Performance-related Pay in the Russian R&D Sector*

Mikhail Gershman, Tatiana Kuznetsova

Strengthening the motivation, quality and efficiency of researchers' work is a pressing issue in all countries pursuing active science, technology and innovation policies. One way to address this challenge is by introducing flexible remuneration mechanisms which are country-specific yet still share certain basic principles such as a relationship between compensation and research productivity. Improving R&D workers' remuneration is particularly urgent now in Russia given researchers' low salaries in many areas of science (particularly considering the complexity of their work). To address the problem of compensation for researchers, new policy measures have been adopted since 2012.

This paper presents new evidence from Russia's scientific community — researchers, managers of R&D organisations, and government representatives — collected via a survey and focus group discussions on the desirability and efficiency of the current remuneration policy. Although most members of Russia's scientific community do not question the necessity and relevance of the government's 'efficient contract' initiative in the R&D sector, its implementation has had a more mixed response. The authors analyse the reasons and effects of this controversy.

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Raising the productivity of the R&D sector and improving the mechanisms of state support are important goals of many countries' state science and technology (S&T) strategies [OECD, 2012a, 2013]. Designing effective and flexible remuneration systems that recognise the complex, creative and intellectual nature of scientific work is a challenging issue. Policy-makers are addressing the problem with performance-related pay (PRP) schemes[1] [OECD, 2005]. The objectives of PRP schemes are to increase scientists' motivation, research quality and productivity. There is evidence that introducing PRP systems on a large scale has positive effects for remuneration and for science overall [*Hasnain et al.*, 2012]. However, there is also much evidence pointing to the ambiguous, and sometimes negative, effects of introducing PRP schemes in various areas of social policy. The PRP concept adopted by many countries in the 1980s and 1990s (for example, in education and healthcare) was later heavily criticised. Only a small proportion of civil servants were motivated by such schemes [*Marsden*, 2004, 2010; OECD, 2005, 2012b]. Of course employees worked hard to get a higher salary; however, the nature of the work (how interesting it is to them) and career prospects were stronger incentives [*Eckartz et al.*, 2012; *Ederer, Manso*, 2013]. Other studies have reached similar conclusions regarding the role of intangible incentives for researchers in Russia [*Gokhberg et al.*, 2010].

Mechanisms and criteria to remunerate researchers usually have a distinct national flavour. For example, Germany and Colombia measure researchers' performance using specific (occasionally quantitative) criteria [*Huisman, Bartelse,* 2001; *Altbach et al.*, 2008]. Other countries, such as the USA and Canada, take advantage of different levers to strengthen motivation and increase productivity. In particular, the institution of tenure track largely eliminates the need to apply specific productivity measurements: a chance to get a permanent professorial position becomes a better motivation than monetary incentives. However, to get this a researcher must demonstrate first-rate scientific results [*Chait*, 2002, 2005].

There are other mechanisms as well. For instance, Switzerland adopted a three-tier system in 2006 which provides a small basic salary, an annual increase based on experience, and bonuses which vary depending on researchers' performance. In reality, each tier consists of many grades with specific rules for upwards promotion. Sometimes, the regular package of employment benefits includes certain performance bonuses. In the USA, the introduction of PRP systems started at the management level, while in France and Canada PRP schemes are extended to lower-level rank-and-file positions as well [OECD, 2005].

Various remuneration mechanisms used in different countries can be classified into five groups: European, North American, South American, Russian (or Chinese), and Mixed [*Altbach et al.*, 2012, 2013; *Huisman, Bartelse*, 2001].[2]

The mechanisms predominant in European countries have complex hierarchic relations, a focus on long-term contracts[3], and guaranteed salaries provided by the state which strictly regulates the whole process. For this group, it is typical (but not compulsory) to categorise researchers as civil servants, who have an effectively pre-determined career development remuneration scheme. The second model (North American) involves relatively less state influence, with the academic community playing an active role in determining the criteria and indicators to allocate remuneration funds. The South American model is still emerging: its key features are hard to distinguish because of the variation in economic and technological development across countries in the region, but in

[1] The 'efficient contract' term initiative, which has been widely implemented in Russia in recent years, is similar to PRP [*Kouzminov*, 2011].

[2] This rough, much aggregated categorisation may be of more value to highlight some basic principles of remuneration and evaluation of researchers' work cross-nationally than as a classifying tool.

