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Rural youth migration between 1971 and 1996

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Highlights

- All provinces lost youth from their rural areas between 1971 and 1996. The greatest loss was in Saskatchewan and in the four Atlantic Provinces, particularly in Newfoundland and in Prince Edward Island. The provinces with the smallest loss of rural youth were Alberta and British Columbia.
- Urban areas gained youth in all provinces except in the Atlantic Provinces. Urban areas in Alberta showed the largest gains. In the Atlantic Provinces, urban areas lost youth in Newfoundland and in Prince Edward Island, but only in some age groups. In Nova Scotia and New Brunswick, the urban youth population appears stable.
- Alberta had the strongest rate of provincial in-migration of young adults. Ontario and British Columbia also have provincial in-migration of young adults.

Introduction

Although youth migration has been a popular subject in recent years, little research has focussed on the migration between rural and urban areas. Most of the research has concerned inter-provincial migration. In this bulletin, we consider the magnitude of both rural – urban migration and inter-provincial migration between 1971 and 1996 using population pyramids

The age structure of a population reflects the results of birth rates, death rates and migration rates in a particular geographic area. The age structure of the population in a given geographical area is typically driven by the number of births over time as the number of births is usually greater than the number of deaths and the rate of migration.

The impact of migration is often difficult to determine by looking at a population pyramid at a given point in time. However, if we compare population pyramids between two points of time, we can infer the impact of migration. The purpose of this paper is to compare the population age structure over time to determine the impact of migration on the population age structure in rural and small town areas.

Definition of Rural and Small Town (RST) Canada

RST refers to the population living outside the commuting zones of larger urban centres (LUC) - specifically, outside Census Metropolitan Areas (CMAs) and Census of Agglomerations (CAs). A CMA has an urban core of 100,000 or over and includes all neighbouring municipalities where 50 percent or more of the work force commutes into the urban core. A CA has an urban core of 10,000 to 99,999 and includes all neighbouring municipalities where 50 percent or more of the work force commutes into the urban core. Thus, RST Canada represents the non-CMA and non-CA population. It includes all the residents outside the commuting zones of larger urban centres.

Note that the geographic boundaries of rural and small town areas are changing over time (Mendelson and Bollman, 1998a and 1998b). Thus, we will show the population pyramid in terms of the proportional structure of the population (i.e. by taking each bar as a percent of the total) rather than by showing each bar in terms of the absolute number of individuals.

Population pyramids

A population pyramid is a common way to portray the age structure of the population in a given area. Each (horizontal) bar shows the percent of the population in each age group, with each gender shown at each end of the bar. In a growing population, the lower bars (i.e. the younger age groups) are longer because there are more young people than older people. If all the bars were essentially the same length, then the population would not be growing because each younger age group would be replacing an older age group of (essentially) the exact same size.

Population pyramids for rural and small town Canada

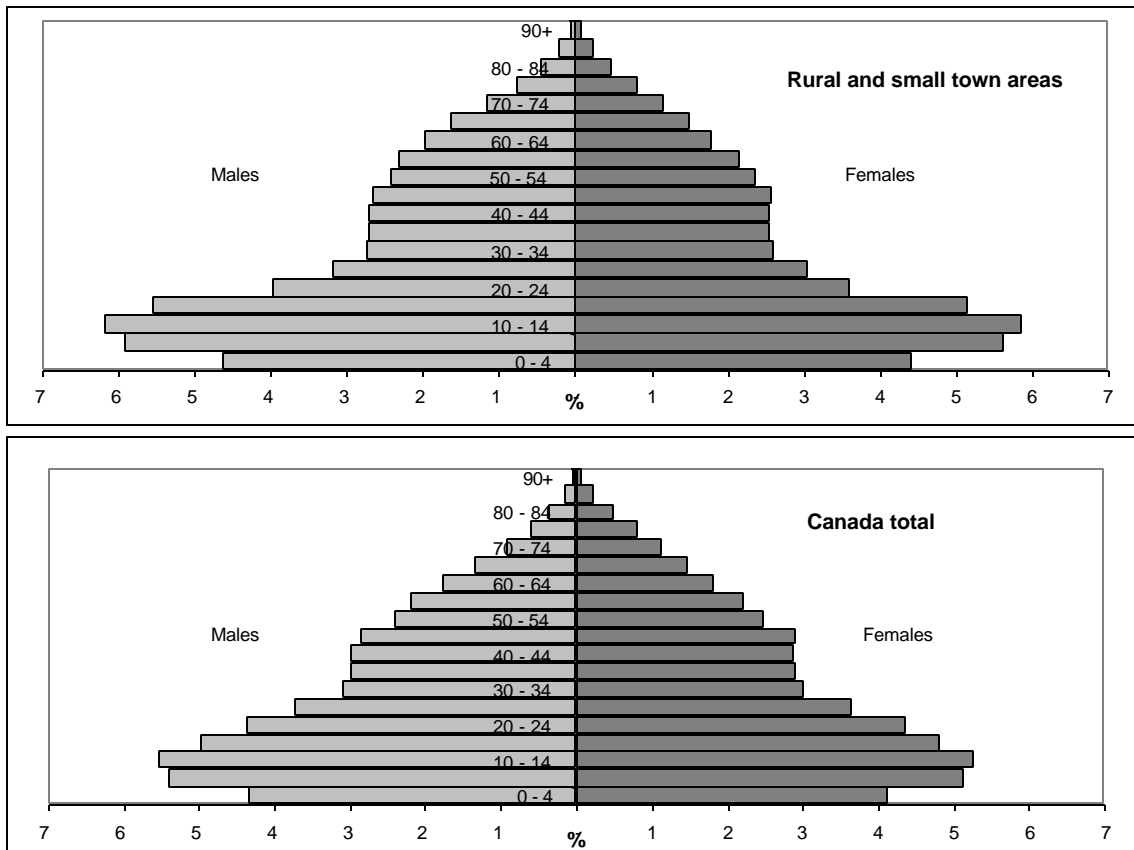
When we compare the population pyramid for the rural and small town population to the population pyramid for the overall population, we can offer a few general conclusions:

- first, in both rural and small town areas and in the total population, there was a baby boom of individuals – aged 5 to 25 in 1971, or born between 1946 and 1966 (Figure 1);
- sometimes we can see that rural and small town areas have relatively fewer individuals of a given age group relative to the population as a whole. For example, by comparing the population structure for RST areas in 1971 to the overall Canadian population structure, one sees that the RST population has a smaller proportion of individuals who are 20 to 24 and 25 to 29 years of age (Figure 1). Moving to the 1981 example, we see that that the RST population has a smaller proportion of individuals in the 20 to 24 age group (Figure 2). In a final example, in 1996 we again see a smaller proportion of RST individuals who are 20 to 24 and 25 to 29 years of age, compared to the overall Canadian

population (Figure 3). Is this due to migration?¹ Will these individuals return to RST areas?

Thus, we can see that rural areas tend to have relatively fewer young adults than urban areas. However, it is difficult to determine the size of the magnitude of this apparent gap without further analysis. Specifically, how many young adults would we have expected to find in RST areas?

