**Causes and Consequences of Academic Inbreeding in Ukraine**

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**Abstract**:

In Ukraine, education has largely lost its screening function because of widespread corruption and dishonest studying practices, so social ties and personal relations play a leading role in the job search in the entire economy. Hence, it is not surprising that inbreeding is very common in Ukrainian academia - about 50% of faculty obtained their highest degree from the university that employs them. Taking into account that diploma grades provide only a noisy signal of a candidate’s quality, by hiring own graduates universities reduce uncertainty about the qualifications of the newly hired faculty. However, as a person gains other signs of quality (scientific degrees, publications etc.), she can more easily find a job at another university. Our econometric analysis shows that inbred faculty does not differ in its (observable) quality from non-inbred faculty. At the same time, ceteris paribus, inbred faculty members get somewhat lower salaries.

**List of abbreviations**

CIS – Commonwealth of Independent States – includes all former Soviet republics except for the Baltic states (namely, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan).

CMU – Cabinet of Ministers of Ukraine

HEI – Higher Educational Institution(s)

MES – Ministry of Education and Science of Ukraine

***Data note****. We made an online survey based on the inbreeding questionnaire and distributed it among university staff. We received 59 responses, mostly from economists, from the universities all over Ukraine. We asked them about general hiring practices at their universities and their “personal stories” of employment. We refer to this survey as “our” survey and use its results for illustrative purposes.*

*For econometric estimation we use the data from a recent survey performed by the Centre for Society Research (Ukraine) [[1]](#footnote-1). In the summer of 2013, they questioned 424 professors of over 50 universities on a wide range of topics (teaching workload, research publications, participation in conferences, salaries and income etc.). This survey also contains a question about whether a person works at the same university that (s)he graduated from. We refer to this survey as CSR-2013. The sample for this survey was formed in the following way. First, universities were divided into the groups by field (general, technical, medical etc.). Then, a certain number of universities from each group were randomly selected. In selected universities, a chair or two were randomly selected, and interviewers tried to reach several faculty members at these chairs. In most cases, eight faculty members from each university were interviewed, although in some universities this number is smaller. We believe that this sample rather accurately represents the population of Ukrainian university faculty, and the usage of these data for econometric analysis is justified.*

# 1. Introduction

Academic inbreeding is a practice of universities hiring their own graduates right after graduation, without significant work experience. In the developed countries, the debate on academic inbreeding already lasts for over half a century resulting in numerous research papers and university-level or even government-level policies addressing inbreeding (see, for example, Blanke & Hyle (2000) for a literature review). The general perception is that “inbreeding is bad” because it slows down introduction of new research topics and teaching practices into universities[[2]](#footnote-2). For example, Horta et al. (2009) find that that inbred professors publish less research papers and establish fewer connections outside their university. Inanc and Tuncer (2011) arrive at a similar conclusion. To the contrast, Mishra and Smyth (2012) do not find any difference in research productivity (measured as the number of publications) between inbred and non-inbred faculty, and Cruz-Castro and Sanz-Menendez (2010) show that promotion speed is equal for inbred and non-inbred faculty members in Spanish universities.

In Ukrainian universities, inbreeding is very common. Nevertheless, it has never been considered as a problem. Rather, hiring of own graduates is viewed as a “natural” state of things. Our survey suggests that widespread inbreeding is a consequence of a larger phenomenon – almost exclusive hiring of “insiders”, i.e. people that are in some way related to the existing faculty and hence, are recommended by current faculty members to the people making hiring decisions.

This practice has both historical and modern underlying reasons. The historical reason for inbreeding is the Soviet practice of centralized distribution of the fresh university graduates into their first workplaces. University professors tried to keep their best students (or students related to them in some way) at their Chair, viewing these students as “apprentices” who would continue their research and teaching and thus ensure succession of a “scientific school”. For university graduates, remaining at a Chair was a desirable option, since professors had both higher than average salaries and a high social status.

The modern reason for inbreeding is that education has practically lost its screening function because of the very widespread corruption and dishonest studying practices (cheating and plagiarism[[3]](#footnote-3)). This means that determined students can obtain good skills and knowledge together with good grades. However, “bad” students can obtain the same grades for money: besides paying to professors for exam grades, students can buy a course paper, a diploma thesis and even a doctoral dissertation. Hence, based on the diploma grades alone, a potential employer cannot tell a “good” student from a “bad” one and has to use some other screening mechanism[[4]](#footnote-4). Often, this mechanism is personal recommendations.

