
1990: NEW PARADIGM OR NEW PARASITISM?

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Introduction

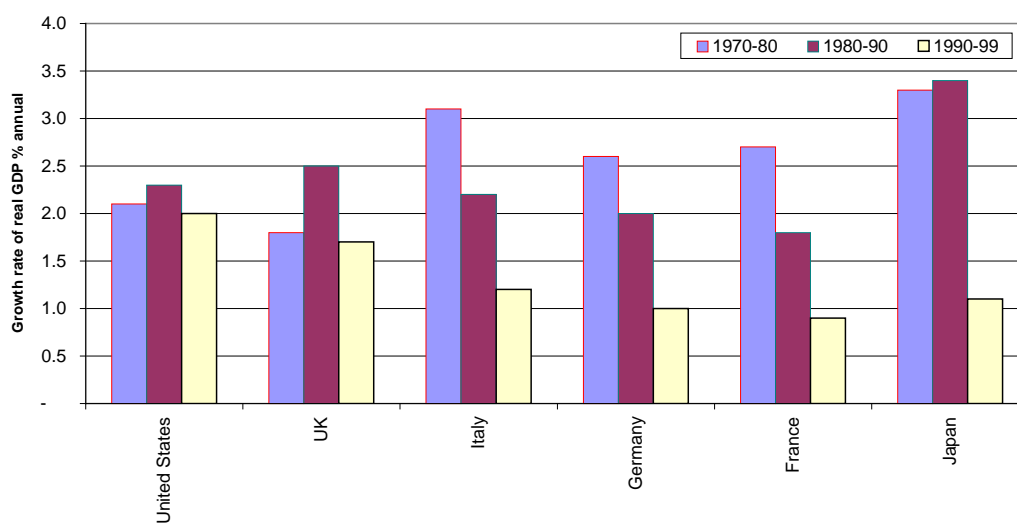
This paper is an incomplete version of a paper which will address the current state of the US and its relation to the world economy, investigating the Greenspan thesis that the 'New Economy' will launch a New Paradigm (effectively, a fifth Kondratieff). As a part of this exercise, the data will be transformed using TSS methodology into labour-time magnitudes in order to provide for international and intertemporal comparison on a conserved-value basis and to separate out the labour utilisation effect of economic change from the productivity and monetary effects. As an accompaniment I have posted a paper, published in Historical Materialism, which completes this computation for the case of the USA and also addresses the question: 'what is the current state of the world economy?'

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INVESTMENT AND THE NEW ECONOMY IN THE G6 COUNTRIES.

Throughout the 1990s the US economy has undergone a sustained period of economic growth. As figure 1 shows, other economies have not. Reversing the trend of the 1980s, advanced-country growth in the 1990s is diverging; as the OECD(2000:7) notes: 'Analysis of growth patterns in the OECD area shows that levels of GDP per capita are no longer converging. In the 1990s growth was higher in a few high-income countries such as Australia, the Netherlands, Norway and the United States. In addition, countries such as Ireland and Korea continued to catch up to higher income levels. But growth in Japan and much of continental Europe, notably its larger economies, was slower than in the 1980s'.

Figure 1: Growth in GDP per capita



Source: OECD (2000)

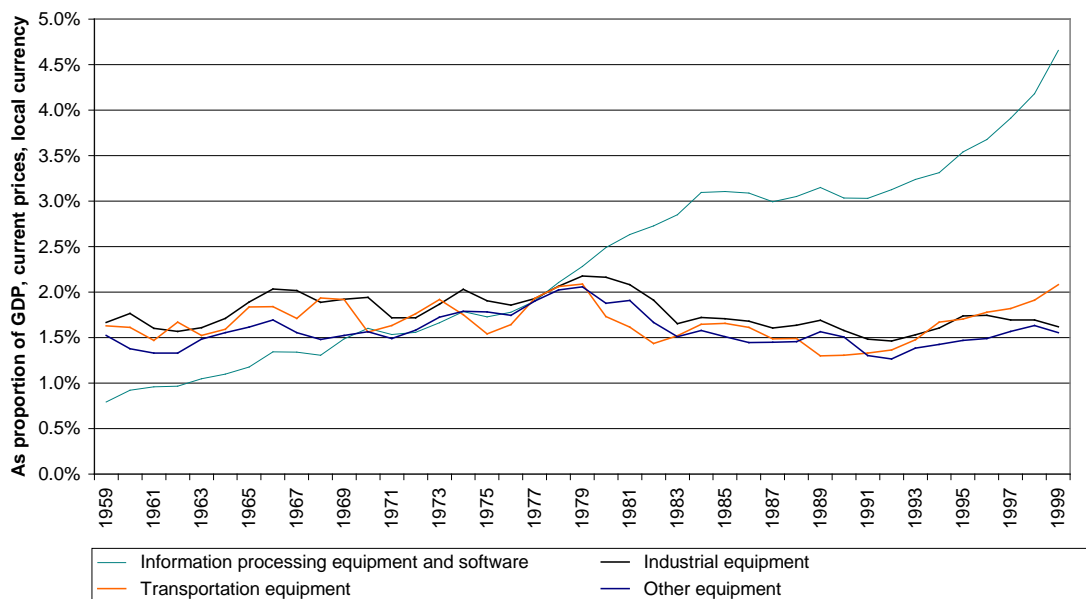
Thus, even if US growth continues, it cannot be assumed the UK will automatically follow. It is decisive to identify the conditions which provoked and sustained the US expansion. This is also