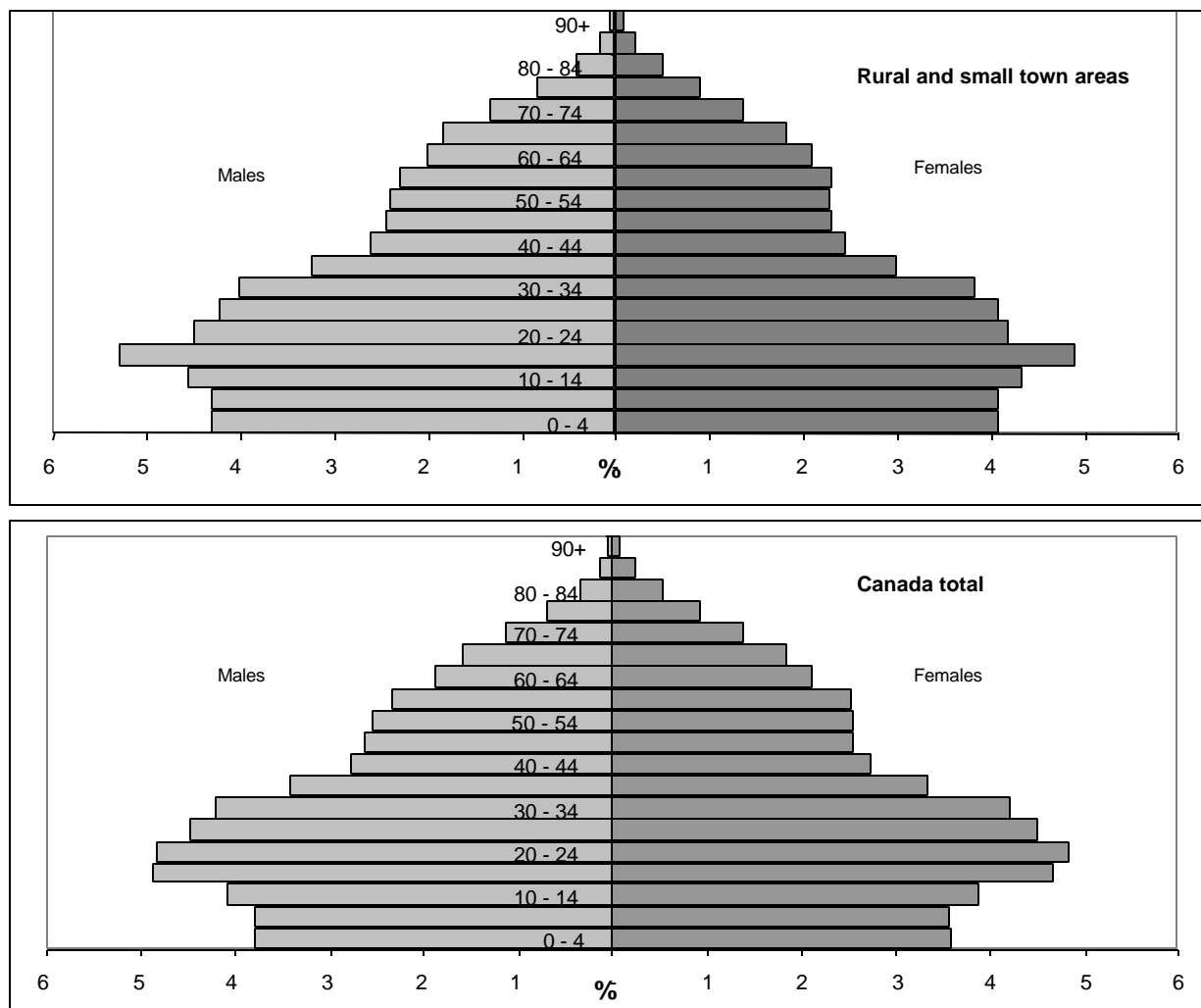
Figure 1. Population pyramids, Canada, 1971



Source: Statistics Canada. Census of Population, 1971
Rural and small town refers to the population outside the commuting zone of Census Metropolitan Areas (CMAs) and Census Agglomerations (CAs).

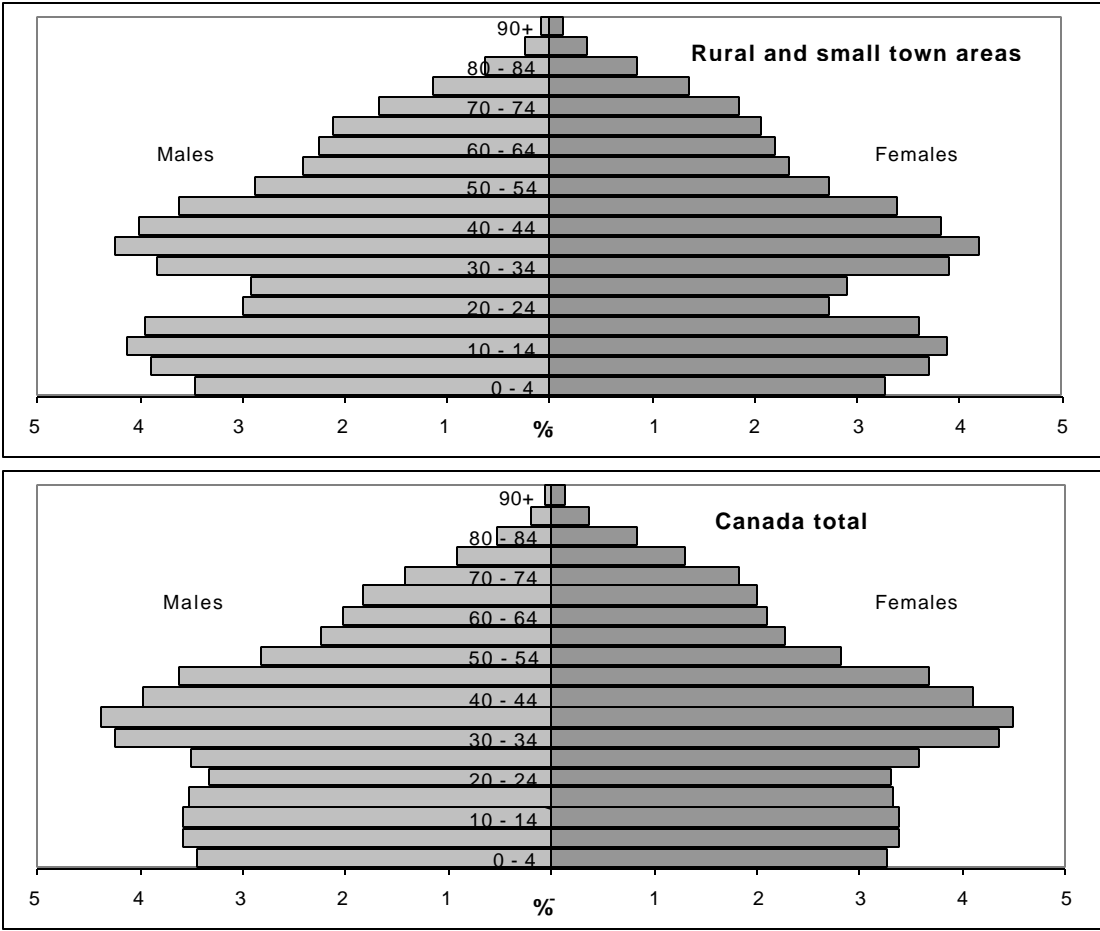
¹ If we had only one pyramid to analyse, we could not rule out the possibility that lower rural birth rates were a factor.

Figure 2. Population pyramids, Canada, 1981



Source: Statistics Canada. Census of Population, 1981.
 Rural and small town refers to the population outside the commuting zone of Census Metropolitan Areas (CMAs) and Census Agglomerations (CAs).

Figure 3. Population pyramids, Canada, 1996



Source: Statistics Canada. Census of Population, 1996.
 Rural and small town refers to the population outside the commuting zone of Census Metropolitan Areas (CMAs) and Census Agglomerations (CAs).

