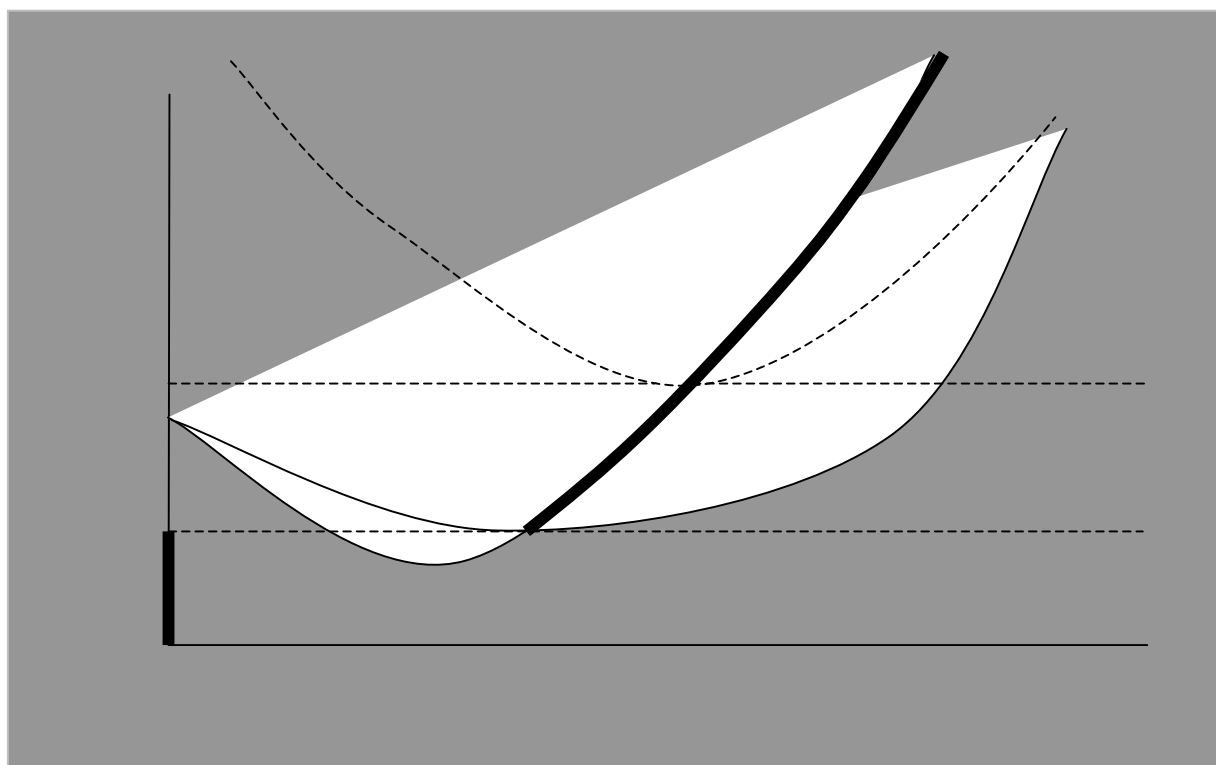
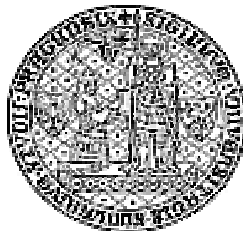


Working paper *UK FSV - IES*

No. 47

František Turnovec: Economic Research in the Czech
Republic: Entering International Academic Market



2004

Economic Research in the Czech Republic: Entering International Academic Market¹

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Abstract

Paper provides a short characteristic of publication outputs of the economists in the Czech Republic during eight years (1993-2000) and presents the project of evaluation of research performance of the Czech economics departments based on records in international databases.