[3] Although recently there have been tendencies to employ more researchers on short-term contracts, especially at the junior level in the UK [Science is Vital, 2011].

most countries specific remuneration requirements are included in national and foreign research grants, which account for a substantial share of research funding.

The Russian (or Chinese) model is determined by i) rigid remuneration schemes with low basic salary (basic rates); ii) numerous formal productivity criteria that are often implemented voluntarily and opaquely; iii) low academic mobility with a persistent disjuncture between science and education; and iv) social networks and contacts playing a significant role in career development and appointment to highly paid positions. Finally, the mixed model combines different features of the models described above and is relevant, for instance, for some Eastern European countries.

Russian science today is noted for tensions between the state and society in terms of desired outcomes in the quality of R&D output and the contribution of S&T to economic growth and improving the well-being of citizens. At the same time, the R&D sector itself has numerous problems such as low prestige of the scientific profession, the relatively low level of researchers' salaries compared to other economic sectors and other countries, outdated infrastructure and facilities, the rising average age of R&D workers, and outflow of talented scientists [*Gokhberg et al.*, 2010, 2011].

Three quarters of Russian R&D organisations are currently state-owned, with nearly half (47%) of them fully government funded and controlled [HSE, 2014, pp. 29–33]. The majority of such organisations consume a large share of public resources show poor results, and are not competitive enough to operate under market laws. As in other countries, Russian public research organisations (PROs)[4] are under pressure to adapt to changing innovation dynamics including increased competition for key resources (especially highly skilled personnel) and changing priorities of public research and innovation procurement. Unsurprisingly, PROs are the key target for many reforms in the Russian R&D sector although the sector's size means implementing such reforms is not a quick or painless process.

The government could use a variety of tools to manage PROs' research focus and performance in terms of both quality and relevance.[5] In 2012, the Russian government adopted several national policy documents to improve the development of S&T in terms of productivity and scientific output, including measures to improve the remuneration of researchers employed by public research institutions (PRIs) and universities. The new system aims to i) increase researchers' salaries to at least 200% of the mean wage in the regional economy by 2018[6]; and ii) introduce PRP mechanisms that regularly evaluate researchers' productivity.[7] Although this remuneration reform is already under way, the scientific community lacks awareness about the reform's main components and mechanisms. In particular, the optimum ratio between basic salary and incentive bonuses, the criteria to evaluate researchers' performance and the extent to which an increase in researchers' remuneration could affect their productivity remain unclear.

Reflecting on the ongoing debates in Russia, this paper discusses the potential merits and drawbacks of implementing a PRP system in the R&D sector. We argue that a large-scale transition to the new remuneration scheme could be inefficient without completing institutional reforms in the R&D sector. Several important issues should also be considered when designing a PRP scheme, such

[4] Here we refer to public research organisations (PROs) which include public research institutions (PRIs) and universities.

[5] Practically, performance-based contracts and competitive funding mechanisms for PROs have been more widely used than measures to improve incentive structures and remuneration schemes at the level of research teams and individuals [*Arnold et al.*, 2007; *Guinet,* 2012; OECD, 2013].

[6] Presidential Decree 'On measures to implement state social policy' no 597, dated 07.05.2012.

[7] Government Order 'Program to gradually improve the remuneration system in public budgetary institutions for 2012-2018' no 2190-r, dated 26.11.2012.

as providing a decent basic salary; interpreting research productivity more widely to include researchers' scientific, educational, and administrative responsibilities; and allocating R&D funding directly to research teams.

Methodology and Data

The basis of our study is comprised of empirical data collected by the authors through a survey and focus group discussions in 2013.

The survey covered homogenous groups of public R&D organisations. They included institutes of the State Academies of Sciences (SAS)[8], universities (including national research universities[9]); and PROs belonging to ministries and other government agencies, including public research centres (PRCs).[10]

The sample was designed to have an approximately equal number of managers and scientists representing the major groups of the above listed organisations. In total, the survey got responses from nearly 1500 managers (heads of organisations and research divisions) and researchers. The two questionnaires (for managers and researchers) each contained approximately 40 questions divided into two main blocks:

i) Factors influencing researchers' motivations;

ii) Organisational practices of researchers' evaluation and remuneration; respondents' opinions on the current government policies.