In Ukraine, in general nepotism is very common. For example, according to the ULMS-2007 survey, from 48% to 68% of respondents found their jobs through “relatives and friends”, and this channel is the most important for the job search in Ukraine[[5]](#footnote-5). Academic environment is not different from the rest of the country – according to CSR-2013 survey, 48.6% of faculty are inbred.

Our online survey showed that kinship or other social ties is the second most important factor in academic employment (after the number of publications) – its average score is 2.14, while the score of “studied at the same university” is 3.07[[6]](#footnote-6). Our survey also shows that competition between internal candidates is much more common (score 2.5 of 5) than an open competition (score 3.5), and very often competition is a fiction (score 1.9[[7]](#footnote-7)). In their personal employment stories all the respondents stressed the importance of personal ties (knowing someone within the faculty) and no one reported being hired through a standard competitive procedure (CV submission, interviews etc). As one of our respondents indicated, CVs of “outsiders” are not even considered. Thus, widespread inbreeding is a consequence of “preference for insiders” rather than a preference of university administration for own graduates *per se*.

Although very widespread, academic inbreeding in Ukraine has received no attention from researchers or policy makers. The data on the topic is practically absent – state statistical agency provides only the very general data on the number of university faculty with and without degrees. We could find only one survey of the university faculty (CSR-2013) described above in the Data note. This survey allows to determine whether a certain faculty member was inbred, so we could perform an econometric estimation of the factors that impact the probability of inbreeding.

We also tried to measure the impact of inbreeding on the “price” (salary) and “quality” (research productivity) of faculty. The regression analysis of CSR-2013 data showed that inbreeding levels are higher in medical universities and universities with the “national” status and lower in the very small universities of less than 1000 full-time students.

We did not find any evidence that inbred faculty is worse than non-inbred ones in terms of the number of publications and the probability to get a foreign fellowship. However, we found that, ceteris paribus, inbred faculty has lower salaries suggesting that universities pay more if they want to attract an outside person (presumably of higher quality in terms of characteristics non-observable to us).

In the absence of real screening mechanisms (i.e. when it is not clear whether diploma grades are “earned” or “bought” ones), inbreeding or personal recommendations remain the only way to tell a “good” applicant for a faculty position from a “bad” one. Hence, in current Ukrainian conditions, inbreeding can be viewed as a second-best solution to the screening problem.

In the sections 2 and 3 below we present the results of econometric analysis of factors and consequences of inbreeding, and in the section 4 we make some conclusions and policy recommendations.

## 2. Factors that impact inbreeding

The CSR-2013 survey shows that 48.6% of faculty work in the educational institutions from which they graduated. In this section, we explore the impact of different personal and university-level characteristics on the probability of a person being inbred. First, we perform some simple data analysis of the link between university characteristics and its inbreeding level, and then turn to regression results.

The first thing to check is whether inbreeding levels are different for different disciplines. Table 1 shows that the highest level of inbreeding is observed in medicine. We can suggest two explanations for this fact. First, medical universities are the hardest to enter, and personal ties there play more important role than in other HEI. Second, there is normally only one medical university in a city, so its graduate willing to pursue an academic career should either relocate to another city or to remain at the *alma mater*. However, relocation is problematic because university salaries are too low. In the big cities, flat rents are higher than an average university salary.

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| ***Table 2. Inbreeding levels by field*** |
| *Field* | *% of inbred faculty* | *Total number of observations* |
| Humanities  | 40.3 | 120 |
| Economics  | 54.0 | 51 |
| IT | 40.5 | 37 |
| **Medicine**  | **79.4** | **34** |
| Pedagogical science | 0.0 | 12 |
| Law  | 50.0 | 18 |
| Natural sciences | 47.1 | 51 |
| Social sciences | 25.0 | 12 |
| Technical sciences | 60.8 | 74 |
| Source: CSR-2013 data |

The next question is whether “better” universities have higher inbreeding levels. The common logic suggests that they should because if a university wants to hire “the best” people and it *produces* “the best” people, it ends up with hiring its own graduates.

Figure 1.

Source: based on CRS-2013 and Top-200 rating data for 2012.

Using CSR-2013 survey data, we tried to find a correlation between the share of inbred faculty and the place of a university in the Top-200 rating of Ukrainian HEI[[8]](#footnote-8). If “better” universities hired more inbred candidates, the correlation between the rating score and the share of inbred faculty would be negative. At -0.16, it is actually negative but not significant (see Figure 1).

