

A Demographic and Economic Model of the Canadian Immigration Plan

by

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Major Paper presented to the

Department of Economics of the University of Ottawa

in partial fulfilment of the requirements of the M.A. Degree

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Ottawa, Ontario

January , 1995

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Chapter 1.

Introduction

Immigration has always been quite visible in Canada's population profile. At the time of the 1986 census, almost one out of six Canadian residents was born outside of the country.¹ Virtually everyone in Canada today is an immigrant or a descendant of immigrants aside from the natives. Even the first Canadian Prime Minister John A. Macdonald himself was an immigrant. Although nearly all of these influential Canadian immigrants were from Great Britain, reflecting English Canada's colonial origins, the point is that these newcomers were prominent among Canada's recognized nation builders.

The settling of Canada by immigrants from countries all over the world has been and remains one of the most important features of Canadian history and of the continuing evolution of its society, cultural institutions, and political life. Each year, there are thousands of immigrants coming from all over the world

¹ Managing immigration: a framework for the 1990s, p.9.

to Canada. Indeed, by 1991 Canada's population of approximately 27 million was 23 percent French and 28 percent British, while 31 percent were neither.² Another 19 percent were reported to be of multi-ethnic ancestry.³ Canada is in actual fact a multicultural society.

Canada is experiencing a fundamental change in its immigration policy. On Oct 30, 1994, the 1995 immigration plan was announced by the Minister of Citizenship and Immigration - Sergio Marchi aiming at promoting a reduction of the number of immigrants coming to Canada below that in 1994. The decrease is expected to fall within the range of 190,000 - 215,000 from 250,000 per year. Between the years 1995 - 2000, this policy will have some influence on the population and, in turn, the productivity of the Canadian labour force. Immigration reflects Canadian history as a nation, and this new immigration plan will definitely reflect Canada's future.

As a general objective, this paper attempts to determine how

² Canada Year Book 1994, (Ottawa: Statistic Canada, 1993), p.99.

³ Ibid.

demographic developments will influence the Canadian immigration policy not only through the evolution of the size and age structure of the Canadian population, but also through the possible economic consequences of decreasing immigrants, namely declining real economic growth rates.

As a focussed objective, this paper utilizes a type of measure that will help to decide if the new Immigration Plan (1995-2000) is adequate or not. The appropriateness of such a measure should be expressed in terms of the country's output per capita.

As a conceptual framework, we will use the so-called Social Accounting or Social Demographics⁴ as a means of coordination of information on human stocks and flows. This framework, proposed by Richard Stone (1971), is of great importance because with the progress of economic and social modelling, a need has grown for a coherent framework within which demographic, educational, manpower and other data relating to human stocks and flows can be

⁴ The term social accounting was introduced into economics by J. R. Hicks in 1942. It means "the accounting of the whole community or nation, just as private accounting is the accounting of the individual firm" [Sohn, Ira (1986)].

coordinated and analyzed.⁵ Among the goals of demographic accounting is to bring together a knowledge of the operating characteristics of the system and the set of aims that the system is expected to serve. Consequently, the model must consider those characteristics and the intrinsic constraints, then sets an objective function.

This paper will follow a sequential process in developing the topic. The second chapter will situate the reader in the historical context of immigration in Canada. The third chapter analyzes the Canadian immigration system. The fourth chapter describes the 1995 Immigration Plan, and the fifth chapter describes the models that have been developed for this purpose. Finally, the sixth chapter shows the main results derived from the application of the models. Consequently, it will delineate the main conclusions reached through the models' results and their analysis.

⁵ Stone, Richard in Sohn, Ira (1986).

Chapter 2.

Historical Background

On Oct 30, 1994, the federal government tabled its Annual Report to Parliament entitled: "A Broader Vision: Immigration and Citizenship, Plan 1995 - 2000," which lowered gross immigration levels to 190,000 - 215,000 for 1995 down from the planning level of 250,000 for 1994. This represents the government's efforts to decrease immigration in a gradual manner, after several years of economic difficulties - recession, and high unemployment.

In order to appreciate the significance of this policy shift in 1994, it is helpful to briefly review the different phases of Canadian immigration since the 1800s, as well as the underlying economic conditions associated with the changes in immigration policy.

Since the 1860s, Canada has received over 11 million immigrants; however, annual flows have been anything but smooth and orderly, ranging from a high of 400,870 in 1913 to a low of

7,576 in 1942 (*Table 2.1*).

Canada immigration levels have fluctuated widely. Due to the unfavourable economic conditions and wars, the flow of immigrants into Canada was very low between 1860 to 1900. At the same time, much of Canada's best farm land was held by speculators, and the Canadian government offered very limited financial assistance to immigrants.⁶ Moreover, at one time other countries were offering bonuses such as free passage, a grant of land, agricultural implements, and loans for building homesteads to immigrants.⁷

⁶ Canada: Immigration and Colonization, 1841 - 1903, Norman MacDonald, 1968, p.236.

⁷ Ibid.

Table 2.1 Canada Immigration 1860 - 1993 (in persons)

1860	6,276	1887	84,526	1914	150,484	1941	9,329	1968	183,974
1861	13,589	1888	88,766	1915	36,665	1942	7,576	1969	164,531
1862	18,294	1889	91,600	1916	55,914	1943	8,504	1970	147,713
1863	21,000	1890	75,067	1917	72,910	1944	12,801	1971	121,900
1864	24,779	1891	82,165	1918	41,845	1945	22,722	1972	122,006
1865	18,958	1892	30,996	1919	107,698	1946	71,719	1973	184,200
1866	11,427	1893	29,633	1920	138,824	1947	64,127	1974	218,465
1867	10,666	1894	20,829	1921	91,728	1948	125,414	1975	187,881
1868	12,765	1895	18,790	1922	64,224	1949	95,217	1976	149,429
1869	18,630	1896	16,835	1923	133,729	1950	73,912	1977	114,914
1870	24,706	1897	21,716	1924	124,164	1951	194,391	1978	86,313
1871	27,773	1898	31,900	1925	84,907	1952	164,498	1979	112,093
1872	36,578	1899	44,543	1926	135,982	1953	168,868	1980	143,117
1873	50,050	1900	41,681	1927	158,886	1954	154,227	1981	128,618
1874	39,373	1901	55,747	1928	166,783	1955	109,946	1982	121,147
1875	27,382	1902	89,102	1929	164,993	1956	164,857	1983	89,157
1876	25,633	1903	138,660	1930	104,806	1957	282,164	1984	88,239
1877	27,082	1904	131,252	1931	27,530	1958	124,851	1985	84,302
1878	29,807	1905	141,465	1932	20,591	1959	106,928	1986	99,219
1879	40,492	1906	211,653	1933	14,382	1960	104,111	1987	152,098
1880	38,505	1907	272,409	1934	12,476	1961	71,698	1988	161,929
1881	47,991	1908	143,326	1935	11,277	1962	74,586	1989	192,001
1882	112,458	1909	173,694	1936	11,643	1963	93,151	1990	241,230
1883	133,624	1910	286,839	1937	15,010	1964	112,606	1991	230,781
1884	103,824	1911	331,288	1938	17,244	1965	146,758	1992	252,842
1885	79,169	1912	375,756	1939	16,994	1966	194,743	1993	254,321
1886	69,152	1913	400,870	1940	11,324	1967	222,876		

Source: Facts And Figures: Overview of Immigration, Canada.1994

The number of immigrants increased year after year from an annual rate of 21,716 in 1897 to an intermediate peak of 272,409 in 1907, and thereafter to an all-time high of 400,870 in 1913 due to the attraction of excellent farming "land opportunity" and the modification of the restricted immigration policy which was introduced in the parliament from 1885 onward.⁸ This legislation was first directed towards the Chinese, and later targeted all nonwhite immigrants in order to restrict and regulate Chinese immigration.⁹

However, with the outbreak of the First World War, the flow of immigrants sharply decreased. From the all-time high of 400,870 immigrants in 1913, it dropped to a low of 36,665 in 1915. After the war, the strong overseas demand for food resulted in a further expansion of agriculture. Thus Canada allowed more immigrants entering the country.¹⁰

After the industrial expansion of the 1920s, North America

⁸ Stranger at Our Gates, Valerie Knowles, 1992, p.48.

⁹ Ibid.

¹⁰ Ibid, p.118.

was hit with the Great Depression in the 1930s. When the economic crisis struck, the Canadian government took immediate steps to limit the volume of immigration. On March 18, 1931, the entry of immigrants of all classes and occupations was restricted by the order-in-council unless immigrants could prove that they were British subjects or citizens of the United States and that they had sufficient means to maintain themselves until employment was secured.¹¹ Certain other categories of people were also allowed to immigrate - the next of kin of legal Canadian residents, for example, agriculturists who had sufficient means to farm in Canada.¹² However, the earlier exceptions granted to people of Asian origin were revoked, barring the arrival of not only new immigrants but also the wives and children of those who were already here.¹³ With the application of the order-in-council and the economic woes of the Great Depression, immigration to Canada became a mere trickle.¹⁴ From 104,806 newcomers, in 1930, the number fell to 14,382 in 1933 with minor

¹¹ Ibid, p.108.

¹² Ibid.

¹³ Immigration and the Postwar Canadian Economy, Alan Green, 1976, p.23.

¹⁴ Stranger at Our Gates, Valerie Knowles, 1992, p.108.

annual variation, it remained approximately at that level right up to the end of World War II.

The Canadian economy continued to expand after the war. Because of the low rates of natural population growth during the years of the Depression, the domestic labour force had grown very slowly. Therefore, the Canadian government allowed more immigrants to enter. However, immigration was carried out in a racist manner; the government was trying to preserve the "white Canada" policy.¹⁵

During the period of rapid economic growth in the 1950s and 1960s, an average of 130,000 immigrants per year entered Canada. In 1967, in order to allow the right to sponsor nondependent relatives, the Canadian government adopted a new immigrant-selection system - the point system. It regulated the flow of those immigrants who did not qualify as close family members or who are refugees by applying a selection system based on points. Immigrants admitted in this way subsequently became referred to as "independent class" immigrants, in contrast to "family class"

¹⁵ Ibid. p.121.

and refugees.

By the mid-1970, there was some fear that immigration was getting out of hand, having reached about 218,465 in 1974. At the same time, there was an upward pressure on unemployment due to the energy crisis. Like many industrialized economies with which Canada was associated, production slowed down alongside with rising inflation. Thus the reaction of the Canadian government was to protect the living standards of its domestic residents by restricting immigration as one of its primary efforts.¹⁶

The year 1978 was also marked by another oil shock after an oil crisis in late 1973. The doubling of the price of oil further upset the international economic environment including Canada whose economy went into a deep slump. With relatively poor economic conditions in Canada, there was a sharp decline in gross immigration levels, with some annual fluctuations, from approximately 218,465 in 1974 to 143,117 in 1980 and 88,239 in 1984.

¹⁶ Immigration Policy and Canadian Economic Growth, Marr and Percy, 1985.

In 1985, due to the concern about the low immigration levels, the long-term relationship between immigration and Canada's demographic future, and given the projections of the decline in the size and concomitant aging of the Canadian population, the government announced a significant increase in target immigration levels from 85,000 - 90,000 in 1985 to 105,000 - 115,000 for 1986 and 115,000 - 125,000 for 1987.¹⁷ Much of the increase for 1986 was in the economic class, with a special emphasis on attempting to increase business immigration, including the creation of a new category of business immigrants - the investor. A continuation of the policy to increase immigration level was announced by the government, raising immigration level for 1991 to 220,000, and, between 1992 and 1994, a projected high of 250,000.

On Oct 30, 1994, the Canadian government decided to lower gross immigration levels to 190,000 - 215,000. The major decrease in immigration is to be in the family class, with a particular focus on the sponsorship of parents and grandparents.

¹⁷ Critical Years in Immigration, Freda Hawkins, p.90.

Chapter 3.

The Canadian Immigration System

3.1 Introduction

Immigration is a fundamental element of the Canadian identity. Canada's immigration law is designed to be non-discriminatory and humanitarian, while encouraging Canada's social, cultural and economic development.¹⁸

Each year, the Canadian government is responsible for determining the overall immigration level that Canada will accept. Applications are considered under a broad processing system that gives priority to family reunification and refugees. The Canadian immigration system has established rules for selecting immigrants and consists of three categories which correspond to the program objectives: Family class, Refugees, and Independent immigrants.

¹⁸ A Broader Vision: Immigration and Citizenship, Plan 1995-2000, Canada. 1994.

3.2 The Family Class

Family immigration - including both family class and assisted relative immigrants - is by far the largest component of overall immigration. Although "family class" applicants are sponsored close family members, brothers and sisters are generally excluded. They must apply as independent immigrants through the point system (which will be discussed in more detail later in this paper). There are no criteria relating to education, language or employment skills that members of the family's class need to satisfy. If those close family members pass the basic standards of good health, good character, and security clearance requirements, they are entitled to immigrate as visas holders. Moreover, the sponsor also has to meet the minimum income level required for sponsorship, depending on the number of relatives being sponsored. The sponsoring relatives also must agree to give them lodging and care for up to 10 years so that the sponsored family members will not need to rely on welfare in Canada (these two requirements do not apply to spouses and dependents).

A Canadian citizen, or a permanent resident of at least 19

years of age may sponsor any of his/her close relatives or family class members. (Table 3.1)

Table 3.1 Members of the Family Class

1) Wife/husband
2) A fiancé(e)
3) Dependent sons and daughters
4) Parents and grandparents
5) Brothers, sisters, nephews, nieces and grandchildren who are orphaned, unmarried and under the age of 19
6) Children under 19 the sponsor plans to adopt
7) Any other relative, if the sponsor does not have any of the above or any family in Canada.

Source: Canada's Immigration Law, 1994

3.3 Refugees

Canada, home to millions of citizens descended from refugees who fled from oppression and persecution, has the reputation as a safe haven as old as the country itself. Refugee immigration has

been part of Canadian history for almost three centuries; from American slaves fleeing north via the underground railway to the Vietnamese boat people. Canadian borders have been open to those truly in need of help.