In addition, the authors conducted 5 focus groups to analyse a wider range of issues.[11] Focus groups are considered an efficient technique for collecting and classifying diverse kinds of expert information.[12] The expert-participants not only discussed recent government initiatives and more general problems associated with the development of national S&T potential, but also suggested ways to boost research productivity. Three separate focus groups were held with representatives from i) government agencies; ii) managers of PROs and universities; and iii) leading researchers. We ran separate focus groups to allow the participants to express their opinions freely. 8–12 experts participated in each discussion group, which ensured sufficient diversity of opinions and still enabled the participants to have interactive discussions.

Discussions focused on the following issues:

- Factors affecting researchers' loyalties (hierarchy of values, financial and non-financial incentives, prestige of the profession);
- Work organisation and remuneration (job description, workload, work planning, control by management, etc.);
- Research productivity;
- Institutional factors affecting research productivity;
- Government policies and instruments to evaluate research productivity.

In the next section, we discuss the most important and interesting findings from the survey and focus group discussions.

[8] The study was carried out before a recent law enacted on September 2013 which merged the three previously separate academies (focusing on medicine, agriculture, and the sciences in general) into one body (Federal Law 'On the Russian Academy of Sciences and the reorganisation of the state academies' no 253, dated 27.09.2013).

[9] The status of 'National Research University' is enjoyed by 29 Russian universities with strong research capabilities. This group of universities receives vast public support in the form of additional funding from the federal budget.

[10] Public research centre (PRC) is the official public status that has been assigned since 1993 to PRIs and universities which possess a unique research and experimental base, talented research staff, and internationally-recognised scientific results. As of 2014, there are 48 PRCs.

[11] For more information on the focus group discussions, see [*Gershman, Kuznetsova*, 2013].

[12] On the methodology and practice of focus groups, see [*Bloor et al.*, 2001; *Johnson*, 1996; *Krueger, Casey*, 2009; *Belanovsky*, 1996].

Main results

Remuneration mechanisms

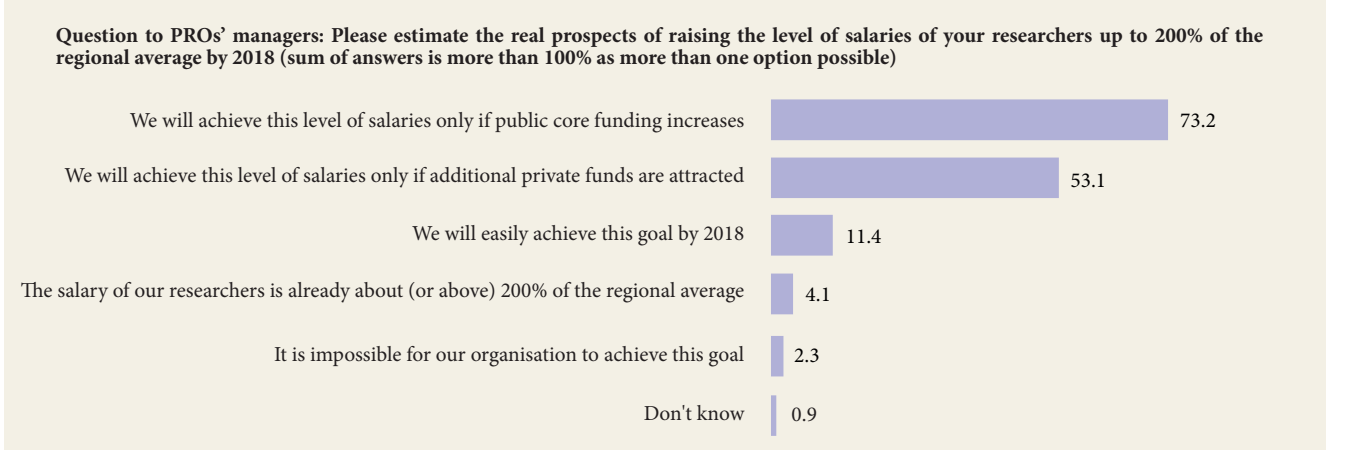
As already noted, many countries emphasise providing decent compensation to researchers with strict performance-related requirements for hiring and promotion [*Altbach et al.*, 2012]. In Russia, however, low basic salaries and insignificant differences between pay grades remain. This situation does not help attract talented younger researchers and retain experienced professionals, which hinders the renewal of the R&D sector. Most Russian experts who took part in the focus groups believed, therefore, that the government should primarily focus on raising basic salaries, which means increasing core funding for PRIs and universities [*Gershman, Kuznetsova*, 2013].

