gross product over a long period of time suggests that there was a sharp reduction (6 percentage points in 'all industries' and 8 percentage points in the case of manufacturing) in the contribution of US parents to US GDP between 1982 and 1989, followed by stability in that contribution thereafter. Thus, if at all the relocation argument is supported by the gross product figures, it appears to be during the early years of globalisation.

Table 12: U.S. Parent Share of all private U.S.-business GDP (Adjusted Percentages)

	1982	1989	1994
All industries	33	25	26
Petroleum extraction and refining	80	87	97
Manufacturing 2	67	60	59
Services	6	6	8

Source: Mataloni (200) and Mataloni and Yorgason (2002)

It could of course be argued that this exercise, which requires comparison of figures from the BEA's benchmark surveys of US direct foreign investment abroad and its National Income and Product Accounts, could be fraught with problems. However, the BEA itself has in the past attempted to adjust aggregate gross product figures to make them more comparable with the FDI figures. For improved comparability with U.S.-parent gross product, GDP of all private U.S. businesses was adjusted to remove from the total categories not applicable to non-bank U.S. parents— specifically, GDP of depository institutions; imputed rental income of owner-occupied farm and non-farm housing; and rental income of persons. The results yielded by this comparison of adjusted figures provided in Table 12 tallies with the view supported by Table 11 that any loss of production due to relocation occurred, if at all, during the early years of globalisation and not during its peak years in the 1990s.

Table 13: Share of U.S. parents' Employment in worldwide MNC total (Per Cent)

	1982	1989	1994	1999
All industries	79	79	76	74
Manufacturing	74	73	70	68

Source: Mataloni (200) and Mataloni and Yorgason (2002)

But the litmus test of relocation lies not in output but in employment trends, which provide a second cause for confusion. As Table 13 shows, the share of US parents in MNC employment worldwide remained more or less constant during 1982-89, but fell quite significantly (5 percentage points in 'all industries' and manufacturing) during 1989-99. This could be interpreted to mean; (1) that relocation by MNCs resulted not so much in a major loss of employment in the US, as in a faster growth of MNC employment in the periphery than in the core; and (2) that this process of relocation did not result in any loss in share of parents of US multinationals in gross product generated worldwide or in the contribution of these parents to US GDP.

According to the BEAs own interpretation of trends based on its 1994 benchmark survey, the persistence, despite relocation of production, of a high share in manufacturing GDP of US parents partly reflects "the firm-specific intangible assets (such as patents or brand images) that allow these firms to earn profits that are sufficient to overcome the additional costs of producing in foreign markets." This refers, of course, only to that part of surplus that is repatriated in some form to the parent country, and not to that which is used either to expand international assets or to increase the retained surpluses of the affiliates themselves. Clearly, relocation does not imply lower profits for US companies, whatever else it may mean for the US economy. Rather, as has been argued by many, international expansion has been a way of maintaining or enhancing the surpluses garnered by US parents from the world market. The value of that surplus also increases in real terms because of the fall in primary commodity prices associated with globalization.

What needs to be noted is that the expansion of US capital abroad has increasingly taken the form of acquisitions of existing firms as opposed to investment in green-field projects. Such acquisitions, which are followed by the modernization or even replacement of the acquired firms' assets, allows for US firms to capture market shares in which pre-existing brands are

replaced by those of the acquiring firm.³ The consequent standardization of brands sold worldwide has been widely noted. Underlying such standardization is the growing command of US firms of the gross product of host countries. The share of the gross product of host countries accounted for by US majority-owned affiliates located abroad varies between 4.5 and 16 per cent in economies as diverse as Ireland, Singapore, Canada, UK, Honduras, New Zealand, Belgium, Netherlands, Australia and Hong Kong (Mataloni and Yorgason 2002: 34). As the process of privatization and liberalization in the developing world as a whole proceeds apace, and the process of corporate restructuring in countries affected by financial crises necessitates sale of assets by bankrupt firms at low prices denominated in currencies depreciating against the dollar intensifies, this share in many developing countries can be expected to rise substantially. In sum, the hollowing out of US manufacturing is accompanied by a rise in the surplus commanded by US parents.

Implications for Trade

One impact of relocation is of course on US trade performance. An early study relating to the US (Kravis and Lipsey, 1992), found that while the share of US multinationals in world exports fluctuated around 17 per cent between 1966 and 1986 and was between 15 and 16 per cent in 1987 and 1988, the share of the US dropped from 17 per cent in 1966 to about 12 per cent in 1986-88. Further, among US multinational firms, the shares of parents in world exports tended to decline while the shares of affiliates drifted upwards. That is US multinationals were supplying a rising share of their international markets from production sites abroad.

A part of these exports are to the US itself. Intra-MNC trade amounted to \$147 billion and \$158 billion respectively in 1997 and 1998 respectively. Another \$29 billion worth of goods and services were shipped by affiliates abroad to US persons (Mataloni 2000: 29). This compares with total imports of goods and services into the US of \$1294 billion and 1364 billion respectively in those years (Bach 2000: 71). That is a little more than 13.6 per cent of US imports are due to imports from US affiliates abroad.

³ In 1998 alone US parents acquired 276 firms and established 201 new firms, with assets totalling \$144 billion and employing 200,000 persons (Mataloni 2000: 33).

