

Opponent's report on the FR of the IPn Audit

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Abbreviations used in this report

CR Czech Republic
FR Final Report
i-f Institutional Funding
PBCF Performance Based Contract Funding
FBF Formula Based Funding
RVVI Board for R&D&I
OP Operation Program
AV CR Academy of Sciences of the CR
MSMT Ministry of Schooling, Youth and Sports
MPO Ministry of Industry and Trade
RI Research Institution

INTRODUCTORY NOTE

- 1) The FR has extraordinary broad coverage (as required by ToR) and its all-in-one analysis is unique in the CR and is of great value-added. It contains descriptive and critical components plus recommendation. In my report I focus primarily on later two and do not elaborate on less important omissions and imperfections within the first component.
- 2) From the forward looking perspective I consider the third component of the FR as the most important because they have the potential to shape follow-up reform steps and for this reason I am devoting greatest attention to this component. First two components

are very informative and are important to understand national circumstances when shaping recommendations for reform steps.

- 3) The FR contains a lot of valuable information and deep comparative and synthetic insight. I am more or less skipping all this in my comments because it is good part of the FR and there is not much to comments on. In my comments I focus on explaining deficiencies of the FR as concerns omissions, mistakes, doubtful *in conclusions and recommendations* which seem to be missing some important background. This is why readers of my report may find it quite critical about the FR. But I would like to stress that my opinion on the FR is very positive. Though, I recommend that my reservations are adequately reflected in the final version of the FR. **In the following I underline my explicit questions and suggestion what remains to be accomplished.**

ON PRIORITIES AND OVERALL STRUCTURE

- 4) I am convinced that the importance of numerous recommendations differs a lot. It is not stipulated at this moment and should be in the FR. My personal opinion on priority sorting is the following:

- Change of the top R&D governance (RVVI vs. government and advisory boards, administrative and analytical support and evaluating institution)
- Introduction of informed peer-review of research institutions (RI)
- Changes in institutional funding of RIs
- New situation emerging due to new OP funded R&D&I infrastructures

Numerous other recommendations are spread across the FR but I find them much less important and not so critically important for the functionality of the whole R&D system. Therefore, I focus primarily on the content of Annexes 2 and 3 and I refer to other Annexes if suitable.

Annex 1 – Assessment of Public R&D expenditures in the CR

Annex 2 – R&D Governance in the Czech Republic

Annex 3 – The Quality of Research, Institutional Funding and Research Evaluation in the CR and abroad.

- 5) Annexes 2 and 3 provide conclusions and summary of recommendations at their end. In Annex 1, conclusions and recommendations are spread only within the texts. In this respect, the structure of all Annexes should be unified. Key findings (i.e. problems, deficiencies, unknown issues) should be summarized and sorted in the order of perceived importance (it is the unique feature of the Audit covering all aspects of R&D in the country allowing for this). Without this, the most important pieces of information and key recommendations will be hidden by huge amount of information provided in the FR.

ON THE SYSTEM OF GOVERNANCE

- 6) The most important recommendation of the FR is contained in Annex 2 and concerns numerous changes to the system of R&D governance, especially at the highest level of the current RVVI. Changes in governance at the highest level are quite important because the system of governance can drive or block all other follow-up changes. These recommendations seem to be well grounded based on detailed identification and description of loopholes described in the appendix. However, the proposal is not comprehensive enough because it does not clarify re-allocation of all responsibilities of the current RVVI. This is the case, for example, of the formation of state budget for R&D. Would the responsibility be shifted to the government (not clarified in the FR), the AV CR as the only provider of R&D funding w/o a voice in the government, would be disadvantaged. This institutional deadlock, in my view, caused great deal of tensions in the recent past and is an obstacle of modifying the governance structure. Therefore, I expect that the FR will suggest some solutions.
- 7) I would like to see more explicit answers to following questions: Is the system with individual providers of R&D funding serious obstacle for improvements in effectiveness and efficiency of the R&D system? What is needed (based on the thorough audit of problems) to make providers accountable for what they are expected to do? Should some of their obligations and powers be reduced or expanded? Which ones? To what extent existing obstacles lie in the legislation and to what extent it is a problem of insufficient management, experience, shortage of information at various levels?
- 8) Case studies of foreign R&D systems in the FR focus primarily on evaluation and funding of higher education sector and say much less about other sectors. On the other hand, sections on the Czech system do the opposite and pay very partial attention to the evaluation and funding of the Czech higher education system (note that Metodika allocates relatively smaller proportion of funds to this sector and is dominated by the normative funding scheme which does not seem to be noted by the FR). As a result, findings of the comparative exercise are very partial and very incomplete and some conclusions and recommendations are biased and not well grounded. I have noted this in my previous report.
- 9) I am missing analysis, key findings and recommendations concerning the new situation emerging due to OP funded research infrastructures. This is particularly important because longer term sustainability of those infrastructures may require substantial shifts in proportions of i-f vs. target funding or non-negligible increases of state budget on R&D (or EU funds in the next period for R&D). Solutions chosen may change the role (significance) of i-f in the future, therefore changing the role of PBFC and FBF. It may even determine proper shape of the governance structures.