Canada is speedy and generous in response to the plight of refugees from scattered parts of the world. In 1993, Canada accepted 24,543 refugees.¹⁹ Canada spends thousands of dollars to process, care, provide shelter for and train each refugee. Groups of Canadian residents, including church groups and ethnic community organizations, may also sponsor refugees and bring them into Canada.

A person who satisfies the description of a refugee as outlined in the United Nations' definition of Convention Refugee may be allowed to claim refugee status. A Convention Refugee is a person with well-founded fear of persecution for reasons of race, religion, nationality, membership in a particular social group or for political opinion, and he/she is outside the country of his/her nationality and is unable or, by reason of that fear,

¹⁹ Facts and Figures: Overview of Immigration, Canada, 1994.

is unwilling to make himself/herself available of the protection of that country.²⁰ In addition, he/she may not have a country or nationality, is outside the country of his former habitual residence and is unable, or by reason of such fear, is unwilling to return to that country.²¹

Each year, thousands of refugees are brought to Canada for resettlement. Indeed, Canada's work on helping refugees is recognized around the world. In 1986, the Canada was awarded the Nansen Medal by the United Nations High Commissioner in recognition of the entire nation's outstanding efforts in providing aid to refugees.²²

3.4 Independent Immigrants

Independent immigrants, consisting of entrepreneurs, investors, self-employed people and others having skills in demand, are selected on the basis of who can contribute to the

²⁰ Canadian Citizenship Made Simple, Joe Serge, 1993, p.37.

²¹ Ibid.

²² Ibid, p.38.

economy with their acquired skills and training in their occupation that is in demand in Canada. They must also meet the criteria established by the point system of immigrant selection. Applications are evaluated through a system which assigns points based on various factors ranging from age and education to knowledge of English or French, or both, and ability to adjust to the conditions in Canada, and the applicant's training, work experience, and occupation.

3.5 The Point System

The main principle of the point selection system was to select those independent immigrants who are placed in priority due to strong educational and occupational background and who would be useful to the current labour market needs. This policy stance was not surprising, given the nature of the rapidly developing Canadian economy, which was frequently characterized by shortages of professional and skilled labour.²³ This policy was to be universally applicable and not discriminate on grounds

²³ Diagnosing Labour Market Imbalance in Canada, Canadian Public Policy, Newton, K., G. Betcherman, and N. Meltz, 1981, 7:1, p99-102.

of race, colour or religion. Through a point system, (**Table 3.2**) the immigration officer attempts to determine whether the applicant's skills are needed and suitable for placement as a new immigrant in Canada. Emphasis is placed on practical training, experience and the likelihood of successful establishment in Canada. However, some independent immigrants who possess specific skills or recognized abilities would be assessed as well. Entrepreneurs and investors, for example, are not assessed on occupational demand or arranged employment factors. Obviously the arranged employment factor does not apply to self-employed applicants.

Table 3.2 Selection Criteria for Business Immigrants, Assisted Relatives and Other Independent Immigrants

Factor	Units of assessment	Notes
Education	Maximum 16 points	1 point for each successfully completed year of formal education.
Specific vocational preparation	Maximum 18 points	1-3 months earn up to 3 points; 3-12 months earn 5-7 points; 1-4 years earns 11-15 points; more than 4 years earn 18 points.
Experience	Maximum 8 points	0 units is an automatic refusal.
Occupational demand	Maximum 10 points	Based on need for the applicant's skills in Canada.
Arranged employment or designed occupation	Maximum 10 points	Awarded when applicant has a guaranteed job offer that has been approved by a Canada Employment Centre or the occupation is included in the Designated occupations List for the province where the applicant intends to live.
Age	Maximum 10 points	Those 21-44 earn 10 points. 2 points are deducted for each year outside that age bracket.
Knowledge of English/French	Maximum 15 points	Points are awarded on the basis of the applicant's ability to speak, read or write one or both of Canada's official languages - fluently, well or with difficulty.
Personal suitability	Maximum 10 points	Awarded by a visa officer after a personal interview, and based on applicant's adaptability, resourcefulness, motivation and initiative
Demographic factor	Maximum 10 points	Depending on high or low immigrant-target level set for that year.
Bonus points		A 5 point bonus is earned by those who have a relative in Canada. 45 bonus points are awarded to an investor or entrepreneur applicant; and 30 points to a self-employed applicant.

Source: Canada's Immigration Law, 1994.

3.6 Business Immigrants

Canada's Business Immigration Program was officially launched in the late 1970s, as a complement to the government's broader strategy relating to foreign investments. The government realized that Canada's position in foreign direct investment had been changed. Canada has become a mature industrialized nation with more and more Canadians basing their multinational corporations here and investing abroad. With the Canada - United States Free Trade Agreement, the Canadian market is no longer protected by any tariff wall. Before, Canadian industries were not internationally competitive due to protection. Foreign based multinationals started to move their production to developing countries where labour and materials were cheaper. All of these events (with the exception of the Free Trade Agreement) happened at a time of economic recession and when the unemployment rate was historically high. These important changes in the international economy induced the Canadian government to carry out an industrial adjustment strategy which naturally required large amounts of investment. Canadian as well as multinational capital has been historically over-conservative and investors are reluctant to invest in the small business sector and high risk

enterprises. Canada's Business Immigration Program was therefore designed by the government as part of Canada's strategy to cope with these difficulties. The strategic mandate of the Business Immigration Program is to encourage business persons to contribute to the Canadian economy through: the commitment of risk capital; the creation and/or retaining employment; the transfer of business know-how and management skills; and the contribution to regional development and industrial growth.

Both federal and provincial governments actively encourage foreigners to invest in Canada. Indeed, immigration authorities must give priority to those applicants who are prospective business immigrants due to the potential benefits they offer to the Canadian economy. The three basic categories of business immigrants are defined as follows.

(a) "**Entrepreneur**" means an immigrant: (i) who intends to and has the ability to establish, purchase or make a substantial investment in a business or commercial venture in Canada that will make a significant contribution to the economy, and whereby, employment opportunity will be created or continued in Canada for one or more Canadian citizens or permanent residents, other than

the entrepreneur and his dependents and (ii) who intends and has the ability to provide active and on-going participation in the management of the business or commercial venture.

The applicant should provide a set of documents including a detailed proven track record of business, experience, a statement of financial resources either already in Canada or available for transfer to Canada, and a written description of the proposed business, including an indication of the province in which it is to be located. The actual process is quite complex and somewhat difficult.

(b) **Investors**: An investor is defined as an immigrant who²⁴ (i) has operated, controlled or directed a financially successful business or a commercial undertaking; (ii) has, by his own endeavour, accumulated a net worth of at least \$500,000 and has made an irrevocable investment of at least \$150,000 for a minimum of a three-year period in an approved vehicle²⁵ in a province

²⁴ Revision to the investor category announced by the Minister of Employment and Immigration on April 27, 1988.

²⁵ The approved investment vehicles are (a) a project of significant economic benefit to the province; or (b) an investment syndicate approved by the province, the main purpose of which is to

which, in the previous year, has received fewer than 3% of Canada's business immigrants²⁶; or (iii) has, by his own endeavors, accumulated a net worth of at least \$500,000 and has made an irrevocable investment of at least \$250,000 for a minimum of a three-year period in an approved vehicle; or (vi) has, by his own endeavors, accumulated a net worth of at least \$700,000 and has made an irrevocable investment of at least \$500,000 for a minimum of a five - year period in an approved vehicle, which investment may be guaranteed by a third party.

Unlike the entrepreneur, the investor immigrant is not required to actively participate in daily management, since the major goal for this category is to attract high risk capital to Canada.

(c) **Self-Employed Person:** For the purpose of the Immigration

provide equity or loan to establish, purchase, expand, or maintain business which has significant benefit to the province; or (c) a government - administrated capital venture fund, the main purpose of which is to provide equity or loan to establish, purchase, expand, or maintain business or commercial ventures.

²⁶ the provinces which qualify under this tier in 1988 are Newfoundland, Nova Scotia, New Brunswick, Prince Edward Island, Manitoba, and Saskatchewan.

Canada Act, self employed person means an immigrant who intends to and has the ability to establish or purchase a business in Canada that will create an employment opportunity for himself and will make a significant contribution to the economy and the cultural or artistic life of Canada.²⁷ The self-employed person must make a presentation of his/her business proposal to the Federal Immigration Department and the provincial government. An investment between \$100,000 to \$150,000 will likely be required²⁸.

3.7 Overview of the System

Canada has one of the most open policies in the industrialized world for immigrants. However, it faces a serious concern about the immigration's benefit schemes and perhaps the anxiety that there will be a serious problem in its structure or, at least, in the fairness or opportunity of the benefits provided. Undoubtedly, immigration will affect public expenditure and its allocation. Thus the question of whether the

²⁷ House of Commence, Immigration Canada Act s.2., 1981

²⁸ Immigration to Canada, Segal Gary, 1986, p.36.

Canadian economy is better or worse off with immigration is raised or lowered. Citizens blame immigrants for taking over their jobs, increasing welfare payment, health care costs, and housing demands. Moreover, if a greater number of immigrants are in the older age range, Canada will need more younger people to provide economic security for an ever increasing number of immigrants. In addition, the controversy of the growing number of immigrants sponsored by their relatives in Canada resulted in a shift favouring private over national and broader public interests. Accompanying this shift has been a decline in educational and skill advantages that were traditionally enjoyed by immigrants.

Only 29.81%, compared to 51.2%, of family immigrants admitted to Canada in 1993 were selected purely on the basis of economic criteria.²⁹

On the other hand, one may say that a larger population by encouragement of immigration will help to develop Canadian resources, by providing a larger number of consumers.

²⁹ Facts and Figures: Overview of Immigration, Canada, 1994.

In other words, a larger domestic market will reduce Canada's present dependence on the export of primary products. A larger domestic market permits manufacturing firms to undertake longer, and lower-cost production runs. A bigger population also yields lower per capita costs of government, transportation and communication, and stimulates the development of more specialized services. These are the very important economic reasons why immigration tends to increase the real income per person in Canada.

In particular, it was recognized that there was also a need to plan immigration in the context of Canada's demographic future. The post war baby boom has ended; the Canadian fertility rate has fallen below the replacement level of 2.1 births per woman.³⁰ The rate of 2.1 is the number of births needed to replace one generation by the next; two births to replace the parents and 0.1 to compensate for the small number of deaths that occur before the next generation reaches reproduction age. Immigration therefore could be regarded as one available instrument for achieving a desired future population size and

³⁰ Appendix A

rate of growth.

This has led to an immigration debate and its never ending controversy. Therefore, the guiding principles must be kept in mind to diminish the risk of unfairness. The plan must maintain the immigration and citizenship program's commitment to economic development, family reunification and humanitarianism. It also has to recognize that the effective settlement of immigrants is necessary if both newcomers and Canadians are to realize the full benefits of immigration. These principles are the basis of any immigration program, and must always be respected. In this way, the system may survive through time, and most important of all, it may achieve the expected goals.

Chapter 4.

The 1995 Plan

4.1 Introduction

The Minister of Citizenship and Immigration - Sergio Marchi - announced The Immigration Plan 1995-2000, which represents a fundamental change to Canada's immigration policy. It sets out the plan's level of immigrants for 1995 and also gives a policy direction that the government will pursue in the years 1996 to 2000.

The 1995 plan (**Table 4.1**) has a new planning range for the number of immigrants. The purpose is to emphasize more on Canada's immigration policy objectives rather than just trying to maintain the total planned numbers. Previous immigration plans led to the focus on the overall total and numbers for each component (family, refugee and business class) as fixed numbers, which were identified as targets to be achieved. Rather than on essential policy objectives, the numbers of immigrants were

focused. However, actual immigration rarely matched the planning figures. This led to increased numbers in one category to compensate for a short fall in another in order to maintain the overall planned total number.

Besides, the 1995 Plan projects lower overall immigrant totals than in 1994, another major objective of the 1995 plan is to give more balance between the family and economic components of immigrants. In other words, increasing the number of economic immigrants and reducing the number of family class immigrants become the major issue. The 1995 Plan will accommodate all qualified applicants in the economic family components. The lower numbers of the family class will allow the immigration program to be gradually reoriented in later years to applicants who can make an immediate contribution to the Canadian economy. Canada would like to give the first priority to those who have the capacity to settle quickly, who can bring their new ideas, fresh approaches, skills and talents. As a matter of fact, the economic-class immigrant tends to increase demand for Canadian goods and services, and increase investment capital.

Table 4.1 1995 Immigration Plan

	1994 Plan	1994 Projection	1995 Plan
Immediate Family	68,000	67,000	53,000 - 55,000
Parents and Grandparents	43,000	42,000	33,000 - 35,000
Total Family	111,000	109,000	86,000 - 90,000
Skilled Worker: - principal applicant	30,700	26,000	24,000 - 26,000
- dependant	43,000	37,000	32,000 - 35,000
Business: - principal applicant	6,000	7,000	4,000 - 5,000
- dependent	18,000	21,000	11,000 - 14,000
Total Economic	97,700	91,000	71,000 - 80,000
Live-in Caregiver: - principal applicant	8,000	6,000	4,000 - 5,000
- dependent	-	-	1,000 - 2,000
Deferred Removal Order Class	-	-	4,000 - 6,000
Retirees	5,000	6,000	-
Total Other	13,000	12,000	9,000 - 13,000
Total Immigrant	221,700	212,000	166,000 - 163,000
Refugee			
Government Assisted	7,300	7,300	7,300
Privately Sponsored	6,000	2,700	2,700 - 3,700
Refugees Landed In Canada	15,000	8,000	12,000 - 18,000
Dependants Abroad	-	-	2,000 - 3,000
Total Refugee	28,300	18,000	24,000 - 32,000
Total	250,000	230,000	190,000 - 215,000
Estimated out-migration	50,000	50,000	50,000

Source: A Broader Vision: Immigration and Citizenship, Plan
1995-2000

On the other hand, the government believes that family class immigrants such as parents, and grandparents may not be able to integrate to contribute to Canada as quickly as those who come by the point system. Most of the family class immigrants are instead likely to require public assistance. **Table 4.2** shows that starting from 1996, the economic class will increase from 43% total of immigrant to 47%, but family class will decrease from 51% to 47%. This ratio will continue to change until year 2000. The total number of immigrants to be admitted each year will be determined on an annual basis but will reflect longer-term strategic objectives. The goal of immigration at approximately one percent of Canada's population will be applied over the long term.³¹

³¹ A Broader Vision: Immigration and Citizenship: Plan 1995 - 2000, Canada, 1994.