Figure 1 shows the distribution of PROs' managers' opinions concerning the actual potential to increase researchers' salaries. At the time of the survey, only 4% of the surveyed organisations were close to achieving, or had attained, the target increase in researchers' salaries, set by Presidential Decree no 597, dated 07.05. 2012 (see footnote 6 above). Only about 11% of respondents are positive they will be able to reach this goal. The majority of managers (73%) think that this target is unachievable given the available resources; 53% of surveyed managers, meanwhile, believe that attracting extra non-government funds seems to be the more urgent matter. PROs' managers think state (institutional) funding to their organisations should be raised by about 160% and non-government investments by 140% to increase researchers' remuneration. These estimates suggest that without structural reforms, remuneration targets put too much pressure on the federal budget.

During the focus group discussions, the participants suggested the following funding scheme: research teams or organisations which receive public funding (in any form) should first provide a decent level of basic salary to retain personnel. The remaining funds (if any) should be used to reward good performance and for other purposes. To support the highest qualified staff, the experts in the focus groups recommended creating a few high-paid permanent positions as well as 'guest' positions for talented researchers from other regions or countries.

An important issue which requires serious consideration is who should receive the funds. Research teams could receive the funds directly or the host R&D organisations could receive the resources and subsequently allocate the funds between teams of researchers. At present, the second approach for public fund-

Figure 1. **Prospects for raising average salaries of researchers by 2018, according to PROs' managers(as a percentage of respondents picking each option out of total number of respondents)**



Source: authors' calculations based on data of Institute for Statistical Studies and Economics of Knowledge, National Research University — Higher School of Economics (henceforth HSE ISSEK).

ing of R&D predominates in Russia.[13] While international experience suggests that both these models are viable, almost all participants of our focus groups agreed that remuneration funds should be allocated and managed at the level of research teams.

Prerequisites for increasing salaries

On the whole, introducing efficient contracts in PROs would mean researchers could earn salaries comparable with the private sector. This would help markedly improve their living standards. As a result, many scientists — including younger researchers — would for example then be able to get on the property ladder by taking out a mortgage.[14] At the same time, raising researchers' salaries would be risky without also tackling other critical issues (increasing individual productivity, completing institutional reforms, etc.) Specifically, increasing researchers' salaries relative to other sectors of the economy could lead to an additional inflow of university graduates and workers from other industries into the R&D sector (as happened incidentally in the USSR in the middle of the 20th century). However, such an inflow of personnel in itself does not automatically improve the situation; on the contrary, the quality of R&D might deteriorate [*Gokhberg et al.,* 2011]. Thus, the new remuneration mechanisms should not only guarantee a reasonable salary but also be a method of selecting the best researchers through assessing their performance. This selection could be made through researchers' performance assessment. In addition, workers who do not meet the evaluation criteria should be transferred to alternative positions or subject to dismissal.

Linkages between remuneration and productivity

The experts confirmed the importance of linking remuneration to productivity. However, they felt that appropriate incentives could be effective only if other measures were introduced in parallel, namely provision of modern equipment, improvement of working conditions, and designing adequate performance criteria.

In particular, a widespread worry among the focus group participants was that as researchers' productivity is hard to measure, any evaluation system would turn into a profanity or just a formality, while the emphasis on quantity of academic publications might negatively affect their quality. Researchers might end up being concerned with only meeting formal targets. Other risks voiced by the experts include more (occasionally unreasonable) demands for salary increases, an outflow of highly skilled workers, and an influx of under-qualified people who are mainly motivated by money.

Nevertheless, the vast majority of the survey respondents agreed that to increase individual and group productivity, the current remuneration system should be changed in combination with other factors (Figure 2).

Rank-and-file researchers stressed the importance of purchasing new scientific equipment and materials (62%) and raising basic salaries (57%). Over half of respondents (51%) emphasised the need to work harder which suggests that the R&D sector could be more productive — including by introducing PRP systems (44%). The distribution of respondents' answers confirms that current funding is not enough to make these mechanisms efficient: the need to receive more research grants and expand both public and private financing was mentioned by 50% and 44% of researchers, respectively. This corresponds to what managers of PROs felt about the real possibilities of raising staff salaries (Figure 1).

