

**THE IMPLEMENTATION OF A DOUBLE DEGREE  
IN POLAND AND ITS CONSEQUENCES  
FOR TEACHING QUANTITATIVE COURSES**

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**Abstract.** The Bologna process has created new opportunities for bilateral agreements between universities. One of the results of such a contract could be a double degree certificate which consists of two independent diplomas that are offered for the students who participated in an exchange. Programmes that involve strong quantitative courses have started to be interesting for universities with a quantitative approach which is connected with the recent disturbances in the financial markets that caused a big increase in demand for specialists from the risk measurement and management area. Additionally, a possibility of exchange highly improves the attractiveness of the programme. The aim of the paper is to show the benefits of the Bologna process for universities and students based on the example of the Master studies' curriculum offered by one of the Polish universities.

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## 1. Introduction

One of the main goals of the Bologna process since its very beginning has been to enhance mobility that provides substantial added value: wider competences, knowledge and skills, foster the internationalisation of higher education and promote employability through international experience of graduates [EHEA 2012].

The process of matching various systems of European higher education and creation of – as a result – European Area of Higher Education, covering several steps to enable students' exchange through:

- the adoption of a two-cycle system that covers the 1st cycle of study (whose duration cannot be less than three years) and the 2nd level cycle available only for those who graduated from the first cycle,

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- a system of academic credits – based on the ECTS system,
- the implementation of a Diploma Supplement that allows to recognize and understand qualification,
- removing barriers for the free circulation of students, lecturers, researchers and technical-administrative personnel.

The above mentioned support allows to develop a cooperation between academic institutions through the integration of study plans, mobility programmes and the development of bilateral collaboration. One of the outcomes of such cooperation are joint-degree or double degree programmes which offer the same or similar curriculum in the universities involved in the consortium.

As an example of a well-functioning cooperation, an English taught Master studies in Quantitative Asset and Risk Management are taken into account. The main area of the studies – field of finance and risk management – has gained an increased importance through the on-going financial crisis. The global search for an “efficient and sustainable financial system” underlines the need for highly skilled experts in finance at an international level [European Commission 2010, p. 8]. At the same time, the growing internationalization of the world of work also increases the demand for international and intercultural competences on the labor market. These competences can be enhanced through international mobility.

The structure of the paper is as follows. The first chapter briefly describes the benefits of the Bologna process for the creation of a double degree agreement. The second chapter shows the example of the creation of a quantitative multiple degree in Poland.

## **2. Double degree in the Bologna process. The case of Poland**

To create a double degree agreement there is the necessity to establish a partnership between universities that is based on specific expertise, academic profiles and competencies to foster synergies for future activities. It is expected that partners from the higher education sector have a long-standing experience in international cooperation. Close collaboration at organizational level allows to create professional ties between the individual experts (research, didactics) while previous joint activities provide a fertile ground for this newly set up strategic partnership.

Generally, a partnership of universities begins when the educational institutions throughout Europe have been chosen. The consortium aims to enhance the quality and attractiveness of international student mobility

usually through establishing innovative structured mobility paths (specialization streams) and attractive double/joint degree options. A focus on the double degree criteria makes the consortium carry out some preparations. The set of specific objectives usually involves:

- clearly structured mobility paths and specialization options (with the duration of at least one semester),
- linking specialization options with the academic profile of the participating institutions,
- a new practice oriented course concept (including company case studies),
- an efficient recognition of the qualifications and credits gained abroad.

The project partners should be carefully chosen and assembled on the basis of their specific expertise, academic profiles and competencies to foster synergies for the project activities. While all participating higher education institutions have a renowned academic profile in finance and risk management, the project of the consortium has a largely strategic orientation due to a high level of complementarity and the active inclusion of labor market representatives. This is reflected in the following aspects:

Study programmes in finance and risk management face particular hurdles when trying to internationalise. It comes as no surprise that the academic field of quantitative finance and risk management is a highly focused one. While many higher education institutions run broad programmes in business administration, the number of focused programmes in finance and risk management is relatively small. Against this background it often proves difficult for higher education institutions in this field to find appropriate partner universities for high quality student exchange. This makes high quality mobility – which is a challenge for many institutions – an even greater challenge for programmes in finance and risk management. At the same time, the individual experience of the consortium members proves that there is a high demand for international mobility options among students at the involved institutions. Furthermore, we noticed a great interest among students to deepen their knowledge in a specific subject area towards the end of their study periods.

In the case of Poland, the consortium combines the traditional universities with a stronger focus on fundamental research and the universities of applied sciences. The programme was jointly developed by a consortium of four higher education institutions from Austria (University of Applied Sciences bfi Vienna), Italy (University of Bologna), Poland (University of

Economics in Katowice) and Romania (Alexandru Ioan Cuza University of Iasi). In addition to the already mentioned higher education institutions, four companies have agreed to cooperate with the consortium. In contrast to the traditional research universities in Bologna, Katowice and Iasi, the University of Applied Sciences of bfi Vienna puts a stronger emphasis on the practice-orientation of its higher education. This is also reflected in the track record of close cooperation with labor market representatives. The individual academic profile of the participating higher education institutions is directly linked to the thematic specialization options and mobility paths for students in the network which will be offered in the framework of the project. This complementarity provides significant added value for the project implementation and the participating student population.

The geographical coverage was considered when assembling the consortium. The project combines higher education institutions from Western European and Eastern European countries, which allows for additional synergies beyond the individual specialization paths. Broadly speaking, Katowice and Iasi provide a unique transition experience in Eastern Europe, which is of high relevance for the Western European partners: many Austrian and Italian companies in the financial industry play a very active role in these countries. Hence, there is a substantial need for skilled graduates with experience in this field.

