University of Pittsburgh & Comenius University

ECONOMICS EDUCATION:
Saving and Sustaining a Project

project partners

Department of Economics
University of Pittsburgh

Faculty of Mathematics & Physics
Comenius University

I. Introduction

The University of Pittsburgh began its cooperation with Comenius University in January 1997. Comenius University is the second partner for the MTEE Program in Slovakia. Due to severe problems of nonperformance by the first partner, the MTEEP was moved at the end of 1996, requiring an interruption in the Economics Education component of the project from January to May 1997.

The nonperformance of the first partner university was pervasive. There was serious nonperformance with respect to every important aspect of the project. The problem of nonperformance had a number of roots, but the taproot is concisely characterized by Cathy Ashmore on page 56 of the proceedings volume of the Lessons Learned Conference (held at the Warsaw School of Economics in 1996) edited by Bogdan Radomski et al.:

> *We had some partners that wanted just the money, and this is what we had to look at immediately. When they did not want to do what the goals and the project were about, and they only wanted us to give them money, then there was no possibility for partnership.*

After almost 16 months of a sort of partnership, and 8 months of intense discussions, negotiations, and other efforts to get the project on track, USAID and the University of Pittsburgh had to face the reality that only two viable alternatives existed. One was to abandon the project and for USAID to redirect its grant funds. The second was to try to re-establish the project with an alternative Slovak university partner. The USAID and the University of Pittsburgh agreed to take the second option. The second option meant that the task had become an effort to both save a project and build it into a sustainable, productive, and high quality project in Management Training and Economics Education.

The change in partners resulted in the Department of Economics (hereafter the "Department") of the University of Pittsburgh linking up with the Faculty of Mathematics and Physics (hereafter "FMPH") at Comenius University for the purpose of establishing an education program in modern economics in Slovakia. Planning for the new cooperative relationship with the new partner began at the end of 1996 and intensified in the early months of 1997.

Three years prior to entering into a cooperative relationship with the Department, the FMPH established a new program in the Mathematics of Economics and Finance (MEF). The program was an exercise in educational entrepreurialism by the FMPH and the program's founder, Professor Pavol Brunovsky. The MEF program was well defined with regard to Mathematics but was not so well defined with regard to Economics and Finance. The reason for the asymmetry was that the FMPH did not have any economics or finance faculty members, and therefore it did not have any internal authority to provide for guidance in fleshing out the economics and finance portions of the curriculum. The entrepreneurial insight of Professor Brunovsky was in recognizing a need for the program, and his risk-taking challenge (and that of the FMPH dean)

was to move ahead while trying to solve the problem of how to define and staff the economics and finance side of the program. His insight was stimulated and justified in part by the establishment of Master's level programs in the mathematics of finance in recent years at universities such as University of Chicago and Carnegie-Mellon University.

Because there were no economists in Slovakia who were fully up to date in the various methods and models of modern economics and finance, or even reasonably informed in an empirical sense about the workings of market economies, the program was begun by relying on the voluntary support of a few Austrian economists who commuted from Vienna. This support was very limited both in the number of people involved and in the amount of time they could make available. Moreover, none of the volunteers could assume any leadership role for the economics and finance side of the program. But it was possible to begin the program by putting the bulk of the mathematics content in the first three years of the five year program, and the bulk of the economics and finance content placed in years four and five of the program, with year three being something of a transition year. This structure allowed the FMPH to start the program with a degree of entrepreneurial optimism that sufficient support could somehow be found during the first three years of the program's existence to fill the faculty needs in economics and finance.

The optimism about the MEF program was well founded with regard to demand. The original program concept was for a very small program enrolling only twenty (20) students per class or a steady state enrollment of one hundred (100). The reason for the low enrollment limit was that the program was intended to be an elite program, and it was not clear how strong the demand would be. But the first year provided a rewarding response in that there were over fifty applicants, most of whom were well qualified. The demand grew in each of the two succeeding years as the information about the program spread. In the third year, as the number of applicants grew to more than two hundred, the decision was made to adjust the annual enrollment higher, but not so high that the program would lose its elite character. After the third year the annual enrollment limit was raised to fifty (50) students per year as the application rate has grown to exceed three hundred per year.

It was serendipity that the MTEEP in Slovakia needed to be restructured around a new partner in 1997. But it did, and both the Economics Education and the Management Training components of the project found natural partners at Comenius University. In the early 1990's Comenius University had founded a new program in management studies and a new Faculty of Management (FM). The curriculum of the FM was incomplete in that it did not have an MBA program and was immature in that the FM did not have significant faculty depth in either training or practical experience with regard to modern methods and theories of management. Also, the new program in management had an English language emphasis just like the MEF. Further, both the FMPH and the FM could readily adapt to the goals and commitments of the MTEEP in Slovakia and agreed to do so. So the MTEEP was shifted to Comenius University, and the risk-taking behavior and optimism of Professor Brunovsky and the FMPH were justified.