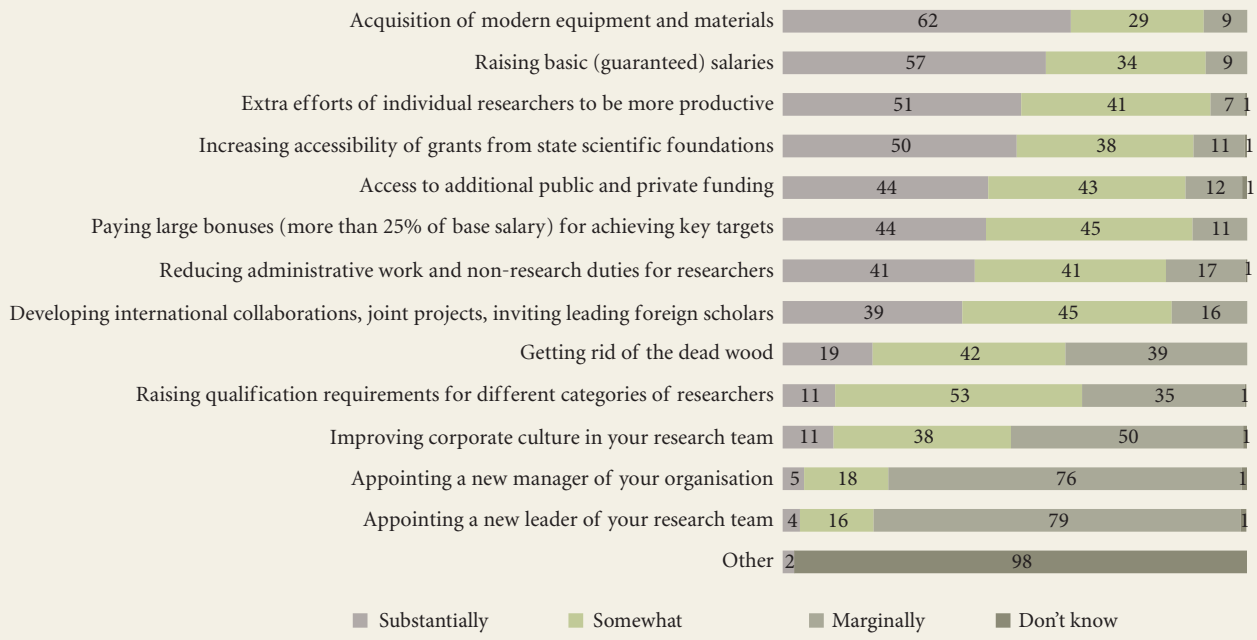
Another way to make researchers work more productively is by reducing their administrative responsibilities and allowing them to focus on science (41%).

[13] The newly established Russian Science Foundation (RSF) is an exception to this trend, as it allocates grants directly to research teams (see http://www.rscf.ru/).

[14] Low geographic mobility of researchers is an important factor hindering the development of science [*Gokhberg, Meissner*, 2013]

Figure 2. **Measures to increase research productivity, according to researchers (as a percentage of respondents picking each option out of total number of respondents)**

Question to researchers: To what extent may the measures listed below increase research productivity in your organisation?



Source: authors' calculations based on HSE ISSEK data.

Finally, taking part in international research networks and bringing leading foreign scientists to Russia was considered significant by almost 40% of respondents. Interestingly, getting rid of the 'dead wood' (inefficient researchers) was only seen as an important way to boost productivity by about one fifth of respondents (19%). It is probably because in Russia (and in the USSR) PROs' institutional funding is allocated on the basis of the previous year's payroll.

These findings provide more clear evidence that switching to a new remuneration system cannot be limited to an automatic pay raise (including guaranteed salary) and would be largely pointless without taking into account other important factors.

Criteria and measurements

Overall, experts think that it is impossible to design universal evaluation criteria due to the large variety and specific nature of branches of science and the peculiarities of PROs. For example, researchers' work is organised differently in the State Academies of Sciences, PRCs, industry-specific institutes, and universities. Therefore, the specific parameters of remuneration and evaluation criteria should undoubtedly differ by organisation.

In addition, there are more fundamental challenges. PRIs and universities typically produce goods (such as research papers) whose quality can only be reliably assessed by professionals [*Altbach et al.*, 2008; *Gassler, Schibany*, 2011].