In essence, the realization of the surplus garnered by US firms abroad and embodied in commodities requires not just a vent in the form of services sector growth, but the import of those commodities produced abroad in which surpluses are embodied. These imports from affiliates combined with larger imports and lower exports resulting from the reduced competitiveness of US manufacturing, to generate the record trade and current account deficits referred to earlier. Since this was accompanied by a loss of US competitiveness in world markets, the US trade deficit continued to widen as the share of the US in world imports rose to a record level of 18 per cent. The current account balance of the US, which reflected a marginal surplus of \$6.6 billion in 1991, was transformed into a deficit that increased from \$47.7 billion in 1992 to \$123.3 billion in 1996, \$217.1 billion in 1998 and \$331.5 billion in 1999. (Bach 2000: 71) The current account deficit in 1999 amounted to 3.7 per cent of GDP (WTO 2000: 5). This exceeds the previous peak recorded as far back as in 1987. And there are no signs of a correction. During the first six months of 2000, US imports increased by 21 per cent, while exports expanded at just 14 per cent, taking its annualized current account deficit to a new record of \$400 billion or 4.5 per cent of GDP (*ibid*: 2).

The role of the loss of US competitiveness in explaining this trend is apparent from trade figures. For example, North America's exports to Asia, which account for a little more than a fifth of North American exports, grew by just 3 per cent in 1999, though Asia's imports increased by 10 per cent (WTO 2000: 6). Similar evidence of a loss of market share comes from other destinations as well.

This combination of income growth combined with declining manufacturing competitiveness (partly resulting from a strong dollar) has thus far been sustained because of the attractiveness of the US as a destination for capital flows. The US has been sucking in capital from diverse sources, keeping the dollar strong despite the rise in its deficit on the current account of the balance of payments. However, record capital flows tend to aggravate the decline in US competitiveness. To quote the WTO (2000: 2), "The strong net capital outflows from the euro area to North America contributed to the weakness of the euro vis-à-vis the US dollar." This obviously helped European exporters to the US and domestic producers competing with imports from the US, aggravating the loss of US competitiveness in one region where it has thus far been successful in maintaining market share. Thus the fastest growing economy in the

developed world appears to be the least competitive, and the most dependent on capital inflows to sustain its growth process. Capital flows are accompanied by the emergence of a host of financial intermediaries, who mediate and speculate on such flows, resulting in a further burgeoning of the services sector. Needless to say, the country that has been most successful in achieving this virtuous growth that denudes commodity production in the domestic economy is the US. Not surprisingly, the US has been the most successful in recent times in terms of growth and has been the principal home of the new economy.

References:

Bach, Christopher L. (2000), "US international transactions: Revised estimates for 1982-99", **Survey of Current Business**, July.

Baran, Paul A. and Paul M. Sweezy (1966), **Monopoly Capital: An Essay on the American Economic and Social Order**, New York: Monthly Review Press.

Blair, Margaret M. and Steven M.H. Wallman (2000), "Unseen wealth: Report of the Brookings task force on understanding intangible sources of value: Executive summary", Washington D.C.: Brookings Institution, http://www.brook.edu/es/research/projects/intangibles/tf_exsum.htm.

Cox, W. Michael and Richard (2000), "The New Paradigm", in **Federal Bank of Dallas: 1999 Annual Report**, Dallas: Federal Bank of Dallas.

Gordon, Robert J., "Has the 'New Economy' rendered the productivity slowdown obsolete".

Guo, Jiemin and Mark A. Planting (2000), "Using input-output analysis to measure YC economic structural change over a 24-year period", Paper presented at the International Conference on Input-Output Techniques. Macerata, Italy, August 21-25, Washington D.C.: Industry Economic Division, Bureau of Economic Analysis, US Department of Commerce.

Kravis, Irving B. and Robert Lipsey (1992), "Sources of competitiveness of the United States and its multinational firms", **Review of Economic Statistics**, 74(2).

Landefeld, J. Steven and Barbara M. Fraumeni (2000), "Measuring the new economy", Paper prepared for the Bureau of Economic Analysis, May 5 meeting, Washington D.C.: US Department of Commerce, Bureau of Economic Analysis.

Lum, Sherlene K.S., Brian C. Moyer and Robert E. Yuskagave (2000), "Improved estimates of gross product by industry for 1947-98", **Survey of Current Business**, June.

Marx Karl (1954), **Capital: A Critical Analysis of Capitalist Production, Volume I**", Moscow: progress Publishers, Reissue in English of the 4th German Edition of 1890.

Mataloni, Raymond J. (2000), "US multinational companies: Operations in 1998", **Survey of Current Business**, July.

Mataloni, Raymond J. and Daniel R. Yorgason (2002), "Operations of U.S. Multinational Companies: Preliminary Results from the 1999 Benchmark Survey", **Survey of Current Business**, March.

Organization for Economic Cooperation and Development (2000), **The Service Economy**, Paris: OECD.

Triplett, Jack E. and Barry P. Bosworth (1999), "Productivity in the services sector". Washington D.C.: Brookings Institution, Paper prepared for the American Economic Association, January 7-9.

World Trade Organization (2000), **International Trade Statistics 2000**, Geneva: WTO.