ON PROPOSED PRINCIPLES OF INFORMED PEER-REVIEW (IPR)

- 10) I find the proposal of IPR very good one. It also contains attributes to be secured for good functioning in the CR (lack of evaluation culture, small size, etc.). It is very similar to the idea of *Big Evaluation* as envisioned in the document *Long-Term Principles of Evaluation and Funding* approved by the RVVI during spring 2011 (critical opinions on this strategic document should be included into this annex). The notable difference

seems to be the proposal that evaluation outcomes based on the IPR are not directly linked to funding allocations. This seemingly counterintuitive recommendation makes sense if one takes into account several unsuccessful attempts to introduce R&D evaluation in the CR. I fully agree that evaluation culture needs time to be developed and financial interests pose major danger in stages of infancy.

- 11) There is not much information in the FR on the way performance of individual providers should be evaluated. It should be clarified whether results of IPR (quality profiles of RIs in particular fields) as proposed can and should be aggregated to the level of whole universities (note that university will be evaluated in numerous distinct research fields) or even whole segments under particular providers.
- 12) It is being stressed several times in the FR that evaluation of R&D outcomes should be taking into account also roles, goals and missions of particular RI. This is not fully clear to me. By definition, R&D outcome is not R&D output but it is *socio-economic impact of outputs*. From this standpoint, the value of socio-economic impact (difficult to measure) does not seem to depend on the mission and role of RI which produced it. What matters is definitely the volume of inputs used by RI to generate the output. Is this the meaning of the recommendation? Is the FR saying that when evaluation outcomes, one should evaluate also productivity (unit costs)?
- 13) Great deal of the proposed IPR process resembles the approach applied by RAE/REF with some valid exceptions reflecting CR situation. What should be made clearer is whether authors of the FR envisage (recommend) such a heavy and demanding IPR (in terms of costs, workload, duration) as they use in the UK or whether authors have in mind some light version. If the later is true, what should be made simpler compared to the REF/RAE?

ON EVALUATION AND FUNDING

- 14) The second most important recommendation of the FR is to abandon current Metodika, to fix proportion of i-f budgets of all research institutions (RI) at current proportions (this probably also implies fixing proportions of i-f budget at the level of providers?) and to launch, ASAP, smooth process of transition to two-stream i-f by Formula Based Funding (FBF) and Contract Based Funding (CBF). What seems to be given little attention in this respect is that current Metodika serves also other purposes than mere allocation of i-f to RIs by providers, i.e. providers not having own evaluation of RIs (all, except AV CR): (a) between providers (MSMT, AV CR, MPO, and other eligible ministries), (b) it steers¹ allocations between basic and applied research and innovations, and (c) it steers allocation between groups of disciplines. The FR should be more explicitly specifying what should replace aforementioned other roles of Metodika. Let me remind that endless tense discussions in the country have been devoted to those allocation issues during recent years and the FR cannot leave this w/o discussion. In my opinion, allocations into dimensions (b) and (c) should not be left at full discretion of providers and to spontaneous processes. Some central steering is necessary. Would government (or whichever central body of coordination) decline its steering role (more or less the

¹ Here I am using term “to steer” because those allocations are not 100% mechanical (as is the allocation among RIs) because proportions are based on imperfect information about field origin of research outputs and type of research activity (due to continuous space between basic and applied research).

current situation), the decisions on allocations would be done completely at the level of individual providers and this does not seem to be appropriate for number of reasons. I am also convinced that steering (b) and (c) should reflect three key considerations: (i) strategic goals and priorities of the country, (ii) information on productivity of disciplines or groups of disciplines and types of research relative to some international benchmarks, (iii) incumbent research capacities (labs and human resources). Though there are some comments on these issues in the FR, this issue is almost untouched in the part describing how Metodika should be abandoned.

