Educational Internationalisation

Academic Voices and Public Policy

Jennifer Olson
University of Oslo, Norway

Heidi Biseth
Buskerud University College, Norway

and

Guillermo Ruiz (Eds.)
University of Buenos Aires, Argentina

This book is part of the Sense Publishers series emerging from the 2013 WCCES XV World Congress in Buenos Aires (Series Editors Suzanne Majhanovich and Allan Pitman). The Congress Theme of New Times, New Voices provided the broad frame for the conference and the series of volumes, including this one, which contains research contributions focusing on educational internationalisation. Ever since the early days of international and comparative inquiry in education, the idea that policy and practice might be borrowed or transferred from one location to another has been a continuing theme. Several studies included in this volume focus on the activities of governments, the interactions between supranational organisations and states and the role of private and civil society actors in educational internationalisation.

The chapters in this volume explore how internationalisation is carried out in various educational levels and through new or expanding policies and practices. Moreover, the chapters represent diverse research perspectives and geographical regions. More specifically, they examine issues pertaining to: (1) changes in the academic profession, (2) responses to the European Bologna Process and European perspectives on internationalisation, (3) political and institutional interventions that shape educational policy agendas, (4) children’s rights and teacher education in Latin America, and (5) the voices of Roma interest groups. Taken together, these chapters explore the relationships between academic voices and those of international organisations, as well as how national policy makers interpret contrasting international discourses, and political and social factors that influence educational internationalisation processes.
Educational Internationalisation
THE WORLD COUNCIL OF COMPARATIVE EDUCATION SOCIETIES

Series Editors:

Suzanne Majhanovich, University of Western Ontario, Canada
Allan Pitman, University of Western Ontario, Canada

Scope:

The WCCES is an international organization of comparative education societies worldwide and is an NGO in consultative partnership with UNESCO. The WCCES was created in 1970 to advance the field of comparative education. Members usually meet every three years for a World Congress in which scholars, researchers, and administrators interact with colleagues and counterparts from around the globe on international issues of education.

The WCCES also promotes research in various countries. Foci include theory and methods in comparative education, gender discourses in education, teacher education, education for peace and justice, education in post-conflict countries, language of instruction issues, Education for All. Such topics are usually represented in thematic groups organized for the World Congresses. Besides organizing the World Congresses, the WCCES has a section in CERCular, the newsletter of the Comparative Education Research Centre at the University of Hong Kong, to keep individual societies and their members abreast of activities around the world.

The WCCES comprehensive website is http://www.wcces.com

As a result of these efforts under the auspices of the global organization, WCCES and its member societies have become better organized and identified in terms of research and other scholarly activities. They are also more effective in viewing problems and applying skills from different perspectives, and in disseminating information. A major objective is advancement of education for international understanding in the interests of peace, intercultural cooperation, observance of human rights and mutual respect among peoples.

The WCCES Series was established to provide for the broader dissemination of discourses between scholars in its member societies. Representing as it does Societies and their members from all continents, the organization provides a special forum for the discussion of issues of interest and concern among comparativists and those working in international education. The first series of volumes was produced from the proceedings of the World Council of Comparative Education Societies XIII World Congress, which met in Sarajevo, Bosnia and Herzegovina, 3–7 September, 2007 with the theme of Living Together: Education and Intercultural Dialogue.

The first series included the following titles:

Volume 1: Tatro, M. & Mincu, M. (Eds.), Reforming Teaching and Learning
Volume 3: Pampanini, G., Adly, F. & Napier, D. (Eds.), Interculturalism, Society and Education
Volume 4: Masemann, V., Majhanovich, S., Truong, N., & Janigan, K. (Eds.), A Tribute to David N. Wilson: Clamoring for a Better World

The second series of volumes has been developed from the proceedings of the World Council of Comparative Education Societies XIV World Congress, which met in Istanbul, Turkey, 14–18 June, 2010 with the theme of Bordering, Re-Bordering and new Possibilities in Education and Society. This series includes the following titles, with further volumes under preparation:

Volume 1: Napier, D.B. & Majhanovich, S. (Eds.) Education, Dominance and Identity
Volume 2: Biseth, H. & Holmarsdottir, H. (Eds.) Human Rights in the Field of Comparative Education
Volume 3: Ginsburg, M. (Ed.) Preparation, Practice & and Politics of Teachers
Volume 4: Majhanovich, S. & Geo-Jaja, M.A. (Eds.) Economics, Aid and Education
Volume 5: Napier, D. B. (Ed.), Qualities of Education in a Globalised World
The third series of volumes has been developed from the proceedings of the World Council of Comparative Education Societies XV World Congress which met in Buenos Aires, Argentina, June 24–28, 2013 with the theme of New Times, New Voices. This series will include a number of volumes under preparation including:

Volume 1: Gross, Z. & Davies L. (Eds.) The Contested Role of Education in Conflict and Fragility
Volume 3: Majhanovich, S. & Malet, R. (Eds.) Building Democracy through Education on Diversity
Volume 4: Olson, J., Biseth, H. & Ruiz, G. (Eds.) Educational Internationalisation: Academic Voices and Public Policy
Educational Internationalisation

Academic Voices and Public Policy

Edited by

Jennifer Olson
University of Oslo, Norway

Heidi Biseth
Buskerud University College, Norway

and

Guillermo Ruiz
University of Buenos Aires, Argentina

SENSE PUBLISHERS
ROTTERDAM/BOSTON/TAIPEI
# TABLE OF CONTENTS

Acknowledgments ix

1. Educational Internationalisation: Academic Voices and Public Policy 1
   *Jennifer Olson, Heidi Biseth and Guillermo Ruiz*

2. Changing University Policies, Structures and Cultures: Global Research Partnerships and Academic Experiences in Canada, China, Russia and the USA 7
   *Anatoly Oleksiienko*

3. Internationalization and the Changing Thai Academic Profession 25
   *Chanita Rukspollmuang, Nuttaporn Lawthong, Kamonwan Tangdhanakanond, Fuangarun Preededilok and Sumit Suwan*

4. The Academic Profession in Finland: Coping with Academic Duties and Societal Challenges 43
   *Timo Aarrevaara*

5. The Bologna Policy Forum: The Temptation to Act on Non-European Higher Education Systems 59
   *Jean-Émile Charlier and Oana Marina Panait*

6. Adapting to a New European Philosophy of (University) Education: Conscious Cooking (with Science) and Transversal Competences for Chemistry Majors 77
   *Carlos Estevez Valcárcel, Renée DePalma and María Helena Zapico Barbeiro*

7. Framing European Higher Education Internationalization: An Institutional Logics Approach 95
   *Jennifer Olson*

8. Child’s Rights and Preschool Education in Latin America: Progress, Limitation and Challenges 113
   *Luis Miguel Lázaro*

   *Guillermo Ruiz and Andrea Molinari*
TABLE OF CONTENTS

   Silvia Edling and Guadalupe Francia

Contributors 167
ACKNOWLEDGMENTS

We, the editors of this volume, would like to convey our immense appreciation to the many people who have contributed greatly in bringing this volume to completion. All but one of the chapters in this collection originated as paper presentations at the XV World Congress of Comparative Education Societies held in Buenos Aires, Argentina on June 24–28, 2013. The Congress was hosted by the World Council of Comparative Education Societies (WCCES) and by the local organizer SAECE (Sociedad Argentina de Estudios Comparados en Educación) at Buenos Aires University. We would like to thank all parties involved in the XV World Congress, in particular the Congress Organizers Professor Norberto Fernández Lamarra, Professor Felicitas Acosta, Professor Cristian Pérez Centeno, and the other members of the Local Organizing Committee for their work towards a successful congress.