highly relevant to asking whether it can continue. The central questions are thus:

- (i) Is the US expansion sustainable – will it continue, perhaps after a relatively mild recession or ‘soft’ landing?
- (ii) Is it exportable – will the US growth serve as the motor of a world economic expansion as in the ‘golden age’ of the 1950s?
- (iii) Is it reproducible – can other countries imitate the conditions which gave rise to it?

A key element is the ‘New Economy’ loosely defined as those sectors quoted on NASDAQ – a combination of hi-tech sectors, notably ICT (Information and Communication Technology) and biotech. Interest has centred particularly on ICT, broadly defined as the synergistic fusion of computing and telecommunications. What contribution has this made to the expansion?

Figure 2: US Fixed Investment



As

figure 2 shows, investment in ICT is a decisive component of recent US economic growth. It has risen steadily from 0.5% of GDP in 1960 to nearly 5% in 1999. By 1997 it had outstripped investment in machinery, transport, and other equipment¹ As figure 3 shows, this was heavily concentrated in software, amounting in 1999 to 2% of GDP although in real terms, as figure 3a shows, the expansion was dominated by computers and peripherals, and communications equipment showed a more definite rise.²

¹ Furnishings, and machinery in the non-manufacturing industries

² ‘real’ growth in software, and to a lesser extent computing equipment, must be treated with caution; a ‘box’ which nominally supplies the same function (a computer, an operating system) provides more productive power as time goes on. The accounts compensate using hedonic indices which measure the actual services provided, but there is no agreed standard and so each country’s, and each researcher’s, estimate of real output or spending on these items will be different.

