

The International Competition for Talent

To succeed in the new century we need a highly educated and scientifically educated work force. . . . A well-targeted and well-managed Migration Program can help us augment such a labour force. In fact, if I had to sum up one reason for the transformation this government has brought to the Migration Program, it would be this—to help augment the skills, education and knowledge that Australia will need to prosper in the 21st century.

—PHILIP RUDDOCK, AUSTRALIA'S MINISTER FOR IMMIGRATION AND MULTICULTURAL AND INDIGENOUS AFFAIRS, MAY 2002

While Canada has experienced recent growth in the number of workers entering the country, international competition for educated and skilled workers is now greater than ever before. In response to global labour shortages in certain key economic sectors, the United Kingdom, Japan and Germany, countries not traditionally open to immigration, are beginning to compete for skilled workers. . . . Today Canada finds itself competing in a global marketplace where the demand for skilled immigrants is swiftly increasing.

—CITIZENSHIP AND IMMIGRATION CANADA, 2000

Germany is embedded in a world economy . . . in which the qualifications and knowledge of people are becoming crucial growth factors. In order to ensure it remains competitive, Germany will be more dependent . . . on the international exchange of information and will need to co-operate with people of different origins in order to develop new solutions to problems as well as new ways of thinking and working.

—INDEPENDENT COMMISSION ON MIGRATION TO GERMANY, 2001

Today we will mark up one of most important pieces of legislation that the Senate will consider this year, the "American Competitiveness in the 21st Century Act." . . . We want the high-tech industry to thrive in the U.S. and to continue to serve as the engine for the growth of jobs and opportunities for American workers. If Congress fails to act promptly to alleviate today's high tech labor shortage, today's low jobless rate will be a mere precursor to tomorrow's lost opportunities.

—REPUBLICAN SENATOR ORRIN HATCH, MARCH 9, 2000

The [Highly Skilled Migrant] program represents a further step in developing our immigration system to maximize the benefits to the UK of highly skilled workers who have the qualifications and skills required by UK businesses to compete in the global marketplace. . . . It will allow eminent scientists to base their research projects [in the UK], should encourage the movement of business and financial experts to the City of London and given those at the top of their chosen profession the choice of making the United Kingdom their home.

—LORD ROOKER, U.K. IMMIGRATION MINISTER, DECEMBER 2001

Over the past decade or so, official pronouncements on immigration policy have often been couched in the language of “national competitiveness,” especially in knowledge-intensive sectors. The growing concern with competitiveness suggests that governments increasingly see themselves as competing for internationally mobile human capital via their immigration policies. This trend is apparent in the strategies adopted by five “competitors” in the international market for talent: Australia, Canada, Germany, the United Kingdom, and the United States. Two recent reforms also reflect this development: Canada’s rationalization of its points system for permanent skilled migration and the temporary U.S. expansion of H-1B visas in response to the tech boom of the late 1990s. Before discussing these policies, we present a simple framework for thinking about how countries compete for talent.

A Market for Talent

Countries compete for the world’s workers—engineers, scientists, managers, nurses, and so on—by offering them various mixes of opportunities and imposing selective barriers. As economist George Borjas describes it,

There . . . exists an immigration market allocating persons wishing to leave their current countries of residence among the few host countries willing to admit them. Potential migrants, like workers

looking for a job, are looking for the best country to live in. Host countries, like firms looking for specific types of workers, set immigration policies so they can attract specific types of migrants. Just as the labor market guides the allocation of workers to firms, the immigration market guides the allocation of persons to countries.¹

We focus on the demand side of this market—the “deals” that the potential host countries offer. The deals are composed of a mix of incentives in the form of social, economic, and political opportunities and disincentives in the form of immigration barriers. Some would argue, however, that “the phenomenon of international migration is characterized by disincentives rather than incentives.”² In any case, potential movers will be interested in a long list of socioeconomic and political factors: incomes (adjusted for cost of living), job availability, average tax rates (including income taxes, payroll taxes, expenditure taxes, and property taxes), marginal tax rates, public benefits (such as unemployment benefits), public services, amenities, attitudes toward immigrants (including tolerance of cultural and religious diversity), languages commonly spoken, political and legal rights, strength of relevant diasporic networks, and so on. Most of these factors are only loosely controlled by competing governments, and where they are the direct concern of policy, the choice is dominated by policy objectives other than attracting or repelling immigrants.³

As things stand, all rich countries have substantial, though varying, scope to alter the deals they offer by selectively dismantling the barriers—the disincentives—to foreign workers and the domestic firms seeking to employ them. Thus much of what appears to be governments’ changing the way they compete for the world’s skilled workers is really the selective removal of their own barriers in the international labor market.

Once a would-be migrant meets the immigration authority’s selection criteria, the individual receives an offer in the international talent market, which can be called a *migrant value proposition* (MVP). The MVP is the country’s offer to the would-be migrant valued in purchasing power parity adjusted to units of the migrant’s home currency. The MVP will depend on numerous factors, including the individual’s likely purchasing power parity adjusted after-tax earnings, the costs of moving, the quality

1. Borjas (1990).

2. Bhagwati (1991, p. 340).

3. Tax policy is a good example.

of government-provided benefits such as health care and education, the attractiveness of the physical environment, the attitude of domestic residents toward immigrants, and the existence of immigrant networks. Equally important are the conditions under which the individual is admitted. Can the stay be permanent or does it have a time limit? If temporary, are extensions and conversion to permanent status possible? Can one's spouse and children accompany the migrant? Is the spouse allowed to work?

In deciding whether to accept the offer, the potential migrant will establish a *reservation value* (RV)—a value that must be exceeded before the individual will migrate to the country making the offer. This RV depends on the economic and social opportunities in one's home country, *and* on the offers (that is, MVPs) being made by the country's competitors in the immigration market.

Immigration market propositions fall into two main types, determined by whether they offer *permanent* or *temporary* residence.