We would also like to sincerely thank all the contributors to this volume for their interesting and insightful chapters, as well as their work in provided feedback to fellow authors. We appreciate the authors’ great attention to the comments provided by all reviewers and editors as well as to requests for style and format changes. It is due to this hard work and dedication we now have a highly relevant and thought-provoking volume on Educational Internationalisation. The diversity of topics, geographical locations and theoretical approaches reflects the broader Congress theme: “New Times, New Voices: Comparative Perspectives for Education”. With each of the chapters, we hope to provide new and relevant ideas to contribute to the rich discussions occurring throughout the world on internationalisation.

Furthermore, we are grateful to the external chapter reviewers who provided detailed and constructive comments to the authors and to us as editors: Simon Marginson, Ulrich Teichler, António Nóvoa, Brian Denman, Felicitas Acosta, Mónica Marquina, Cristian Pérez Centeno, Greg Misiaszek, Ana Ancheta Arrabal, María Laura Clérico, Pilar Aramburuzabala, Nikki Forfar and Antonio Olmedo Reynoso. And a very special thank you to Carlos Mora Ninci for allowing us to use one of his beautiful paintings for the cover of this book.

We are also grateful to be working with Michel Lokhorst and the staff of Sense Publishers, Rotterdam, the Netherlands. The support from Suzanne Majhanovich and Allan Pitman of the WCCES Publication Standing Committee has been incredibly valuable in bringing this volume to completion. Through the Sense book series, the important research conducted by the authors and presented at the WCCES Congress is available to everyone interested in this topic.
JENNIFER OLSON, HEIDI BISETH AND GUILLERMO RUIZ

1. EDUCATIONAL INTERNATIONALISATION

Academic Voices and Public Policy

INTRODUCTION

This book, Educational Internationalisation: Academic Voices and Public Policy emanated from presentations at the World Congress of Comparative Education Society (WCCES), held in Buenos Aires, Argentina in June 2013. The WCCES conference brings together diverse educational topics, perspectives and peoples from all over the globe. The 2013 conference was no different, in fact, the 2013 conference was conceived in order to address issues, discuss concepts, identify sources and even renew current approaches to internationalisation. The response to the call for proposals can be regarded as testimony to the centrality of international mechanisms for scholarship in the comparative education field, beyond boundaries and schools of thoughts. Participants in the WCCES conference had the opportunity to discuss the similarities and differences of challenges occurring in educational contexts, and recognize the unique attributes of individual cases. This volume highlights these diverging and converging patterns around the theme of educational internationalization. In the following nine chapters that make up this book, the authors discuss the many features of educational internationalization in both a comparative manner and through single case studies. Comparisons are made between countries, organizations, and policies while the single cases stress how changes in institutional exercises and international policies can have significant impacts on local, national and global practices. Moreover, as the topics of the chapters show, there are many important aspects of educational internationalization that have come to light in recent years due to the heightened awareness and emphasis being put on internationalization.

Internationalization in educational contexts has evolved in a myriad of ways and frameworks. Major global and national organizations have introduced new strategies, policies, and/or declarations that stress the importance of engaging in the process of more global connections. The emphasis of these policies and declarations are often directed towards addressing global issues and sharing best experiences, but also have pressed on local and national elements to adapt to dominant ideas and/or practices. As such one can argue, as many of the chapters in this book do, that there is an expanding environment that is promoting educational internationalization.
The interconnectedness of states, organizations, and individuals has always existed, yet the current attention to educational internationalization has enlarged the pool of activities, projects, initiatives and ideas linked to the concept. In such an environment, we see internationalization as including new and diverse actors, organizations and practices that are striving to achieve various goals. Yet it is also important to look at individual nation-states’ national frameworks as they reveal unique mechanisms that foster relevance, as well as regulate interactions.

Through this book, as editors and authors, we set out to provide recent empirical studies that are part of the growing emphasis on educational internationalization. As such the chapters can be read and thought about in a range of ways, can be read cover to cover, but also could be dipped into and out of. To facilitate the reading we have organized the chapters into an interconnected journey from international and global issues to the politics dimensions of internationalization, taking into account the voices of actors in regional and local contexts. In summary, the chapters cover the following:

Anatoly Oleksiyenko’s study (Changing university policies, structures and cultures: Global research partnerships and academic experiences in Canada, China, Russia and the USA) focuses on the collaborative governance challenges experienced by university academics facing a growing demand for international research partnerships aimed at global problem-solving. Connections between policies, structures and cultures are viewed as being essential in planning and attributing costs of cross-border initiatives, but these connections change over time as the world experiences new layers of challenges. The data supporting the discussion were derived from the author’s longitudinal research on the interactions of resource structures, cost-sharing schemes and global responsibility agendas at leading research universities in four countries: Canada, China, Russia and the USA. The four countries provide an interesting comparative sample, given their respective geographical size, scope of influence in international governance structures, and intensity of ambition for global leadership in science. The cross-referencing of quantitative and qualitative data was employed, but the key focus was on using qualitative data to illustrate researchers’ attitudes and reasoning related to cost-sharing in international projects. The major focus of the discussions was on the interviewees’ research areas, as well as on the challenges that they faced in sharing responsibilities and costs related to international partnerships.

Chanita Ruksoppimuang, Nuttaporn Lawthong, Kamonwan Tungchanakanond, Fuangarun Preededilok and Sumit Suwan (Internationalization and the changing Thai academic profession) explore the current state of the academic profession and practices in Thailand through comparing it with the ASEAN plus three countries, the United States and United Kingdom, with the emphasis on the criteria and process of appointment of academic titles for full-time faculty members. The mixed method research used survey study, questionnaires, and inventory based on Icek Ajzen’s Theory of Planned Behaviour. The study found similarities and differences in appointment and promotion processes among countries. Most universities studied
in the ASEAN plus three countries adopted guidelines used in the United States and England such as the American “up or out” policy. The main question the authors’ asked was: “how is this employed”. Analysis of the model in accordance with the theory of Icek Ajzen found intention to be a major factor, and identified a significant relationship between intention, attitude, and the actual submission to academic promotion process.