Universities with higher ratings are usually larger and older ones. Therefore, we tried to find a link between university size and the share of inbred faculty in it (Table 2). Table 2 does not show any clear link between inbreeding level and the university size.

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| ***Table 2. University size***[[9]](#footnote-9) ***and the share of inbred faculty*** |
| University size, full-time students | < 1 000 | 1 000-5000 |  5 000-10 000 | 10 000-20 000 | > 20 000 |
| Share of inbred faculty, % | 44.4 | 43.8 | 50 | 55.9 | 47.5 |
| Number of universities | 8 | 12 | 8 | 19 | 5 |
| Number of observations | 63 | 96 | 60 | 145 | 40 |
| Source: CSR-2013 data |

Finally, inbreeding could be higher in towns than in cities because in cities there are more outside opportunities for both universities and students. However, CSR-2013 data do not support this assumption (Table 3).

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| ***Table 3. Inbred faculty in cities of different size*** |
| *City/town size, thousand people* | *20-99* | *100-499* | *>500*  |
| Share of inbred faculty, % | 48.6 | 56.2 | 43.9 |
| Number of universities | 5 | 19 | 29 |
| Number of observations | 35 | 153 | 230 |
| Source: CSR-2013 data |

To find out the impact of different factors on the probability of a person being inbred, we estimated a probit regression with the dependent variable equal to 1 if a faculty member works at the same institution from which (s)he graduated. As the right-hand-side variables we consider:

* indicators of a person’s “quality” – his/her teaching experience, number of publications in Ukrainian and foreign journals and participation in foreign fellowships. A “better quality” person (i.e. the one with longer teaching experience, more research publications or with foreign fellowships) is more likely to find another job and hence, less likely to still work at a university from which (s)he graduated. Hence, we expect these quality variables to negatively impact the inbreeding probability;
* female dummy: in our sample, 43% of 220 females and 54% of 202 males are inbred. The difference is not large and to see whether it is significant, we include this dummy into the regression. A priori we cannot tell the sign of this variable;
* field of study dummies (Table 1), with humanities as the base category;
* university size dummies (Table 2), with less than 1000 full-time students as the base category;
* type of city dummies (Table 3), with town as the base category;
* a dummy equal to 1 if a university has the “national” status[[10]](#footnote-10).

Regression results are presented in the Table 4.

Regression results indicate that teaching experience and the number of publications are indeed negatively connected to the probability of being inbred – thus, more experienced professors can more easily find a job at another university. The only field where inbreeding is significantly higher than in humanities is medicine (discussed above). Inbreeding levels in all other disciplines are not significantly different from each other. University size variables indicate that very small universities (less than 1000 full-time students) are less likely to inbreed their faculty, but after this threshold the university size does not matter.

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| ***Table 4. Probit regression results (marginal effects reported), dep. var – inbred faculty dummy*** |
| *Variable* | *Coefficient* | *Variable* | *Coefficient* |
| Teaching experience (years) | -0.0046\*\* | City (100-499) | 0.0901 |
| Foreign fellowships dummy | -0.0471 | Large city (>500) | 0.0101 |
| # of publications in Ukrainian journals | -0.0213\*\* | Field of study: |  |
| # of publications in foreign journals | 0.0032 | Economics | 0.1058 |
| Female | -0.0607 | IT | -0.0330 |
| University size: |  | Medicine | 0.4707\*\*\* |
| Law | 0.0822 |
| 1-5 thousand students | 0.2740\*\* | Nature sciences | 0.0187 |
| 5-10 thousand students | 0.3286\*\*\* | Social sciences | -0.2217 |
| 10-20 thousand students | 0.3110\*\* | Technical sciences | 0.1010 |
| Over 20 thousand students | 0.2482\*\* | “National” status | 0.1715\*\*\* |
| 386 observations; \*\*\* - significant at 1% level, \*\* - significant at 5% level \* significant at 10% level |
| Source: CSR-2013 data, own estimation |

“National” universities are likely to have more inbred faculty, possibly because they are considered more prestigious places of work, which means that (1) it is harder to get into them, so personal connections play a higher role, and (2) students are more willing to stay at them because of higher salaries and better perspectives.

