

# What is the New Economy?

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## *Searching a definition*

The widespread usage of the term "New Economy" evokes the impression of a general consensus among the economists using it. However, this term means different things to different people and therefore there is no common definition (Bosworth and Triplet, 2000). Usually the search for a definition brings to broad descriptions of the character and main qualities of the New Economy. In many cases, these descriptions are not more than a general characterization of the macroeconomic performance of the U.S. in the 1990s. According to the Bureau of Economic Analysis the New Economy is described as the expansion of the U.S. economy in the 1990s, characterized by its unprecedented length, strong growth in real GDP and per capita GDP, higher rates of investment as well as low inflation and unemployment (Fraumeni and Landefeld 2000). Driving forces of this phenomenon have been identified as the impact of globalization, the intensified international competition and the impact of technological innovation over the last decades which led to a general improvement in long-run productivity growth (Davies et al. 2000).

Some authors have tried to give a narrow definition to the New Economy in order to be able to conduct empirical studies. According to Gordon (2000) the New Economy is understood as equivalent to an acceleration in the rate of technical advance in IT in the second half of the 1990 decade, without taking into account its contributions prior to 1995. The New Economy is therefore seen as a transformation eradicating the budget deficit, inflation and the business cycle. For Bosworth and Triplet (2000) the New Economy embraces IT, namely computers, peripherals, computer software, communications and related equipment. Being the spread of these new technologies evident both on the demand and on the supply side during the 1990s, the IT is seen as an accelerator of the economy's trend rate of output and productivity growth.

From both the broad and the narrow definitions it appears that the New Economy resembles a transformation to a "knowledge and idea-based economy" in which innovative ideas and technology are the keys to economic growth. Risk, uncertainty and constant change are described to be

the norm in this kind of economy. If the broad definition of New Economy limits the time period, it is not clear though why a whole economy should be identified with only one sector or industry. According to these definitions either all the years before 1990 (Davies et al. 2000) or all sectors outside the New Economy are excluded and referred to as Old Economy (Nordhaus 2000).

The New Economy is often referred to as the “E-economy” (Cohen et al 2000). This term points at the fact that the recent economic transformation is driven by the development and diffusion of modern electronics-based information technology. The E-economy is intended as a structural shift, bringing transformation and disruption, and not primarily as a macroeconomic or cyclical phenomenon. However, it is not about soft macroeconomic landings, smooth growth, permanently rising stock prices, government budget surpluses, or permanently low rates of unemployment, interest and inflation.

What, then, is the New Economy about? There are eras when advancing technology and changing organizations transform not just one production sector but the whole economy and the society on which it rests. Such moments are rare. But today we may well be living in the middle of one. Information technology builds tools to manipulate, organize, transmit, and store information in digital form. It amplifies brainpower in a way analogous to that in which the nineteenth century Industrial Revolution’s technology of steam engines, metallurgy and giant power tools multiplied muscle power. Currently, not a single sector of the world economy is sheltered from the developments of IT. Greenspan (2000) stated that there is, with few exceptions, little of a truly Old Economy left. Virtually every part of our economic structure is affected by the newer innovations. However, since technological developments to date have been based on some former inventions, it is really difficult to draw a line that separates “old” from “new”. Indeed, the telegraph was the predecessor of the telephone and the microprocessor is a further development of the transistor invented by Shockley in 1947. Only the interconnection of computers via the Internet on an international scale represents a development which can be characterized as “new” because it can only be found in the 1990s. This event has surely marked a line and, by sparking a revolution in information availability, given birth to a new kind of economy (Greenspan 2000).

According to Jentsch (2001) the New Economy is any economy characterized by the following features:

- the economy’s information sector contributes more than 25% to the GDP growth rate,
- in the economy’s business sector, the Internet is adopted as an infrastructure for economic transactions by at least 25% of the businesses,
- at least 25% of all households have a computer and access to the Internet.