Timo Aarrevaara (The academic profession in Finland: Coping with academic duties and societal challenges) explores the recent changes that have taken place within the academy in Finland based on the quantitative, Changing in Academic Profession (CAP) survey and the qualitative EUROAC survey. The target population in the Finnish CAP survey were persons employed full-time or who spent the predominant part of their employment working at higher education institutions. The CAP survey was carried out in 2007–2008 in 18 countries and provided an overall picture of the academic profession, including how work conditions are changing. The study considered many key issues in building a connection between the academic community, university structures and relationships with society. The data from the CAP study present a clear picture of the Finnish academic profession’s work before the new Universities Act (2009) that came into force from the start of 2010. Finnish higher education can no longer assume the efficacy of the knowledge throughout a scholar’s lifetime, because the life cycle of knowledge is becoming shorter. This has an impact on the academic profession’s status in society.

Jean-Émile Charlier and Oana Marina Panait (The Bologna policy forum: The temptation to act on non-European higher education systems) analyze the genesis of the Bologna Policy Forum, as a new global actor in coordinating higher education policies worldwide. The authors attempt to understand the current role played by the Bologna Policy Forum in the field of global higher education policies, through the Foucauldian concept of apparatus. They argue that the “European higher education apparatus” was created with the Bologna Process and was overtaken by the European Commission, which then expanded it throughout the world. However, since 2009, the authors argue that the Bologna Process reached its maximum effectiveness and incorporated all that it could. Yet, the authors contend that the apparatus did not end, rather progressively continues to adopt new perspectives, thus carrying the apparatus further. The chapter begins with the theoretical developments of the Foucauldian concept of apparatus and subsequently examines the creation of the Bologna Policy Forum, its nature as a coordinating actor of the higher education policies. The conclusion highlights, on the basis of empirical evidence presented, the European higher education apparatus’ capacity to place competitive actors into a “black box”.

Carlos Estvez Valcárcel, Renée DePalma, and Maria Helena Zapico Barbeito (Adapting to a new European philosophy of (university) education: Conscious cooking (with science) and transversal competences for chemistry majors) explore the pedagogical philosophies involved in a paradigm shift in teaching practices derived from the Bologna Process. The authors posit that the personal and social
competences advocated by the European Higher Education Area (EHEA) go beyond both procedural and conceptual knowledge, that consist of traditional modes of teaching through lectures, note-taking, and writing examinations. The new pedagogical philosophies in the European paradigm shifts the responsibility from the teacher to the learner in ways that foster new kinds of learning processes. While they are not meant to replace such subject-based knowledge, they give rise to transversal competences that cannot be learned through transmission in a teacher-centred paradigm. Rather the learning style emphasises process over product and shifts the learning responsibility from the instructor to the student. Such an enquiry-based paradigm may present dilemmas in terms of changing roles of teachers and students, among others. The authors focus on a particular case of pedagogical innovation inspired by one Spanish Chemistry faculty’s interpretation of this shift. The case involved the creation of a new learning activity that complemented already-established courses in the Chemistry degree program. As an attempt at incorporating more authentic learning and assessment practices into the existing curriculum, analysing this case may shed light on some of the complexities involved in the Bologna process.

Jennifer Olson (Framing European higher education internationalization: An institutional logics approach) analyses the development of the European perspective on higher education internationalization, drawn from European Commission documents, using the institutional logics approach. According to the author, the institutional logics perspective is a productive conceptual framework to examine how internationalization is gradually expanding, pulling together various purposes and creating long-term effects on practices and the concept. The author argues that although internationalization is not new, its place in the higher education field and the logics surrounding why governments, higher education organizations, agencies and individuals engage in internationalization are shifting. Internationalization as a concept has changed in the last decade. It has moved from a rather taken-for-granted feature of the higher education field to a central topic in current discussions on higher education reforms. Through a close reading of recent European Commission documents it is evident that the logics undergirding internationalization are changing and growing in complexity, which is fundamentally altering the motivations and rationales for HEIs engaging in new internationalization projects and practices.

Luis Miguel Lázaro (Child’s rights and preschool education in Latin America: Progress, limitation and challenges) focuses on the Children’s Rights approach in expanding and delivering Latin American preschool education. He argues that despite the progress made in the expansion of the economy in the first decade of the twenty-first century, poverty and inequality still remain a challenge for Latin American countries, where a significant proportion of the population, especially children, live in poverty. Although the situation differs among the countries, the author argues that all Latin American countries need to provide quality preschool education to support all children’s development. Drawing on the child-rights-based approach, the author considers social, cultural, economic, political, legal and
educational factors that support or undermine the realisation of the right to education recognised in the Convention on the Rights of the Child. From this perspective, the author analyses preschool education in the region in order to define the meaning of equitable educational policies for preschool education with a view to the post-2015 process.

In the chapter by Guillermo Ruiz and Andrea Molinari (Teacher education reformed: Internationalisation of new academic formats and the persistence of old issues in South America) they track the recent trajectory of government policies that have modified initial teacher education for secondary schools in the four countries of MERCOSUR: Argentina, Brazil, Paraguay and Uruguay. The authors look at the reforms of initial teacher education in the regional context doing a normative analysis of the government policy documents of these four countries. Taking into account the normative dimension of the State, in the period from 1996 to 2010, the authors try to identify political and ideological foundations in order to interpret the application of public policies on teacher education. Educating future teachers has been one of the most important endeavours in each of these countries since the beginning of national education systems. According to the authors, approaching educational reform with a focus on national States as the unit of analysis can lead to the assumption that globalization is a key driver of policy ideas for education and academic reforms. The authors challenge the assumption that globalization leads to homogenization and results in the international convergence of educational systems, and show that the effects of globalization in education policy are mediated by local history and politics and by the interplay that each country has with the global forces, which can be seen in the teacher education reform in these countries.

Silvia Edling and Guadalupe Francia (Roma in Europe: Policies and Roma voices: Exploring and comparing the voices of Roma people expressed on three Roma advocacy webpages) analyze the similarities and differences between three Roma organizations’ websites and explore how the organizations’ descriptions of the challenges facing the Roma might be overcome. The authors’ point of departure is that Roma populations throughout Europe are systematically subjected to political, educational, economic and cultural discrimination that limits their rights to education, employment, health and housing. Despite the development and implementation of public anti-discrimination policies at national and European levels Roma populations are often victims of negative stereotypes portraying them as “the others” in most European countries. Drawing on previous research on Roma and reports from Roma organizations, the authors point out that one important reason for the failure of public policies to prevent the discrimination of Roma is the lack of policies based on the Roma populations’ own experiences and perspectives. The authors thus look into organizations created by and for Roma to explore how challenges are described, how solutions are proposed, how they relate to existing policies concerning Roma people, and what similarities and differences exist between the websites with regard to the previous questions.
In sum, the present volume offers cases grounded in empirical research, located in different arenas of comparative education, which we hope contributes to a deeper understanding of the various levels, scales and even temporalities inherent to the process of internationalisation in the field of education. Furthermore, we hope that many of the debates outlined in the chapters will have significant implications in understanding what educational internationalisation means at the present time, and the consequences that educational internationalisation has in promoting social justice and the right to education around the world.