- 15) It is obvious that allocations (b) and (c) specified by Metodika fail to reflect (i) and (ii) at all and (iii) is reflected only partly (set by Metodika 2010 as an average of proportions inherited from the past funding, i.e. Research Intentions and from proportions computed by the law of three sums using Metodika points). These facts are spotted by the FR but should be explained more lucidly and implications stated more carefully.
- 16) Abandoning Metodika would also mean that new recipe for allocation (a) of i-f between providers has to be designed too (if the system of providers is not to be abandoned too). Recommendations in Annex 3 are silent about this. Only some guesses can be made based on notes (are these strong recommendations?) that *the roles, goals and missions of different R&D institutions* (meaning institutes of the AV CR vs. universities vs. ministerial institutes vs. private R&D institutions) *are not, but should be defined after thorough discussions* (pp. 63 of appendix 3). I cannot find this in the FR while I am sure that statute of each RI contains attempts to stipulate this. Does it mean that the Audit found that written roles, goals, and missions in existing statuses are currently not defined or defined not properly?
- 17) Throughout the FR I cannot find stronger opinion on whether the current allocation structure in dimension (a) is adequate. For example, some people point to large number of fields covered by AV CR institutes and compare it to the situation of fewer in Germany and conclude that R&D activities of AV CR should be reduced to those disciplines and types of research where the institutional setup of the AV CR and its institutes is more effective and more efficient than others for the purpose of basic research. I admit that before the Audit, due to shortage of reliable analysis, I was not able to form my own opinion on this. But I am not any smarter after reading the FR. This should be added or it should be at least explained what such evaluation should contain and what are the pros and cons of different institutional backgrounds in the CR as perceived by the Audit. For example, the systems of internal governance within universities and AV CR institutes differ tremendously.
- 18) The proposal to design, pilot and regularly realize IPR of RIs is quite sensible. Not making direct connection between IPR outcomes and funding for some period of time not to protect development of evaluation culture from partial interests is also sensible. Very problematic is the proposal of replacing Metodika. The reasons are that: (i) the FR does not sufficiently recognize legal and other realities of the Czech environment, (ii) is not fully and properly enough recognizing real pros & cons and roles of Metodika, (iii) could not be aware of ongoing adjustments and fixes in Metodika 2012.
- 19) I cannot find definition of inst. funding as it is being used by authors of the FR. My feeling is that their definition is not necessarily identical with the definition used by the Czech

regulatory system. This causes some confusion in descriptive chapters and should be clarified.

- 20) Based on my experience, the definition of i-f should be derived from agreed purpose of the i-f. If the purpose of i-f is not explicitly stated, it is difficult to reach a consensus on its proper share and on allocation criteria. My own opinion is that i-f should secure medium-term operation (keep core human resources, energy, maintenance) of RIs vis-a-vis volatile flows of target (competitive) project funding. This is more important in case of smaller IRs with small number of ongoing projects. Since target funding is prospective (and especially in basic research it is difficult to promise and predict outcomes), it makes sense to focus i-f retrospectively on the medium-term past (realized outputs and outcomes). Taking this into account, the proposal of the FT to replace retrospective Metodika by two-stream funding owes number of answers: (i) what is the purpose of i-f according to authors of the FR and given this, (ii) what are adequate relative proportions of i-f for RI of different sizes and types? (iii) what would be adequate proportion of prospective contract funding relative to backward looking formula budget? For example, the volatility of target funding has adverse impact on relatively small RIs (smaller institutes of the AV CR) with few projects running but volatility is not big problem in case of huge RIs like Charles or Masaryk university running hundreds of parallel projects and they are less exposed to funding volatilities. Is it the case that some streams of funding labelled as *institutional* are not effectively not institutional but are targeted or competitive and vice-versa?

Formula Based Funding (FBF) stream

- 21) Formula based funding approach is being proposed to partly replace allocation prescription given by Metodika (currently Metodika 2011 is in effect). While Metodika is fiercely criticized for grounded and ungrounded reasons, the FBF recipe is similarly or even more problematic. Moreover, while numerous deficiencies of Metodika are being fixed over years, the FR stresses that the formula for FBF should not contain publication/bibliometric based indicators and should be kept simple. It is not clear how it would make it better tool than Metodika. My impressions is that it would be juts the opposite case. It is also not clear why the FR proposes to exclude publication/bibliometric indicators from the formula given that number of countries it refers to are doing so. Moreover, which indicators would remain in case of AV CR or other ministries whose RIs do not have students as possible indicators. As indicator, the FR suggests number of foreign academics or number of mobilities. These indicators contain little information about quality and productive role and are even more manipulable and more prone to opportunistic behaviour than properly fixed bibliometric indicators. Moreover, indicators proposed by the FR are already used in the formula funding (normativni financovani VS) scheme of educational activities of higher institutions. This should be clarified in the FR.
- 22) Since the FR does not suggest suitable proportions of FBF vs. CBF streams (should there be some notable difference of proportions between RI types as they exist in the CR?), it is difficult to think about proper criteria used in both schemes. For example, if the FBF stream is meant to be minor (let say 10%) of the overall funding for RIs, it is probably not a big problem to use simple indicators because they do not matter much anyway.