Table 4.2 1996 - 2000 Immigrant Plan

(Immigrants - Planned Percentages)

	1994 Projection	1995	1996	1997 - 1999	2000
Economic	43%	43%	47%	52%	53%
Family	51%	51%	47%	44%	44%
Other	6%	6%	6%	4%	3%
Total	100%	100%	100%	100%	100%

Source: A Broader Vision: Immigration and Citizenship, Plan 1995
- 2000

4.2 Family immigration

Although the number of family immigrants will be cut down, the reunification of the immediate family will continue to be the priority with the 1995 plan.

Over the past 10 years, 14% of family class sponsorship broke down. Many older family immigrants were on welfare because these family class immigrants were not assessed for their skills. They tend to have low skills, are too old to work and use more of

Canada's social welfare system.³² Nationally, the social welfare cost of this default in sponsorship obligation is estimated to have been close to \$700 million in 1993.³³ Although the federal government has not yet defined the detail law of how to improve sponsorship contracts, sponsors will have to be held financially responsible to a greater degree through the possible introduction of a financial guarantee mechanism or sponsorship bond in the future.

In 1992, in order to cut down on family immigrants, instead of permitting never married children of any age to immigrate as dependants, regulations redefined dependent children as those under age 19 and unmarried, as well as those adult children who are either full - time students supported by their parents, or those with disabilities supported by their parents.³⁴ In the 1995 Plan, sponsoring parents and grandparents will be more difficult and restrictive. A decline in the number of family immigrants is expected.

³² A Broader Vision: Immigration and Citizenship Plan 1995-2000, Canada, 1994.

³³ Ibid.

³⁴ Ibid.

4.3 Economic Immigrants

Economic immigrants are the focus of the 1995 Plan. Canada hopes to increase the skill levels of the newcomers. The immigration department wants to emphasize an applicant's potential for long term success, with emphasis on education, experience, language skills, age and employability.

The point system is the basis for selecting independent immigrants. The government can use this system to absorb skilled workers and to help employers to fill skilled jobs for which Canadians are not available. By the point system, Canada can recruit those who can best contribute to its economic goals. Starting in 1993, the government has increased the number of points awarded for education and skill levels, and tightened the assessment of English and French skills. Further initiatives will enhance both the short and long-term contributions by newcomers to the Canadian economy.

The inventory of business applicants has fallen in recent years. This may reflect the performance of the Canadian economy, and business opportunities elsewhere, and to world events in

general. The 1995 Plan will improve selection criteria, placing greater emphasis on entrepreneurs and investors with a strong business background and the capacity to integrate into the Canada business community. Canada will also improve counselling services for business immigrants including investment advice.

4.4 The Refugee Plan

Canada is one of the industrial countries that operates a major refugee resettlement program. The 1995 Plan will still provide protection to thousands of refugees. However, how many refugees and humanitarian cases should Canada be accepting, and how should Canada meet its humanitarian obligations towards refugees, are questions that have been of concern to government, non-governmental organizations and some interested parties.

In the 1995 plan, the government will improve the private sponsorship of refugees program. Over its 15 year history, the program has assisted more than 155,000 refugees and members of designated classes to resettle in Canada.³⁵ The success of this

³⁵ Ibid.

program is attributable directly to the energy and enthusiasm demonstrated by the volunteers across Canada who are actively engaged in the private sponsorship process.

Chapter 5.

The Analytical Framework

5.1 Introduction

To analyze the Canadian Immigration system we have developed two models: a demographic model and an economic model. The aim of the demographic model is to display the behaviour of the human flows through time with consideration given to the appropriate demographic variables that are used. For instance, factors such as births, deaths and migration will be kept in mind, since they may influence the system in different manners and to a different extent. As for the economic model, it is developed to show the relationship between national income and the system's demography. The capacity of production of the society depends on the number of active persons other factors of production. Hence, the linkages between economics and demography are vital and this point is the innovative aspect of the research since most of the analyses are carried out by projecting population groups without regards for the impact of economics.

5.2 The Demographic Model

For the present analysis, we have chosen the demographic model that uses the so-called Demographic Accounting because it is a possible means to integrate information on human stocks and flows, and provides a comprehensive basis for social research and planning. For this purpose, a set of demographic matrices are developed using the Standard-Demographic Matrix to present the human flows in a particular period. In that matrix the columns represent the inputs, while the rows represent the outputs.

One should understand the demographic and social factors on which the success of policies based on models depends, and how this information can be used analytically and connected with the national economic accounts. Input-output analysis is an immediate example of this type of model building process. For this purpose we use the Standard Socio-Demographic Matrix form as a basis for the socio-demographic model in order to make projections. This kind of model is similar to open Leontieff models in economics in the sense that they are set in motion by injecting exogenous elements as the inputs of the system.

Those inputs of the matrix are the human beings that enter the system. Hence, the inflow population of a given year is made up of (1) those living in the country at the end of the preceding period, and remaining at the beginning of the next period; (2) those born during the period, who flow in from the outside world; (3) the immigrants of the period. On the other hand, the outputs, that is, the outflow population, consists of (1) the deaths during the period, who flow to the outside world, and (2) the emigrants of the period, also flowing to the outside world.

Depending on the purpose of the model, we will set different limits when subdividing the population by groups. This is to enable the information to become disaggregated in order for the information to become useful. For instance, the population considered in our model has been divided into 15 different groups, each of them containing 5 year-periods, save the last one. Thus, the Canadian population is partitioned by ages 0 to 4, 5 to 9, 6 to 10 and so on until the last group that assembles those individuals aged 70 and over.

To study the aging of the Canadian population, a system of demographic accounts is set up along the line suggested by

Richard Stone (1971). In symbolic form, the standard matrix of socio-demographic stocks and flows for a country can be represented by the following **Table 5.1** for any year t .

Figure 5.1 Standard Socio-Demographic Matrix Model

state _{t+1}	state _t	outside world	age groups 1 2 3 ... n	closing stock
outside world	a	d ₁ d ₂ d ₃ ... d _n		
age group 1	b ₁	S ₁₁		X' ₁
age group 2	b ₂	S ₂₁ S ₂₂		X' ₂
...	.	S ₃₂		..
...
...
age group n	b _n	S _{nn}		X' _n
opening stocks		X ₁ X ₂ X ₃ ... X _n		

The population, divided into n age groups, is represented by an n -vector. In the table, the population at the beginning of year t is denoted by the vector (X_1, X_2, \dots, X_n) , which will be called the opening stocks. For example X_1 denotes the number of children under 4 years of age, X_2 the number of children between

the ages 5-9, while X_n denote the number of people aged 70 and over.

At the end of year t , the population is given by the vector $(X'_1, X'_2, \dots, X'_n)$, known as the closing stocks. This vector will then constitute the opening stocks at the beginning of the following year, i.e., year $t+1$. The evolution of the population from one year to another, i.e., the variation $(X_1, X_2, \dots, X_n) \rightarrow (X'_1, X'_2, \dots, X'_n)$, is explained by births, deaths, immigration and emigration. The entry denoted by a in the above table gives the number of individuals, irrespective of age, who both entered and left the country during year t .

In principle, this total a should contain (1) all the babies born in year t who died during that same period; (2) all the immigrants of year t , who either died or changed their mind and emigrated before the end of that period; (3) all short-term visitors. In practice, statistics for emigrants and temporary visitors are not sufficiently detailed to fill those categories (2) and (3), so essentially, a represents only those in category (1).

Column vector \mathbf{b} gives us the number of individual in each age group who entered the country in year t and were still there in the following year. The number b_1 represent the number of babies born in year t who survived into year $t+1$, whereas b_2, \dots, b_n denote net immigrants.

The row vector (d_1, d_2, \dots, d_n) denotes the number of individuals, subdivided by age, who were in the country at the beginning of year t but left the country during that year, either by death or emigration. At the centre of the table there is a matrix that contains all the individuals who were present in the country in year t and survived into year $t+1$. For example, X_1 is the number of children under 4 years of age at the beginning of year t , that during the year d_1 of them would leave the country either by emigration or through deaths, S_{11} of them remain in this age group and S_{21} of them would move into the next age group. Clearly $X_1 = S_{11} + S_{21} + d_1$. As for the closing stocks, it is easy to see that $X'_1 = b_1 + S_{11}$, $S'_2 = b_2 + S_{22} + S_{21}$, and so on.

The demographic developments of a country are represented through a succession of demographic matrices. The dynamic motion

of the country's population is projected by computing successive matrices under certain hypotheses concerning births, deaths, and migration. The results of this process are shown in the next chapter.

5.3 The Economic Model

The link between demography and national income must be established in order to analyze the impacts of demographic developments on the immigration system. In this model, the economy is divided into k industries, and the value added contributed by each industry is estimated. The results are then summed across industries to arrive at a value for national income. For a typical industry, its output, say Y , can be written symbolically as $Y = F(K, L, R)$ where K , L and R are inputs of capital, labour and raw materials or intermediate inputs, respectively. Here K might denote a vector of various types of capital goods (e.g., machines), R various types of intermediated inputs, and L various types of labour.

The labour inputs are classified according to age and occupation. Under this classification L is a matrix with the

following interpretation: L_{ijk} is the number of workers with age i and skills j employed in industry k . For industry k , its value added, say VA_k , is given by the difference between the value of goods produced and the value of the intermediate inputs. This value added is then used to pay the workers (wages and salaries) and the capital owners (cost of capital), say:

$$VA_k = \sum_{i,j} W_{ijk} + \Pi_k$$

where W_{ijk} is the total value of wages paid to workers with age i and occupation j in industry k , and Π_k are the profits of industry k . The national income is then given by the sum of all the VA 's

ie., $\sum_k VA_k$

National income depends on many factors, such as the structure and size of the labour force; it also depends on the technology and technical progress in each industry. Since the structure of the labour force depends on the country's

demographic developments, the paper will attempt to estimate the labour force structure using the demographic model described above. Another important dimension is the gain in productivity, which is also considered in the model.

5.4 Assumptions and Projections

In many cases, assumptions must be made when inappropriate or insufficient data are given. Therefore, to be as accurate as possible, the data used in this paper are derived, directly or indirectly, from Statistics Canada's publications and database sources.

When data do not exist, or are insufficient, or additional figures are needed, some assumptions related to the future behaviour of certain variables are made. This is where the assumptions are needed. Furthermore, we would like to mention that data for 1992 are real data, unless otherwise specified.

Instead of considering the inflation factor in the model, the real increase of the national output is appraised by means of

the index of productivity gains. Productivity measures the efficiency of the production process by relating the output (the amount of goods and services produced) to the inputs (the quantity of labour, capital, energy and other intermediate inputs used). Productivity increases when the same amount of input produces larger quantities of goods and services than before, or when the same amount of output is produced with smaller quantities of inputs.³⁶

Population projection. From Statistics Canada were obtained the population totals for the projection period i.e., 1993 - 2011 (see **Table 5.2**).

Births, deaths and migration. The specific numbers for each age group during the projection years were obtained. Also using the same source as above, we obtained the numbers for migration and deaths. We assumed that they will be distributed in the same proportion as they occurred in 1992 (see **Table 5.3, 5.4 & 5.5**).

³⁶ A comparison of the total factor productivity and total cost performance of Canadian and U.S. industries, Economic Council of Canada, Canada, Rao, Someshwar and Tony Lempriere, 1992.

Table 5.2 Population Projections by Age Group (Figures in '000)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
0 - 4	1,982.0	1,813.1	1,777.3	1,730.9	1,684.2	1,638.3	1,593.7	1,551.2	1,511.2	1,473.6
5 - 9	1,884.8	1,856.7	1,863.6	1,870.1	1,866.8	1,850.2	1,824.3	1,788.3	1,741.9	1,695.0
10 - 14	1,867.2	1,849.4	1,856.2	1,855.7	1,856.0	1,863.3	1,869.6	1,876.4	1,882.6	1,879.2
15 - 19	1,840.6	1,823.6	1,836.1	1,844.8	1,855.1	1,861.4	1,873.2	1,880.0	1,879.3	1,879.5
20 - 24	1,979.2	1,959.2	1,934.5	1,912.3	1,883.4	1,880.2	1,879.6	1,892.0	1,900.5	1,910.8
25 - 29	2,296.8	2,174.1	2,104.4	2,056.4	2,045.4	2,030.0	2,017.1	1,992.3	1,969.5	1,941.1
30 - 34	2,460.1	2,416.9	2,419.7	2,402.9	2,349.1	2,283.7	2,203.8	2,134.0	2,086.0	2,074.9
35 - 39	2,319.4	2,315.3	2,345.7	2,370.7	2,401.8	2,410.3	2,420.5	2,423.2	2,406.5	2,352.8
40 - 44	2,073.7	2,065.4	2,107.1	2,159.9	2,204.6	2,259.4	2,303.3	2,333.7	2,358.6	2,389.6
45 - 49	1,738.4	1,809.3	1,885.2	1,958.6	2,019.2	2,025.5	2,050.9	2,092.5	2,145.2	2,190.0
50 - 54	1,356.9	1,412.2	1,472.3	1,530.5	1,594.2	1,706.7	1,791.7	1,866.9	1,939.6	1,999.8
55 - 59	1,209.3	1,211.5	1,233.2	1,257.2	1,289.0	1,332.4	1,393.5	1,452.7	1,510.2	1,572.9
60 - 64	1,174.4	1,182.1	1,182.2	1,178.0	1,178.8	1,178.3	1,182.5	1,204.1	1,228.0	1,259.5
65 - 69	1,059.0	1,071.1	1,076.8	1,088.7	1,099.1	1,109.9	1,117.6	1,118.6	1,115.9	1,117.9
70+	2,167.1	2,257.2	2,332.5	2,407.1	2,480.6	2,549.9	2,618.8	2,682.4	2,750.8	2,816.6
Total	27,408.9	27,217.1	27,426.8	27,623.8	27,807.3	27,979.5	28,140.1	28,288.3	28,425.8	28,553.2