Jennifer Olson  
Department of Education  
University of Oslo, Norway

Heidi Biseth  
Buskerud University College, Norway

Guillermo Ramón Ruiz  
University of Buenos Aires  
National Scientific and Technical Research Council, Argentina
INTRODUCTION

The changing dynamics in the relationships among governments, markets and academic institutions at home unavoidably affect collaborations abroad (Marginson & Rhoades, 2002; Markusova et al., 2004; Vest, 2007; Jones & Oleksiyenko, 2011). Conflicting flows of public and private interests across borders drive the need for a better understanding of the agency of academic collaboration and its roles and responsibilities in arranging governance, budget responsibilities, and cross-cultural learning (Altbach et al., 2009; Jones & Oleksiyenko, 2011). The research on “glonacal agency” (Marginson & Rhoades, 2002; Marginson, 2004; Jones & Oleksiyenko, 2011) points to both convergences and divergences in the multi-stakeholder interests that evolve in the process of cross-border mobility in higher education. States, markets and academic oligarchies have limited control over “glonacal partnerships,” as stakeholder commitments and resources are being split across global, national and local planes of higher education (Oleksiyenko, 2012). There is a growing expectation that a “glonacal agency” will somehow be able to play an integrative, rather than a divisive role, reconciling the competing tensions. As a larger number of higher education stakeholders acquire power and aspire to enhanced control over university mandates, the multilayered convergence becomes tenuous. Partnership managers increasingly find it difficult to reconcile the competing values and expectations of resource providers and resource users at home and abroad (Jongbloed et al., 2008; Jones & Oleksiyenko, 2011).

Competition for resources increases across all the levels of the “glonacal agency” (Marginson, 2004) and collaboration is often disabled when cost-sharing mechanisms work at one level, but not at the other (Jones & Oleksiyenko, 2011). Synergy is difficult to achieve when there is a growing variability in the interpretation of costs, as parlayed by stakeholders favoring more power being shifted to either markets, or governments, or academic professions. Moreover, various research fields across universities and nations produce a kaleidoscope of financial expectations and
strategies that boundary-spanners often find difficult to harmonize. In the long run, international research projects that succeed are those that are either very strategic and selective (Oleksiyenko, 2012) or that are very flexible with divergent ideas about stakeholders, collaborative costs, and the architecture of intellectual, material and financial inputs (see Hagedoorn, Link, & Vortas, 2000; Reich, 2002).

Embroiled in the multi-dimensional competition among local, national and global agendas, academic strategists increasingly expect their collaborators, resource providers and other stakeholders to transcend the limitations in their policies, structures and cultures, and make the appropriate adjustments for fruitful partnerships. While general understanding of such demands is improving, empirical research data remains insufficient to support in-depth discussion, examination and action. The questions that loom large for collaborators across various national contexts are: how do nation-states, universities and researchers assemble diverse political, structural and cultural underpinnings for the greater global good, when agendas, resources, and implementation mechanisms tend to diverge? What challenges do collaborators experience in synergizing structural, symbolic and human resources to create large-scale multi-stakeholder projects? How can the gaps in conceptualization and synergy of resources be reduced? This chapter examines some of these issues by looking at the collaborative strategies of researchers in China, Russia, Canada and the US.

THE STUDY

This study is focused on the collaborative governance challenges experienced by university academics facing a growing demand for international research partnerships aimed at global problem-solving. Connections between policies, structures and cultures are viewed as being essential in planning and attributing costs of cross-border initiatives, but these connections change over time as the world experiences new layers of challenges, e.g., pandemic diseases, climate change, lack of access to education, and other development setbacks (Reich, 2002; Betz, 2008). The data supporting the discussion were derived from the author’s longitudinal research on the interactions of resource structures, cost-sharing schemes and global responsibility agendas at leading research universities in four countries: Canada, China, Russia and the USA. The four countries provide an interesting comparative sample, given their respective geographical size, scope of influence in international governance structures, and intensity of ambition for global leadership in science. Both Canada and the US, as well as Russia and China have influenced each other as neighbors, collaborators and competitors at various stages in history.

A comparative multi-scalar analysis was used to correlate a range of variables reflecting on the often ambiguous scale and scope of simultaneous contextual and organizational changes taking place across the local, national and global planes. Furthermore, the investigation considered the multi-level dependencies across social, economic and political spheres which research universities often experience. For example, the global mobility of academics and students and their engagement in
projects elsewhere were variables correlated with the growth of new research centers and their focus on globally significant issues such as global health, climate change and international development. The publicity stream related to global challenges was compared with the level of emphasis on local problems in the discourse associated with initiated programs and projects. The study looked at the approaches of universities to managing the integration of multilateral research partnerships and an effort was made to understand how the scale of boundary-crossing initiatives was conceptualized and integrated into the responsibilities of researchers and their units. The cross-referencing of quantitative and qualitative data was employed, but the key focus was on using qualitative data to illustrate researchers’ attitudes and reasoning in regard to participation, sharing and contribution in international projects.

The comparative data were generated between 2007 and 2012 from a variety of sources. The paper is based in part on content analysis of institutional materials originating in eight major research universities, also known as world-class research universities – two in each of the above-mentioned countries. Except for ones in the US, all universities referenced in this study were public in nominal terms but relied on a combination of public and private resources. These universities represent an important part of their respective national R&D systems and have amassed resources that allow them to hold influence in international networks. Although they do not epitomize the entire research systems, their research strategies are crucial in building the logic and trajectories of collaborative decisions affecting other R&D players. For ethical reasons (i.e., primarily to avoid the competitive and benchmarking interpretations that comparative research can generate), this paper does not disclose the names of the universities or their divisions. It can be said that they enjoy a strong academic reputation and significant inflow of resources from domestic and foreign stakeholders.

Among the documents reviewed in this study were the universities’ strategic and academic plans, annual reports, communiqués to boards and committees for budgeting and planning, as well as university affairs and research. In addition, similar data were examined at the level of several divisions: social sciences and techno- and bio-sciences (engineering and medicine). The study also drew on a database of qualitative data inputs from semi-structured and unstructured interviews with academics and administrators (N=123) who contributed in person, over the telephone and/or electronically. The major focus of the discussions was on the interviewees’ research areas, as well as on the challenges that they faced in sharing responsibilities and costs related to international partnerships. Some interviews were conducted in Russian or Putonghua and translations were made to integrate the input. The data from the interviews were triangulated with statistical data at the institutional levels and the level of the national research councils or government funding agencies supporting academic research in the selected countries. The study employed standard qualitative data analysis techniques to code and interpret the collected data for the comparative case study (Miles & Huberman, 1994; Yin, 2003).
FINDINGS

National governments and research universities in Canada, China, Russia and the US have been adjusting their budgeting structures for international collaborations with different development scales and speeds (Oleksyenko, 2014). These adjustments have been made within the limits of stakeholder perceptions of academic roles and responsibilities in the national R&D schemes, which also differed from country to country. As Tables 1 and 2 show, the allocation of GDP to science varied with regard to the streaming of research dollars to universities, governmental and industrial laboratories.