II. Events in 1997

The shift of the MTEEP in Slovakia from the initial and nonperforming partner to Comenius University was done without altering any of the objectives or scope of work of the University of Pittsburgh project. On the Economics side of the project the objectives were and are:

* To establish a core cadre of Slovak faculty with research and analysis capabilities competitive with high quality international graduate faculties in economics via a special Faculty Professional Development Program in Economics

* To establish a Slovak capacity to sustain a similar Faculty Professional Development Program (FPDP) in Economics for other university faculty members in Slovakia after the USAID-Pittsburgh assistance ends

* To modernize undergraduate education in economics in Slovakia

* To establish modern and internationally competitive doctoral level education in economics in Slovakia

* To establish an improved domestic capacity for economic policy advising and analysis in Slovakia.

Before the shift of the MTEEP-Slovakia project to a new university partner was formally approved by USAID, the curriculum of the MEF and student requirements were reviewed and revised. The revisions centered on completing the definition of the Economics and Finance half of the curriculum. A copy of the curriculum that has since been approved is included in this report as Appendix A.

Some brief highlights of the revised curriculum are:

1. The MEF is a five year program, consisting of three years work at the baccalaureate level and two years at the masters level;

2. Most of the mathematics and statistics courses are taken in the first three years;

3. Most of the economics and finance courses are taken in years four and five;

4. Students take a total of fifty-four (54) credit hours in economics and finance, including three credits in financial accounting and four credits in Insurance Theory;

5. Thirty-six (36) of the above mentioned fifty-four credits are in standard courses in economics;

6. In years four and five students must take three sequences of courses (three fields) from

among the following choices ---

a. Financial Markets,

b. Advanced Financial Mathematics,

c. Public Finance and Choice Theory,

d. Game Theory and Economic Experiments,

e. Industrial Organization and Regulation,

f. Economics of Information,

g. International Trade and Finance.

In addition to completing the definition of the program and its economics and finance content, the Faculty Professional Development Program (FPDP) in Economics was redesigned. The venue of the FPDP was changed as part of the redesign. The new FPDP involves faculty members from the FMPH going to the Department at the University of Pittsburgh for two academic years. During those two years the faculty members from the FMPH take the standard first year doctoral courses in Microeconomic Theory, Macroeconomic Theory, and Econometrics, and must elect at least two optional courses. In the second academic year the visiting Slovak faculty must complete two optional field specializations and can elect a third in economics or another discipline. In addition, in the second year the Slovak faculty must define and begin a research project in economics. During both years the Slovak faculty participate in all courses as regular students, i.e., must take and pass all exams, perform all homework assignments and projects, and receive grades according the same standards as the regular PhD students in Economics.

Since a two academic-year stay is not sufficient to allow the completion of the full PhD program in Economics (it would be impossible to do all the course work, pass all the comprehensive exams, and do a PhD dissertation in two years), the Slovak faculty can elect to receive Master's degree in Economics during their visit. Among the requirements they must meet to obtain the Master's degree is the condition that they take the doctoral comprehensive exams in Microeconomics and Macroeconomics.

The goal of the FPDP in Economics is to develop twelve to fifteen faculty members who:

1. will be well qualified to teach the economics courses in the MEF curriculum;

2. are capable of successfuly conducting research in economics whose results would meet the standard required to merit publication in international peer reviewed journals; and

3. are capable of passing on their newly acquired knowledge to colleagues by conducting doctoral level courses similar to those they participated in at the University of Pittsburgh;

4. can provide competent policy analysis and advisory services.

These faculty will be the core cadre for the MEF and the core economics cadre for a Joint Center in Economics and Management to be established at Comenius University. The joint center will support for continuing the MTEEP faculty development efforts in economics and management for other Slovak faculty from any Slovak university, and for research in economics and management.

A core cadre of twelve to fifteen full-time faculty members is the equivalent of a modest sized department of economics at an American university. For example, the top-twenty departments of economics at the University of Rochester and at Carnegie-Mellon University have always had a full-faculty of the same or smaller size. It also is interesting to note that establishing a full-time faculty cadre of twelve to fifteen faculty members within three years would mean that the MEF program would have more full-time local faculty than the CERGE program has established in seven years, and as many full-time faculty members when including all full-time faculty members (visitors plus local and non-Czech full-time faculty members). Thus the Economics Education component of the MTEEP-Slovakia project will provide the FMPH with a core cadre that is more than adequate for generating its own second generation of teacher-scholars.

