

**INTERNATIONAL STUDENT MOBILITY AND HIGHLY SKILLED
MIGRATION: A COMPARATIVE STUDY OF CANADA,
THE UNITED STATES AND THE UNITED KINGDOM**

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By

Qianru She

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ABSTRACT

With the rise of the knowledge economy and aging population, advanced industrial countries seek to address their skill shortage and promote national skill bases through highly skilled migration. As a result, recruiting international students, especially those at tertiary levels, has been integrated into national strategies to compete for global talent. In spite of the widely recognized significance of recruiting international students to a high skill economy, the uneven growth in foreign enrolments among host countries, geographically oriented source regions and destinations of the students, and limited post-graduate stay rates suggest important questions about governments' commitment to attracting and retaining international students.

A main purpose of this comparative study is to identify and assess specific national strategies and their goals of managing international student mobility. Changes in international student policies, in particular entry and immigration regulations, and the trends in student mobility in Canada, the United States and the United Kingdom since the 1990s are examined drawing on secondary data. The results suggest that rather than strictly relying on market forces, nation states address and cope with the "pressure point" of skill upgrading in a strategic and political way. The management of international student mobility, among other national strategies aiming at a high skill society embraces a collective goal of national interest shaped by the political economy in each nation.

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LIST OF ABBREVIATIONS

AUCC	Universities and Colleges of Canada
CIC	Citizenship and Immigration Canada
EEA	European Economic Area
ERASMUS	European Region Action Scheme for the Mobility of University Students
EU	European Union
HESA	Higher Education Statistics Agency (UK)
HRST	Human resources in science and technology
HSMP	Highly Skilled Migration Programme (UK)
IIE	Institute of International Education
IGS	International Graduates Schemes
NAFSA	National Association of Foreign Student Advisers (now Association of International Educators)
NSF	National Science Foundation (US)
OECD	Organisation for Economic Co-operation and Development
OPT	Optional Practical Training (US)
PBS	Points-based system (UK)

S&E	Sciences and Engineering
SEGS	Science and Engineering Graduates Scheme (UK)
SEVIS	Student and Exchange Visitor Information System (US)
STEM	Science, technology, engineering, or mathematics
UIS	UNESCO Institute for Statistics
UKBA	UK Border Agency
USCIS	US Citizenship and Immigration Services
USDHS	US Department of Homeland Security
UUK	University UK

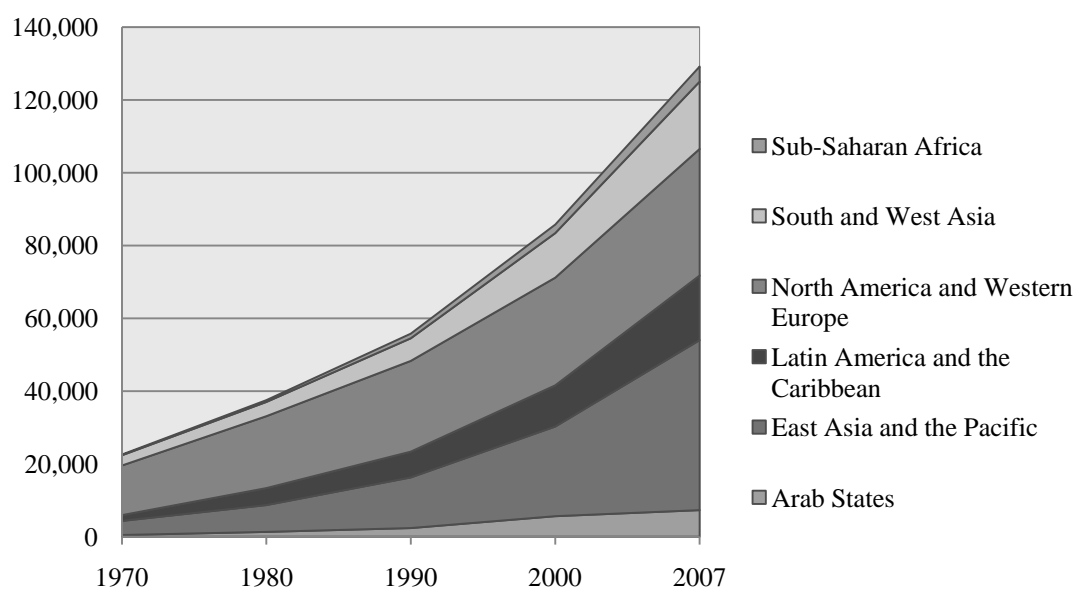
CHAPTER 1. INTRODUCTION

Today's global economy is characterized as a post-industrial knowledge economy, which is based on the production, distribution and application of knowledge and technology (OECD 1996). In the new economy, the importance of traditional factors of productivity such as capital, land, energy, and labour subsides, as knowledge and technology become the key drivers of long-term economic productivity. Since the 1990s, advanced industrial countries have witnessed a trend towards growth in high-technology investment and industries; labour market demand for highly skilled workers in knowledge-based occupations are also increasing, as well as associated economic gains (OECD 1996). A nation's "knowledge advantage" (Department of Finance Canada 2006), which refers to a well-educated, highly skilled, and flexible workforce, has been recognized as the most critical asset for economic prosperity. As an adaptation to the changing environment, human capital upgrading is placed high on governments' policy agendas as the strategy to establish a high value-added knowledge economy and maintain national competitiveness in the global economic chain. It has been widely accepted that investment in human capital is not only the determinant of individual income and well-being, but also the solution to a broad range of social economic issues including fuller employment and social cohesion (OECD 1998).

A core strategy to acquire a sustainable high-skilled working population is the investment in formal education, especially the promotion of a more widely accessible higher education. According to the United Nations, the number of total student enrolment in tertiary education worldwide has skyrocketed in the past decades, growing five-fold from 28.6 million in 1970 to 152.5 million in 2007, with an average annual increase of 4.6% and the number doubling every

15 years; the higher education expansion in terms of enrolment growth has been particularly remarkable since the late 1990s as the global competition based on knowledge and innovation becomes progressively more intense.¹ (Figure 1.1). In the context of higher education expansion, the proportion of adult population (25-64 year-olds) with tertiary attainment dramatically increased in the past decade from 20% in 1998 to 27% in 2007 across the Organization for Economic Cooperation and Development (OECD) countries (OECD 2009a), which is leading towards the achievement of governments' objectives to significantly improve national skill bases, in particular the proportion of working-age populations with post-secondary education.

Figure 1.1. Tertiary enrolments in selected regions 1970-2007 (thousand)



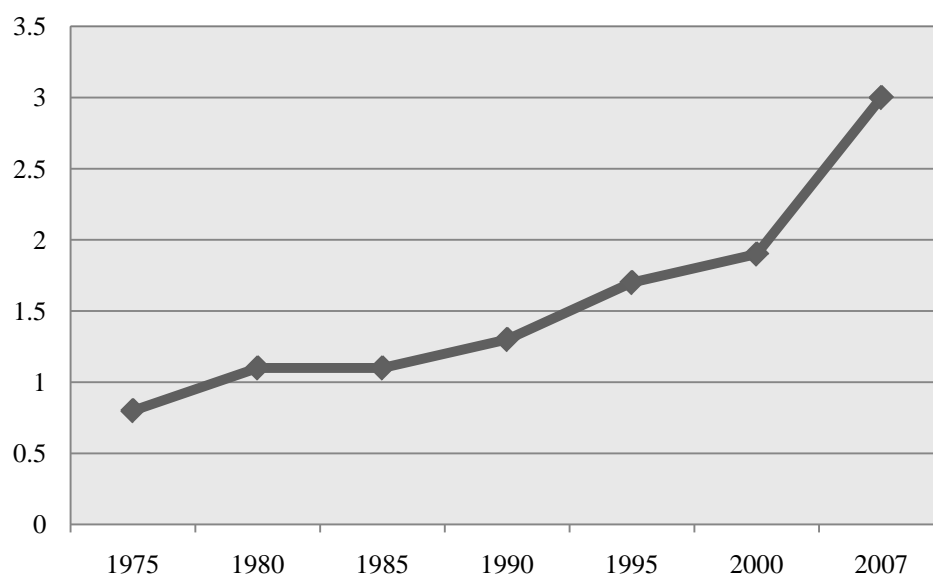
Source: UIS (2009, Time Series Data: Table 1).

It is notable that foreign-born populations have made a growing contribution to host countries' skill bases. From 1990 to 2000, the stock of immigrants in OECD nations with tertiary education (either from their home country or receiving country) rose by almost 8 million

¹ Both native-born and foreign-born have contributed to the expansion.

(Docquier, Lowell, and Marfouk 2009). The past decades also saw a tendency towards an increase in the employment of immigrants in high-skill occupations (Chaloff and Lemaître 2009). These trends reflect a growing reliance on immigration to address the skill challenge, as most of the advanced countries are experiencing a continuous decline in working-age populations in the knowledge-based economy (Chaloff and Lemaître 2009). Against the backdrop of economic reconfiguration and demographic change, the competition among developed economies for highly skilled migrant workers becomes increasingly intense; how to manage highly skilled migration based on labour market demand and national interest stands as a central concern of economic competitiveness. Among this top concern, recruiting international students has drawn growing attention from advanced economies and has been integrated into their strategies to compete for global talent (OECD 2008a). Figure 1.2 shows the trend in foreign tertiary enrolments in the past 30 years.

Figure 1.2. Worldwide enrolment in tertiary education outside country of citizenship 1975-2007 (million)



Source: OECD (2009a).

Several main themes can be identified with respect to the recruitment of international students as part of the broad strategy for managing highly skilled migration.

First of all, the demand-driven migration which targets at labour market needs has been recognized as a more pragmatic way compared to a supply-driven mode of immigration as the former one is to a certain extent able to avoid imposing immediate financial burden on the receiving country (Chaloff and Lemaître 2009). Thus, there has been an increasing emphasis on employer-oriented selection of immigration (Chaloff and Lemaître 2009). Local authorities have also begun to play a vital role in managing migration for the purpose of meeting local labour needs (OECD 2007). Host countries are paying stronger attention to newcomers' language proficiency, work experience, prior success and related factors which are seen as key indicators of their labour market outcomes. Preference of residence approval and status change is given to temporary residents who have local work or study experience. This applies well to international students. As temporary residents in host countries, international students are viewed as potential skilled workers who are more easily integrated into local labour markets due to their verified credentials, country-specific experience and skills, and social connections (Tremblay 2005; OECD 2007; Chaloff and Lemaître 2009).

Secondly, previous studies demonstrate a significant link between academic mobility and potential migration. One of the key reasons for student mobility is to acquire post-graduate employment in host countries (Suter and Jandl 2006; Rosenzweig 2008). Cross-sectional analyses reveal that many former international students undergo a shift in status from students to work permit holders or permanent residents (Suter and Jandl 2006). Approximately, 15-35% of international students can be expected eventually to work and settle in host countries; the higher the level of education is, the more graduates stay (Suter and Jandl 2006). Meanwhile, hosting

international students has a significant positive effect on future migration, regardless of previous immigration stock (Dreher and Poutvaara 2005).

Host countries' interests in international students as a pool of highly skilled migrant workers in particular lie in the following two reasons. On the one hand, with the development of information technology and the outflow of manufacturing jobs to less developed countries, human resources in science and technology (HRST) become a key indicator of innovation performance of advanced economies (see e.g., OECD 2008b; 2009b). Compared with native-born youth, international students are more likely to be enrolled in science and technology programmes where the acquired skills can be easily transferred to other circumstances (Suter and Jandl 2006). On the other hand, international students account for a high proportion of enrolment in advanced research programmes (Tremblay 2005; Suter and Jandl 2006), highlighting their potential contributions to host countries' economies in case they stay upon completion of their study. Briefly speaking, the inflow of international students to advanced industrial countries is a noteworthy input into host countries' innovation strategies (Chellaraj, Maskus, and Mattoo 2005; Tremblay 2005), though at the same time it is closely related to the human capital loss to the source countries (Gribble 2008).

Thirdly, international student policy has become a tool in the global competition for high skills. OECD countries, which have been dominating in receiving worldwide international students, are engaged in promoting and marketing their higher education institutions, easing entry and status extension regulations, allowing international students to work during studies, offering channels for them to change status and stay as knowledge workers (Tremblay 2005; Suter and Jandl 2006; Santiago et al. 2008; Chaloff and Lemaître 2009). The convergence in

governments' international student policy has demonstrated widely recognized benefits from educating international students.

In spite of the above, other facets of international student mobility need to be addressed. In the face of the rapid growth in foreign enrolments worldwide, particularly in the OECD nations, new trends in the distribution of international students have emerged in recent decades. For instance, as New Zealand, France, and Japan have become more ambitious in competing for international students, the US, a traditional leading destination country, has seen a remarkable drop in its share of the international higher education market (OECD 2008a). Moreover, international students are mainly from a small number of principal source regions such as China, India, and South Korea; the destinations of the students are heavily geographically oriented, with European students tending to stay in Europe and students from the rest of the world tending to study in OECD countries outside of Europe (OECD 2007). In addition, for most host countries with data available, a very limited proportion of international students stay after the completion of education (Suter and Jandl 2006), which is associated with the circular nature of migration (see Gribble 2008).

The imbalanced growth and limited stay rates suggest important questions about governments' commitment to recruiting international students. In fact, despite the convergence in international student policies across host countries, the detailed regulations, procedures, and mechanisms through which policies are carried out differ from one country to another (Cornelius and Tsuda 2004). To a substantial extent, receiving countries remain in favour of their specific policy framework (Chaloff and Lemaître 2009), and give privilege to certain immigration categories or applicants from certain places of origin, even when it comes to the most qualified. Hence, it is critical for the discussion of international student mobility to go beyond the

consideration of economic productivity and examine a broader range of political economic conditions and their roles in shaping government practices of managing highly skilled migration. International students, among other discretionary migrant categories, are subject to a national strategy for the high skill economy which represents a collective goal, not exclusively to enhance the skill bases in the host country.

This study asks the following questions: 1) What are the policy frameworks for recruiting international students in Canada, the US and the UK, in particular visa and immigration policies? 2) What are the trends in international student mobility in the three countries? 3) How does the government of each nation manage international student mobility, and what are the implications of their practices for highly skilled migration?

Previous comparative research on highly skilled migration in advanced industrial countries is by and large general comparison in the trends in people's flows and changes in migration policies among a large number of receiving countries (see e.g., Gera and Songsakul 2007; OECD 2008b). A few studies focusing on international students are limited to the issue of how governments and institutions could make their higher education more appealing to international students, rather than to discuss the recruitment of international students as a strategy to manage highly skilled migration (see e.g., Verbik and Lasanowski 2007). Some others fail to fully explore the questions for the reason that they tried to cover a broad range of issues or due to the lack of cross-country data (see e.g., Suter and Jandl 2006). Furthermore, human capital theory remains a key approach underlying relevant research on international student migration without social and historical context properly examined, which is weak in explaining and interpreting the variations in student mobility among countries.

This thesis offers a comparative research focusing on three principal English-speaking host countries of interest to both academic and political circles: Canada, the US and the UK. Changes in international student policies and trends in student mobility since the 1990s are examined drawing on secondary data. The data employed in this study are from varied sources including national government agencies of border and security such as the UK Border Agency (UKBA), the US Department of Homeland Security (DHS), and Citizenship and Immigration Canada (CIC); statistical agencies such as the UK Higher Education Statistics Agency (HESA), the US National Science Foundation (NSF), and CIC; and international education and migration sources such as Institute of International Education (IIE) and the OECD. Mixed methods are applied in the study where qualitative analysis is conducted as a complement of statistical description. By looking at the issue from the political economy perspective, this research aims to identify and assess distinct national strategies for managing international student mobility, determine key factors shaping the environment of student mobility in each nation, and address the deficiency of human capital theory in the analysis of global competition for high skills.

The study is able to overcome the lack of cross-country data, since comparable data on student mobility in the three countries are largely accessible from the data sources. Meanwhile, it is feasible to carry out more in-depth comparison and analysis by examining the situation in a small group of receiving countries. For policy makers, the study will provide a relatively comprehensive picture of international student mobility; implications drawing from the study may help establish a rational expectation from recruiting international students and take effective measures to manage student flows and highly skilled migration. Last but not least, although this study addresses the issue of international student mobility from host country's perspective, it offers an insight for sending countries to understand their positions in the global talent war. This

may help the sending countries response to the potential risks of brain drain in a pragmatic and strategic way, which also plays a crucial role in shaping the global environment for student mobility.

The body of the thesis is divided into four parts. Chapter 2 reviews the theoretical debate on skill formation, outlines the political economy framework for addressing highly skilled migration, and discusses the methodology of the research. Chapter 3 offers a brief overview of the policy changes pertaining to international students, in particular visa and immigration regulations, since the late 1990s in Canada, the US and the UK; the analysis explores the shifting policy contexts and identifies distinct frameworks of international student policy in each country. Chapter 4 examines and compares the trends in international student mobility in the three countries by looking into the stock/total enrolment of international students, levels and fields of their study, places of origin, and post-graduate retention. To conclude, the last chapter assesses governments' strategies for managing student mobility, discusses the key factors shaping national practices of recruiting mobile students, and offers policy implications for managing student flows and highly skilled migration.

CHAPTER 2. THE POLITICAL ECONOMY OF HIGH SKILLS AND HIGHLY SKILLED MIGRATION

Since the 1990s, an almost universal policy consensus has emerged across the advanced industrial economies stressing the pursuit of a high-skill, knowledge-based economy through upgrading the skill levels of the working population and maintaining a sufficient supply of high-qualified labour force (see e.g., Industry Canada 2002; HM Treasury 2006; DHS 2008a). These policies are guided by the underlying human capital theory which argues that much of the unexplained increase in productivity, wages and economic growth can be explained by the investment in human capital (Becker 1980). There are many forms of investment in human capital including schooling, on-the-job training and migration (Becker 1980). By investing in human capital, individuals are able to increase their lifetime earnings, and governments are also able to enhance employment, economic growth, as well as social justice and cohesion (see Brown, Green, and Lauder 2001). In the era of economic globalization, governments' economic agendas typically include provisions to compete for worldwide mobile talent judged by an international (rather than national) criterion of human capital, especially in the context of aging population. At the same time, however, a broad range of criticisms on the deficiency of human capital approaches to the issue of high skill economy has also appeared, stressing especially the overly simplistic notion of evolutionary progress and a skewed emphasis on the supply-side interventions in human capital theory (see Crouch, Finegold, and Sako 1999; Brown, Green, and Lauder 2001; Livingstone 2004). In posing a challenge to the dominance of human capital rules in defining the parameters on nations' economic development, and directing and assessing government economic policies, many of those who adopt critical orientations call for a holistic and multidisciplinary approach to theorising skill formation. One of the major critical

alternatives, political economy analysis, emphasizes the social construction of skills and takes both supply- and demand-sides of skills into consideration. This chapter provides a brief overview of the theoretical debate on skill formation and outlines the political economy framework for addressing high skill strategies within specific national contexts. In particular, this chapter focuses on the political economy of highly skilled migration which is a crucial component of skill formation in the global knowledge economy. The last section of the chapter delineates the methodology to compare and contrast orientations to international student migration adopted by Canada, the US and the UK.