- 23) It is being stressed that allocations to IR with institutional backgrounds (v.v.i. vs. public higher education institutions) should be driven by different, adequately chosen sets of indicators. This necessarily means that each provider should develop its own scheme with own indicators. This makes sense. But missing is explanation of what will make providers accountable for adopting such good practices as the past experience proved the opposite. The FR still does not seem to be aware enough that irresponsibility and inability of providers has been the major obstacle in the Czech R&D system which among other motivated adoption of Metodika because it strongly tightens hands of those providers who lack will and / or capacity to run own sensible evaluation of RIs in their portfolio. Following the recommendation of the FR without further changes, checks and guarantees, we would most likely end up in situation we hastily left several years ago. Let me remind widespread and strong scepticism among academic communities at university about steering abilities at the MSMT. Taking this into account and assuming that the Civil Service Law will not be adopted and Competence Act will not be changed in the CR, implying that the low accountability of providers will remain more or less the same, is not the current system with Metodika (if better fixed and used only(!) for allocations at lower levels by less accountable providers) the second best solution?

Performance based contract funding (PBCF) stream

- 24) I find the proposal to adopt PBCF as one of two streams of i-f as the most problematic. My feeling is that it is based on incomplete understanding of local conditions and over-optimistic expectations. The argument that other countries adopted such schemes several years ago is not convincing. Moreover given that it is still too early to observe real and complete consequences (as properly admitted noted in the FR). I do not discuss pros of PBCF because these are well articulated in the FR. I focus on many cons which are largely missed in the FR: (i) CBF would give huge power to hands of the schooling ministry vis-à-vis tertiary education institutions. The FR should recognize that Czech universities fiercely oppose any attempt to increase powers of the ministry which would endanger their autonomy making them more vulnerable to political and other partial interests. If the content of the bilateral contract would not be an outcome of some sort of competitive process (allowing comparable universities to bid for delivery of particular kind of public services), too much discretion would be placed into hands of ministry administrators. (ii) only few examples are provided in the FR on possible content of a PBC and those examples apply mostly to the ministry of schooling since they deal with number of enrolled students, graduates or educational programs. But such elements can hardly be used in case of other providers as is the AV CR which would make contracts with its RIs (similarly in case of MPO and other providers whose RIs do not have educational component). How would PBCs look like at the AV CR? How would PBCs differ from past Research Intensions? Note that in case of AV CR institutes, each CF would be very specific in unique discipline benchmarking to other institutes in the same field would be very impossible. The current shape of the FR leaves too many open questions unanswered and therefore, proposals do not convince me that the proposed system of i-f would be notably better.
- 25) It is not recognised well in the FR that non-negligible stream of funding is already being provided to tertiary institutions by channels which effectively represent CBF. For

example: non-R&D subsidies for unrestricted use are allocated according to the number of students, graduates, academic workers with prospective elements. There are other streams resembling contract funding like development program (Rozvojové projekty VS), Development funding (Fond rozvoje VS), investment funding, specific research (Specifický výzkum). Note that non-R&D budget allocated by the schooling ministry to tertiary institutions is above 20 mld. CZK per year. Compared to this, R&D i-f budget allocated to schools is much smaller. Proportions at the AV CR are very different. AV CR does not have educational and investment stream of funding as universities and is left almost entirely with R&D i-f and target/project funds. This means that examples of PBF provided in the FR are useless for the AVCR and probably also for other providers. This should be completed in the FR.

- 26) The FR stresses the importance of bargaining for bilateral PBC between a provider and particular RI. However, it is not clear what should be the matter of bargaining. The volume or unit prices of contracted outputs/ outcomes? Should it include development parts like building new laboratories or campuses? Bargaining implies that contract parameters will not be the same for IRs and there will be large scope of provider's discretion to agree on them in bilateral basis. Should it be the feelings of ministry administrators which university can expand its PhD program? I find current arrangement based on explicit formulas (the space for ad-hoc opinions and decision of ministerial administration is provided by explicitly separated funding titles like investment fund) and quotas combining past capacities of RIs (static component) and quota changes (dynamic component) reflecting among other field specific performance of RIs in research as much better system for the circumstances of the CR. The system of PBCF would widen space for nepotism, corruption and endanger isolation of universities from pressures of political clientele. It is easy to note that PBCs have to be designed in a way preventing this, but the essence of PBC makes this extraordinary difficult in the CR (in its recommendations Audit should take into account very low grading of institutional quality and high corruption potential of the CR in major international comparisons²). The FR should be better aware of local factors which led to failures in the past and is overoptimistic that next attempt will be successful. Also note that it is not true that PBC is decreasing uncertainty. It is true at the moment when 5-years-long contract is being signed but the uncertainty is growing since then as the point of signing new contract is approaching because the content of the new contract will highly depend on outcomes of bargaining and it is by definition quite uncertain. Moreover, uncertainty would be fostered by frequent and rather substantial changes at higher levels of ministerial management. This is specific feature of the Czech system which goes far beyond the system of R&D and higher education. Similarly specific is the procedure of annual state budget design which introduces notable uncertainties related to the volume of annual R&D budgets. This is another feature of the whole Czech fiscal system which will hardly be changed for the sake of the R&D system. This requires that there is space left for ad-hoc adjustment of annual state subsidies / spendings including those on R&D i-f. Would contracts be set in nominal absolute terms, ad-hoc deviations of annual state budget volumes from projected ones would require greater adjustments in other budgetary chapters.