The survey shows that 40% of managers would welcome more stringent hiring and promotion requirements (meaning more tough evaluation criteria) to improve researchers' skills and productivity. However, the exact indicators and the values which should be applied for the criteria remain a subject of fierce debate.

The participants of the focus groups agreed that the number and quality of publications remains the best measure of research productivity (with certain disciplinary-specific exceptions). Although the number of publications in high-

ly ranked journals is an exceptionally important criterion, it should be supplemented with other indicators especially when making administrative decisions (Figure 3). For each knowledge area, specific publication and citation indicators should be used alongside additional academic productivity indicators [*Kahn et al.*, 2009].

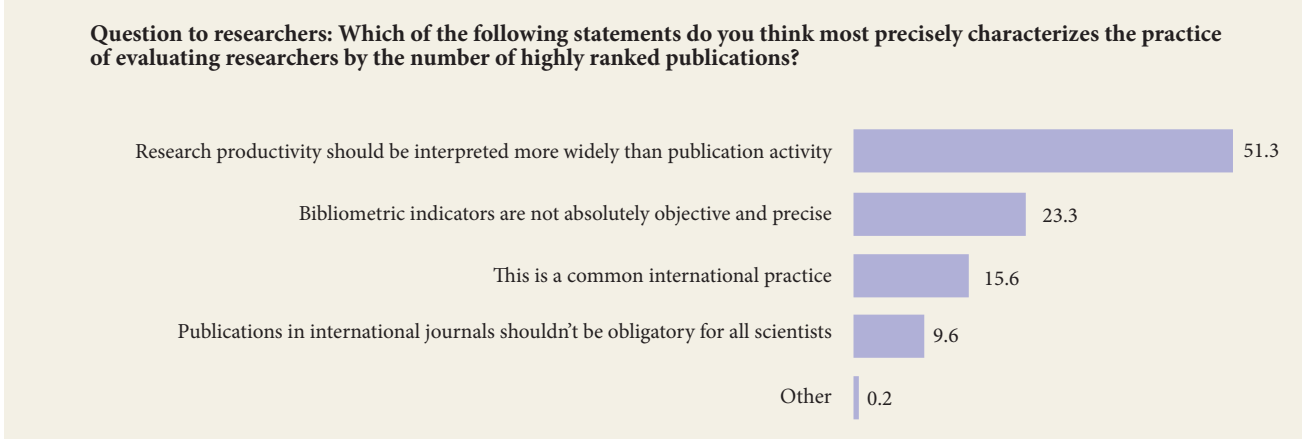
The experts believed that using only international databases to evaluate Russian researchers is unacceptable in principle given that these databases may be inaccurate (as shown in Figure 3, 23% of survey respondents shared this idea). Several emerging systemic problems cause some concern, despite the growing popularity of such bibliometric indicators.

In the first place, we observe a recent tendency to overestimate the significance of bibliometric (and other scientometric) indicators in measuring scientific productivity without integrating these indicators into a more comprehensive framework that would account for the specificities of various areas of science. A consequence of the growing demand for bibliometric indicators is the relatively new but widespread global practice of paying for publications in some international, indexed academic journals without proper peer review. In addition, powerful lobbying groups exist around high impact scientific journals. As stated above, the blind use of journal ratings for evaluating researchers' work can negatively affect the quality of research [*Rafols et al.*, 2012].

In 2012–2013, many national debates took place in Russia about making changes to the regulatory and legal framework for PRIs' evaluation procedures. During these debates, certain attempts were made to exclude the indicator for the 'number of publications in Russian scientific journals' from the list of productivity indicators given the low quality of many of such journals.

However, according to many experts, publications in Russian journals (and their weighting when evaluating research productivity) are important to scientists who investigate particular domestic issues such as language, culture, and history. Issues dealing with internal Russian problems may be of little tangible interest to foreign readers but it is important to develop those branches of science, to train staff and future researchers, and to preserve cultural traditions. It is worth noting that Russian researchers also face certain objective barriers hindering their international publication activity. These include specific features of certain research fields, a shortage of relevant materials and data, and insufficient financial incentives. Other significant barriers that are more of an individual nature include: lack of experience and skills in academic writing, lack of international contacts and insufficient knowledge of foreign languages. These problems set the agenda for future reforms in Russian science.

