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Is Canada Alone in Exporting Her Best and Brightest to the United States?

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Abstract

Since the mid-1990s, there has been concern in Canada that the country has been exporting some of its most talented people to the United States. But has this phenomenon affected only Canada, or have other countries also experienced similar migration patterns? This paper will analyze and compare the quantitative and qualitative aspects of Canadian migration to the United States with migration from other G-7 source countries. Existing evidence suggests that an increasing number of Canadians have entered the United States in the 1990s and that these Canadians have been “better quality” immigrants in terms of educational attainment and earnings, compared to both earlier waves of Canadian immigrants and those born in the United States. But, is Canada unique in losing her best and brightest to the United States? Published data from the Immigration and Naturalization Service (INS) are used in addressing these questions. We conclude that both the permanent and temporary migration patterns of Canada to the U.S. do not diverge markedly from those of other G-7 countries.

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Is Canada Alone in Exporting Her Best and Brightest to the United States?

I. Introduction

The so-called “brain drain” from Canada to the United States continues to attract the attention of the Canadian media, policy makers, and the Canadian public-at-large. Some observers (DeVoretz and Laryea, 1998) argue that a large number of Canadians have immigrated to the United States in the 1990s, largely due to the increased ease of entry to the U.S. in the post-free trade era, coupled with the relatively high marginal capital gains and income taxes in Canada. In addition, recent evidence (Frank and Bélair, 1999; Zhao, et al., 2000) has shown that these individuals have been amongst Canada’s best and brightest, and its highest income earners. Schwanen (2000) also notes this and adds that this southward flow is especially worrisome because it includes knowledge workers in the sciences and engineering; individuals that are needed in Canada to spur productivity and incomes in the new information economy.

Others have noted that the loss of talent to the United States is not so problematic. Zhao, et al. (2000) showed that permanent migration to the United States in the 1990s as a percentage of the Canadian population is at a historic low. They also find that temporary migration, although ostensibly increasing during the decade, is hard to ascertain owing to measurement problems. Still, migration of individuals in certain knowledge-based occupations (such as engineering, education, natural sciences, and medicine) has been disproportionately large, although relatively small compared to the stock of such workers in Canada. In any case, Canada still attracts a large number of

highly educated individuals from third countries, more than offsetting the migration of educated Canadians. In a similar vein, Helliwell (1999) also noted that Canadian migration in the 1990s was low by historical standards. He argued that this was somewhat surprising given the high income and unemployment rate differentials, both of which favoured higher migration to the U.S., especially amongst highly skilled individuals. Globerman (1999) also observes an increase in temporary migration to the United States, but says that this can be beneficial to the Canadian economy because it fosters economic integration with the U.S. economy, and also because individuals who return to Canada will do so with knowledge and experience that will ultimately benefit the country.

The intention of this paper is to determine if the migration of individuals to the United States from Canada is only a Canadian phenomenon, or if similar migrations from other Group of Seven (G-7) countries to the United States have also been occurring in the 1990s. The results such an exercise could yield important policy implications. If it can be shown that Canada is not alone in this increase in migration, then perhaps domestic policy options to slow the migration (insofar as it is considered to be problematic) may be limited. Conversely, if this phenomenon is uniquely Canadian, then domestic policy (such as lowering taxes, increasing funding to medicine and research, etc.) may be more useful.

The second section of this paper describes the data used as well as their limitations. Section III shows the trends in permanent and temporary migration over the 1990s for all six countries. The final section concludes.

II. Data Sources

The data are drawn from a number of publications of the Immigration and Naturalization Service (INS). Although these data are less-than-ideal, they are the best data currently available.¹ The INS publishes annually its *Statistical Yearbook of the Immigration and Naturalization Service* which contains data on the number of immigrants who are admitted to the United States on a permanent basis (i.e., legal permanent resident status) during a fiscal year (October 1 through September 30). Individuals who are granted this status hold what are commonly known as “green cards” which allow them to legally live and work in the United States. After a certain period of time of residence in the United States (usually five years), and after fulfilling certain criteria, these individuals become eligible for citizenship.

The *Statistical Yearbook* also contains information on the number of nonimmigrant visas issued. Depending on the type of visa issued, individuals are permitted to work, study, perform, etc. in the United States. It is expected that these individuals will leave the United States upon expiration of their visa, although many are renewable for various lengths of time.

These data will be referred to as *immigrant (or permanent immigrant)* and *nonimmigrant or (temporary immigrant)* data throughout the remainder of the paper.

Both the immigrant and nonimmigrant data present problems for studying the movements of individuals to the United States. Although the immigrant data do count the number of *individuals* granted permanent resident status in a given year, they include

¹ It is usual to use data from the decennial U.S. census to conduct analyses of immigrants since this is the only data set with sufficiently large samples. See Zhao, et al. (2000) for a detailed description of alternate data sources and their limitations. See also Greenwood, et al. (1991) and Lowell (1999) for good

those who wish to reside in the country to work, study, retire, or (as in the cases of children and spouses) who wish to reside with family member granted permanent resident status. In other words, the actual number of individuals who gain this status with the intention of working in the United States is not clear. Secondly, while the INS keeps meticulous records on the number of individuals granted permanent resident status, no records are kept about how long these individuals were in the United States prior to receiving permanent resident status, nor whether these individuals remain in or leave the country and at what dates.

Compounding the analysis of the immigrant data is the fact that the number of pending adjustment of status applications has grown.² According to the most recent INS data, the number of adjustment of status applications pending increasing steadily from 121,000 in FY 1994 to 811,000 in FY 1998.³ This later figure is more than double the 382,000 applications actually approved in FY 1998. As a result, the impact of these pending adjustments on the characteristics of immigrants is not known (INS, 1999). Furthermore, the INS does not maintain data on the characteristics of adjustment of status applicants whose decision is pending, but it does note that a high percentage of these are likely to be employment-related adjustments.

discussions of limitations of these INS data. Interested readers can find recent editions of these publications on the statistics page of the INS website at: www.ins.gov/graphics/aboutins/statistics.

² There are two ways to become a permanent resident of the United States. First, is applying outside of the United States at a consular office of the Department of State and obtaining a visa. The individual is then granted permanent resident status when they pass through the port of entry and are issued a permanent resident (i.e., "green") card sometime thereafter. The second method involves entering the United States as a non-permanent resident (i.e., visitor, student, temporary worker, etc.) and having this status adjusted to permanent residency while continuing to reside in the United States. Between 1995 and 1998, about one-half of all permanent residents were admitted by either avenue (INS, 1999).

³ The fiscal year (FY) of the INS runs from October 1 through September 30. For example, FY 1998 would begin on October 1, 1997 and end on September 30, 1998.

The nonimmigrant data have problems of their own. For INS administrative purposes, nonimmigrant *visas*, not *individuals*, are counted in these data. This means that an individual could enter the U.S., for example, three times in a one-year period and each time a record of entry would be completed. This would show up as three entries in the data. Similarly, an H1B nonimmigrant visa, common amongst foreign professionals living in the United States, is generally granted for a period of three years after which it can be renewed. Furthermore, individuals (if eligible) may renew these visas after they expire and, since the visa is employer-specific, the visa must be reissued if an individual changes employers. Similarly, the TN visa, issued to various professionals under the terms of the North American Free Trade Agreement, must be renewed annually. These factors mean that the number of visas overstate the number of individuals entering the United States. Conversely, visa renewal can take place either at border points or through the INS while residing in the U.S. In the former case, a record of entry (I-94) is completed and tallied. In the latter case, no such paperwork is completed and thus it is not recorded. Also worthy of consideration are changes in U.S. immigration requirements which have dictated that foreigners have visas even if they are to do any business in the U.S., even for a few days.⁴ Thus, these data are likely to overestimate the number of temporary migrants.