2.1 Human Capital in the Knowledge Economy

The core thesis of human capital theory lies in an understanding of peoples' learning capacities as comparable to other natural "physical means of production" resources involved in the capitalist production process; when the resource is effectively exploited the results are profitable both for the enterprise and for society as a whole (Livingstone 2004, 162). In the post-industrial knowledge economy which is perceived as seeing a rapid expansion of education, a fast growing demand for workers to upgrade their skill levels, and vastly increasing labour market needs for well educated professionals, human capital gains weight as the key factor of national competitiveness and the solution to a series of socio-economic problems in the advanced economies. Economic globalization has greatly expanded the policy significance of human capital theory (Brown, Green, and Lauder 2001). Not only has the quality of domestic higher education became subject to global benchmarks, but the competition among advanced nations seeking well-educated and highly skilled mobile talent with international experience and perspectives is getting more intense. To secure the labour supply and create a world-class labour force under the conditions of significant demographic change, advanced economies have looked

far beyond state borders to secure the accumulation of human capital. The assumption behind the strategy is that in the global “knowledge wars” (Brown and Lauder 1996), a sustainable competitive advantage can only be achieved by offering high value-added products supported by high skills in the world market (see Crouch, Finegold, and Sako 1999; Brown, Green, and Lauder 2001). The developed nations, therefore, are deemed to act as “magnet” economies in the global economy offering high-waged job opportunities and attracting high-skilled workers from throughout the world (see Brown and Lauder 2006). The most optimistic anticipation of the human capital theory believes that the miracle of global human capitalism will lead a rising skill base across the entire population, and eventually achieve economic efficiency as well as social justice (see Brown, Green, and Lauder 2001).

A further dimension in the human capital approach concerns the governing competence of nation states. Individual nation states are seen as virtually powerless and having no choice but to follow the logic of globalization (Brown, Green, and Lauder 2001) through, for instance, bringing in skilled migrant workers to achieve the national skill profile required for a high skill economy. In this sense, the scope for government involvement in skill formation is limited to the supply side, and the move towards a global convergence in skill policy is inevitable (Brown, Green, and Lauder 2001).

There is no doubt that the policy appeal of investing in human capital will remain irresistible to national governments around the world (Brown, Green, and Lauder 2001). But the possibility of achieving socio-economic prosperity is not solely conditioned by the skill aspect. In fact, the more human intelligence, capability and creativity become an integral feature of economic performance, the more social and political issues of inequality, opportunity and democracy will shape a nation’s economic competitiveness (Brown 1999). Equally, national

strategies for skill upgrading and innovation are not simply economic issues but aim at achieving a social and political goal. The critiques against the human capital approach have made at least the following key points.

First of all, from the supply-side, the embodiment of what it means to be skilled is socially constructed. This human facet of economic activity inhibits the social relations of productivity (Brown, Green, and Lauder 2001). Second, an improved supply of a high qualified working force does not immediately lead to a commensurate demand for skilled workers (Crouch, Finegold, and Sako 1999; Livingstone 2004), and the impact of technology on employment skills is uneven among different economies (Brown, Green, and Lauder 2001). Third, the economic structure change and the shift to the service sector do not mirror a universal rise in nations' skill levels, nor an end to low skilled employment (Brown, Green, and Lauder 2001). Fourth, the waste and underutilization of human capital still exist widely in both local and international labour markets (Crouch, Finegold, and Sako 1999; Brown, Green, and Lauder 2001; Livingstone 2004); in particular, nationality continues to operate as a vital tool to exclude millions of qualified foreigners from employment opportunities (Brown, Green, and Lauder 2001). Last but not least, nation states' responses to the "pressure points" (Brown 1999) of economic globalization are strategic and political, rather than inevitable (Brown, Green, and Lauder 2001). The different ways in which nation states intervene in public and economic policies remain vital to understanding variations in national strategies for a high skill economy and how common problems are defined and managed in each country (Brown, Green, and Lauder 2001). On the whole, a nation's political economy system decides the role human capital and skills play in raising productivity and economic competitiveness. This structure includes the sectoral composition of the economy, the nexus of production strategies of corporations, labour market

regulation, the corresponding variations in the constellations of political interest groups and how they interpret social political conditions, give rise to variations in economic growth and shape governments' skill formation policies (Brown, Green, and Lauder 2001; Menz 2009).

2.2 The Political Economy of Highly Skilled Migration and Multidimensional National Interest

The political economy framework makes a key contribution to addressing the skill issue by bringing the human facet of skill formation, namely, the social and historical contexts, back into discussion. From the political economy perspective, **skill formation** is defined in terms of developing the social capacity for learning, innovation and productivity (Brown 1999). It emphasizes the social dimension of skill formation and stresses the importance attached to social, cultural and institutional contexts which decide the success or failure of skill formation strategies (Brown 1999). Therefore, in "ideal-typical" terms, a high skill economy is one which has a high social capacity for learning, innovation and productivity in a post-industrial or knowledge economy (Brown 1999). In this sense, "high skill society" is more appropriate than the term "high skill economy" to highlight the social foundations of skill formation as well as the social goals it addresses (Brown, Green, and Lauder 2001, 3).

One of the main controversies over the management of migration in the advanced economies is the coexistence of a highly profiled desire for the most qualified migrant workers (as well as the fear of losing ground in the competition) and the virtual reluctance or unwillingness to facilitate the mobility presented through restrictive immigration and border regulations (Cornelius and Tsuda 2004). This situation, on the one hand, can be captured by the power relations among key stakeholders (Menz 2009; Cornelius and Tsuda 2004; Brown, Green, and Lauder 2001). For instance, capitalist employers in skilled sectors are more likely to be

advocates for an expansionary skilled labour migration policy which aligns with their priority of maximizing profits through securing the quality and flexibility of labour supply (Menz 2009). In particular, a stable intake of international students, a precursor to highly skilled migration, also tends to be supported by university associations given the contributions made by international students to revenue generation and the education system. However, these advocates' efforts to influence policy-making have to be managed carefully considering the sceptical or outright hostile public opinion towards migration especially during times of high unemployment and reductions in government services (Menz 2009; Cornelius and Tsuda 2004). Their influence on national policy-making, therefore, is conditioned by the pattern of interest group politics and the degree of internal policy consensus (Menz 2009; Cornelius and Tsuda 2004; Brown, Green, and Lauder 2001). As a result, employer associations may prefer certain groups of migrants over others, choosing those seen as complementing existing strengths and addressing perceived weaknesses or deficiencies in the domestic economy (Menz 2009).

On the other hand, the state as a political agent in its own right also affect the formulation of policy by defining issues, providing information, and shaping public discourse (Rudolph 2003). It can respond to appeals of interest groups, anticipate changes in public opinion and craft policies in advance of demand for policy changes to achieve a top-down policy-making objective (Rudolph 2003). The aftermath of the 9/11 attacks serves as an example. Despite the rising concerns about terrorism, migration policies in many countries have not radically altered in the post 9/11 era, which signals an active state seeking to balance interest and craft an optimal grand strategy to serve the national end (Rudolph 2003). Finally, in the wave of the neoliberal logic of economic globalization which calls for governments to create conditions amiable and conducive to business, investment and innovation (Menz 2009), labour migration policy has to both

demonstrate its decisive support for the development towards a high skill economy which is anticipated to eventually benefit the nation as a whole, and to convince the general public of the government control over migration regarding border security, national identity, and social stability.

The political economy of international migration is seen as particularly useful to address the social and historical contexts of immigration and the goal migration seeks to achieve (Menz 2009), in that migration process is relevant to multiple dimensions in national interest (Rudolph 2003). The **national interest** of states can be defined largely according to three dimensions: (1) geopolitical security, (2) the production and accumulation of material wealth, and (3) social stability and cohesion (Rudolph 2003). The political economy of highly skilled migration clearly demonstrates the package of a collective goal of national interest. For achieving the specific goal, nation states adopt differentiated attitudes and practices towards the “useful” wanted and the “burdensome” wanted-not, and the open selective pathways to certain migrant groups correlate with even more tightly locked doors elsewhere (Menz 2009). Meanwhile, highly symbolic politics that present a strong image of governmental control over migration became a dominant theme of societal security regardless of whether ethnic dimension of national identity is emphasized (Rudolph 2003).

In the emerging knowledge economy, migration is so integrated into labour market needs and economic competitiveness of advanced countries that few can afford to drastically reduce immigration without major negative consequences (Cornelius and Tsuda 2004). Nevertheless, most of the industrialized countries would prefer to classify themselves as reluctant or unwilling importers of foreign labour (Cornelius and Tsuda 2004). The political economy analysis of the controversy holds up the notion that the national commitment to a high skill economy is wrapped

in the political safety blanket of competitiveness (Brown, Green, and Lauder 2001). Facing the challenge of international competition, nation states respond in different ways based on their particular social foundations, which reflect distinct strategies to pursue a high skill economy. The political economy of highly skilled migration, a component of national skill formation, is intimately related to a collective goal of national interest, as well as the legitimacy of government authority (Brown, Green, and Lauder 2001). Broadly speaking, skill formation can be understood as a manifestation of societal goals delivered through social and economic means (Brown, Green, and Lauder 2001).

2.3 Methodology: A Comparative Analysis

As was discussed above, the political economy of skill formation is embedded in historical, institutional, cultural, and political contexts in each country (Brown 1999). Thus, an international comparative analysis is essential in order to explore how the forces of globalisation influence the institutional frameworks and productive systems of each society, and what are the distinct responses of nation states to common competitive pressures (Brown 1999). Drawing on the political economy approach, the comparison of this study focuses on how key stakeholders interpret and represent issues of skill formation. The analysis will offer an insight into how the ways in which key stakeholders define their social, economic and political goals serve as a “guide to action” that makes some policy reforms possible whilst ruling out others (Brown, Green, and Lauder 2001, 54).

In order to address these questions, two sets of data are examined and compared. First, skill formation policies reflect “trade-offs” between competing vested interest groups which shape the policy framework on the basis of politically negotiated settlements (Brown, Green, and Lauder 2001, 243). Therefore, evidence from the changing policy contexts in each nation can be an

explicit way to examine the power relations among stakeholders and distinct political economy systems developed historically. Regarding the focus of this research, immigration and visa policies relevant to international students are compared and analyzed. Indeed, the political economy of international student mobility can be displayed in a broad range of government policies and activities in host countries including tuition and funding policy, branding of national education, labour market regulations, co-operations between public and private sectors as well as between federal and local governments. However, immigration and visa policies are closely related to the outcomes of international student mobility and the rights and welfare that international students could enjoy. Thus, it is appropriate to examine immigration and visa policies for the purpose of exploring the connection between government policy and its effects and consequences. Meanwhile, immigration and visa regulations are explicitly linked to the three dimensions of national interest which is a long-term development. The investigation of visa and immigration policies brings history back into consideration and offers a comprehensive insight into the implications of the study in the continuously changing global environment. The main data sources employed are national border and security agencies, such as UK Border Agency (UKBA), US Department of Homeland Security (DHS), and Citizenship and Immigration Canada (CIC). Policy documents from those sources are analyzed and compared in order to identify the changing policy contexts and distinct policy frameworks for managing international student mobility in Canada, the US and the UK.

Secondly, the trends in international student flows into the three countries are examined drawing on secondary data. The main data used in this research are from national government sources of research and statistics such as CIC and the UK Higher Education Statistics Agency (HESA), as well as international sources of student mobility such as the OECD and the IIE. This

study adopts measures of student mobility widely used in previous research. Government performance in attracting international students is examined in terms of the stocks/enrolments and market shares of international students, the levels and fields of their study, and their places of origin; to find out the nations' performance in retaining international students, retention rates and the proportion of residence approvals² of international students are considered based on existing data. Qualitative analysis is conducted as a complement to statistical data in order to find out the connection between government policy and its outcomes, as well as the implications of the connection for managing international students mobility and highly skilled migration.

2.4 Definitions of Key Terms

Before getting into the data, several key terms in the research need to be addressed.

High skilled. In general discussions about highly skilled migration, the implicit definition of a highly skilled migrant is one with a university degree (Chaloff and Lemaître 2009), or approximately a degree at tertiary 5A (see the following definition) level and above as defined in the International Standard Classification of Education (ISCED). However, the size of this “best and brightest” group of people is relatively small (Chaloff and Lemaître 2009). As the demographic change in fact results in labour needs across a broader segment of persons with better than upper secondary education levels, the scope of the highly skilled also expands to include post-secondary education at university-level as well as vocational, technical or professional qualifications of shorter duration than a bachelor's degree, which approximately corresponds to tertiary education (Chaloff and Lemaître 2009). Besides educational attainment, occupation and wage levels are also used by host countries to identify potential high-qualified

² Retention rate is the proportion of international students who gain residence in the country, ideally by cohort; the proportion of residence approvals is those former international students in the host country who gained certain type of residence as the percentages of the total residence approvals (see Chapter 4).

candidates for immigration, whereas the results measured by the three indicators overlap to a considerable extent (Chaloff and Lemaître 2009). This research focused on the mobility of international student at tertiary level as potential highly skilled migrant workers. For this purpose, the educational dimension is used in the study, and those with a credential from higher education/tertiary education are defined as highly skilled.

Tertiary Education/Higher Education. The term tertiary education was adopted recently by UNESCO and OECD to reflect the growing diversity of institutions and programmes corresponding to the previous commonly used term “higher education” (Santiago et al. 2008). Post-secondary education is another term to describe the full range of programmes and institutions available after the completion of upper secondary education (Santiago et al. 2008). However, this term is overly broad to fit in the discussion, since it encompasses a far wider range of occupational preparation programmes as well as adult education programmes (Santiago et al. 2008). In the International Standard classification of Education (ISCED-97) issued by the UNESCO, tertiary education is defined in terms of programme levels at ISCED level 5B, 5A and 6 (OECD 2004). Examples of typical tertiary programmes are, for instance, ISCED 5B: 2-3 years college, 3-4 years college, Occupational / Technology programmes, and Vocational Diploma in Canada; ISCED 5A: Bachelor’s degree programmes in the US and the UK; and ISCED 6: Doctor of Philosophy (Ph.D.) programs in the US (OECD 2004). It should be noted that the existing data across countries are subject to different arrangement of higher education systems, the terms used by specific countries, and the way data were collected.³ However, the statistical comparison among countries can be expected to reflect the general trends of student flows at tertiary level.

³ For example, Canada uses post-secondary education which comprises Trade, University, and Other post-secondary categories, in its official documents and statistical reports, rather than higher education used more frequently in the

International students. International students (or internationally mobile students or educational foreigners - see Suter and Jandl 2006) are those who leave their country or territory of origin and move to another country or territory with the objective of studying (UIS 2009). They can be defined according to the following characteristics (see UIS 2009 for more details):

- Permanent residence: Students can be considered to be mobile students if they are not permanent residents of the host country in which they pursue their studies.
- Prior education: Students can be considered to be mobile students if they obtained the entry qualification to their current level of study in another country. Prior education refers typically to upper secondary education for students enrolled in tertiary programmes.
- Citizenship: Students can be considered to be mobile students if they are not citizens of the host country in which they pursue their studies (commonly referred to as “foreign students”).

In fact, the permanent residence and prior education criteria are applied by the UNESCO Institute for Statistics (UIS) to define international students. Non-citizenship is also commonly used especially for data from the European Union (EU) and OECD countries. However, citizenship alone is insufficient to measure the flows of mobile students. Based on the above criteria, country-specific definitions of international students are as follows.

Canada: “Foreign students” are defined as temporary residents who have been approved by an immigration officer to study in Canada. Every “foreign student” must have a student authorisation, but they may also be in possession of other types of permits or authorisations.

US and the UK. This study focuses only on students under University and Other post-secondary categories, which roughly represent those at tertiary level of study in Canada.

Students do not need a study permit for courses of six months or less if they will finish the course within the period of stay authorised upon entry, which is usually six months. (CIC 2009a)

United Kingdom: “Overseas students” are defined as students who are not UK domiciled, and whose normal residence is either in countries which were European Union (EU) members as of December 1st of the reporting period (EU students) or whose normal residence prior to commencing their programmes of study was outside the EU (non-EU students). Data thus exclude students who are permanent residents without British citizenship. (HESA 2010c)

United States: “International student” is defined as anyone who is enrolled at an institution of higher education in the United States who is not a U.S. citizen, an immigrant (permanent resident) or a refugee. These may include holders of F (student) visas, J (exchange visitor) visas, and M (vocational training) visas. (IIE 2010a)

The country-specific definitions (as well as sources) of international students reflect the different methodology of data collection and processing employed in each nation. For instance, in the US and the UK, the scope of discussion is limited to students in higher education (tertiary education), whereas in Canada, the definition of foreign students covers students at a full range of levels of study. This research uses the term “international student” in the comparative analysis which is specified as internationally mobile students at tertiary level without additional notes. Even though the coverage of the definitions still differs to some extent from one country to another, the data can be expected to reflect the general trends in international student mobility (OECD 2009c; 2007).

CHAPTER 3. MANAGING STUDENT FLOW: CHANGING POLICY

CONTEXTS OF INTERNATIONAL STUDENT MOBILITY

The United States, the United Kingdom, and Canada are three principal English speaking countries receiving international students, holding among them over one-third of the worldwide international students at tertiary level in 2008 (OECD 2010a). It shows the attractiveness of the English language environment and the advanced level of economic development to international students; meanwhile, changes in international student policies in those countries also have substantial impact on the trends in student mobility. This chapter reviews policy changes with respect to international students, in particular visa and immigration regulations, since the late 1990s. The discussion compares the shifting policy contexts and identifies distinct frameworks of international student policy in each of the host countries.

3.1 Canada

Canada's federal government presented its innovation strategy at the beginning of the 21st century for achieving a high-skill society and securing its competitive advantages in the global knowledge economy. In one of the final papers, *Achieving Excellence: Investing in People, Knowledge and Opportunity*,⁴ the nation's skill challenge resulting from the aging population and low fertility rate was addressed as one of the main obstacles to innovation (Industry Canada 2002). The Strategy set the goal of developing the most skilled and talented labour force in the world to fuel Canada's innovation performance; it also recognized foreign talent including foreign students as a critical source of high-qualified workers to meet the perceived increasing

⁴ The other paper presenting Canada's innovation strategy is *Knowledge Matters: Skills and Learning for Canadians*. See http://www.kooperation-international.de/index.php?eID=tx_nawsecured1&u=0&file=fileadmin/redaktion/doc/knowledge_matters_236.pdf&t=1278634083&hash=66a556f47980b1792b0ee8f1ab285d41&PHPSESSID=c332.

demand for high skills in the 21st century (Industry Canada 2002). Therefore the government gave priorities to initiatives to increase the number of graduate students and to help universities attract the best international students at graduate level through financial incentives, branding campaigns, as well as immigration programmes (Industry Canada 2002).

As was promoted by the innovation strategy, the new Immigration and Refugee Protection Act (IRPA), developed in 2000, came into effect in June 2002 (CIC 2002). It allows foreign nationals to study in Canada for up to 6 months (from previous 3 months) without a study permit, which makes it easier to recruit foreign students for short periods of study in Canada (CIC 2002). The new Act also adopts a pragmatic way dealing with the issue of “dual intent”. It recognizes that an international student may at the same time have one intention to apply for a study permit (as a temporary resident) and a second intention to apply for permanent residency; meanwhile, “an applicant may have several mechanisms under the Act allowing them to transfer from the temporary resident stream to the permanent resident stream that would satisfy this dual intent provision” (CIC 2008b). The Act accepts that an intention by a foreign national to become a permanent resident does not preclude them from becoming a temporary resident, and the “dual intent” is not grounds for refusal of the study permit (CIC 2008b).

Since that time, Canada has been expressing consistently its commitment to attracting and retaining more international student and tap into the source for highly skilled workers in the knowledge economy. In its economic plan *Advantage Canada: Building a Strong Economy for Canadians* (Department of Finance Canada 2006), the government addressed again the country’s challenges and advantages in developing into a high value-added economy and outlined its overall policy objectives related to the recruitment of foreign talents including foreign students. The plan encourages the best foreign students to attend Canadian colleges and universities by

marketing the excellence of Canada's post-secondary education (Department of Finance Canada 2006). It urges that immigration policies should be more closely aligned with the labour market needs; thus, particular attention should be given to skilled temporary foreign workers and Canadian-educated foreign students who are well placed to adapt to the Canadian labour market (Department of Finance Canada 2006). By retaining the brightest, the plan aimed at pursuing a "knowledge advantage" for the nation which will create "the best-educated, most-skilled and most flexible workforce in the world" (Department of Finance Canada 2006, 53).