**3. Impact of inbreeding on the “price” and “quality” of faculty**

Next, we consider the impact of inbreeding on the income of faculty and their scientific and research results. For this regression we use only the data on people who receive 100% of their income at a given university (336 observations, of them 159 inbred), since we have very little data on the side jobs of faculty. As an income variable, we take income brackets: less than UAH 2500, UAH 2500-3500, UAH 3500-4500, UAH 4500-6000 and greater than UAH 6000 per month, form a categorical variable and estimate an ordered probit regression. Summary statistics for the dependent variable are presented in the Table 5.

Table 5 suggests that being an inbred faculty member negatively impacts income. However, this relation may reflect other factors – for example, that more experienced and/or more honoured people (i.e. with higher scientific degree or rank, with greater number of publications etc.) can more easily find a job at another institution (i.e. screening process for them is easier). Therefore, we include these “signs of quality” as control variables into the regression along with other personal and university characteristics.

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| ***Table 5. Income brackets and inbred faculty: summary statistics*** |
| Income brackets, UAH | <2500 | 2500-3500 | 3500-4500 | 4500-6000 | >6000 |
| Share of inbred faculty | 61% | 45% | 47% | 35% | 43% |
| # of observations | 114 | 132 | 78 | 46 | 23 |
| Source: CSR-2013 data |

Personal characteristics included into the regression are:

* *teaching experience* is expected to be positively connected to income, although for professors who reached pension age the relation may reverse. So, we include the square of this variable into the regression too. Correlation between teaching experience and age is 0.82, so we don’t include a separate age variable;
* *average total hours per week* that a person works should positively impact income;
* *number of publications during the last three years* – in Ukraine, in CIS and in other foreign countries. A higher number of publications can signal “better quality” of a person. Hence, this variable is expected to increase his/her income;
* a dummy variable indicating that a person took part in *fellowship(s) abroad* during the last three years is also a signal of a person’s quality;
* a dummy variable equal to 1 if a person holds a *degree from a foreign university*. The sign of this variable is *a priori* ambiguous. On the one hand, a degree from a foreign institution may be a signal of a person’s quality, but on the other hand, the fact that (s)he came back to Ukraine may signal the opposite. Most probably, this variable will not be significant because of the small number of positive outcomes in the sample;
* a dummy equal to 1 *if over 25% of the literature that this person recommends to students is in a foreign language other than Russian*. This person can have an additional payment for usage of foreign language in his/her work (there is no direct question about this in the survey);
* dummy variables for *scientific degrees* (candidate or doctor), *ranks* (docent or professor) and *administrative positions* (being a chair head or a faculty dean). All of these variables should be positively related to income;
* field of teaching dummies, with “humanities” being the base category;

University characteristics are the same as in the previous regression and include:

* university size dummies;
* “national” status of a university dummy (in these universities salaries should be higher);
* city size dummies.

Individual control variables and summary statistics for them are presented in the Table 6. Summary statistics for the “field of studies” and university-level variables are very similar to those presented in the tables 1, 2 and 3. Inbred faculty on average is younger and so has lower teaching experience than other faculty. It also less often has a Doctor degree or a Professor rank.

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| ***Table 6. Summary statistics of individual-level variables for income regression*** |
| *Quantitative variables* | *Mean (st. dev.) of total sample* | *Mean (st. dev.) of inbred faculty* |
| Teaching experience (years) | 16.7 (12.1) | 14.6 (11.8) |
| Average total hours per week | 17.3 (10.4) | 17.3 (11.1) |
| Number of publications in Ukraine for the last three years | 8.6 (11) | 9.4 (11.5) |
| Number of publications in CIS for the last three years | 0.72 (2.04) | 0.64 (1.44) |
| Number of publications in other countries for the last three years | 0.84 (3.14) | 0.71 (2.3) |
| *Dummy variables* | *% of 1’s* | *Of them, % inbred* |
| A person took part in fellowship(s) abroad during the last three years (dummy) | 13.2% | 41.9% |
| A person holds a degree from a foreign university | 3.3% | 50% |
| Over 25% of literature that this person advises to students is in a foreign language other than Russian | 18.8% | 44.4% |
| A person holds a Candidate degree | 60% | 49.2% |
| A person holds a Doctor degree | 3.7% | 33% |
| A person has a docent rank | 48.8% | 47.2% |
| A person has a professor rank | 4.2% | 35.7% |
| A person is a head of a chair | 9.5% | 29% |
| A person is a faculty dean | 2.38% | 87.5% |
| Source: CSR-2013 data, own calculations |

Regression results are presented in the Table 7 below.