In sum, the permanent migration data do provide an accurate count of foreigners admitted to the United States. They do not, however, allow us to determine whether these individuals remain in the country and for how long. Furthermore, the fact that there has recently been a large backlog of adjustment of status applications further complicates

⁴ Both Helliwell (1999) and Zhao, et al. (2000) mention this phenomenon as a reason for the surge in visas issued to Canadians in the 1990s.

the analysis, at least somewhat. The temporary migration data, by contrast, may not accurately reflect the number of individuals entering the United States, owing to the fact that multiple entries may be made by a single individual in a given year and/or renewals of visas by individuals may result in an over count of individuals entering the United States. Still, these factors do not mean that the use of these INS data is without merit. Since we are ultimately interested comparing the trends in the permanent immigration (and, to a lesser degree, nonpermanent immigration) to the U.S. of the Canadian-born with those born in third countries, this should not prove to be great a problem under the assumption that an equal proportion of individuals from each of the countries are granted admission in any one year. In other words, the above listed factors will undoubtedly bias the statistics presented below, but as long as these biases affect each country's immigrants in a similar fashion, any comparison of Canadian immigrants to the U.S. with those from third countries will still prove informative for our purposes.

We limit our sample to include only migration to the United States from Canada and the other five G-7 countries (the U.S. is eliminated for obvious reasons). This choice of countries is for two reasons. First, each country has a long history of migration to the United States. Second, these countries are all wealthy, industrialized economies with relatively well-educated work forces. In other words, they are all countries similar to the United States and workers have skills can be transferred to the U.S. labour market.

III. Trends in Permanent and Temporary Immigration

A. Permanent Immigration

Figure 1 shows the number of immigrants admitted annually from 1987 through 1998 from Canada and the other five G-7 countries (i.e., excluding the United States). With the exception of France and Italy, where immigration at first glance appears to be rather flat over the time period, the other countries all show similar patterns: Permanent immigration peaks in the early-1990s, and then declines thereafter. In fact, the United Kingdom and Canada both show similar trends; immigration increasing in the early- and mid-1990s, before decreasing in the latter part of the decade. In absolute numbers of permanent immigrants admitted, the United Kingdom and Canada account for the largest number, and by a substantial margin.

<< INSERT FIGURE 1 >>

Figure 2 presents these data in a slightly different way; showing the percentage change in permanent immigration from these same source countries for each year over the 1988 to 1998 period. Now the immigration patterns of Canada and the United Kingdom appear to be consistent with the other four countries. Thus, although the number of individuals migrating to the United States from Canada and the United Kingdom are much larger in each of the years compared to the other four countries, year-to-year changes in immigration have been consistent across all countries.

<< INSERT FIGURE 2 >>

One of the main concerns in Canada has been that Canadians who enter the United States, may not return to Canada. Thus, individuals who enter the U.S. on a temporary basis, may adjust their status to permanent resident while in the U.S. Again, it

is worth comparing Canada to the other G-7 countries. To do this we look at the number of adjustments of status relative to the total number of immigrants admitted from each source country.⁵ These data are the focus of Figure 3. Generally, with the exception of 1996, there is little noteworthy about the Canadian immigrants relative to those from other countries. In this year, the high proportion of adjustments amongst the Canadian-born was simply due to a large number of adjustments and a small number of new arrivals, both relative to the years preceding and following 1996 (see Appendix Table A-2). Again, compared to the other source countries, with the exception of 1996, there is nothing remarkable about the Canadian data. Figures 4 and 5 show that in year-over-year percentage changes, the Canadian data are consistent with those from other countries. These figures clearly show that in 1996 there was a large percentage increase in the numbers of Canadian adjusting status, and a contemporaneous drop in the number of new arrivals.

<< INSERT FIGURES 3-5 >>

Since there has been concern in Canada that a number of individuals have left Canada to work in the United States (on nonimmigrant visas) before adjusting to permanent resident status, this is worthy of further investigation. It should be noted, then, that in the mid-1990s the composition of Canadian immigrants changed. Now, a larger number were adjusting their status from temporary work, intracompany transferee, and other and unknown visa categories, perhaps due to individuals who entered under the

⁵ There are two main avenues to attain permanent resident status in the United States. The first is by adjustment of status. The second avenue is to apply through a U.S. mission outside of the United States. See footnote 3 above for details.

provisions of the NAFTA.⁶ Nevertheless, this may still not be an issue because of the fall in the number of new arrivals from Canada over the same period. Thus, although more recent permanent immigration may be the result of increasing adjustment of status rather than new arrivals, individuals who would have entered the United States previously as new arrivals, may now be changing to permanent resident status while residing in the U.S. The fact that the absolute number of Canadians granted permanent admission has been falling, coupled with the fact that patterns of permanent migration have closely mirrored the patterns of the other countries, suggests that this indeed may be what is happening. In other words, we simply see a movement of individuals between entry categories, without any real change in the *number* of migrants.

While aggregate permanent immigration numbers are useful, the concern in Canada is the type of migrant going to the United States. Here we are concerned with the *quality* of migrant flows, rather than the *quantity* (which was addressed above). There is great concern that highly skilled individuals such as managers, engineers, and physicians are leaving the country in unacceptably high numbers. Not only are these individuals among the most productive of all employees but, because higher education in Canada is publicly financed, they also leave with an education subsidized by Canadian taxpayers.⁷ Furthermore, the length of time necessary to train these professionals is generally long, meaning that labour shortages that result from the migration of these people may persist

⁶ This latter category (i.e., other and unknown) includes workers admitted under the provisions of the North American Free Trade Agreement. The section on temporary migration below will discuss this in more detail. Detailed data on adjustments of status are found in Appendix Table A-2.

⁷ This is especially problematic amongst young people leaving upon graduation from Canadian educational institutions, since the government has no way of recouping these education costs (through tax revenue). Furthermore, there is some evidence (Frank and Bélair, 1999), that those recent graduates who left for the United States were amongst the best and brightest in their graduating classes, so the likelihood that these people would ultimately earn higher salaries, and thus pay more taxes, was great. Thus, not only are these

for sometime.⁸ For these reasons, we must look at the occupational composition of these migrants.

The INS does keep records on the occupations of permanent immigrants admitted. The published data are aggregated into two large categories of skilled workers: executive, administrative, and managerial occupations, and professional, specialty, and technical occupations. Figures 6 and 7 show the percentage changes in the number of immigrants admitted in each of these categories. Again, the changes in the Canadian data are similar to those of the other five countries. In fact, toward the end of the period, growth in each of these occupational categories is negative for most countries, including Canada. In the case of Canada, however, this decline could be due to the increased popularity of temporary immigration visas, especially those granted to these occupational groups under the terms of the NAFTA. These will be discussed more fully in the next section.

<< INSERT FIGURES 6 & 7 >>

B. Temporary Immigration

Although permanent immigration implies an individual's desire to remain resident in the United States for an indeterminate length of time, a look at the temporary immigration statistics is also a worthwhile exercise for three main reasons. First, the temporary flow of migrants to the United States could still represent a loss of human capital. This reduces production in Canada and decreases the tax receipts of various levels of government. Of course, if these individuals gain useful skills and knowledge while in the U.S., the effect could be to enhance the Canadian productivity and tax

tax revenues being lost, but also a higher-than-average amount of revenue is likely being foregone when these individuals leave the country.

revenues. Second, the line has been blurred between temporary and permanent migration. As temporary work visas have become easier to renew and extend, they have become increasingly important as a means of entering the United States.⁹ Although temporary work visas are inferior to permanent resident status for a number of reasons (e.g., money and time costs of entering the United States may be high, limited ability of family members to obtain employment, etc.), these do offer individuals a means of remaining in the United States for long periods of time. This can be especially important given the large backlog of pending adjustment of status applications. Third, temporary immigration status in the United States may be a means by which individuals are able to become permanent residents of the country. As is evident from the evidence presented above, the number of individuals who have been adjusting their status from temporary visas to permanent immigrant status has shown an upward trend for all countries in the 1990s. Furthermore, as noted by both DeVoretz and Laryea (1998) and Globerman (1999), the percentage of temporary Canadian migrants with intracompany transferee visas that have been changing to permanent resident status has increased throughout the 1990s. For these reasons, looking at the number of temporary immigrants, especially those in managerial and professional visa categories, might be useful in determining whether temporary immigration could turn into permanent immigration at some time in the future. As mentioned above, however, the INS records on nonimmigrants count

⁸ Zhao, Drew, and Murray (2000) argue that the number of educated individuals entering Canada equals, and even, in some cases, exceeds, the number of individuals leaving Canada so that Canada is a net beneficiary of international migration.