Guided by the above policy agenda, the government launched a series of policy initiatives to expedite the processing of study permit applications and enhance access for foreign students to the Canadian labour market during and after the period of study. In April 2006, the Minister of CIC announced the national roll-out for the Off-Campus Work Permit Program which allows international students in public post-secondary institutions to seek employment off-campus (CIC 2008a). From 2007 this programme was extended to selected private institutions (CIC 2008a). As a result, the total number of foreign students who received Off-Campus Work Permits multiplied to 15,454 in 2006–2007 from 1,190 in 2005–2006, it then rose further to reach 17,044 in 2007–2008 (CIC 2008a). Meanwhile the Post-Graduation Work Permit Program which allows students to work in Canada after their graduation was expanded by extending the maximum validity of the permits from one year to up to three years by 2008 (CIC 2009b). According to the Minister's report, the total number of students who received Post-Graduation Work Permits increased from 7,354 in 2005-2006 to 10,933 in 2007-2008 (CIC 2008a). As to the status change after graduation, a new immigration category, the Canadian Experience Class, was implemented in September, 2008. It provides a channel to permanent residence in particular for temporary foreign workers or foreign graduates from Canadian post-secondary institutions (with at least one

year skilled work experience in Canada) (CIC 2010a). All in all, the Canadian government continued to deliver policy initiatives to maintain the country's competitive edge in attracting and retaining international students by providing them with opportunities to obtain Canadian work experience required to apply for permanent resident status through varied pathways.

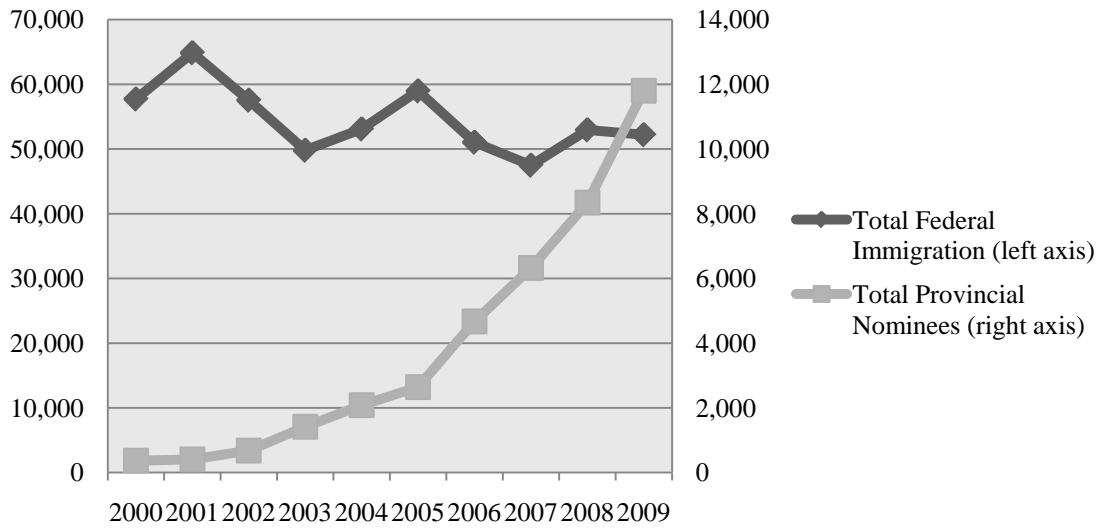
Since the late 1990s when the first Provincial Nominee Program was implemented in Manitoba, Canadian provinces and territories have been playing a growing role in tackling labour market needs. The Provincial Nominee Programs are stressed in Canada's economic plan as vital to address local labour shortages (Department of Finance Canada 2006). To date, 11 out of the 13 Canadian provinces and territories have an agreement with the Government of Canada that allows them to nominate immigrants who wish to settle in the nominating province or territory.⁵ The criteria for nomination are largely skill-based and focus on the regional economic needs. The CIC anticipates that by 2012, roughly one-third of all economic immigration to Canada will take place through the program (Pandey and Townsend 2010). Among the 11 provinces and territories participating in the Provincial Nominee Programs, 7 have international student streams which seek to attract international students to their higher education institutions and retain those highly skilled, in-demand and with strong local ties. The applicants for nomination are largely required to have obtained a diploma or degree from a recognized Canadian post-secondary institution after finishing at least one academic year of full-time study, and currently have a secure full-time job offer from a local employer. Compared with the federal government's immigration regulations, the international student streams in the Provincial Nominee Programs highlight the sponsorship of a local employer as a guarantee of immediate economic contributions of landing international students to the province or territory that nominated them.

⁵ See CIC website <http://www.cic.gc.ca/english/immigrate/provincial/apply-who.asp> and relevant provincial web pages for details.

Recently, British Columbia launched a three year International Post-Graduate Pilot Project which eliminates the requirement of a job offer for graduates from B.C. Master's and PhD programmes in natural, health and applied sciences (Government of British Columbia 2011). Starting in 2011, international graduates from a minimum 2-year Manitoba post-secondary programme will be able to apply without a job offer (WES 2010). The new trends clearly demonstrate the significance of international students, especially those in sciences areas and graduate levels of study, to local economies.

From 2001 to 2009, the principal economic immigrants at the federal level showed a general downward trend with significant fluctuations, whereas the approvals through the Provincial Nominee Programs soared at an annual rate of 345% from 368 in 2000 to 11,801 in 2009 (Figure 3.1). In other words, there is a significant shift as provincial governments take more responsibility from federal authorities to stream immigration and create flexibility to meet local skill needs.

Figure 3.1. Approvals of principal economic immigrants in Canada, 2000-2009



Note: Principal economic immigrants include Skilled workers, Canadian experience class (only in 2009), Entrepreneurs, Self-employed, Investors and Live-in caregivers.
Source: CIC (2010b).

3.2 United Kingdom

As a member country in the European free movement area, the UK has traditionally been involved in Europe-wide labour mobility programmes and regional commitment to skill development. The flagship student mobility programme in Europe, the ERASMUS, was launched by the European Union in 1987. The ERASMUS Programme enables students at higher education institutions to spend an integrated period of study of up to 12 months in another participating country at very low cost (European Commission 2010c).⁶ The general goal of the programme is to create a European Higher Education Area and to foster innovation throughout Europe (European Commission 2010a). More than 4,000 higher education institutions in 31 European countries participate in the programme, which account for 90% of the European universities (European Commission 2010a). In February 2002, the EU addressed the significance

⁶ ERASMUS students, whether or not they receive an ERASMUS grant, are exempted from paying fees for tuition, registration, examinations and access to laboratory and library facilities at the host institution.

of an open European labour market for promoting skills development and combating skills shortages and bottlenecks in the *Commission's Action Plan for Skills and Mobility*; the Plan highlighted student mobility in higher education as a critical measure to facilitate geographical mobility in the European area (Europa 2007). In 2008/09, the UK hosted 16,000 Erasmus students, which account for nearly 10% of the total European student mobility for study (European Commission 2010b).

Apart from the European higher education market, the UK announced its strategic plan for participating as an ambitious competitor in the global higher education arena through the two Prime Minister's Initiatives (PMI). Against a background of heightening competition for international students, the UK launched the first PMI in June, 1999, with a clearly stated goal of attracting an additional 75,000 international students, including 50,000 students to higher education, by 2004/05 in order to make UK the first choice for international students (MORI 2003). The Initiative exceeded its target of 75,000 student recruitments by 43,000 students (MORI 2003). However, according to the programme assessment, institutions marketed heavily in the PMI priority markets, in particular China, which is the largest student provider (MORI 2003). To build on the achievement of the first PMI, a second phase of the programme (PMI2) was launched by Prime Minister Tony Blair in April, 2006, a five-year programme supported by a total of £30 million funding (British Council 2008a). It continued to give priority to increasing the number of international students but adopted a much more strategic agenda of higher education internationalization by giving more weight to non-monetary considerations such as partnership building (British Council 2008a). The new target of PMI2 is, by the year 2011, to attract an additional 100,000 international students, including 70,000 students to higher education, improve students' experience, and double the number of countries sending more than

10,000 students per year to the UK (British Council 2010). The strategic activity strands designed to achieve the goals covered marketing the UK education brand, reducing the dependence on a small number of source countries, and ensuring the quality of student experience from application and visa processes to the end of the studies (British Council 2008a).

Similar to Canada, new immigration rules were issued as a tool to attract and retain international students. Since nationals from the European Economic Area (EEA) are eligible to work in the UK during and after their studies without the need to apply for a work permit, and to apply for permanent residence permit after a continuous 5 years residence (including student years) (Suter and Jandl 2006), the UK's recent policy initiatives are mostly beyond the free-movement regime and target at students from non-EEA countries. In October, 2004, the Science and Engineering Graduates Scheme (SEGS) was launched. This immigration category allowed non-EEA nationals who graduated from UK higher education institutions in certain mathematics, physical sciences and engineering subjects to remain in the UK for 12 months after their studies in order to pursue a career; an amendment to the programme in May, 2006 allowed all Master's and PhD students to be eligible for SEGS with any course from a recognized UK higher education institution (Workpermit.com 2010a). One year later, in May, 2007, the SEGS was superseded by the International Graduates Schemes (IGS), a similar but less restrictive category which allowed students of any discipline to stay for one year after graduation and gain valuable work experience in the UK (Salt 2009). The students were allowed to transfer to a work permit scheme at the end of the stay, but were required to support and accommodate themselves and dependents without recourse to public funds (Salt 2009). In 2007, 2,243 students were approved for the SEGS which was only 0.5% of the total foreign labour immigration (Salt 2008), whereas

in 2008, the number of students under the IGS reached 16,171 which accounted for 4.2% of foreign labour flow into the UK (Salt 2009).

The most notable policy change related to international students in the past decade in the UK is the implementation of the new points-based system (PBS), which primarily focuses on non-EEA nationals who apply to come to or remain in the UK to work or study. Initiated in February, 2008, the PBS was devised to overcome the problems of the old system⁷ and to ensure that only those with the right skills or the right contributions⁸ can come to work or study in the UK.

The student tier (Tier 4) in the new system rolled out in March, 2009. Under the General Student category of Tier 4, non-EEA students have to pass a point-based assessment and score 40 points in order to come to study in the UK for more than 6 month or to extend their permission to stay (British Council 2009); the 40 points include 30 for a visa letter from a student sponsor (a licensed education institution), and 10 for maintenance⁹ (British Council 2009). Only students who can demonstrate a proven track record in previous studies and who pursue full-time study at or above Level 3 on the National Qualifications Framework (NQF)¹⁰ are allowed to apply (UKBA 2008). English language students are also expected to have already started to learn English before they come (UKBA 2008). The restricted rules of students' qualification were designed to guard against the risk of bogus students and to protect the UK

⁷ UK Home Office identified three main problems of the old system: not effectively identifying and attracting the migrants of most benefit to the UK; complex, subjective and bureaucratic processes; and scope for improvement in compliance management and reducing abuse (Home Office 2006).

⁸ As clearly stated by the Home Office (2006), the points-based system should be focused primarily on bringing in migrants who are highly skilled or to do key jobs that cannot be filled from the domestic labour force or from the EU; it should also help facilitate the entry of international students who rightly see the UK as a world leader in the provision of higher and further education, and in the teaching of English.

⁹ Students need to show they have enough money to cover course fees and monthly living costs for up to 9 months; their bank statements must confirm they have held the money for at least 28 days.

¹⁰ Approximately equals higher education plus high level vocational training. See <http://www.qcda.gov.uk/resources/assets/qca-06-2298-nqf-web.pdf>.

labour market (UKBA 2008). While enforcing control on eligibility to come, the new system continues to support the goal of the PMI2 by entitling students who have passed the point-based selection to work part-time during terms and full-time during vacations. Under the PBS, international students in UK higher education institutions no longer have to seek approvals from the UK Border Agency (UKBA) to be eligible to work during their study (UKBA 2008).

The new system strengthened the principle of sponsorship, of which the basic idea is to impose greater responsibility to those who benefit from migration and bring migrants to the country (UKBA 2008), such as higher education institutions and local employers. As for the student tier, besides having 30 points out of the total 40 allocated to institutions' sponsorship, universities and colleges are also required to take the responsibility for tracking students' status and entitlement to study (UKBA 2008). In fall, 2009, the "sponsor management system" was introduced for licensed student sponsors to report to the UK Border Agency if students fail to enrol or miss more than 10 expected teaching contacts without permission (Dobson and Salt 2009). Clearly, the general openness to non-EEA students is accompanied by cautiousness regarding potential risks as the result of the mobility.

The new system also superseded the previous International Graduate Scheme for students to gain work experience upon graduation and clarified the routes for international graduates from UK higher education to work and settle in the UK. In order to enhance the UK's overall offer to international students and retain the most able ones, the subcategory of Tier 1, post study category, enables international students to stay in the UK for up to 2 years after graduation and to seek employment without having a sponsor (Border and Immigration Agency 2007). This category provides a transitional route for high-calibre graduates from eligible UK institutions, in whatever subject, to transfer to either the Tier 1 high skilled category, or Tier 2 skilled workers

(with a job offer), both of which are routes to settlement (Border and Immigration Agency 2007). Like Canada's Post-Graduation Work Permit, the UK's post study permit is not renewable; the holders are expected to leave the country or switch into another part of the PBS as soon as they are able to do so (Border and Immigration Agency 2007).

3.3 United States

Unlike the constantly growing interests of Canada and the UK in recruiting international students, the attitude of the US towards international students has changed drastically in the past decade. The US has traditionally been the most attractive destination for international students, especially those at advanced research level, due to the academic prestige and extraordinary education and research resources (Marginson 2006). Since the mid 1960s, the US immigration policy shifted its preference from privileging European origins to favouring family ties to the US and the quality of applicants as employees; the large number of foreign students and their dependents in the US were mainly seen as an economic boon for the country in both the short and long term (Martin 2004).

However, the fact that one of the September 11 hijackers entered the country on a student visa without ever enrolling in school raised concerns about national security to the forefront.¹¹ In order to strengthen the US borders, secure the visa entry system, and enhance the ability to track potential terrorists, the Congress passed the *USA Patriot Act* and the *Enhanced Border Security and Visa Entry Reform Act* ("Border Security Bill") soon after the 9/11 attacks (Arroyo 2003).

The two Acts tightened the requirements for obtaining a student visa, cracked down on

¹¹ One extreme example is the terrorist attacks motivated Senator Dianne Feinstein to quickly propose a six-month moratorium on student visas, giving the Immigration and Naturalization Service (INS) a breathing period to put the program back in shape and under tighter control. After intense lobbying by the nation's universities, who perceived the economic impact of the moratorium as an interruption of an important source of cheap labour and a loss of tuition revenues, Senator Feinstein withdrew her proposal (see Borjas 2002).

foreigners who overstay their visa, broadened the power of law enforcement to pursue terrorism, and heightened the reporting requirement for both foreign students and universities admitting foreign nationals (Arroyo 2003).

One of the most publicized reforms as a result of the two Acts was the implementation of the Student and Exchange Visitor Information System (SEVIS), an electronic monitoring system applied after the 9/11 attacks to track foreign students, exchange visitors, and their dependents. There had been no system in place to monitor whether foreign students actually comply with visa requirements once in the United States, though the debate regarding the operation of a status tracking system started since the mid 1990s (IIE 2003). The 9/11 attacks drew renewed attention to the student tracking system, after which the opposition to the implementation, largely from the academic community, ceased, and the Congress quickened the pace for the system to be put into place (IIE 2003). The SEVIS enables the immigration authorities to ensure that foreign students arrive in the United States, enrol and attend classes at a university, and properly maintain their legal status while in the country. As a result, student visa applicants have to pay an extra \$100 SEVIS fee and divulge highly personal information as required by the heightened reporting requirement (National Academy of Sciences 2005).

Besides status tracking, many students also became subject to other substantial changes in visa procedures, including mandatory interviews and background security checks. The programme with the largest impact on students was the Visas Mantis security clearance performed on students and researchers in sensitive scientific and technical areas (Yale-Loehr, Papademetriou, and Cooper 2005). The Visas Mantis was established by the State Department in 1998 to prevent the entry of persons who might attempt to illegally export sensitive technology from the United States; all non-immigrants seeking entry into the US temporarily to study or

work in a area covered by the Technology Alert List (TAL) are required to undergo this security check (ACE 2005; National Academy of Sciences 2005). However, the number of checks multiplied in the years following the 9/11 attacks, from 1,000 in the year 2000 to 20,000 in 2003 (ACE 2005). By June, 2003, it was estimated that it took an average of 67 days for the Visas Mantis security check and notification process to be completed (GAO 2005). In addition, male student visa applicants between certain ages from countries on the Department of State's "watching list" (predominantly Muslim countries) were subject to a Visa Condor security clearance from the beginning of 2002 (Yale-Loehr, Papademetriou, and Cooper 2005; National Academy of Sciences 2005). Moreover, in September, 2003, the Biometric Visa Programme was put into place, which required all visa applicants to have personal interviews with consular officials, and have their biometric information taken (National Academy of Sciences 2005). The complex scrutiny associated with visa application and often lengthy procedures led to significant delays for many students to receive visas and start their programmes, or outright denials of their visa applications (Yale-Loehr, Papademetriou, and Cooper 2005; Hindrawan 2003). In particular, low-risk frequent visitors and those seeking re-entry after temporary travel abroad were often required to run the same gauntlet every time they sought re-entry (NAFSA 2008; Yale-Loehr, Papademetriou, and Cooper 2005).

As competitor countries such as Canada, the UK and even some non-English speaking countries were taking proactive measures to broadcast their keenness to recruit international students, the US was sending a message to the students, however unintentionally, that they were no longer welcome through the tightened entry and monitoring policy. It was not surprising to see a remarkable drop in international enrolments in the US after the 9/11 attacks, along with a shrinkage of its international education market share (UIS 2009). A large part of the drop was

due to substantial declines in applications (visa refusals also increased), as many international students chose to move to a third country for their study (Yale-Loehr, Papademetriou, and Cooper 2005). Canada, for example, enrolled more than 100,000 foreign students in 2003, a 55% increase since 2000 (Bollag 2004). The lack of time guidelines, transparency, and flexibility in the US clearance policy became widely criticized since it hindered international students and scholars' access to the country to an extent that itself threatened the national security in the global talent war (NAFSA 2003; 2006; 2008; National Academy of Sciences 2005; DHS 2008b).

In response to the declining international student flow into the US and its negative impact on the long-term national interest, the US government undertook a number of measures to restore the US competitiveness in bringing international students. In July, 2004, the Secretary of State asked consular posts to give priority scheduling to F, J, and M visa applicants¹² who are often subject to deadlines (GAO 2005). The process of Mantis check was significantly expedited by the end of 2004, with a total average processing time of only 15 days; the number of cases pending more than 60 days also declined (GAO 2005). In February, 2005, the State Department and DHS agreed to extend the validity of Visa Mantis clearance for the whole length of the approved academic programmes, up to 4 years, so that, for instance, foreign students attending 4-year college programmes do not have to undergo frequent Mantis checks that were previously valid for only one year (GAO 2005). The immigration authority also updated its regulatory guidance regarding students' intent to stay at the conclusion of studies. Recognizing that "students may not have the same property, employment, and family obligations of other temporary visa applicants", the State Department clarified that it is natural for students not to possess the same ties to a residence abroad that might be present in other cases (such as

¹² Academic students (F1); exchange visitors (J1), vocational students (M1), and their dependents (F2, J2, and M2 visa applicants).

temporary workers) used as evidence of return (Edson 2005, 20). Accordingly, international students are only required to possess “the present intent to depart the United States at the conclusion of his or her studies. That this intention is subject to change or even likely to change is not a sufficient reason to refuse a visa” (Edson 2005, 20).