The main conclusion from these estimation results is that even taking into account all other factors, the “price” of inbred faculty is lower. Perhaps, this is a reflection of the fact that, to attract an outside person, a university should offer him/her better conditions than to an internal candidate. Such person could also possess skills/knowledge (non-observable to us) that internal candidates do not have. This also suggests that while inbreeding can increase the chance to get a job as a faculty member it does not lead to a higher wage in itself.

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| ***Table 7. Results of ordered probit regression for income brackets*** |
| *Independent variables* | *coefficients* | *Marginal effects for income brackets*  |
| *<2500* | *2500-3500* | *3500-4500* | *4500-6000* | *>6000* |
| Inbred faculty | -0.620\*\*\* | 0.1795\*\*\* | 0.0078 | -0.1197\*\*\* | -0.0593\*\*\* | -0.0082\* |
| Teaching experience | 0.0521\* | -0.0152\* | -0.0006 | 0.0103\* | 0.0049\*\* | 0.0006 |
| Teaching experience squared | -0.00067 | 0.0002 | 0.0000 | -0.0001 | -6.2E-05 | 0.0000 |
| Hours per week | 0.0056 | -0.0016 | -0.0001 | 0.0011 | 0.0005 | 0.0001 |
| Female dummy | -0.0197 | 0.0057 | 0.0002 | -0.0039 | -0.0018 | -0.0002 |
| Publications in Ukraine | 0.00465 | -0.0014 | -0.0001 | 0.0009 | 0.0004 | 0.0001 |
| Publications in CIS | 0.00532 | -0.0016 | -0.0001 | 0.0011 | 0.0005 | 0.0001 |
| Publications in other foreign countries | 0.0131 | -0.0038 | -0.0001 | 0.0026 | 0.0012 | 0.0002 |
| Foreign fellowship(s) | 0.376 | -0.0971\* | -0.0280 | 0.0751 | 0.0432 | 0.0067 |
| Foreign degree | -0.187 | 0.0583 | -0.0052 | -0.0359 | -0.0154 | -0.0018 |
| Foreign sources >25% | -0.407\* | 0.1303 | -0.0194 | -0.0760 | -0.0313\* | -0.0036 |
| Candidate degree | 1.048\*\*\* | -0.3257\*\*\* | 0.0410 | 0.1865\*\*\* | 0.0863\*\*\* | 0.0119\*\* |
| Doctor degree | 1.917\*\*\* | -0.2263\*\*\* | -0.4295\*\*\* | 0.1094 | 0.3331\*\*\* | 0.2132 |
| Docent rank | 0.654\*\*\* | -0.1897\*\*\* | -0.0067 | 0.1256\*\*\* | 0.0622\*\* | 0.0086 |
| Professor rank | 1.227\*\* | -0.2032\*\*\* | -0.2514 | 0.1743\*\*\* | 0.2123\* | 0.0680 |
| Head of chair | 0.376 | -0.0958 | -0.0301 | 0.0750 | 0.0439 | 0.0069 |
| Faculty dean | 1.775\*\*\* | -0.2152\*\*\* | -0.4061\*\*\* | 0.1218 | 0.3178\*\*\* | 0.1817 |
| Economics  | 0.659\*\* | -0.1529\*\*\* | -0.0773 | 0.127\*\*\* | 0.0871\* | 0.0162 |
| IT | 0.574\*\* | -0.1341\*\*\* | -0.0661 | 0.1117\*\* | 0.075\* | 0.0135 |
| Medicine  | 0.791 | -0.166\*\* | -0.1198 | 0.1449\* | 0.11591 | 0.0249 |
| Pedagogical sciences | 1.056\*\*\* | -0.1867\*\*\* | -0.2058\* | 0.1662\*\*\* | 0.1767\* | 0.0495 |
| Law  | 0.33 | -0.0845 | -0.0256 | 0.0660 | 0.0382 | 0.0059 |
| Nature sciences | 0.399\* | -0.1024\* | -0.0306 | 0.0796\* | 0.0462 | 0.0072 |
| Social sciences | -0.301 | 0.0972 | -0.0158 | -0.0562 | -0.0227 | -0.0025 |
| Technical sciences | 0.457\* | -0.1195\*\*\* | -0.0310 | 0.0908\* | 0.0517 | 0.0080 |
| “National” university | 0.385\* | -0.1106\*\* | -0.0073 | 0.0757\* | 0.0372\* | 0.0050 |
| 1-5 thousand students | -0.902\*\* | 0.3009\*\* | -0.0771 | -0.1550\*\*\* | -0.0616\*\* | -0.0071 |
| 5-10 thousand students | -1.193\*\* | 0.4257\*\* | -0.1845 | -0.1751\*\*\* | -0.0599\*\*\* | -0.0062\* |
| 10-20 thousand students | -0.732\* | 0.2236\*\* | -0.0161 | -0.1367\* | -0.0626\* | -0.0082 |
| >20 thousand students | -0.0933 | 0.0280 | -0.0005 | -0.0182 | -0.0083 | -0.0010 |
| City (100-499 thousand) | -0.535 | 0.1643 | -0.0118 | -0.1016 | -0.0454 | -0.0056 |
| Large city (>500 thous.) | -0.660\* | 0.187\*\* | 0.0157 | -0.1276\* | -0.0656\* | -0.0095 |
| Cut 1. Constant  | -0.00756 | - | - | - | - | - |
| Cut 2. Constant | 1.524\*\* | - | - | - | - | - |
| Cut 3. Constant | 2.414\*\*\* | - | - | - | - | - |
| Cut 4. Constant | 3.431\*\*\* | - | - | - | - | - |
| Number of observations: 255; \*\*\* - significant at 1% level, \*\* - significant at 5% level \*- significant at 10% level |
| Source: CSR-2013 data, own estimation |