Figure 3. **Researchers' opinions on the practice of evaluating research productivity by the number of highly ranked publications (as a percentage of respondents picking each option out of total number of respondents)**



Source: authors' calculations based on HSE ISSEK data.

Given the above, it is strategically important to raise the quality of domestic scientific journals and help them to be included in international citation databases. This would undoubtedly contribute to the overall growth of Russian science, increased collaboration, the application of new knowledge to industry, and more distribution of knowledge to wider and younger audiences. Russian-language publications may be considered less important compared to international ones, but ignoring them would not only be unwise, it would be harmful.

However, some participants in the focus groups were inclined towards introducing 'strict' criteria of R&D productivity based mainly on international publications in high impact factor journals. This reflects the significant diversity of the Russian scientific community and the convention of occasionally adopting international experience uncritically. Scientific productivity can also sometimes be better measured with the whole team working on a particular problem, rather than by using individual contributions by specific team members.

Types of activities and working time structure

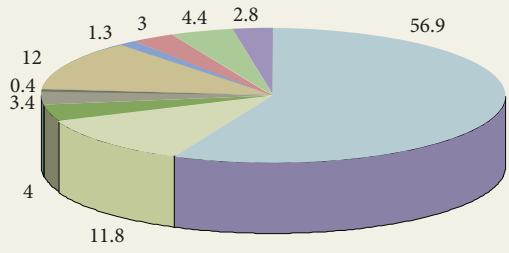
One of the important factors lowering the efficiency of standardised R&D productivity measuring systems (based on bibliometric indicators) is the variety of activities that researchers have to undertake (Figure 4).

It is not uncommon in Russia that certain responsibilities (planning and coordination of work, dealing with suppliers, etc.) are delegated to particular staff members during a project, which distracts them from their main work. Managers must be able to evaluate and reward such administrative activities performed by employees in addition to their research. According to the survey results, these extra administrative responsibilities account on average for at least 12% of researchers' working week. Another example is teaching. For staff of Russian universities' research departments, these responsibilities are by definition not a priority. On the other hand, educational activities have a higher priority for teaching staff which encourages them to reduce their research-related responsibilities.

Yet another important issue is the evaluation (and remuneration) of peripheral research that often take up a large proportion of working time. These consist of writing long reports with many formal requirements for government agencies and other customers or preparing finance statements required by funding agencies. Very often, such activities dominate the researcher's timetable (although researchers usually consider this work as an integral part of their main job, see Figure 4). It is simply impossible to avoid doing such work because researchers have to take on many projects to earn an adequate salary.

Figure 4. **Time structure of researchers' average working week (%)**

Question to researchers: Please say what proportion of your working time in a typical working week is spent on the following activities



- Activities for principal job (in the office)
- Activities for principal job (in library or other places)
- Activities for other job (as an additional work)
- Teaching as an additional job
- Tutoring
- Administrative activities
- Consulting
- Editing and translating scientific texts
- Taking part in academic conferences and workshops
- Other

Source: authors' calculations based on HSE ISSEK data.

Researchers' low basic salaries in Russia, as well as a lack of equipment and reliable data, affect the allocation of the time they spend working. Small salaries are offset by consulting activities, private tutoring, and other activities.

Therefore, despite researchers in Russia and other countries in theory spending almost the same amount of time on research, foreign scientists might have a time advantage.[15] Improving the provision of technical infrastructure, strengthening scientific data bases, and a reasonable reduction in the reporting requirements for research grants and targeted programmes would go some way toward making Russian researchers more competitive. In addition, it would make sense to provide a legal right to a year-long sabbatical after six or seven years of continuous research work, as is customary in many countries and as used to be the case in certain research fields in the USSR.

Institutional and organisational context

As already mentioned, measures to increase researchers' productivity should be accompanied by a package of institutional and legal changes which are often not directly related to S&T. Institutional and financial issues in the R&D sector have remained a subject of fierce debate for over two decades [*Gokhberg, Kuznetsova*, 2011]. Here, we only note the subject of restructuring the network of R&D organisations. According to the experts of our survey, in certain fields up to 90% of research teams work inefficiently, and many of them have no chance to improve their practices. For instance, in biomedicine, the experts felt that only 450 out of almost 4000 laboratories were productive. The 'empty corridors' problem in PROs still exists, although the solution is quite obvious.