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
0 - 4	1,438.7	1,406.9	1,377.6	1,351.5	1,328.3	1,306.8	1,286.7	1,268.1	1,251.0	1,234.1
5 - 9	1,649.0	1,604.3	1,561.8	1,521.8	1,484.0	1,449.2	1,417.2	1,388.0	1,361.7	1,338.4
10 - 14	1,862.3	1,836.3	1,800.2	1,753.6	1,706.8	1,660.6	1,615.9	1,573.2	1,533.2	1,495.3
15 - 19	1,886.7	1,892.9	1,899.5	1,905.8	1,902.2	1,885.3	1,859.3	1,823.1	1,776.6	1,729.8
20 - 24	1,916.9	1,928.7	1,935.4	1,934.7	1,934.9	1,942.0	1,948.2	1,954.8	1,961.0	1,957.5
25 - 29	1,937.7	1,937.0	1,949.2	1,957.5	1,967.7	1,973.7	1,985.4	1,992.0	1,991.3	1,991.3
30 - 34	2,059.3	2,046.2	2,021.3	1,999.0	1,970.0	1,966.6	1,965.7	1,977.8	1,986.1	1,996.2
35 - 39	2,287.6	2,207.8	2,138.4	2,090.5	2,079.2	2,063.8	2,050.6	2,025.9	2,003.6	1,974.6
40 - 44	2,398.3	2,408.7	2,411.5	2,394.9	2,341.5	2,276.7	2,197.5	2,128.3	2,080.8	2,069.7
45 - 49	2,244.7	2,288.6	2,319.0	2,344.1	2,375.3	2,384.2	2,394.7	2,397.8	2,381.6	2,328.9
50 - 54	2,006.7	2,032.3	2,074.0	2,126.5	2,171.2	2,225.6	2,269.3	2,299.8	2,325.1	2,356.3
55 - 59	1,683.6	1,767.3	1,841.5	1,912.9	1,972.3	1,979.6	2,005.4	2,046.9	2,098.8	2,143.1
60 - 64	1,302.0	1,361.4	1,419.2	1,474.9	1,535.9	1,643.4	1,724.8	1,796.7	1,866.0	1,923.5
65 - 69	1,118.6	1,123.7	1,144.9	1,168.1	1,198.6	1,239.3	1,295.9	1,350.9	1,403.9	1,461.9
70+	2,878.4	2,936.8	2,984.0	3,031.6	3,081.3	3,125.9	3,172.0	3,222.9	3,276.6	3,339.0
Total	28,670.5	28,778.9	28,877.5	28,967.4	29,049.2	29,122.7	29,188.6	29,246.2	29,297.3	29,339.6

Source: Statistics Canada (CANSIM)

Table 5.3 Projection of Immigrants by Age Group

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
0 - 4	15.02	9.98	10.08	10.06	10.03	10.00	9.98	9.96	9.94	9.92
5 - 9	17.92	11.91	12.02	11.99	11.96	11.93	11.91	11.88	11.86	11.83
10 - 14	16.53	10.98	11.09	11.06	11.03	11.01	10.98	10.96	10.93	10.91
15 - 19	15.93	10.59	10.69	10.66	10.63	10.61	10.59	10.56	10.54	10.52
20 - 24	26.14	17.37	17.54	17.49	17.45	17.40	17.37	17.33	17.29	17.26
25 - 29	37.96	25.23	25.47	25.41	25.34	25.28	25.23	25.16	25.11	25.07
30 - 34	31.46	20.91	21.11	21.06	21.00	20.95	20.91	20.86	20.81	20.77
35 - 39	21.77	14.47	14.61	14.57	14.54	14.50	14.47	14.43	14.40	14.38
40 - 44	13.95	9.27	9.36	9.34	9.32	9.29	9.27	9.25	9.23	9.21
45 - 49	7.84	5.21	5.26	5.25	5.23	5.22	5.21	5.20	5.19	5.18
50 - 54	6.64	4.41	4.45	4.44	4.43	4.42	4.41	4.40	4.39	4.38
55 - 59	6.39	4.25	4.29	4.28	4.27	4.25	4.25	4.24	4.23	4.22
60 - 64	6.19	4.11	4.15	4.14	4.13	4.12	4.11	4.10	4.09	4.08
65 - 69	4.34	2.88	2.91	2.91	2.90	2.89	2.88	2.88	2.87	2.87
70+	4.70	3.12	3.15	3.14	3.14	3.13	3.12	3.11	3.11	3.10
Total	232.78	154.69	156.18	155.80	155.40	155.00	154.69	154.32	153.99	153.70

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
0 - 4	9.90	9.89	9.87	9.86	9.84	9.83	9.82	9.81	10.43	9.27
5 - 9	11.81	11.79	11.77	11.76	11.74	11.72	11.71	11.70	12.44	11.06
10 - 14	10.89	10.88	10.86	10.84	10.83	10.81	10.80	10.79	11.47	10.20
15 - 19	10.50	10.48	10.46	10.45	10.43	10.42	10.41	10.40	11.06	9.83
20 - 24	17.23	17.20	17.17	17.15	17.12	17.10	17.08	17.07	18.15	16.14
25 - 29	25.02	24.98	24.93	24.90	24.87	24.84	24.80	24.79	26.35	23.43
30 - 34	20.73	20.71	20.67	20.64	20.61	20.59	20.56	20.54	21.84	19.42
35 - 39	14.35	14.33	14.30	14.28	14.26	14.25	14.23	14.22	15.12	13.44
40 - 44	9.20	9.18	9.17	9.15	9.14	9.13	9.12	9.11	9.69	8.61
45 - 49	5.17	5.16	5.15	5.14	5.14	5.13	5.12	5.12	5.44	4.84
50 - 54	4.37	4.37	4.36	4.35	4.35	4.34	4.34	4.33	4.61	4.10
55 - 59	4.21	4.21	4.20	4.19	4.19	4.18	4.18	4.17	4.44	3.94
60 - 64	4.08	4.07	4.06	4.06	4.05	4.05	4.04	4.04	4.29	3.82
65 - 69	2.86	2.86	2.85	2.85	2.84	2.84	2.84	2.83	3.01	2.68
70+	3.09	3.09	3.08	3.08	3.08	3.07	3.07	3.07	3.26	2.90
Total	153.41	153.20	152.90	152.70	152.49	152.30	152.12	151.99	161.60	143.68

Source: Statistics Canada (CANSIM)

Table 5.4 Projection of Deaths by Age Group

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
0 - 4	0.98	0.99	1.01	1.02	1.04	1.05	1.07	1.09	1.10	1.12
5 - 9	0.40	0.41	0.41	0.42	0.42	0.43	0.44	0.44	0.45	0.46
10 - 14	0.43	0.43	0.44	0.45	0.45	0.46	0.47	0.47	0.48	0.49
15 - 19	1.52	1.54	1.56	1.58	1.60	1.63	1.66	1.68	1.71	1.73
20 - 24	1.81	1.83	1.86	1.88	1.91	1.94	1.97	2.00	2.03	2.06
25 - 29	2.13	2.15	2.18	2.21	2.25	2.28	2.32	2.36	2.39	2.43
30 - 34	2.57	2.60	2.64	2.67	2.71	2.76	2.80	2.85	2.89	2.93
35 - 39	2.79	2.82	2.86	2.90	2.94	2.99	3.04	3.08	3.13	3.18
40 - 44	3.58	3.62	3.67	3.72	3.78	3.84	3.90	3.96	4.02	4.08
45 - 49	4.54	4.59	4.66	4.72	4.79	4.87	4.95	5.02	5.10	5.18
50 - 54	6.41	6.48	6.57	6.67	6.76	6.87	6.98	7.09	7.20	7.31
55 - 59	10.22	10.33	10.48	10.63	10.77	10.95	11.13	11.30	11.48	11.65
60 - 64	15.62	15.78	16.01	16.24	16.47	16.74	17.01	17.28	17.54	17.81
65 - 69	21.68	21.91	22.23	22.55	22.85	23.24	23.61	23.99	24.35	24.72
70+	122.56	123.83	125.63	127.43	129.17	131.35	133.46	135.57	137.62	139.74
Total	197.24	199.31	202.21	205.09	207.91	211.40	214.81	218.18	221.49	224.89

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
0 - 4	1.14	1.16	1.18	1.20	1.22	1.24	1.26	1.28	1.31	1.33
5 - 9	0.47	0.48	0.48	0.49	0.50	0.51	0.52	0.53	0.53	0.54
10 - 14	0.50	0.51	0.52	0.53	0.53	0.54	0.55	0.56	0.57	0.58
15 - 19	1.77	1.80	1.83	1.86	1.89	1.92	1.96	1.99	2.02	2.06
20 - 24	2.10	2.14	2.18	2.22	2.25	2.29	2.33	2.37	2.41	2.45
25 - 29	2.47	2.52	2.56	2.61	2.65	2.70	2.74	2.79	2.83	2.88
30 - 34	2.99	3.04	3.10	3.15	3.20	3.26	3.31	3.37	3.42	3.48
35 - 39	3.24	3.30	3.36	3.41	3.47	3.53	3.59	3.65	3.71	3.77
40 - 44	4.16	4.24	4.31	4.39	4.46	4.53	4.61	4.69	4.77	4.85
45 - 49	5.27	5.37	5.47	5.56	5.65	5.75	5.85	5.94	6.04	6.14
50 - 54	7.45	7.58	7.72	7.85	7.98	8.12	8.25	8.39	8.53	8.67
55 - 59	11.87	12.09	12.30	12.52	12.72	12.94	13.15	13.37	13.60	13.82
60 - 64	18.14	18.48	18.81	19.13	19.44	19.78	20.11	20.44	20.79	21.13
65 - 69	25.18	23.65	26.11	26.56	26.99	27.45	27.91	28.37	28.86	29.33
70+	142.35	144.96	147.57	150.11	152.54	155.15	157.76	160.36	163.10	165.77
Total	229.10	231.32	237.50	241.59	245.49	249.71	253.90	258.10	262.49	266.80

Source: Statistics Canada (CANSIM)

Table 5.5 Projection of Emigrants by Age Group

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
0 - 4	1.98	4.29	4.40	4.41	4.42	4.43	4.43	4.44	4.44	4.45
5 - 9	2.79	6.05	6.20	6.22	6.23	6.24	6.25	6.26	6.26	6.27
10 - 14	2.81	6.10	6.26	6.27	6.28	6.29	6.30	6.31	6.32	6.32
15 - 19	2.35	5.11	5.24	5.25	5.26	5.27	5.27	5.28	5.29	5.29
20 - 24	3.35	7.28	7.46	7.48	7.49	7.51	7.51	7.52	7.53	7.54
25 - 29	5.93	12.87	13.19	13.22	13.24	13.27	13.29	13.30	13.32	13.33
30 - 34	5.39	11.70	11.99	12.02	12.03	12.06	12.08	12.09	12.10	12.12
35 - 39	4.47	9.71	9.96	9.98	9.99	10.02	10.03	10.04	10.05	10.06
40 - 44	3.88	8.42	8.63	8.65	8.66	8.68	8.69	8.70	8.71	8.72
45 - 49	1.93	4.20	4.30	4.31	4.32	4.33	4.33	4.34	4.34	4.35
50 - 54	1.16	2.53	2.59	2.60	2.60	2.61	2.61	2.61	2.61	2.62
55 - 59	0.75	1.63	1.67	1.67	1.67	1.68	1.68	1.68	1.68	1.68
60 - 64	0.53	1.15	1.18	1.18	1.18	1.18	1.19	1.19	1.19	1.19
65 - 69	0.49	1.07	1.09	1.10	1.10	1.10	1.10	1.10	1.11	1.11
70+	0.51	1.10	1.13	1.13	1.13	1.13	1.14	1.14	1.14	1.14
Total	38.32	83.21	85.29	85.49	85.60	85.80	85.90	86.00	86.09	86.19

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
0 - 4	4.45	4.46	4.46	4.47	4.47	4.47	4.47	4.48	4.99	4.07
5 - 9	6.28	6.28	6.29	6.30	6.30	6.31	6.31	6.31	7.03	5.74
10 - 14	6.33	6.34	6.35	6.35	6.35	6.36	6.36	6.37	7.09	5.79
15 - 19	5.30	5.30	5.31	5.32	5.32	5.32	5.32	5.33	5.93	4.84
20 - 24	7.55	7.56	7.57	7.58	7.58	7.58	7.58	7.59	8.45	6.90
25 - 29	13.35	13.36	13.38	13.39	13.39	13.41	13.41	13.42	14.94	12.20
30 - 34	12.13	12.15	12.16	12.17	12.17	12.19	12.19	12.20	13.58	11.09
35 - 39	10.07	10.09	10.10	10.11	10.11	10.12	10.12	10.13	11.28	9.21
40 - 44	8.73	8.74	8.75	8.76	8.76	8.77	8.77	8.78	9.78	7.99
45 - 49	4.35	4.36	4.36	4.37	4.37	4.37	4.37	4.38	4.87	3.98
50 - 54	2.62	2.62	2.63	2.63	2.63	2.63	2.63	2.64	2.93	2.40
55 - 59	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.70	1.89	1.54
60 - 64	1.19	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.33	1.09
65 - 69	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.24	1.01
70+	1.14	1.14	1.14	1.15	1.15	1.15	1.15	1.15	1.28	1.04
Total	86.29	86.39	86.49	86.60	86.60	86.68	86.68	86.79	96.61	78.89

Source: Statistics Canada (CANSIM)

Death probability for newborns. From the Canada Pension Plan Fourteenth Actuarial Report³⁷ was taken the probability of death for persons aged 0, averaging female and male infants. This number comes to be 7.68 deaths per thousand lives, and was assumed constant for the projection period.