Next, we consider the quality of inbred and non-inbred faculty. As the quality characteristics we use the following three variables:

1. number of publications in Ukraine and CIS (articles, monographs and books) during the last three years;
2. number of publications in other countries during the last three years (we consider these publications separately because they should be of much higher quality than papers published in Ukraine and CIS);
3. a dummy equal to 1 if a person participated in foreign fellowship(s) during the last three years.

Since the first two characteristics are count variables, we use Poisson regressions, and for the third dependent variable we employ a Probit estimation.

Right-hand side variables for these regressions are the same as for the previous two equations and include personal, university-level and city-level characteristics. We add two new personal characteristics - “the share of time devoted to research” (a respondent had to indicate a number from 0 to 100%) and a dummy equal to 1 if a person developed a study plan for a discipline. The last variable is an additional indicator of a person’s “quality” and ability to conduct research.

The results of Poisson regressions for the number of publications are presented in the Table 8. “Publications in Ukraine and CIS” is included as an independent variable into the “foreign publications” regression because the majority of Ukrainian professors would first publish their results in Ukraine (it’s easier and cheaper) and then, if those are really of high quality, would send them to a foreign journal. As regression results show, this is in fact the case. People with candidate and doctor degrees have higher number of publications in Ukraine, and those with doctor degrees have more publications abroad. Foreign fellowships also, predictably, increase the number of research publications abroad. The main conclusion from these regressions is that quality of inbred faculty does not differ from quality of other faculty if measured in terms of research publications.

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| ***Table 8. Results of Poisson regression*** |
| *Independent variables* | *Dep. var. – number of publications in Ukraine and CIS* | *Dep. var. – number of publications in other foreign countries* |
| Inbred faculty dummy | 0.108 | -0.674 |
| Teaching experience | -0.0049 | 0.00372 |
| Female dummy | -0.00943 | 0.0105 |
| Publications in Ukraine and CIS | - | 0.0263\*\*\* |
| Foreign fellowship(s) dummy | 0.125 | 1.152\*\* |
| Foreign degree dummy | -0.00895 | 0.00944 |
| Foreign sources >25% | -0.396\* | 0.484 |
| Candidate degree | 0.457\*\*\* | 0.747 |
| Doctor degree | 0.811\*\*\* | 1.474\* |
| Economics  | -0.236 | -0.105 |
| IT | -0.193 | -0.872 |
| Medicine  | 0.544 | 1.863\*\*\* |
| Pedagogical sciences | 0.329 | 0.604 |
| Law  | 0.138 | 1.02 |
| Nature sciences | -0.472\*\* | 0.611 |
| Social sciences | -0.347 | 0.131 |
| Technical sciences | -0.680\*\*\* | 0.233 |
| “National” dummy | -0.0438 | -0.682 |
| 1-5 thousand students | -0.0861 | 0.349 |
| 5-10 thousand students | 0.565\* | 0.843 |
| 10-20 thousand students | 0.323 | 0.687 |
| >20 thousand students | 0.148 | 0.67 |
| Share of time devoted to research | 0.0123\*\*\* | -0.00052 |
| A person developed a discipline (dummy) | 0.394\* | 0.572 |
| Constant | 1.236\*\*\* | -2.432\*\*\* |
| 333 observations; \*\*\* - significant at 1% level, \*\* - significant at 5% level \*- significant at 10% level |
| Source: CSR-2013 data, own estimation |