⁹ The TN (or NAFTA) visa, for example, is obtained at the port of entry by supplying U.S. immigration officials with appropriate credentials, a letter from the U.S.-based employer, and a small fee. This compares to other visa categories which can take a number of weeks to be issued through U.S. missions in Canada or abroad, and then only after extensive paperwork is filed by the employer. The importance of this type of visa is highlighted in a recent survey by Frank and Bélair (1999). The authors note that that

admittances, not individuals. Insofar as each individual enters the country an average of more than one time per year, the figures presented below are likely to overestimate the number of individuals. Still, these data are the best available and, as long as the biases in counting are stable over time and between countries, they still may prove useful in ascertaining trends in temporary migration.

Figure 8 shows the total number of nonimmigrants admitted to the United States from each of the six source countries.¹⁰ The numbers over this seven-year period show an upward trend for each country.¹¹ For Canada, the increase over this period was over 90 per cent, the largest increase for all countries (see Appendix Table A-4). After 1994, however, the growth in Canadian temporary migration does not increase (and actually declines slightly), whereas the numbers from all other countries continue to increase.

<< INSERT FIGURE 8 >>

Just as in the case of permanent migration, there are a number of different avenues via which individuals can enter the United States on a temporary basis. The most important visa categories, both numerically and for public policy purposes, for Canadian migrants are the H1B (workers with specialty occupations), L1 (intracompany transferees), and TC/TN (NAFTA workers).

Figure 9 outlines the number of admittances under the H1B category for citizens of each country from 1990 through 1996. The patterns for all six countries are similar in direction; each shows a decline in the middle of the period and then increases thereafter.

about 80 per cent of 1995 post-secondary graduates from Canadian schools who went to the United States entered as temporary residents, and some 57 per cent of these entered the U.S. under the NAFTA.

¹⁰ It should be noted that these nonimmigrant data are by citizenship and not country of birth (as was the case with the permanent immigrant data). Given the high correlation between country of birth and country of citizenship for the six countries under consideration here, this shortcoming in these data should not alter the results of the present analysis.

In percentage terms, over the period the number of Canadian admittances under this category fell, while increasing for all other countries with the exception of Japan.

<< INSERT FIGURE 9 >>

Figure 10 shows a similar upward trend for all countries in the number of admittances under the L1 visa class. These trends, however, are least pronounced for Canada, which registered an increase of almost 68 per cent. This compares to the other countries which all had triple-digit increases; Germany, in fact, had over a 200 per cent increase (see Appendix Table A-4).

<< INSERT FIGURE 10 >>

Another visa category, which is unique to Canada in our sample, is the TN visa category. The predecessor of this category (i.e., TC) was established under the terms of the Canada-U.S. Free Trade Agreement. This agreement was then expanded to include Mexico in the North American Free Trade Agreement (NAFTA) and the visa category renamed TN. In either case, it allows appropriately credentialed individuals to work in the other member countries if these individuals meet certain criteria (e.g., generally they must have a university education, work in certain occupations, etc.). The aim of this provision in both trade agreements was to facilitate the movement of business people and other professionals as the economies of the three countries have become more closely integrated. Indeed, the number of admittances under this category has increased dramatically in six years; a 406 per cent increase from 5,293 admittances in 1990 to 26,794 in 1996 (Appendix Table A-4). While this increase appears impressive, it should be noted again that this increase is in the number of visas issued, and may not reflect the

¹¹ Unfortunately, unlike data on permanent migration, which is available through FY 1998, INS figures on temporary migration are only available up to FY 1996.

number of individuals entering the U.S. under this category. Part of this increase is also due to the ease of obtaining this visa vis-à-vis other visa categories (e.g., H1B and L1). We have seen above that that number of admittances of Canadians under the H1B category has declined over this same period, while the number admittances under the L1 category has risen by relatively less than admittances from the other G-7 countries. Furthermore, as noted previously, in the 1990s U.S. immigration enforcement changed so as to require visas of all foreigners doing business in the U.S. This is likely responsible for at least part of the increase in temporary admittances from all source countries. In the case of Canadians, who are more involved in commerce with the U.S. than any other country, the effect is magnified. And since the TN visa is the easiest to obtain since it does not require the labour certification and employer petitions involved with some other visa categories, it seems quite reasonable to hypothesize that the massive increase in the issuance of TN visas could be due largely to this phenomenon.

IV. Conclusions

It has been the intention of this paper to document migration from G-7 countries to the United States over the 1990s. The reason for this exercise was to ascertain whether other countries are similar to Canada in sending many of their most skilled individuals to the United States, or whether this is a purely Canadian public policy issue. Although the data from the INS are less-than-ideal for studying these movements of people, we can still offer some preliminary conclusions.

Changes in permanent migration to the United States from Canada in the 1990s show a similar pattern to that from other G-7 source countries. In terms of the yearly changes in the total number of permanent immigrants, as well changes within various

occupational categories, the Canadian data do not display markedly different trends from the other countries.

Relative to the other countries under consideration, temporary visas issued to Canadians have increased at a faster rate than for any other G-7 country. The increase in the total number of temporary visas might be a cause for concern, mainly because of the increased proportion of these individuals adjusting to permanent resident status, which implies an increased likelihood of remaining in the United States. Still, there is no guarantee that these individuals will choose to stay and work in the United States since there are also other reasons for obtaining permanent resident status (e.g., ease of entry compared to temporary visas, ability to switch employers, etc.). In addition, the number of visas issued to Canadians entering under the terms of the NAFTA has increased dramatically in the 1990s, but this has been mitigated somewhat by a decline in the number of other temporary visas issued. Furthermore, with the increased integration of the North America market, an increase in the number of Canadians entering the U.S. is to be expected. Since the INS counts temporary admittances, and not people, we cannot be sure how many individuals are represented by these temporary visas, nor how long these individuals remain in the United States. In short, we cannot accurately count the number of people going to the United States temporary, nor do we know how long they remain in that country. We can say that other G-7 countries have experienced patterns of temporary migration to the U.S. consistent with Canada.

