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## **Preface**

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**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.

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## **1 Introduction**

In this issue we publish a second group of papers on Academic Knowledge Production and Transfer.<sup>1</sup> In this second part we concentrate more on the role of universities in this process and again we have selected contributions based on the experiences of many countries (including Germany, Israel, Finland, China, Spain and Italy). As argued previously, the papers illustrate the principle that there is no single 'best practice' for universities to follow with respect to intellectual property and its transfer to industry.

Universities are all different, and so are countries and regions. And of course so are firms, themselves. What we can see, however, is that some universities have been unusually creative in crafting policies to suit their environment, and these experiences should be understood as universities try to promote their own knowledge transfer process. The experience reported in the following manuscripts, as well as those discussed in the previous journal issue should be studied, not only for what they suggest *ought* to be done, but as well for what they suggest *ought not* to be done. Not every effort was equally rewarding, and universities have learned over time what policies appear to work better and which work less well.

## **2 This second issue**

The first manuscript is authored by Sebastian Gurtner, Claudia Lehmann, Stefan Pieck, Michael Schefczyk, Roland Sauerbrey and Michael Baumann. The authors attempt to give an insight on how technology and knowledge transfer is incorporated by research facilities. They present evidence from a particular project at the University of Dresden, the OncoRay Center for Radiation Research in Oncology. This unit actively fosters the transfer of research activities into commercial products. The authors discuss the motivation of the partners, research activities and transfer strategies. The cooperation portfolio and the structure of the centre are also discussed.

The second paper is authored by Yehuda Niv and Hagit Messer-Yaron, from a university that has been particularly successful in fostering the transfer of knowledge to a world-wide group of industrial customers. The authors describe the technology entrepreneurial process as it is realised in a research university in Israel (Tel Aviv University), and demonstrate that successful processes rely on a synchronised effort of the researcher-inventor and the university's commercialising entity (Ramot at Tel Aviv University Ltd.). The process is shown to be further enhanced when actions are taken to bridge the development gap that exists between the scientific-based novelty provided by the university, and the application-proven requirements of the industry.

The third paper is written by Jianzhong Hong and Heidi Olander. The paper examines the roles of formal governance and informal social networking in university-industry knowledge interaction in the context of high-tech multinational corporations. The issue is approached by conducting a critical literature review with empirical cases from Finland and China. Previous studies on university-industry collaboration focus primarily on one-way technology and knowledge transfer. This study argues that, especially in the cross-cultural context of high-tech multinational corporations, more interactive types of knowledge interaction should be of key concern where there are various challenges of informal governance that include, for example, interpersonal trust, mutual commitment, frequency of communication and interaction, and awareness of cultural and knowledge-related gaps between collaboration partners.

The fourth manuscript, by Jie Zhang, Ruxi Gao and Xiaojun Wu, discusses a famous hi-tech park for biopharmaceutical firms in Shanghai, whose formulation and growth are all sponsored by the government. After presenting background analysis of the biopharmaceutical industry, the authors focus on this park, called Pharmacy Valley. With detailed analysis, they hypothesise that although the government has given the industrial district intensive support, the cooperation network among firms is still far from well set up, the financing channel is under-built, and the aggregation is only in the

primary stage. For all the firms in the Pharmacy Valley, the development gap is found to be substantial, as are the innovative capabilities and industrialisation level compared with multinationals.

The fifth paper is written by Oihana Basilio and M. Paloma Sánchez. The authors describe the substantial internationalisation process between firms and universities in recent decades. They suggest that this follows the more general trend of internationalisation of university activities. In order to study these changes and suggest a framework to analyse the internationalisation of universities, this paper applies a novel taxonomy for techno-globalism to the internationalisation of knowledge and integrates it with the different university missions: teaching, research and third-mission. After providing some examples of governmental programmes to encourage such internationalisation using the proposed framework, the paper studies the Spanish case, with an emphasis on the knowledge-transfer to industry and the move towards internationalisation of university-industry relations.

The sixth manuscript is written by Marco R. Di Tommaso and Laura Ramaciotti. It focuses on academic spin-off in Italy and it offers an overview of the Italian debate both in academic and policy-making circuits. National and regional policies are analysed and then university practices are described in detail. The paper also presents data on how in Italy, in the last decade, the number of spin-offs has quickly grown. Looking at the future, the authors argue that, at the base of the ability of Italian universities to produce and transfer knowledge, is the revision of the existing incentive mechanisms (to the single researcher, the faculty, the department, hospital, ...) and of the university's performance assessment. Within this context the regulations concerning the spin-offs and the academic research property rights have a clear impact on the incentive mechanisms for the single researcher that, on a more general level, have an impact on the performance of each single university and, therefore, of the entire national academic system. The incentive mechanisms applied so far on a national or regional level or by individual universities have brought up a new phenomenon that has to be considered crucial for the country. However, it is also clear that academic production and transfer should receive continuous attention in order to produce further significant effects on the national economic system.

## Note

<sup>1</sup>A first group of paper on 'Academic knowledge production and transfer' was published in *Int. J. Healthcare Technology and Management*, Vol. 11, No. 4, 2010.