Since the third “quality indicator” – foreign fellowships, is a dummy variable, we use a probit regression. The results are presented in the Table 9. The only factors significant for foreign fellowships are participation in conferences abroad and knowledge of a foreign language (proxied by the dummy equal to 1 if the share of foreign sources recommended by this professor to students is higher than 25%). The “inbred faculty” dummy is not significant, therefore, inbred faculty members have the same chance of getting a foreign fellowship as other faculty.

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| ***Table 9. Results of probit regression. Dependent variable – foreign fellowship(s) during the last three years. Marginal effects reported*** |
| *Variable* | *Marg. effect* | *Variable* | *Marg. effect* |
| Inbred faculty | -0.0280 | Pedagogical sciences | 0.0355 |
| Teaching experience | 0.0001 | Law  | -0.0487 |
| Female  | -0.0135 | Nature sciences | 0.0061 |
| Publications in Ukraine and CIS | -0.0013 | Social sciences | 0.0340 |
| Publications in other foreign countries | 0.0049 | Technical sciences | 0.0349 |
| Conference participation in Ukraine and CIS | -0.0005 | “National” dummy | -0.0078 |
| Conference participation in other foreign countries | 0.0416\*\*\* | 1-5 thousand students | 0.0104 |
| Foreign degree | 0.0414 | 5-10 thousand students | -0.0160 |
| Foreign sources >25% | 0.1222\*\*\* | 10-20 thousand students | -0.0225 |
| Candidate degree | 0.0615\* | >20 thousand students | 0.0876 |
| Doctor degree | -0.0141 | City (100-499 thousand) | 0.1220 |
| Economics  | 0.0470 | Large city (>500 thousand) | 0.1047 |
| IT | 0.0298 | Share of time devoted to research  | -0.0015 |
| Medicine  | -0.0194 | Observations | 331 |
| 333 observations, \*\*\* - significant at 1% level, \*\* - significant at 5% level \*- significant at 10% level |
| Source: CSR-2013 data, own estimation |

Summing up the results of the last three regressions, we can conclude that quality of inbred faculty does not differ from the quality of non-inbred faculty.

## The role of inbreeding in hiring and promotion

Inbreeding is a mechanism that partly replaces screening in Ukrainian conditions. Since it is hard to find out how good a person is based on her grades (since those can be bought rather than earned) or the number of his/her publications (since those can be of low quality), current faculty prefers to hire people they know – either their former students or acquaintances. Hence, the role of inbreeding in hiring is rather high. However, do inbred faculty members get promoted faster than non-inbred ones?

To answer this question, we compared the number of years that inbred and non-inbred faculty worked at each level of academic career ladder (using CSR-2013 data) – assistant, lecturer/senior lecturer, docent and professor. We did not find any statistically significant difference between the means of these variables. Hence, inbred and non-inbred faculty is promoted with the same speed.

We can conclude that being a student at a university plays a role only during hiring process, and once you are there, other factors become more important - namely, publications, participation in conferences, scientific degrees and ranks etc., as well as personal ties with other faculty and the university administration[[11]](#footnote-11).

# 4. Conclusions

The practice of hiring own graduates is deeply rooted in the Ukrainian academic environment. High levels of inbreeding have two main causes. First, the widespread nepotism inherited by Ukraine from the Soviet Union. Second, this nepotism (in the form of hiring of relatives or acquaintances) is reinforced by the loss of the screening function by higher education because of widespread corruption and dishonest studying practices. Thus, if an outsider applies for a place at a university, the institution is uncertain about this applicant’s quality because his/her grades can be either “earned” or “bought”. Therefore, to reduce uncertainty, a university would rather hire an insider – someone recommended by an existing faculty member who has more information about the quality of the candidate. Studying at a university is just one of the ways to establish personal relations with an existing faculty member who could recommend an applicant to the people making hiring decisions.

We tried to find out whether salaries of inbred faculty members and their “quality” measured as the number of publications differ from those of non-inbred ones. The regression results show that, although the number of publications and the probability of getting foreign fellowship(s) is the same for inbred and non-inbred faculty, the former do get lower salaries (all other things equal). Perhaps, universities offer better conditions to attract external candidates while expecting loyalty (and readiness to accept lower salaries) from their own graduates.