Comparing population pyramids over time

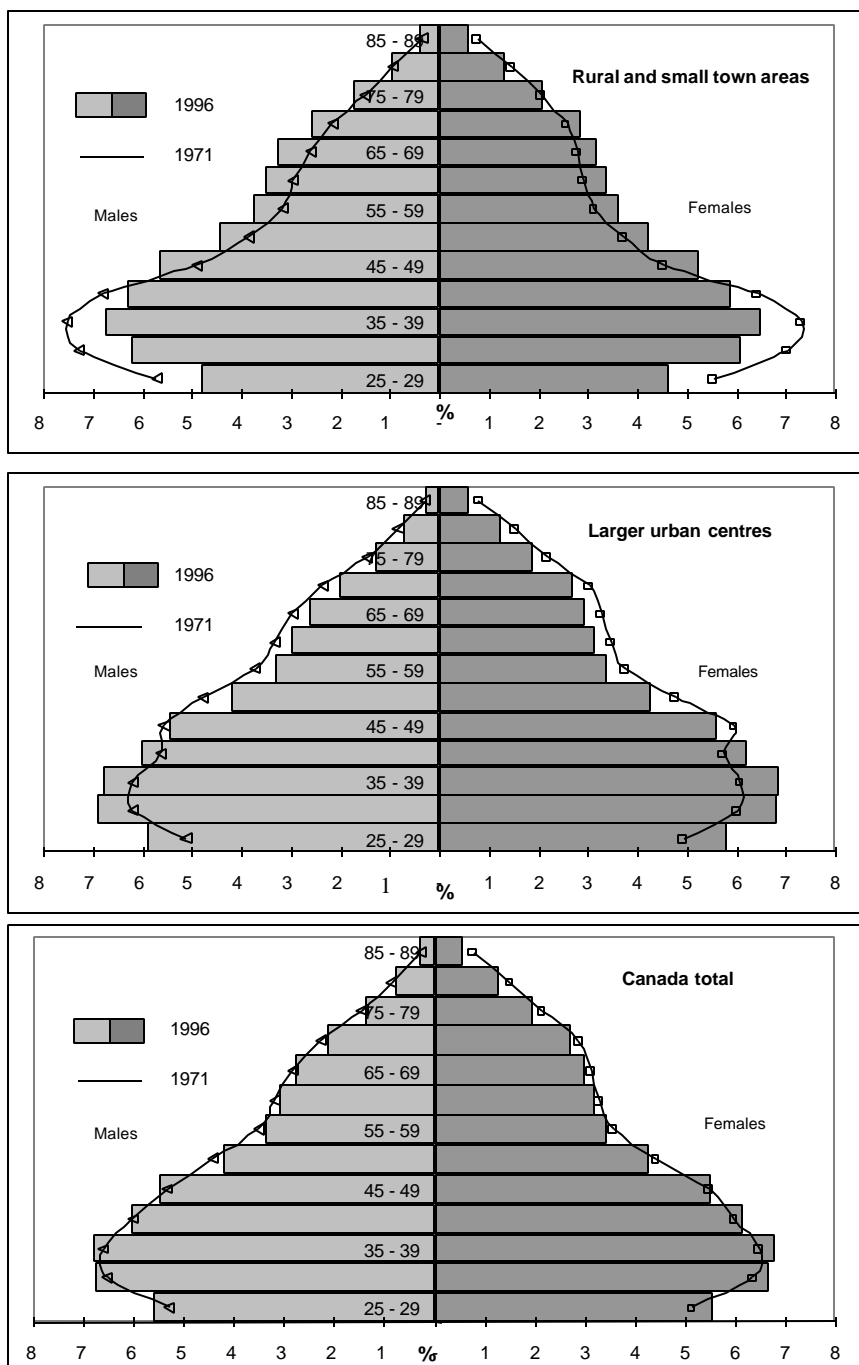
For countries or regions with constant boundaries, analysts typically can compare the absolute numbers of individuals in each age cohort² over time to determine the impacts of death, in-migration and out-migration. Due to the changing boundaries of rural and small town areas (see Mendelson and Bollman 1998a and 1998b), in order to do our analysis, we have calculated the relative or proportional age structure in rural and urban areas for two periods. Specifically, we use the 1971 age structure to indicate or to predict the age structure in 1996. We then compare the “predicted” 1996 age structure with the “actual” 1996 age structure in order to infer the impact of migration on the 1996 age structure. We followed the following steps:

1. Individuals over 65 years of age in 1971 were removed from the calculation as they would be over 90 years of age in 1996 and a very small proportion of the population lives to be 90 years of age. Thus, the 6 oldest age groups have been removed from the 1971 pyramid.
2. Individuals under 25 years of age in 1996 were removed from the calculation as they would not have been born in 1971. Thus, the youngest 5 age groups have been removed from the bottom of 1996 pyramid. We also removed the people aged 90 years and more in order to have the same number of age groups in each of the 1971 and 1996 pyramids. Also, the group of individuals over 90 years of age is an open-ended class with a small number of individuals making the estimates less precise.
3. For each 1971 age class from 25-29 years of age to 60-64 years of age, we calculated, at the national level, the share of individuals within each age and gender class who died between 1971 and 1996. This allowed us to more closely “predict” the expected age structure in 1996, including the impact of death but excluding the impact of migration. We applied this Canada-level “mortality rate” (i.e. the share of individuals in each 1971 age and gender class that had died by 1996) to both the LUC and the RST populations in each province.
4. In each of 1971 and 1996, we used the data that had been corrected for census under-coverage.

Thus, with this calculation, we were able to estimate the expected age structure in 1996 that would have been generated from the 1971 resident population (that was under 65 years of age). We superimposed the “expected” 1996 age structure (as calculated above from the 1971 data) (represented by the lines in Figure 4) on top of the actual structure for the 1996 individuals who were over 25 years of age (see the bars in Figure 4).

² An « age cohort » refers to the group of individuals born during a specific time period. For example, the individuals who were born during the 1961 and 1966 time period would be 5 to 9 years of age in 1971 and 30 to 34 years of age in 1996 – these individuals are members of the same age cohort.

Figure 4. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Canada



Source: Statistics Canada. Census of Population, 1971 and 1996.
 Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

It is common for rural youth in age classes from 15 to 25 years of age to leave their communities to pursue further education or to obtain employment experience. By choosing to compare two periods that are 25 years apart, we hope to avoid the impact of temporary or voluntary out-migration by rural youth – a 25 year time span will essentially compare the proportion of individuals 0 to 4 years of age (in 1971) with the proportion of individuals 25 to 29 years of age (i.e. 25 years later in 1996). This will indicate the degree of “permanent” out-migration from RST areas.

Rural youth exodus

In rural and small town areas, the lines (i.e. the expected 1996 structure calculated from the 1971 structure) show that more young adults (25 to 44 years of age) are expected in the 1996 population than are found in 1996 (Figure 4). Thus, there was a rural youth exodus (net out-migration from RST areas) for youth who were under 19 years of age in 1971. These individuals would be young adults (25 to 44 years of age) in 1996 and we find proportionally fewer than would be expected from the 1971 population structure.

Note that the lines in Figure 4 show that fewer older folks are expected than the actual bars show for 1996. This is partly a statistical artefact. If we find proportionally fewer young adults in 1996 than we expect, then we *must* find proportionally more older adults in 1996 (because our percent calculation adds to 100 percent). However, part of this result may also be due to the (return) migration of older adults to RST areas.

At the Canada level, we see an exodus from rural and small town areas for each of the four youngest age groups, and especially for the three youngest age groups (Figure 4). The exodus is similar for men and for women, which is not the case in all provinces. As expected, the pattern for larger urban centres is the inverse of the RST pattern. In the Canada total graph, we see some international immigration into the younger groups, with a similar pattern for men and for women. However, international immigration has a much smaller impact than inter-regional (i.e. rural to urban) migration.

Differences in rural—urban migration among the provinces

Among the provinces, Quebec, Ontario and Manitoba show a rural—urban migration pattern similar to the overall Canadian pattern (see Figures 5 to 14 for the provincial patterns). Some provinces exhibit a stronger rural exodus, mostly among the Atlantic Provinces. Other provinces, such as Alberta and British Columbia, show a less pronounced rural exodus compared to the overall Canada-level pattern. In the Atlantic Provinces, an exodus is also present in the larger urban centres. Thus, there is out-migration from each Atlantic province, a situation that also exists in Saskatchewan.

Newfoundland and Prince Edward Island appear to have the strongest rural exodus among the provinces. In Newfoundland, the exodus is concentrated in the three youngest

groups – the difference between the expected and the actual share for the 40 to 44 age group (in 1996) is smaller than at the Canada level. In Prince Edward Island, the rural exodus is similar in all groups and appears to be a bit stronger among women.

Newfoundland and Prince Edward Island are the only provinces to show net out-migration from their larger urban centres, although this exodus is much smaller in magnitude than the rural exodus. In Newfoundland, this urban out-migration appears for men 30 to 34 years of age (in 1996) where in Prince Edward Island, the urban out-migration is present for men and women who were 35 to 39 years of age (in 1996).

Each Atlantic Province shows a youth exodus at the provincial level. The two provinces most affected are Newfoundland and Prince Edward Island. For Newfoundland, this exodus is apparent only for the three youngest age groups but the exodus is apparent for the four youngest groups in the other Atlantic Provinces. In addition, provincial out-migration appears equal for men and women in Prince Edward Island but in the other Atlantic Provinces, out-migration appears stronger for men.

Saskatchewan is also one of the provinces most impacted by the exodus of youth from RST areas – each of the four youngest age groups are affected, especially those 30 to 39 years of age (in 1996). In addition, the exodus from RST areas appears to be slightly more significant for women.

Migration into larger urban centres is present in Saskatchewan for the four youngest age groups of men. However, this urban in-migration is more evident in the 35 to 39 age group (in 1996) and is relatively weaker in the other three age groups, relative to the overall Canada-level pattern. The patterns are similar for women except for the 40 to 44 age group where net migration appears to be zero.