The most recent change in international student policy highlighted provisions for international students to obtaining US work experience and status shift upon graduation. The policy provisions have been recognized as ways to retain the best international students in order to maintain the supply of highly skilled workers. From the fiscal year 2005, the H-1B Visa ¹³ Reform Act was put into effect which makes international students with a Master’s or higher degree from US higher education exempt from the 65,000 annual ceiling on H-1B petition approvals (up to a maximum of 20,000 per year) (USCIS 2010). In order to address the immediate competitive disadvantage faced by US high-tech industries, in April, 2008, the government extended the maximum period of Optional Practical Training Program (OPT)¹⁴ from 12 months to 29 months for F1 students who have completed a science, technology, engineering, or mathematics (STEM) degree in a US higher education institution (DHS 2008a). The new regulation also extended the authorized period of stay for all F1 students who have a properly filed H-1B petition and change of status request pending with USCIS, so that they could continue working in their current jobs while waiting for the result of application without having to leave the country (DHS 2008a).

¹³ It is an extensive temporary work programme for high-skilled foreign workers which has traditionally been in a great demand compared with other temporary work categories. It is for the US employers to employ foreign workers in specialty occupations that require theoretical or technical expertise in a specialized field and a bachelor's degree or its equivalent. The annual ceiling on H-1B petition approvals was reverted from 195,000 to 65,000 beginning in fiscal year 2004 (see USCIS 2010; DHS 2008a; Suter and Jandl 2006).

¹⁴ F-1 students enrolled on a full-time basis for at least one full academic year in US higher education are eligible for 12 months of OPT to work for a US employer in a job directly related to their major area of study (DHS 2008a).

However, even with the improvement brought in to clear the backlog and speed the procedures after the terrorist attacks of September 11, 2001, the average visa processing time for scientists, scholars, and students climbed up recently (Kaplan 2009a). Although the state department claimed that they were “doing everything to make sure that students don’t miss the beginning of their study programs” (Kaplan 2009a), delays of up to half a year or arbitrary visa denials are not uncommon (Kaplan 2009a; Stone 2008). As a result, many have to remain in the US for several years in spite of vocations or even emergencies back home (Sheqdar 2008; Chiu 2009); organizations choose to have conferences outside the US for fear of visa delays and the short validity approved (Kaplan 2009b). Besides, international students and researchers in science and technology still face the lengthy and costly processing of H-1B visa application and the limited number of the visas available each year for them to work in the US (Stone 2008; Immigration Policy Center 2010), which leads to the US managers ending up with hiring “one less qualified American” (Stone 2008). Failing to bring the best graduates and researchers who in fact help create skilled jobs to the country in a fast manner and the reluctance and unwillingness delivered to the rest of the world by the nation to seriously tackle the problem are still playing a negative role in the US economic competitiveness.

3.4 Discussion: Open or Control? International Student Mobility as Part of Highly Skilled Immigration

By reviewing the changing policy contexts in Canada, the US and the UK, it is clear that international student policy, in particular visa and immigration regulations, have been used as a tool to attract international students and retain the best in the global knowledge economy and demographic change. Host countries demonstrate their openness to an ever larger number of international students by easing entry requirements, enhancing student experience during study,

promoting flexibility for status change, and facilitating settlement; this trend has become most explicit in recent years as host countries gain awareness of the long-term effects of international student flows. Canada continues to grant permanent residency to qualified graduates without stringent requirements for years of residence, and creates more opportunities for international students to gain Canadian work experience which helps them meet the requirements for status change. This reaffirms its expansionary immigration policy framework and the traditional goal of supplementing human capital regardless of short-run economic conditions. The UK proactively stretches its targeting area beyond the EU and the EEA, and engages in promoting the overall level of international student inflow from the rest of the world, though foreign nationals from outside of the free movement area face a raising bar in terms of the requirements for stay in the country (Salt 2009). The 9/11 attacks elevated border security to the primary concern of the US which led to tightened regulations in almost every aspect of the entry process and a substantial decline in student inflow; yet, it has been quickly recognized that a continued, enhanced US openness to international students is part of the solution to achieving national security in the global economy rather than part of the problem (NAFSA 2006). Thus, different government sectors were coordinated to make efforts to restore America's competitiveness in the race for international students (National Academy of Sciences 2005). Clearly, appeals by higher education institutions and domestic employers play a vital role in governments' policy convergence in introducing initiatives that favour international students' entry and stay.

Yet, there is another side of the convergence. All the three countries set a probationary period to test international students' adaptation and contributions to the local labour markets upon their graduation by adopting transitional work permit programmes where the permit is not renewable. Canada's post-graduation work permit, the UK's post study leave and the US's OPT

programme function in similar ways to make sure that only those high-skilled who have succeeded in being integrated into local labour markets would be able eventually to take advantage of the probation and fulfil their intent to stay. In this way, the receiving countries demonstrate their unwillingness or reluctance to retain foreign nationals, highlighting their overall control on immigration, as well as their concerns about general public's unease at local workers' labour market opportunity, national security, expenditure of public resources, and social stability and cohesion. By and large, international student policy orientations in the first place open doors for those who can come in order to maintain the benefits of revenue income, international cooperation and partnership, and enlarge the pool for a skill-based selection; while in the second place they tend to be more selective with respect to who can stay so as to retain only those in need who are deemed to serve the national economy.

While international student policies in the three countries turn out to be convergent in the sense of balancing openness and control, country-specific regulations and the power that directs the policy changes reflect distinct policy frameworks followed by each country.

On the level of general migration policies, Canada and the US are largely seen as classic immigration countries (in comparison with "reluctant" labour importers such as the UK) which were founded, populated, and built by immigrants in modern times (though the focus has always been on particular kinds of immigrants, determined by various social/cultural and economic characteristics); therefore, immigration is a fundamental part of the founding myth, historical consciousness and national identity of the countries (Cornelius and Tsuda 2004). One of the most explicit manifestations is that both countries have a clear philosophy for integrating newcomers and provide legal immigrants and settlers immediate access to rights, benefits and social services (Cornelius and Tsuda 2004). However, since the 9/11 attacks, the US has become nearly as prone

as the “reluctant” labour importers to adopt restrictive measures and indulge anti-immigrant public opinion (Cornelius and Tsuda 2004). By giving policy priority to family reunification and setting quotas for most highly skilled immigrant categories, the US clearly shows its general stance of quantity control over immigration (Chaloff and Lemaître 2009; Martin 2004). On the contrary, Canada’s skill-based immigration is consistent with its continuing prospect of nation-building through human capital accumulation, which allows three-times the level of per capita immigration as the US has, but at the same time maintains a stable and higher public tolerance to immigration (Cornelius and Tsuda 2004). As more than half of its permanent inflows (15 years of age or older) are highly skilled, Canada is able to maintain its position as a major beneficiary of immigration in the knowledge economy (CIC 2010b; Gera and Songsakul 2007).

With respect to international students, the US is most selective in both bringing in and retaining international students in that it has strong preference for those in SETM areas and advanced research programmes. Even those most qualified still face substantial difficulties in obtaining work permits or permanent residency after the completion of their study. It presents the country’s success as a model of student receivers with extraordinary resources, which provides itself the capacity to be very selective as to who are really in need and welcome. Although the US seeks to ease its immigration regulations recognizing the negative impact of losing international students on its economic competitiveness, the difficulties foreign talent face in obtaining a work permit or permanent residency have always been real. Since the 9/11 attacks, many talented employees including international graduates became increasingly unwilling to tolerate the long waits and uncertainty entailed in immigrating to the US, and chose to move to Europe, Canada and Australia where knowledge workers face fewer immigration difficulties (Hansen 2007). Canada, on the other hand, tends to offer relatively broad access and an easy

process for entry and settlement (sometimes without the need of a current job offer), in part to offset its less competitive capacity to attract international students compared with its North American neighbour.¹⁵ The terrorist event did not provoke the same restrictive turn in Canadian immigration policy, despite its increased cooperation with the US on border security (Cornelius and Tsuda 2004). Also, though both countries released policy guidelines dealing with the visa requirements for non-immigrant intent, Canada tends to pursue policy consistency in line with the country's long-term goal of immigration; whereas the US has considered its policy more from a perspective of the effectiveness of visa regulations in the post-9/11 era, when the concern of the cost of losing high qualified international students outweighs, or at least parallels, that of border security.¹⁶ In short, regarding international student policy, the US is inclined to have low openness to international students' entry and high control on their settlement, whereas Canada tends to act in the opposite way: high openness to entry and low control on stay.

The UK has undoubtedly become more active in bringing foreign-born in the past two decades, though traditionally it was emphatically not a country of immigration (Cornelius and Tsuda 2004). The UK has become a net immigration country since 1983, and net immigration has contributed more to population than natural growth since the late 1990s (Layton-Henry 2004). Recently, the government has moved towards more liberal admission of highly skilled immigrants as a consequence of an aging population and severe shortages of professional

¹⁵ The U.S. exceeds its competitors Canada and the UK in the capacity of hosting international students. In terms of the number of higher education institutions, the IIE reports that over 400,000 foreign students were enrolled in 2,300 US colleges and universities in 2000 (Martin 2004, 51-85, note 6); the Association of Universities and Colleges of Canada (AUCC), the voice of Canada's universities, currently has 95 Canadian universities and university-degree level colleges as registered members; the UK Higher Education Statistics Agency (HESA) reports statistics of over 150 higher education institutions, among which 133 are currently registered members of the University UK (UUK).

¹⁶ NAFSA report (2006) argued that the non-immigrant intent requirement is inconsistent with today's realities and is not an effective tool of visa policy, it recommended eliminating this imposed barriers at least for those pursuing degree programs. Putting together the government's policy and its tones, the US reconsideration of the non-immigrant intent requirement is more likely to be an expedient strategy in reviving the US attractiveness to international students, rather than any forms of transformation of its immigration policy frameworks for recruiting international students.

workers (Cornelius and Tsuda 2004). Its policy regulations of having no quota¹⁷ or requirement of current job offer for the highly skilled while limiting the inflow of the less-skilled demonstrates a strong commitment to quality control over immigration.

However, the UK is still characterized as a reluctant labour importer. The country has considerable experience with immigrants, but immigration has not been a fundamental part of its national identity nor their past nation-building process; the attitudes of political elites and general public towards immigration generally are more negative than in the classic immigration countries (Cornelius and Tsuda 2004). This to a large extent accounts for the facts that the country recruits most migrants temporarily as guest workers rather than as permanent additions to the labour force (Cornelius and Tsuda 2004), and that it does not have a clear philosophy or proactive measures to integrate newcomers (Layton-Henry 2004).

The UK is reluctant to admit immigrants especially from non-EEA countries. Despite the observation that most entry categories of foreign nationals from outside the EEA saw a large increase since the mid 1990s (Layton-Henry 2004), the UK's immigration policy, in particular skilled immigration, still gives priority to nationals from the EEA community (Chaloff and Lemaître 2009). Most recently, the newly developed point-based work permit programmes were designed to bring in skilled workers in short supply from non-EEA countries; however, employers must first carry out a resident labour market test to ensure there are no suitable applicants in the EEA countries (Salt 2009). Lately, the UK confirmed the increase in the passmark for Tier 1 visa (Workpermit.com 2010b) and announced a permanent cap of 21,700 on skilled immigration to take effect in April of 2011 (Workpermit.com 2010c), which signifies a tightened control on the way over both quality and quantity of skilled immigration from non-

¹⁷ A cap of skilled immigration has been set lately. See the following discussion.

EEA countries. In general, the UK seeks to be less dependent on migration in the future through up-skilling resident workers and controlling foreign inflows (Salt 2009); meanwhile, it takes advantage of the provisions of free labour movement in Europe as much as possible for meeting the high-end demand in the labour market (Chaloff and Lemaître 2009).

It is interesting to see the UK's increasingly more inclusive policy towards international students since the late 1990s under its policy framework of immigration control. In fact, migrants to the UK are predominantly young people (between the ages of eighteen and thirty-four, see Salt 2009, Table 4.23), to a certain extent reflecting the large numbers of overseas students (Layton-Henry 2004). Among foreign nationals given entry to the UK from non-EEA countries, students were the largest group of entrants.¹⁸ The government's openness to international students is certainly triggered by the heightened competition in the international education market. Also, it shows the attractiveness of UK higher education and English language acquisition (Layton-Henry 2004). Yet, the UK's immigration control and preference to EEA nationals apply well to international students. Not only does the country go along with its most important ally the US in sponsorship regulation and student monitoring systems, it also acts cautiously in granting permanent residency to international students. In brief, the UK tends to combine a relatively high level of openness and control in managing international student mobility. On the one hand, the country makes its first-rate higher education resources more accessible to international students, in particular those from non-EEA countries, in order to maintain the benefits as a main competitor in the international education market and an influential partner in international cooperation. On the other hand, it decidedly insists on immigration control considering post-

¹⁸ 52% of the total entry of non-EEA nationals in 2000 are students (Layton-Henry 2004, 297-333, Table 8.7). According to the latest data, almost half (49%) of foreign inflows from non-OECD area (most non-EEA countries are non-OECD countries) came to the UK for the purpose of study (Salt 2009, Table 1.7).

graduate status change to convince the public of the government’s discretion regarding the consequence of recruiting foreign nationals. A recent analysis indicates that it is quite likely that in future it will either become harder for international students to stay under the Tier 1 post study work or the category itself may end altogether; both cases will make far fewer international students qualified for either a Tier 1 or Tier 2 visa, hence the difficulty for them to remain in the country on a long-term basis (Workpermit.com 2010d). It was clearly stated by the UK Immigration Minister, Damian Green that, “this Government wants high-calibre students with the genuine desire to study to come to our country for temporary periods, and then return home” (Workpermit.com 2010e). In other words, the UK’s strategy to recruit international students, in particular from non-EEA countries, is the least integrated into its skilled immigration plan compared with Canada and the US.

As was discussed above, the orientations of international student policy, in terms of entry and status change, in Canada, the US and the UK can be simplified in the terms outlined in Figure 3.2, regardless of the actual numbers of student inflows.

Figure 3.2. Distinct policy frameworks for managing international student mobility

		Openness to entry	
		High	Low
Control on stay	High	United Kingdom	United States
	Low	Canada	

As part of the bigger issue of skilled migration, international student mobility is as much political as economic. International student policy is not simply subject to the rule of enhancing human capital in the global talent war. The benefits and risks with respect to student migration are politically contested and defined in specific social context in each country. Thus, the approaches to the principle of maximizing benefits and minimizing negative consequences of student inflows vary from one country to another. The governments of host countries seek to balance the concerns of different stakeholders, including academic communities, domestic employers, political conservatives, local workers, and international partners, and are engaged in achieving a collective goal of national interest in order to sustain and strengthen government's authority and legitimacy. Therefore, it is not so much whether one immigration system is more effective than another in bringing more skilled workers, but how a country can ensure that its selection criteria are consistent with its specific objectives (OECD 2007). Managing international student mobility as part of the strategy for managing highly skilled migration goes beyond merely a matter of skill formation and in fact represents particular social relations and power struggles in each nation.

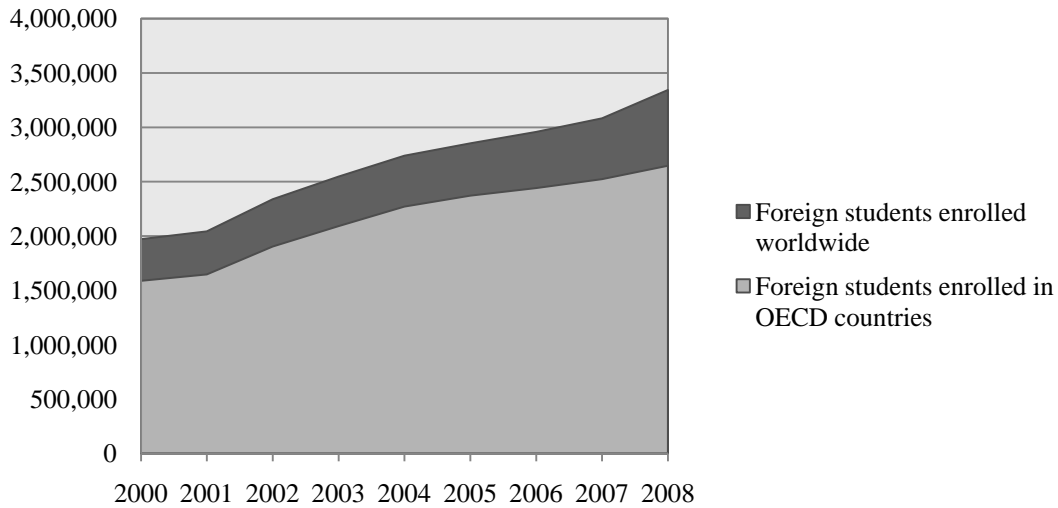
CHAPTER 4. TRENDS IN INTERNATIONAL STUDENT MOBILITY IN CANADA, THE UNITED STATES, AND THE UNITED KINGDOM

4.1 General Trends in International Student Mobility

Foreign enrolment in tertiary education throughout the world tripled in the past three decades (OECD 2010a). In 2008, over 3.3 million tertiary students were enrolled outside their country of citizenship (compared with 0.8 million in 1975) of whom 2.7 million (79.1%) studied in OECD nations (Figure 4.1). Since 2000, the number of foreign students enrolled in tertiary studies in OECD nations has increased by 67%, for an average annual increase of 8% (OECD 2010a). The OECD countries will continue to dominate in receiving worldwide mobile students, though in the long run their share of international students is likely to decline due to the global expansion of higher education (OECD 2009c).

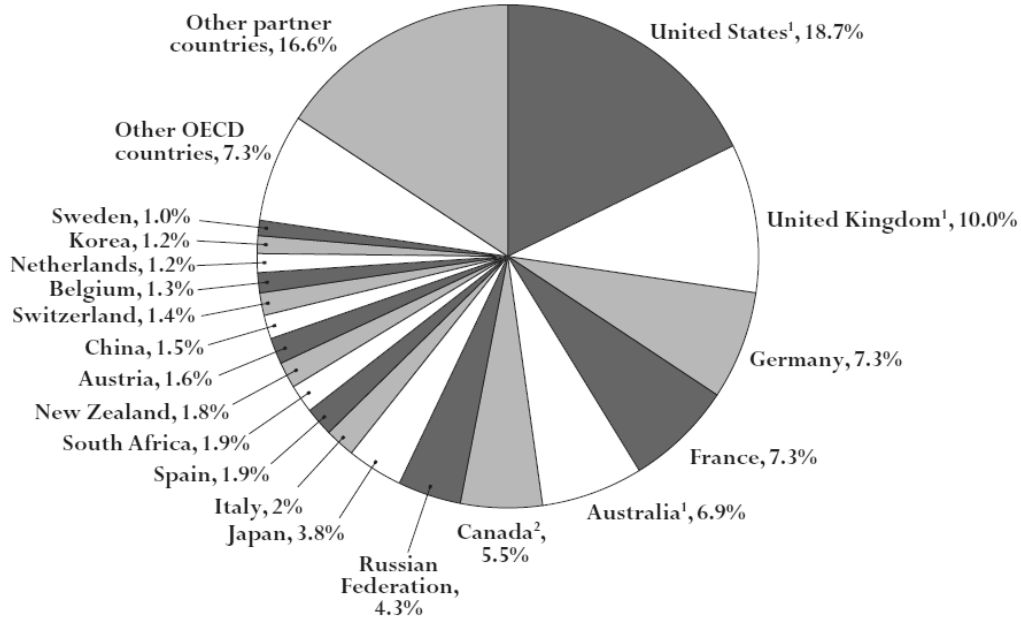
As is shown in the distribution of foreign students in the OECD area (Figure 4.2), the US, the UK and Canada ranked among principal international student receiving countries, with a combined share of 34.2% of foreign tertiary enrolment in 2008. There are different dimensions that constitute student mobility within the current configuration of international higher education markets, and these dimensions have been changing over time. The following section of the chapter explores the trends and changes in international student mobility over the past decade, by looking into the stock or total enrolment of international students, levels and fields of their study, places of origin, and post-graduate retention in Canada, the US and the UK.

