

**For discussion on
8 December 2014**

Legislative Council Panel on Education

**Funding support for research work
conducted by the post-secondary education sector in Hong Kong**

Purpose

This paper briefs Members on the existing funding support for research work conducted by the post-secondary education sector in Hong Kong.

Background

2. Teaching and research are considered as the two core duties of the post-secondary sector. Across the world, different countries and regions are relying increasingly more on their post-secondary institutions for conducting research, in order to enable industry and innovation to flourish, meet social needs, and enhance the long-term competitiveness of the economy. Besides, teaching is closely linked to and should be informed by research. All academics should be at the forefront of knowledge in their field through research, so that they can transmit the latest thinking and developments, and engender a sense of inquisitiveness. There is a strong need for Hong Kong to nurture and develop its own academics, and this requires a strong research element across all major disciplines.

3. The Government attaches great importance to supporting the research work conducted by the post-secondary sector. In 2012/13, the reported aggregate expenditure on research of the University Grants Committee (UGC)-funded institutions amounted to \$7,576 million, representing 0.36% of Hong Kong's GDP and a 6% increase as compared with last year. Of this amount, the grants from the Government (including those through the UGC, the Research Grants Council (RGC) and other Government sources) constituted the bulk of research expenditure for the institutions. Funding commitment from the Government has been on the rising trend since 2004/05. In 2012/13, about 82% of the total research expenditure of the institutions came from the Government, which amounted to \$6,192 million, representing a 5% growth over the previous year. The table below shows the research expenditure of UGC-funded institutions by source of funds from 2008/09 to 2012/13:

Source of funds (\$ million)	2008/09	2009/10	2010/11	2011/12	2012/13
HKSAR Government	5,486.2 (82%)	5,599.0 (82%)	5,660.3 (81%)	5,916.2 (83%)	6,192.1 (82%)
<i>UGC</i>	4,510.5 (68%)	4,500.4 (66%)	4,491.6 (65%)	4,754.0 (66%)	4,962.0 (65%)
<i>RGC</i>	582.4 (9%)	644.7 (9%)	632.5 (9%)	660.4 (9%)	702.1 (9%)
<i>Other Government sources</i>	393.3 (6%)	453.9 (7%)	536.2 (8%)	501.8 (7%)	528.0 (7%)
Other sources	1,163.8 (18%)	1,236.1 (18%)	1,288.1 (18%)	1,238.6 (17%)	1,384.2 (18%)
Total	6,650.0 (100%)	6,835.1 (100%)	6,948.3 (100%)	7,154.9 (100%)	7,576.3 (100%)

Research funding from the UGC and the RGC

4. As shown above, the majority of research funding for UGC-funded institutions currently comes from the UGC and RGC. Details are set out in the ensuing paragraphs.

UGC – Block Grant

5. The UGC provides research funding for UGC-funded institutions by means of a Block Grant, i.e. a lump sum of fund, which comprises three elements: the Teaching element which supports general teaching and learning activities; the Research element and the Professional Activity element. The Research element, i.e. the Research Portion (R-portion), constituting 23% of the Block Grant, is disbursed to the institutions as infrastructure funding to enable institutions to provide both the staffing and facilities (e.g. accommodation and equipment) necessary to carry out research, and to fund a certain level of research. The annual R-portion provision for the 2014/15 academic year is about \$4 billion. In the spirit of the Block Grant, actual allocation of funds under the R-portion is a matter for the institutions to decide according to their research needs. On top of the R-portion, the UGC at present provides funding under the Block Grant to support the provision of 5 595 research postgraduate (RPg) places at about \$1.5 billion per annum.

RGC – Research Endowment Fund

6. Established in 2009, the Research Endowment Fund (REF) has an original endowment of \$18 billion and an injection of \$5 billion. The investment income from \$20 billion is distributed as research grants to the UGC-funded institutions for supporting competitive funding schemes, whereas the investment income from the remaining \$3 billion provides competitive

research funding for the local self-financing degree sector to enhance academic and research development.

7. In the 2008/09 academic year, the year before the setting up of the REF, the UGC/RGC had a budget of about \$640 million for allocation to the UGC-funded institutions through UGC/RGC competitive funding exercises. With the setting up of REF, the funding available for allocation by the RGC has now increased to around \$1.1 billion per year.