### *The Telecommunications Industry*

The benchmark of 25% represents a statistical indicator claimed to be large enough to have a significant impact on the economy as a whole (Department of Commerce 2000). The information sector includes here the industries software, hardware, communication equipment and services (Jentsch 2001). This technology-centered definition is based on the assumed novelty of large-scale IT adoption and interconnection. Further, it encompasses quantitative indicators which help to detect and analyze the emergence of the New Economy regardless of time and place as well as to compare it to other economies.

The extraordinary build-out of the communications networks that link computers together is almost as remarkable as the explosion in computing power. The result has been that the New Economy has emerged faster, diffused more rapidly and more widely throughout the economy than previous technological revolutions (Castells 1996, Shapiro and Varian 1999). The New Economy can though emerge in other countries than the U.S. or Europe within periods other than the 1990-2000 timeframe. At present we are in fact witnessing the impact of the New Economy on countries such as China and South Korea.

### *The New Economy and Economic Growth*

The definition described above does not explicitly include the consequences of the technology adoption. The positive development of the U.S. economy in the recent years could be attributed to different factors such as globalization, deregulation, flexible labor markets and an anti-inflationary monetary policy. There is no doubt though that an increasing interconnection and the subsequently increased information availability have altered the growth process of industries. The traditional Exogenous Growth Theory explains economic growth as a result of the accumulation of human capital and technical progress in a world of constant returns to scale and scarce resources. According to the more recent Endogenous Growth Theory (Romer 1986), there are three important elements influencing long term economic growth: externalities, diminishing returns in the production of new knowledge and increasing returns in output production. Companies investing in new knowledge cannot perfectly internalize advances in knowledge such as new research results. Externalities arise when other businesses capture such knowledge spill-overs and use them as a costless factor of production. This means that doubling inputs in research will not necessarily double the amount of new knowledge produced and assimilated and as a consequence knowledge production shows diminishing returns. Further, Romer (1986) assumes increasing returns in the production of consumption goods. Thus it

seems that long-term growth is mainly driven by the accumulation of knowledge, which in turn is enhanced by interconnectivity.

As interconnectivity has led to an increased availability of information, knowledge can be easily accumulated. According to Weitzman (1998) the ultimate limit to economic growth is represented by the ability to process the abundance of potentially new ideas into a productive form and not by the ability to generate new ideas. Therefore, economic growth implies the existence of a complete learning process, where knowledge is not only produced but also assimilated and successfully applied. The key to the successful – and therefore productive – application of knowledge is human inventiveness (Shiller 2000).

However, if knowledge becomes an increasingly important production factor, then intellectual property rights may influence the market structure more than expected. The right to exclude others from using knowledge may in fact lead to temporary monopolies or to market failure, despite free competition or low market entry barriers (Jentsch 2001). Furthermore, externalities such as spill-over effects can be seen as imperfect incentives to invest in knowledge production and therefore lead to market failures. Finally, because of increasing returns, some firms – such as those involved in the production of information goods – might devolve into natural monopolies. Production cost structures based on high fixed costs but almost zero marginal costs (Romer 1990) for each following unit can lead to economies of scale and to potential monopolies.

The above described limits can be at the base of economic downturns. However, since World War II, the U.S. business cycles have changed their appearing: contractions have become shorter, expansions longer, fluctuations in general have become less volatile (Jentsch 2001). Proponents of the New Economy even claim that the U.S. economy is on a steady growth path behind which the main driving factor is represented by IT investments. Apparently the features of these investments enhance the stability of business operations and therefore reduce the volatility of the business cycle. Greenspan (2000) explains that IT investments not only have a capacity-enhancing and cost-cutting effect. On the contrary, being the foundation of the revolution in information availability, they have enhanced learning processes and consequently reduced uncertainty. Market participants are therefore able to react more quickly to changing conditions. As a consequence the whole economy can more easily adapt to external shocks, volatile fluctuations are reduced and contractions as well as recessions are shorter.