² The Global Competitiveness Report 2010–2011 of the WEF.

PARTIAL OBSERVATIONS

- 27) Throughout the FR it is frequently stressed that „waterfall principle” of evaluation should be made a rule. This means that an agency at any level should not evaluate itself but should be evaluated from higher level. In the same time, country case studies frequently refer to self-evaluation as a good practice to be followed. If both suggestions are not contradictory, I am missing something important and it should be clarified it in the FR.
- 28) The audit of human resources and related policies is giving rather general advices that *things should be done better*. It should be made clearer whether things are done badly because actors (managers at various levels ranging from department chairs to university leadership and ministry administrators) are simply not experienced enough in human resource management or whether there are loopholes in the institutional setup (precluding good HRM or creating wrong incentives). As an institutional setup I have in mind legislation, statuses of RIs (universities in particular), and for example governance structures imposed by the AV CR on its RIs. Let me give simple example. Are universities hiring own PhD grads in large proportions because their HR managers are not aware that it is wrong strategy, is it because university statuses are wrongly designed, is it because improper legislation requires such statuses, is it because ministerial steering and regulation (including for example formula funding of universities) is wrong, is it due to lack of healthy competition among RIs, etc? Answers to those questions would be much more valuable than the general statement above.
- 29) Great deal of the critique related to Metodika is well taken (Annex 3, pp.111-116). But some critique is not well grounded and authors should consider revisions if deemed appropriate. Critical points about Metodika....
- 30) ... do not distinguish enough between i-f allocations (i) of the state R&D budget between providers, and (ii) allocations realized by providers between IRs. Some critique may apply at one level but not at other. For example, Metodika is not binding at all for AV CR (legislation allows providers to determine its i-f allocations to RIs on their own if they have own evaluation) so that the problem of AV CR is that Metodika is being used also for allocation (i). But the critique in the FR devotes little attention to this distinction. Yes, something should replace Metodika determining allocations (i) but what should it be? Similarly, Metodika is allocating relatively small share of public funding to public institutions of higher education because larger stream of funding is allocated by formula funding, investment funding and few other schemes. These facts are not being recognized enough in the FR and Metodika is presented as dominating funding allocation to universities (not true). On the other hand, Metodika is not binding allocation rule within the AV CR.
- 31) ... point that it is being changed over time. Yes, the current proposal of Metodika 2012 which was sent to external consultations at the end of June 2011 contains number of fixes and some substantial revisions in directions proposed by the FR (see below).
- 32) ... point that it does not evaluate R&D outcomes (socio-economic impact on the society) and focuses solely on research outputs. This is perfectly right. But it is not simultaneously admitted that evaluation of outcomes is methodologically and procedurally very complicated and moreover rather unexplored exercise. This fact is admitted in another section of the FR reviewing Dutch and UK systems where this type of evaluation is still in stage of infancy. In the CR we struggle implementing much simpler evaluations of

research outputs and we have hopes that we will succeed developing at least some light version of REF-like IPR of RIs during next five years. Given this, this criticism of Metodika seems too strong.

- 33) ... note that it is not reflecting research environment and viability of RIs. It is true but at the allocation level between IRs, any provider with own evaluation is allowed to incorporate this (but does not except the AV CR). FR does not seem to advice what should be done to change this reluctance of providers. At the higher allocation level (among providers), FR does not provide any suggestion on whether allocations should also reflect research environment and viability of RIs under individual providers and if so, how (noting that the FR warns that evaluations of RIs by IPRs should not be linked to inst. Funding).
- 34) ... note that setting evaluation criteria ex-post and changing them over time introducing uncertainty in expectations of academic community. It is true but other systems are also suffering with this to some extent. For example, particular Unit of Assessment specific evaluation criteria of outputs and outcomes in the new British REF will be specified and adopted by evaluation panels and sub-panels only at times when research to be evaluated will be already finished and published. Yes, there is much better understanding of research quality standards within academic community in the UK and criteria to be adopted will to great extent reflect existing common sense (but not necessarily the weights in the QR funding formula assigned to individual quality groups). Note that IPRs like REF in the UK are realised only once in 4-6 years. In this sense, annual or bi-annual adjustments and fixes of Metodika toward better reflection of excellence standards in particular field groups (not yet at the level of fields) seems to be adequately reflecting the need for faster convergence of the Czech common sense to international standards of research quality.
- 35) ... stress that i-f allocations by Metodika *are not reflecting different types of institutions and disciplines*. Yes it is true at the top level of i-f allocations to individual providers, and it is a serious mistake of Metodika seriously discriminating especially AV CR because Metodika does not differentiates between different institutional grounds. But at lower level of i-f allocation, institutional types are much more homogenous (public higher education institutions under MSMT, v.v.i. under AV CR) and if there are still some differences between institutional types, providers are free to make adjustments if they want. But the law requires that these adjustments are well grounded and based on provider's evaluation. It is true that Metodika 2009 and older ignored differences among disciplines (equal points awarded, pooled budgets) so that i-f allocations between disciplines did not reflect anything sensible. But Metodika 2010 fixed budgets for basic groups of disciplines. Proposed Metodika 2012 goes further on and accounts for discipline-group specific types of outputs. This direction of fixing is also relevant for the critique that Metodika does not reflect different costs of disciplines (it should be clarified that this probably represents only operational costs and not investment costs). Fixing i-f budgets for groups of disciplines only diminishes the serious problem of different costs. Yes, budget allocations introduced by Metodika 2010 for 10 groups of disciplines were extraordinary ad-hoc (did account for discipline specific operational costs only thanks to assigning 50% weight to past i-f allocation by research intentions) but it had happened already and nothing can be done about it. Future changes in established discipline group specific allocations can be realized parametrically within Metodika. It should not be based on Metodika's points (not comparable across disciplines) but according to changes