The opportunity to participate in the FPDP in Economics was advertised among the faculty members of the FMPH in March 1997 and a final selection process was conducted in May 1997. The selection process included interviews by a joint committee of the FMPH and the Department. The joint committee then recommended a subset of the applicants to the Department's standing Graduate Committee which in turn reviewed the applications and was required to provide its recommendation to the Dean of Graduate Studies for admission of applicants to graduate study in the Faculty of Arts and Sciences at the University of Pittsburgh. Fifteen applications were received and five applicants ultimately cleared the review and recommendation process, and were accepted for doctoral studies in the Department.

The five successful applicants began their FPDP programs at the Department in Pittsburgh at the end of August 1997. Two women and three men comprised the group. The two women were advanced graduate students in doctoral programs (one in Statistics and Econometrics and one in Computer Graphics). All three men had their doctoral degrees, two in Physics and one in Mathematics.

At the end of the fall 1997 semester one of the three men returned to Slovakia and did not return to the University of Pittsburgh because of health problems.

III. Events So Far in 1998.

Four of the original five participants continued their first year program in the FPDP in Economics during the spring semester of 1998. The fifth participant did not continue. But a new and sixth participant was received at the Department for a special one semester FPDP.

The sixth participant was selected for a very special task. The sixth participant has a doctorate in mathematics and had worked for two years in the private sector for a software development firm. His assignment is to spend a semester at both the University of Pittsburgh participating in a special seminar on the Mathematics of Finance, and at Carnegie-Mellon University familiarizing himself with specialized software, hardware, and operations of a computer laboratory designed to support economic and financial analyses. The purpose of the special FPDP semester for the sixth participant is to prepare him to become the architect and director of a similar computer laboratory at the FMPH in Bratislava. As part of the special professional development semester, and part of the process of preparing to supervise and operating a economic analysis laboratory in Bratislava, the sixth participant also is taking the regular graduate courses which use the CMU laboratory as an integral part of their instructional programs.

The second semester in the FPDP (spring 1998) in Economics was a good semester for the four continuing participants. One of the participants is at the top of the class in the second semester of the Microeconomic Theory course and in the top quarter of the class in the second semester of Macroeconomic Theory; another one of the four is at the top of the class in Econometrics and in the second quarter (from the top) of the class in Macroeconomic Theory; and otherwise all four are performing satisfactorily in the doctoral courses.

It was anticipated that the first year of the FPDP would be a difficult and adaptive year for the Slovak participants, and that in the second year they would show their full strengths. The evidence so far from the first year is that perhaps the adaption is occurring faster than was anticipated, but the strengths of the participants were not underestimated and they are going provide a very strong core cadre for the development of modern economic education and research programs in Slovakia.

Some additional support for the MTEEP-Slovakia project was obtained from the Andrew W. Mellon Foundation at the beginning of 1997. A portion ($33,333) of a larger grant was approved for use to help develop library support for the MEF and the PFDP. The first use of the Mellon Foundation funds was made in 1997. A mathematical software package was acquired and added to the software library supporting teaching and research.

In addition to the activities mentioned above, two University of Pittsburgh faculty members provided some special lectures at the FMPH of Comenius University. Professor Jean-Francois Richard, an internationally distinguised econometrician gave several lectures on current research topics in econometrics when he visited to participate in the first-level evaluation and selection of participants for the FPDP. In addition, Professor John Chadam, Chairperson of the Department of Mathematics at the University of Pittsburgh and a distinguished applied mathematician with a special research program in the mathematics of finance gave three lectures at the FMPH.

IV. Upcoming Activities in 1998.

A. The Library

It is expected that in 1998 the bulk of the Mellon grant funds will be used. Additional software needs have been identified an order placed for a statistical package that will be used to support both teaching and research. Also, a lists of books and journals are being developed jointly by the FMPH and the Department.

The library needs of the Economics Education component of the MTEEP-Slovakia are very substantial and will be ongoing. Part of the activities of 1998 will need to be the determination of a realistic and sustainable program of library acquisitions to support both the teaching and research missions of the Economics Education component, and a plan for the fulfillment of the acquisitions program. Included under the library development needs are the textbook needs of the MEF. Students in Slovakia for the most part cannot afford modern textbooks, especially those that must be purchased as English language texts. Reasonable expectations for sustainable financial flows are such that it will not be possible to provide the individual students with textbooks for the forseeable future.

Planning for future library needs also must provide for continuing software acquisitions. As computer applications software continue to develop, it will be necessary to acquire software package updates periodically as well as wholly new packages that come on the market.

B. The Economic and Finance Computer Laboratory

A major activity for 1998 will be the determination of the final plans for the EFC Computer Laboratory and the acquisition of hardware. The hardware specifications and software (including operating systems) for the laboratory will be finalized in the late spring and early summer months after Dr. Igor Melichercik returns to Bratislava from his special FPDP at the University of Pittsburgh and Carnegie-Mellon University. The laboratory will use special applications software developed and used at Carnegie-Mellon University in its Master of Science in Computational Finance program offered by the Department of Mathematics, and other programs. The goal is to have the first version of the laboratory up and running by the fall semester of 1998.