Policies that permanently admit skilled workers and their families can be subdivided into those that do not include a particular job in the criteria for entry (and instead use a skills-based points system, for example) and those that require certain types of job offers (probably in conjunction with meeting certain standards of qualification). Most points systems are based on the assumption that long-term earnings in the domestic labor market correlate with human capital attributes—education, experience, facility with national languages, and the like—and that points can be assigned to these factors to ensure that only those with sufficiently high likely earnings are accepted.⁴ The main alternative is to look at occupations with a short supply of workers. If nurses or software developers are needed, for example, immigrants with qualifications and possibly job offers in these areas will be selectively admitted. A drawback of this approach is that shortages may be temporary; once domestic skill

4. A better measure of the value to natives of an immigrant or group of immigrants is the difference between the social value of the resulting added output less their earnings (after netting out the effects of any additional taxes and government expenditures). Focusing on anticipated earnings can still produce "good selections" if the size of the "immigrant surplus" tends to rise with their earnings. This is more likely to be the case under a progressive fiscal system and one in which knowledge spillovers are greater for workers with more human capital. However, the "immigration surplus" can also be large for less-skilled and thus lower-earning workers. This will be the case, for example, when demand for less-skilled workers is highly inelastic, so that less-skilled immigration significantly drives down the wage (see, for example, Borjas, 1995). In this case, policymakers will have to trade off the relatively large immigration surplus (that is, the aggregate gain to natives) against rising skill differentials (that is, the increased inequality among natives).

supplies catch up with demand, today's selections may not be the workers who would have made the biggest net contributions in the long run.⁵ Another key element of an offer of permanent residency is the existence and nature of an option to obtain full citizenship. Although permanent residents typically have many of the rights and obligations of citizens, significant differences exist along such dimensions as voting rights and treatment in the legal system.

Policies that admit workers (and possibly their families) on a temporary basis usually insist on an outstanding job offer. If policymakers are concerned about the impact of temporary migrants on competing domestic workers, they may also ask for a demonstration of no harm to domestic workers or evidence that a suitably qualified domestic substitute is not available. Offers in this category can vary in other important respects. How long is the temporary work visa valid? Is it renewable? If yes, how many times? Are applicants allowed to bring their family? Is a spouse allowed to work? Is it permissible to apply for permanent status while in the country on a temporary visa? What taxes are temporary workers obliged to pay? Which benefits are they entitled to receive?

Permanent Migration Policies in Five Countries

Of the five countries examined here, Australia, Canada, and the United States (countries largely built on immigration) have well-established policies to permanently admit immigrants on the basis of their human capital and job offers. In contrast, Germany and the United Kingdom are relative newcomers to the competition for highly skilled mobile talent with offers of immediate or eventual permanent residency.⁶

As table 3-1 shows, the countries under consideration have experienced a broadly based, if sometimes hesitant, shift to more skill-focused policies. Australia and Canada, the two with established skills-based points systems, increased both the number of skilled immigrants and the

5. Persistent apparent shortages can exist where there is monopsony power in the skill market. We say "apparent shortages" because although employers would like to hire more workers at the going wage, they are unwilling to raise the wage since they would have to pay the higher wage to new and old employees alike. Employers will often lobby to have immigration meet their "excess demand." Such monopsony power is thought to be particularly important in health care skill markets (see Staiger, Spetz, and Phibbs, 1999). One problem with using immigration as a long-term way to relieve the apparent shortages in this market is that it reduces pressure to rationalize the market by introducing more competition between providers or making long-term investments in domestic skills.

6. The contrast should not be drawn too sharply, however, as initially "temporary" entry has morphed into permanent settlement in all of these countries.

Table 3-1. Skilled-Focused Permanent Migration Programs in Selected Countries

	<i>Canada</i>	<i>Australia</i>	<i>Germany</i>	<i>United Kingdom</i>	<i>United States</i>
Program	Independent skilled workers program	Skill migration (multiple programs) ^a	Proposed points-based system ^b	Highly skilled migrant program (introduced on pilot basis in January 2002)	Employment-based preferences (permanent residency) ^c
Number (percent of total)					
1995	81,000 (38)	...	24,100 (29)	...	85,300
2000	118,000 (52)	...	44,730 (56)	...	107,000
Cap	No	No	No	No	Yes (140,000)
Points system	Yes	Yes ^d	Yes	Yes ^e	No
Labor market test	No	No	No	No	Yes (with exceptions)
Selection criteria	Age, language, education, experience, job offer, adaptability	Age, language, education, occupation, ^f experience	(1) Highly skilled professionals with job offers: qualifications and earnings; (2) workers without job offers: points system	Past earnings, ^g education, experience, professional achievement	Job offer (certification from the Department of Labor of no adverse impact on domestic workers required in most cases) ^f
Leading recipient countries in 2000 (percent)	China (23) India (10) Pakistan (8) Korea (4)	United Kingdom (15) South Africa (14) India (10) Indonesia (9)	Not applicable	Not applicable	India (15) China (13) Philippines (10) Canada (7)

a. Included programs (number in 2000–01): employer nominations (7,510); business skills (7,360); distinguished talents (230); skilled independent (22,380); skilled Australian sponsored (7,200); and 1 November onshore (60).

b. The table describes the points system. The actual law passed in 2004 did not include this system. Instead, the existing recruitment ban remains in place with some limited exceptions.

c. There are five preference categories: E1, priority workers (28.6 percent), certification not required; E2, professionals holding advanced degrees (28.6 percent), certification required; E3, professionals holding bachelor's degrees and other workers (28.6 percent), certification required; E4, special immigrants (7.1 percent); and E5, employment creation investors (7.1 percent), who must invest between \$0.5 million and \$1 million, depending on geographic area, and create at least 10 full-time jobs.

d. A new points system was introduced in July 1999. A new category for skilled independent overseas students was added in July 2001. Applicants with Australian qualifications who apply within six months of completing their studies are exempt from the work experience requirement. No points test applies to the employer nomination stream, though candidates must meet basic requirements.