Saskatchewan is the only province outside the Atlantic Provinces to have out-migration of youth at the provincial level. This exodus is present in each of the four youngest age groups – it is strongest for the 30 to 34 year age group and smallest for the 25 to 29 age group.

Alberta and British Columbia have an exodus from rural and small town areas that is less than the Canadian average. Only the two youngest age groups appear to show RST out-migration and this rate of out-migration is less than the Canadian average.

Alberta is the province with the largest migration into its larger urban centres (LUC). This in-migration is present for each of the four youngest age groups – it is strongest for the 35 to 39 (in 1996) age group and this is in the context where rural out-migration in Alberta impacts only the two youngest age groups. LUC in-migration is similar for men and for women, except the 40 to 44 year age group where LUC in-migration appears stronger among the men.

British Columbia has LUC in-migration for the four youngest age groups; the rates appear similar for men and for women and again this is in a context of RST out-migration among only the younger age groups

These two provinces (Alberta and British Columbia), plus Ontario, are the ones where we observe in-migration of youth at the provincial level between 1971 and 1996. By looking at the difference between the actual 1996 population structure and the “predicted” population structure based on the 1971 structure, we can say that Alberta is the province that gained proportionally the most individuals, 24 to 44 years of age in 1996, due to provincial in-migration between 1971 and 1996. Ontario ranks second and British Columbia ranks third. In Alberta, provincial in-migration was most important for the 35 to 44 age group whereas in British Columbia, the gain was most marked in the youngest group, 25 to 29 years of age in 1996.

Summary and conclusions

All provinces lost youth from their rural areas between 1971 and 1996. The greatest loss was in Saskatchewan and in the four Atlantic Provinces, particularly in Newfoundland and in Prince Edward Island. The provinces with the smallest loss of rural youth were Alberta and British Columbia.

Urban areas gained youth in all provinces except in the Atlantic Provinces. Urban areas in Alberta showed the largest gains. In the Atlantic Provinces, urban areas lost youth in Newfoundland and in Prince Edward Island, but only in some age groups. In Nova Scotia and New Brunswick, the urban youth population appears stable.

Alberta had the strongest rate of provincial in-migration of young adults. Ontario and British Columbia also have provincial in-migration of young adults.

We have reviewed a 25-year period. This time period would allow individuals under 19 years of age in 1971 to “temporarily” leave rural areas to pursue education and to gain job experience. We looked to see if they had returned by 1996, when they would have been 25 to 44 years of age. They had not returned. There was a (net) exodus of youth from rural and small town areas in each province during the 1971 to 1996 period.

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Mendelson, Robert and Bollman, Ray D. (1998b) **Rural and Small Town Population is Growing in the 1990s.** (Ottawa: Statistics Canada, Agriculture and Rural Working Paper No. 36, Cat. No. 21-601-MPE98036).

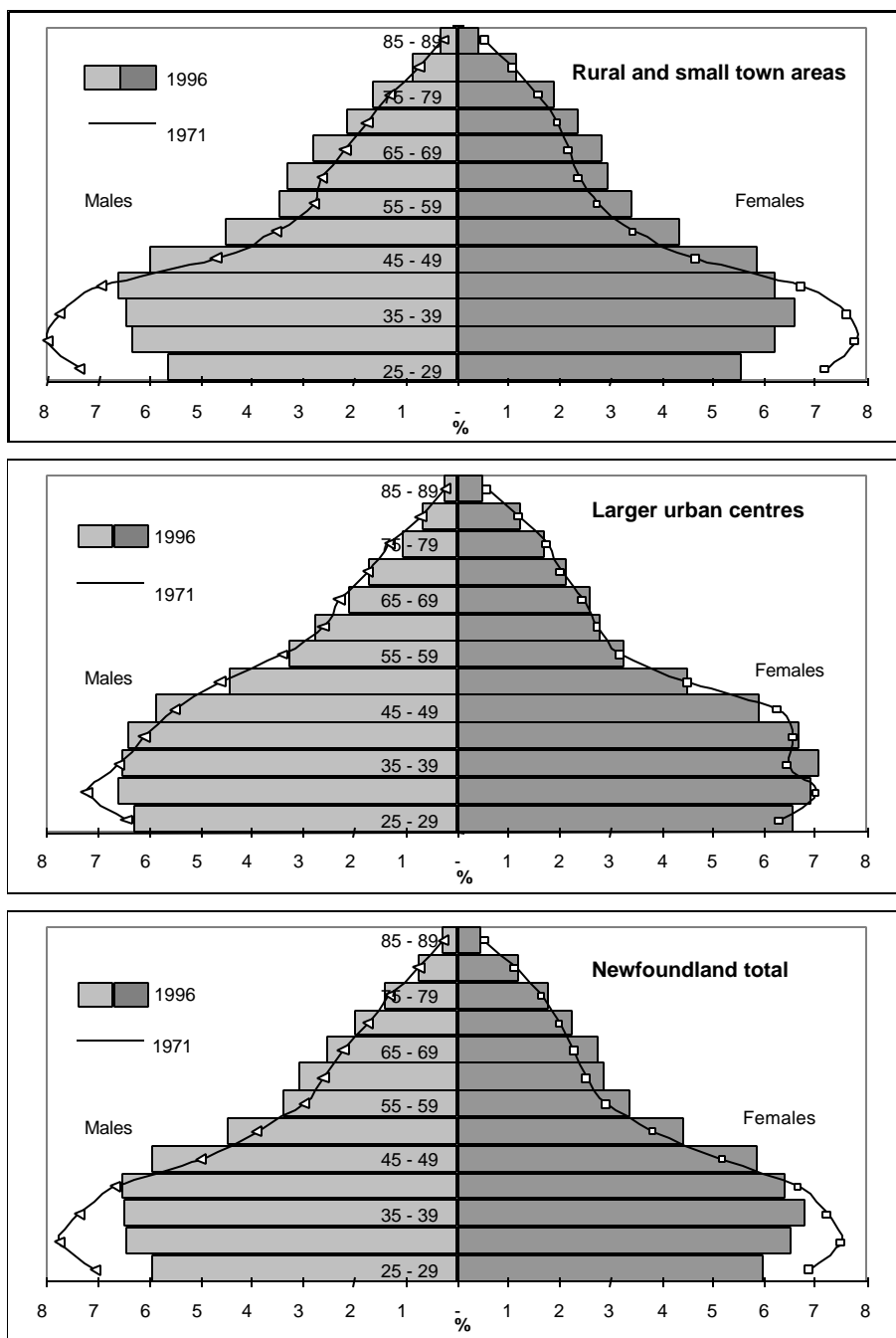
Table 1: Summary of youth migration patterns between 1971 and 1996 (for each 1996 age group), Canada and Provinces

Age group,	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick
1996	Rural and small town areas				
25-29	Strong out-migration	Strongest in Canada	Second strongest (with Saskatchewan)	Strong out-migration	Weakest out-migration among Atlantic Provinces
30-39	Strong out-migration	Second strongest in Canada	Strong out-migration	Strong out-migration	Strong out-migration
40-44	Weak out-migration	Among the weakest in Canada	As strong as 25-29 age group	Out-migratoin as strong as 25-29 age	Strong out-migration
Gender	Similar out-migration	Similar out-migration	Women: slightly stronger out-migration	Men: slightly weaker out-migration	Similar out-migration
	Larger urban centres				
25-29	In-migration	Stable structure	In-migration less strong than Canada-	Weak in-migration	Stable structure
30-39	In-migration	Out-migration: 30-34	Out-migration for 35-39 age group	In-migration for women	Stable structure
40-44	Weak in-migration	Weak in-migration	Weak in-migration for men	Stable population	Stable structure
Gender	Similar in-migration	Female in-migration; male out-	Gender differences exist	Only Atlantic Province with female out-	Stable structure
	Total				
25-29	Weak in-migration	Strongest in Canada	Weak out-migration	Men: weak out-migration, Women: stable	Stable structure
30-39	Stable structure	Strongest in Canada	Strong out-migration	Men: out-migration, Women: stable	Out-migration
40-44	Stable structure	Stable: only Atlantic Province	Weak out-migration	Men: out-migration, Women: stable	Out-migration
Gender	Stable structure	Male out-migration slightly stronger	Gender differences exist	Men: out-migration, Women: stable	Stable structure
	Comments:	Province with strongest RST and provincial-level out-migration. Only province with a LUC out-migration for 30-34 age group.	Province with second strongest RST and province-level out-migration. Only province with LUC out-migration for 35-39 age group.	Men: RST out-migration to other provinces. Women: RST out-migration to LUC within province.	