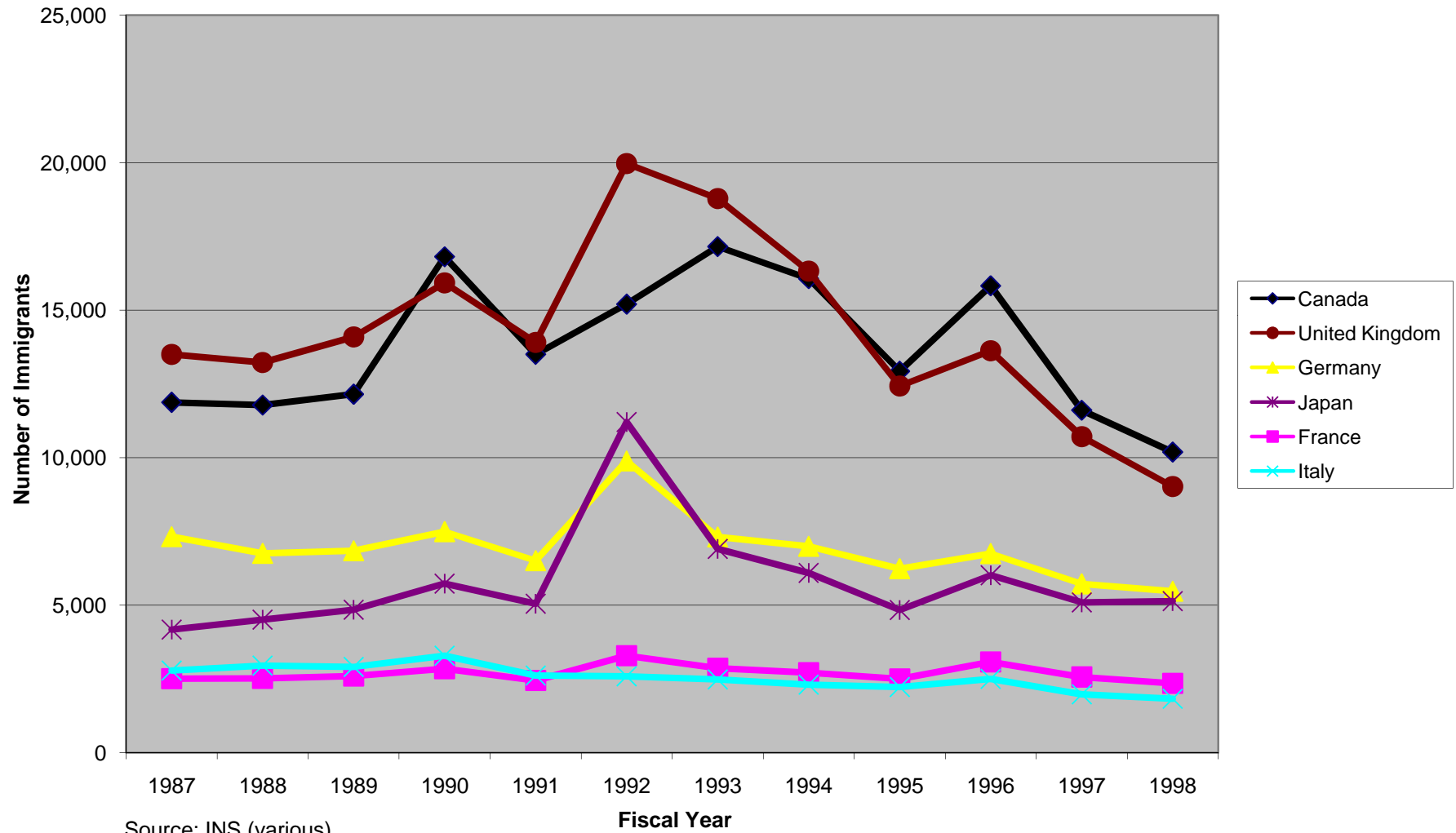
In sum, if Canadian permanent and temporary migration to the United States is viewed in isolation, one might conclude that a brain drain did in fact occur in the 1990s. However, upon comparing the Canadian experience to that of other countries, we see

similar trends in both types of migration. In other words, if Canada is in fact experiencing a brain drain, so too are other G-7 countries. The fact that migration patterns between countries are related, also suggests that a closer look be taken at U.S. policy, rather than the policies of any individual country which might promote migration. We await the availability of the public use data from the 2000 U.S. Census to assist in a more detailed analysis of these issues.

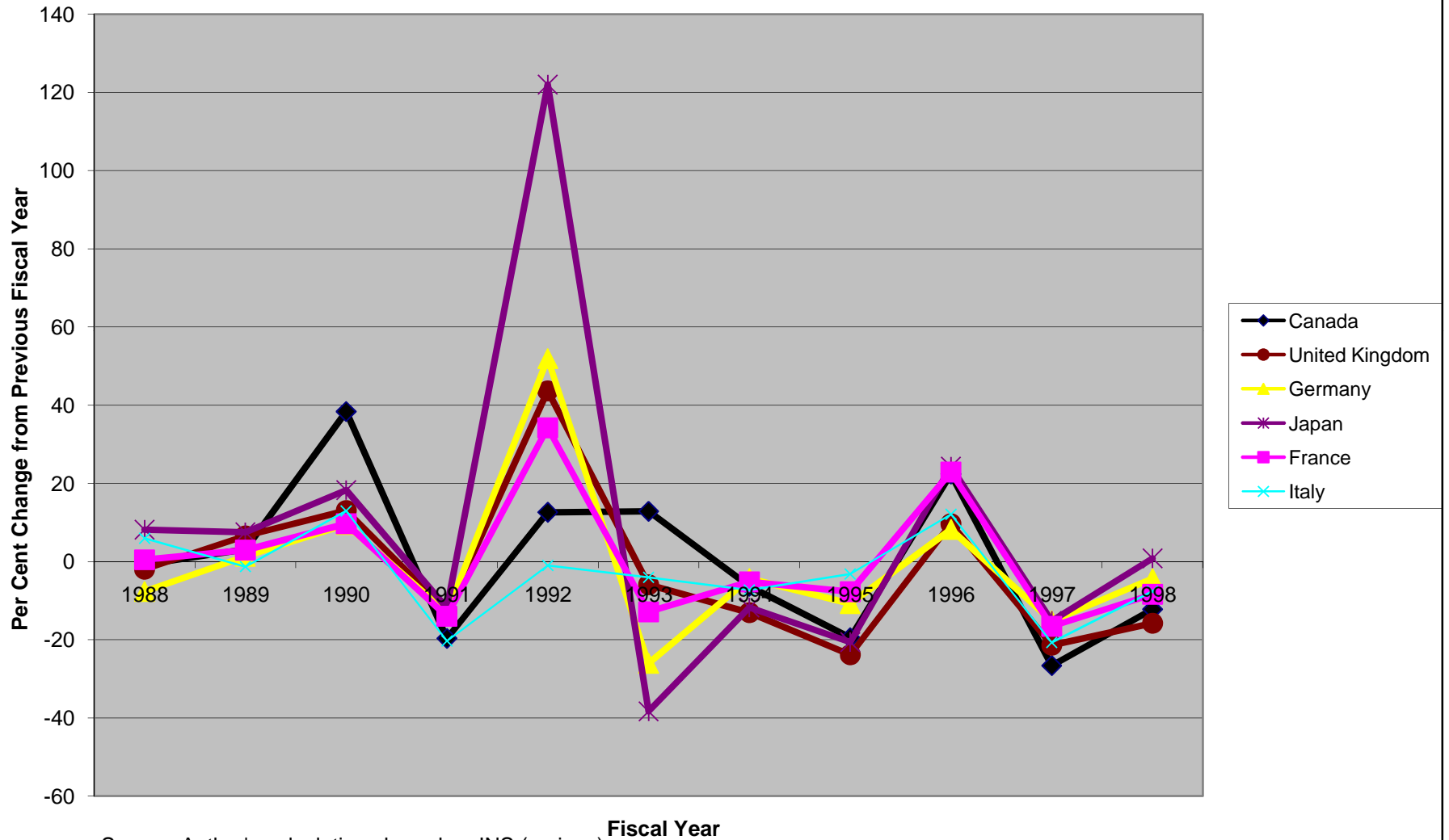
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**Figure 1: Total Number of Immigrants Admitted,
by Country of Birth, Fiscal Years 1987-98**



**Figure 2: Year-Over-Year Changes in Permanent Immigration
by Country of Birth, 1988-98**



Source: Author's calculations based on INS (various).