The project goes beyond a traditional academic cooperation project and actively includes labor market representatives. Relevant industry representatives for each specialization path were included already during the application preparation stage. They agreed to provide concrete case studies for the individual specialization paths and will in turn be enabled to increase ties to skilled graduates in the field (see the attached letters of intent).

All partners from the higher education sector have a strong track record in international cooperation and long-standing experience in implementing EU projects. Close professional ties between the individual experts and previous joint activities provide a fertile ground for this newly set-up strategic partnership. All universities develop a double degree programme based on their existing master programmes in the field of finance and risk management and implement Erasmus staff mobility on an on-going basis. Furthermore, they have implemented several waves of Erasmus staff mobility for academics and administrative staff.

### **3. Quantitative programmes and their recognition**

With a background of both theoretical and practical knowledge concerning the present aspects of the financial system, the consortium have prepared an innovative programme. Focused on integrated aspects of risk management, it covers the most current and important topics from financial markets.

Additionally the programme focuses on the practical side of modern risk management confirmed by professionals from the financial industry who are to be involved in the programme. This bilateral cooperation allows to improve the quality and increase the integration between the consortium of universities and enterprises.

The consortium builds strong connections between academia and enterprises, the focus of the program is on the practical application of theoretical knowledge in the finance industry, specifically banks. This objective is reached by active cooperation with experts from the industry who will support the courses offered in the program. Similarly, the consortium builds close links with the vocational education qualifications available in the finance industry, specifically international exams like CFA and FRM. Representatives of these associations will be also included in the program and the program will therefore prepare the students for the successful completion of the relevant parts of these qualifications.

To improve the effects of the programme, the universities in the consortium have signed Erasmus agreements which allow easing the exchange of ECTS points. The ECTS points received by participants will be treated as a part of their Master Studies programme in their host universities. Additionally, teaching materials prepared by teachers for the participants are to be offered on a special e-platform.

With the need for knowledge of advanced methods in risk management, the programme is based on the quantitative background of the participants. Along with the lectures which are originally offered by teachers in their host institution, the consortium extends the programme by the practical aspects of risk management. A focus on a multidisciplinary approach to financial market is an alternative and innovative proposal for the serious consequences of the global financial crisis. This is why the programme covers also law and ethical aspects as an additional academic discipline. Understanding that ethical standards play an important role in the modern world, the programme is open also for students from different backgrounds (e.g. Business and Law) who can participate in some of the lectures and receive the relevant amount of ECTS points.

Generally the programme focuses on:

- a multidisciplinary approach to risk management which demonstrates an interrelation between quantitative methods and behavioral, ethical and legal aspects,
- a transition of experiences between emerging and developed markets, and between business and academia to improve knowledge and to increase the potential of the participating institutions,
- a promotion of multicultural experiences and international relations,
- utilizing ICT services and practice to create and develop the attachment of students, teachers and experts as a basis to extend and sustain the cooperation.

The analysis of the job market shows that there is a lack of alumni who have a practical knowledge of the quantitative methods used in financial markets and are experienced in multicultural cooperation. Because of the increasing globalization on the financial markets, it is also important to give students a chance to meet experts and students of other backgrounds and gain a comparative perspective. Additionally, the crisis of trust made investors verify the existing law and to establish new ethical standards. Understanding the importance of students' needs and facing the demand from the job market, the universities in the consortium decided to develop their partnership through a programme based on their experience. The programme responds to the identified problems by focusing on the following specific objectives:

- to emphasize the interrelation between the quantitative methods and the practical aspects of risk management,
- to enhance students employability prospects by developing their language skills, ethical standards and management practices through the opportunity to learn from experts,
- to exchange the experience between emerging and developed markets, between business and academia to improve knowledge and to increase the potential of the participating institutions,
- to develop an attractive and innovative method of learning in order to motivate them by including a combination of tools (printed materials, e-learning and Internet feedback),
- to create a network of scientific collaboration and research in the field. The programme is to contribute to the faster integration of universities (students and teachers) by offering them language acquisition, multidisciplinary projects, workshops in an international group and culture familiarization.

The evaluation of student's achievements will take place during the courses and after the end of the course. After the end of the course, the evaluation will take place in the form of a written final exam. The mean of the two scores will give the final grade for each student. The Student Office in the host university summarizes the information about students' performance at the end of the programme and issue transcripts for all participating students. All partner institutions use the ECTS credit and have long experience with cooperation and recognition of studies within the Erasmus exchange.

Students who successfully complete the programme have knowledge about the coherence between asset and risk management in banks, are familiar with the organisation of risk management, reporting systems and the concepts of risk-oriented pricing on a wide basis and also for single risk types, know the advantages and disadvantages of the various risk adjusted performance measures (RAPM), know how to control risk of single instruments and portfolios by the means of derivative instruments. The direct cooperation with industry in finance and risk management will enhance the labour market relevance of the Master programmes. Through these measures the quality of higher education for students in the given field will increase.

#### **4. Conclusions**

The created programme in quantitative finance differs from the existing teaching programmes mainly through employing experienced teachers from the business area. Because the programme stresses the necessity of quantitative skills in the modern financial market together with the importance of ethical standards, this interdependence is the most valuable innovation. The strong connections between theory and practice, the collaboration between academic and professional experts, and the cooperation among students of various backgrounds show the added value of the programme.

The expected learning outcomes are strongly connected with the structure of the programme. International groups of students with the necessity of being open to new customs, traditions and ways of life allows support their social competence and cultural awareness and expression. The presence of teachers from business and industry builds their ability for initiative-taking and entrepreneurship. Teachers who come from both emerging and developed countries are able to exchange their experience at both didactic and practical level.

The consortium, as well as a set of double degree agreements, bring significant added value to the courses that exist locally in each participating institution.

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