Figure 3: US Investment in ICT

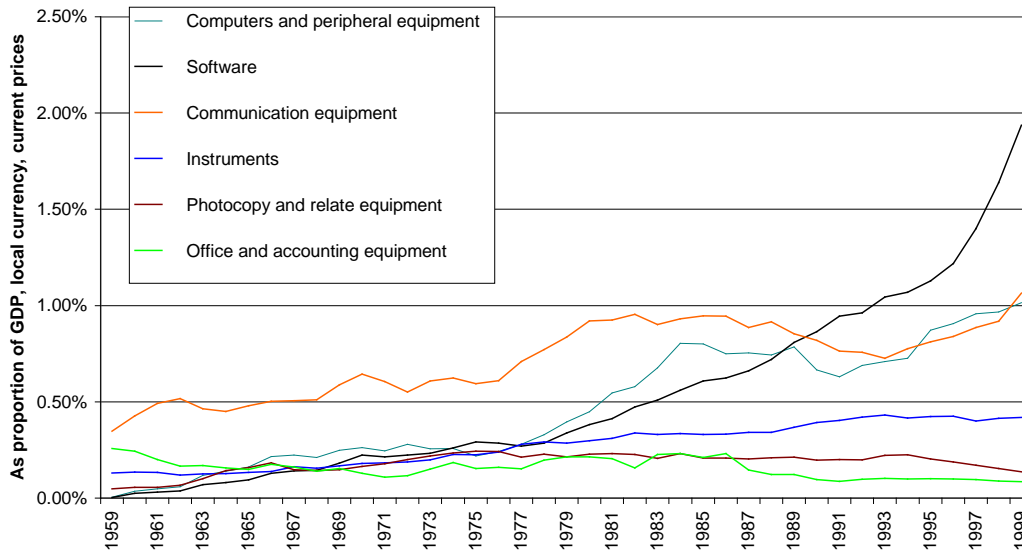
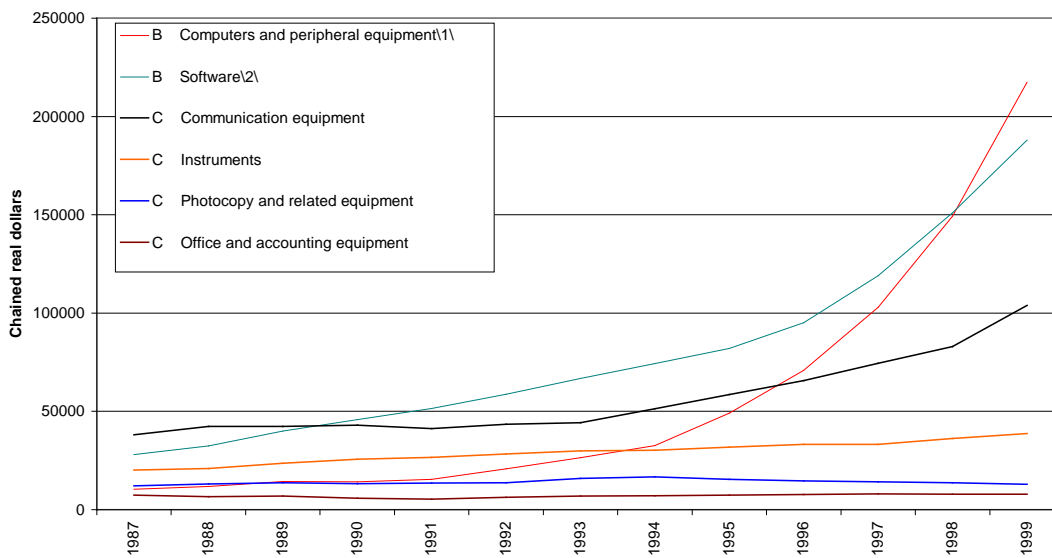


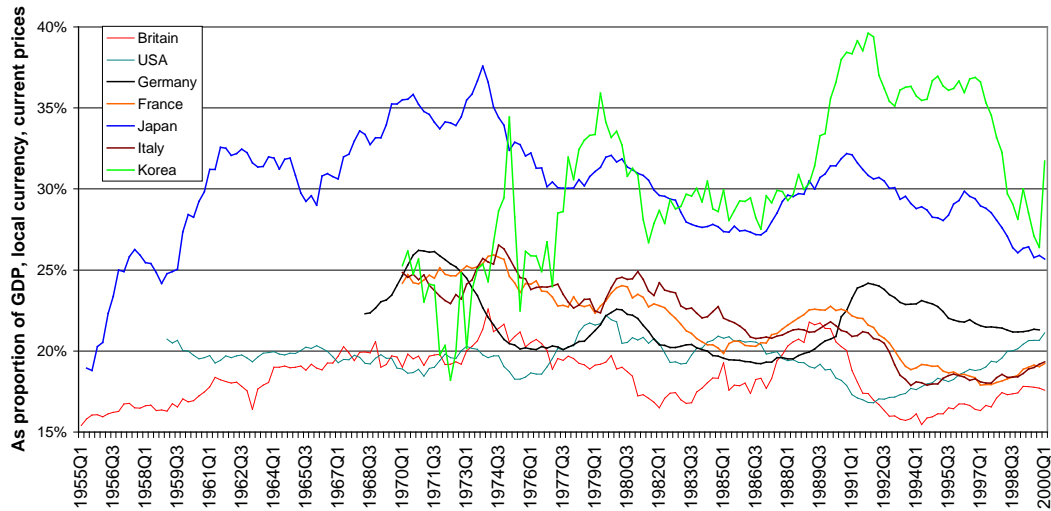
Figure 3a: USA Investment in ICT, real terms



Is

this pattern generalisable, and is it stable? Regardless of the share of ICT, US investment in general stands out from all other countries during the 1990s. Figures 4a and 4b show that the surge in IT spending is only one aspect of a sustained surge in US investment.