Active population. The proportion of persons in each age group that are active, and the employed-to-total population ratios were calculated from the 1992 employment statistics. These ratios were assumed to remain constant during the projection period. (Table 5.6)

Employment by industry. According to the 1980 Standard Industrial Classification (SIC-80)³⁸, industries were considered to belong to 19 different activities. The corresponding 1992 figure of employed persons in each industry, as a percentage of the economy's total employment, was assumed to be maintained through the projection period.

³⁷ Canada 1991-E

³⁸ Canada 1980

Table 5.6 Active Population Ratios, Canada 1992

Age Group	Active Population
0-4	0.00%
5-9	0.00%
10-14	0.00%
15-19	40.80%
20-24	62.55%
25-29	71.71%
30-34	71.70%
35-39	76.10%
40-44	76.00%
45-49	73.29%
50-54	73.33%
55-59	55.07%
60-64	32.10%
65-69	11.61%
70+	3.05%

Source: Statistics Canada (1993). Labour force annual average 1992, 71-220

Table 5.7 *Employment by Industry. Canada, 1992*

Industry	Employment
Agriculture	3.54%
Fishing & Trapping	0.32%
Logging & Forestry	0.50%
Mining, Quarrying & Oil Wells	1.28%
Manufacturing	14.61%
Construction	5.65%
Transportation & Storage	4.76%
Communication	2.75%
Wholesale Trade	4.51%
Retail Trade	13.10%
Finance & Insurance	4.02%
Real Estate & Ins. Agents	2.21%
Business Services	5.52%
Government Services	6.81%
Educational Services	7.25%
Health & Social Services	9.99%
Accommodation food & Beverage Services	6.23%
Other Services	7.03%
Unclassified	0.00%

Source: Statistics Canada (1993). Labour force annual averages 1992. Catalogue 71-220

Employment by Occupation. According to the 1980 Standard Occupational Classification (SOC-80)³⁹. There are 10 different occupations in each industry. Again, the proportions of employed persons in each occupation during 1992 were assumed to remain constant for the rest of the projection period.

Table 5.8 Employment by Occupation. Canada, 1992

Occupation	Employment
Managerial & Other Professional	31.86%
Clerical	16.21%
Sales	9.90%
Services	13.59%
Primary Occupations	4.75%
Processing	11.56%
Construction	5.20%
Transport	3.63%
Material Handling	3.29%
Unclassified	0.00%

Source: Statistics Canada (1993). Labour force annual averages 1992. Catalogue 71-220

³⁹ Canada (1993-G)

Average weekly earnings. Since the corresponding number for the Fishing & Trapping Industry was unavailable, it was assumed to be equal to that of the Agriculture Industry due to the similar nature of both activities. Data for all industries' average weekly earnings are in **Table 5.9**. Using the 1992 Average Standard Work Week (see **Table 5.10**) for that industry we arrived at a figure assumed to be reasonable.

Table 5.9 Average Weekly Earnings by Industry. Canada, 1992

Industry	Average Weekly Earning (\$)
Agriculture	324.90
Fishing & Trapping	324.90
Logging & Forestry	704.67
Mining, Quarrying & Oil Wells	935.48
Manufacturing	655.88
Construction	638.59
Transportation & Storage	661.61
Communication	755.33
Wholesale Trade	582.87
Retail Trade	320.89
Finance & Insurance	623.22
Real Estate & Ins. Agents	516.57
Business Services	584.70
Government Services	723.10
Educational Services	683.23
Health & Social Services	486.58
Accommodation food & Beverage Services	212.57
Other Services	368.43
Unclassified	405.31

Source: Statistics Canada (CANSIM)

Table 5.10 Average Standard Work Week by Industry. Canada, 1992

Industry	Original Data	Adjusted Data
Agriculture	n.a.	38.0
Fishing & Trapping	n.a.	38.0
Logging & Forestry	38.6	38.6
Mining, Quarrying & Oil Wells	38.2	38.2
Manufacturing	28.3	28.3
Construction	39.5	39.5
Transportation & Storage	38.2	38.2
Communication	38.4	38.4
Wholesale Trade	38.5	38.5
Retail Trade	39.3	39.3
Finance & Insurance	36.3	36.3
Real Estate & Ins. Agents	36.5	36.5
Business Services	36.9	36.9
Government Services	38.0	38.0
Educational Services	n.a.	38.0
Health & Social Services	35.6	35.6
Accommodation food & Beverage Ser	40.1	40.1
Other Services	37.3	37.3
Unclassified	n.a.	38.0

Source: Statistics Canada (1993). Employment earning and hours, Catalogue 72-002

Profits by Industry. Although the corresponding figures for each industry was not available from Statistics Canada (only partial disclosures are made quarterly, but they do not cover all industries), the total profits before taxes for all industries have been published.⁴⁰ To estimate the participation of each of those industries in the total, we assumed that profits were proportional to the amount that each industry contributed to the 1992 Gross Domestic Product (GDP).

⁴⁰ Canada 1993-B

**Table 5.11 GDP at Factor Cost & Profits by Industry.
Canada, 1992**

Industry	GDP	Profits
Agriculture	11,025.1	834.4
Fishing & Trapping	822.1	62.2
Logging & Forestry	2,946.2	223.0
Mining, Quarrying & Oil Wells	19,938.1	1,509.0
Manufacturing	88,046.8	6,663.8
Construction	29,034.2	2,197.4
Transportation & Storage	21,915.5	1,658.7
Communication	15,383.5	1,164.3
Wholesale Trade	30,253.9	2,289.7
Retail Trade	29,913.2	2,264.0
Finance & Insurance	39,895.7	3,019.5
Real Estate & Ins. Agents	42,938.2	3,249.7
Business Services	241.9	18.3
Government Services	34,041.5	2,576.4
Educational Services	28,304.5	2,142.2
Health & Social Services	32,579.3	2,465.7
Accommodation food & Beverage Ser.	11,186.2	846.6
Other Services	1,253.9	94.9
Unclassified	8,458.2	640.2
Total	448,178.0	33,920.0

Source: Statistics Canada (1993), Provincial Gross Domestic Product by Industry, 1984-1992. Catalogue 15-203

Productivity index. The productivity index for the projection period was calculated using a linear regression model from the published data as of 1992 (see **Appendix B**). This regression model was applied to the productivity index for the business sector as well as to the manufacturing sector. The adjusted coefficients of determination are 79.07% and 86.47%, respectively. Due to the lack of already projected figures from an official or other specialized source, these projects were assumed to be reasonable. The figures used in the economic model corresponds to the average of both sectors, and are shown below.

All these assumptions are incorporated into the models, in order to reach a high degree of complexity without interfering with the easiness of presentation or the simplicity of understanding the obtained results.

Table 5.12 Estimation of Productivity index, Canada.

Year	Authur
1992	96.10
1993	103.62
1994	104.59
1995	105.56
1996	106.54
1997	107.51
1998	108.48
1999	109.45
2000	110.43
2001	111.40
2002	112.37
2003	113.34
2004	114.32
2005	115.29
2006	116.26
2007	117.23
2008	118.21
2009	119.18
2010	120.15
1011	121.12

Chapter 6.

Results and Conclusions

6.1 Introduction

We have already mentioned the key assumptions made in the application of those models and the purpose of those assumptions in Chapter 5. Therefore, in this chapter we exhibit the results needed for further discussion. The results obtained from the application of the demographic model by means of the Socio-Demographic Standard Matrix, together with the economic model, will be described here. As a final step, we point out the main conclusions derived from the application of the models.

6.2 Results of the Demographic Model

Table 6.1 shows the 1993 Socio-Demographic Standard Matrix developed according to the theory explained in the previous chapter.⁴¹ With the matrices corresponding to years 1993 - 2011

⁴¹ Tables corresponding to years 1994 - 2011 are not included for the sake of space.

we were able to calculate the human flows for each year. All figures are expressed in thousands and some slight errors are attributable to rounding off.

In Section 5.2 of the preceding chapter the structure of the matrix is explained. Here, (**Table 6.1**) we would like to emphasize the main features. The upper left most corner figure (2.59) corresponds to the a scalar value, which contains those newborns that died during the year and the emigrants of age less than one. Since we did not obtain the appropriate data, the last figure was considered to be zero.

The first three rows indicate the totals for the year as well as the deaths and emigrants for each age group. For instance, age group 5-9 shows that 0.41 thousand persons will die during the year; similarly, 6.05 thousand will emigrate; the sum, 6.46 thousand persons, will either die or emigrate. Figures for totals, for example, are 5.28 for the age group 0-4 years and 6.53 for age group 10-14 years; the age group of those aged 70 and more, accounts for 124.93 thousand deaths and emigrants. The total of deaths and emigration, for all age groups, during the year accounts for 285.11.

Table 6.1 Standard Socio-Demographic Matrix. Canada

Standard Socio-Demographic Matrix		1993															
		Figures in '000															
		Canada															
Age Group	Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	
		d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d12	d13	d14	d15	
Deaths	2.59	0.99	0.41	0.43	1.54	1.83	2.15	2.60	2.82	3.62	4.59	6.48	10.33	15.78	21.91	123.83	
Emig'n	0.00	4.29	6.05	6.10	5.11	7.28	12.87	11.70	9.71	8.42	4.20	2.53	1.63	1.15	1.07	1.10	
Total	2.59	5.28	6.46	6.53	6.65	9.11	15.02	14.30	12.53	12.04	8.79	9.01	11.96	16.93	22.98	124.93	
Births	337.50																
0-4	9.98	1,446.26															
5-9	11.91	361.56	1,480.19														
10-14	10.98		370.05	1,474.30													
15-19	10.59			368.57	1,453.56												
20-24	17.37				363.39	1,560.07											
25-29	25.23					390.02	1,727.26										
30-34	20.91						431.82	1,922.08									
35-39	14.47							480.52	1,842.22								
40-44	9.27								460.55	1,642.69							
45-49	5.21									410.67	1,440.41						
50-54	4.41										360.10	1,122.55					
55-59	4.25											280.64	959.63				
60-64	4.11												239.91	932.14			
65-69	2.88													233.03	838.50		
70+	3.12														209.62	2,132.27	
Opening Stocks	492.19	1,813.10	1,856.70	1,849.40	1,823.60	1,959.20	2,174.10	2,416.90	2,315.30	2,065.40	1,809.30	1,412.20	1,211.50	1,182.10	1,071.10	2,257.20	27,217.10
		x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13	x14	x15	

The bottom row of the matrix indicates the initial stocks for each age group, i.e., those survivors from the previous year. In the case of year 1993, the survivors from year 1992 are, for example, 2,174.10 thousand persons for the age group 25-29 years, and 1,211.50 thousand for those persons age 55-59. The total of those opening stocks are 27,217.10 thousand, i.e., the total initial population of the year.

The left column depicts the immigrants of the year, divided by age groups, where the first figure corresponds to the births of the year. In this case, births for the year accounts for 337.50 thousand. As for immigrants, we have, for example, 20.91 thousand for age group 30-34, whereas 4.11 corresponds to age group 60-64. The total is 492.19, located in the lower part of the same column.

In the main body of the matrix it is shown the survivors of the year that either will remain in the same age group as the previous year or that will move into the next age group. The figure of those that will remain in that same age group for next year, corresponds to the upper figure in each column, e.g., in age group 35-39 we have 1,842.22 thousand persons. The number of

persons that will flow into the next age group in the following year are represented by the lower number. For that same age group, 460.55 will move into the next group in the following year.

Since each age group is composed of five different ages, we assumed that for each age group, the number of persons moving into the next age group at the end of the present year was one fifth of the total number of persons in this group. This implies that within each age group, individuals are equally distributed. This assumption makes sense since we are talking about flows during a period, thus after five years all persons of each age group will have left that group. The last group (those aged 70+) is an exception to this dynamic flow, since there is no further group into which they can move. this is the case of the 2,132.27 persons aged 70+ shown in our table.

In the right column we have the so-called closing stocks. These figures correspond to the algebraic sum of each row, including the corresponding numbers in the immigrants and births' column. As for age group 45-49, for example, we have 1,856.29 thousand persons, i.e., in 1994 there will be 1.85 million people

aged 45-49, thus the closing stocks' figures will become the opening stocks for the next year for all age groups. We must mention that the exception for this rule are births for the year and the first age group since both are added up each year so that they will conform to the 0-4 age group of next year, making room for next year's births.

Similar interpretations should be applied to all the tables of our Demographic Model; the number of persons in each age group for the whole projection period are obtained based on the results from the matrices, as explained above. These results can be compared with Statistics Canada's data (see **Table 5.2** in preceding chapter). In this form, we have the summary for all the projected years that is shown in **Table 6.4** at the end of this chapter.

6.3 Results of the Economic Model

Inputting the population projections figures obtained from the demographic model's matrices into the economic model, we obtain the corresponding numbers of active persons for each year. The divisions of the model coincide with 19 industries, 10

occupational activities and 12 age groups, producing a matrix of 1,803 entries. The first three age groups, i.e., persons aged 0 to 14 are not considered active individuals. The industry and occupational classifications are shown in **Table 5.7** and **5.8** of the preceding chapter, respectively.

In **Table 6.2** we may observe that in 1993, for example, 8.4 thousand people are aged 15-19 years, are employed in industry 1 (Agriculture and related service industries) and are of occupation 1 (managerial and other professional). Similarly, 21,800 persons ages 20-24 years, are working in industry 10 (retail trade industries) belonging to occupation 4 (services). This division allows us to estimate the number of persons that are employed in each industry and each specific occupation for every age group. The figures and their totals are also shown. A similar procedure was applied for years 1994-2011, whose results are not presented for the sake of space.

Applying the value for each cell in the matrix to the corresponding annual average wage, we computed the wages paid to those employed persons. Data for wages are shown in **Table 5.9** in **chapter 5**. For each year, the corresponding productivity

index was applied to reflect the future performance of the economic agents in national output.