in national strategic preferences and according to new (now non-existent) information about productivity of Czech disciplines compared to adequate international benchmarks.

- 36) ... argue that financial part does not contain prospective element. Yes, but related facts should be explicitly recognized too: (i) prospective elements – meaning developments and not regular operation of RIs - are contained in other funding titles being used by higher education institutions in the CR. But FR is silent about them. (ii) AV CR can use own i-f allocation to its RIs and AV CR is free to incorporate prospective component into i-f. (iii) Other providers – ministries – can follow the practice of AV CR if they adopt own evaluation of their RIs. As concerns (ii), many universities are big enough and have enough financial autonomy to reserve part of the institutional budget to fund prospective development in selected areas (faculties). This can hardly be done by much smaller institutes within AV CR. The obvious problem here is that Metodika is designed so that it creates strong incentives to adopt its principles (awarding points = money) at all levels, i.e. not only providers but also universities and even faculties and departments and individuals. But this can easily be a problem in other funding scheme including the combination of CBF or FBF. It does not seem to be a problem in the British REF/RAE scheme (skipping details why). But contrary to the CR, their scheme allocates funds only among universities w/o the middle level of different providers. Another question is whether the FR proposes that prospective element is incorporated also into the allocation between providers? Should it be the government or some other body deciding (and contracting) it?
- 37) ... note that it does not provide space for political prioritizing. Also this criticism deserves much more detailed explanation: (i) Since Metodika 2010, government can easily adjust funding proportions across groups of disciplines and between basic and applied research, (ii) Metodika 2012 introduces other parameters allowing for smooth changes of priorities within applied research and experimental development, (iii) any provider can adjust i-f allocations according to own priorities relatively easily but they have to have own evaluation of their RIs (they don't, probably because political prioritizing was not yet set as a political interest?). The FR seems to be silent about more suitable institutional process how political prioritizing should be incorporated into i-f. Given that providers do not do it today, what will make them doing this in the PBF and FBF system?
- 38) ... that it is simply counting research outputs. Yes, but over time it is less true: (i) quality of articles published in journals indexed by major intl. databases (Wos, Scopus, ERIH) is approximated by field specific size of journal's impact factor (publication counts are used also in other countries like Sweden, Finland and Australia). (ii) Proposed Metodika 2012 envisions use of peer-review evaluation of monographs. (iii) Equally important is that proposed Metodika 2012 is totally abandoning the practice of counting non-publication outputs and links applied research oriented part of the i-f stream to external funds acquired by RIs in the past five year window (this is in line with foreign practice and recommendations of the FR).
- 39) ... note that it creates incentives to produce more points. This is a serious problem but mainly when outputs do not correspond to the volume and quality of research performed. If points are assigned properly to good quality research outputs, incentive to produce more points is not necessarily wrong incentive.