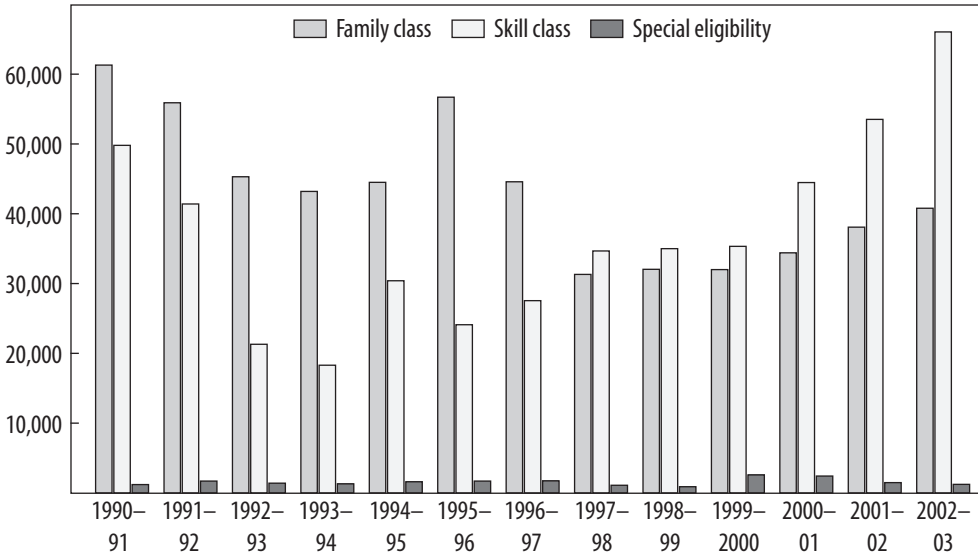
e. This program is not strictly designed for permanent migration. Initial acceptance is for a period of one year. The applicant can then apply to have the visa extended for a further three years. At the end of the four years, a migrant wishing to remain in the United Kingdom permanently can apply for permanent residence or "settlement." This route to permanent residency is also available to work-permit holders, so the difference between the two programs as a means to permanent residency should not be exaggerated. A key difference, however, is that those entering under the highly skilled migrant program are not tied to a particular employer.

f. Occupation must be on the Skilled Occupations List.

g. Points based on past earnings are country specific, with poorer countries tending to receive more points for a given level of pound sterling earnings. For example, someone from Canada would need to have earned £250,000 to receive the maximum 50 points in this category, whereas someone from India would need to have earned £90,000.

Figure 3-1. Permanent Immigration to Australia by Broad Category, 1990–91 to 2002–03

Number of immigrants



Source: Hugo (2001); Department of Immigration and Multicultural and Indigenous Affairs.

share of skilled immigrants in total permanent immigration in the second half of the 1990s (see figures 3-1 and 3-2). In order to increase the average skill level of the entering pool, the Australian government made major changes to its points system in 1999.⁷ The changes included giving points to applicants with an occupation on the Migration Occupations in Demand List (MODL), with further points being granted if the applicant had a job offer in an occupation on this list. Because of concerns about the transferability of foreign human capital, additional points were granted for Australian educational qualifications and experience. And, in a nod to the ever-growing importance of international commerce to the Australian economy, points were to be given for fluency in languages other than English.

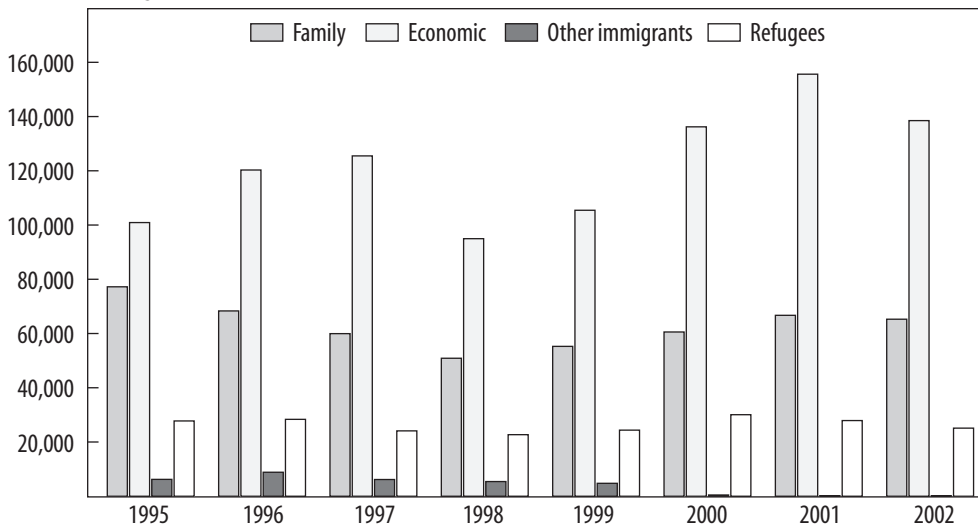
Canada's reforms are particularly interesting because, as already mentioned, it is a country built on immigration, with large—if volatile—flows over the last century and a half (figure 3-3). In 1967 Canada pioneered a points-based system for selecting permanent immigrants based on their predicted economic contribution.⁸ The system has evolved over

7. Hugo (2001).

8. For an excellent historical overview of Canada's immigration policy, see Green and Green (1999).

Figure 3-2. Gross Immigrant and Refugee Flows to Canada, by Broad Category, 1995–2002

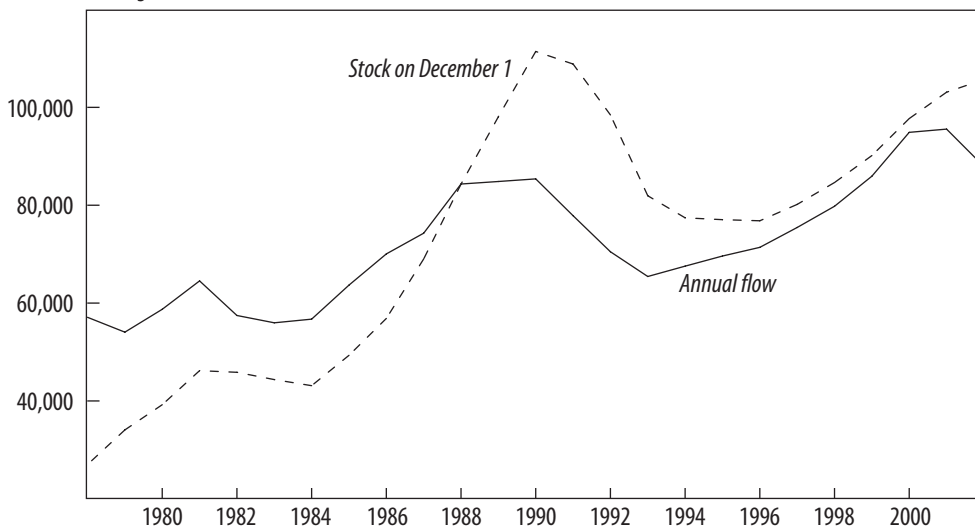
Number of immigrants



Source: Citizenship and Immigration Canada.