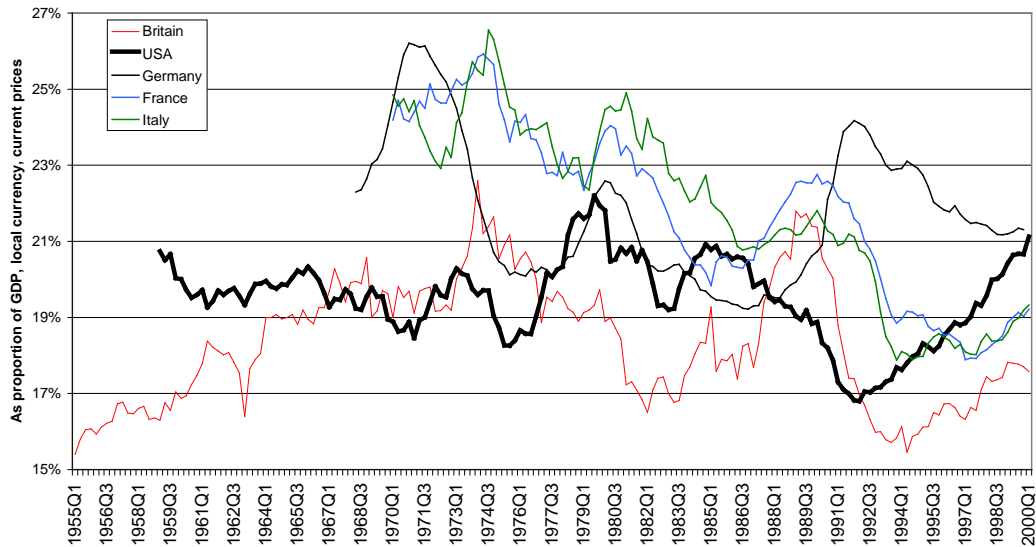
Figure 4a: Fixed investment



Source: OECD. Germany before 1991: West Germany, seasonally adjusted by AF

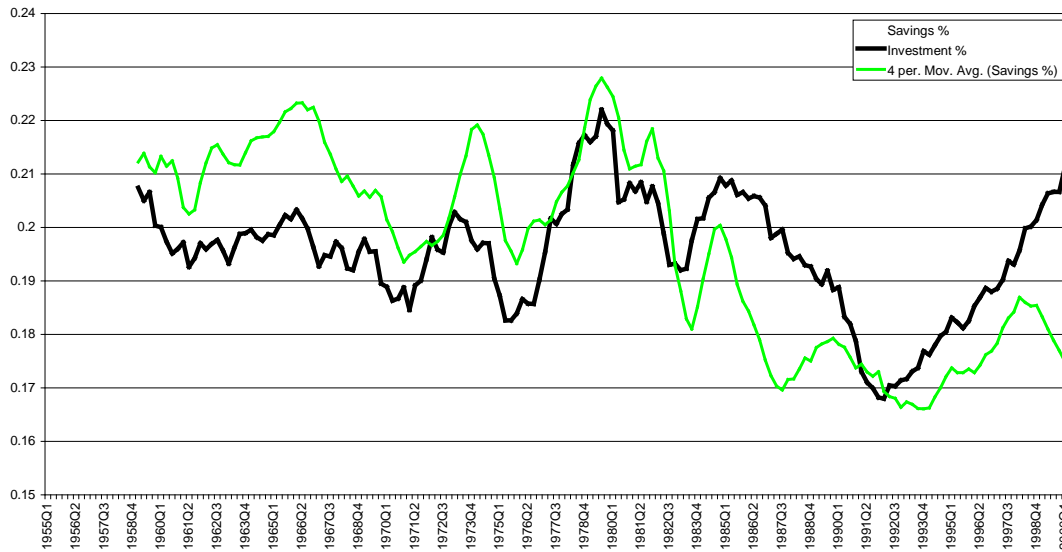
The figure also shows that, like GDP, investment diverged sharply after 1990. From 1992 onwards the US rise was marked by a prolonged fall in all competitors except the UK, which began in any case from its historically lowest postwar level, as a consequence of the redirection of UK investment outwards under Thatcher.

Table 4b: Fixed investment, US and Europe



The 1990s, as might be expected from the movements in economic output, saw a divergence in rates of investment. A seesaw period began, in which US investment grew not in concert with, but at the expense of, its chief rivals. This raises doubts as to whether its growth is exportable.