- 40) ... point that it is becoming more complex over time. In the same time it is admitted elsewhere that this is very general phenomena observed in other countries employing formulas like Finland and Netherlands. Yes, it is completely true. But it is natural because formulas try to reflect extraordinary complexity of R&D processes on one hand and adaptive and opportunistic behaviour of academic communities on the other. There exists no simple and in the same time perfectly functional solution, as properly stated elsewhere in the FR. The FR proposes FBF stream of i-f stressing that the formula should be kept simple. In the same time, it finds Metodika *too mechanistic*. But this is in some sense an attribute of simplicity the FR calls for too. It contradicts with the criticism that Metodika suffers with reductionist approach. It is also difficult to understand another strong recommendation of the FR that good evaluation should be taking into account specific attributes of underlying R&D. Partially viewed, proposals in the FR are OK under assumptions that other things can stay equal. But things cannot be considered as fixed and cannot be handled partially.
- 41) ... remind that *it does not reflect inputs used*. It is perfectly right. More should be said however. Without information on inputs, productivity by disciplines and by RIs cannot be uncovered and results cannot be benchmarked to world standards. I did not see any benchmarked comparison of this kind for the CR yet. And the FR does not seem to change this. Though, this kind of information is quite important when making strategic decisions on allocations across disciplines and RIs. The FR is not stating this explicitly enough. Note that research outputs are audited in another Appendix (numbers of publications, citation intensity etc.) and notable positive trends during last decade in the CR are warmly welcomed. Appendix 1 audits structure and trends in R&D expenditures and appreciates notable increases in public funding of R&D several years before the economic crisis in 2009. Extraordinary valuable value-added of the FR would be synthesizing those two components determining research productivity. But I am missing this in the FR. I would like to learn about productivity of particular CR disciplines relative to adequately chosen foreign benchmarks. I would like to know whether positive trend in research outputs have been fully due to positive trends in funding or if part of it is due to growing productivity. If the later is true, which disciplines contribute the most. If such analysis could not be performed, it should be clearly explained why – what are the data or other obstacles to be resolved to accomplish it in the future. Even if this was not doable, the Audit could use information it collected in several case studies of RIs and could provide productivity benchmarking for individual RIs. But this is also missing in the FR. Absence of this insight (benchmarked productivity) in the ongoing evaluation at the AV CR is also not mentioned. Relative performance of individual RIs of the AV CR cannot be done because there is just one RIs within the AV in each particular discipline. Therefore, foreign benchmarks (properly selected institutions) were necessary for the AV CR to learn about Excellency of individual RIs. Although AV CR did not use such benchmarking, it seems to end up with some ranking of RIs by excellence. The FR should evaluate if the approach of the AV CR provides reliable information to do this. Does the process evaluate outcomes (not only outputs) properly? Is the link between evaluation outcomes and i-f funding of RIs well designed? Is there sufficient and well designed prospective element? This is important if wa want to learn from the experience of the evaluation at the AV CR

- 42) ... that it is introducing instability. Yes, this is huge problem when allocating i-f to providers given that they fund IRs of different types and missions. But at the lower level of allocation to RIs, this does not seem to be a problem. Note that each new year, evaluation by Metodika cannot affect more than 20% of the overall i-f budget (of those RIs which get i-f according to Metodika). But even 20% is the maximum possible in very unlikely case of a RI which did not have any new research output in the past evaluation round. Moreover, Metodika 2012 proposes lower threshold for annual change at 10%. This means that there is moderation component in Metodika and any provider having own evaluation tools can apply additional moderations when allocating funds to their RIs. The fact that providers (except AVC R) are not doing it is not necessarily the problem of Metodika.
- 43) ... repeat that it is discriminating social and human sciences. Clarification is needed to explain the essence of this discrimination better. There are in fact three quite different dimensions of discrimination: (i) i-f allocations between groups of disciplines established by Metodika 2010 were largely ad-hoc and as is shown by the international comparisons in the FR human sciences and social sciences in particular are under-funded (relative to other disciplines). These allocations are no more given by points but are fixed! (ii) Social and human sciences produce much greater shares of outputs (books and non-impact factor journal articles) which are assigned fixed amount of points and which are not inspected. This benefits low quality research within these two groups of disciplines discriminating excellent research within those two groups. Related to the "discrimination" are two other findings placed in another parts of the FR: (i) budget allocation of the TA CR for applied research in social sciences (OMEGA) is found negligibly small compared to other programs of applied research, (ii) the purpose of social and human sciences for the society is not recognized yet, is not stated and is not understood.

MINOR PARTIAL OBSERVATIONS

- 44) Frequently, the AVCR is put at the same level as individual universities. While it is more or less fine if one compares sizes (budget or FTEs), it is wrong when discussing institutional issues. It is because AV CR is a provider with responsibilities similar to the position of ministries, while a university is just a RI (lie an institute under the AV CR). This distinction of the AV CR from universities should be fixed in the FR.
- 45) Similarly, according to adopted terminology, the AV CR belongs to the *governmental sector* of R&D (plus few other but minor institutions) and public institutions of tertiary education belong to *higher education sector*. What differentiates AV CR from MSMT and other ministries in particular is that the leadership of the AV is selected, appointed and overseen by AV research staff (bottom-up) and owes nothing to political parties and the electorate, except adherence to law and binding governmental regulations. The leadership of the MSMT (as of any other provider than the AV), on the other hand, is appointed by political process. From this perspective, via steering by the MSMT, higher institutions are much more "governmental" than AV CR.
- 46) Figure 10 in Annex 3 should better describe axis. Percentages represent shares of discipline specific i-f on the overall i-f budget of the CR (according to CEZ – research

intentions in the past on axis-x; according to Metodika 2010 on axis-y). Without such clarification, understanding of this picture is rather difficult.