Keywords: citation index, economic research, international databases, research performance
JEL Classification: I29, D63, C12

After 1989 economic research in the Czech Republic had faced several difficult problems. The demand for new concepts to implement fast transition from centrally planned economy to a standard market economy led to a rather chaotic discussions on transformation steps, missing traditional academic attributes. It is in some sense understandable: in the hands of the state there was an enormous power and responsibility for unprecedented economic reforms. There was no time for deep analyses and careful evaluation of options. Part of economic community became directly involved in everyday politics on the high positions in governmental offices and in the parliaments. Invasion of outside economic advisors of different rank and quality was a part of the game and supported the impression that a straightforward interpretation of simple neoclassical diagrams is a "scientific way" of solving economic problems. But, from a medium and long run perspective the main problem was to re-establish academic standards in economic research. A characteristic feature of the economic research was an isolation from world standards in presenting research outputs. With a few exception, related mostly to operations research and econometrics, the publication of results was oriented exclusively on Czech (and Slovak) economic journals publishing in the Czech language and using not very demanding reviewing procedures. So to overcome isolation and undemanding provincial character of economic science it was necessary to enter international academic market.

The following data about publication activities of the Czech economic community illustrate the process of internationalization of Czech economic research. We are using the data from database of the Government Committee for Research (GCR), that has an ambition to collect information about all publications of the Czech researchers (not only economists).

By the classification used by the Committee there are two branches of economic science: General Economics (GE) and Applied Statistics and Operations Research (ASOR). The data about journal publications, chapters in books and book monographs in these two branches for the

¹ This research was supported by the Grant Agency of the Czech Republic, project No. 402/04/1214.

years 1993-2000 were retrieved from this database.² Only papers in journals having ISSN registration and chapters in books and book monographs having ISBN registration were considered.

All publications were subdivided by the publishers: out of all publications papers in journals listed in the ECONLIT database³, and chapters in books and book monographs followed by ECONLIT and Social Science Citation Index (SSCI) were retrieved (classified publications). Within each group additional classification was used by the location of publisher: classified journals published in the Czech Republic and classified journals published in the "West";⁴ classified books published by prestigious Czech academic publishers and books published by the "western" publishers.⁵ Another classification was used by the language of publication: publications in English, in other world languages, and in Czech and Slovak as a complement to total (see also Turnovec, 2000). While the GCR database might be incomplete,⁶ using the time series provides some general characteristic of the development in the field.

In Table 1, 2 and 3 we provide information (time series 1993-2000) by the types of publications (ISSN journals, ISBN chapters and monographs), separately by GE and ASOR.

Some of the classified international journals in which the economists affiliated in the Czech Republic⁷ published at least one paper during this period:

American Economic Review
European Economic Review
Journal of Mathematical Economics
European Journal of Political Economy
Eastern European Economics
International Journal of Finance and Economics

² The GCR and central database of publications were introduced only in 1993, after the separation of Czechoslovakia and establishment of the Czech Republic.

³ ECONLIT is an electronic database of American Economic Association, founded in 1969. It collects records about journal publications, books and research papers. SSCI is an electronic database collecting records about citations of articles, books and other publications in journals oriented on social sciences.

⁴ There are three classified Czech economic journals, included in JEL database: Politická ekonomie [Political Economy], published by the Prague Economic University, with papers published usually in Czech, Finance a úvěr [Finance and Credit], published by the Charles University in Prague, with papers both in Czech and English language, and Prague Economic Papers, published by the Prague Economic University exclusively in English. By "West" we mean countries of EU, USA and Japan.

⁵ Only two Czech classified publishers were considered: The Academia Press, publishing house of the Academy of Sciences of the Czech Republic, and The Karolinum Press, publishing house of the Charles University in Prague.

⁶ The system of updating database is not perfect, the motivation for researchers to keep their records complete is weak and some of publications, related to quantitative economics might be included under mathematical branches of the database, there is also some time lag in recording new publications.

⁷ I am intentionally not using "Czech economists" to avoid complicated discussion about nationality of authors. There is no "Czech economic science", but "economic science in the Czech Republic".

Control and Cybernetics
 Communist and Post-communist Studies
 Journal of Business Ethics
 Economics of Transition
 Central European Journal for Operations Research