While Canada remained on equal footing with the US with regard to GDP per capita, the former country’s general expenditure on research and development has been comparatively lower and declined over the last decade in absolute percentage terms, despite the 40% increase in the purchasing power parity of the Canadian dollar. Meanwhile, China’s capacity in general expenditures on research and development grew by almost 300% with respect to the purchasing power parity. China expressed an ambition to “catch up” in the global scientific race, which is reflected in the almost double increase in the GDP proportion for R&D. At the same time, Russia’s six-fold increase in GDP did not have a similar effect on its own science infrastructure.

As Table 2 suggests, in all of the countries, industry performed more than half of all R&D, with its contribution in Russia and the US set at around 70%. Except in the case of Russia, industry has also been a key financier of R&D projects, and Chinese industrialists have significantly increased their decision-making weight in the national R&D budget (from 57.6% to 71.7% over the last decade). At the same time, the financing role of the Chinese government has declined and has become proportionally lower than in the other three countries, both with regard to money spent and projects implemented in governmental laboratories. Unlike the others, Russia’s proportion of expenditures on governmental laboratories has increased from 54.8% to 70.3% at the same time. Government-run laboratories have also expanded their control over R&D projects, with performance volume climbing from 24.4% to 31% between 2000 and 2010.

Research universities in the selected countries also display different proportions and scales of engagement in the national R&D systems. Canadian universities are the only ones that have had significant control over R&D performance: their general expenses in the national budget grew from 28.2% in 2000 to 38% in 2010. Universities in the other three countries have had less influence on the national R&D schemes. Chinese universities performed only 8.6% of the Gross domestic Expenditure on Research and Development (GERD) in 2000 (with a decline to 8.5% in 2010); Russian universities – 4.5% (with an increase to 8.4% in 2010), and the American universities – 11.4% (with an increase to 14.7% in 2010). The Canadian universities have significantly higher levels of self-financing in research, which is
often reflective of a growing entrepreneurialism, even in the social spheres (see Jones & Oleksiyenko, 2011).

In contrast to their colleagues in other countries, Canadian researchers were able to attract the highest proportion of foreign research dollars to the national GERD (17.4% in 2000, with a decline to 9.3% in 2008). Russian researchers have also benefited from the dollars derived from foreign sponsorships, but those sources of income declined significantly over time, as the Russian government became more restrictive on foreign input to national science. Likewise, both the US and China have been cautious about absorbing foreign dollars for domestic R&D.

Thus, academic researchers in the four countries appear to be on unequal budgetary and decision-making footing for collaborative research. The differences in relative decision-making weight, and the tensions that they give rise to, are further explained in the analysis of adjustments made in systemic and institutional scientific policies, structures and cultures in these countries.

Policy Adaptations

Supporting global research partnerships institutionally has become a key organizational challenge in most universities involved in this study. In North America, the concerns were primarily related to the changing priorities and aims of sponsors. Largely engaged in aid projects supporting poverty alleviation, hunger relief and pandemic prevention in Africa and Asia in the 1980s–90s, Canadian and American researchers witnessed a reduction in technical assistance programs in 2000s and the growing influence of trade-related policies advocated by national governments concerned about global competitiveness. With the decline of subsidies for socially-significant research, entrepreneurial activities in this area grew and led to the rise of “developmental periphery” units (as defined by Clark, 1998) that began to operate on a cost-recovery basis with financial support from the local private sector or foreign partners. This orientation became stronger with the rise of Brazil, Russia, China and India (BRIC) as weighty new economic players and important markets for North American industry.

The federal BRIC strategy in Canada, for example, called for more academic engagement in “orchestrated and expensive trade visits” to countries such as China, India and Brazil. US researchers, on the other hand, were initially more cautious in their engagement with colleagues in China, but moved ahead with more collaborations there in tandem with the proliferation and growth of their business schools’ executive programs, which served to first test the political and economic waters in the new market economy. Although American universities followed up on their earlier technical assistance commitments in such areas as AIDS in Africa, their institutional anxieties grew as US federal agencies began to re-orient their foreign commitments and spend more money on the “war on terror”. Risk and liability concerns became more pronounced as the death toll rose in the conflict zones. Thus, in addition to
becoming embroiled in the “aid or trade” dilemma, American researchers and their Canadian sub-contractors became circumscribed by security concerns.

Meanwhile, the Chinese government created a number of long-term projects (e.g., 211 and 985) that allowed leading local scholars and administrators to obtain training abroad, develop collaborative projects with Chinese diasporas (Welch & Zhen, 2008; Cai, 2011), and significantly improve local productivity and performance in top global journals (Oleksiyenko, 2014b). At the same time, researchers at Russian and Chinese universities expressed dismay at the lack of change in western perceptions of the new economies’ contributions to global science. In a number of cases, American collaborators were criticized for continuing to view their Russian and Chinese colleagues as “knowledge and technical assistance recipients, rather than equal knowledge producers”. Despite static western attitudes, the velocity of changes within China has been accelerating. Among the significant shifts has been China’s growing presence in Africa and South-East Asia (e.g., through Confucius Institutes and university scholarships), especially in countries with prospects for capital investment and natural resource extraction. American partners became particularly concerned about the increasing “soft power” of the Chinese authorities. Meanwhile, the Russian government has followed the Chinese model of preferential funding to a few select universities at home, and began to restore “soft power” in former Soviet ally-countries, including Ukraine, Vietnam, and Cambodia. Russia’s policy took a sharp turn away from soft power, however, as its government resorted to hard power and Cold War methods during the Ukraine crisis. Russian universities have expressed concern about the budgetary implications of this shift in the long-term, particularly given that sanctions introduced by G-7 countries have already had a profoundly negative effect on Russia’s currency and economy.

Meanwhile, the changing financial powers of China created a paradigm shift in the planning of East-West collaborations. In the past, some Canadian project directors felt that subsidization of their “renowned colleagues” from Russia and China was “somewhat awkward, as it was cultivating a sense of dependence and entitlement, rather than of equitable collaboration and trust”. At the same time, in some cases the subsidization offered Canadian and American researchers the leverage “to negotiate preferential conditions in collaborative projects,” which Russian and Chinese scholars sometimes interpreted as the ability to “dictate interests favoring donors’ over recipients’ interests”. This type of leverage began to disappear as Russian and Chinese researchers became less dependent on the resources of their partners in the West. Indeed, some have argued that the reverse was becoming true: western scholars are more frequently dependent on the financial support that Chinese and Russian universities could offer to foreign experts.

**Structural Adaptations**

The increasing convergence of public and private funds in China has allowed certain fields of science and technology in the selected universities to engage leading scholars
in the West, primarily those belonging to the Chinese knowledge diasporas (Welch & Zhen, 2008; Hayhoe et al., 2011). Some also recruited early-career Western talents by promising them more opportunities at the emerging scientific labs in China. For example, a newly-minted PhD graduate from an Ivy League university in the West, who was interviewed for this study, declared that he had access to a team of 10 post-doctoral and doctoral students to conduct his research in biotechnology at a leading Chinese university that invested heavily in his research – something he doubted that he could get, even after a ten year career at home, where academic fields and structures were mature and saturated. Meanwhile, a senior Chinese administrator felt that the training received by young local researchers through their involvement in labor-intensive projects led by their highly advanced western peer was offering an excellent opportunity for incorporating new methods of research management and instrumentation, as well as for developing a sense of ambition and leadership.