8. The RGC gives equal support to different types of academic research including both basic and applied research. All applications for research funding are assessed by local and non-local experts of the RGC, based on the academic quality of research proposals. Four categories of research funding schemes are operated by the RGC, namely collaborative research, individual research, fellowship, and joint research with the Mainland and overseas regions. All proposals received are subject to a rigorous peer review process supported by the RGC's international network of external reviewers.

(A) Collaborative research schemes

9. The RGC encourages and supports research across all disciplines to build up the research capability in the higher education institutions. Complex problems and high impact projects would often require the participation of talents from multiple disciplines and different organizations. Collaboration both within and among institutions are therefore highly encouraged by the RGC.

10. There are three collaborative research funding schemes operated by the RGC, namely the Theme-based Research Scheme (TRS), the Areas of Excellence (AoE) Scheme and the Collaborative Research Fund (CRF). With the exception of the TRS, the RGC does not set any priority areas of research under all funding schemes. More details of the three schemes are provided below.

Theme-based Research Scheme (TRS)

11. Starting from 2010/11 academic year, the investment income from up to \$4 billion of the REF (around \$200 million per year) is used to finance research projects on specific themes under the Theme-based Research Scheme. The objective of the TRS is to focus academic research efforts of the UGC-funded institutions on themes of strategic importance to the long-term development of Hong Kong. Three themes have been selected for implementation, as follows:

- (a) Promoting good health;
- (b) Developing a sustainable environment; and

- (c) Enhancing Hong Kong's strategic position as a regional and international business centre.

12. Under these three themes, 11 grand challenge topics have been identified by the RGC in consultation with the academic community. The funding ceiling is \$75 million per project for up to five years. There were four rounds of exercises and 18 projects have been funded totaling \$832 million. In the 2014/15 academic year, a total of 37 preliminary applications were received. Four proposals were supported with total amount of about \$205 million. The Government is reviewing the existing themes of TRS with a view to assessing if the current scope should be expanded.

Areas of Excellence Scheme (AoE)

13. Established in 1998, the AoE provides funding support to UGC-funded institutions to build upon their existing strengths and develop them into areas of excellence. With an annual budget of about \$80 million, the AoE supports large-scale research projects of all disciplines. The prevailing funding ceiling is \$60 million per project for up to eight years. There have been six rounds of the AoE exercises so far and 18 projects have received a total of \$1,086 million. In the 2013/14 academic year, a total of 32 preliminary applications were received. Three proposals were supported with total amount of about \$144 million.

Collaborative Research Fund (CRF)

14. The CRF provides funding for the procurement of major research facilities and/or equipment or library collections to support collaborative research involving two or more institutions, or group research activities that operate across disciplines and/or normal institutional boundaries. It is for medium scale, team projects of three to five years' period. The funding for each project ranges from \$2 million to \$10 million. The budget in 2008/09 was \$50 million. The budget for the 2014/15 exercise was \$110 million, an increase of 120 % over 2008/09. In the 2013/14 academic year, a total of 67 applications were received. 14 proposals were supported with total amount of about \$95 million.

(B) Individual research schemes

General Research Fund (GRF)

15. The objective of the GRF is to support basic and applied academic research projects normally up to \$2 million per project and last for two to three years. The total funding allocated under the scheme is distributed among five subject panels, viz. Biology & Medicine, Business Studies, Engineering,

Humanities & Social Sciences and Physical Sciences. The budget in 2008/09 was \$517 million. The budget for the 2014/15 exercise was \$615.2 million, an increase of 19% over 2008/09. In the 2014/15 academic year, a total of 2 661 applications were received. 969 proposals were supported with total amount of about \$591.84 million, inclusive of an amount of \$19.7 million for supporting 102 proposals (about 11% of the 969 proposals) relating to public policy development.

Early Career Scheme (ECS)

16. The ECS, introduced in 2012/13, is intended to nurture junior academics and to prepare them for a career in education and research. In addition to funding independent research work, two levels of awards are provided under the ECS: (i) Early Career Awards - an honorary title will be awarded plus \$100,000 per project; and (ii) Early Career Grants - an additional amount of \$50,000 per project will be provided to those awardees who have submitted a satisfactory Education Plan for undertaking educational activities. The funding for each project is normally up to \$2 million. The budget for the 2014/15 exercise was \$100.5 million. In the 2014/15 academic year, a total of 359 applications were received. 154 proposals were supported with total amount of about \$94.13 million, inclusive of an amount of \$3.3 million for supporting 17 proposals (about 11% of the 154 proposals) relating to public policy development.