Increasing remuneration on its own, which of course would be welcomed by researchers, is hardly likely to improve the overall situation in Russia's PROs. A significant increase in scientists' wages without wider systemic changes may even be a disastrous policy. It would not help to get rid of the 'dead wood'. Instead, these inefficient researchers would then have to be paid higher salaries.

Institutional reforms should be combined with a radical modernisation of R&D infrastructure (including premises and equipment), which has deteriorated significantly since the fall of the Soviet Union. The 'sticking plaster' approach is not conducive to solving accumulated problems.

Awareness of government policies

The issue of public awareness of government S&T policies has several facets in Russia [*Gokhberg et al.*, 2010, 2011]. Public awareness reflects the quality of policies, which should be modified in a timely manner based on constant feedback and interaction with the research community and specific targeted groups. On the other hand, this information is important to the stakeholders in the S&T sphere — PRIs and universities — who strive to increase their productivity under specific limitations.

Our survey data show that overall Russian scientists are largely passive, even about issues that directly affect them. 16% of managers in PROs and 36% of researchers only learned about the changes to remuneration mechanisms from the survey questionnaire. This seems to be rather surprising given the extent of lively public debates and the wide media coverage. Researchers employed by universities, which are ahead of PRIs in terms of transitioning to an efficient contract system, were the best informed.

Public authorities should clearly make more efforts to publicly disseminate information about planned reforms in S&T policy.

[15] However, this hypothesis still needs further testing.

Discussion and conclusions

Our analysis leads us to conclude that a rapid transition to a PRP system without simultaneously undertaking much-needed institutional reforms would be inadvisable. The government and most of the Russian scientific community both agree that reform and a performance-based remuneration system are needed. However, it is first necessary to address the systemic problems. Regular business processes should be restructured so that researchers do not have to carry out irrelevant responsibilities. To achieve this, various brokerage structures should be established to support R&D projects at all stages and eventually help with commercial application of researchers' ideas. Another option might be to set up structures to manage R&D organisations' property, equipment and facilities.

It is certainly necessary to continue increasing R&D expenditures, including raising researchers' salaries. However, that will have little effect if researchers do not see professional and personal opportunities for themselves in the future and if their profession's prestige remains low [*Austin, Larkey*, 2000; *Gokhberg et al.*, 2010]. An incomplete list of needed S&T policy reforms includes: restructuring the public R&D sector and identifying the best performing PROs; improving funding mechanisms; attracting non-budgetary funds; improving the work of public science foundations; upgrading facilities and equipment; implementing targeted measures to preserve disciplinary schools in science; and attracting young people to science.

Scientists' generally low enthusiasm towards the planned reforms may be explained by a general low level of trust in executive authorities by all strata of Russian society (especially by intellectuals), the conservative inertia of the scientific community and a desire to retain the status quo on the one hand, and by the *de facto* failure of previous attempts at reform on the other hand. Diverse approaches to researchers' remuneration carried out in the last 20–25 years led to scientific organisations selecting priorities unsystematically and often formally reporting on key performance indicators. Lack of transparency regarding allocation of performance-based payments and bonuses at PRIs and universities was also mentioned by our survey respondents as a current problem. There is neither external control over such payments nor clear and transparent policies within PROs. The circumstances described above make researchers more wary towards any remuneration reforms.

The survey and focus groups findings suggest that, overall, Russian scientists see introducing efficient remuneration mechanisms and increasing research productivity as key challenges. At the same time, they still view the government as the major R&D funder. The experts pointed out that research productivity should be interpreted more widely, to include researchers' educational, administrative and other responsibilities. The package of indicators used to evaluate R&D productivity should take into account the particular features of different scientific disciplines and areas of work. This conclusion must be taken into account when designing new remuneration mechanisms for researchers.

PRP mechanisms can only be efficient if a decent basic salary is provided (in some organisations this currently accounts for no more than 10% of researchers' final salary). Negotiating such imbalances could make the R&D sphere attractive again to talented young people as well as to experienced professionals. Such measures should be reinforced by suitable legislation.

It is really important to address the problems analysed in this paper associated with introducing new systems for remuneration as part of a strategic shift towards contemporary ways of organising and supporting science in Russia. The tempo of reforms must not slacken: it is crucial to show real results of the reforms by 2014–2016. This should include achieving the targets written in the main S&T policy documents. F

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