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Chapter II

e-Policy:
The Impact and Political Economy of the Digital Revolution

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ABSTRACT

This chapter addresses the issues relating to the development and impact of information and communication technologies and their implications for economic policy. The chapter reviews the growing presence of ICT production and use in advanced economies, despite the current economic environment and the collapse of the dot-com bubble. It addresses the impacts of ICTs on the economy in general, the measurement issues involved, and on product and factor markets in particular. This is followed by a discussion of the implications of ICTs on the design and effectiveness of fiscal and monetary policy, and especially on the different aspects of structural policy. The chapter concludes that by virtue of their ubiquitous nature and economy-wide diffusion, ICTs profoundly affect economic decision-making; they change the effectiveness of different economic policy tools, and force a redesign of approaches in a number of policy areas.

This chapter appears in the book, Social and Economic Transformation in the Digital Era, edited by Georgios Doukidis, Nikolaos Mylonopoulos, and Nancy Pouloudi.

INTRODUCTION

Understanding the impact of the digital revolution requires an accurate assessment of how economic developments and policies are being influenced by technological trends, and in particular by the spread of information and communication technologies (ICTs). ICTs are economy-wide enabling technologies, whose spread and impact has been likened to that of electricity in industrialized economies (David, 1991). Their diffusion is transforming industrial economies into economies directly based on the generation, distribution, and use of knowledge and information, with new methods of production and types of consumption. Nevertheless, their impact on the economy and society is not yet fully understood, nor a comprehensive framework for their analysis developed.

The formulation of such a framework is not an easy task at the onset of a phenomenon that may change so radically the manner of economic activity—not to mention social norms—that are being carried out. It has been said (Wyckoff, 1997) that today's juncture is similar to the one at the beginning of the century when the car was first introduced. Even though then, just like now, it was clear that the impact would be important, specific forecasts were hard to make when very few knew how to drive, most roads were unsuitable for cars, and there were no car mechanics. It could be relatively safely said that there would be a considerable impact on the plastic and steel industries, but who could predict pollution, traffic jams, or the increased geopolitical significance of the Middle East?

The same uncertainties relate to the impact of ICTs on the formulation and conduct of economic policy. Both macroeconomic and structural policies—the two hands of the economic policy-maker—are already influenced. On the fiscal side of macro-policy, tax policy and administration are rapidly changing through the combined effects of new IT-based management tools and electronic commerce. Network technologies that have raised the international mobility of production factors and tax bases are reducing countries' ability to tax and increasing incentives to engage in potentially harmful tax competition (Mann, Eckert, & Cleeland Knight, 2000).

Monetary policy is influenced *inter alia* by the impact that IT and networks have on altering the nature of monetary transactions, and thereby the controls of governments over money supply and monetary policy in general. Finally, structural policy is profoundly influenced by the way that ICTs change the fundamentals on which the economy is based, and thereby change the terms on which policies for entrepreneurship, employment and skills, competition, and regulation are formed (OECD, 1996a).

This chapter addresses the issues relating to the development and impact of ICTs and their implications for economic policy. Its starting point will be a brief overview of trends in ICT production and use, especially in light of the current economic environment and the collapse of the dot-com bubble. It will then address the impacts of ICT on economy-wide growth and productivity in general, and on product and factor markets in particular. This will be followed by a brief discussion of the impacts of ICT on fiscal and monetary policy, and especially on the different aspects of structural policy. The main purposes of the discussion will be to identify the principal channels for linkages between the macro economy and technology, and to assess their importance and implications for policy.