Figure 3: Adjustments of Status as a Percentage of Total Immigrants Admitted, by Country of Birth, 1990-98

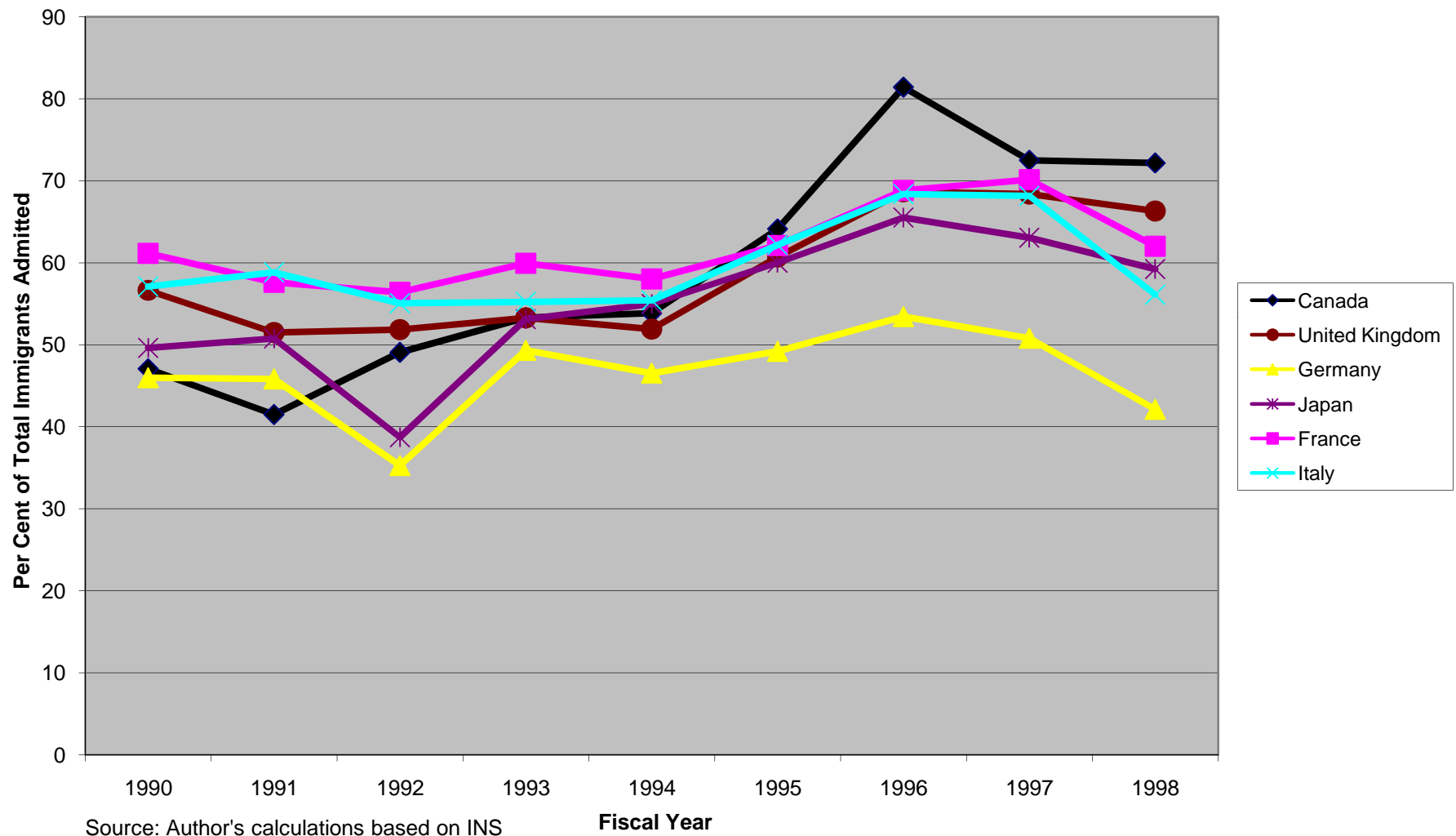
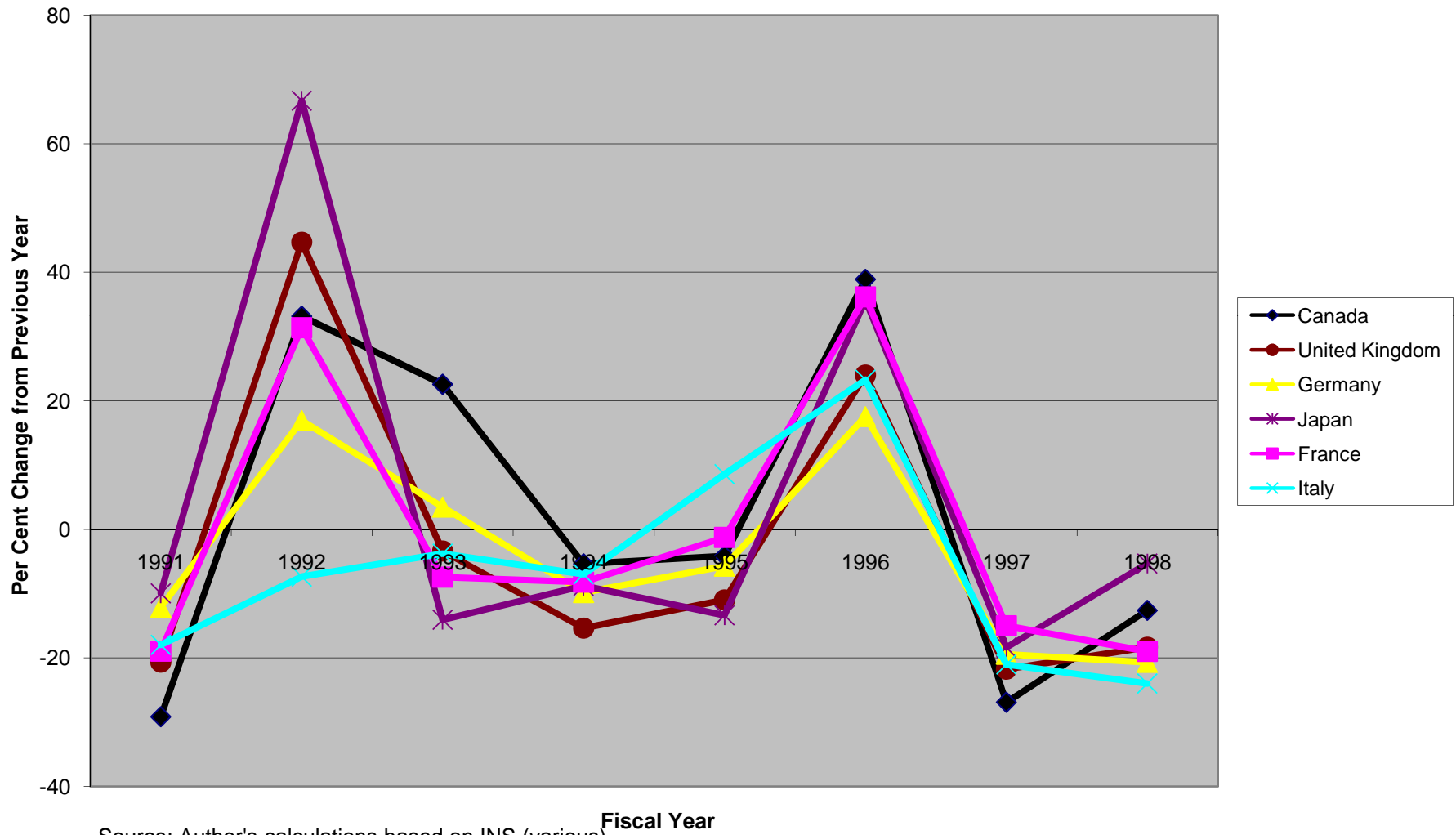
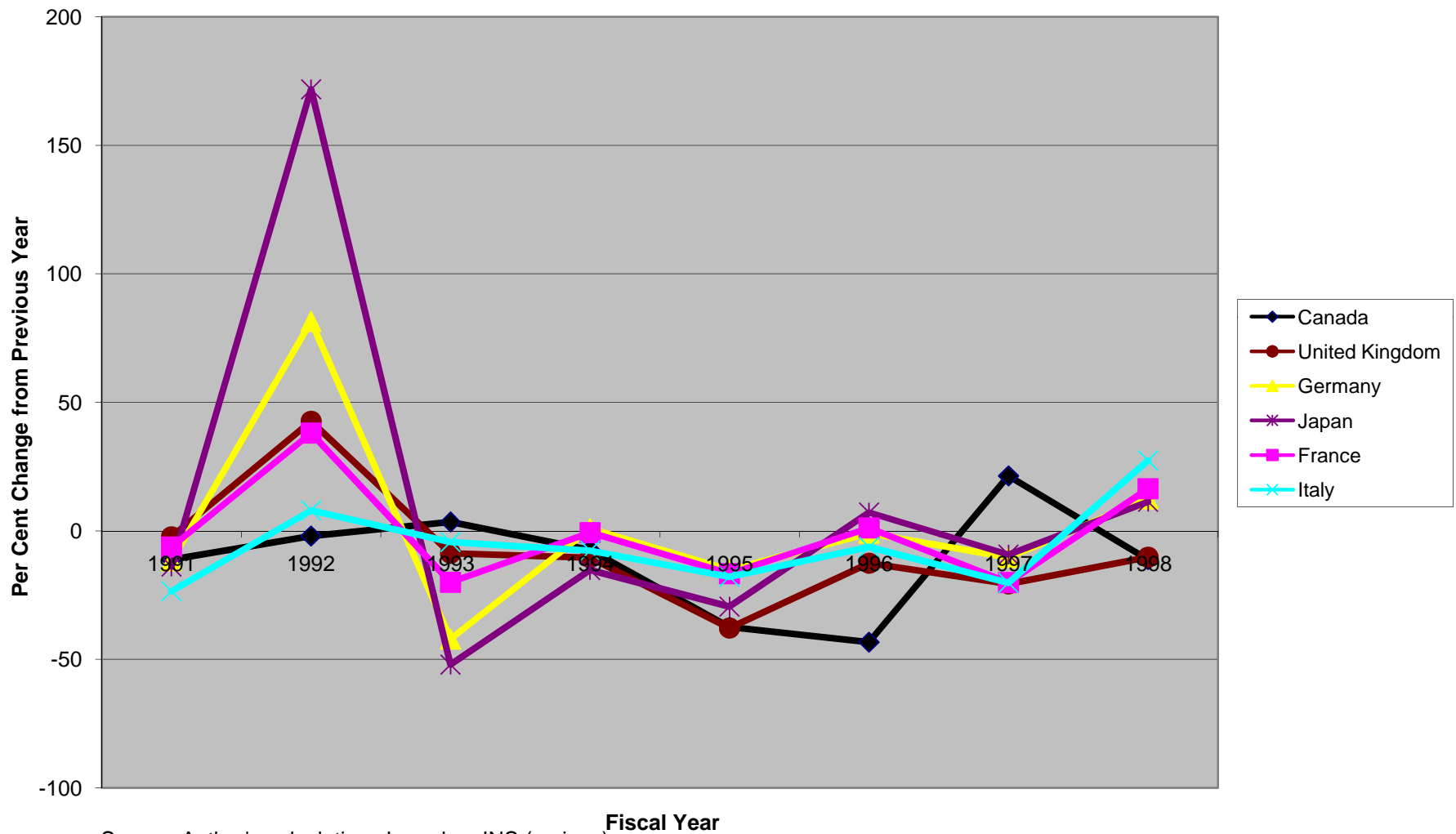