As global competition for scientific talents escalated and the outflow of young scientists was intensified by recurring economic crises in the west, North American decision-makers began to create funding schemes to help retain or regain brains. The Canadian federal government pursued star-scientists by introducing the Canada Research Chairs program. Budgetary allocations of 200,000 and 100,000 dollars for Tier 1 and Tier 2 positions provided a significant boost to research universities’ ambitions to regain Canadian talents from the US and elsewhere. The money made it possible to offer competitive income and research packages. In addition, the Chairs were able to involve doctoral and postdoctoral students in implementing their research ideas and to broadcast their outcomes via a wider range of international forums. As a result, some Canadian labs received expressions of interest from the Chinese Academy of Sciences, which was looking for opportunities to co-fund Canada-based research projects and thus plug into the scientific work being done across the Pacific. Alas, ethical and security concerns related to foreign control of domestic projects prevented many collaborative decisions from moving ahead.

The increasingly entrepreneurial character of international relations has been compelling researchers in all four countries to pay more attention to stakeholder strategies. However, relationship-building with local communities has been treated differently and received varying levels of encouragement in the West and in the East. Across a range of disciplinary affiliations, Russian and Chinese scholars felt more obliged to demonstrate the social significance of their scientific work than their North American counterparts. “Political ideologues” and communist party bureaus promoted “socially-conscious commitments” in China, while Russian scholars have held onto their commitment to “nation-building” (or “patriotic science”) even after the communist manifestos lost official sway. Some local observers in both countries have argued that the academic traditions in Russia and China were stimulating “organic community and industry relations,” translating into fewer tensions between science and practice in the process of global collaborations. Academic researchers in Canada and the US tended to be more relativistic in interpreting their commitments to lay communities. Many researchers in social sciences and humanities advocated
distance and valued independence for “disinterested, curiosity-driven research”. However, medical and engineering researchers viewed their relations with professional communities as an inseparable part of their research and teaching. The lay communities were particularly important for medical researchers working on public health projects.

Stakeholder linkages had various degrees of influence on generating opportunities for partnership projects at home and abroad. Universities in global cities, for example, were able to rely on the presence and engagement of diverse ethnic groups, including foreign-born faculty members and students. Medical professionals saw this type of access to communities as an advantage, given that it offered a more comprehensive demographic picture of genetic pools presented by new research participants, and, hence, improved efficacy of medical treatments for various diseases; they were also able to improve communication about preventative healthcare and to engage new sponsorship. Linguists and psychologists also felt enriched by opportunities to engage various cognitive and mental constructs in their work. Yet, some researchers claimed that the advantages of a diverse environment were underutilized and could be used more strategically to enhance the legitimacy and funding base for international projects. At the same time, others viewed engagement with local ethnic communities as creating “unnecessary risks and even political stigmas” especially “for projects in developing countries where lingering political disagreements threatened [the] task fulfilment”.

While researchers in Russia and China relied primarily on governmental funding for international projects, some of them increasingly pursued private funds. China has been adopting university-oriented philanthropy faster than Russia, with Hong Kong private donors setting examples and establishing trends for the mainland to emulate. The emerging philanthropic interest in the field of higher education by newly-fangled Chinese billionaires was noted by some reporters as being “new and experimental, and [there have been] only a few university administrators who would dare to build ‘strategic connections’ with the new donors”. The practices however began to change at flagship universities in sync with global trends as described by Warren and Bell (2014). Although the practice of private giving to universities remained underdeveloped in China and Russia, the flagship university stakeholders stimulated discussions about tax legislation changes and promoted joint projects to make the states’ R&D agendas and funds more supportive of private donations. However, some high profile accountability-related scandals in the US university-administered technical assistance projects in the post-Soviet Russia of 1990s seemed to have created a long-lasting adversarial effect on the planning of joint projects by North American and Russian scholars. Contributing to the poor image of university engagement in international R&D objectives was the failure of Russian administrative and legislative frameworks to adequately deal with international audits, while turning a blind eye to cases of illegitimate additional income, unofficial currency conversion and improperly documented bank transfers, which were pervasive in the early post-Soviet period. Corruption has been frequently reported
as a key factor affecting relations in the higher education system of Russia (also see Temple & Petrov, 2004).

**Cultural Adaptations**

In all four countries, organizational culture began to adjust along with changes in the funding arrangements for global research partnerships. The increase of earmarked funding for leading research universities in China and Russia allowed researchers in those countries to travel more often and observe best research practices and modes of governance in competitor-countries in the west, as well as in each other’s higher educational systems. Although the older generation of academics in Russia and China remain uncomfortable when discussing consultancy rates and reimbursement arrangements in international projects, young scientists admitted that “such negotiations were a normal practice” and tended to be more outspoken on money matters. Their partnerships with American scholars had a particularly significant impact on shifting mindsets, given the relative comfort that American academics felt in factoring in and negotiating funds for their projects. However, some senior Russian scholars interviewed for this study still had the lingering belief that project costs were not something that they could easily grasp, and expressed the view that it is the officials’ job to take the lead on financial matters and “be responsible for the right decisions to be made”. Often, however, the reluctance to deal with the “unmentionables” in such situations was a source of failed commitments and implementation strains, as the institutional planners and academic project teams had differing views on the real costs, inflation rates, foreign currency fluctuations and other issues.

Chinese scholars shared somewhat similar concerns about the division of roles when it came to finances. However, they exhibited a much more structured approach to dividing responsibilities among senior and junior scholars, as well as the higher and lower levels of the administrative echelons. Furthermore, while university administrators in China relied on top-down structures in the past, Chinese scientists began receiving more decision-making powers as marketization of higher education increased. This tendency was in part influenced by Western-trained returnees at Chinese research universities, who often viewed the hierarchical dimension as being detrimental to their outreach and promotion in global science. As a possible indicator of changing dynamics, Chinese university executives interviewed for this study proudly presented cases of young scholars being put in leadership positions and tasked with organizing and making final decisions with regard to partnership projects.

Likewise of consequence, Canadian and American scholars were for the most part unwilling to enter into any hierarchical schemes with their Chinese counterparts. Canadian university executives preferred to delegate most of the decision-making powers to the individual scholars who were in charge of raising funds from governmental and industrial sources, and thus in the position to
make strategic choices with regard to competitive proposals in the domestic and international research arena. The entrepreneurial spirit of international projects was increasingly viewed as an acceptable norm in Canada, where the government reduced funds for international research and urged academics to seek alternative sources of funding.