- 47) The finding on pp.51 of Annex 3 concerning strong contradiction between strategic objectives and real objectives set by Metodika is quite important and in the same time it is excellent and simple example of what is wrong with Metodika. The way the report is written does not highlight this and stays lost inside long texts.
- 48) Annex 3, pp. 71 describing Dutch system and BAMA model mentions that relative performance of each university is provided by the evaluation. It sound interesting, important, and given that universities have different structure of disciplines and shares of R&D, it would be very informative for the CR to learn more details on this procedure in the FR.
- 49) The review of the Dutch system does not provide critical enough assessment (what seems to work and what does not). Great deal of the description is about Dutch evaluation and funding elements which FR neglects in case of the CR (normativni financovani = formula funding of higher education institutions, according to the number of students, graduates, FTEs, etc.).
- 50) Annex 3, pp. 78-80 describing British REF/RAE system is not clear about determination of quality profiles for evaluated institution. In case of the profile evaluating *Research Outputs*, I more or less understand that each person being evaluated is assigned to one of the five quality groups and the % profile reflects allocation of individuals across those groups. But it is not clear at all how profiles for Research Environment and Esteem Indicators are created. While people/individuals are countable, Environment and Esteem are not countable and other approach has to be used to end up with those % profiles. I see this problem even in the case of REF Research Profiles in specific disciplines where it is impossible to evaluate work of single individuals and one has to evaluate whole teams (physics of elementary particles).
- 51) Annex 3, pp. 93 describing Austrian system points that evaluation is a compulsory task to each university. How it correlates with another strong recommendations elsewhere in the FR that the waterfall principle in evaluation should be applied?
- 52) pp.96: Tolerance semester in Austrian funding scheme is noted in very detailed overview of the Austrian formula, despite that it affect relatively small portion of the overall university budget. In the CR, there is tolerance year (my note) but the FR is missing this fact. This is because the FR misses that there is formula funding scheme (normativni financovani) used by the MSMT and described in regulatory document Principles of highr education institutions (Zásady financování VŠ). This scheme is even more important for institutions of higher education because it allocates much greater proportion of funds than Metodika. Important fact is not explained: are there funded student quotas in the formula? If not, what prevents schools enrolling too many students?
- 53) Should the IPR in the Czech Republic be run in English language given that participation of foreign evaluators should be higher than in the UK?
- 54) My impression is that negative elements of the new Austrian system are among other: weak use of the waterfall principle, results are not comparable across universities and are difficult to benchmark them to some foreign standards, creating undesirable

incentives, contracts are rather burdensome exercise with uncertain outcome. Is my impression wrong?

- 55) Annex 3, pp. 101 describing the Finnish system also focuses primarily on one segment only = universities. Other segments are neglected. The opposite is done in case of the CR. How much richer is the KOTA database compared to Czech SIMS and IS VaV system? What should be improved in the CR in this respect.
- 56) pp. 103 describing contracts in Finland, *allocation formula* is abruptly mentioned, but it is not clear yet what it is.
- 57) 4 years long period of PBCs cannot be synchronized with the political cycle (as was done in Finland) in the Czech Republic because the periodicity of political cycle is not constant here.
- 58) Country case studies do not mention system allocating investment funds to universities. Similarly, it is not clear how R&D funds are steered toward particular disciplines and types of research. Is there any steering of this at higher levels (above universities) or is it fully under jurisdiction of universities? Czech Metodika does this. Strangely, but does.
- 59) In case studies, there is no information on how (processes) are R&D funds are allocated between universities and the government sector.
- 60) How is that good practice Finish example contains allocation according to publications (and ongoing hopes to increase its weight in the future!) – but it is not recommended to the CR by the FR? Could FR state what proportion of the total university public funding (including normative and investment funding streams) in the CR is attributed to publications via Metodika? From Figure 29 it seems that in Finland it is 20%. My guess is that it will not be more than this in the CR.
- 61) Number of students, degrees and teachers does not seem to be measures of university efficiency (pp. 109).
- 62) pp. 110: It is mentioned that Finish universities organize evaluations. Is waterfall principle fulfilled there?
- 63) FINHEEC probably fulfils waterfall principle, but it seems to be mere audit of systems (procedures) and not of R&D outcomes. It looks that it covers only universities. Is there any other higher level evaluation using waterfall principle and covering all segments, not only universities? If not, should the CR follow this and leave evaluation tasks on providers and individual RIs?
- 64) Annex 1 is still not clear enough when discussing expenditure structure. In the review, it frequently does not differentiate between primary and secondary source of expenditures. Complete funding flow chart containing all funding flows would help clarifying this. The numbers on i-f proportions are confusing.

In Řež on Sept 10, 2011