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ANALYSIS

A sustainable perspective on the knowledge economy: A critique of Austrian and mainstream views[☆]

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ABSTRACT

This paper proposes that the current growth-oriented exposition of the knowledge economy in literature is not only monistic but also partial. The mainstream's persistent emphasis on knowledge and economic growth and its neglect of knowledge and other critical issues (such as promoting wealth equalities and environmental conservation) lead to a paucity in terms of the variety of knowledge in the global knowledge commons, which will not fulfill the goal of sustainable development. To maintain a sustainable society with an efficient use of resources, it is necessary to achieve a more equitable distribution of wealth. This type of question, however, continues to be ignored and remains unanswered in both the Austrian analysis of the knowledge problem and the mainstream exposition of the knowledge economy. In this regard, John Stuart Mill's concept of the *stationary state* is in line with contemporary analysis of a sustainable society and is worth further review.

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1. Introduction

Investigations and discussions on the knowledge economy (or knowledge-based economy) have intensified (see, for example, Grossman and Helpman, 1991; Freeman and Polasky, 1992; Jones, 1995; OECD, 1996; Atkinson and Court, 1998; Aghion and Howitt, 1998) since the 1990s. The mainstream exposition of the knowledge economy, however, is epistemologically circumscribed. Knowledge is regarded as the central impetus to economic growth. Yet, one might ask a subsequent question. Do we need to develop a knowledge-based economy to solve serious problems (such as rising wealth inequalities and

environmental degradation) and lead socioeconomic progress to a sustainable society? This type of critical issue, as usual, has been left unnoticed and unanswered in mainstream literature.

The present interpretation of the knowledge economy focuses on the significance of knowledge or human capital for economic growth.¹ Romer (1986, 1990) and Lucas (1988) initiated the recent wave of growth research in the mid-1980s. According to the new growth theory, the advance of knowledge is a crucial determinant of long-term economic growth. Indeed, as early as in the 1960s, Fritz Machlup, late president of the American Economic Association (AEA) and an eminent Austrian economist specializing in the subject of knowledge, has first analyzed

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¹ In the economics literature, human capital and knowledge are frequently used interchangeably and broadly refer to people's acquired or innate abilities that are conducive to productivity and economic growth. For a detailed examination of human capital and knowledge, see Lin (in press) for example.

the “knowledge industries” in his pioneering book entitled *The Production and Distribution of Knowledge in the United States* (1962) and has found that the ratio of knowledge-production to adjusted GNP was almost 29% in 1958. Despite the fact that the share of knowledge production in GDP has been increasing over the past several decades for most countries,² our human societies have been concurrently characterized by serious phenomena such as rising income and wealth inequalities and the global community becoming less and less sustainable.

Clearly, the unifacted exposition of the knowledge economy from the perspective of increased production and accumulation has been far from perfect. Since the Brundtland Report released in 1987, we have begun to inquire into the possibility of global sustainability from an overlapping-generations perspective. Fundamental to this new perspective is the recognition that human generations are interrelated and intergenerational issues such as equity, environmental externalities, allocation of (environmental) resources, and policies for social optimality ought to be critically addressed (see, for example, Howarth and Norgaard, 1990; Howarth, 1991; Babu et al., 1997; Farmer and Randall, 1997; Dasgupta, 1998; Ansuategi and Escapa, 2002; Farmer, 2005).

To develop a sustainable perspective on the knowledge economy, the remainder of this paper is organized as follows. Section 2 reviews the Austrian analysis of knowledge, which is considered the predecessor of the mainstream exposition of the knowledge economy. Section 3 examines the knowledge economy from the mainstream perspective. Section 4 provides a critique of the Austrian and mainstream views. Section 5 analyzes the evolution of knowledge and its impact on human development. Section 6 offers a glimpse of a new vision of the knowledge economy that helps develop John Stuart Mill’s ideal and sustainable society. The final section provides a conclusion.

2. The Austrian analysis of knowledge

The present emphasis of the knowledge economy on the production, distribution and use of knowledge (and information) can trace its lineage directly back to Austrian economist Fritz Machlup’s original research presented in *The Production and Distribution of Knowledge in the United States* (1962).³ Later, Machlup published some other works including *Knowledge and Knowledge Production* (1980), *The Branches of Learning* (1982) and *The Economics of Information and Human Capital* (1984).⁴ His unusual ideas have

² According to the OECD report (1996), more than half of the GDP in the major OECD countries is now knowledge-based. Also, Rubin et al. (1986) provided updated US statistics presented in Machlup (1962) up to 1980.

³ For the development of the ideas of the Austrian school, see Vaughn (1994) for example. Vaughn (1994, p. 36) has mentioned that Machlup’s 1962 work “was an Austrian theme in a neoclassical setting.”

⁴ According to Machlup (1962, 1980), knowledge can be classified into the following five types: (1) practical knowledge, (2) intellectual knowledge, (3) small-talk and pastime knowledge, (4) spiritual knowledge, and (5) unwanted knowledge. In addition, he classified knowledge production into six major knowledge industries and branches: (1) education, (2) research and development (R&D), (3) artistic creation and communication, (4) media of communication, (5) information services, and (6) information machines.

highlighted the significance of knowledge production for economic growth in modern economies and have stimulated subsequent research into the knowledge economy. For instance, 1979 Nobel laureate T.W. Schultz has applied Machlup’s (1962) concepts of education into his important book entitled *The Economic Value of Education* (1963), which later became an underlying basis employed by his Chicago fellow Robert Lucas to develop the new growth theory in the 1980s.

Despite Machlup’s influential study on the subject of knowledge, one can strongly perceive his strong Austrian inclination toward market-oriented knowledge (for economic growth) and his paucity of discussions such as policy-oriented knowledge (for reducing poverty). In this regard, one has to trace his insights from the Austrian literature. The knowledge issues, as seen in the tradition of the Austrian analysis, are a central element and can be traced far back to the early work of the founder of the Austrian School, Carl Menger, in his *Principles of Economics* published in 1871 (Baetjer, 2000). In the 1930s and 1940s, the so-called *knowledge problem* was formally introduced and analyzed by Hayek (see, for example, Kasper and Streit, 1998, chap. 3).

In his 1937 paper “Economics and Knowledge” and his 1945 paper “The Use of Knowledge in Society,” Hayek attacked the traditional assumption of complete knowledge and stressed the nature of the economic problem as follows:

But in our analysis, instead of showing what bits of information the different persons must possess in order to bring about that result, we fall in effect back on the assumption that everybody knows everything and so evade any real solution of the problem... It has become customary among economists to stress only the need of knowledge of prices, apparently because – as a consequence of the confusion between objective and subjective data – the complete knowledge of the objective facts was taken for granted. (Hayek, 1937, p. 49)

The economic problem of society is thus not merely a problem of how to allocate “given” resources — if “given” is taken to mean given to a single mind which deliberately solves the problem set by these “data.” It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge not given to anyone in its totality. (Hayek, 1945, pp. 519–20)

From the perspective of Hayek, the best use of knowledge in society is to ensure that heterogeneous individuals with distinct plans can promptly apply their limited or partial knowledge to cooperate and/or compete with each other in the market. To Hayek, competition means decentralized planning by heterogeneous individuals with limited knowledge (i.e., heterogeneous individuals who possess differential knowledge). Additionally, his notion of equilibrium, in this context, implies a specific situation in which all heterogeneous individuals’ plans are synchronized. Finally, the interactions of all these heterogeneous individuals (best known as the market process or a *catallaxy*) can lead to the creation or discovery of new knowledge.

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