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or divergent trajectories?

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Policies at the technological frontier. Europe and US: the follower's trap or divergent trajectories?

Vittorio Ancarani*

ABSTRACT

After a long-lasting period of economic growth and catching-up efforts with the US technological leadership, in the '90s major European economies entered a trend of slow growth, and patchy technological progress. Studies by Acemoglu, Aghion and Zilibotti, [2003]; Aghion and Howitt [2005] identify the source of this trend in the failure to shift from an investment-based model of growth to an innovation-based one's, deemed mostly appropriate when economic performance takes place close to the technological frontier. This failure may occur because policies fostering catching-up investment-based strategies bring about market rigidities and relatively less competitive environment, which in turn hinder the transition to innovation-based strategies. The upshot brings to a vicious circle, called the 'trap of the follower'. Against this background, the paper investigates what caused European economies falling 'trapped', and what made them unable to cross the frontier. A major paper's argument argues that the failure occurred not so much because they were unsuccessful to get into an innovation-based growth pattern, as some of them get into. When assessing their innovation regime, the paper shows that the failure lies in the adoption of a pattern of incremental instead of radical innovations, as it shows in the technological leader. The case in point is the biotechnology sector in the US and Germany. The paper finds that the different models of economic organization in the two countries affected deeply their respective innovation regimes. In the final section, the paper analyzes some aspects of the European competitiveness deficit, and points to more risky and dynamic systems of innovation, as the way out of the European low growth potential.

INTRODUCTION.

For some time now, there has been agreement amongst economists that technological progress represents the main component in long term economic growth. It is therefore significant, and worrying at the same time, that in Europe the trend of these two factors has been marked by moments of stark discontinuity. After World War II and up until the 70s, there was a higher growth rate in the major countries of the Old Continent than in the United States. In particular, in the '60s and '70s, labor productivity in Europe was systematically higher than in the United States (3,5% as opposed to 1,4% on average in the '70s). Simultaneously, in terms of technological development, there was a process that saw the gap close in progressively on the World Leader,

* Vittorio Ancarani, University of Turin. This article is a slightly revised version of a paper presented at the annual ISA Conference held in New York 15-18 February 2009. I thank Margaret E. Kosal of the Georgia Institute of Technology and the participants to the panel *The Politics of High Technology* for their helpful comments.

the United States. In other words, the main European countries showed great skill in nearing the so-called technological frontier (that is, the level of the most advanced knowledge and technology of the time.)

The success of the post-war model of growth of the European economy was characterized by a strategy of heavy investment, rapid technological development and growing productivity. In particular, the technological development was primarily based on the adoption of technologies that had not been used before, but were already operative in a more advanced technological arena, typically the United States. This strategy was made possible by a set-up of political and economic institutions that emphasize government intervention in the form of policies limiting competition or providing subsidies to major national companies, huge investments, the establishment of long term relationships between banks and businesses, and the presence of a well-prepared work force and technical personnel¹.

In the '80s the success of this strategy was reflected in the conviction, spread widely and accredited by analysts and policy-makers, that Europe (and Japan) were, at that stage, able to challenge the United States for the first place in technological leadership. Towards the end of the decade, this feeling is represented well in the influential report made by the MIT Commission on Industrial Productivity. Academics like Lester Thurow [1992] and Laura Tyson [1992] depict Japan and Europe as success stories to be imitated and they become promoters of active, federal, industrial policies for the United States in sectors such as electronic components, telecommunications and the automotive industry.

Still, contrary to the expectations and diagnoses of the previous decade that forecast an inexorable decline, starting from the mid '90s, the American industry and economy picked up. The 'great U-turn'² was marked by a growth in productivity of more than 3,3% in the period from 1991 to 2005. Paradoxically, some of the very factors that had been indicated as being the weak points of the American economy in the diagnosis made in the '80s, are now seen as sources of competitive advantages and reinforced economic and technological leadership in key sectors such as semiconductors and biotechnologies. In particular, the high turnover of companies in many key sectors or the strong pressure from capital markets for tight financial targets, are

¹ See Acemoglu et alii [2002].

² Blueston and Harrison's words are quoted in Atkinson [2006].