The procedure that we followed for this exercise was to multiply the average weekly wage, say \$655.88 (industry 5, manufacturing industries), by the productivity index for the year, i.e., 1.0362. This yields 679.63 which multiplied by 52 (weeks) gives \$35,340.39. Annually, the total amount of wages paid to that industry during the year was calculated using the above result and summing over the number of active persons in each occupation and over all age groups.

For the productivity index figures, the result of a projection made based on a linear progression model as explained in the preceding chapter. It is shown in **Appendix B**, (historical data) and **Table 5.12** (projected data). Since we are dealing with real values, not nominal values it must be stated that inflation was not considered in our model.

Due to the Plan 1995-1000, a new range of immigrants; 190,000 immigrants per year (lower range) and 215,000 immigrants per year (higher range), we carried out the same procedure for

all the industries and all the years considered in the projections. In order to compare the results, we performed the same procedure for the original immigration plan used by Statistic Canada,⁴² and arrived at the totals for those variable, i.e., wages paid, needed for our economic model. Those totals for each were added to the corresponding productivity-indexed profits of the same industries (see **Table 5.11**), to obtain the Value Added of year. Then we divided each value added by the population of that year. The outputs per capita for the different projected years are shown below, for both the 1995 Plan and the original plan. (**Table 6.4**)

⁴² Canada (1990-C)

Table 6.2 Economic Model Matrix (persons)

Age group	Industry	occupation	1	2	3	4	5	6	7	8	9	10	Total
1			0.0										
2			0.0										
3			0.0										
4	1		8.4	4.3	2.6	3.6	1.3	3.0	1.4	1.0	0.9	0.0	26.3
	2		0.8	0.4	0.2	0.3	0.1	0.3	0.1	0.1	0.1	0.0	2.4
	3		1.2	0.6	0.4	0.5	0.2	0.4	0.2	0.1	0.1	0.0	3.7
	4		3.0	1.5	0.9	1.3	0.5	1.1	0.5	0.3	0.3	0.0	9.5
	5		34.6	17.6	10.8	14.8	5.2	12.6	5.7	3.9	3.6	0.0	108.7
	6		13.4	6.8	4.2	5.7	2.0	4.9	2.2	1.5	1.4	0.0	42.0
	7		11.3	5.7	3.5	4.8	1.7	4.1	1.8	1.3	1.2	0.0	35.4
	8		6.5	3.3	2.0	2.8	1.0	2.4	1.1	0.7	0.7	0.0	20.5
	9		10.7	5.4	3.3	4.6	1.6	3.9	1.7	1.2	1.1	0.0	33.6
	10		31.1	15.8	9.6	13.2	4.6	11.3	5.1	3.5	3.2	0.0	97.5
	11		9.5	4.8	3.0	4.1	1.4	3.5	1.6	1.1	1.0	0.0	29.9
	12		5.2	2.7	1.6	2.2	0.8	1.9	0.9	0.6	0.5	0.0	16.4
	13		13.1	6.7	4.1	5.6	2.0	4.7	2.1	1.5	1.4	0.0	41.1
	14		16.1	8.2	5.0	6.9	2.4	5.9	2.6	1.8	1.7	0.0	50.7
	15		17.2	8.7	5.3	7.3	2.6	6.2	2.8	2.0	1.8	0.0	53.9
	16		23.7	12.0	7.4	10.1	3.5	8.6	3.9	2.7	2.4	0.0	74.3
	17		14.8	7.5	4.6	6.3	2.2	5.4	2.4	1.7	1.5	0.0	46.3
	18		16.7	8.5	5.2	7.1	2.5	6.0	2.7	1.9	1.7	0.0	52.3
	19		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			237.2	120.7	73.7	101.2	35.4	86.1	38.7	27.0	24.5	0.0	744.5
5	1		13.8	7.0	4.3	5.9	2.1	5.0	2.3	1.6	1.4	0.0	43.4
	2		1.2	0.6	0.4	0.5	0.2	0.5	0.2	0.1	0.1	0.0	3.9
	3		2.0	1.0	0.6	0.8	0.3	0.7	0.3	0.2	0.2	0.0	6.1
	4		5.0	2.5	1.6	2.1	0.7	1.8	0.8	0.6	0.5	0.0	15.7
	5		57.0	29.0	17.7	24.3	8.5	20.7	9.3	6.5	5.9	0.0	179.0
	6		22.1	11.2	6.9	9.4	3.3	8.0	3.6	2.5	2.3	0.0	69.2
	7		18.6	9.5	5.8	7.9	2.8	6.7	3.0	2.1	1.9	0.0	58.3
	8		10.7	5.5	3.3	4.6	1.6	3.9	1.8	1.2	1.1	0.0	33.7
	9		17.6	9.0	5.5	7.5	2.6	6.4	2.9	2.0	1.8	0.0	55.3
	10		51.1	26.0	15.9	21.8	7.6	18.6	8.3	5.8	5.3	0.0	160.5
	11		15.7	8.0	4.9	6.7	2.3	5.7	2.6	1.8	1.6	0.0	49.3
	12		8.6	4.4	2.7	3.7	1.3	3.1	1.4	1.0	0.9	0.0	27.1
	13		21.6	11.0	6.7	9.2	3.2	7.8	3.5	2.5	2.2	0.0	67.6
	14		26.6	13.5	8.3	11.3	4.0	9.6	4.3	3.0	2.7	0.0	83.4
	15		28.3	14.4	8.8	12.1	4.2	10.3	4.6	3.2	2.9	0.0	88.8
	16		39.0	19.8	12.1	16.6	5.8	14.2	6.4	4.4	4.0	0.0	122.4
	17		24.3	12.4	7.6	10.4	3.6	8.8	4.0	2.8	2.5	0.0	76.3
	18		27.4	14.0	8.5	11.7	4.1	10.0	4.5	3.1	2.8	0.0	86.1
	19		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			390.8	198.8	121.4	166.7	58.3	141.8	63.8	44.5	40.4	0.0	1,226.3
6	1		17.6	8.9	5.5	7.5	2.6	6.4	2.9	2.0	1.8	0.0	55.2
	2		1.6	0.8	0.5	0.7	0.2	0.6	0.3	0.2	0.2	0.0	5.0
	3		2.5	1.3	0.8	1.1	0.4	0.9	0.4	0.3	0.3	0.0	7.8
	4		6.4	3.2	2.0	2.7	0.9	2.3	1.0	0.7	0.7	0.0	20.0
	5		72.6	36.9	22.5	31.0	10.8	26.3	11.8	8.3	7.5	0.0	227.8
	6		28.1	14.3	8.7	12.0	4.2	10.2	4.6	3.2	2.9	0.0	88.1
	7		23.6	12.0	7.3	10.1	3.5	8.6	3.9	2.7	2.4	0.0	74.2
	8		13.7	6.9	4.2	5.8	2.0	5.0	2.2	1.6	1.4	0.0	42.9
	9		22.4	11.4	7.0	9.6	3.3	8.1	3.7	2.6	2.3	0.0	70.3
	10		65.1	33.1	20.2	27.8	9.7	23.6	10.6	7.4	6.7	0.0	204.2
	11		20.0	10.2	6.2	8.5	3.0	7.2	3.3	2.3	2.1	0.0	62.7
	12		11.0	5.6	3.4	4.7	1.6	4.0	1.8	1.3	1.1	0.0	34.5
	13		27.4	14.0	8.5	11.7	4.1	9.9	4.5	3.1	2.8	0.0	86.1
	14		33.8	17.2	10.5	14.4	5.0	12.3	5.5	3.9	3.5	0.0	106.2
	15		36.0	18.3	11.2	15.4	5.4	13.1	5.9	4.1	3.7	0.0	113.0
	16		49.6	25.2	15.4	21.2	7.4	18.0	8.1	5.7	5.1	0.0	155.7
	17		30.9	15.7	9.6	13.2	4.6	11.2	5.1	3.5	3.2	0.0	97.1
	18		34.9	17.8	10.9	14.9	5.2	12.7	5.7	4.0	3.6	0.0	109.6
	19		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			497.1	252.9	154.5	212.0	74.1	180.4	81.1	56.6	51.3	0.0	1,560.1
7	1		19.5	9.9	6.1	8.3	2.9	7.1	3.2	2.2	2.0	0.0	61.3
	2		1.8	0.9	0.5	0.8	0.3	0.6	0.3	0.2	0.2	0.0	5.5
	3		2.8	1.4	0.9	1.2	0.4	1.0	0.5	0.3	0.3	0.0	8.7
	4		7.1	3.6	2.2	3.0	1.1	2.6	1.2	0.8	0.7	0.0	22.2
	5		80.7	41.0	25.1	34.4	12.0	29.3	13.2	9.2	8.3	0.0	253.2
	6		31.2	15.9	9.7	13.3	4.7	11.3	5.1	3.6	3.2	0.0	97.9
	7		26.3	13.4	8.2	11.2	3.9	9.5	4.3	3.0	2.7	0.0	82.5
	8		15.2	7.7	4.7	6.5	2.3	5.5	2.5	1.7	1.6	0.0	47.7
	9		24.9	12.7	7.7	10.6	3.7	9.0	4.1	2.8	2.6	0.0	78.1
	10		72.3	36.8	22.5	30.9	10.8	26.2	11.6	8.2	7.5	0.0	227.0
	11		22.2	11.3	6.9	9.5	3.3	8.1	3.6	2.5	2.3	0.0	69.7
	12		12.2	6.2	3.8	5.2	1.8	4.4	2.0	1.4	1.3	0.0	38.3
	13		30.5	15.5	9.5	13.0	4.5	11.1	5.0	3.5	3.1	0.0	95.6
	14		37.6	19.1	11.7	16.0	5.8	13.6	6.1	4.3	3.9	0.0	118.0
	15		40.0	20.4	12.4	17.1	6.0	14.5	6.5	4.6	4.1	0.0	125.6
	16		55.2	28.1	17.1	23.5	8.2	20.0	9.0	6.3	5.7	0.0	173.1
	17		34.4	17.5	10.7	14.7	5.1	12.5	5.6	3.9	3.6	0.0	107.9
	18		38.8	19.7	12.1	16.6	5.8	14.1	6.3	4.4	4.0	0.0	121.8
	19		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			552.5	281.1	171.7	235.7	82.4	200.5	90.2	63.0	57.1	0.0	1,734.1
8	1		19.8	10.1	6.2	8.5	3.0	7.2	3.2	2.3	2.0	0.0	62.3
	2		1.8	0.9	0.6	0.8	0.3	0.7	0.3	0.2	0.2	0.0	5.6
	3		2.8	1.4	0.9	1.2	0.4	1.0	0.5	0.3	0.3	0.0	8.8
	4		7.2	3.7	2.2	3.1	1.1	2.6	1.2	0.8	0.7	0.0	22.5
	5		81.9	41.7	25.5	34.9	12.2	29.7	13.4	9.3	8.5	0.0	257.1
	6		31.7	16.1	9.8	13.5	4.7	11.5	5.2	3.6	3.3	0.0	99.4
	7		26.7	13.6	8.3	11.4	4.0	9.7	4.4	3.0	2.8	0.0	83.8
	8		15.4	7.8	4.8	6.6	2.3	5.6	2.5	1.8	1.6	0.0	46.4
	9		25.3	12.9	7.9	10.8	3.8	9.2	4.1	2.9	2.6	0.0	79.4
	10		73.5	37.4	22.8	31.3	11.0	26.7	12.0	8.4	7.6	0.0	230.5
	11		22.5	11.5	7.0	9.6	3.4	8.2	3.7	2.6	2.3	0.0	70.7
	12		12.4	6.3	3.9	5.3	1.8	4.5	2.0	1.4	1.3	0.0	38.9
	13		31.0	15.7	9.8	13.2	4.6	11.2	5.1	3.5	3.2	0.0	97.1
	14		38.2	19.4	11.9	16.3	5.7	13.9	6.2	4.4	3.9	0.0	119.8
	15		40.7	20.7	12.6	17.3	6.1	14.7	6.6	4.6	4.2	0.0	127.6
	16		56.0	28.5	17.4	23.9	8.4	20.3	9.1	6.4	5.8	0.0	175.8
	17		34.9	17.8	10.9	14.9	5.2	12.7	5.7	4.0	3.6	0.0	109.6
	18		39.4	20.1	12.2	16.8	5.9	14.3	6.4	4.5	4.1	0.0	123.7
	19		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			561.1	285.5	174.4	239.4	83.7	203.6	91.6	63.9	57.9	0.0	1,781.1