C. The Second Cohort for the FPDP

During May and June 1998 the second cohort of Slovak faculty will be selected to participate in the FPDP at the Department in Pittsburgh. It is expected that at least seven more participants will be selected. It is expected that the second cohort will include successful applicants from outside the FMPH just as was the case for the first cohort. It is a strong sign of the serious commitment to the Economics Education component of the MTEEP-Slovakia by the leadership of the FMPH that they accept applications from any qualified persons and are willing to hire into the FMPH superior external applicants.

D. The Second Year Program of the FPDP

The remaining four participants of first cohort of the FPDP will return to the Department in August 1998. Their first activity will be to sit for the doctoral comprehensive exams in Microeconomic Theory and Macroeconomic Theory. Following the exams they will begin their second year courses on 31 August.

The four participants are just now selecting their fields of specialization in economics and therefore their course selections for the second year. At this time it appears that the first four participants will select and provide coverage in the FEM and the Slovakia successor to the FPDP in the following special fields (Industrial Organization and Regulation, International Trade and Finance, Financial Markets, Game Theory, and Experimental Economics) as well as the core areas of Microeconomic Theory, Macroeconomic Theory, and Econometrics.

During the second year of the FPDP the participants are expected to take three course sequences plus begin a research project. There currently is under consideration the possibility of allowing the participants to have an additional option in their selection of courses. The additional option would be to allow the participants to replace one of the three course sequences in economics with a course sequence from an MBA program. Whether this option will be allowed will depend on two considerations. First, it will depend on whether the Faculty of Management (FM) at Comenius University wants to have the help and cooperation of the FMPH members in teaching courses in the Weekend Executive MBA and other MBA components of the MTEEP-Slovakia. Second, it will depend on whether the participants in the FPDP in Economics select and elect to take a course sequence from an MBA program at either the Katz Graduate School of Business or Carnegie-Mellon University that is a practical complement to their elected areas of specialization in Economics. At this time it appears to be reasonably probable that both conditions will be fulfilled.

E. Special Lectures

Some special assistance is being provided to the MEF by the Department during the period of study by the first cohort of the FPDP. The assistance is in the form of special mini-courses presented in Bratislava by Department faculty members. The first will be a mini-course on the "Economics of Information," which will be presented by Professor Phillip Reny during late April and early May 1998. The purpose of the mini-course is to assist the FMPH in the presentation of the required courses and elective courses in the MEF while its own core cadre of economics faculty are being prepared. This assistance will complement the limited assistance already provided by a very small set of volunteer economists from Vienna.

Some additional mini-courses might be presented in the fall of 1998 if the leadership of the FMPH request them.

V. 1999 and Beyond

In 1999 the first cohort in the FPDP will complete their two years of preparation and development. It is expected that they will have earned along the way a Master's degree in Economics and be engaged in a research project in economics that should result in a publishable contribution to the existing body of knowledge in one of the areas relevant to the MEF.

The first FPDP cohort will start to participate in the activities of the EFC Laboratory during the summer of 1999 and start to teach in the MEF in the fall semester of 1999. The establishment of the joint center for research and postdoctoral training in economics and management should occur in late 1999 and its first activities undertaken at that time.

In the spring of 2000 the second cohort from the FPDP will be available to participate in the activities of the EFC Laboratory and start to teach in the MEF in fall semester of 2000. They aso will participate in the joint center's teaching and research activities.

While most of the graduates of the MEF are expected to take employment in the private sector, it is also expected that some will elect to pursue doctoral studies in either financial mathematics or economics. The Departments of Economics and Mathematics at the University of Pittsburgh look forward to extending their further cooperation to FMPH by accepting qualified applicants to their doctoral programs from among the graduates of the MEF. So the further development and sustainability of the FPDP in Economics can be accomplished by:

1. The programs and operations of the joint center for research and postdoctoral training in economics and management made available to faculty members at other Slovak universities;

2. Providing doctoral level education and training for another generation of Slovak faculty either at the FMPH or at the University of Pittsburgh (financed by assistantships provided by the departments at the University of Pittsburgh).

3. Funded research projects undertaken by the faculty who completed the two-year FPDP in Economics at the Department and their successors.

The MEF of course will be sustained by the core cadre of faculty who completed the two year FPDP in Economics at Pittsburgh, and their successors developed either at the joint center, at the FMPH, or in Pittsburgh.

The quality of undergraduate and professional economics education in Slovakia will be advanced and sustained not only by the perpetuation of the MEF, but by the improved teaching and research provided by other Slovak economics faculty members who complete the successor FPDP in Economics at the joint center.