International collaborations in Russia and China have been primarily pursued by scholars with strong foreign language skills and foreign degrees. These scholars were likely to maintain relations with their mentors abroad upon returning home, and could build their partnership projects on those linkages. Some scholars in China and Russia felt that engagement with foreign partners was “rewarding per se,” as it provided inspiration for new conceptual and methodological explorations. Moreover, it offered opportunities for co-authorship with foreign researchers, and could serve as an essential strategic element for many young Chinese and Russian scholars whose universities offered incentives and awards for publications in the ISI-listed journals. Prestige-oriented outcomes (books and papers at well-regarded and globally recognized publishing houses; invitations to give keynote talks at leading international conferences, among others) were particularly celebrated at Chinese universities. This, however, gave rise to tensions between younger and more senior scholars, since the former tended to have the advantage of being more proficient in English and more knowledgeable about western publication standards. Tensions between “reputable” scholarship and “patriotic” scholarship became especially acute in Russia, with a large proportion of the Russian academe unequivocally supporting the latter in the wake of the crisis in Ukraine, which led to Russia’s increasing isolation and political rivalry with the US and the EU.

In China, inter-institutional intelligence was given particular attention, as administrators there believed that exceptional relations, manners and a calculated approach to inter-institutional projects would save them from failure and embarrassment in the long term. For the Chinese, international partnership building usually involved a cascade of interactions that would typically be started by representatives of the Chinese “knowledge diaspora,” engaging senior decision-makers at both an employing university abroad and an alma-mater in China. Subsequently, they would draw in new layers of collaborators on both sides to create a critical mass of interest and commitment. The initiator(s) would again involve senior decision-makers at the final stage of project preparation to develop an inter-institutional agreement that would serve as the ultimate symbolic stamp of approval. In contrast, as governmental funding for international research began to decline, Canadian and American decision-makers tended to downplay the ceremonial part of the partnership process, given growing criticism of “empty” senior level agreements in their home countries. Over time, the agreement-signing ceremonies were largely limited to international partnerships that were regarded as strategic and provided mutually acceptable cost-benefit ratios. As the latter became more central for decision-making, some research universities delegated the agreement-making to the level of budget-controlling faculties and research institutes.
In Canada, the lack of adequate federal support for international research projects caused numerous faculty members to complain about the role strains experienced in the absence of logistical support for cross-border activities. Tenure-track researchers, whose portfolios were evaluated on the basis of high-ranking publications, were particularly vulnerable to sidetracking in projects focusing on development and diplomacy, rather than on research. Consultancy became largely the domain of tenured senior scholars or retired professors, who could afford to dedicate their time to this type of work. Overall, researchers were cautious about making commitments to projects that had little or no institutional investment and political support. At some universities, senior authorities were forthright about their preference for academics joining external consulting companies, rather than integrating international projects into the university fabric. Concerns about costs and administrative overload became more pronounced, even in areas where engagement of non-academic representatives was essential (e.g., public health, education, social work, environment). Traditionally more conservative about hiring contingent faculty, some Canadian scholars argued that the American practice of employing “professors of practice” and “clinical professors” (whose job requirements placed less emphasis on traditional academic criteria and more on innovation and development) could be considered justifiable, as universities aspired to separate academic and developmental research governance schemes and budgets.

DISCUSSION

The success of global research partnerships is increasingly subject to the level of synergies among the policies, structures and cultures of participating universities. Cost-sharing becomes an imperative for international research in times when scientific ambitions, complexity and competitiveness increase, while public subsidies for academic research, in particular non-industrial research, flag. The sharing of costs often necessitates that academic researchers engage in social constructing and negotiation of stakeholder roles and responsibilities in providing political, financial and symbolic resources to support common goals. When costs overwhelmingly shift to individual portfolios, academic researchers are eager to assort contextual, institutional and individual forces that can reduce individual burdens, but still sufficiently benefit their scientific reputation (see earlier arguments by Slaughter & Rhoades, 2004).

In pursuit of equitable cross-border partnership-building, academics are urged to build a solid support base at home. In that regard, they have to consolidate their research agendas, define their priorities and shape strategic stakeholder linkages. In the absence of coherent messages and actions regarding their projects, they find it difficult to engage the critical funding sources, as well as to create sustainable support and equitable sharing of resources with their foreign partners. Given that the commitments of disparate stakeholders are increasingly harder to sustain in times of growing local and global competition (Marginson, 2004), the number of large-scale
and influential research partnerships remains low. Most global initiatives in academic research still continue being implemented in the form of sporadic fragmented steps taken by various actors locally, nationally and globally.

The comparative research framework proposed in this paper can be helpful in understanding where asymmetric tensions accumulate and how they play out. The challenges experienced by the global superpowers in positioning their universities for impactful research are illustrative that it can be difficult to overcome asynchonous and disconnects in R&D policies, structures and cultures, despite the scale of resources and desire to prioritize collaboration over competition in science. China, for example, has been taking bold steps to advance its big science initiatives in line with the larger global aspirations of its national government. Chinese international partnerships are supported by significant resources that are available either through governmental agencies or private sponsorship. Most of these initiatives are, nonetheless, focused on the global positioning of national players and hence encourage internal competition, rather than the consolidation of national science. China’s stance affects the behaviors of its international partners. For example, while China has been privatizing its research and driving more of it through industrial laboratories, Canadian research universities have been urged to shift their international collaborations to entrepreneurial schemes. While Canadians were more inclined toward inter-institutional symmetries and “public good” in international research in the past, the emergence of “new global economies” encouraged its government and universities to support collaborative arrangements that would allow Canadians to make money in the new markets. Despite the fact that Canadian universities receive an exceptionally high proportion of GERD in comparison with the other countries in this study, most of these expenditures relate to domestic, rather than international purposes.

Despite the growing recognition that synergies are important for global problem-solving, universities have limited capacities, incentives and cultural predispositions to enable smooth international collaborations, given the multi-scalar challenges outlined in the previous section (also, see the summary of multi-scalar adaptations in Table 3 below). In highly decentralized research systems like the ones in Canada and the US, the institutional budgetary schemes aimed at market-like behaviors tend to plunge organized research units into competition, rather than collaboration, even within the same academic departments (see also Lang, 2001). Researchers are largely still dependent on academic traditions and cultures that champion insular segregated performance frameworks. While both public and private financial investments are increasingly important for the successful launch and survival of collaborative initiatives, some national and institutional cultures are more receptive than others to such financing synergies. In Canada and the US, individual entrepreneurs operating across the boundaries of academic, governmental and industrial communities became primary drivers of decisions made in regards to international collaborations. Costs related to boundary-crossing projects hinge entirely on the entrepreneurial skills of those researchers, and their desire “to reconcile financial, economic, political, and
cultural divides”. Cases where collaborative ideas are put into heavier organizational frames are more likely to be observed in places where resources for research are abundant and centralized – for example, in China, where regulatory mechanisms are equally strong within industrial, governmental and academic institutions. In Canada and the US, despite growing governmental control over GERD, attempts to regulate international interaction were most often treated as cases of experimental, rather than comprehensive institutional steerage.