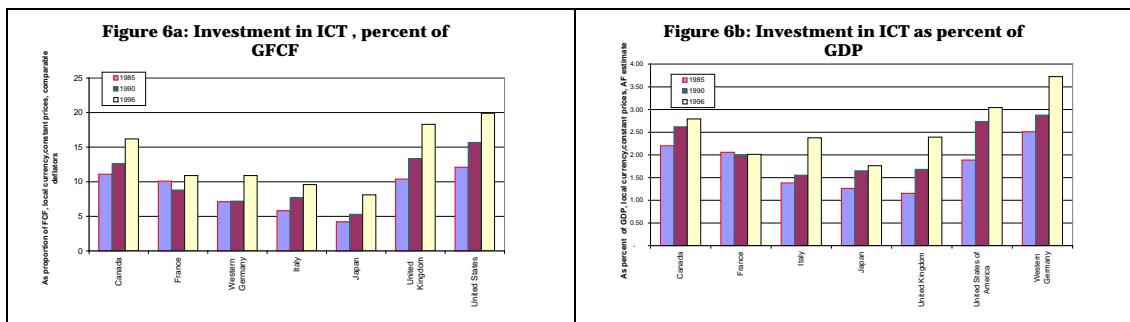
Figure 5: Investment and savings in the USA



Significantly, US expansion was not financed out of its own domestic savings. In this respect the 1990s differs decisively from the postwar ‘golden age’ of 1947-74 which was also driven by the prolonged expansion of the US economy but during which, as figure 5 shows, US savings stayed above investment so that it exported capital net to the rest of the world, fuelling a world-wide investment boom. After a turbulent transition by 1984 a different pattern set in; the US became a capital importer, US investment was financed out of rest of the world’ savings, and its expansion was purchased at the expense of the rest of the world.

IS US ICT INVESTMENT REPRODUCED IN OTHER COUNTRIES?

Other countries have not yet produced data comparable with US figures on New Economy investment. Some studies have tried to rectify this; Schreyer (2000) provides data from private sources shown in figure 6a, for three distinct years in constant price terms (see table 2) as a percent of GDP. The USA leads absolutely, but rates of growth are quite similar. As a percent of GDP, as shown in figure 6b, German investment in ICT until 1996 was higher. This could be interpreted as meaning it lags in ICT but could equally signify it is ahead in other areas.

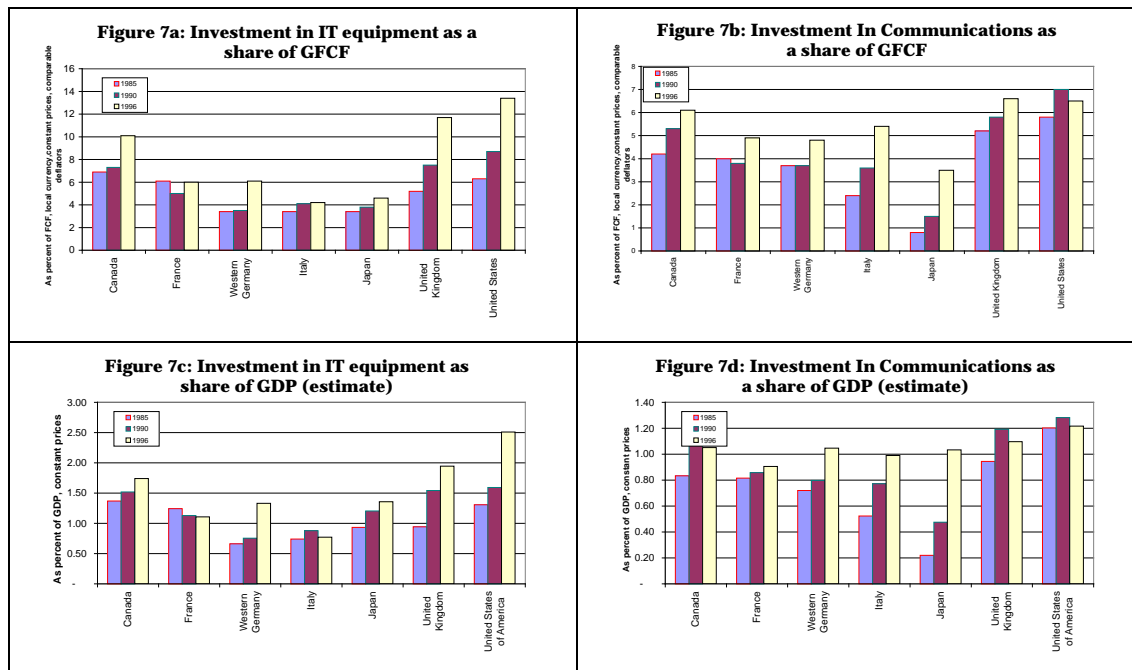


COMPONENTS OF ICT INVESTMENT

Both the OECD and the BEA provide breakdowns of IT spending between computing equipment and telecommunications equipment. This exhibits a strong contrast; the decisive sector of the US investment expansion is computing equipment (including software) while Japan, admittedly