Figure 4: Year-Over-Year Changes in Adjustments of Status, by Country of Birth, 1991-98



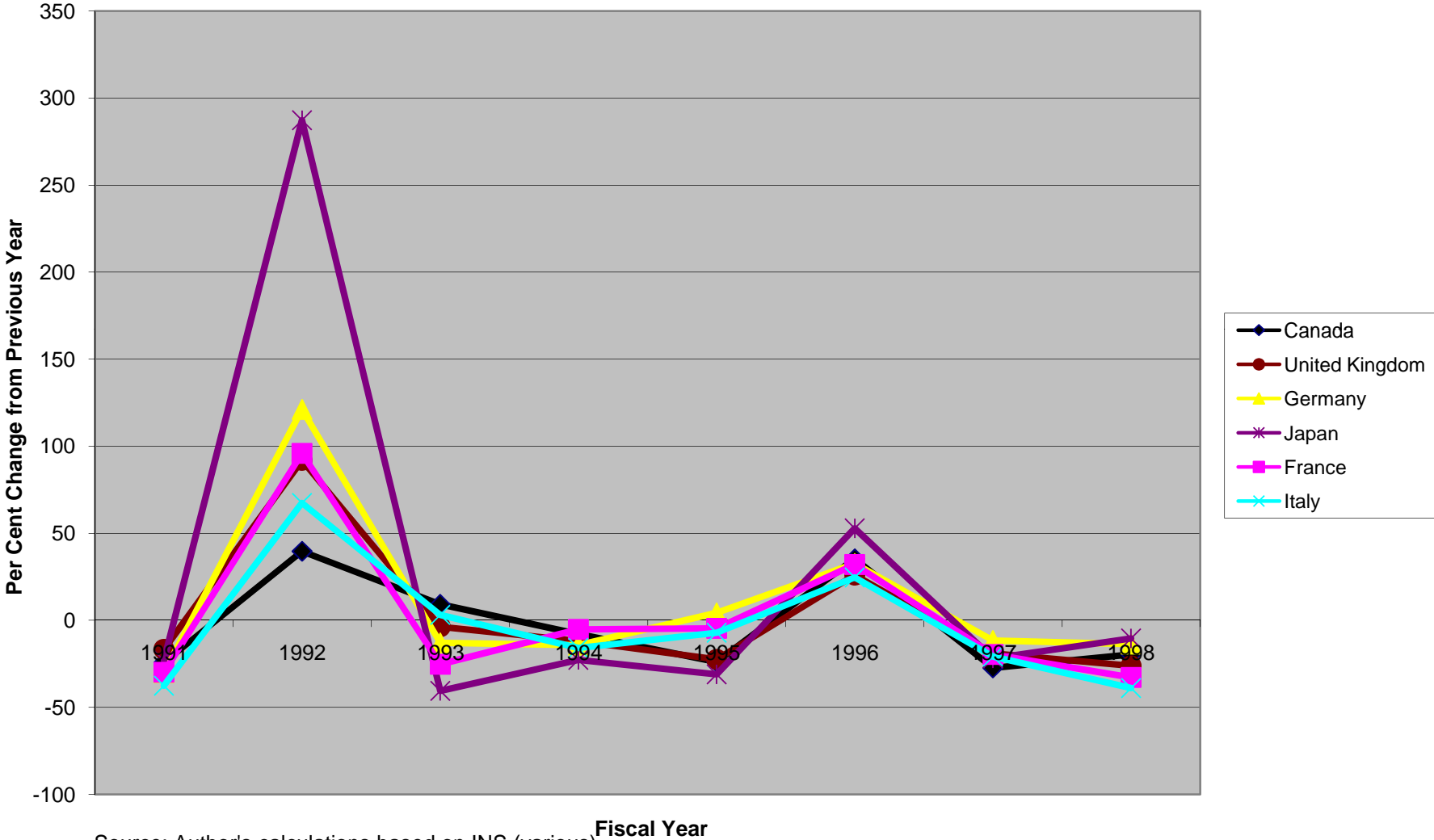
Source: Author's calculations based on INS (various).

