
Preface

Marco R. Di Tommaso

Facoltà di Economia,
Università degli Studi di Ferrara,
Via Voltapaletto, 11 – Ferrara, Italy
E-mail: ditommaso@economia.unife.it

Stuart O. Schweitzer

Department of Health Services,
UCLA School of Public Health,
UCLA, Los Angeles, CA 90095-1772, USA
E-mail: sschweit@ucla.edu

Biographical notes: Marco R. Di Tommaso is Professor of Applied Economics at the Faculty of Economic Studies of the University of Ferrara (Italy), where he teaches Industrial Economics and Policy and Development Economics and Policy. He is the Director of C.MET05 (inter-university centre for Applied Economic Studies, universities of Ferrara, Firenze and Marche Polytechnics). He is Honorary Guest Professor at South China University of Technology and he has held visiting appointments at UCLA. He has been scientific coordinator of many research projects dealing with industrial development policy commissioned by regional, national and international institutions, such as UNIDO, UNDP and OECD. His research interests are in the areas of industrial policy, local development and international industry.

Stuart O. Schweitzer is Professor of Health Services at the UCLA School of Public Health and co-directs the UCLA Research Program in Pharmaceutical Economics and Policy. He earned his PhD in Economics from the University of California, Berkeley. He has worked at The Urban Institute and the National Institutes of Health, and was Senior Staff to President Carter's Commission for a National Agenda for the 1980s, developing health policy recommendations. He has also held visiting appointments at Oxford University, Shanghai Medical University, CREDES (Paris), ESSEC (Paris) and the University of Ferrara (Italy). His research interest is health policy, especially as it pertains to pharmaceuticals, biotechnology and genetics.

1 Introduction

Universities are by definition producers of knowledge. How this academic knowledge is transferred to industry is becoming critically important to three stake-holders: universities, firms, and regional and national governments. The forms of this transfer are varied, including investment by high-tech firms in academic research and programs,

university granting firms rights to use patented knowledge through royalty and licence payments, and the creation of high-tech spin-off firms clustered around universities. Little is understood at present of what policies undertaken by universities, regions, and national governments are successful in promoting this transfer and which are not. What is known, however, is that some countries, some regions, and some universities are much better than others in this process. This is why it was decided to solicit contributions from scholars dealing with these issues from a wide variety of universities and countries (including USA, Germany, Italy, Israel, Spain, Finland, and China). Contributions have been selected if they deal with the above described broad scenario or if they cover single related topics such as case studies of: university-firm collaborations; national and regional government policies; university 'best practices'; clusters of companies, universities and hospitals; networks of laboratories, academic institutions and entrepreneurial partners. Our inquiry is about academic production and transfer in general but it focuses primarily on the health industry, not only because of its size in most countries, but because it is, in many ways, central to the broader high-technology sector that is of particular interest to so many industrialised and emerging economies.

The experiences reported in this journal underline that there is no single 'best practice' to promote academic knowledge transfer. Rather, the experiences from many universities and countries illustrate how successful programs adapt to their environment.

2 This first issue¹

The first paper, by Marco R. Di Tommaso and Stuart O. Schweitzer, discusses the general issues involved in transfer of academic knowledge. The roles that can be played by universities, firms, and government, to facilitate successful transfer are discussed. It is pointed out that if measures are undertaken that alter academic goals and priorities, it is possible that these changes will entail unintended consequences, some of which will be harmful to other academic, economic and social goals. Recognition of the costs of knowledge transfer policies will encourage all three parties to think about these complex tools in new ways.

The second paper, by Aaron Tremaine, Kathryn Atchison, and Christian Behrenbruch, discusses the role that knowledge transfer has played in the impressive growth of the high-technology sector in California. Unlike states with only a few clusters, a number of strong economic clusters have emerged over time in California and evidence suggests that the state has assisted these formations around research universities. The authors note that California may now be losing its economic leadership position, a position that was fostered by an entrepreneurial and performance-driven ecosystem. Within this system, universities were instrumental in not only educating a workforce and creating partnerships with industry, but also transferring technology to the public, and thus catalysing significant industrial activity around these institutions. The authors suggest that continued prosperity will require California to align the traditional concepts of industrial recruitment and labour management policy with the entrepreneurially driven economic policies that have shaped California's success for the past several decades.

California's current business climate, viewed in terms of its tax policies, regulations, and work ordinances, is generally viewed as inhospitable to business.

The third paper, by Elisa Barbieri, focuses on the crucial issue of policy evaluation. In the US experience, the Bayh-Dole Act has been considered as the major cause of an increase in technology transfer through university patents. It is interesting to highlight that the Bayh-Dole Act has also strongly influenced policy makers of many European countries that in the same years were elaborating their regulations on university-business relations. Nevertheless, a much smaller amount of empirical evidence has been produced in Europe, compared with the USA, on the effects of such policy changes. In addition, such evidence rarely takes into account forms of technology transfer other than university patenting. The paper highlights how unexpected adverse effects can arise from Bayh-Dole-inspired reforms in Europe and suggests ways to take these into account when designing policy evaluations as well as policy interventions.

The fourth paper is written by Marco R. Di Tommaso and Manli Huang, and it focuses on China. The authors discuss an unusual case study – the close relationship between a producer of Traditional Chinese Medicine (TCM), a major university and a network of hospitals. The TCM industry is experiencing a process of radical re-organisation, upgrading, and modernisation. The Chinese government is investing in the industry, hoping to promote its development both domestically and for export. It is trying to defend domestic producers from potential foreign entry and more generally because this sector is judged as one of the key industries able to lead the development of domestic production capacity. In this context the processes of TCM knowledge production and transfer to industry is at the core of all the on-going government policies and firms' strategies. The paper focuses on this scenario and it offers a case study that is considered a best practice from both the firm strategy and the public policy perspectives.

The fifth paper, by Lita L. Nelsen, considers the relationship between one of America's premier high-technology universities, the Massachusetts Institute of Technology (MIT), and the greater community. Nelsen refers to this combination as an 'entrepreneurial eco-system'. The author describes the Boston area as a hotbed of entrepreneurial companies spinning out of the region's universities and research hospitals, with MIT playing a leading role in the development of these technology clusters. The Institute's long history of interactions with industry and of professors founding companies has led to the development of a culture in which university researchers, industrial scientists and entrepreneurs, and venture investors interact on a continuing basis. Acceleration of spin-outs came with the passing of the Bayh-Dole Act and the use of patents and other intellectual property to formally transfer the results of academic research. Of particular interest in the paper is the description of a number of entities that have been formed on campus to aid potential entrepreneurs, all of which involve volunteers from the business and investment community. This continuing interaction with the surrounding business community, coupled with the volume of state-of-the-art academic research, has led to the entrepreneurial ferment of the region and transformed its industrial landscape.

The sixth paper in this issue is authored by Laretta Rubini. The author studies the transfer of knowledge in science-based research networks, with particular reference to the effect of international networking on the quality of research. A high quality basic research system is the base for the establishment of effective mechanisms of knowledge

spillovers and diffusion within the academic and to the productive world. The impact of international networking on the quality of research is analysed by means of an innovative empirical model applied to data on the public research laboratories dealing with genetics in the Emilia Romagna region of Italy.

Note

¹A second group of papers on “Academic knowledge production and transfer” will be published in *Int. J. Healthcare Technology and Management*, Vol. 11, No. 5, 2010.