Figure 3-3. Annual Flow and Stock of Temporary Foreign Workers in Canada, 1978–2002

Number of foreign workers



Source: Citizenship and Immigration Canada (2002).

time, initially focusing on meeting cyclical skill shortages and later on augmenting the country's human capital base to improve prospects for long-term economic growth.

The profile of workers admitted to Canada in 2000 via the points-based skill stream reflects a well-educated population: 83 percent of principal applicants (and 59 percent of dependents over the age of 15) have a bachelor's degree or better (table 3-2). The countries of origin are primarily developing countries, with the top three sending countries—China, India, and Pakistan—together accounting for 43 percent of principal applicants. The increased prominence of developing countries in this regard coincides with a fall in the earnings of immigrants compared with those of native workers with similar broad human capital characteristics. In response, the government began putting more emphasis on the selective economic stream compared with the family and refugee streams (see figure 3-2), but, with the deteriorating earning performance also affecting the skill stream, it decided to reform the points system to better select workers with the potential to do well in the Canadian labor market.⁹

The resulting legislation, the Immigration and Refugee Protection Act of June 2002, is undoubtedly the most significant change in Canadian immigration policy since the points system was introduced in the 1960s. Although the new law has changed many aspects of Canada's immigration policy, we focus here on the changes to the points system (table 3-3), which brought a fundamental shift in the focus of the skill stream. Points related to occupation shortages have been eliminated, with the emphasis now on observed attributes that indicate flexible skill sets, suited to an economy with ever-shifting skill demands.

How well has the new policy been designed from the viewpoint of attracting and admitting workers likely to be high earners in the Canadian economy? Empirical work relating earnings to human capital attributes has shown the predictive power of education, experience, and language skills—all of which are emphasized in the new system.¹⁰

9. A related debate and reform effort has focused on removing artificial barriers to immigrants in the labor market, such as nonrecognition of foreign credentials.

10. The vast literature in the tradition of Mincer (1958) provides a useful framework for evaluation. See also McHale (2002), who shows how a simple human capital points system can be designed using a well-specified earnings function for predicting earnings and a chosen earnings cutoff. Points are based on the coefficients in the earnings regression in such a way that immigrants receiving points below a points cutoff have predicted earnings below the chosen earnings cutoff. Thus selections are based on predictions that the applicant's earnings will be sufficiently high. McHale also examines the conditions under which earnings are a good indicator of an immigrant's economic benefit to the native population.

Table 3-2. Profile of Skilled Immigration to Canada in 2000

<i>Profile</i>	<i>Number</i>	<i>Percent</i>
Principal applicants	52,080	44
Dependents	66,415	56
Total	118,495	100
<i>Principal applicants by gender</i>		
Male	39,561	76
Female	12,519	24
Total	52,080	100
<i>Principal applicants by education (15 and older)</i>		
Less than bachelor's degree	9,387	18
Bachelor's degree	29,031	56
Master's degree	11,242	22
Doctorate	2,371	5
Total	52,031	100
<i>Dependents by education (15 and older)</i>		
Less than bachelor's degree	18,137	51
Bachelor's degree	13,887	39
Master's degree	3,406	10
Doctorate	384	1
Total	35,814	100
<i>Principal applicants by source country</i>		
China	12,760	25
India	5,738	11
Pakistan	3,961	8
France	2,356	5
Philippines	1,714	3
Romania	1,465	3
Republic of Korea	1,349	3
United Kingdom	1,307	3
Morocco	1,065	2
Iran	1,049	2

Source: Citizenship and Immigration Canada (2000b).

Table 3-3. New and Old Skilled Worker Points-Based Selection Grids

	<i>Maximum points</i>
<i>New system</i>	
Education	25
Language	24
First	16
Second	8
Experience	21
Age	10
Arranged employment	10
Adaptability	10
Spouse's education	3–5
One year authorized work in Canada	5
Two years postsecondary study in Canada	5
Points received under arranged employment	5
Family relationship in Canada	5
Total	100
Initial pass mark	75
<i>Old system</i>	
Education or training factor (occupation-specific)	18
Education	16
Language	15
First	9
Second	6
Occupation (based on General Occupations List)	10
Age	10
Arranged employment	10
Work experience	8
Relative in Canada	5
Demographic factor	8 (subject to change)
Total	100
Pass mark	70

Source: Citizenship and Immigration Canada.

Empirical evidence also supports giving additional points to principal applicants and spouses with Canadian education and labor market experience, to those with formal job offers, with past acceptance at and graduation from Canadian postsecondary institutions, and even to levels of spousal education.¹¹

11. The most obvious reason that the spouse's education matters is that families are admitted and not just individuals. Thus it makes sense to look at the spouse's earning power as well. The theory of positive assortive mating, which predicts that the more educated will tend to match together, suggests the spouse's education can be an additional indicator of the quality of the principal applicant's education.

Some of the design features are harder to understand. For example, providing the full 10 points available for age to anyone between 21 and 49, while deducting two points for every year below or above that range, seems rather more arbitrary than might be expected in a system based on a well-specified earnings function. Given the cost of state pension and health care entitlements for retirees, it is unlikely that individuals in their late 40s yield the same long-term benefits to the economy as those in their early 20s. Other examples of dubious design include the credit for bilingualism—which has the hallmark of politics rather than economics—and the curious requirement of substantial years of full-time study for those targeted as skilled tradespersons, whose skill training is presumably acquired primarily on the job. Although the large credit given for education is consistent with the human capital approach to immigration policy, the manner in which points are credited across varying educational levels appears unlikely to find much basis in a human capital-based earnings regression. The greatest number of points for university-educated applicants is granted to those with a master's or Ph.D. (25), followed by those with two or more bachelor's degrees (22), and then those with two-year university degrees (20). Thus someone with a single four-year bachelor's degree gets the same number of points in the educational category as someone with a two-year degree.