(C) Fellowship schemes

Humanities and Social Sciences Panel Prestigious Fellowship Scheme (HSSPFS)

17. The HSSPFS, introduced in 2012/13, aims at granting extended time-off and supporting funds to the outstanding investigators with proven track record of research and publication under the Humanities and Social Sciences disciplines to enable them to focus on research work and writing. The fellowship provides resources for employment of relief teachers to relieve all or part of the awardees' teaching duties and all of the administrative duties, and the costs of travel, subsistence and dissemination of outputs. The funding ceiling for each project is \$1 million. The budget for the 2014/15 exercise was \$10 million. In the 2014/15 academic year, 17 applications were received. Six applications were supported with total amount of about \$4.48 million.

Hong Kong PhD Fellowship Scheme (HKPFS)

18. The HKPFS, launched in 2009, aims at enhancing the quality of PhD students, strengthening the training of academic researchers and improving the overall research capability of institutions in Hong Kong by attracting

research students who demonstrate outstanding qualities of academic performance, research ability or potential, communication and interpersonal skills as well as leadership abilities, to pursue their research-based PhD programmes in Hong Kong's UGC-funded institutions. The Fellowship provides each awardee with a monthly stipend of \$20,000 and a conference and research-related travel allowance of \$10,000 per year for up to three years. In the 2014/15 academic year, RGC received a total of 9 334 initial applications from 150 countries and regions around the world. After a rigorous selection process, 223 elite candidates from 38 countries and regions have accepted the scholarship awarded by the RGC.

(D) Joint research schemes

19. Joint research schemes are established in collaboration with research bodies in the Mainland and overseas and are meant to promote and further encourage research co-operation and exchanges. These joint schemes provide funding for supporting research projects, travels, conferences/workshops or fellowships. The RGC is running ten joint research funding schemes with the Mainland, European countries and the United States. A list of the ten schemes is at Annex. The budget for the Joint Research Schemes in 2008/09 was \$23 million. The budget for the Joint Research Schemes in 2014/15 is \$51 million, an increase of about 122% over 2008/09. In the 2013/14 academic year, a total of 439 applications were received for various Joint Research Schemes. 72 proposals were supported with total amount of about \$40 million.

The local self-financing degree sector

20. Apart from supporting the UGC-funded institutions, the Government has also been drumming up support for research work conducted by the local self-financing degree sector in collaboration with the RGC. In January 2012, an amount of \$3 billion was injected into the REF. The investment income from the \$3 billion provides competitive research funding for the local self-financing degree sector to enhance academic and research development. The research funding provision for the self-financing degree sector is made available under three different schemes. They are the Faculty Development Scheme, the Institutional Development Scheme and the Inter-institutional Development Scheme. These schemes are competitive and non-recurrent in nature, and the first round exercise was launched in December 2013.

Faculty Development Scheme (FDS)

21. The FDS aims at developing the research capability of individual academics in the institutions so that they can transfer their research experiences

and new knowledge into teaching and learning. The budget for the 2014/15 exercise was \$40 million. In the 2014/15 academic year, 217 applications were received. 51 applications were supported with a total amount of about \$30.31 million.

Institutional Development Scheme (IDS)

22. The IDS aims at building up the research capacity of the institutions in their strategic areas, involving physical research facilities and infrastructure supports. The budget for the 2014/15 exercise was \$100 million. In the 2014/15 academic year, seven applications were received. Six applications were supported with total amount of about \$67.95 million.

Inter-Institutional Development Scheme (IIDS)

23. The IIDS aims at enhancing academics' research capability in the institutions and keep them abreast of new developments and challenging research topics in relevant fields, through organization of workshops, seminars or short courses by an institution or jointly between institutions. The budget for the 2014/15 exercise was \$10 million. In the 2014/15 academic year, 16 applications were received. Six applications were supported with total amount of about \$2.54 million.

24. Seven self-financing institutions offering locally-accredited local degree programmes participated in the first round exercise. Consultation for the second round is underway with a view to extending the funding schemes to cover all self-financing institutions which offer locally-accredited local degree programmes.

Research funding from the Innovation and Technology Fund

25. Apart from supporting basic research, the Innovation and Technology Fund (ITF), established in 1999, provides financial support for applied research and development (R&D) activities. After UGC/RGC, ITF is the second most important source of research funding to the post-secondary institutions. In the recent three years from 2011 to 2014, the ITF has, on average, approved over 100 R&D projects each year which are conducted by local universities¹, involving funding amount of over \$200 million per annum.