Figure 4.1. Number of foreign students enrolled in tertiary education outside their country of origin, 2000-2008



Source: OECD (2010a).

Figure 4.2. Distribution of foreign students in tertiary education by country of destination, 2008



1. Data relate to international students defined on the basis of their country of residence.

2. Year of reference 2007.

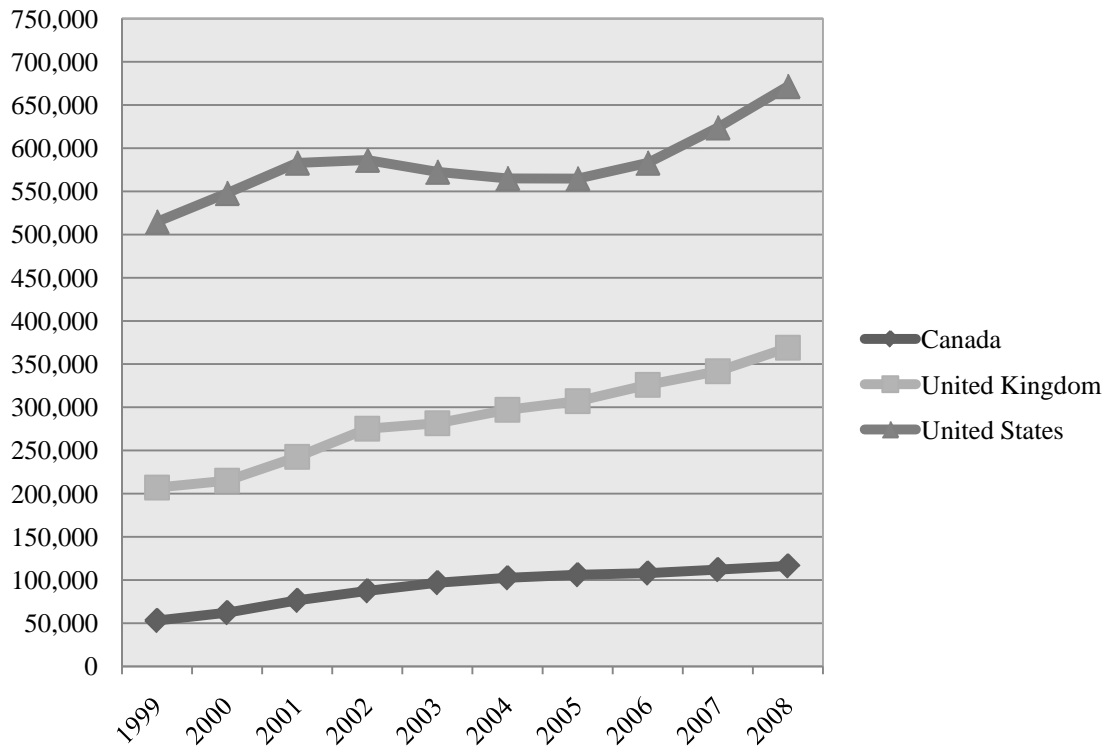
Source: OECD (2010a).

4.2 How Many International Students Study in the Three Countries?

Figure 4.3 shows the stock of international students in Canada, the US and the UK in the past 10 years. It demonstrates, first, three markedly different levels of stock of international students with the US standing highest and Canada the lowest throughout the period. Secondly, Canada and the UK saw a stable growth in the number of international students between 1999 and 2008, whereas the number of students in the US fluctuated over that period. In fact, the stock of international students in Canada and the UK increased by 119.0% and 78.2% respectively during the 10 years, while the number in the US had growth of only 30.5% (Appendix 1). By taking a close look at the trend in each country, it is noticeable that the number of international students in the US continuously dropped in the first half of the 2000s, then recovered since 2005, which corresponds to the negative impact of the 9/11 attacks on international student recruitment and the government's efforts to restore the nation's competitiveness in hosting mobile students and scholars. On the contrary, both Canada and the UK experienced a surge in the first half of the period, and the growth continued smoothly during the decade. Specifically, while the number of international student enrolled¹⁹ in the US in 2005 (526,809) fell back to a level even lower than in 2000 (526,670), Canada and the UK saw a 70.5% and 42.7% growth respectively in the five-year period. In this sense, Canada had potentially achieved the goal set in the 2002 innovation strategy to improve significantly its performance in recruiting foreign talent, including foreign students. By having recruited 43,000 more international students by the year 2008 (compared to 2006), the UK has also accomplished over 60% of its goal of bringing an additional 70,000 international students to higher education through to 2011, which was set in the 5-year programme of PMI2.

¹⁹ Exclude students in Optional Practice Training (OPT).

Figure 4.3. International students in higher education, Canada, the US, and the UK, 1999-2008



Source: CIC (2010b); HESA (2010b, 2009a, 2008a, 2007, 2001a); IIE (2010b).

The comparison of the annual growth rates of international students (Table 4.1) in the three countries gives more details to the overall trends. The US had a 3-year consecutive decline in the stock of international students from 2003 to 2005, which made a total 3.75% dropping-off after the 9/11 terrorist attacks. At the same time, the number of international students in the UK and Canada kept rising, though the annual growth rates varied from one year to another. In particular, the number of international students in Canada increased at a high rate in the first half of the period, but the growth noticeably slowed down after 2003, as its North American neighbour started to take measures to recover from the significant loss of mobile talent in the aftermath of the 9/11 event. The wane and wax between the two powers as attractions for international students reflect their competitive relations in the global knowledge economy. As for the UK, the

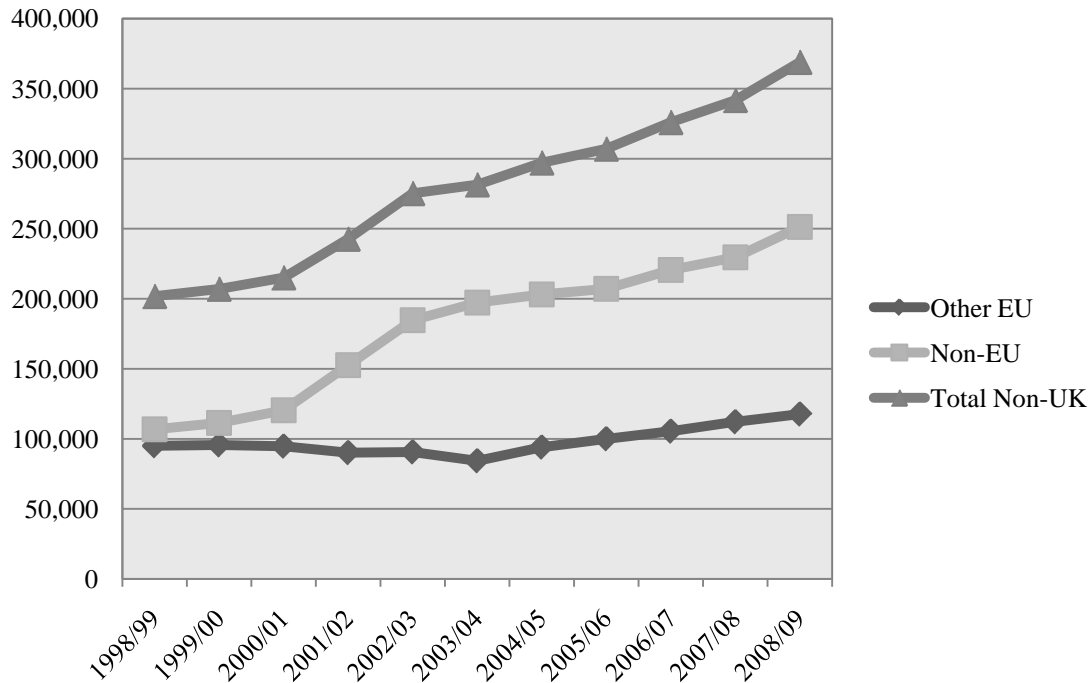
growth rate moderately slowed down but the number of international students kept rising without being obviously affected by the recovery of the US power. It reaffirms the overall success of the UK government's measures to promote the recruitment of international students; it also reflects the general growth in university students and pressures from students for spaces in universities. However, as shown in the split of the number of international students by domiciles (Figure 4.4), the total increase of international students in the UK tends to rely on the growth of the number of students from non-EU countries.

Table 4.1. Annual growth rates of the number of international students in Canada, the US and the UK, 2000-2008

Annual change %	Canada	UK	US
2000	17.2	3.9	6.4
2001	22.7	12.8	6.4
2002	14.5	13.4	0.6
2003	10.8	2.3	-2.4
2004	5.8	5.5	-1.3
2005	3.5	3.3	-0.05
2006	1.8	6.2	3.2
2007	3.7	4.8	7
2008	3.8	8.0	7.7

Source: CIC (2010b); HESA (2010b, 2009a, 2008a, 2007, 2001a); IIE (2010b).

Figure 4.4. International student enrolments in UK higher education by domicile, 1998/99-2008/09

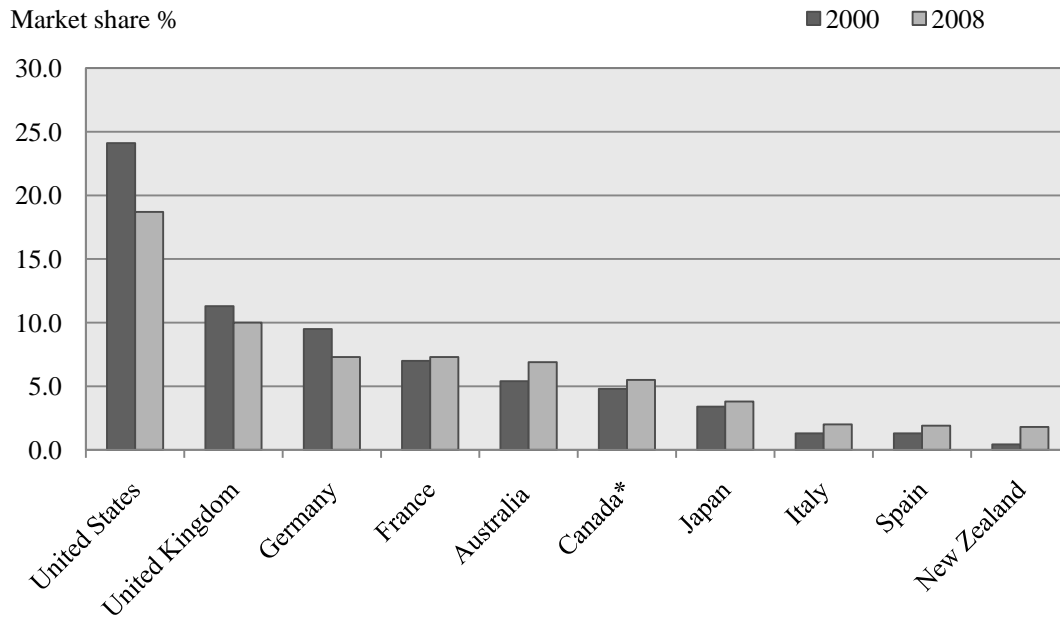


Source: HESA (2010b, 2009a, 2008a, 2007, 2001a).

The changes in the share of the international higher education market correspond to the above situations. Figure 4.5 shows market shares of the top 10 OECD countries receiving international students, including Canada, the US and the UK. Clearly, the US stands on the very top among all host countries in terms of the total enrolment of international students. However, the country's share of worldwide international students declined by over 5% (from 24.1% to 18.7) between 2000 and 2008. In fact, the US used to hold nearly 40% of international students worldwide in the early 1980s (NAFSA 2003); the trend in the decline of the US share has been ongoing for decades due to the global expansion and internationalization of higher education. However, the recent downturn of the US share was largely a consequence of the new wave of tightened visa policy in the post-9/11 era and the decline tended to be more rapid compared to

the previous one. Moreover, the decrease in the number of international students after the 9/11 attacks was the first one after the 30 years continuous growth since 1971, as well as the first consecutive drop (from 2003 to 2005) since the end of the 1940s (IIE 2010b).

Figure 4.5. Share of international students in selected OECD countries, 2000 and 2008



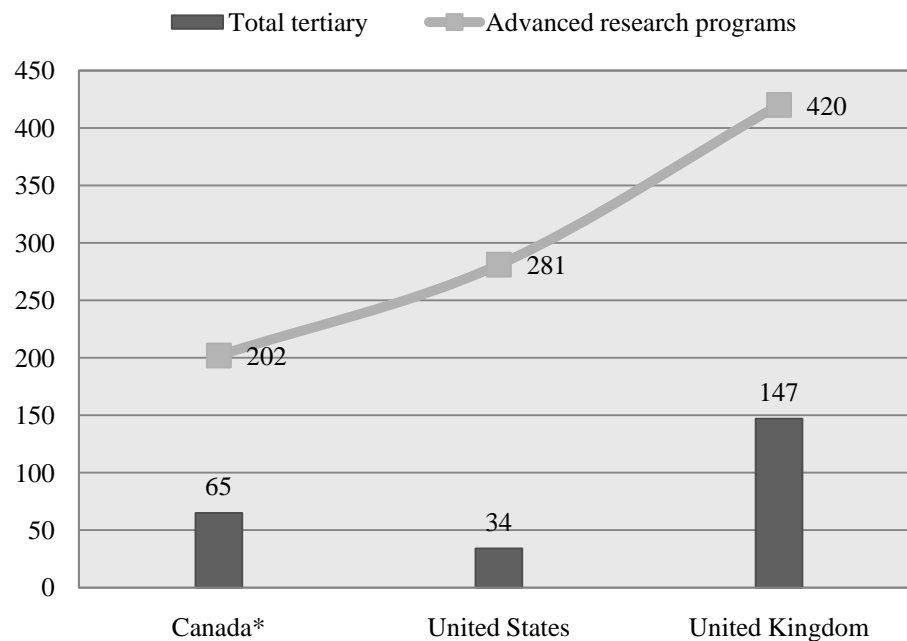
* Data refer to the year 2007 instead of 2008 and exclude private institutions.
Source: OECD (2010a).

4.3 How Mobile Are Tertiary Students?

Student mobility can be measured by the proportion of international students in tertiary education (see e.g. OECD 2010a; OECD 2009a). Figure 4.6 shows that in all the three countries, student mobility in advanced research programs is markedly higher than that in total tertiary education. The UK has the most mobile students in both total tertiary education (147 international students per 1,000 students enrolled) and in advanced research programs (420 international students per 1,000 students enrolled) among the three countries. Student mobility is a practical indicator of governments' performance in attracting international students (see Gera

and Songsakul 2007), yet, it does not inform how many international students stay after completing their study. It also signifies the extent to which national higher education depends on foreign enrolment, as well as educational attainment of domestic students. The data presented in Figure 4.6 indicate that the three countries rely more on foreign enrolment in advanced research programs than in other levels of programs in tertiary education. The overall highly mobile UK tertiary students exhibit on the one hand the positive result of branding UK education and enhancing students' experience through varied measures, and on the other hand a relatively lower level of domestic demand for higher education in comparison with its two North American competitors. Thus, the effect of admitting international students on boosting revenue income, maintaining and enhancing the overall offer of higher education to the residents, and promoting international partnership may in fact weigh more heavily in the UK than in the other two nations and therefore be of higher consideration by the government. Comparing Canada with the US, the latter has higher student mobility in advanced research programs but lower in total tertiary education. It suggests a higher level of domestic educational consumption in the US and its strength in attracting advanced researchers.

Figure 4.6. Student mobility: International students per 1,000 students enrolled in tertiary education, Canada, the US, and the UK, 2008



* Year of reference 2007, excludes private institutions.

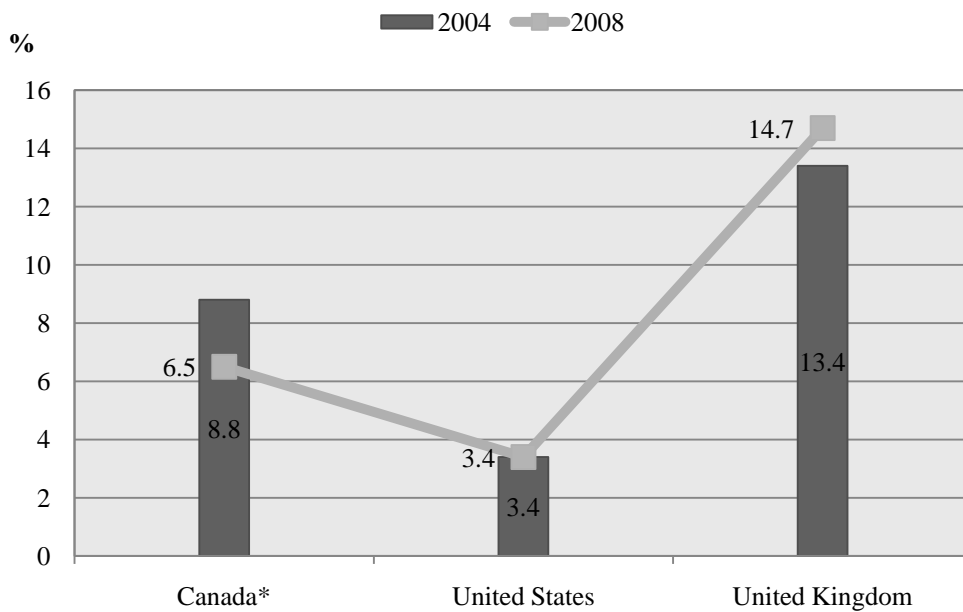
Source: OECD (2010a).

If we compare the 2008 data of student mobility in tertiary education with the data for 2004 (Figure 4.7), it is interesting to see that student mobility tends to decline in Canada (from 8.8% to 6.5%), increase in the UK (from 13.4% to 14.7%), and remain stable in the US (3.4%) during the four-year period. Though the picture needs to be further examined with data from additional sources²⁰, it may well indicate that the US in fact maintains a relatively stable, small fraction of international students despite of the fluctuation in the number of international student enrolments. This can be attributed to its large base of domestic tertiary enrolment, a highly selective admission policy towards international students, and a general policy framework of

²⁰ For example, data presented by IIE Open Doors demonstrate a 0.5 percentage point decline of the proportion of international students between 2001/02 and 2005/06 from 3.7% to 3.2% as the result of the 9/11 attack; the number then went back to the 2001/02 level by 2008/09. In fact both OECD and Open Doors provide a picture that international students remained a relatively stable small fraction of total tertiary enrolment in the US.

immigration control. Meanwhile, the trends in which Canada sees a reducing student mobility while the UK has a growing one²¹ to some extent reflect the rapid expansion of Canadian-born students in higher education in the former in contrast with a deficiency in domestic demand for higher education in the latter.

Figure 4.7. Student mobility: International students as percentage of all students enrolled in tertiary education, 2004 and 2008



* Year of reference 2007 instead of 2008, 2002 instead of 2004; excludes private institutions. Source: OECD (2010a, 2006a).