The initial pass mark in the new points system was set at 75 but was subsequently reduced to 67. The initial cutoff did seem high given the substantial numbers entering Canada in the skill stream in the years before the reform and judged by the kind of people who would then be excluded. The number of qualified applicants was sure to drop. For example, a 22-year-old applicant (10 points), with a four-year computer science degree (20 points), one year's experience (15 points), and high proficiency in English but no proficiency in French (16 points) would score only 61 points. Even with a formal job offer or maximum adaptability points based on a Canadian education or experience and a university-educated spouse, this applicant would score only 73 points and be rejected under the initial cutoff score.¹²

Although one can quibble with the design of the new points system, Canada is clearly positioning itself to compete more effectively with selective offers of permanent residency in other countries. But it is facing

12. On the other hand, the fact that the cut would be made by a 45-year-old (10 points) with a two-year degree (20 points), four years of experience (21 points), high proficiency in English and moderate proficiency in French (24 points), and no formal job offer or adaptability points (0 points) hints that the problem lies with the relative point allocations just as much as with the rather stringent cutoff.

increased competition from other countries that are willing to make permanent offers. One drawback of Canada's system is that it takes time, sometimes years, to process backlogs for applicants, especially those from high-volume countries such as China and India. In recent years delays have become even longer because of more intense background security checks following September 11, even though it is widely recognized that approval time and bureaucratic ease carry considerable weight in the competition for the most sought-after workers. A positive element of the new law that should offset the slow processing is that it removes the previous ambiguity concerning the ability to apply for permanent status while working in Canada under a temporary work visa. Status change is now clearly allowed, permitting the most sought-after workers to come on a temporary visa and work while waiting for their permanent residency application to be processed.

Strictly speaking, the United Kingdom's points-based system, the Highly Skilled Migrant Programme introduced on a pilot basis in early 2002, is not for permanent migration, since visas are initially granted for a period of one year but can be extended for an additional three years. After four years the immigrant can apply for permanent residency or "settlement" and is not tied to a particular employer at any time. In a clear signal of competitive intent, the Home Office announced in October 2003 that it was reducing the points cutoff from 75 to 65, granting extra points to those under the age of 28, and providing extra points for partner/spouse qualifications. Another notable feature of the U.K. system is that it allocates points on the basis of past earnings.¹³

Under the shadow of an aging population and massively underfunded social insurance liabilities, Germany intensely debated an immigration reform bill with a points-based system for permanent skilled immigration. An important impetus to the new legislation was a 2001 report by the Independent Commission on Migration to Germany, which opened with the unmistakable exhortation that "Germany needs immigrants." This law has traveled a tough legislative road, however, and the bill that finally passed in 2004 went less far in selective recruitment than first envisioned. Although there are some new skills-focused exceptions to the previous recruitment ban—top-ranking scientists and managers are given the right to permanent residence under certain conditions, for example—the new regime is a shadow of the innovative points system that was initially proposed.

13. Poorer countries, which tend to pay lower wages at given skill levels, receive the available points at lower pound sterling earnings levels than richer countries.

Of the five countries, the United States has probably been the least active in reforming its system of permanent immigration, instead continuing its post-1965 focus on family unification. The Immigration Act of 1990 did increase the cap on visas going to priority workers and professionals with U.S. job offers. This employment preference cap of 140,000 is rarely reached, however, in large part because the application process is a difficult and lengthy one, requiring in most cases a U.S. job offer and Department of Labor certification of no adverse impact on domestic workers.¹⁴ One facilitating feature is that potential immigrants can apply for an employment preference visa while employed in the United States under a temporary work visa such as the H-1B. This is where the United States has been much more active in revising its skill-focused policies.

Temporary Migration Policies in Five Countries

The trend toward opening up entry possibilities to skilled foreigners is also apparent in reforms to the temporary migration policies of all the countries under consideration (table 3-4). All five offer temporary work visas to highly skilled workers with job offers. In the mid-1990s Australia introduced a major new class of temporary (long-stay) visas that are valid for periods of up to four years.¹⁵ Although a job offer is required—a feature of the temporary migration programs in all five countries—Australia does *not* require applicants to demonstrate that domestic workers are not adversely affected. Instead, potential employers must show that the immigrant will provide a “benefit to Australia,” which can come through positive employment effects, expanded trade, enhanced links with international markets, improved competitiveness, and the like. This seemingly minor shift in emphasis actually represents a major shift in the official view of immigrants’ impact on the economy—they are no longer considered a drag on the economy, driving down wages and taking away jobs, but competitiveness-enhancing assets with the potential to increase productivity.

In Canada, by contrast, employers bringing in workers under its Employment Authorization system must still obtain validation from Human Resources Development Canada (HRDC) to illustrate that

14. There is a provision that a maximum of 7 percent of employment preference visas go to immigrants of any one country, which is a binding constraint for countries such as India and China with a high demand for employment-based green cards.

15. Hugo (2001).

Table 3-4. Skill-Focused Temporary Migration Programs in Selected Countries

	<i>Canada</i>	<i>Australia</i>	<i>Germany</i>	<i>United Kingdom</i>	<i>United States</i>
Program	Employment authorization: temporary residents	Temporary (long stay) business entry	IT specialists temporary relief program ("Green Card") ^a	Work permits	H-1B—Specialty professional workers
Number (2000–01)	86,225 ^b	40,493 ^c	8,000 ^d	82,437 ^e	201,079 ^f
Job offer required	Yes	Yes	Yes	Yes	Yes
Cap	No	No	Yes (20,000 total)	No	Yes (195,000 per year) ^g
Labor market test	Yes (validation required by HRDC; exception for software developers)	No (but employers must show that the temporary entrant will provide a "benefit to Australia") ^h	Yes (employment agency checks EU worker availability and qualifications/remuneration)	Yes (waived for "shortage occupations")	No (but employers must "attest" to no adverse affect on U.S. workers)
Tied to employer	Yes	Yes	No ⁱ	Yes ⁱ	Yes
Length of visa (max.)	3 years	4 years	3 years	5 years	3 years
Renewable	Yes	Yes	Yes (5-year max.)	Yes (10-year max.)	Yes (6-year max.)
Spousal employment	No ^k	Yes	Yes (after 1 year)	Yes	No
Possibility of permanent settlement	Yes (under new law)	Yes	No (but possible under new law)	Yes (after four years)	Yes ^l

a. Program was introduced in August 2000 to relieve perceived shortages in the IT sector. Germany also operates a much larger work permit system (333,381 in 2000). The aim of the "Green Card" system was to make the recruitment of IT professionals easier through unbureaucratic, rapid, and transparent procedures (McLaughlan and Salt 2002).