We also tried to find out which personal and university-level factors impact the probability of a person being inbred. The only significant (and negative) personal characteristics were teaching experience and the number of publications suggesting that people who gained additional “signs of quality” (and, perhaps, wider social ties at other universities) can more easily find a job at another institution.

In Ukraine, academic inbreeding has never been viewed as a problem either on a university or on the state level. In fact, it is considered a “natural” state of the system. An offer to enter Ph.D. studies and later to become a faculty member is often considered as a reward to the best students. We don’t think that the situation is going to change in the near future – at least not until the time when diploma grades and scientific degree(s) of a person reflect his or her true quality.

We need to stress that inbreeding is a symptom rather than a problem. The real problem is the impossibility to be hired for “outsiders”, i.e. for people who are not acquainted in one or another way with an existing faculty member. Although formally the universities adhere to the “open competition” hiring procedure prescribed by the law, in reality the winner of the “competition” in most cases is known in advance. And such fake competitions are again only a part of the problem. The entire problem is that Ukrainian education system in general is largely fake – from paid exam grades and student papers downloaded from the Internet, to purchased dissertations and plagiarized research papers published in university journals that no one reads. Solving this problem requires a systemic joint effort from the government, universities and the student community.

***Policy recommendations***

A policy to reduce inbreeding levels would be the renewal of the screening function of the higher education by bringing it closer to the Western standards.

The first step towards this would be granting real academic and financial autonomy to universities. Namely, the system of financing of higher education should switch from financing institutions to financing students. Under the “money follow a student” rather than “universities get the money from the Ministry” system, universities would be forced to attract students by the quality of provided knowledge (evaluated by employer’s demand for graduates) rather than by availability of state-funded places. To improve their reputation, universities would be forced to (1) attract the best students; (2) expel underperforming students and (3) attract the best faculty on the market. These measures would automatically reduce inbreeding rates in a few years.

At the same time, universities could provide students with greater freedom in formation of their own study plans, i.e. widen the choice of study disciplines, increase academic mobility by developing cooperation with Ukrainian and foreign universities, and introduce ECTS rather than imitate its introduction. To introduce some “real” research into universities, the state “normatives” for the number of publications should be cancelled, and teaching workload of professors should be considerably reduced.

The new law on higher education adopted in July 2014, is quite progressive, and solves some of the biggest problems of the higher education system. For example, it increases to university autonomy by granting the universities the right to award their own PhD degrees, eliminates the impact of the Ministry of the rectors’ elections, reduces teaching workload of professors and increases the share of elective courses to 25%. However, it does not change the university financing scheme described above.

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1. <http://www.cedos.org.ua/system/attachments/files/000/000/002/original/csr_-_teachers_-_report_-_final.pdf?1386338539> [↑](#footnote-ref-1)
2. I biology, inbreeding (mating of genetically related individuals) leads to the spreading of corrupt genes and the following degradation of a population or a specie. It is generally believed that inbreeding causes degradation of educational institutions a similar way – by replication of inferior research and teaching practices. [↑](#footnote-ref-2)
3. See Osipyan (2009) and Stephans et al (2010). [↑](#footnote-ref-3)
4. Another consequence of the poor screening function of higher education is the fact that returns to higher education in Ukraine are the lowest among Eastern European countries – see Coupe and Vakhitova (2010). [↑](#footnote-ref-4)
5. See Bilyk and Sheron (2012). [↑](#footnote-ref-5)
6. The scale was from 1 (very important) to 5 (not at all important) [↑](#footnote-ref-6)
7. The scale was from 1 (very often) to 5 (not at all often) [↑](#footnote-ref-7)
8. The rating is composed upon the estimates of scientific potential, teaching potential and international visibility of a university. Complete rating is at <http://www.euroosvita.net/index.php/?category=49&id=2656> [↑](#footnote-ref-8)
9. Data from the system “vstup.info” on the number of students that entered the university in a given year. [↑](#footnote-ref-9)
10. The “national” status is granted to the universities either by President or by Cabinet of Ministers decrees. Usually, it is granted to the best universities in their fields but exact criteria are not clear. Currently, over 170 of 334 Ukrainian universities have this status. Until recently, these universities received some additional funding from the state budget. [↑](#footnote-ref-10)
11. Almost 40% of CSR-2013 survey respondents think that “good relations with administration” are very important for career development. Another 33% think that this factor is “fairly important”. [↑](#footnote-ref-11)