starting from a low initial base, has expanded most rapidly in telecommunications, almost catching up (in terms of investment as a share of GDP) with the USA.

The *differentiation* between economic performance, to the extent that it is attributable to ICT, seems therefore concentrated in the area of IT equipment and software; communications are an infrastructural precondition without which ICT synergies cannot be exploited but is not in itself sufficient.



CONCLUSION

Technological advance plays a double role in any expansion, as a product and as an input. As Schreyer (2000:5) notes “One important distinction which needs to be made is the difference between ICT industries and their contribution to growth, and the role of ICTs as capital inputs in all parts of the economy.”

The returns to producers of hi-tech goods create a sink for investment, fuelling demand for funds and raising their output. The *producers* of hi-tech goods enjoy constantly rising demand and if, therefore, the production of hi-tech goods constitutes a large part of the output of any country, it has a better chance of maintaining high employment and riding out recession.

But hi-tech goods are *employed* to raise productivity and this is the reason they are sought. The consumers of hi-tech can cut costs and raise profits. However once a new technology is in common use, it confers no special advantage and on the contrary, leads to falling prices. The use of hi-tech confers a competitive advantage; those countries or producers that get ahead of the competition by using it first, secure the greatest benefits. For a nation or a city that wants to compete, therefore, the greatest advantage arises from disseminating the new technology as widely as possible, which means making it available as cheaply as possible.

A prolonged expansion arises when these two effects are coupled; when a new technology enters and transforms all aspects of production and society, like for example the internet. The result is an investment boom; everyone can cut costs by using the new technology, funds are freed up which are then directed into the exceptional returns to be obtained by producing the new technology. This is the basic feature of a prolonged ‘Kondratieff’ expansion.

Not every technical innovation leads to an expansive wave. At least two conditions set limits on

the extent to which a new technology can serve as the basis of a prolonged expansion. First, is the new technology disseminated? Can its productivity gains be realised economy-wide? Does it become an element in every other part of the economy, or just in restricted areas? It is not enough to be a growth area; to fuel a prolonged expansion, a new technology must enter all other technologies; it must be what Perez (0000) calls a 'core technology'.

But second, can the new technology be financed? Does the market generate a sufficient volume of funds, and distribute it worldwide in such a manner, to pay for a volume of investment that can counter the normal cyclic and chronic deficiencies in consumer demand which the market brings in its wake?

The evidence suggests that

- (i) the US, with its continental economy, has created some of the conditions for a double expansion in both the production and consumption of ICT, which does play the potential role of core technology
- (ii) the chronic weakness of US savings, directly expressed in its chronic trade deficit, has meant that this expansion has been achieved at the costs of, rather than by stimulating, the export or reproduction of this wave.
- (iii) This in turn, because of the dependence of the US on capital imports, calls into serious question the sustainability of the present US expansion.

The ability of any country which does not wish to fall victim to the resultant steady competitive divergence provoked by the nature of the US expansion depends crucially, therefore, both on successfully producing and deploying ICT, and on generating the funding to do so independent of the vicissitudes of world capital markets; moreover, effective deployment requires a detailed analysis and understanding of the exact location of the cost-saving and innovation-stimulating benefits of ICT, and of its infrastructural requirements.