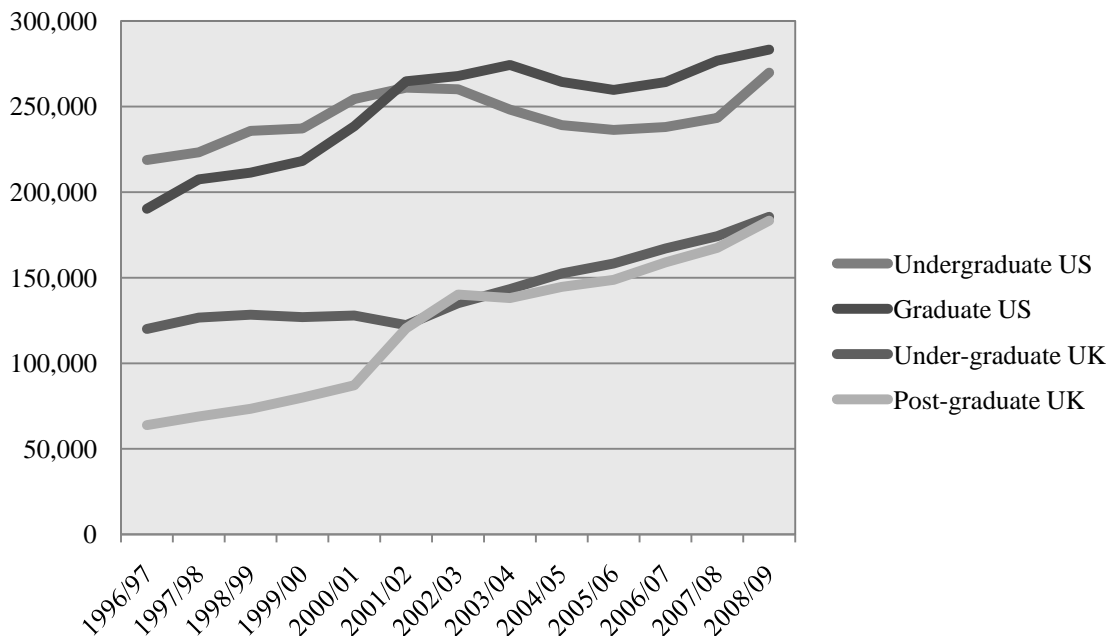
4.4 At What Academic Levels do International Students Study?

According to UNESCO, mobile students are more likely to graduate from the equivalent of master’s programs and above than local students (UIS 2009). Figure 4.8 clearly displays a fast growth of international students enrolled at graduate levels in the US and the UK. The number of graduate international students in the two countries used to be smaller than that of undergraduate

²¹ According to the OECD, the same trends of student mobility in Canada and the UK also exist in advance research programs (OECD 2010a; OECD 2006a). Based on data from CIC (2010b) and Statistics Canada (2010), student mobility in Canada increased slowly in the past decade, but it is still lower than that in the UK.

students in the mid 1990s; however, graduate enrolment has almost equalled (in the UK) or even surpassed (in the US) undergraduate enrolment since the beginning of the century with a generally higher growth rate than undergraduate enrolment. In the US, graduate enrolment of international students was less affected by the 9/11 attacks (with a two-year consecutive decline compared with undergraduate enrolment with a 4-year consecutive decline after the 9/11 attacks), and tends to account for a higher percentage of total foreign enrolment (Appendix 2).

Figure 4.8. International students by academic level, the US and the UK, 1996/97-2008/09



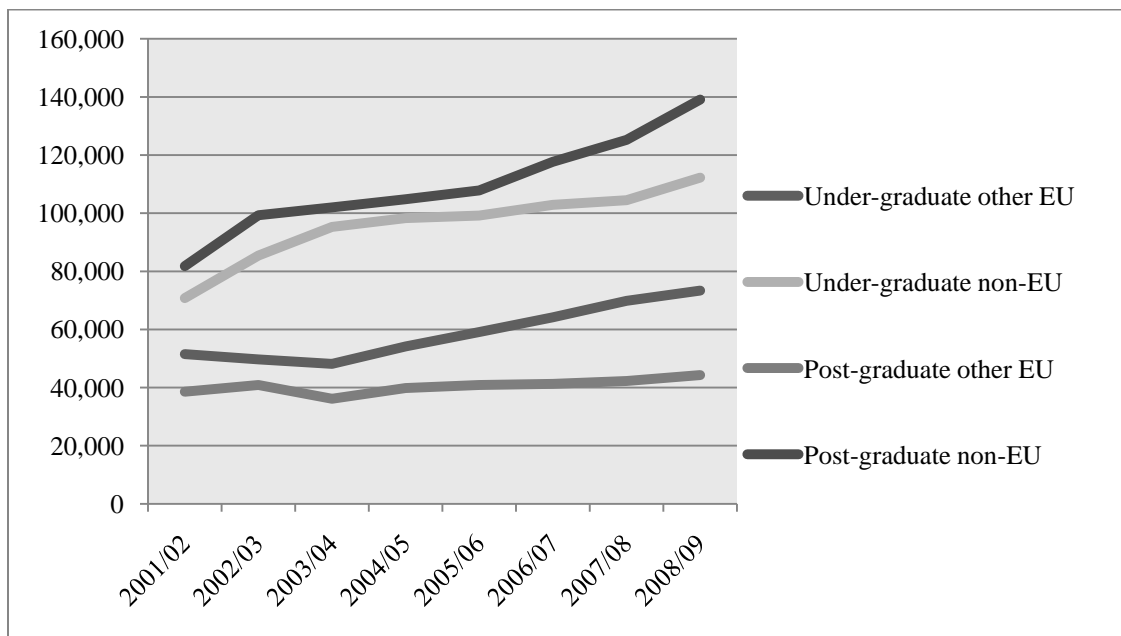
Note: The US uses terms undergraduate (Bachelor's and Associate's) and graduate; the UK uses terms under-graduate (first degree and other under-graduate) and post-graduate.

Source: HESA (2010b, 2009a, 2008a, 2007, 2001a); IIE (2010b).

As a member of the EU, the UK reveals a more complex picture of overseas enrolment. Figure 4.9 shows the composition of international students in UK higher education by academic level and domicile. Besides corresponding to the fact that international students from outside of the EU contribute more to the total increase in international student enrolment, it is noteworthy that among students from non-EU areas, the number of post-graduate students is larger than that

of under-graduate students and grows at a higher rate, whereas the trends reverse for students from the other EU countries. In other words, students from non-EU countries are more likely to be enrolled in post-graduate programmes, whereas students from other EU countries are more likely to be enrolled in under-graduate programmes. Together, having increased by over 70% from 2001 to 2008, post-graduate students from non-EU areas contribute most to the growth of international students in the UK (Appendix 3).

Figure 4.9. International students in UK higher education by academic level and domicile, 2001/02-2008/09



Source: HESA (2010b, 2009a, 2008a, 2007); IIE (2010b).

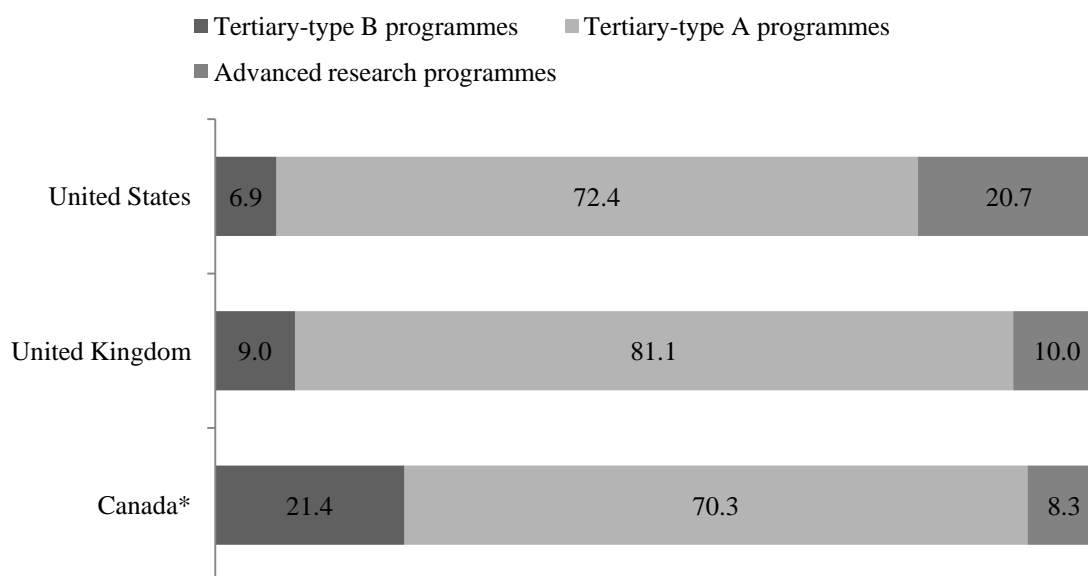
Canada does not have comparable data on international students by academic level, but the number of total graduate students enrolled in Canadian higher education increased by over 40% from 2000 to 2007 (Statistics Canada 2010), which has exceeded the goal of 5% growth per year set in the national innovation strategy 2002. Meanwhile, graduate enrolment as the percentage of total higher education enrolment has been rising since the 1990s while the proportion of

undergraduate students remained stable (Statistics Canada 2010). Considering the fact that international students are more likely to attend graduate programmes, it is reasonable to assume a rapid growth of international graduate students in Canada as seen in the US and the UK.

The OECD and UNESCO data present the level of programmes attended by international students. As is indicated in Figure 4.10, international students in the three countries are predominantly enrolled in programmes that offer a university degree (approximately the equivalent of tertiary-type 5A and 6). Over 90% of international students in the US and the UK enrolled in tertiary-type 5A and 6 programmes, whereas only 78.6% of international students in Canada studied at the same levels. The data also demonstrate the strength of the US in attracting international students at an advanced research level, and the UK's advantage in offering degrees in tertiary-type 5A programmes.²² The UNESCO data (Table 4.2) focus on international students graduating from university degree programmes (approximately tertiary-type 5A and 6). It confirms the US advantage in holding doctorate students. Meanwhile, it suggests that although Canada may have seen a rapid growth in the number of international students in graduate study, the majority of its share of mobile students seek a Bachelor's degree.

²² The UK has been branding its well-recognized one-year Master's program (see for example <http://www.ukgradschools.com/about-british-degrees.asp>).

Figure 4.10. Distribution of international students by academic level in tertiary education, 2008



* Reference year 2007, excludes private institutions.

Source: OECD (2010a).

Table 4.2. Distribution of international graduates by level of study (percentage), 2008

	Bachelor	Master's	Doctorate
United States	32	55	13
United Kingdom	35	59	6
Canada	61	34	5

Source: UOE and UNESCO Institute for Statistics, cited in Kennedy (2010).

4.5 How Many Students Study in Sciences and Engineering?

Higher education in sciences and engineering (S&E)²³ has been widely recognized as a vital factor of economic development. Advanced industrial countries compete with each other in promoting their shares of total enrolment in S&E and S&E degrees earned by both permanent

²³ According to S&E Indicators 2010 issued by the US National Science Foundation (NSF), S&E includes Physical/biological sciences; Mathematics/computer sciences; Agricultural sciences; Social/behavioral sciences; and Engineering. It is to some extent different from the OECD definition. In the *OECD Science, Technology and Industry Scoreboard 2009* (p.132), Science degrees include: life sciences; physical sciences; mathematics and statistics; and computing. Engineering degrees comprise: engineering and engineering trades; manufacturing and processing; and architecture and building. The OECD definition does not include programs such as agricultural and social/behavioral sciences as are contained in the NSF definition.

and temporary residents, which are seen as indicators of national innovation performance (e. g., OECD 2009b). Among international students enrolled in Canada, the US and the UK, a considerably large proportion (compared to the proportion among domestic students) enrolled in S&E with the lowest in Canada at 32.3% and the highest in the UK at almost 38%; the percentage at graduate level was even higher (Table 4.3). It demonstrates the significance of foreign talent to the intake of students in S&E in higher education institutions in the host countries. Almost half (49.7%) of international graduate students in the US enrolled in S&E in 2006 which can be expected to be the highest among the three countries given the US share of worldwide international students and their distribution among academic levels.

Table 4.3. International students enrolled in S&E as percentage of total international students enrolled, Canada, the US, and the UK, 2006

	Total foreign S&E students	Total foreign students	Total foreign S&E/total foreign %	Foreign S&E Graduate	Foreign graduate	Foreign S&E graduate/Foreign graduate %
Canada*	34,270	106,058	32.3	13,060	-	-
UK	123,580	325,985	37.9	67,630	158,920	42.6
US	201,765	582,984	34.6	131,455	264,288	49.7

* Reference year 2005.

Source: NSF (2010, Table 2-45; 2008, Table 2-45, 2-24); CIC (2010b); HESA (2010b); IIE (2010b).

Table 4.4 displays foreign S&E enrolment at graduate levels and the growth trends in the most recent decade with data available. All three countries experienced a growing reliance on foreign talent in graduate enrolment in S&E. The UK had an average 13.7% annual growth in the number of foreign graduate S&E students between 1995 and 2006, exceeding both Canada (7.0%) and the US (4.3%) during the similar period of time. Meanwhile, the country also had the largest proportion of foreign S&E graduate students among all S&E graduates students enrolled, as well as the fastest increase of the percentage (from 28.9% to 45.1%) from 1995 to 2006. In other

words, the UK has the highest mobility of graduate S&E students and the most rapid growth of this mobility compared to Canada and the US.

Table 4.4. Foreign graduate students enrolled in S&E, 1995 and 2006

	Foreign S&E graduate students		% of foreign graduate S&E		Total % change	Annual % change
	1995	2006	1995	2006	1995 to 2006	
Canada*	7,690	13,060	17.0	19.8	69.8	7.0
UK	28,850	72,360	28.9	45.1	150.8	13.7
US	102,885	151,018	20.6	25.3	46.8	4.3

* Reference year 1995 and 2005.

Source: NSF (2010, Table 2-45, 2-43, 2-17; 2008, Table 2-45).

The US had the lowest annual growth rate (4.3%) of foreign graduate students in S&E over the decade, though it significantly surpassed its competitors in the number of the students. In fact, the number of first-time full-time S&E graduate students with temporary visas, who are more subject to immigration and entry policy changes compared to other categories of S&E graduate students, declined 18% from 2001 through 2004, though it increased by 4% in fall, 2005 (NSF 2008). Though the US hosts the largest number of foreign graduate students in S&E among the three countries, the share of those enrolled in S&E (25.3%) as a proportion of total graduate students was almost 20 percent points lower than that in the UK (45.1%) in 2006. Once again, these figures reflect the larger domestic demand in the US than the UK for higher education in S&E.

Earned S&E doctorate degrees have been used as a key indicator of research capability for innovation and productivity. Table 4.5 presents the number and percentage of doctorate degrees

earned by foreign students in S&E. In the UK, 42% of all doctoral degrees in S&E were granted to foreign students; the number is slightly lower but quite similar in the US (41.2%). However, the percentage of all doctoral degrees earned by foreign students in the US (33.3%) is much lower than in the UK (40.2%). It may well be the case that, in contrast to the UK's strategy of attracting international students in all fields, the US tends to lay its emphasis on students in S&E areas who are intended to serve as potential supply of workforce in high-skilled occupations. The different strategies reflect a higher domestic educational attainment and a more labour-market-oriented consideration of student migration in the US than in the UK. Canada has a relatively small proportion of doctoral degrees earned by foreign students, yet, it is noticeable that the percentage of foreign doctorate recipients in Engineering and physical sciences is comparable with the ones in the same areas in the US and the UK (Statistics Canada 2009). It indicates the preference of international students for certain doctoral programmes and the generally low level of student mobility in advanced research programmes in Canada.

Table 4.5. Doctoral degrees earned by foreign students, 2005 or most recent year

		Total	Foreign	
			Number	%
United Kingdom	All S&E	16,520	6,650	40.2
		9,760	4,100	42
United States	All S&E	43,354	14,424	33.3
		27,974	11,516	41.2
Canada	All	-	-	25.3

Source: NSF (2008, Table 2-49). Statistics Canada (2009, Table 4).

4.6 Where Are International Students From?

On the whole, Asian countries are dominating as exporters of international students: approximately 50% of all international students worldwide were from Asia in 2008 (OECD 2010a). In particular, students from China and India represent by far the largest group (with 17.1%

and 6.8% respectively) of all international students enrolled in OECD nations (OECD 2010a). Table 4.6 presents the top 10 countries/regions sending international students to Canada, the US and the UK in 2008. Clearly, students from Asian countries account for the largest proportion of international students in all the three countries. In particular, the three receiving countries are seeing the fastest growth of international students from China and India compared to the number of students from other places of origin (Table 4.7). Besides the general trend in which Asian students are predominant in the number of international students in the three countries, the place of origin of international students features sending countries that are close to the receiving ones historically (such as former colonies to the UK), geographically (e.g., the US to Canada and vice versa), economically (e.g., other EU countries to the UK) or/and culturally (e.g., France to Canada).

Table 4.6. Top 10 countries/regions sending international students to Canada, the US, and the UK, 2008

Canada*		United States		United Kingdom				
Country of origin	% as total international students	Country of origin	% as total international students	Country of origin	% as total international students			
1	China	23.7	India	15.4	China	13.8		
2	South Korea	15.4	China	14.6	India	10.0		
3	United States	6.4	South Korea	11.2	Ireland	4.5		
4	France	4.8	Canada	4.4	Nigeria	4.2		
5	India	4.1	Japan	4.4	United States	4.2		
6	Japan	3.7	Taiwan	4.2	Germany	4.1		
7	Saudi Arabia	2.6	Mexico	2.2	France	3.8		
8	Taiwan	2.3	Turkey	2.0	Malaysia	3.7		
9	Hong Kong	2.3	Vietnam	1.9	Greece	3.5		
10	Mexico	2.2	Saudi Arabia	1.9	Pakistan	2.8		
Total top 5 2008		54.3	Total top 5 2008		50.0	Total top 5 2008		36.6
Total top 5 1999**		46.2	Total top 5 1999**		41.6	Total top 5 1999**		39.4

* Including foreign students in educational programmes at all levels.

** The top five sending countries and their ranks may change over years.

Source: CIC (2009a); HESA (2010c, 2001b); IIE (2010b).

Table 4.7. Index of change in the number of international students from China and India, 1999=100

	1999	2001	2003	2005	2007
Canada	100	293	538	588	616
US	100	134	146	144	181
UK	100	281	619	695	708

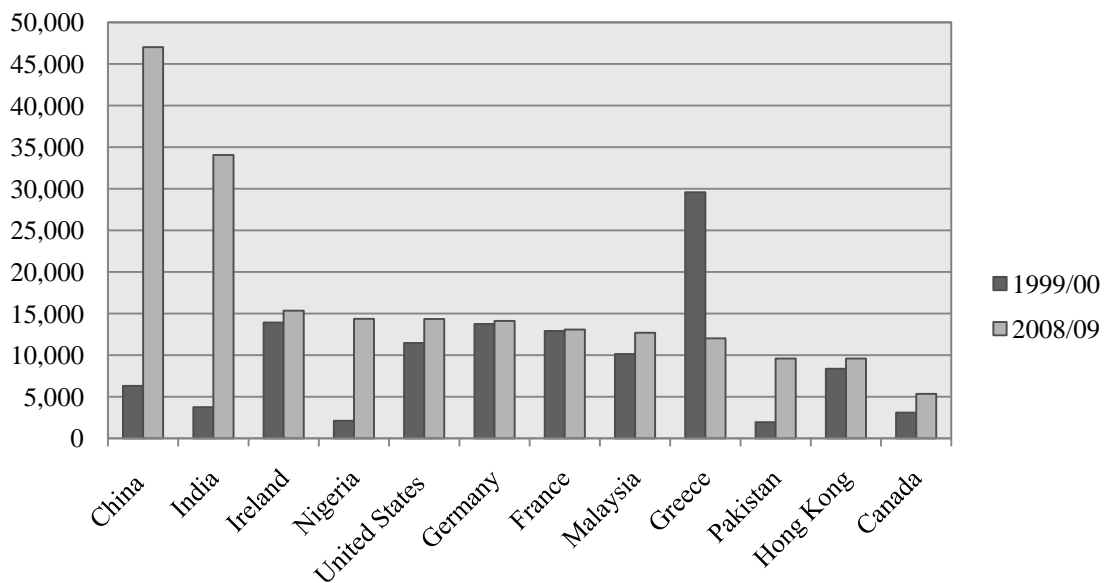
Source: CIC (2009a); HESA (2009b, 2008b, 2005, 2003, 2001b); IIE (2010b).