b. Number is for 2000. The stock of temporary workers with employment authorizations on December 31, 2000, was 88,962 (Citizenship and Immigration Canada 2000b).

c. Number is for 2000–01 and includes 3,411 independent executives establishing businesses in Australia. In addition, 3,438 visas were issued to medical practitioners and their dependents, and 1,738 visas were issued to people joining educational and research institutions. The estimated stock of long-stay business entrants as of June 30, 2001, was 56,000. The median duration of stay of visa holders as of that date was just under six months.

d. Number is for the period from August 2000 to June 2001.

e. Includes only out-of-country work permit approvals (McLaughlan and Salt 2002).

f. Number is for fiscal 2001 (which begins in October 2000). A further 130,127 petitions were approved for continuing employment (U.S. Immigration and Naturalization Service [INS] 2002).

g. Renewals do not count toward the cap.

h. The benefit can come in various ways: create or maintain employment; expand trade, develop links with international markets, or improve competitiveness. Emphasis is on positive effects rather than the absence of harm.

i. Switching employers is possible without further labor market test. Five-year limit applies to combined employments.

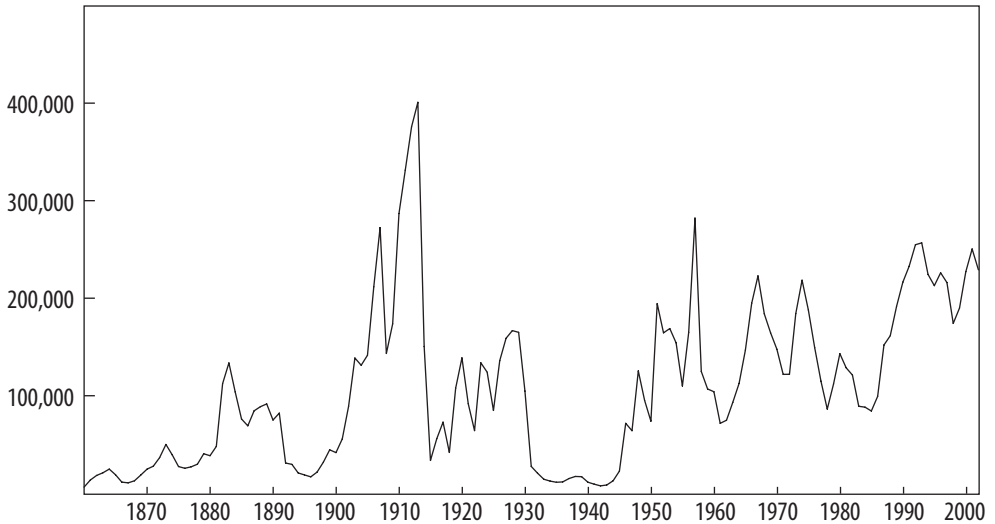
j. Employees switching employers must have new employer apply for a new permit.

k. Spouses can apply for employment authorization on their own merit. Under the Spousal Employment Authorization Program, spouses of workers in engineering, management, technical, and skilled grades can receive an authorization without a labor market test (McLaughlan and Salt 2002).

l. Visa holders can apply for permanent residency while they are in H-1B status. Extensions to H-1B status are possible in one-year increments for those whose visa expires when an application for permanent residency has been pending for more than one year (McLaughlan and Salt 2002).

Figure 3-4. Immigration to Canada, 1860–2002

Number of immigrants



Source: Citizenship and Immigration Canada (2000b).

efforts have been made to find a domestic worker to fill the position and that the temporary worker will not adversely affect domestic workers.¹⁶ The flow and stock declined over the first half of the 1990s, but both moved upward over the second half of the decade as the performance of the Canadian economy improved and shortages in key sectors emerged (figure 3-4).

In Germany, concern about competitiveness in newly emerging information technology (IT) industries was a major reason behind the “Green Card” program for IT specialists introduced in August 2000. Initially, it had some difficulty attracting applicants with the necessary skills, despite a concerted effort to keep bureaucratic hassles and delays to a minimum. In the intense atmosphere of international competition for highly qualified IT specialists in the closing months of the technology boom, these difficulties deterred many mobile Indian specialists in particular, who instead chose to go to the United States on H-1Bs, which are discussed in the next section. These difficulties may also explain the

16. Interestingly, in a move that suggests the government recognizes this cumbersome process can make it hard to compete for the most internationally sought-after workers, the validation requirement was removed on a pilot basis for software developers.

Table 3-5. United Kingdom Work Permits Issued by Country of Origin
Percent

<i>Origin</i>	1995	1996	1997	1998	1999	2000	<i>Change in share (percentage points), 1995–2000</i>
All nationalities	24,161	26,432	31,720	37,528	41,950	64,571	
Country breakdown							
United States	32.6	32.8	30.2	27.1	23.2	19.6	–13.0
India	8.3	10.1	12.7	15.1	13.5	19.0	10.7
Philippines	0.3	0.3	0.3	0.7	5.4	10.5	10.2
Australia and New Zealand	6.5	7.2	8.3	9.2	9.0	8.8	2.3
South Africa	2.7	3.3	4.3	5.8	7.9	6.9	4.2
Japan	10.0	9.8	7.9	7.2	5.9	4.1	–5.9
Canada	3.8	4.2	4.4	4.0	3.6	3.0	–0.8
China	2.7	2.6	2.5	2.4	2.5	2.4	–0.3
Russia	3.0	2.4	2.4	2.3	1.9	1.6	–1.4
Malaysia	1.2	1.4	1.3	2.0	1.8	1.3	0.1
Poland	2.5	1.3	1.4	1.4	1.1	1.1	–1.4
Czech Republic	0.8	0.6	0.6	0.6	0.6	0.7	–0.1

Source: Dobson and others (2001).

pressure on the German government to improve its offer in the skilled immigrant market with skills-related permanent visas.