9	1	17.7	9.0	5.5	7.6	2.6	6.4	2.9	2.0	1.8	0.0	55.6
	2	1.6	0.8	0.5	0.7	0.2	0.6	0.3	0.2	0.2	0.0	5.0
	3	2.5	1.3	0.8	1.1	0.4	0.9	0.4	0.3	0.3	0.0	7.8
	4	6.4	3.3	2.0	2.7	1.0	2.3	1.0	0.7	0.7	0.0	20.1
	5	73.1	37.2	22.7	31.2	10.9	26.5	11.9	8.3	7.5	0.0	229.3
	6	28.3	14.4	8.8	12.1	4.2	10.3	4.6	3.2	2.9	0.0	88.7
	7	23.8	12.1	7.4	10.2	3.5	8.6	3.9	2.7	2.5	0.0	74.7
	8	13.8	7.0	4.3	5.9	2.1	5.0	2.2	1.6	1.4	0.0	43.2
	9	22.6	11.5	7.0	9.6	3.4	8.2	3.7	2.6	2.3	0.0	70.8
	10	65.5	33.3	20.4	27.9	9.8	23.8	10.7	7.5	6.8	0.0	205.6
	11	20.1	10.2	6.2	8.6	3.0	7.3	3.3	2.3	2.1	0.0	63.1
	12	11.1	5.6	3.4	4.7	1.6	4.0	1.8	1.3	1.1	0.0	34.7
	13	27.6	14.0	8.6	11.8	4.1	10.0	4.5	3.1	2.9	0.0	86.6
	14	34.1	17.3	10.6	14.5	5.1	12.4	5.6	3.9	3.5	0.0	106.9
	15	36.3	18.4	11.3	15.5	5.4	13.2	5.9	4.1	3.7	0.0	113.8
	16	50.0	25.4	15.5	21.3	7.4	18.1	8.2	5.7	5.2	0.0	156.8
	17	31.2	15.9	9.7	13.3	4.6	11.3	5.1	3.5	3.2	0.0	97.8
	18	35.2	17.9	10.9	15.0	5.2	12.8	5.7	4.0	3.6	0.0	110.3
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	500.5	254.7	155.5	213.5	74.6	181.6	81.7	57.0	51.7	0.0	1,570.8	
10	1	15.0	7.6	4.6	6.4	2.2	5.4	2.4	1.7	1.5	0.0	46.9
	2	1.4	0.7	0.4	0.6	0.2	0.5	0.2	0.2	0.1	0.0	4.2
	3	2.1	1.1	0.7	0.9	0.3	0.8	0.3	0.2	0.2	0.0	6.6
	4	5.4	2.8	1.7	2.3	0.8	2.0	0.9	0.6	0.6	0.0	17.0
	5	61.7	31.4	19.2	26.3	9.2	22.4	10.1	7.0	6.4	0.0	193.7
	6	23.9	12.1	7.4	10.2	3.6	8.7	3.9	2.7	2.5	0.0	74.9
	7	20.1	10.2	6.2	8.6	3.0	7.3	3.3	2.3	2.1	0.0	63.1
	8	11.6	5.9	3.6	5.0	1.7	4.2	1.9	1.3	1.2	0.0	36.5
	9	19.1	9.7	5.9	8.1	2.8	6.9	3.1	2.2	2.0	0.0	59.8
	10	55.3	28.2	17.2	23.6	8.3	20.1	9.0	6.3	5.7	0.0	173.7
	11	17.0	8.6	5.3	7.2	2.5	6.2	2.8	1.9	1.8	0.0	53.3
	12	9.3	4.8	2.9	4.0	1.4	3.4	1.5	1.1	1.0	0.0	29.3
	13	23.3	11.9	7.2	9.9	3.5	8.5	3.8	2.7	2.4	0.0	73.2
	14	28.8	14.6	8.9	12.3	4.3	10.4	4.7	3.3	3.0	0.0	90.3
	15	30.6	15.6	9.5	13.1	4.6	11.1	5.0	3.5	3.2	0.0	96.1
	16	42.2	21.5	13.1	18.0	6.3	15.3	6.9	4.8	4.4	0.0	132.5
	17	26.3	13.4	8.2	11.2	3.9	9.5	4.3	3.0	2.7	0.0	82.6
	18	29.7	15.1	9.2	12.7	4.4	10.8	4.8	3.4	3.1	0.0	93.2
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	422.8	215.1	131.4	180.4	63.0	153.4	69.0	48.2	43.7	0.0	1,327.0	
11	1	11.7	5.9	3.6	5.0	1.7	4.2	1.9	1.3	1.2	0.0	36.7
	2	1.1	0.5	0.3	0.5	0.2	0.4	0.2	0.1	0.1	0.0	3.3
	3	1.6	0.8	0.5	0.7	0.2	0.6	0.3	0.2	0.2	0.0	5.2
	4	4.2	2.1	1.3	1.8	0.6	1.5	0.7	0.5	0.4	0.0	13.3
	5	48.2	24.5	15.0	20.6	7.2	17.5	7.9	5.5	5.0	0.0	151.3
	6	18.6	9.5	5.8	8.0	2.8	6.8	3.0	2.1	1.9	0.0	58.5
	7	15.7	8.0	4.9	6.7	2.3	5.7	2.6	1.8	1.6	0.0	49.3
	8	9.1	4.6	2.8	3.9	1.4	3.3	1.5	1.0	0.9	0.0	28.5
	9	14.9	7.6	4.6	6.3	2.2	5.4	2.4	1.7	1.5	0.0	46.7
	10	43.2	22.0	13.4	18.4	6.4	15.7	7.1	4.9	4.5	0.0	135.6
	11	13.3	6.7	4.1	5.7	2.0	4.8	2.2	1.5	1.4	0.0	41.6
	12	7.3	3.7	2.3	3.1	1.1	2.6	1.2	0.8	0.8	0.0	22.9
	13	18.2	9.3	5.7	7.8	2.7	6.6	3.0	2.1	1.9	0.0	57.2
	14	22.5	11.4	7.0	9.6	3.3	8.2	3.7	2.6	2.3	0.0	70.5
	15	23.9	12.2	7.4	10.2	3.6	8.7	3.9	2.7	2.5	0.0	75.1
	16	33.0	16.8	10.2	14.1	4.9	12.0	5.4	3.8	3.4	0.0	103.4
	17	20.6	10.5	6.4	8.8	3.1	7.5	3.4	2.3	2.1	0.0	64.5
	18	23.2	11.8	7.2	9.9	3.5	8.4	3.8	2.6	2.4	0.0	72.8
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	330.2	168.0	102.6	140.8	49.2	119.8	53.9	37.6	34.1	0.0	1,036.3	

12	1	7.5	3.8	2.3	3.2	1.1	2.7	1.2	0.9	0.8	0.0	23.6
	2	0.7	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.0	2.1
	3	1.1	0.5	0.3	0.5	0.2	0.4	0.2	0.1	0.1	0.0	3.3
	4	2.7	1.4	0.8	1.2	0.4	1.0	0.4	0.3	0.3	0.0	8.5
	5	31.1	15.8	9.6	13.2	4.6	11.3	5.1	3.5	3.2	0.0	97.5
	6	12.0	6.1	3.7	5.1	1.8	4.4	2.0	1.4	1.2	0.0	37.7
	7	10.1	5.1	3.1	4.3	1.5	3.7	1.7	1.2	1.0	0.0	31.8
	8	5.8	3.0	1.8	2.5	0.9	2.1	1.0	0.7	0.6	0.0	18.3
	9	9.6	4.9	3.0	4.1	1.4	3.5	1.6	1.1	1.0	0.0	30.1
	10	27.8	14.2	8.7	11.9	4.2	10.1	4.5	3.2	2.9	0.0	87.4
	11	8.5	4.3	2.7	3.6	1.3	3.1	1.4	1.0	0.9	0.0	26.8
	12	4.7	2.4	1.5	2.0	0.7	1.7	0.8	0.5	0.5	0.0	14.7
	13	11.7	6.0	3.6	5.0	1.7	4.3	1.9	1.3	1.2	0.0	36.8
	14	14.5	7.4	4.5	6.2	2.2	5.3	2.4	1.6	1.5	0.0	45.4
	15	15.4	7.8	4.8	6.6	2.3	5.6	2.5	1.8	1.6	0.0	48.4
	16	21.2	10.8	6.6	9.1	3.2	7.7	3.5	2.4	2.2	0.0	66.6
	17	13.2	6.7	4.1	5.6	2.0	4.8	2.2	1.5	1.4	0.0	41.6
	18	14.9	7.6	4.6	6.4	2.2	5.4	2.4	1.7	1.5	0.0	46.9
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		212.7	108.2	66.1	90.7	31.7	77.2	34.7	24.2	22.0	0.0	667.6
13	1	4.3	2.2	1.3	1.8	0.6	1.6	0.7	0.5	0.4	0.0	13.4
	2	0.4	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	1.2
	3	0.6	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.0	1.9
	4	1.5	0.8	0.5	0.7	0.2	0.6	0.3	0.2	0.2	0.0	4.9
	5	17.7	9.0	5.5	7.5	2.6	6.4	2.9	2.0	1.8	0.0	55.4
	6	6.8	3.5	2.1	2.9	1.0	2.5	1.1	0.8	0.7	0.0	21.4
	7	5.8	2.9	1.8	2.5	0.9	2.1	0.9	0.7	0.6	0.0	18.1
	8	3.3	1.7	1.0	1.4	0.5	1.2	0.5	0.4	0.3	0.0	10.4
	9	5.5	2.8	1.7	2.3	0.8	2.0	0.9	0.6	0.6	0.0	17.1
	10	15.8	8.1	4.9	6.8	2.4	5.7	2.6	1.8	1.6	0.0	49.7
	11	4.9	2.5	1.5	2.1	0.7	1.8	0.8	0.6	0.5	0.0	15.3
	12	2.7	1.4	0.8	1.1	0.4	1.0	0.4	0.3	0.3	0.0	8.4
	13	6.7	3.4	2.1	2.8	1.0	2.4	1.1	0.8	0.7	0.0	20.9
	14	8.2	4.2	2.6	3.5	1.2	3.0	1.3	0.9	0.9	0.0	25.8
	15	8.8	4.5	2.7	3.7	1.3	3.2	1.4	1.0	0.9	0.0	27.5
	16	12.1	6.1	3.8	5.2	1.8	4.4	2.0	1.4	1.2	0.0	37.9
	17	7.5	3.8	2.3	3.2	1.1	2.7	1.2	0.9	0.8	0.0	23.6
	18	8.5	4.3	2.6	3.6	1.3	3.1	1.4	1.0	0.9	0.0	26.7
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		121.0	61.6	37.6	51.6	18.0	43.9	19.7	13.8	12.5	0.0	379.7
14	1	1.4	0.7	0.4	0.6	0.2	0.5	0.2	0.2	0.1	0.0	4.4
	2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	3	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.6
	4	0.5	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.0	1.6
	5	5.8	2.9	1.8	2.5	0.9	2.1	0.9	0.7	0.6	0.0	18.2
	6	2.2	1.1	0.7	1.0	0.3	0.8	0.4	0.3	0.2	0.0	7.0
	7	1.9	1.0	0.6	0.8	0.3	0.7	0.3	0.2	0.2	0.0	5.9
	8	1.1	0.6	0.3	0.5	0.2	0.4	0.2	0.1	0.1	0.0	3.4
	9	1.8	0.9	0.6	0.8	0.3	0.6	0.3	0.2	0.2	0.0	5.6
	10	5.2	2.6	1.6	2.2	0.8	1.9	0.8	0.6	0.5	0.0	16.3
	11	1.6	0.8	0.5	0.7	0.2	0.6	0.3	0.2	0.2	0.0	5.0
	12	0.9	0.4	0.3	0.4	0.1	0.3	0.1	0.1	0.1	0.0	2.7
	13	2.2	1.1	0.7	0.9	0.3	0.8	0.4	0.2	0.2	0.0	6.9
	14	2.7	1.4	0.8	1.2	0.4	1.0	0.4	0.3	0.3	0.0	8.5
	15	2.9	1.5	0.9	1.2	0.4	1.0	0.5	0.3	0.3	0.0	9.0
	16	4.0	2.0	1.2	1.7	0.6	1.4	0.6	0.5	0.4	0.0	12.4
	17	2.5	1.3	0.8	1.1	0.4	0.9	0.4	0.3	0.3	0.0	7.7
	18	2.8	1.4	0.9	1.2	0.4	1.0	0.5	0.3	0.3	0.0	8.7
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		39.7	20.2	12.3	16.9	5.9	14.4	6.5	4.5	4.1	0.0	124.4
15	1	0.8	0.4	0.2	0.3	0.1	0.3	0.1	0.1	0.1	0.0	2.4
	2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	4	0.3	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.9
	5	3.2	1.6	1.0	1.4	0.5	1.2	0.5	0.4	0.3	0.0	10.1
	6	1.2	0.8	0.4	0.5	0.2	0.4	0.2	0.1	0.1	0.0	3.9
	7	1.0	0.5	0.3	0.4	0.2	0.4	0.2	0.1	0.1	0.0	3.3
	8	0.6	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.0	1.9
	9	1.0	0.5	0.3	0.4	0.1	0.4	0.2	0.1	0.1	0.0	3.1
	10	2.9	1.5	0.9	1.2	0.4	1.0	0.5	0.3	0.3	0.0	9.0
	11	0.9	0.4	0.3	0.4	0.1	0.3	0.1	0.1	0.1	0.0	2.8
	12	0.5	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.0	1.5
	13	1.2	0.6	0.4	0.5	0.2	0.4	0.2	0.1	0.1	0.0	3.8
	14	1.5	0.8	0.5	0.6	0.2	0.5	0.2	0.2	0.2	0.0	4.7
	15	1.6	0.8	0.5	0.7	0.2	0.6	0.3	0.2	0.2	0.0	5.0
	16	2.2	1.1	0.7	0.9	0.3	0.8	0.4	0.2	0.2	0.0	6.9
	17	1.4	0.7	0.4	0.6	0.2	0.5	0.2	0.2	0.1	0.0	4.3
	18	1.5	0.8	0.5	0.7	0.2	0.6	0.3	0.2	0.2	0.0	4.8
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		22.0	11.2	6.8	9.4	3.3	8.0	3.6	2.5	2.3	0.0	68.9
Total Totals		3,887.6	1,978.0	1,208.0	1,658.3	579.6	1,410.6	634.5	442.9	401.5	0.0	12,201.0

Table 6.2 Economic Model Matrix (wages)