Table 1: Summary of youth migration patterns between 1971 and 1996 (for each 1996 age group), Canada and Provinces

Age group, 1996	Québec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	Rural and small town areas					
25-29	Weak out-migration	Strong out-migration	Strong out-migration	Second strongest out-migration	Weak out-migration	Strong out-migration
30-39	Strong out-migration	Strong out-migration	Strong out-migration	Strongest out-migration	30-34: weak out-migration, 35-39: stable	30-34: strong out-migration
40-44	Strong out-migration	Weak out-migration	Strong out-migration	Strongest out-migration	Stable structure	Weak in-migration
Gender	Women: stronger out-migration	Similar out-migration	Similar out-migration	Similar out-migration	Stable structure	Stable, except 35-39 age
	Larger urban centres					
25-29	In-migration	In-migration	In-migration	Weak in-migration	In-migration	Strongest in-migration in Canada
30-39	In-migration	In-migration	In-migration	Weak in-migration	Strong in-migration	In-migration
40-44	Weak in-migration	Weak in-migration	Men: weak in-migration	In-migration for men	Strong in-migration	Weak in-migration
Gender	Similar in-migration	Similar in-migration	Similar in-migration	Gender differences	Stable structure	Similar in-migration
	Total					
25-29	Weak in-migration	Weak in-migration	Stable structure	Weak out-migration	Weak in-migration	Strongest in-migration in Canada
30-39	Stable structure	In-migration	Stable structure	Out-migration	Strong in-migration	In-migration
40-44	Stable structure	Men: stable, Women: in-migration	Stable structure	Out-migration	Strong in-migration	In-migration
Gender	Stable structure	Stable structure	Stable structure	Stable structure	Stable structure	Stable structure
		Province with population	Province with characteristics similar to Canada-level	RST out-migration is strongest across four youngest age groups. Weak LUC in-migration. Only province outside Atlantic Provinces with province-level out-migration of	Weakest RST out-migration in LUC in-migration strongest in Strong LUC in-migration for 35-44 age with no RST out-migration for this age Strongest provincial in-migration in	Second weakest RST out-

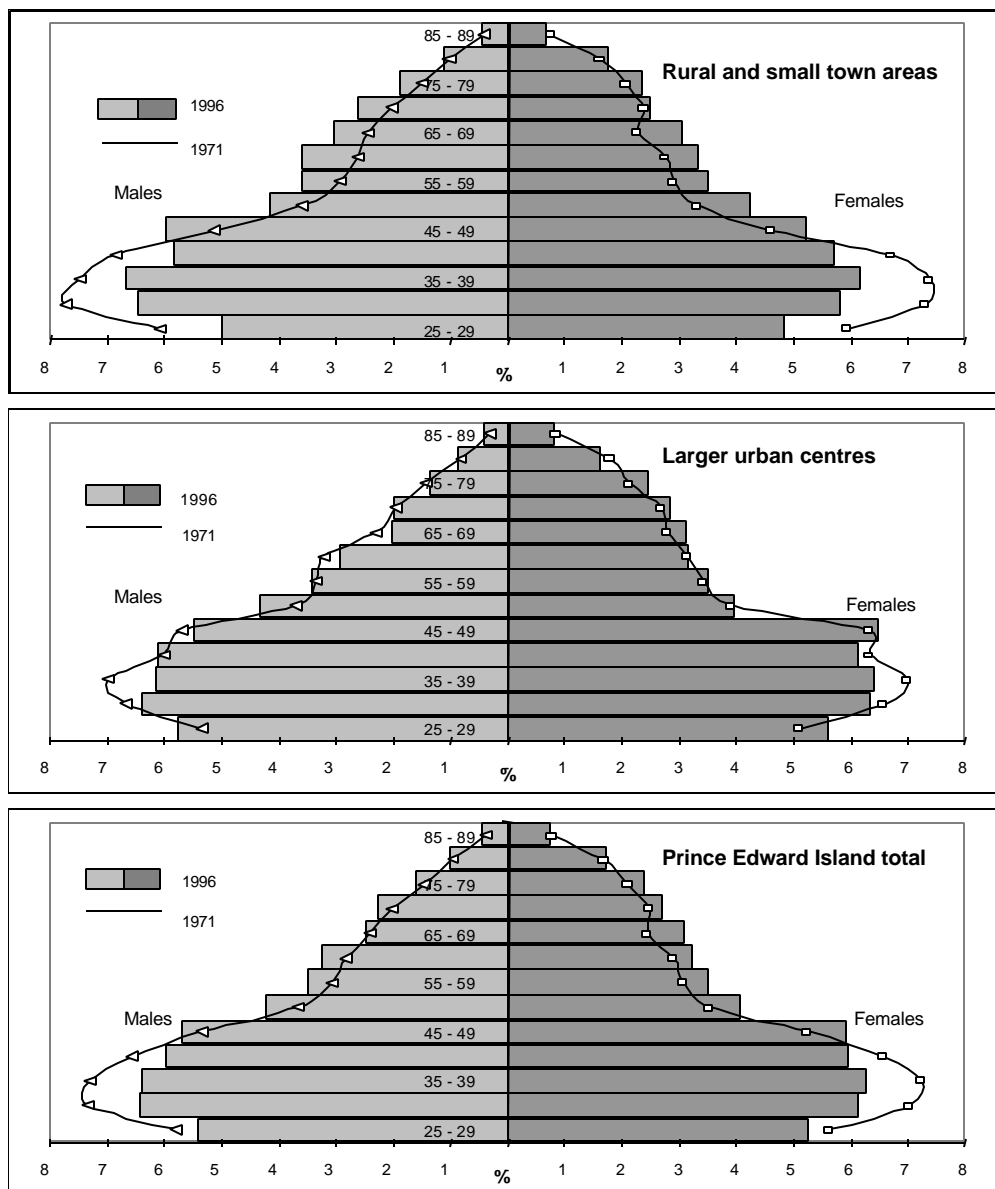
Figure 5. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Newfoundland



Source: Statistics Canada. Census of Population, 1971 and 1996.

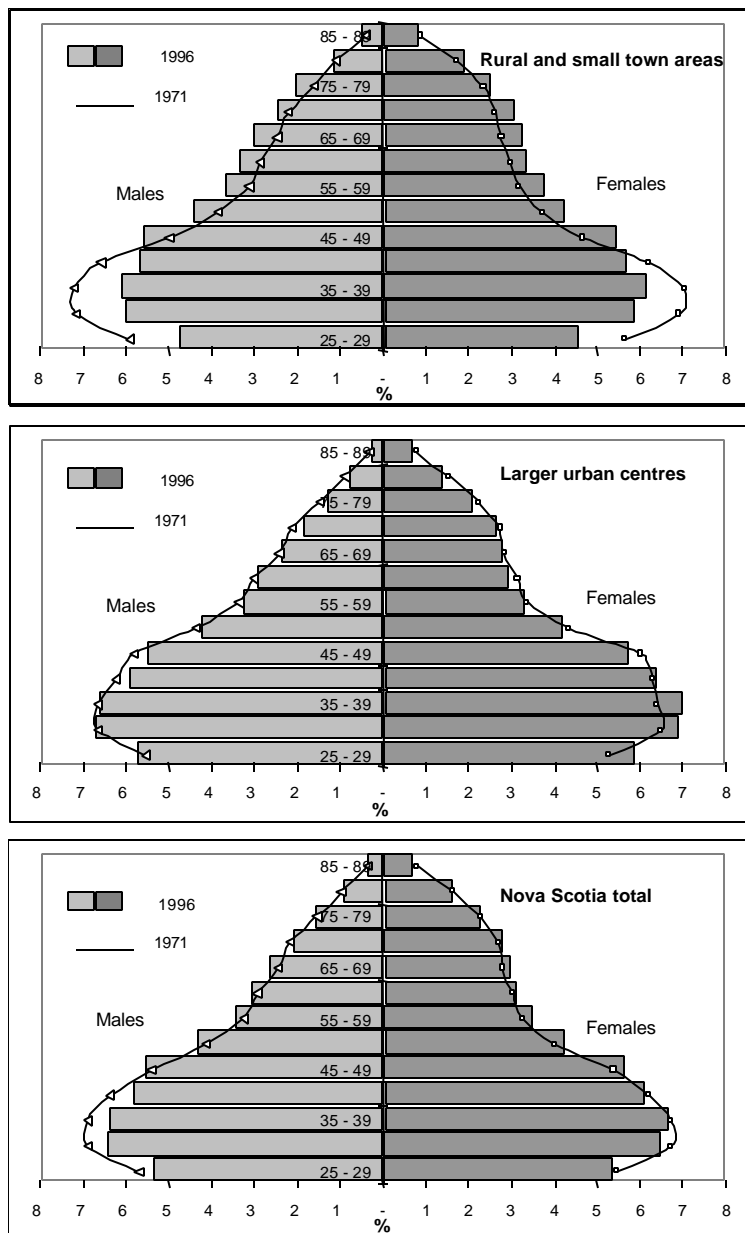
Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