Figure 5: Year-Over-Year Changes in New Arrivals, by Country of Birth, 1991-98



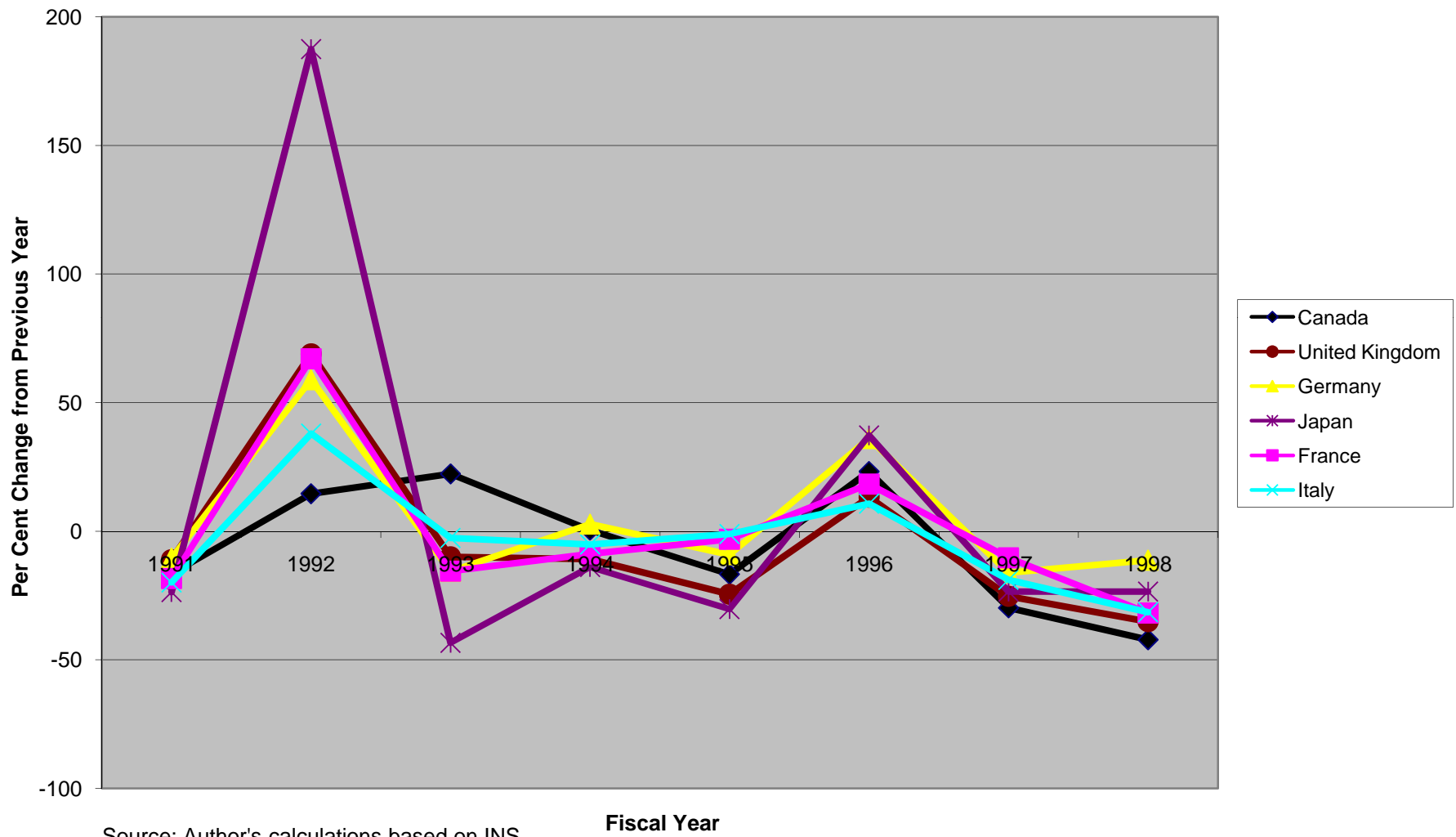
Source: Author's calculations based on INS (various).

Figure 6: Year-Over Year Changes in Immigrants Admitted in Executive, Administrative, and Managerial Occupations, by Country of Birth, 1991-98



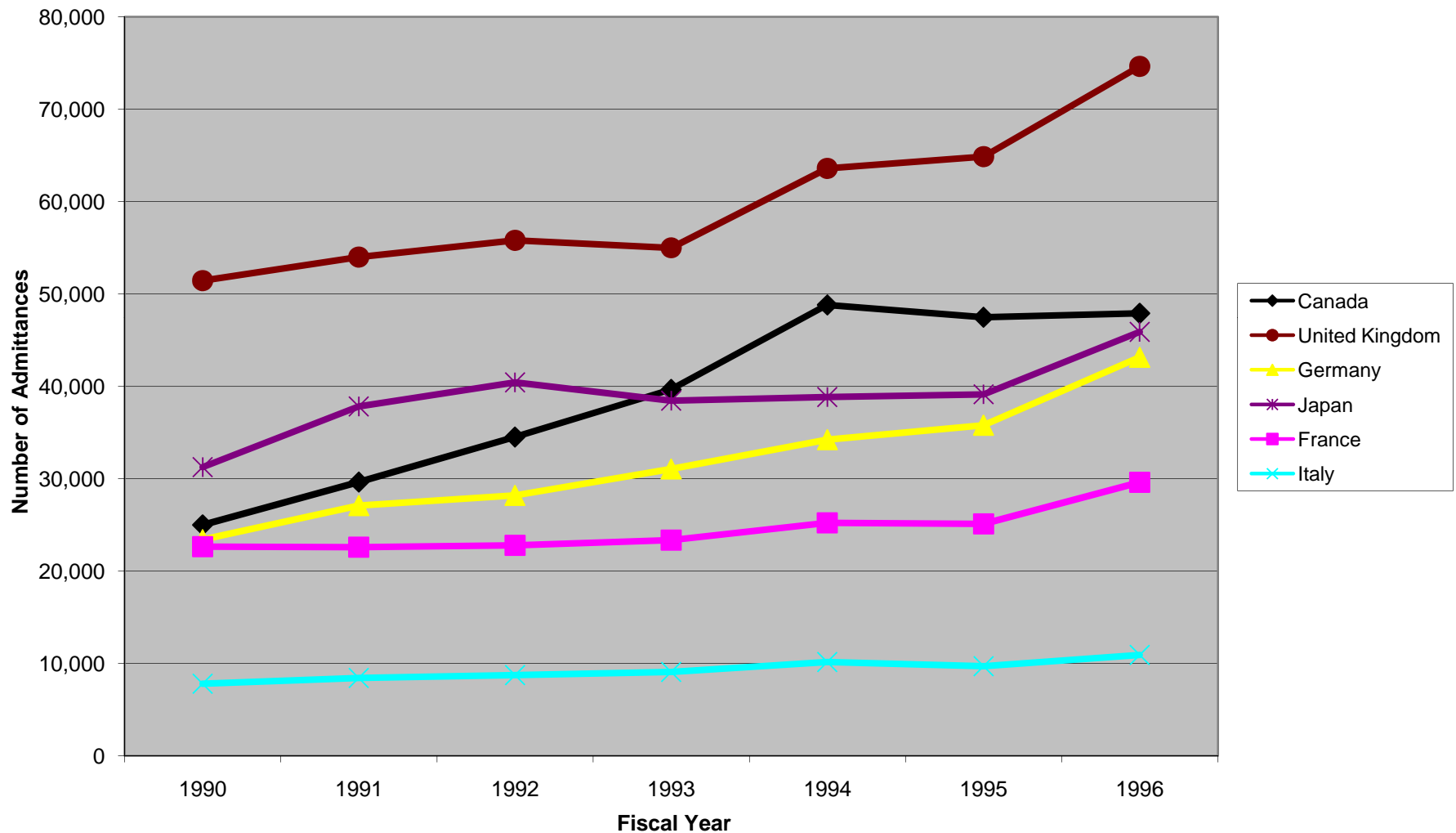
Source: Author's calculations based on INS (various).