Nonetheless, the extent to which host countries rely on their leading source countries for student inflow varied. As is shown in Table 4.6, the proportion of international students in Canada and the US from the top 5 source countries considerably increased during the past decade while the percentage in the UK went in the opposite direction (from 39.4% to 36.6%). The figures display a growing reliance of Canada and the US on a small number of source countries for the growing number of international students. This trend is also evident in that, in 1999, 10 countries sent over 10,000 international students to the US and the number hardly changed in 2008 (11 countries) (IIE 2010c); as to Canada, the number of countries sending more than 10,000 students remained the same (3 countries) over the ten years (CIC 2009a).

The UK seems to be the only exception among the three countries in that it not only saw the most remarkable growth of international students from Asia, especially from the most populated countries, but also managed to reduce the reliance on the main sending countries for importing international students, which is indicated by a shrinking percentage of international students from the top 5 sending countries (Table 4.6). In addition, there were only 6 countries sending more than 10,000 international students to the UK in 1999; the number increased to 9 in 2008 (Figure 4.11). However, different conclusions may be drawn by taking a further look at the

UK's situation. In 1999, four countries out of the six sending over 10,000 students to the UK are from the EU area. All the six countries (the four EU countries together with US and Malaysia) remained in the 10,000+ category in 2008, and the three new members in the category (China, India and Nigeria) are developing countries from non-EU areas. It certainly shows the UK's success in marketing its higher education in priority countries exclusively in non-EU areas (see British Council 2008b), which corresponds with its shifting attention from emphasizing numbers to a broader strategy of global partnership and influence.

Figure 4.11. International students in UK higher education by place of origin, 1999/00 and 2008/09



Source: HESA (2010c, 2001b).

Yet, as the UK used to focus on the free-movement area for importing mobile talent, it was lagging behind countries such as the US, which is even more outstanding in its ability to recruit international students in higher education from other parts in the globe, especially from Asia. Therefore, a shift in attention from Europe to the rest of the world undoubtedly resulted in reduced reliance on the EU countries for importing international students, and an expansion of

the intake of students from non-EU countries, especially those with high capacity to produce mobile talent. Even though the UK is now seeking a catch-up with the US in recruiting international students from throughout the world, the dynamics of student mobility in the two countries are shaped by their distinct policy frameworks, which may cast light on new trends of student mobility in the future. Moreover, in the post-9/11 era of an increasingly intense competition for global talent both among and outside of developed countries, the exceeding progress made by the UK may eventually slow down, as has been forecast more generally for advanced economies (OECD 2009c).

4.7 How Many International Students Stay after Graduation?

The above analysis has illustrated the performance of Canada, the UK and the US in attracting international students to their higher education institutions. Yet, the whole picture of international student mobility and its connection to local labour markets is still incomplete since the students coming to study in the host countries are only a potential source of highly skilled workers. The post-graduate retention of international students by the three countries needs to be examined and compared.

International evidence of student retention can be drawn from two sets of data: the first one is retention rate, which is roughly the proportion of international students who gain residence in the country, ideally by cohort; the second is the proportion of residence approvals who were formerly students in the host country (Merwood 2007). Though many countries have adapted their migration policies to retain international graduates following the completion of their studies, only a few are able to provide such evidence (OECD 2009d; Suter and Jandl 2006). Even for those countries that do produce statistics on international student retention, the data are not ideal

for cross-country comparison due to country-specific methods of measurements and data collections.

For instance, stay rate is computed by OECD for selected countries including Canada (see OECD 2010b) as well as by the US (see e. g., Finn 2010) as an indicator of student retention. However, the OECD (2010b) estimates stay rates based on students' status change²⁴ which does not necessarily concern students who have finished their studies, or those who end up working in the host countries after graduation; the US does calculate stay rates of those who have completed their education and work in the country based on income and tax data²⁵ which avoids the limitation of OECD figures, but it mainly focuses on doctoral recipients in S&E. The UK provides data on full-time international graduates who have obtained employment in the country, but it is only short-term evidence (6 months after graduation) and limits to overseas students domiciled in the EU member countries (Suter and Jandl 2006). Meanwhile, the comparability of the proportion of residence approvals is limited by the specific immigration systems and statistical reports of host countries.

With full consideration of the limitations, evidence of international student retention in Canada, the US and the UK is presented in Table 4.8. The results show a significant association between studying abroad and post-graduate retention in general, though host countries tell different stories about these links. First of all, with different methods²⁶, the ICMPD (Suter and

²⁴ The stay rate is calculated as the number of status changes as a percentage of the number of international students who do not renew their study permit (OECD 2010b).

²⁵ If a foreign doctorate recipient earned \$5,500 or more and paid taxes on it for the year(s) specified, he or she was defined as a stayer. Adjustments were made for missing Social Security numbers, mortality, and for the relatively small proportion of recent doctorate recipients who stay in the United States but do not earn at least \$5,500. The stay rate is estimated as the percentage of stayers in the cohort of doctorate recipients (Finn 2010).

²⁶ The report of the ICMPD on student retention in Canada followed the method ideal for observing stay rate: the percentage of international students who gained residence over years by cohort. The OECD method is based on status change, see Note 24.

Jandl 2006) and the OECD (2010b) reported similar values in stay rates in Canada: approximately 15%-20% of international students eventually settle and work in the country. In fact, the OECD has suggested that stay rates between 15% and 35% can be expected for most countries (OECD 2009d; OECD 2010b). Among both temporary and permanent status change of the students in Canada, the large majority of international students (70% and 76% respectively) changed their status for work-related reasons. Statistics from CIC also reveal that among those who had transitioned from foreign students to foreign workers before landing, the proportion of permanent residence approvals were significantly higher than that among international students who had not (Justus 2006). Most prominently, international students contributed to a fast growing proportion of foreign workers and permanent immigrants in Canada. Besides the increasing percentage (from 2.2% to 8.9%) of migrant workers who made the transition from foreign students, the number of international students, spouses and dependents admitted through the Provincial Nominee Programs grew by 128% between 2005 and 2008 according to statistics from CIC (WES 2010). Preliminary data on the Canadian Experience Class show that, starting in 2009, over 60% of all admissions are former students, and the approval rate under the student stream was 86% in 2010 (WES 2010).

Table 4.8. International student retention by host country

	Retention rate	Proportion of residence approvals
Canada*	<p>Approximately 15–20% of international students settle and work in Canada (Suter and Jandl 2006).</p> <p>18.8% of international students earn temporary residence (among which 70% of the status change is for work); 14.7% gain permanent residence (among which 76% is for work) (OECD 2010b).</p>	<p>In 2009, 8.9%²⁷ of total temporary migrant workers were previously foreign students compared to 2.2% in 2000 (CIC 2010b); 3.7%²⁸ of landed immigrants were former foreign students (CIC 2010b).</p> <p>74% of the total admission through Canadian Experience Class were international students (WES 2010).</p>
UK	<p>23–29% of overseas students domiciled in EU (excluding the UK) were employed in the UK six months after graduation (HESA 2010a; Suter and Jandl 2006).</p>	<p>In 2005, an estimated 2–5% of Highly Skilled Migrant Programme approvals were international students at the time of application (Suter and Jandl 2006).</p> <p>4.2% of foreign labour immigrants entered through IGS (International Graduate Scheme in 2008 (Salt 2009).</p>
US	<p>60% of doctoral recipients in S&E from a US university in 1997 were still in the country 2007 (Finn 2010).</p>	<p>23% of the approved H-1B petitions were for those who had a prior student visa; of all those who transferred from a non-immigrant status to H-1B holders, approximately 58% were F-1 students in the country (USINS 2000).</p> <p>Among immigrants entering through employment based categories, 22% entered as students or exchange visitors (Massey and Malone 2002).</p>

* Including students in educational programmes at all levels.

²⁷ Foreign workers transitioned from foreign students as the percentage of total entry of foreign workers in 2009, including foreign students at all academic levels.

²⁸ Permanent residents transitioned from foreign students as the percentage of total entry of permanent residents in 2009, including foreign students at all academic levels.

The UK does not collect data on retention of international students domiciled in non-EU countries due to the low response rate (HESA 2010a). Of full-time overseas students domiciled in the EU area, 25% were employed in the UK six months after graduation in 2008/09; there has been no evident increase in the proportion during the past seven years (Suter and Jandl 2006; HESA 2010a). Since the movement for employment is largely unrestricted for citizens of countries in the European free-movement area, the proportion of residence approvals indicates only the retention of non-EEA nationals. In 2008, those who entered the UK labour market through IGS (International Graduate Scheme) comprised 4.2% of its total labour immigration (Table 4.8). Considering other possible routes for overseas students to work in the country (such as through HSMP or Work Permits, which now become Tier 1 and Tier 2 under the Points-Based System), the contribution of international students from non-EEA countries to the UK's labour market may be slightly higher.

The US does not have firm data on stay rates of international students except for foreign S&E doctorate recipients (OECD 2009d). Finn (2010) reported that the 10 year stay rate of foreign doctorate recipients is 60% (Table 4.8), which has not declined but reached a new high compared with the previous six-year period. The US immigration authority has stopped reporting previous status of new H-1B visa holders after 2000, which otherwise can be a good indicator of the contribution of international students to its high-skill economy. The 2000 report of INS shows that 23% of the approved H-1B petitions were for those who had a prior student visa; meanwhile, of all those who transferred from a non-immigrant status to H-1B holders, approximately 58% were F-1 students in the country (Table 4.8). The most recent accessible data of permanent residence approvals of international students in the US are for the cohort of immigrants admitted during the months of July and August, 1996. As is presented in Table 4.8,

22% of the immigrants entering through employment-based categories were in the country as students or exchange visitors before landing.

Though much of the above evidence of student retention is not comparable, the data shed light on the connection between international student mobility and highly skilled migration. The UK and the US tend to offer an employment-oriented assessment of their performance in student retention by emphasizing work-related status change, whereas Canada is more likely to follow a general human resources principle by considering student retention for all reasons as a whole. Canada's student retention policy proved to be effective through the remarkable growth in the status change of international students to migrant workers and landed immigrants. The US demonstrated its strong preference for students in S&E at doctoral level and its success in retaining the world's best, though its reluctance to grant immigrant status has been fully observed. In particular, the H-1B visa program seems to be the main route for international students to obtain residency in the US. The proportion of approved H-1B petitions for international students can be expected to be even higher after the fiscal year 2005, as the H-1B advanced degree exemption was put into effect which made an additional 20,000 new H-1B visas available for international students with a Master's or PhD degree from a US university.²⁹ Though the H-1B visa is only an approval of temporary residency, and the criticisms by corporate America on the admission ceiling and the difficulties to obtain the visa have never stopped (see, e.g., Deccan Herald 2010), the program sets up a model as a transition path to settlement. It may be the very first consideration and the most applicable choice for international students in the US seeking legal residency upon graduation. Moreover, the probationary period

²⁹ There hasn't been a clear trend of increase of the total approvals of H-1B petitions in the past decade, see http://www.travel.state.gov/visa/statistics/nivstats/nivstats_4582.html (Classes of Nonimmigrants Issued Visas – FY1987-2009 Detail Table)

of being a temporary skilled worker fulfills the goal of the US employment-based immigration (though in general family-based immigration still takes priority in the country) and guarantees an immediate and relatively long-term contributions made by the admitted foreign talent to the nation's technology and innovation.

4.8 Summary

The results and analysis in this chapter draw a comprehensive picture of international student migration in the three countries. In the current policy environment facilitating student mobility, the magnitudes of foreign enrolments in Canada, the UK and the US are increasing significantly. The number of international students in Canadian higher education more than doubled in about a decade since the late 1990s; the UK witnessed a 78% growth in the overseas students enrolled in its higher education institutions, to which students from non-EU countries were the main contributors; even with the negative effect of the 9/11 attacks on student intake, the US was seeking a quick recovery from the talent loss and still saw a over 30% raise over the 10 years from 1999 to 2008. The increase in student inflows to the three countries is especially evident in the numbers of graduate students enrolled in S&E. As is revealed by NSF, foreign graduate enrolments in S&E multiplied by over 150% from 1995 to 2006 in the UK, followed by an almost 70% increase in Canada and 46.8% in the US during the same period. Meanwhile, all the three countries observed higher student mobility in advanced research programmes compared with total tertiary education, as well as in S&E programmes, especially at graduate levels of study. It reaffirms previous findings that international students are more likely to be enrolled in graduate studies and science and technology areas. In addition, Asian countries, in particular the most populated ones, enriched the flourishing academic movement by dominating the lists of the top sending nations for the three host countries.

However, international comparisons also reveal gaps among government performance concealed by the general trends in student mobility. Most visibly, following the 9/11 attacks, the US experienced a total 3.7% decline in the stock of international students and the first consecutive annual drop-offs in the past half a century, as foreign enrolments in the two other comparator nations kept rising. Along with a shrinking share of worldwide mobile students by 5% from 2000 to 2008, the US also saw a growth rate of foreign graduate enrolment in S&E lagging behind the UK and Canada, though it surpassed the two in the number of students enrolled. Besides, although China and India topped the list of source countries sending international students to the US, it was not able to take as much advantage of the talent exporting capacity of the two emerging economies as the UK and Canada were able to do, as the rising in the number of students from China and India to the US were far slower than that to the UK and Canada. In spite of all these facts, the US never lost its number one place in terms of international student stock and it still holds nearly one-fifth of the world mobile students in higher education. The country is absolutely the first choice for students and scientists in advanced research programmes and in S&E areas, and is no doubt the most successful model in its ability to retain the best and the brightest.

The UK seems to be outstanding in almost all the aspects of attracting international students regardless of student retention, be it the rapid growth in foreign enrolment and student mobility, advantage in hosting students in post-graduate studies and S&E programmes, or the reduced reliance on previous leading source countries. In contrast to the systematic data on overseas students in the UK higher education institutions, there is an evident lack of data on post-graduate activities which would help track student retention; meanwhile, all the evidence on students' status change points to an emphasis on temporary rather than permanent status change.

The nation's keenness on holding international students, in particular from non-EU countries, seems no longer to persist upon the completion of their studies.

With the fastest growth in the number of international students over the past decade, Canada has demonstrated its potential in competing with its North American neighbour in holding international students. Although Canada has only 5.5% of total international students in the world, it has almost twice the number of international students the US has per 1,000 students enrolled in tertiary education. Besides the visible increase in its share of total international students in tertiary education, Canada also outpaced the US in the growth rate of foreign graduate enrolment in S&E. Its progress in managing international student mobility is most prominent in post-graduate retention, as employment-related policy provisions and new channels to permanent residency facilitated students' long-term stay. Still, Canada was disadvantaged compared with its two counterparts in the stock of international students and the proportion of international students at the advanced research level. The expansion of foreign enrolment in Canadian higher education also tends to rely heavily on a few major source countries in Asia.

While a strategic consideration to secure the supply of highly skilled labour is generally embodied in host countries' practices of recruiting international students, huge variations in international student policy and its outcomes make explicit the distinct strategies of each nation to manage student migration and suggest specific goals they seek to achieve. Thus, an analysis and interpretation of the divergence is critical for capturing a complete understanding of international student mobility. Drawing on the discussion in this and preceding chapters, the last chapter offers a political economy insight into distinct government practices associated with managing international student mobility.

CHAPTER 5. RECAPPING AND LOOKING FORWARD: ASSESSING NATIONAL PRACTICES OF MANAGING STUDENT MIGRATION AND THEIR IMPLICATIONS ON HIGH SKILL STRATEGIES

Discussion in previous chapters has demonstrated both similarities and variations among international student policies and their outcomes in Canada, the US and the UK. On the one hand, government policies in the three countries tend to converge in the sense of balancing openness and control, whereas country-specific regulations and the power shaping the contexts of student flows gives rise to distinct policy frameworks for managing student mobility. On the other hand, behind the general growth in student mobility, international comparisons reveal differences in government performance in attracting and retaining international students in the three nations. Putting the two sides of discussion together, the following section assesses the government performance of each nation in recruiting international students by taking social and historical conditions into account. The analysis identifies key factors shaping national practices of managing student mobility, and explores the implications of different approaches for high skill strategies in the knowledge economy.

5.1 Recruiting International Students: Emerging Strategy of Canada's Skill-Based Immigration

Canada has maintained a consistent policy in its emphasis on skill-based immigration. The policy initiatives towards international students in over the past decade were mostly framed as part of its response to the skill challenge, but they were also in part prompted by the unintended effects of the 9/11 attacks that took place in the US. In particular, following the terrorist event, the new wave of visa restriction in the US to a considerable extent drove away the attention of foreign study seekers to its peaceful and welcoming American neighbour, Canada. The

consequent soaring inflows of international students to Canada after the terrorist attacks drew attention to a broader range of potential benefits from educating foreigners and activated a more strategic consideration of student mobility in the knowledge economy. Hence, the country started taking advantage of its developed economy, English language environment, favourable immigration policies, and geographic and cultural proximity with the US significantly appealing to people seeking study abroad with diversified intents. As international students come to be recognized as a rich pool for skilled labour, an increasingly larger number of international students are allowed to shift to other temporary categories or permanent residents (CIC 2010b). The contributions of international students to the entry of foreign workers and permanent residents, measured by the proportion of temporary and permanent residence approvals, have also kept rising (CIC 2010b). Given the current shift of the selection of economic immigrants from the federal government to provincial administrations through the Provincial Nominee Programs, international students, especially those with a Master's or PhD degree, can be expected to be more valued and integrated into Canada's skill-based immigration.

Yet, Canada's openness to international students and the strategic consideration of competing with other economies for the best and brightest foreign graduates have only recently been placed on the policy agenda for a high skill economy. The country has never had a national-wide and fully articulated strategy for international student recruitment as many other competitors have (Keeley 2009; Le-Ba 2007; AUCC 2001).³⁰ Recruiting international students has been managed conventionally by academic institutions themselves as a way of obtaining additional revenue and enhancing the overall offer of higher education to local residents. Besides,

³⁰ Recently, Canada started paying more attention to the image of its higher education and branding the quality and values of its education for international students at varied levels of study. This may indicate future change in its national marketing strategy (see <http://imagine.cmec.ca/en/understanding/>).

as a traditional immigration country, landing of foreign nationals directly from their home countries who have gone through the skill-based selection remains the major focus in its planned immigration. According to CIC, more than half of its admissions of permanent residents (15 years of age or older) are highly skilled (in terms of having higher education credentials); yet, over 70% of its total annual permanent immigration are new arrivals (compared with 41% of new arrivals in the US) (US DHS 2010; CIC 2010b). Also, almost 90% of its total entry of temporary workers are newcomers rather than from other temporary categories (CIC 2010b). In other words, Canada's skill-based immigration strategy places a high degree of emphasis on the direct import of talent from abroad, rather than those who transfer from existing temporary residents, including from international students. Therefore, the recent hike in foreign enrolments (CIC 2008c) and post-graduate status change are rather prominent in the history; they are indicative of a new approach in the country's skill upgrading as well as the historically marginal role of international students in its foreign intake. Given the capacity of Canada's higher education institutions and the relatively low proportion of international students in S&E and advanced research programmes compared to the US and the UK, student retention will continue to act as a supplement, rather than a main focus of its skilled immigration in the foreseeable future.

On the whole, both traditional and innovative considerations are strongly presented in Canada's strategy to manage international student inflow. The traditional consideration based on revenue generation and mutual understanding³¹ is embodied in taking international students in general. It has been estimated that international students contributed \$6.5 to the Canadian economy in 2008 (RKA, Inc. 2009), a growth of over 140% from that in 1996 (AUCC 2001).