Figure 6. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Prince Edward Island



Source: Statistics Canada. Census of Population, 1971 and 1996.
 Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

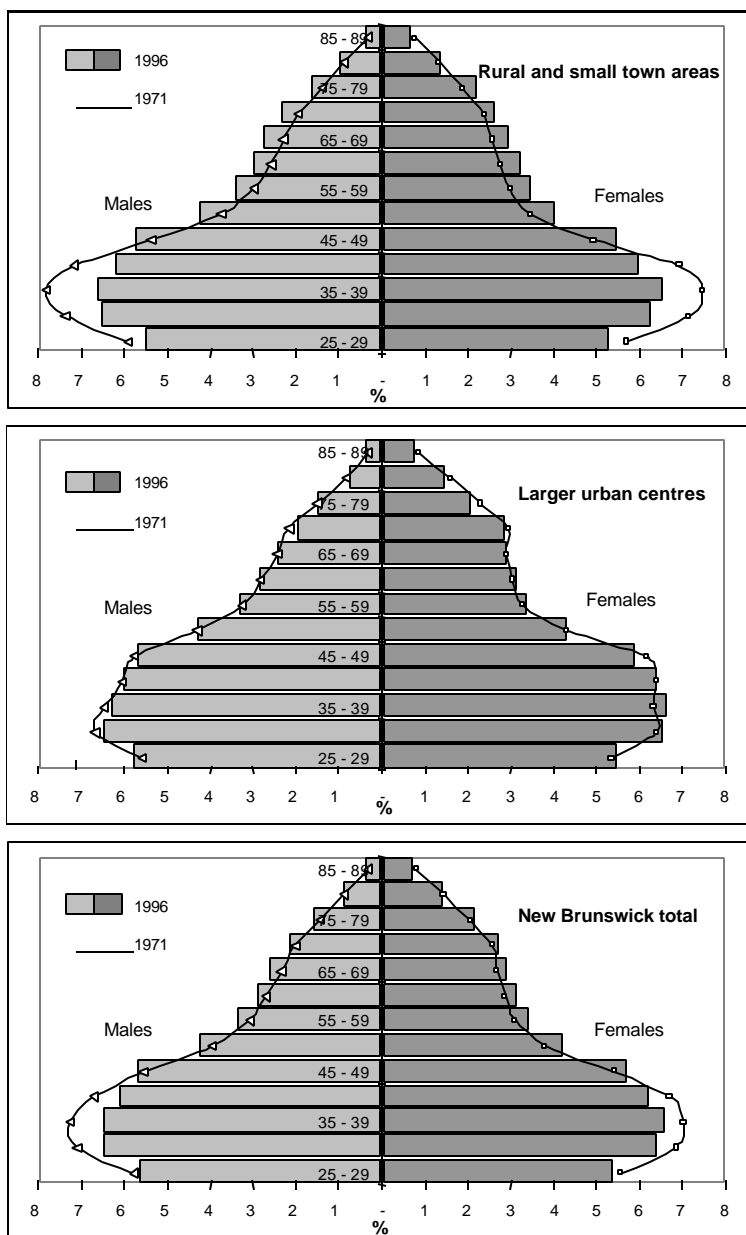
Figure 7. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Nova Scotia



Source: Statistics Canada. Census of Population, 1971 and 1996.

Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

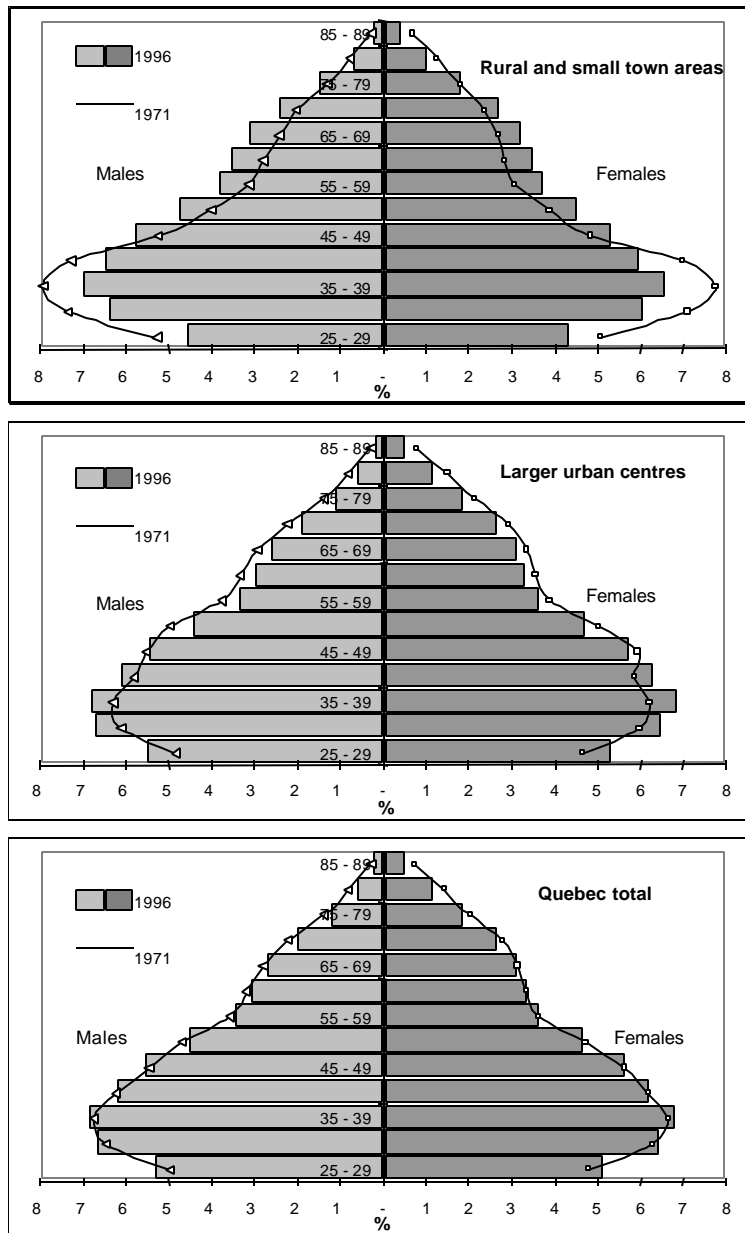
Figure 8. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), New Brunswick



Source: Statistics Canada. Census of Population, 1971 and 1996.

Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

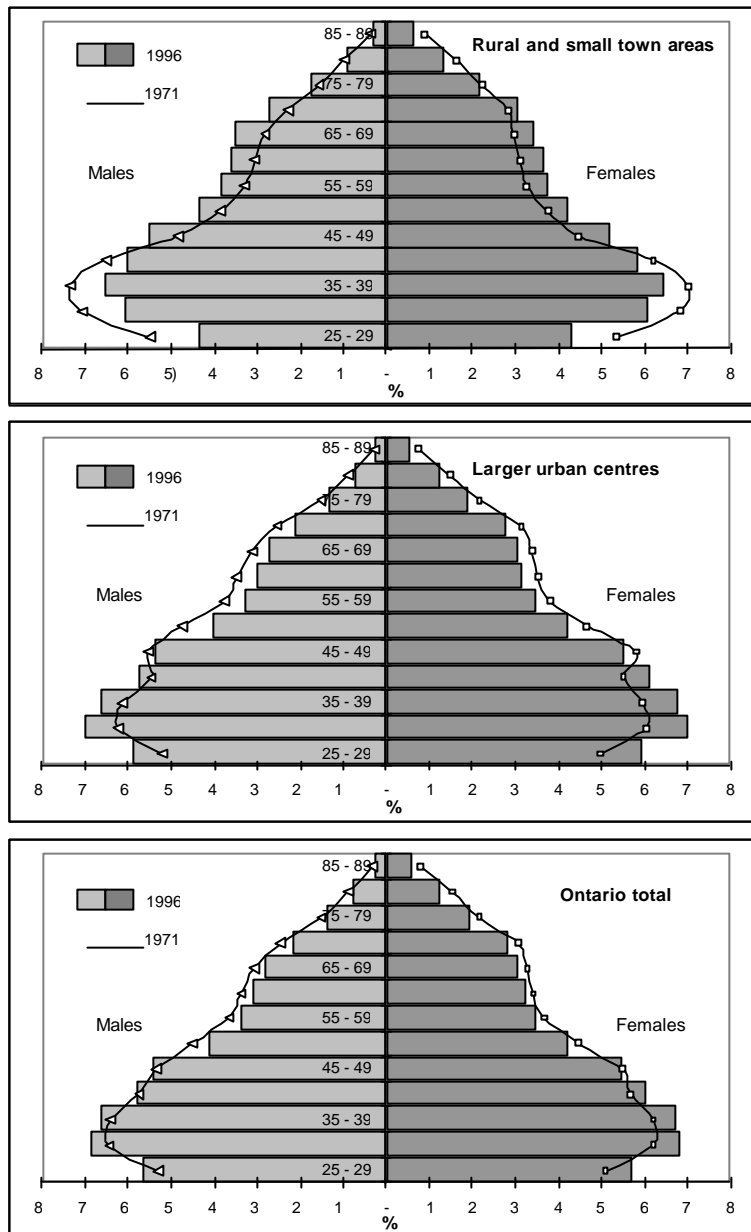
Figure 9. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Quebec



Source: Statistics Canada. Census of Population, 1971 and 1996.

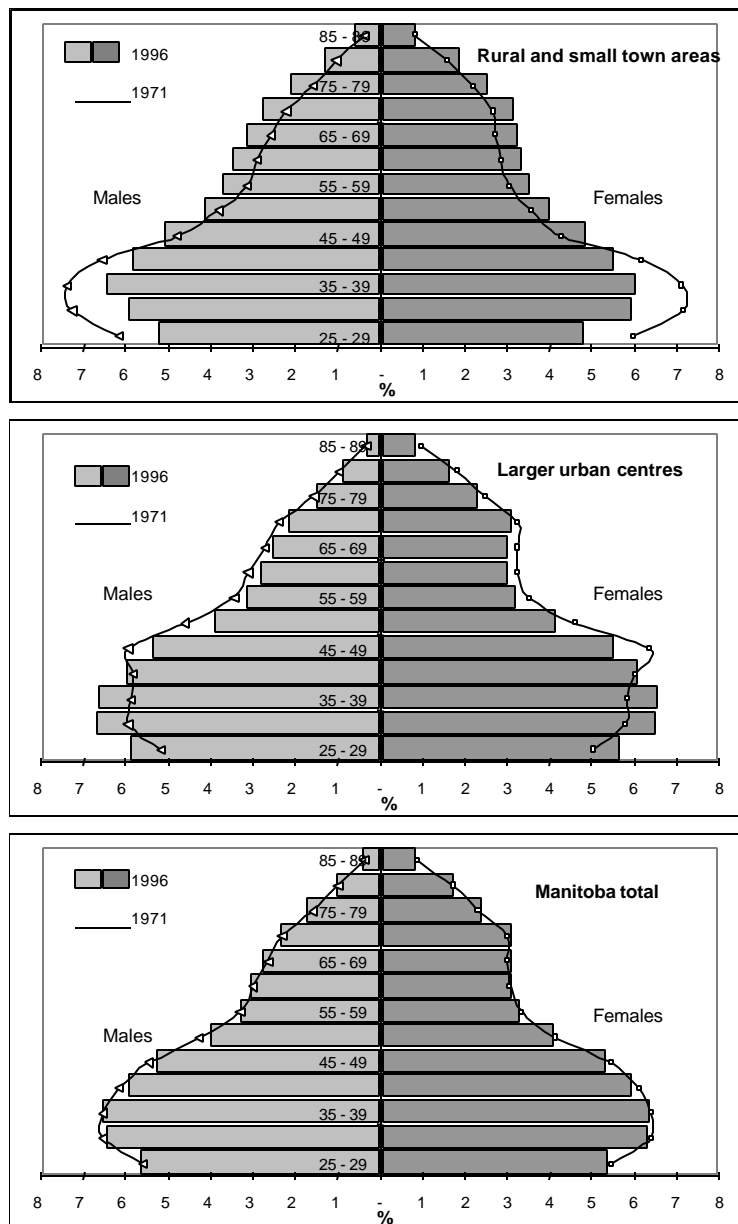
Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

Figure 10. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Ontario



Source: Statistics Canada. Census of Population, 1971 and 1996.
 Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

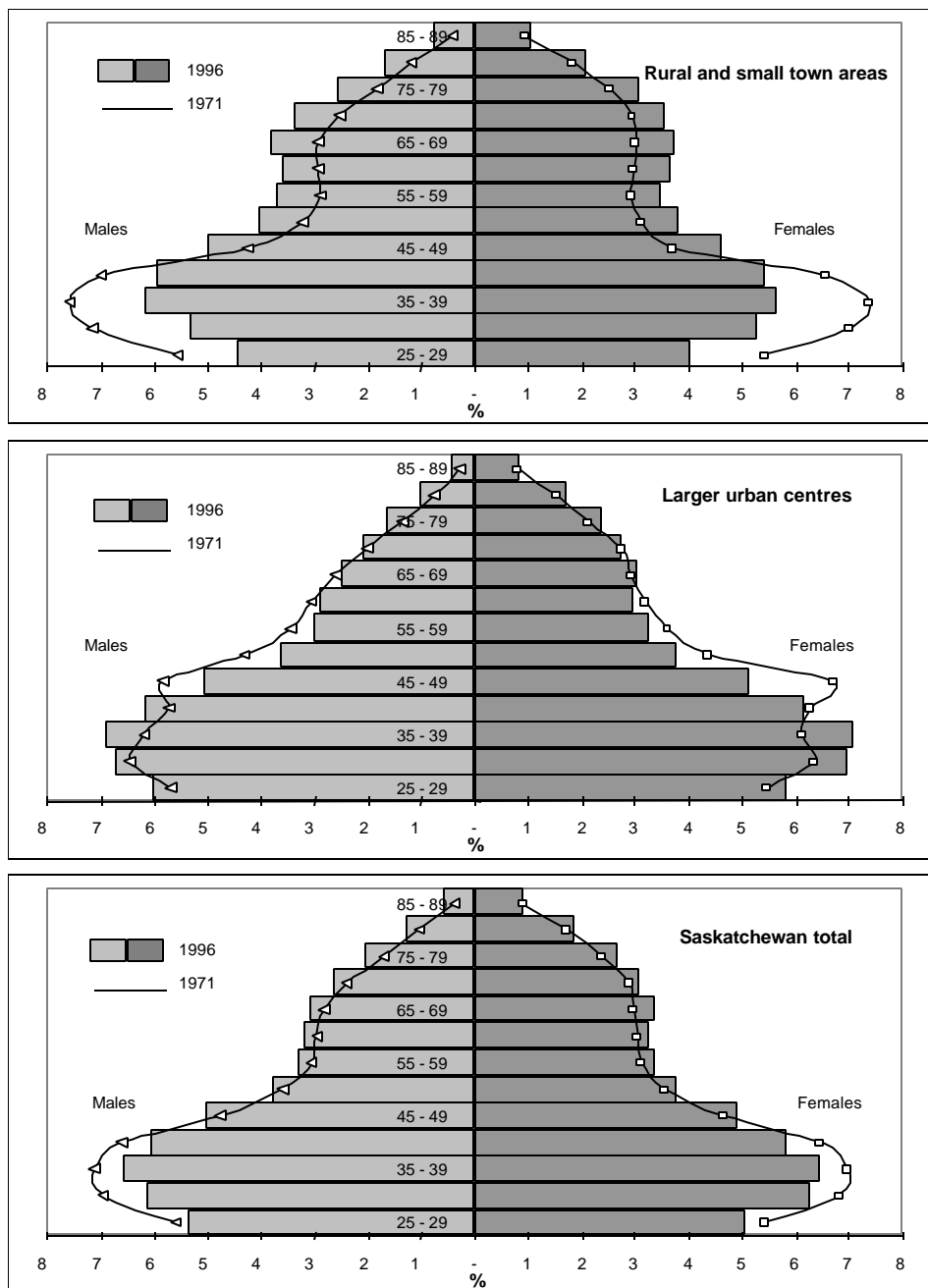
Figure 11. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Manitoba



Source: Statistics Canada. Census of Population, 1971 and 1996.