Another system overhaul of the late 1990s, in the United Kingdom, was marked by a dramatic increase in the number and distribution of work permits. The number jumped from just over 24,000 in 1995 to more than 64,000 in 2000 (table 3-5), and most of the new workers were from developing countries. The share of work permits given to Indians, for instance, increased from 8.3 percent in 1995 to 19.0 percent in 2000, while the share going to workers from the Philippines increased from just 0.3 percent to 10.5 percent. As for immigrant occupations (table 3-6), among holders of work permits from the leading sending countries in 2000, those from India were concentrated in engineering and computing, while those from the Philippines were concentrated in the health professions (notably nursing).

The Case of U.S. H-1Bs

The H-1 visa program in the United States dates from the Immigration and Nationality Act of 1952, its original purpose being to bring workers

Table 3-6. United Kingdom Work Permits and First Permissions Granted by Country and Occupation, 2000

Occupation	South										
	United States	India	Philippines	Africa	Australia	Japan	Canada	China	Russia	Malaysia	Poland
All	12,654	12,292	6,772	4,437	3,979	2,645	1,921	1,541	1054	866	687
Managers and administrators	5,247	1,203	55	589	1,097	1,275	579	211	218	139	143
Professional	1,767	2,947	247	879	916	638	394	285	177	348	104
Engineers and technologists	932	2,616	222	213	200	506	139	147	91	147	63
Health	17	109	17	180	67	1	2	30	0	9	2
Teaching	429	84	1	307	396	91	161	67	53	10	21
Business and finance	154	84	3	91	100	30	34	26	16	119	6
Other	235	54	4	88	153	10	58	15	17	63	12
Associate professional and technical	5,493	7,879	6,442	2,918	1,890	604	911	885	586	329	268
Computer analysts, programmers	1,004	5,973	82	526	486	138	253	108	82	73	54
Health	188	1301	6,327	1,876	535	46	115	179	13	136	42
Business and finance	1,470	257	20	180	360	158	174	135	97	59	41
Artistic and sports	2,020	182	9	174	315	119	275	35	231	8	89
Other	811	166	4	162	194	143	94	428	163	53	42
Other	147	263	28	51	76	128	37	160	73	50	172

Source: Dobson and others (2001).

of “distinguished merit and ability” into the country on a temporary basis to fill positions that were themselves of limited duration.¹⁷ In 1970 Congress relaxed these restrictions, allowing H-1 specialty workers to accept permanent positions, and after 1990 it no longer required applicants to swear they had no intention of “abandoning” their country of origin.

In response to complaints that H-1 workers were filling entry-level positions without a test to determine the harm to domestic workers, the Immigration Act of 1990 created a new class of H-1B visas for workers in occupational specialties. It also introduced new classes for “aliens of prominence”: type “O” visas for workers of extraordinary ability in the sciences, education, business, or athletics, and “P” visas for internationally recognized entertainers and athletes. And for the first time it placed a ceiling (65,000) on the number of H-1Bs that could be granted in a fiscal year.¹⁸

An important feature of the H-1B is that prospective employers must submit a labor condition application to the Department of Labor attesting that wages are in line with those being paid for similar work in the area of skill, that the prospective visa holders will not affect the working conditions of domestic workers, that there has not been a strike or lock-out involving the occupational class of the prospective visa holders, and that the employer has provided notice of the application to the existing workforce. Typically, the Department of Labor looks for obvious inaccuracies and incompleteness rather than substantially reviewing the employer’s attestations. The process is also fast: barring incompleteness or inaccuracies, applications must be certified within seven days of being submitted.¹⁹

H-1B visas are granted for a period of three years and can be renewed for an additional three years. A visa holder may change employers provided that a petition from the new employer has been granted. As mentioned earlier, the law allows H-1B holders to have “dual intent,” coming initially to work with temporary status but intending to apply for permanent residency. Thus the H-1B visa can be used as a way station for those seeking to immigrate permanently to the United States through the time-consuming process of applying for an employment preference visa.

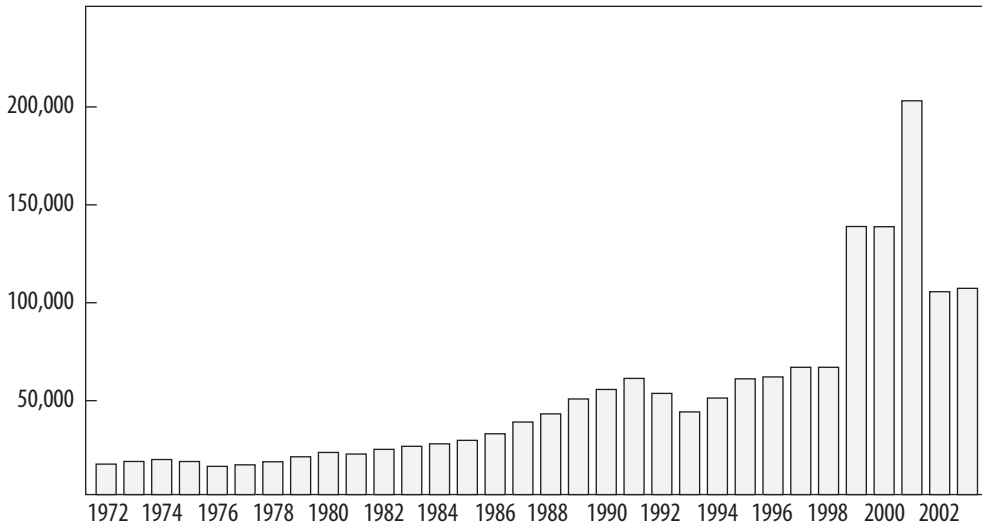
17. Lowell (2000).

18. Usdansky and Espenshade (2000).

19. Lowell (2000).

Figure 3-5. H-1 Visa Issuances (Initial Employments), 1972–2003

Number of visas



Sources: Lowell (2000); U.S. Immigration and Naturalization Service (2002); Department of Homeland Security (2003).

Although the H-1B cap was initially set high enough so as not to be binding, the number of H-1 visas issued grew rapidly in the late 1980s (figure 3-5), making it reasonable to expect the cap to become binding before too long.²⁰ Indeed, as the high-technology boom picked up steam in the late 1990s, the demand for H-1Bs grew rapidly, with the result that the cap was reached for the first time in September 1997. Coincidentally, this was the same month that the Commerce Department issued a report predicting a coming shortage of high-tech workers, which, combined with fears of Y2K-related computer system breakdowns, led high-tech industries to lobby intensively for a higher cap.²¹ The immigration policy debate became very clearly couched in the language of competitiveness.