³¹ The strategy based on mutual understanding pursues above all political, cultural, academic and development aid objectives (OECD 2009c, p.73).

Given the large proportion and rapid growth of foreign undergraduate students enrolled in Canadian higher education institutions³², who are more likely to be full or premium tuition fee payers, the recruitment of undergraduate students can be expected playing a substantial role in generating revenue. On the other hand, the more strategic consideration of competing for prospective knowledge workers is likely to be heavier presented in the investment in graduate study and research, especially in science and technology, by Canadian higher education institutions and provincial governments. International students at graduate levels, therefore, are becoming a greater focus in the measures taken to attract and retain foreign talent. In the long run, the traditional goals of educating worldwide mobile students, especially revenue generation, will remain a fundamental one; while the increasingly rapid growth in transitions from international students to permanent residents either directly or through pathways is emerging as a feature of Canada's skill-based immigration.

Though there has been a growing tendency towards a demand-driven immigration selection regarding post-study retention signalled by the requirements for Canadian work experience or a current job offer, Canada is by all means one of the very few host countries offering international students direct paths to permanent residency. It demonstrates its far-going concern of securing future intakes of high-qualified landing immigrants (Bond et al. 2007). Furthermore, the remarkable increase in the number of former students choosing to immigrate indicates the importance of work-related policy provisions, especially the post-graduate employment programmes (CIC 2010c). Under the provisions, international students have more chance to gain Canadian work experience during their stay and meet the requirements for applying for

³² According to data provided by Statistics Canada (1998) and the Canadian Bureau for International Education (CBIE) (Savage 2005), international students in Canadian universities enrolled in undergraduate level grew faster than those in graduate level from 1993 to 2001.

permanent residency through varied channels. In this sense, the labour market orientation in the selecting criteria in fact serves the national goal of skill upgrading and human capital accumulation due to the policy support.

By taking advantage of its favourable migration policies in a multicultural environment with relatively high public tolerance to immigration and minority ethnic groups, Canada will remain a principal competitor in the international higher education market among advanced economies. The trends in government practices to increase the number of international students who undergo a transition to skilled workers and permanent immigrants are likely to keep rising in the coming decades. On the other side, the government needs to understand and respond clearly to potential challenges it may encounter considering the limited capacity of its educational resources and the foreseeable ceiling on student inflow, especially with the restoration of the US power to attract international students since the mid-2000s. To make the new strategy succeed, the government should improve the awareness among international students of the channels for permanent residency (CIC 2010c), in particular the Canadian Experience Class and the Provincial Nominee Programs, and keep tracking status change and labour market outcomes of former international students for a timely and efficient assessment of student retention. As managing student mobility is emerging as an integrated part of Canada's skill-based immigration, coordination of efforts among federal and provincial governments becomes crucial in fulfilling the national goal.

5.2 UK: Differentiated Strategies and Migration Regimes for Managing International Student Mobility

With its proactive and well-developed marketing and recruiting strategies, the UK turned out to be a big gainer among the three in the international higher education market during the

past decade. Rather than higher education institutions or local authorities, the British government is the main actor promoting the recruitment of world mobile students. It has demonstrated the advantage of a nation-wide strategy in achieving national goals of recruiting overseas students.

Yet, student mobility in the UK is quite distinct from Canada and the US in that the composition of overseas students in the UK is a mixture of those from within and outside of the European free movement area, and the practices of recruiting overseas students from the two source regions follow completely differentiated migration regimes. Student migration among European nations largely falls in the indiscretionary category, which is part of the Europe-wide labour mobility and skill upgrading strategy managed at the European level; whereas, student inflow from outside of Europe is subject to national governance, and is in fact the focus of almost all the most publicized migration policy adjustments and transformations recently initiated by the British government. Recognizing the significant benefits from educating international students, the growing capacity of non-EEA countries to export students, and the increasingly intense competition for the global market share, the UK adjusted its strategies and started to pursue a catch-up with its competitors in recruiting students from outside of Europe, especially from the major source region, Asia. With strong emphasis in its marketing and recruiting strategies on non-EEA countries and an enhanced offer of student experience in the UK, especially the accessible work experience during and after study, the UK has become a leading destination of world mobile students in tertiary education. Over the past decade, the country has seen significant growth in the number of students from non-EU countries, which now constitute two thirds of its stock of overseas students, while the number of those from the EU countries remains relatively stable.

Although the British government has opened widely the door to non-EEA students, the UK remains reluctant to advance labour immigration from countries outside of Europe. An overall approach that places high control on long-term stay of non-EEA nationals has always been real in the UK in contrast to Canada's low control on settlement embodied in its skill-based immigration system. The UK's reluctance and unwillingness to retain non-EU nationals became even more explicit in 2010 when the immigration authority confirmed the permanent cap on skilled immigration and the increase in the passmark for Tier 1 visa standards. In particular, the difficulty for non-EEA students to obtain work permits under skilled worker categories and the likelihood that the Tier 1 post study work category may eventually end make the pathway to status change obscure. These facts suggest that although the opportunities for non-EEA students to gain UK work experience are well integrated into the overall offer of UK higher education to international students, the employment-related provisions by and large act to attract overseas students pursuing enhanced experience of study abroad, rather than to retain them upon graduation. The work-related policies are by no means intended for facilitating post-graduate retention and labour movement.

Though the practice of recruiting international students from European countries tends to be in line with the logic of developing a high skill economy, the UK's approach to non-EEA students is mainly based on traditional consideration of the internationalization of higher education. As the UK's immigration authority elaborated in the Statement of Intent for the points based system, the government is committed to encouraging people from overseas to study and train in Britain for the purpose of revenue generation, culture and academic benefits, long-term international influence, and development aid (UKBA 2008). Therefore, the UK intends to take more effective measures through the new immigration system to facilitate the entry of genuine

students who have a clear intention to leave upon graduation while guarding against the risk of bogus students who do not fit its goal. The policy provisions put in place by the British government to ease the entry of overseas students from non-EEA countries are indeed preconditioned by a focus on temporary residency and a non-immigration regime with a clear goal of protecting UK and European labour markets. Thus, the open doors to non-EEA students, stricter control on their post-graduate status change, and the priority given to EEA nationals as the pool of skilled labour coexist as three interrelated facets of the UK's strategy in managing international student mobility.

An important characteristic of the UK's immigration system becomes noticeable at this point. The term "immigration" in the UK context refers to a broad range of people's movement largely on a temporary basis. This is distinct from Canada, which categorizes immigration as either temporary or permanent, or the US, which defines immigration as permanent settlement contrasted with non-immigration categories. This restricted concept of immigration delivers a message that the so-called "permanent immigration" system or "settlement" in the UK context (see Salt 2009) applies in the first instance to the European community. For the rest of the world, by contract, the UK is not an immigration country, nor does it have a permanent immigration system. In this symbolic way, the government demonstrates a strong political commitment in immigration control.

The strength of UK strategy is to enjoy the benefits of being a leading destination for international students while maintaining the integrity of its immigration system. However, the approach may face challenges in the near future. First, the number of international students from other EU countries enrolled in UK higher education institutions has remained relatively stable in the past decade. The trend does not suggest promising growth in the future given the active

participation of other major European competitors, such as Germany and France, in the international higher education market. Therefore, the UK is likely to see a limit to its share of overseas students from EU countries. On the other hand, as the competition for mobile students becomes increasingly intense among advanced economies, and the traditional source countries, such as China and India, are emerging as active players in the talent war, the rapid growth in the number of non-EU students in the UK will eventually slow down. As a result, the UK may face the challenge of sustaining the growth in foreign enrolments and maintaining the benefits of being a principal student receiving country.

Secondly, the UK has a relatively low skill profile among its adult population (25-64 years old) and workforce. Compared to Canada and the US, which have, respectively, 49% and 41% of their adult population with tertiary education, the UK lags behind with only 33%, ranked 12th among all OECD countries in 2008 (OECD 2010a).³³ This pattern indicates relatively low educational attainment and skill levels of UK citizens, who account for 90% of its residents. As aforementioned, this situation corresponds to the deficiency in the UK's domestic demand for higher education and its dependence on foreign enrolment to sustain the overall offer in higher education. The country also lags far behind Canada and the US in science and technology occupations as the percentage of total employment and the share of tertiary-level graduates in total employment (OECD 2009b), despite exceeding the other two nations in the number of doctoral graduates per million population (OECD 2006b) and sharing a significant portion of the total new OECD university graduates, especially in S&E (OECD 2009b). The country's outstanding educational attainment is compatible with its position as the second leading destination for world mobile students, and certainly reflects the significant contributions of non-

³³ Canada and the US ranked the 1st and the 3rd respectively.

EU students enrolled in UK higher education. However, given the fact that the foreign-born from non-European countries, who are more likely to be in highly skilled occupations than the European born, constitute only 6% of the working population in the UK³⁴, it can be inferred that although the country holds hundreds of thousands of non-EU students in its prestigious higher education institutions, it does not make full use of the well-educated university graduates accessible for the national skill upgrading. The significantly high skill profile of non-EEA workers in the UK is on the one hand closely related to the country's skilled-based screening for migrant workers from outside of Europe; on the other hand, it demonstrates the government's commitment in protecting the UK labour market for a less skilled local and regional workforce. Nevertheless, if the country engages in becoming a world leader in skills and achieving over 40% of the adult population being highly skilled by 2020 (HM Treasury 2006), it may have to tap into non-EEA talent to fulfil the ambition, including integrating non-EEA graduates into its high skill strategies.

5.3 United States: Employment-Based Retention of Foreign Talent and Reactive Practice of Managing International Student Mobility

The US experience in recruiting international students in the past decade was marked by reactive practice in a changing environment for international student mobility. In response to the rising concern about homeland security, the traditional open door policy towards international students was ended by the implementation of tightened visa requirements and the SEVIS system to monitor international students and exchange visitors. These policy initiatives, regardless how much they really helped strengthen the nation's security, took instant effect in bringing down

³⁴ The UK born accounted for approximately 90% of its working population; among the rest 10% of foreign workers, nearly 40% were born in other European countries; both the stock and inflow of non-European workers living in the UK had a higher proportion of populations working at skill level of Group A: Professional, employers, managers, compared with the European born (Salt 2009).

inflows and stocks of international students in the US and intensifying the shrinking US share of the global market for higher education. Facing widespread criticisms about the negative impact of international student policy on the US economy, and lobbying efforts by academic institutions and employer associations against the loss of talent, the government revisited its narrow mindset on national security and took big steps to reform visa and immigration policies in order to restore the US power in bringing in international students. As a result, the second half of the 2000s saw a quick recovery of foreign enrolments in the US, and the stock of international students once again began to grow. The US position in holding international students was not changed vitally as it is still the leading destination for world mobile students, especially for those in S&E and advanced research programs. However, with no proactive strategies to recruit international students in the ever more intense global talent war, the US dominance was challenged by its determined counterparts, such as Canada and the UK. The lack of forward-looking ability made the US immigration policy the main obstacle to the first mover advantage in recruiting international students.

Behind its reactive policy and practice of recruiting international students was the US advantage in domestic and international higher education. Firstly, the US regularly relied less on foreign enrolments in its higher education institutions, which comprised only 3.4% of the total enrolment. Meanwhile, the country is able to attract the largest number of international students in S&E and advanced research programmes, which offer a rich pool for the US to select and retain those most wanted to serve its national interests. This advantage makes it possible for the US to open doors to a small group (compared with domestic enrolment) of international students with an intent to pursue first class education and high-tech occupations, but to retain a large amount of those most skilled, in particular the doctorate graduates, through the H-1B visa

program. The high retention rates of foreign-born doctorate recipients in the US generally support the assumption that the more educated are more likely to stay in the host country upon graduation, though international comparisons reveal that the country-specific context still plays an important role regarding the extent to which this assumption is true.

Furthermore, the US employment-based post-graduate retention is a key factor to its reactive practices to recruit international students. In the US, non-immigrant categories (temporary residents) tend to be an important pool to offer potential status change to either other non-immigrant categories or permanent immigrants. In particular, up to 90% of foreigners receiving immigrant visas for employment are already in the US, especially via the highly recognized pathway from status as students in higher education (OPT), through being granted an H-1B visa, to permanent residency (Dunnett 2010). This pattern meant the decline in the inflow and stock of international students to a considerable extent led to reductions in the supply of high-qualified graduates for the knowledge sectors. Not surprisingly, US corporations are among the main advocates for a liberal immigration stance to attract foreign talent, including international students, for the purpose of securing skilled labour supply. During the past decade, the concern of corporation groups about their economic interest was elevated to new highs as a consequence of the government's policy restriction towards international students. Hence, the lobbying of corporate groups against the labour shortage and its negative impact on the US industry became intensified, which pushed the government to take measures to ease visa and immigration control in order to bring in more international students.

The reactive approach by the US to managing international student mobility is also demonstrated through the absence of proactive measures to adjust its retention policies as a way to attract foreign talent, which is also closely related to its employment-based immigration

selection. Although the US practice of retaining high qualified international graduates was well integrated into its high skill strategy, a reluctance to retain foreign talent including international students has always been apparent, given the difficulties associated with the issue of H-1B visas and the long probationary period for foreign skilled workers to obtain permanent residency. However, the high controls on continuing residence options were not major obstacles for the country to retain its attractiveness to international students, and in fact did not expose as much negative impact on student inflow as the visa policy did; moreover, for those highly skilled graduates who decidedly want to stay in the country, it may not be the most critical concern as the pathway to settlement is embodied in the US employment-based immigrant selection in spite of the long probationary time being non-immigrant residents. The nation faced little trouble in maintaining the integrity of its immigration system or avoiding hostile public opinion regarding the status change of international students, because a significant portion of this high qualified group went through the employment-based selection for permanent residency.³⁵ Therefore, the US did not confront the urgency of reforming its post-graduate retention policy; the recent policy provisions regarding post-graduate work and status change, such as the H-1B advanced degree exemption and the extension of the period of the OPT program, were not initiated as proactive measures to attract international students, but rather an additional offer besides the relaxed visa policy in order to re-establish the US popularity and welcoming image to international students.

The US largely relied on laurels from previous decades to recruit international students. Its strength in attracting the best and retaining the most wanted remained for a number of reasons, such as the extraordinary educational sources, employment-based retention of high qualified graduates, and the high demand for skilled labour in the knowledge industries; yet, the reactive

³⁵ Though there are indeed negative evaluations of foreign student program in the US (Borjas 2002).

practice led the country to be confronted by unprecedented challenges. Among all the issues under debate on the US power in the global talent war, immigration reform remains central to whether the country can sustain its advantage in attracting and retaining foreign talent. If the US is dedicated to world leadership in skills, it must designate its higher education as a strategic national asset for the high skill economy. Rather than simply following global market principles, proactive measures are necessary in order to support the recruitment of international students, especially the target groups in science and technology. Among all the possible measures to fulfill its national goals, policy reform towards transparent and flexible entry rules, and a simplified pathway to temporary and permanent residency for the highly skilled could be the first step.

5.4 Conclusion

Facing the global challenge of demographic change and labour shortage, the competition for highly skilled migrant workers became a vital concern of advanced industrial countries for innovation and future competitiveness in the knowledge economy. As a result, managing international student mobility has been widely recognized as a practical approach to a considerable increase in the number of highly skilled workers and labour market entrants. This study attempted to identify distinct orientations to the management of student mobility in Canada, the US and the UK through international comparisons on the trends in student flows and relevant policy provisions, in particular visa and immigration regulations. Previous discussion suggests that, on the one hand, nation states follow human capital principles by improving foreign intakes in general with an emphasis on those at higher levels of study and those in science and technology areas; the practices of recruiting international students have been integrated into their high-skill strategies through a demand-driven approach to post-study employment and permanent residency. On the other hand, nation states adopt different approaches to managing international

student mobility with the purpose of achieving their specific goals of national interest. Even the most qualified groups are never exempted from country-specific immigration policy frameworks in spite of the labour market needs for knowledge workers. The results indicate that rather than strictly relying on market forces, nation states address and cope with the “pressure point” of skill upgrading in a strategic and political way. The management of international student mobility, among other national strategies aiming at the high skill society, never exists simply as an economic issue of productivity, but embraces a collective goal of national interest deeply rooted in the political economic conditions in each nation.

This analysis also highlights the need for additional study of related issues, including the need for better quality data that are currently maintained by governments. In addition to the points observed earlier in the thesis, another limit of the data on international student mobility is the absence of comprehensive records on labour market outcomes of foreign graduates which would offer the capacity to explore the demand for and the utilization of the highly skilled group. Such analysis is not possible with the sources utilized in this study due to the inability to track status change and compare data on income and work areas of international graduates. However, this is a valuable direction for future research as it may help further the discussion on how international student mobility contributes to each nation’s skill formation and reveal distinct models of high skill economy. In addition, this study focused on visa and immigration policies concerning international students and associated key factors shaping national strategies for managing student mobility. International student policies and practices in other areas may also have significant effects on student migration. These include factors such as levels of tuition fees, funding opportunity, employment regulations, and international agreements, which are beyond

the scope of discussion in this study, but need to be explored in the future in order to address fully national governance of international student mobility.

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**APPENDIX A. INTERNATIONAL STUDENTS IN CANADA, THE UNITED
KINGDOM AND THE UNITED STATES, 1999-2008**

	Canada	United Kingdom	United States
1999	65,850	207,000	514,723
2000	78,710	215,100	547,867
2001	96,467	242,700	582,996
2002	110,237	275,265	586,323
2003	121,535	281,500	572,509
2004	127,638	297,120	565,039
2005	130,218	307,040	564,766
2006	131,136	325,985	582,984
2007	135,390	341,790	623,805
2008	136,956	368,970	671,616

Source: CIC (2010); HESA (2010b, 2009a, 2008a, 2007, 2001a); IIE (2010a).

**APPENDIX B. INTERNATIONAL STUDENTS BY ACADEMIC LEVEL,
THE UNITED STATES, 1997/98-2008/09**

Year	Undergraduate	Graduate	% of undergraduate	% of graduate	Annual change %	
					Undergraduate	Graduate
1997/98	223,276	207,510	48.0	44.7	2.1	9.1
1998/99	235,802	211,426	49.7	44.6	5.6	1.9
1999/20	237,211	218,219	48.4	44.5	0.6	3.2
2000/01	254,429	238,497	48.3	45.3	7.3	9.3
2001/02	261,079	264,749	46.6	47.3	2.6	11.0
2002/03	260,103	267,876	46.6	48.0	-0.4	1.2
2003/04	248,200	274,310	45.7	50.5	-4.6	2.4
2004/05	239,212	264,410	45.0	49.7	-3.6	-3.6
2005/06	236,342	259,717	44.9	49.3	-1.2	-1.8
2006/07	238,050	264,288	44.0	48.8	0.7	1.8
2007/08	243,360	276,842	42.9	48.8	2.2	4.8
2008/09	269,874	283,329	44.6	46.8	10.9	2.3

Source: IIE (2010a).

**APPENDIX C. INTERNATIONAL STUDENTS IN UK HIGHER EDUCATION BY ACADEMIC LEVEL
AND DOMICILE, 2001/02-2008/09**

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	Total % change
Under-graduate other EU	51,500	49,700	48,125	54,155	59,095	64,165	69,865	73,375	42.5
Under-graduate non-EU	70,800	85,400	95,260	98,310	99,210	102,900	104,445	112,215	58.5
Post-graduate other EU	38,600	40,880	36,125	39,840	40,895	41,245	42,285	44,285	14.7
Post-graduate non-EU	81,800	99,285	101,990	104,815	107,845	117,675	125,200	139,100	70.0
Total overseas	242,700	275,265	281,500	297,120	307,045	325,985	341,795	368,975	52.0

Source: HESA (2010b, 2009a, 2008a, 2007)