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APPENDIX: SOME DATA SERIES

Table 1. **ICT investment**

Total industries, percentages

Canada	France	Western Germany	Italy	Japan	United Kingdom	United States
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Share in non-residential GFCF

IT equipment

1985	6.9	6.1	3.4	3.4	3.4	5.2	6.3
1990	7.3	5.0	3.5	4.1	3.8	7.5	8.7
1996	10.1	6.0	6.1	4.2	4.6	11.7	13.4
Communication equipment							
1985	4.2	4.0	3.7	2.4	0.8	5.2	5.8
1990	5.3	3.8	3.7	3.6	1.5	5.8	7.0
1996	6.1	4.9	4.8	5.4	3.5	6.6	6.5
Average annual rate of growth of constant price expenditure on:							
IT equipment							
1985-90	17.2	16.2	18.8	20.8	23.6	25.5	19.6
1990-96	17.6	11.0	18.6	12.9	14.5	17.6	23.8
Communication equipment							
1985-90	20.6	19.0	18.4	25.6	34.7	20.3	16.7
1990-96	4.3	2.1	3.4	9.2	15.0	2.2	5.1
Price deflator							
IT equipment							
1985-90	-9.4	-10.2	-10.3	-8.1	-12.0	-6.7	-10.4
1990-96	-11.1	-9.2	-10.7	-9.1	-12.5	-9.1	-11.5
Communication equipment							
1985-90	1.3	0.5	0.4	2.7	-1.3	4.0	0.3
1990-96	-0.7	1.2	-0.4	1.3	-2.2	1.2	-1.1
Share of ICT in nominal productive capital stock:							
1985	4.3	2.4	2.9	1.3	1.2	3.6	6.2
1996	5.0	3.2	3.0	2.1	2.3	5.2	7.4

Source: Schreyer (2000:12)

Table 2: average annual rates of growth of real GDP

	Actual Growth of GDP				Actual Growth of GDP per capita			
	1970-80	1980-9	1990-9	1999	1970-8	1980-9	1990-98	1999
		0	8		0	0		
United States	3.2	3.2	3.0	4.2	2.1	2.3	2.0	3.2
Japan	4.4	4.0	1.4	0.3	3.3	3.4	1.1	0.1
Germany	2.7	2.2	1.4	1.5	2.6	2.0	1.0	1.4
France	3.3	2.4	1.4	2.9	2.7	1.8	0.9	2.5
Italy	3.6	2.2	1.3	1.4	3.1	2.2	1.2	1.3
UK	1.9	2.7	2.0	2.1	1.8	2.5	1.7	1.7
Canada	4.3	2.8	2.2	4.2	2.8	1.6	1.1	3.4
Austria	3.7	2.3	1.9	2.2	3.5	2.1	1.3	2.1
Belgium	3.4	2.0	1.8	2.5	3.2	1.9	1.5	2.3
Denmark	2.2	1.9	2.3	1.6	1.8	1.9	1.9	1.2
Finland	3.4	3.1	1.5	3.5	3.1	2.6	1.0	3.2
Greece	4.7	1.6	2.0	3.2	3.7	1.1	1.4	2.9
Iceland	6.3	2.7	2.2	4.4	5.2	1.6	1.3	3.3
Ireland	4.7	3.6	6.3	8.7	3.3	3.3	5.5	7.4
Luxembourg	2.6	4.5	5.3	4.9	1.9	3.9	3.9	3.6
Netherlands	2.9	2.2	2.6	3.6	2.1	1.6	2.0	3.0
Norway	4.2	1.5	3.1	0.8	3.6	1.1	2.6	0.2
Portugal	4.7	2.9	2.4	3.0	3.4	2.9	2.3	2.7
Spain	3.5	3.0	2.1	3.7	2.4	2.6	1.9	3.6
Sweden	1.9	2.1	1.1	3.8	1.6	1.8	0.6	3.7
Switzerland	1.9	2.1	0.5	1.7	1.7	1.5	-0.3	1.5
Turkey	4.1	5.2	4.2	-5.0	1.8	2.8	2.4	-6.6
Australia	3.3	3.3	3.5	4.4	1.9	1.7	2.3	3.1
New Zealand	1.6	2.4	2.2	3.9	0.5	1.7	0.7	3.4
Mexico	6.6	1.8	3.0	3.7	3.4	0.0	1.3	1.4
Korea	7.6	8.9	5.2	10.7	5.8	7.6	4.1	9.7
Hungary	..	..	-0.2	4.5	..	..	0.1	4.9
Poland	..	..	3.5	4.0	..	..	3.4	4.0
Czech Republic	..	..	0.4	-0.2	..	..	0.4	-0.1
EU15	0.9	0.7	1.5	1.8	0.7	0.7	1.3	1.5
OECD24	1.1	0.9	1.3	2.4	1.0	0.7	1.2	2.4

Source: Secretariat calculations mainly based on data for the OECD *Economic Outlook*, No 67