

**Out-licensing and the development of the Portuguese pharmaceutical industry**Rafael Barbosa¹, Luís Fonseca¹, Pedro P. Barros¹¹NOVA School of Business and Economics, Lisbon, PORTUGALContact: mst14000419@fe.unl.pt

Objectivos (Objectives): Most firms in Portugal today do not meet the criteria required to carry out this activities on a sustainable basis since they are small and have great difficulty in reaching crucial foreign markets to ensure the financial success of this type of endeavors. This paper looks at the pharmaceutical R&D in Portugal and is divided in two parts. One focused on the description of the evolution and current state of pharmaceutical R&D in Portugal and another focused on possible future development paths.

Metodologia (Methodology): In the first part, we address the evolution of pharmaceutical R&D in Portugal over the last ten years in several dimensions, such as patents and subsidies, to search for any positive improvement in this area. For this, we analyzed mostly publicly available data. In the second part, we build a theoretical perspective on out-licensing strategies and present a few success cases in Portugal. Out-licensing is a contract based on selling the commercial license for a product still in development to another company that becomes responsible for the commercialization of that product. This is a risk sharing tool that can potentially help to circumvent the previously mentioned challenges faced by the Portuguese pharmaceutical firms. To ascertain the theoretical efficacy of out-licensing as means to increase the potential for R&D in Portugal we resort to the analysis of a game with multiple stages and increasing information in each stage that mimics the risk reduction as a pharmaceutical compound progresses through the several stages of clinical trials.

Resultados (Results): BIAL appears to be the only firm that matches the size and structure required to triumph sustainably at an international level through the creation of 100% Portuguese products. Relating to subsidies we clearly find BIAL to be the main recipient over the last years, despite the total amount still being very modest, taking into account estimates for the total cost of developing a brand new drug. Concerning other firms, policy has seemed to favor a more dispersed support to many firms rather than one concentrated on few projects that are deemed more promising. In relation to the second part, we describe under what conditions the participation in out-licensing agreements can provide a way to surpass the issue of scale for full-line R&D development of new products in the pharmaceutical industry.

Conclusões (Conclusions): We discover that, even though the outlook concerning new projects and State support has been improving in general, optimal conditions for a natural blooming of pharmaceutical R&D in Portugal are still far away. Regarding the second part, we identify Out-licensing as a credible tool for the development of Pharmaceutical R&D in Portugal.