### *The New Economy and the Media*

### *The Telecommunications Industry*

Without media though, IT investments would not have led to such a revolution in information availability and to smoother business cycles. Moreover, although news media present themselves as detached observers of market events, they are themselves an integral part of these events. Significant market events generally occur only if there is similar thinking among large groups of people, and the news media are essential vehicles for the spread of ideas (Shiller 2000). Not only limits to IT investments but also barriers to media coverage prevent interconnections to be established and potentially break or hinder the emergence of a network based economy such as the New Economy. Networks have indeed to reach a critical mass in order to become a source of increasing returns and growth (Cohen et al 2000, Economides 2000): the more users participate in the network the more will follow and the higher the value of the network. Metcalfe's law states that the value of a network is proportional to the square of the number of nodes on the network. Therefore, a tenfold increase in the size of the network leads to a hundredfold increase in its value (Shapiro and Varian 1999). Further, the value of products in a networked economy depends not so much on scarcity or production costs, but on plentitude. Pricing of such goods is claimed to be reverse: the more, the cheaper despite increasing quality (Kelly 1997).

Very basic factors such as urbanization are keys to generate population density and make the introduction of IT and media economically feasible. Among the underdeveloped countries the lack of literacy, electricity and telephony hinders interconnectivity and consequently the creation of networks: this is a further critical factor for the emergence of the New Economy and therefore for economic development and growth. The blessing of the information revolution will though not automatically accrue to everyone even in the developed countries. Socially weaker citizens in particular are in danger of becoming the pariahs of the modern information society. Their lack of financial resources, knowledge and skills is said to prevent them from exploiting the advantages of ICT developments, so reinforcing their disadvantage and existing forms of inequalities. This can produce a divide between information-poor and information-rich. In a society in which always greater importance is given to information and communication and thus to ICT, the social participation of these groups of people comes under pressure, thereby endangering not only the economy but also democracy (Frissen 2005).

### *Policy Implications*

A direct policy implication here is that public tasks lie not only in the area of equal access, but also in the field of provision of information itself. Varied, multimedia information provision – which is not guaranteed by the market – and a wide range of communication platforms should be secured in order to

allow citizen participation to the economy. If the new networked media such as online newspapers or digital television are a prerogative of the developed countries, in underdeveloped areas traditional print and broadcast media play a determinant role in enhancing the information society and spreading knowledge. The technological infrastructure needed to bridge the digital divide and therefore to drive the old economy towards the new interconnected economy can only be built through knowledge and financial investments. In this perspective the mass media can be considered as truly drivers of growth and should therefore be subsidized by the governments in less developed countries.

Further, in today's context, government policy toward resources needs to focus on basic research and on human resources. Today's high technology is not the work of self-taught tinkers. Clever engineers working in family garages stand on the shoulders of fundamental, formal, largely academic scientists who created the enormous body of research and development on which the E-economy rests (Cohen et al. 2000). Basic research creates the next technological frontiers. Being close to basic research – having a constant flow of personnel back and forth – is a powerful aid to firms seeking to live on the technological frontier.

The growth of the E-economy requires human expertise and talent to develop, apply, and use new frontier technologies. Everyone needs to know enough about how our modern information and communications technology systems work in order to make effective use of them both at work and at home. Rising differences in wages between those with more formal education and those with less, and between those with more technology-using experience and those with less, are indicators of the magnitude of change and of the potential long-run severity of the problem. This means that government policy should seriously address investments in education in order to eliminate or at least reduce the digital divide.

It is here again the case, as it has always been with technological revolutions, of creative destruction (Schumpeter 1975): the destruction of particular jobs, professions, specialties, and the emergence of new ones. The people who fill the new jobs are not the people who filled the old ones. Hence the shift to the New Economy will not command broad political consent unless government policy is and is seen to be based on the inclusion of everyone in the economic transformation, and the wide diffusion of the benefits. For if the benefits are not broadly understood, broadly seen as accessible, and broadly shared, the durable political coalition to support policies to speed the coming of the New Economy will not exist. And the transformation will be stunted and delayed.

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