In all the countries in this study, budgetary allocations (for centers, chairs, and “star-scientists”) began to change in tandem with the more pernicious influence of the national pursuit of market paradigms in higher education, as well as global competition for resources. Fundraising for international research partnerships was more overt in the US and Canada than in the other two countries, which still enjoyed heavy governmental subsidies. With the devolution of budgetary planning powers from the institutional level to the faculty-level, the American and Canadian scholars began to do more legwork with regard to donor relations. Their increasing dependence on a variety of “small gifts and donations” was viewed by some respondents as creating “significant strain on the earlier agreed objectives,” consequently resulting in a “reduction in commitments to partners abroad”. Sporadic gifts from private donors were creating a false impression that this revenue source was easily available, and hence public support for international research could be withdrawn. In fact, local donors were uneasy about making commitments to a political and cultural system that they personally were unable to comprehend or trust. Some interviewees also reported that fragmented budgetary structures in international research made it difficult to pull together various disciplines across the university’s divisions for problem solving projects that benefitted from interdisciplinarity.

Overall, cost-sharing strategies in global partnerships remain a complex subject. They are fragmented by cross-national differences in the academies’ adaptation of policies, structures, cultures and stakeholder relations. “Resources” in these collaborations cannot and should not be conceptualized exclusively in monetary or tangible terms. In cases when research dollar parity could be established across the participating countries, the research partners still relied on numerous symbolic, political and cultural frames that create asymmetries in the cost-sharing schemes and affect the balance of shared outcomes. These intangible elements have to be given due attention and be conceptualized as resources, rather than as externalities affecting resource allocations. More research is required to better understand the changing notions of stakeholder commitments and accountability expectations, and their impact on cost-sharing in international research.

CONCLUDING REMARKS

This study examined convergences and divergences in the policies, structures, and cultures of research universities at a time when academic scientists aspire for equitable cost-sharing in international partnerships. Cost-sharing appears to be a challenge in
Table 1. GDP/GERD proportions: Canada, China, Russia and the US

<table>
<thead>
<tr>
<th></th>
<th>Pop. (m.)</th>
<th>GDP per capita (000, US$PPP)</th>
<th>GDP growth rate (%)</th>
<th>GERD (% of GDP)</th>
<th>GERD current PPP$ bln.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>34</td>
<td>28</td>
<td>39</td>
<td>5.2</td>
<td>3.2</td>
</tr>
<tr>
<td>China</td>
<td>1,347</td>
<td>2.3</td>
<td>7.5</td>
<td>8.4</td>
<td>10.4</td>
</tr>
<tr>
<td>Russia</td>
<td>143</td>
<td>6.8</td>
<td>20.2</td>
<td>10</td>
<td>4.3</td>
</tr>
<tr>
<td>USA</td>
<td>310</td>
<td>35</td>
<td>46</td>
<td>4.2</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: UNESCO Institute of Statistics 2013

Table 2. Comparative GERD distribution (%)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Government</th>
<th>Universities</th>
<th>Foreign institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Financed</td>
<td>Performed</td>
<td>Financed</td>
</tr>
<tr>
<td>Canada</td>
<td>44.9</td>
<td>45.5</td>
<td>60.3</td>
</tr>
<tr>
<td>China</td>
<td>57.6</td>
<td>71.7</td>
<td>60.0</td>
</tr>
<tr>
<td>Russia</td>
<td>32.9</td>
<td>25.5</td>
<td>70.8</td>
</tr>
<tr>
<td>USA</td>
<td>69.4</td>
<td>61.0</td>
<td>74.6</td>
</tr>
</tbody>
</table>

Source: UNESCO Institute of Statistics 2013
### Table 3. Research university multi-scalar adaptations in international research

<table>
<thead>
<tr>
<th>Policy Adaptations</th>
<th>Canada</th>
<th>China</th>
<th>Russia</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Federal sponsorship of strategic (aka limited) international research; growing influence of private donors; shift from “international development” to “selected markets” in BRICS</strong></td>
<td>Focused and heavily subsidized “world-class university” budgeting (221 &amp; 985); governmentally-sponsored talent regain programs; interest in public—private partnerships; government changing from recipient to donor</td>
<td>Post-transformational acclimatization; resistance to globalization; “patriotic science”; reduction of “technical assistance recipient” status and the growing control of government over international activities in higher education; challenges with international accountability standards and audit</td>
<td>Sponsorship variety including strong private donors and charities; private-public partnerships; market traditions; aspiration for leadership in global efforts; increasing “aid or trade” dilemmas; foreign policy crises after 9/11</td>
<td></td>
</tr>
</tbody>
</table>

| Structural Adaptations | Fewer “development grants” and more “industry-driven” results-based management contracts; donor-driven agendas; cost-recovery projects; excellence centers and chair programs | Selective funding, prestige-driven agreements and outcomes; executive delegations to prestigious western schools; increasing presence of private donors; profit-oriented proposals funding of brand-name arrangements; “brain gain” innovation centers; increasing employment of western talent and regain of local talent trained abroad; from “brain-drain” to “brain circulation” | Competitive pressures in social sciences, management and market-related disciplines from private universities; symmetric and affinity-driven collaborations; global partnerships are driven by junior scholars; emulation of Chinese selective funding schemes; low rate of “brain circulation”; focus on “community-oriented” and “nation-building” research; Academy of Sciences vs. university-based research partnerships | Donor-funded interdisciplinary arrangements; the emergence of new fields that rely on international engagement more intensely; self-financing academic and para-academic positions; the growth of science parks |

(continued)
<table>
<thead>
<tr>
<th>Cultural Adaptations</th>
<th>Canada</th>
<th>China</th>
<th>Russia</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social entrepreneurship; equity and symmetry concerns; hesitant outreach to donors and industries; trust based on personal connections; engagement of immigrant populations; focus on academic excellence – “publish or perish”, “curiosity-driven research” rather than community work</td>
<td>Changes in traditional hierarchies and socialization attitudes; the rise of western-educated scholars/managers; focus on “publishing in prestigious journals”; fescaving; calculated approaches</td>
<td>Inter-generational gaps in market terms; inadequate financial planning skills; scientific heritage and resentment; hospitality and national culture concerns; paternalistic attitudes</td>
<td>Entrepreneurial frames; emphasis on cost-recovery in socially engaged partnerships; cosmopolitan but center-periphery mental constructs; integration of interests between private donors, industries and governmental stakeholders</td>
<td></td>
</tr>
</tbody>
</table>
cross-border R&D collaborations that are subject to complex interactions between human and institutional agencies scattered across local, national and global planes, as was previously discussed by Marginson and Rhoades (2002), Kitagawa (2010), Koehn (2012), and Oleksiyenko (2014). This challenge is difficult to overcome, even in resource-endowed countries such as the USA, Canada, China and Russia. This study provides a framework of analysis for examining critical asymmetries and identifying optimal adjustments that need to be made in policies, structures and cultures when mutuality in international research becomes important.

ACKNOWLEDGMENTS

The author is grateful to study participants in Canada, China, Russia, and the USA for sharing their opinions and concerns about international research partnerships. Some results from this study were discussed at the 2011 annual conference of the American Educational Research Association, and the 2012 annual conference of the Comparative and International Education Society. This study partially benefited from support provided by the Hong Kong Research Grant Council through the grant “Global Competition and Collaboration Strategies of Research Universities in China and Russia”.

REFERENCES


Anatoly Oleksiyenko
Faculty of Education
University of Hong Kong, China