Table 1, Publications: Papers in ISSN Journals

| | | | | | | | | |
|--|------|------|------|------|------|------|------|------|
| General Economics | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| Total | 98 | 193 | 248 | 334 | 600 | 915 | 459 | 450 |
| CZ Politická ekonomie | 7 | 23 | 30 | 14 | 25 | 38 | 23 | 23 |
| CZ - Prague Economic Papers | - | 2 | 8 | 4 | 11 | 14 | 11 | 4 |
| CZ - Finance a Úvěř | 10 | 19 | 22 | 12 | 14 | 23 | 13 | 11 |
| western journals | 5 | 1 | 1 | - | 1 | 17 | 25 | 15 |
| Published in English | 2 | 18 | 28 | 49 | 170 | 88 | 86 | 37 |
| Published in other foreign languages | 3 | - | 2 | 2 | 2 | 23 | 1 | 8 |
| Applied Statistics and Operations Research | | | | | | | | |
| Total | 21 | 41 | 43 | 75 | 73 | 180 | 135 | 67 |
| CZ Politická ekonomie | 1 | 6 | 1 | 3 | - | 6 | 6 | 4 |
| Prague Economic Papers | 1 | - | - | 3 | - | - | 1 | 1 |
| Finance a Úvěř | 3 | - | 2 | - | - | 2 | - | - |
| western journals | 2 | 1 | - | - | 3 | 36 | 42 | 6 |
| Published in English | 3 | 11 | 23 | 26 | 39 | 98 | 93 | 36 |
| Published in other foreign languages | - | - | - | - | 3 | 1 | - | 1 |

Table 1 demonstrates relatively successful re-orientation of “output flows”: while during previous period (1970-1990) there was only one publication in really prestigious economic journal (M. Mañas in *Econometrica* in 1972) and few publications in specialized journals (e.g. *European Journal of Operational Research*, *Management Science*, *Zeitschrift fur Operations Research*), we can observe a visible presence of economists from the Czech Republic on the international academic market.

We can observe the culmination of the number of journal publication in 1998, what is probably related to the “boom” of transformation topics in the first half of nineties.

The third observation is related to the language of publication: Out of 3932 journal publications 807 were published in English, what represents 20.52%. We can still identify difference between general economics and applied statistics/operations research orientation: while 51,81% of papers in ASOR category were published in English, the corresponding score in GE is only 14.50%.

Table 3, Publications: ISBN Book Monographs

| | | | | | | | | |
|--------------------------------------|------|------|------|------|------|------|------|------|
| General Economics | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| Total | 15 | 39 | 28 | 44 | 114 | 94 | 40 | 65 |
| CZ Karolinum | - | - | - | - | 3 | 1 | - | 1 |
| Academia | - | - | - | - | 4 | - | - | - |
| Western publishers | 4 | 2 | 4 | 2 | 1 | 3 | 2 | - |
| Published in English | - | 3 | 5 | 1 | 17 | 7 | 1 | 2 |
| Published in other foreign languages | 4 | 1 | - | 1 | - | 1 | 1 | - |

| | | | | | | | | |
|--|---|---|---|---|---|---|---|----|
| Applied Statistics and Operations Research | | | | | | | | |
| Total | - | 6 | 1 | 7 | 8 | 9 | 9 | 10 |
| CZ Karolinum | - | - | - | - | - | 2 | - | - |
| Academia | - | - | - | - | 2 | - | - | - |
| Western publishers | - | - | - | 1 | - | 2 | 2 | - |
| Published in English | - | - | - | 1 | - | 5 | 5 | - |
| Published in other foreign languages | - | - | - | - | - | - | - | - |

For slightly more than a month the Czech Republic together with other nine new member states is sharing the same research area with other European Union countries. Well elaborated methodology of evaluation of research performance of the research institutions (mostly affiliated with universities) is used in the European Union to produce rankings of economic departments in Europe performance (see e.g. Lubrano, Bauwens, Kirman and Protopopescu, 2003). There is no reason to expect that the same standards will not be implemented in evaluation of universities in new member states. To be competitive in Europe and in the world there is still much to be done in changing publication habits.

At present we even do not know where we are in comparative terms: demanding methods of research performance evaluation have not been tested yet in the Czech Republic. The first attempt will take place in 2004 within the project of the Grant Agency of the Czech Republic "Microeconomics of university education and measuring research performance of the universities". The main features of the project are the following:

Objective of the project: to compare objectively measurable research performance of the faculties of economics, institutes and/or departments of economics at non-economic faculties or non-university economic research institutions according to their presence at international academic markets.

Basic principles of evaluation:

- a) Minimal demand on cooperation of evaluated institutions.