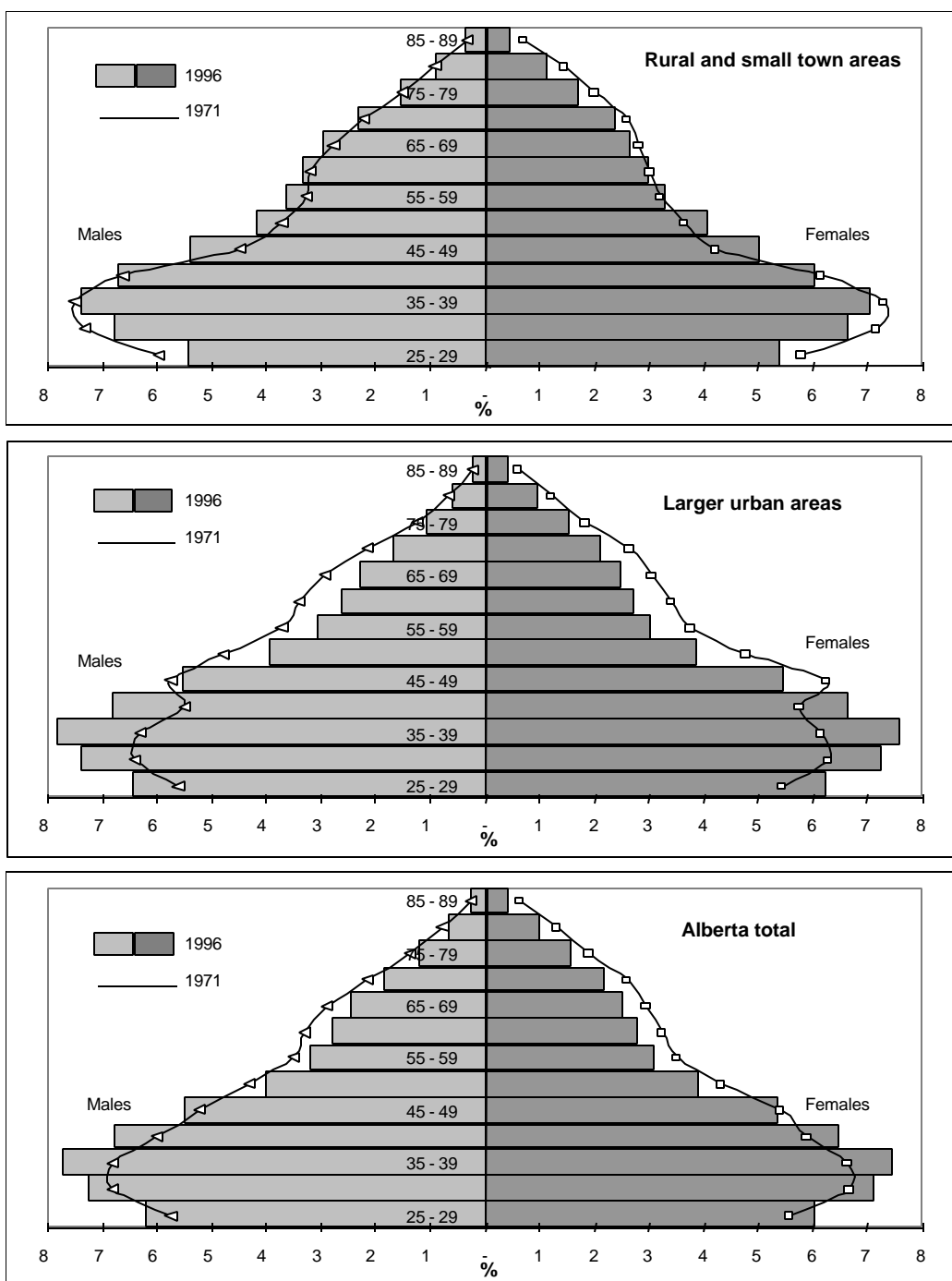
Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

Figure 12. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Saskatchewan



Source: Statistics Canada. Census of Population, 1971 and 1996.
 Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

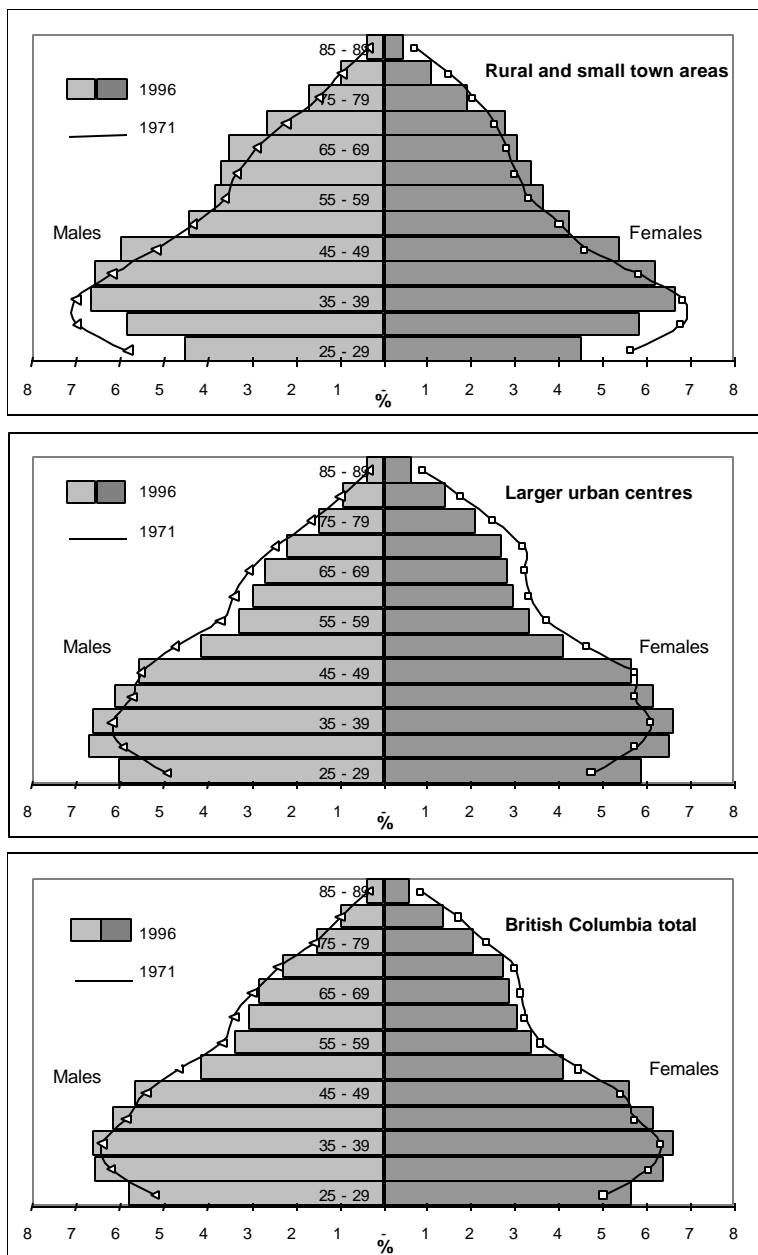
Figure 13. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), Alberta



Source: Statistics Canada. Census of Population, 1971 and 1996.

Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).

Figure 14. Comparison of the actual 1996 population pyramid and the “predicted” 1996 population pyramid (based on the 1971 structure, adjusted for death rates but excluding the impact of migration), British Columbia



Source: Statistics Canada. Census of Population, 1971 and 1996.
 Note: The 1996 bars indicate the actual population structure. The lines labelled “1971” represent the predicted 1996 population structure, where the 1971 population structure has been adjusted for age and gender specific deaths. Thus, the difference between the lines and the bars is an indicator of migration (rural versus urban migration plus inter-provincial migration plus international migration).