The American Competitiveness and Workforce Improvement Act passed in 1998 expanded the available H-1B visas from 65,000 to 115,000 in fiscal 1999 and 2000 and to 107,500 in fiscal 2001. In

20. Lowell (2000) explains the dip in the number of H-1 issuances in the early to mid-1990s by the introduction of the new visa categories, notably O and P.

21. Usdansky and Espenshade (2000).

response to domestic labor concerns, the legislation also introduced restrictions on layoffs (both during the three months before the hiring of an H-1B worker and in the three months after) for so-called H-1B dependent firms that had an excessive percentage of H-1B workers and introduced a \$500 fee to be used to aid displaced workers and disadvantaged students.²²

Notwithstanding the expanded cap, H-1Bs were soon in excess demand once more. Renewed lobbying in response to continued high-tech skill shortages led Congress to revisit the legislation again, and it passed the American Competitiveness in the 21st Century Act in 2000, which President Bill Clinton signed reluctantly in October 2000.²³ The new law raised the cap on H-1Bs to 195,000 for fiscal 2001 to 2003, dropping it back to 65,000 in fiscal 2004. It also allowed for an extension of the six-year limit for workers who have an application for permanent residency pending for more the 180 days, permitted visa holders to change employers immediately on the filing of an application by the new employer, and increased the application fee from \$500 to \$1,000.²⁴

Upon examining the operation of the H-1B program in fiscal 2001, the Immigration and Naturalization Service (INS) found that the demand for H-1Bs remained very strong in the months before September 11, even as the high-tech slump gathered momentum. Of the 331,206 petitions approved in fiscal 2001, 201,079 were petitions for initial employment (most of which are subject to the cap), and 130,127 were for continuing employment (which are not subject to the cap). By contrast, a total of 257,640 petitions were approved in fiscal 2000.

In a breakdown of approved petitions by country of origin, age, educational level, and occupation (table 3-7), India emerges as by far the

22. Lowell (2000).

23. At the bill signing, President Clinton stated: "This legislation contains a number of provisions that merit concern. For example, one provision allows an H-1B visa holder to work for an employer who has not yet been approved for participation in the H-1B program. In addition, there are provisions that could have the unintended consequence of allowing an H-1B visa holder who is applying for a permanent visa to remain in H-1B status well beyond the current six-year limit. I am concerned that these provisions could weaken existing protections that ensure that the H-1B program does not undercut the wages and working conditions of U.S. workers, and could also increase the vulnerability of H-1B workers to any unscrupulous employers using the program."

24. This is an important provision for workers from countries facing long waits for permanent residency visas due to country limits on preferential visas. These waits are particularly long for applicants from China and India. Thus this provision is important in allowing many H-1B visa holders to transition to permanent status.

Table 3-7. Characteristics of Approved H-1B Petitions, Fiscal 2001^a

<i>Characteristic</i>	<i>Number</i>	<i>Percent</i>
Total	331,206	100.0
<i>Country of origin</i>		
Known	330,521	
India	161,561	48.9
China	27,330	8.3
Canada	12,726	3.9
Philippines	10,389	3.1
United Kingdom	9,682	2.9
Other	108,518	32.8
<i>Age</i>		
Known	330,266	
< 20	194	0.0
20–24	38,248	11.6
25–29	138,450	41.9
30–34	85,084	25.8
35–39	39,561	2.0
40–44	16,168	4.9
45–49	7,224	2.2
50–54	3,292	1.0
55–59	1,359	0.4
60–64	483	0.1
> 65	203	0.1
<i>Education</i>		
Known	330,808	
Less than bachelor's	5,608	1.7
Bachelor's	187,735	56.8
Master's	102,996	31.1
Professional degree	9,859	3.0
Doctorate	24,610	7.4
<i>Occupation</i>		
Known	329,866	
Computer-related	191,397	58.0
Other	138,496	42.0

Source: INS (2002).

a. Initial and continuing employment petitions.

largest recipient, receiving almost half of the approvals. India's share increased steadily over the 1990s, from roughly 5 percent to roughly 50 percent, owing to the sharp rise in the demand for computer-related talent.²⁵ The age distribution shows a strong demand for young, relatively recent graduates, with more than two-thirds of all approvals falling in the narrow 25–34 age group. Not surprisingly, given the skill requirements for the H-1B visa, roughly 98 percent of approvals went to individuals with a bachelor's degree or better, with more than 40 percent falling in the "or better" category. The importance of access to H-1B workers by the high-tech industries (notably information technology) is borne out by the fact that 58 percent of all approvals were in computer-related occupations. Indeed, the largest employers of these workers during the first five months of fiscal 2000 belonged to the U.S. economy's technological elite: Motorola (618), Oracle (455), Cisco (398), Mastech (389), Intel (367), and Microsoft (362).²⁶

How is the H-1B program likely to evolve in the future? Following the terrorist attacks of September 11, 2001, and the prolonged technology slump that began in 2000, petition applications and approvals declined in fiscal 2000, while many visa holders fell on hard times and returned home. During the first three quarters of fiscal 2002, the United States approved 60,500 petitions, a number significantly less than the 130,700 approved during the same period of the previous fiscal year. When the expanded cap was not renewed for fiscal 2004, however, the cap allowed was reached by February, which indicates that the demand for visas has nonetheless remained high. Not surprisingly, employers are again pushing for an expanded cap, although prospects are not promising given the fear of terrorism, a relatively weak job market, and grave concern in some quarters about the outsourcing of skilled service sector jobs, especially to India. Indeed, many see the H-1B visa as a factor facilitating the outsourcing of work to India rather than substituting for it. Some employers have been trying to get around the tightened constraint on the availability of H-1Bs by using L-1 visas, which are designed for intracompany transferees. But these visas are also coming under scrutiny from a job-wary Congress. At the same time, there is growing concern about the damage being done to U.S. innovation by policies that restrict industry's access to skilled foreign workers and students.

25. Desai, Kapur, and McHale (2003).

26. INS (2002).