- b) Minimal influence of evaluators on results of evaluation.
- c) Use of unquestionable data (international databases).
- d) Two components of data: outputs (publications) and response (citations). Data will be weighted by internationally accepted impact factors (Kalaitzidakis, Mamuneas and Stengos, 2001).
- e) No other academic activities will be considered.

Units of evaluation:

- a) Either faculty of economics, if the faculty performs study programs exclusively in economics,
- b) or economics department (institute) at the non-economic faculty,
- c) or non-university research unit (e.g. Economics Institute of Academy of Sciences).

Representation of the institution: Only full-time employees in pedagogical and research category. One person can represent only one institution. Only professors and associate professors (senior researchers) will be considered, unless the institution will nominate broader representation.

Primary data:

- a) Publication defined as bibliographic record in international databases (Econlit, SCI, Web of Science).
- b) Citation defined as citation record in international databases (Econlit, SSCI). Auto-citations are excluded.
- c) If the same publication is recorded in different databases, it is considered only once.
- d) In the case of co-authorship each of co-authors gets the share $1/n$ of the publication.

Evaluated period: Last ten years (1994-2003) to get results that can be compared with the results of European rankings. The changes in affiliation of evaluated persons will not be considered, affiliation in 2004 will be significant.

Method of aggregation:

| | |
|--------------|--|
| n | number of evaluated institutions ($j = 1, 2, \dots, n$) |
| m_j | number of representing persons of the j -th institution ($i_j = 1, 2, \dots, m_j$) |
| $p(j, i_j)$ | number of publication units of the person i_j of institution j , $k_{ij} = 1, 2, \dots, p(j, i_j)$ |
| $pw(k_{ij})$ | share of person i_j from institution j in publication k_{ij} (co-authorship considered) |
| $c(j, i_j)$ | number of citation units of the person i_j from institution j , $t_{ij} = 1, 2, \dots, p(j, i_j)$ |
| $cw(t_{ij})$ | share of person i_j from institution j in citation t_{ij} (co-authorship considered) |
| $pf(k_{ij})$ | impact-factor of publication k_{ij} , measured by impact-factor of the journal of publication |
| $cf(t_{ij})$ | impact-factor of citation t_{ij} , measured by impact-factor of the journal of citation |
| r_j | total number of employees of the j -th institution in pedagogical/research category |

Indicators:

Individual performance of the person i_j from institution j

$$v_{i_j} = \sum_{k_{ij}=1}^{p(j,i_j)} pw(k_{ij})(1 + pf(k_{ij})) + \sum_{t_{ij}=1}^{c(j,i_j)} cw(t_{ij})(1 + cf(t_{ij}))$$

(sum of publication shares weighted by impact-factors increased by 1, plus sum of citation shares measured by impact-factor increased by 1). This measure can be used for ranking of individuals in the Czech Republic (e.g. top 100 economists).

Absolute performance of the institution j

$$V_j = \sum_{i_j=1}^{m_j} v_{i_j}$$

(sum of individual performances of individuals affiliated).

Relative performance of institution j

$$RV_j = \frac{V_j}{r_j}$$

(absolute performance per one employee in pedagogical/research category). Can be used for ranking of institutions.

Relative share of individual i_j in research product of institution j

$$RV_{i_j} = \frac{V_{i_j}}{V_j}$$

(can be used for ranking of individuals within the institution).

Marginal relative contribution of individual i_j to institution j

$$MV_{i_j} = RV_j - \frac{V_j - V_{i_j}}{r_j - 1} = \frac{V_j(r_j - 1) - (V_j - V_{i_j})r_j}{r_j(r_j - 1)} = \frac{r_j V_{i_j} - V_j}{r_j(r_j - 1)}$$

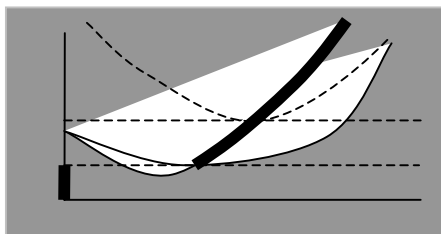
(difference between relative performance of the institution j with individual i_j and relative performance of the institution j without individual i_j).

Many other indicators can be constructed and used for statistical analysis. The first version of evaluation will be finalized and released for publication in December 2004.

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