26. In fact, post-secondary institutions in Hong Kong are important players in promoting commercialisation of R&D results. Today, six local universities² have set up their Technology Transfer Offices to engage in

¹ Including R&D projects directly conducted by the universities and R&D projects led by R&D Centres and undertaken by universities.

² These universities are City University of Hong Kong, Hong Kong Baptist University, the Chinese University

commercialisation and technology transfer. To enhance their capabilities, the ITF has been providing an extra resource amounting to an annual funding of up to \$4 million under the ITF, initially for three years from 2013-14 to 2015-16 to each of the six universities. The scope of the ITF funding includes professional support services such as legal advice and intellectual property rights protection, promotion of R&D results to the industry, etc.

27. The Government has recently set up a new Technology Start-up Support Scheme for Universities under the ITF to provide an annual funding of up to \$24 million to six local universities, initially for three years, to encourage their students and professors to start technology businesses and commercialise their R&D outcomes. The Scheme will provide incentive to encourage science, technology and engineering graduates to pursue their career in the innovation and technology sector, adding fresh impetus to the innovation ecosystem.

28. Furthermore, ITF has supported universities in Hong Kong to establish Partner State Key Laboratories (PSKLs). These laboratories serve as bases for high level research and development, assembling and nurturing outstanding researchers, as well as scholarly exchanges for the country. Since 2011-12, the ITF has provided 5-year financial assistance to each PSKL. At present, there are 16 PSKLs. To further recognise their achievements, strengthen their R&D capabilities and promote their joint efforts with their Mainland counterparts, funding support to the PSKLs in Hong Kong is enhanced. From 2013-14 until 2015-16, the annual funding ceiling has been increased from \$ 2 million yearly to \$5 million for each PSKL.

29. Previously, there had been comments that the funding programmes of UGC/RGC and the ITF worked in silos. As such, the Innovation and Technology Commission has worked with the Education Bureau and the UGC/RGC Secretariat to explore ways of forging a closer link between the funding programmes of the ITF and the UGC/RGC, in particular the TRS, AoE and CRF managed by the RGC. After discussion, a new arrangement which provides an interface between the funding programmes of UGC/RGC and ITF has been formulated and implemented since last year.

30. With the interface, applicants of UGC/RGC schemes will be asked to provide an optional technology transfer plan with their funding application, which serves for the ITC's advance information. Once these applications have been approved for UGC/RGC funding, the ITC will be invited to keep in view of these projects and their progress. For projects with potential to proceed to the applied R&D phase, the project teams will be encouraged to apply for the

ITF such that their projects could receive funding support from the ITF on successful completion of the UGC/RGC-funded projects.

Advice sought

31. Members are invited to note and provide views on the funding support for research work conducted by the post-secondary education sector in Hong Kong.

**Education Bureau
University Grants Committee Secretariat
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Research Grants Council

Joint research schemes

Project grants

(Provide funding for actual research expenses in addition to travel and subsistence)

- (a) National Natural Science Foundation of China (NSFC) / RGC Joint Research Scheme
- (b) The Economic & Social Research Council (ESRC) of the United Kingdom / RGC Joint Research Scheme
- (c) The French National Research Agency (*Agence Nationale de la Recherche*, ANR) / RGC Joint Research Scheme
- (d) Specialized Research Fund for the Doctoral Program of Higher Education (SRFDP) of China and Research Grants Council Earmarked Research Grants (RGC ERG) Joint Research Scheme
- (e) Scottish Funding Council (SFC) / RGC Joint Research Scheme

Travel/Conference grants

(Provide funding for travel and subsistence costs for Hong Kong researchers to visit collaborators, or sponsor travel, accommodation and subsistence costs of guest speakers and direct organising costs of conferences/workshops held in Hong Kong)

- (f) Germany / Hong Kong Joint Research Scheme
- (g) *PROCORE*-France / Hong Kong Joint Research Scheme
- (h) The Netherlands Organisation for Scientific Research (NWO) / RGC Joint Research Scheme

Fellowships

(Provide funding to support Hong Kong scholars to undertake research work in the partner region, including accommodation and subsistence costs)

- (i) Fulbright – RGC Hong Kong Senior Research Scholar / Research Scholar Award Programmes
- (j) Hong Kong – Scotland Partners in Post-Doctoral Research