Figure 7: Year-Over Year Changes in Immigrants Admitted in Professional, Specialty, and Technical Occupations, by Country of Birth, 1991-98



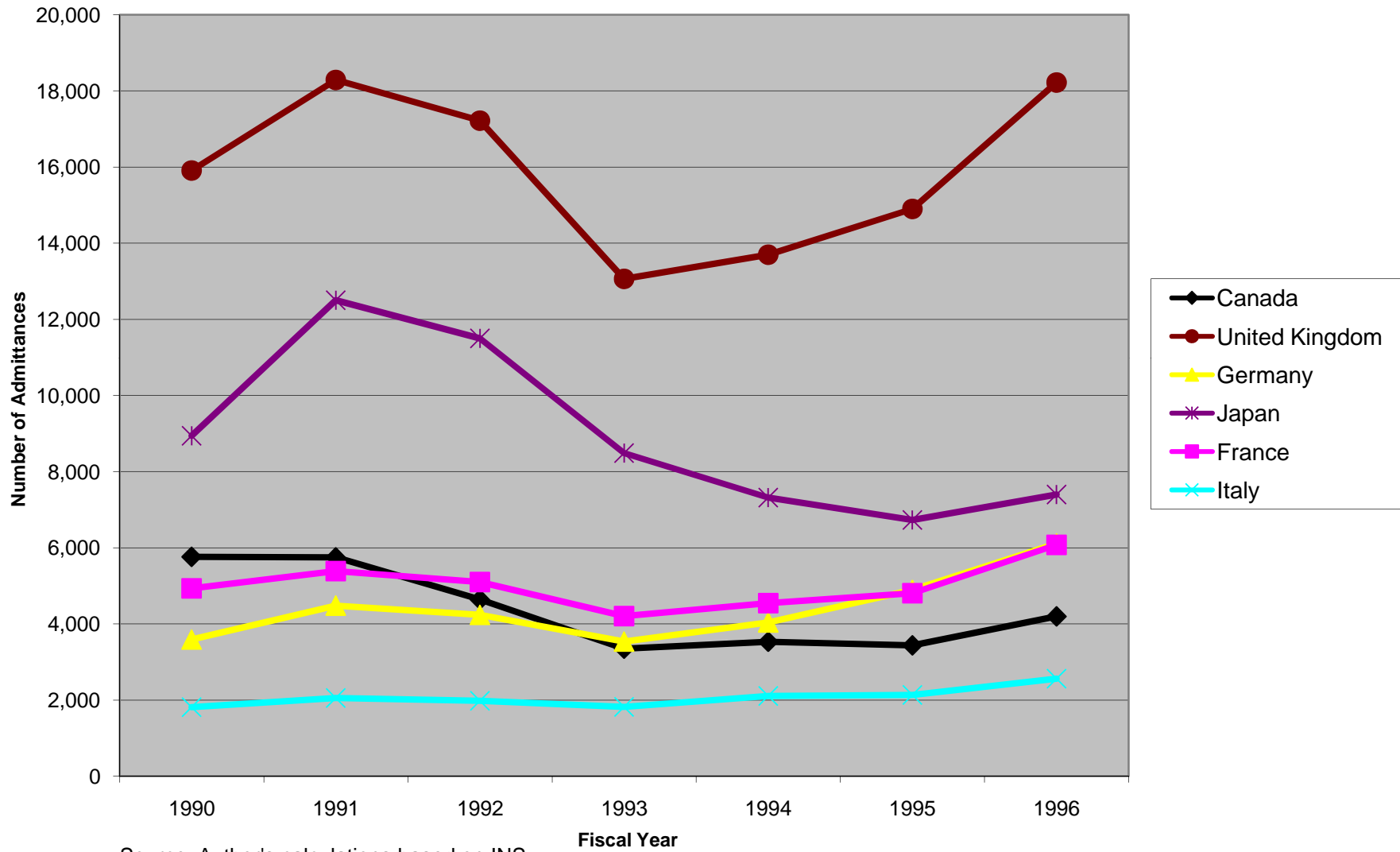
Source: Author's calculations based on INS

Figure 8: Total Nonimmigrant Admittances, by Country of Citizenship, 1990-96



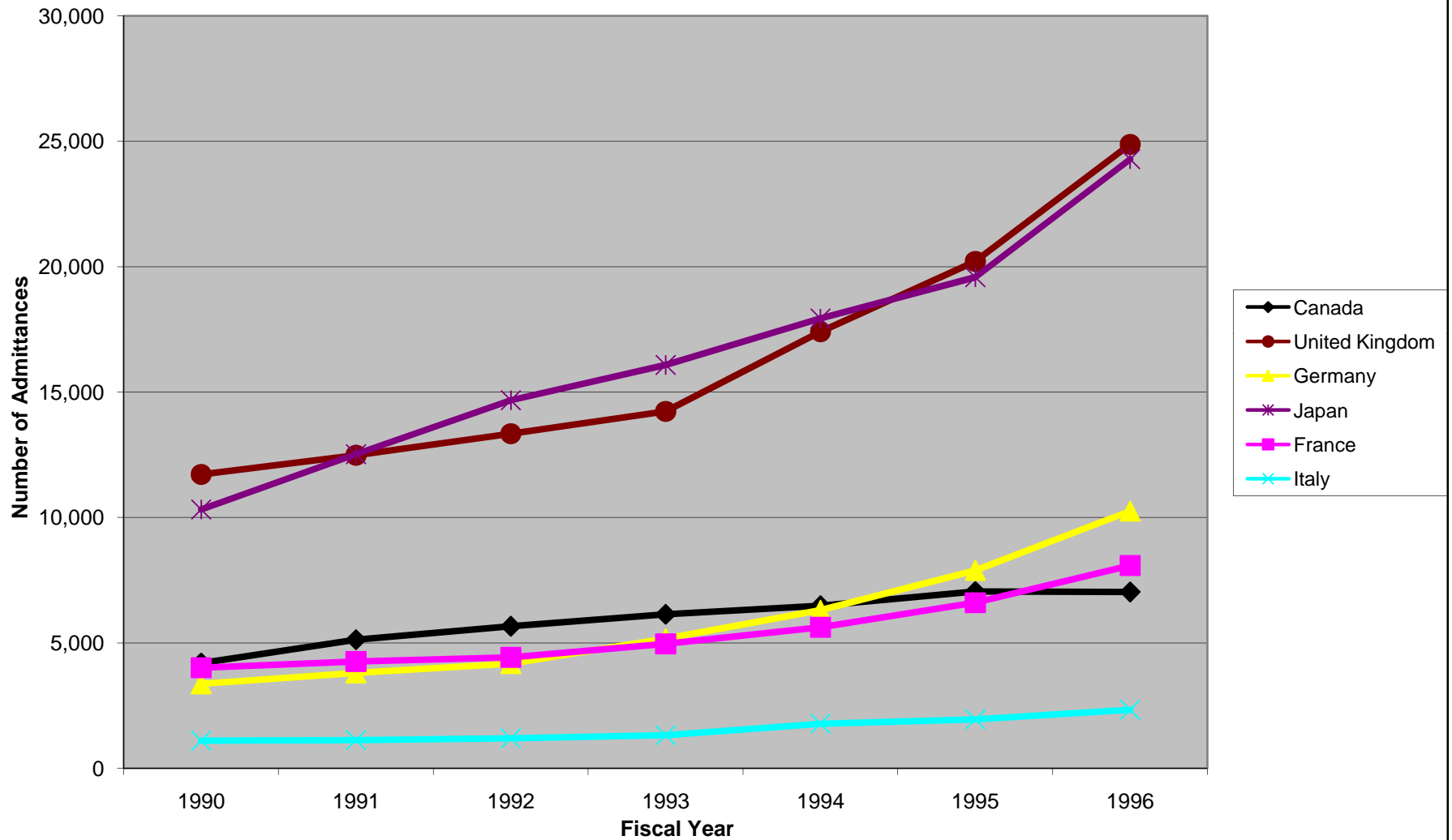
Source: Author's calculations based on INS (various).

Figure 9: Number of Admittances Under the H1B (Specialty Occupations) Visa Class, by Country of Citizenship, 1990-96



Source: Author's calculations based on INS

Figure 10: Number of Admittances Under the L1 (Intracompany Transferee) Visa Class, by Country of Citizenship, 1990-96



Source: Author's calculations based on INS (various).