Age group	Industry	occupation	1	2	3	4	5	6	7	8	9	10	Total
1			0.0										
2			0.0										
3			0.0										
4	1	146.9	74.7	45.6	62.7	21.9	53.3	24.0	16.7	15.2	0.0	0.0	461.0
	2	13.3	6.8	4.1	5.7	2.0	4.8	2.2	1.5	1.4	0.0	0.0	41.7
	3	45.0	22.9	14.0	19.2	6.7	16.3	7.3	5.1	4.8	0.0	0.0	141.2
	4	152.9	77.8	47.5	65.2	22.8	55.5	25.0	17.4	15.8	0.0	0.0	480.0
	5	1,223.9	622.7	380.3	522.1	182.5	444.1	199.8	139.4	126.4	0.0	0.0	3,841.2
	6	460.8	234.5	143.2	196.6	68.7	167.2	75.2	52.5	47.6	0.0	0.0	1,446.3
	7	402.2	204.7	125.0	171.6	60.0	145.9	65.7	45.8	41.5	0.0	0.0	1,262.4
	8	285.3	135.0	82.4	113.2	39.6	96.3	43.3	30.2	27.4	0.0	0.0	832.7
	9	335.8	170.8	104.3	143.2	50.1	121.8	54.8	38.3	34.7	0.0	0.0	1,053.8
	10	536.9	273.2	166.8	229.0	80.0	194.8	87.6	61.2	55.4	0.0	0.0	1,685.1
	11	320.0	162.8	99.4	136.5	47.7	118.1	52.2	38.5	33.0	0.0	0.0	1,004.3
	12	145.8	74.2	45.3	62.2	21.7	52.9	23.8	16.6	15.1	0.0	0.0	457.6
	13	412.2	209.7	128.1	175.8	61.5	149.6	67.3	47.0	42.6	0.0	0.0	1,293.8
	14	629.0	320.0	195.4	268.3	93.8	228.2	102.7	71.7	64.9	0.0	0.0	1,974.0
	15	632.7	321.9	196.6	269.9	94.3	229.6	103.3	72.1	65.3	0.0	0.0	1,985.6
	16	620.9	315.9	192.9	264.8	92.6	225.3	101.3	70.7	64.1	0.0	0.0	1,948.6
	17	169.2	86.1	52.6	72.2	25.2	61.4	27.6	19.3	17.5	0.0	0.0	530.9
	18	330.8	168.3	102.8	141.1	49.3	120.0	54.0	37.7	34.2	0.0	0.0	1,038.3
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		6,843.7	3,482.0	2,126.6	2,919.2	1,020.3	2,483.1	1,117.0	779.7	706.7	0.0	0.0	21,476.4
5	1	242.0	123.1	75.2	103.2	36.1	87.8	39.5	27.6	25.0	0.0	0.0	759.4
	2	21.9	11.1	6.8	9.3	3.3	7.9	3.6	2.5	2.3	0.0	0.0	68.6
	3	74.1	37.7	23.0	31.8	11.1	26.9	12.1	8.4	7.7	0.0	0.0	232.6
	4	251.9	128.2	78.3	107.5	37.6	91.4	41.1	28.7	26.0	0.0	0.0	790.6
	5	2,015.9	1,025.7	626.4	859.9	300.6	731.5	329.0	229.7	208.2	0.0	0.0	6,326.8
	6	759.0	386.2	235.9	323.8	113.2	275.4	123.9	86.5	78.4	0.0	0.0	2,382.2
	7	662.5	337.1	205.9	282.6	98.8	240.4	108.1	75.5	68.4	0.0	0.0	2,079.3
	8	437.0	222.3	135.8	186.4	65.2	158.6	71.3	49.8	45.1	0.0	0.0	1,371.4
	9	553.0	281.4	171.8	235.9	82.5	200.7	90.3	63.0	57.1	0.0	0.0	1,735.6
	10	884.4	449.9	274.8	377.2	131.8	320.9	144.3	100.8	91.3	0.0	0.0	2,775.5
	11	527.1	268.2	163.8	224.8	78.6	191.2	86.0	60.1	54.4	0.0	0.0	1,654.2
	12	240.2	122.2	74.8	102.4	35.8	87.1	39.2	27.4	24.8	0.0	0.0	753.8
	13	679.0	345.5	211.0	289.6	101.2	248.4	110.8	77.4	70.1	0.0	0.0	2,131.0
	14	1,036.0	527.1	321.9	441.9	154.5	375.9	169.1	118.0	107.0	0.0	0.0	3,251.3
	15	1,042.1	530.2	323.8	444.5	155.4	378.1	170.1	118.7	107.6	0.0	0.0	3,270.5
	16	1,022.6	520.3	317.8	438.2	152.5	371.0	166.9	118.5	105.6	0.0	0.0	3,209.4
	17	278.6	141.8	86.6	118.8	41.5	101.1	45.5	31.7	28.8	0.0	0.0	874.4
	18	544.9	277.2	169.3	232.4	81.2	197.7	88.9	62.1	56.3	0.0	0.0	1,710.1
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		11,272.2	5,735.1	3,502.6	4,808.2	1,680.6	4,090.0	1,839.8	1,284.3	1,164.0	0.0	0.0	35,378.7
6	1	307.8	156.6	95.7	131.3	45.9	111.7	50.2	35.1	31.8	0.0	0.0	966.1
	2	27.8	14.2	8.6	11.9	4.1	10.1	4.5	3.2	2.9	0.0	0.0	87.3
	3	94.3	48.0	29.3	40.2	14.1	34.2	15.4	10.7	9.7	0.0	0.0	296.0
	4	320.5	163.1	99.6	136.7	47.8	116.3	52.3	36.5	33.1	0.0	0.0	1,005.8
	5	2,564.8	1,304.9	796.9	1,094.0	382.4	930.5	418.6	292.2	264.8	0.0	0.0	8,048.9
	6	965.7	491.3	300.1	411.9	144.0	350.4	157.6	110.0	99.7	0.0	0.0	3,030.8
	7	842.9	428.8	261.9	359.5	125.7	305.8	137.6	96.0	87.0	0.0	0.0	2,645.3
	8	555.9	282.9	172.7	237.1	82.9	201.7	90.7	63.3	57.4	0.0	0.0	1,744.7
	9	703.6	358.0	218.6	300.1	104.9	255.3	114.8	80.2	72.7	0.0	0.0	2,208.1
	10	1,125.1	572.4	349.6	479.9	167.7	408.2	183.6	128.2	116.2	0.0	0.0	3,530.9
	11	670.5	341.2	208.4	286.0	100.0	243.3	109.4	76.4	69.2	0.0	0.0	2,104.4
	12	305.5	155.5	94.9	130.3	45.6	110.9	49.9	34.8	31.6	0.0	0.0	958.9
	13	863.8	439.5	288.4	368.5	128.8	313.4	141.0	98.4	89.2	0.0	0.0	2,711.0
	14	1,317.9	670.6	409.5	562.2	196.5	478.2	215.1	150.2	136.1	0.0	0.0	4,138.3
	15	1,325.7	674.5	412.0	565.5	197.7	481.0	216.4	151.0	136.9	0.0	0.0	4,160.7
	16	1,301.0	661.9	404.3	554.9	194.0	472.0	212.3	148.2	134.3	0.0	0.0	4,083.0
	17	354.4	180.3	110.1	151.2	52.8	128.6	57.8	40.4	36.6	0.0	0.0	1,112.4
	18	693.2	352.7	215.4	295.7	103.3	251.5	113.1	79.0	71.6	0.0	0.0	2,175.8
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		14,340.4	7,296.2	4,456.0	6,116.9	2,138.0	5,203.2	2,340.5	1,633.9	1,480.8	0.0	0.0	45,006.0
7	1	342.2	174.1	106.3	145.9	51.0	124.1	55.8	39.0	35.3	0.0	0.0	1,073.8
	2	30.9	15.7	9.6	13.2	4.6	11.2	5.0	3.5	3.2	0.0	0.0	97.1
	3	104.8	53.3	32.6	44.7	15.6	38.0	17.1	11.9	10.8	0.0	0.0	329.0
	4	356.2	181.2	110.7	151.9	53.1	129.2	58.1	40.6	36.8	0.0	0.0	1,118.0
	5	2,850.7	1,450.4	885.8	1,216.0	425.0	1,034.3	465.3	324.8	294.4	0.0	0.0	8,946.6
	6	1,073.3	545.1	333.5	457.8	160.0	389.5	175.2	122.3	110.8	0.0	0.0	3,368.8
	7	936.9	476.7	291.1	399.6	139.7	339.9	152.9	106.7	96.7	0.0	0.0	2,940.3
	8	617.9	314.4	192.0	283.6	92.1	224.2	100.9	70.4	63.8	0.0	0.0	1,939.3
	9	782.0	397.9	243.0	333.6	116.6	283.7	127.6	89.1	80.8	0.0	0.0	2,454.3
	10	1,250.5	638.3	388.6	533.4	188.4	453.7	204.1	142.5	129.1	0.0	0.0	3,924.7
	11	745.3	379.2	231.6	317.9	111.1	270.4	121.6	84.9	77.0	0.0	0.0	2,339.1
	12	339.6	172.8	105.5	144.9	50.6	123.2	55.4	38.7	35.1	0.0	0.0	1,065.9
	13	960.2	486.5	298.4	409.6	143.1	348.4	156.7	109.4	99.2	0.0	0.0	3,013.4
	14	1,464.9	745.3	455.2	624.9	218.4	531.5	239.1	168.9	151.3	0.0	0.0	4,597.6
	15	1,473.6	749.7	457.9	628.6	219.7	534.7	240.5	167.9	152.2	0.0	0.0	4,624.7
	16	1,446.1	735.7	449.3	618.8	215.8	524.7	238.0	164.8	149.3	0.0	0.0	4,538.4
	17	394.0	200.4	122.4	168.0	58.7	142.9	64.3	44.9	40.7	0.0	0.0	1,236.4
	18	770.5	392.0	239.4	328.7	114.9	279.6	125.8	87.8	79.6	0.0	0.0	2,418.2
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		15,939.6	8,109.9	4,953.0	6,799.1	2,378.4	5,783.5	2,601.6	1,816.1	1,646.0	0.0	0.0	50,025.3
8	1	347.5	176.8	108.0	148.2	51.8	128.1	58.7	39.6	35.9	0.0	0.0	1,090.5
	2	31.4	16.0	9.8	13.4	4.7	11.4	5.1	3.6	3.2	0.0	0.0	98.6
	3	106.4	54.2	33.1	45.4	15.9	38.6	17.4	12.1	11.0	0.0	0.0	334.1
	4	361.8	184.1	112.4	154.3	53.9	131.3	59.0	41.2	37.4	0.0	0.0	1,135.3
	5	2,895.0	1,472.9	899.6	1,234.9	431.6	1,050.4	472.5	329.8	298.9	0.0	0.0	9,085.7
	6	1,090.0	554.6	338.7	465.0	162.5	395.5	177.9	124.2	112.6	0.0	0.0	3,421.0
	7	951.4	484.1	295.6	405.8	141.8	345.2	155.3	108.4	98.2	0.0	0.0	2,986.0
	8	627.5	319.3	195.0	267.7	93.6	227.7	102.4	71.5	64.8	0.0	0.0	1,969.5
	9	794.2	404.1	246.8	338.8	118.4	288.2	129.6	90.5	82.0	0.0	0.0	2,492.5
	10	1,270.0	646.2	394.6	541.7	189.3	460.8	207.3	144.7	131.1	0.0	0.0	3,985.7
	11	756.9	385.1	235.2	322.9	112.8	274.6	123.5	86.2	78.2	0.0	0.0	2,375.5
	12	344.9	175.5	107.2	147.1	51.4	125.1	56.3	39.3	35.6	0.0	0.0	1,082.4
	13	975.1	496.1										

9	1	309.9	157.7	96.3	132.2	46.2	112.5	50.6	35.3	32.0	0.0	972.7
	2	28.0	14.3	8.7	12.0	4.2	10.2	4.6	3.2	2.9	0.0	87.9
	3	94.9	48.3	29.5	40.5	14.2	34.4	15.5	10.8	9.8	0.0	298.0
	4	322.7	164.2	100.3	137.6	48.1	117.1	52.7	36.8	33.3	0.0	1,012.7
	5	2,582.2	1,313.8	802.4	1,101.4	385.0	936.9	421.4	294.2	266.6	0.0	8,103.9
	6	972.3	494.7	302.1	414.7	145.0	352.8	158.7	110.8	100.4	0.0	3,051.3
	7	848.6	431.8	263.7	362.0	126.5	307.9	138.5	96.7	87.6	0.0	2,663.4
	8	559.7	284.8	173.9	238.8	83.5	203.1	91.4	63.8	57.8	0.0	1,756.7
	9	708.4	360.4	220.1	302.2	105.6	257.0	115.6	80.7	73.1	0.0	2,223.2
	10	1,132.8	576.3	352.0	483.2	168.9	411.0	184.9	129.1	117.0	0.0	3,555.1
	11	675.1	343.5	209.8	288.0	100.7	245.0	110.2	76.9	69.7	0.0	2,118.8
	12	307.6	156.5	95.6	131.2	45.9	111.6	50.2	35.1	31.8	0.0	965.5
	13	869.7	442.5	270.3	371.0	129.7	315.6	142.0	99.1	89.8	0.0	2,729.6
	14	1,327.0	675.1	412.3	566.0	197.8	481.5	216.6	151.2	137.0	0.0	4,164.5
	15	1,334.8	679.1	414.8	569.4	199.0	484.3	217.9	152.1	137.8	0.0	4,189.2
	16	1,309.9	666.4	407.0	558.7	195.3	475.3	213.8	149.2	135.3	0.0	4,110.9
	17	356.9	181.6	110.9	152.2	53.2	129.5	58.2	40.7	36.9	0.0	1,120.0
	18	697.9	355.1	216.9	297.7	104.1	253.2	113.9	79.5	72.1	0.0	2,190.4
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		14,438.4	7,346.1	4,486.5	6,158.7	2,152.6	5,238.8	2,356.5	1,645.1	1,491.0	0.0	45,313.7
10	1	261.8	133.2	81.4	111.7	39.0	95.0	42.7	29.8	27.0	0.0	821.7
	2	23.7	12.0	7.4	10.1	3.5	8.6	3.9	2.7	2.4	0.0	74.3
	3	80.2	40.8	24.9	34.2	12.0	29.1	13.1	9.1	8.3	0.0	251.7
	4	272.6	138.7	84.7	116.3	40.6	98.9	44.5	31.1	28.1	0.0	855.5
	5	2,181.3	1,109.8	677.8	930.5	325.2	791.5	356.0	248.5	225.3	0.0	6,845.9
	6	821.3	417.9	255.2	350.3	122.5	298.0	134.1	93.6	84.8	0.0	2,577.7
	7	716.9	364.7	222.8	305.8	106.9	260.1	117.0	81.7	74.0	0.0	2,249.9
	8	472.8	240.6	146.9	201.7	70.5	171.6	77.2	53.9	48.8	0.0	1,484.0
	9	598.4	304.5	185.9	255.3	89.2	217.1	97.7	68.2	61.8	0.0	1,878.0
	10	956.9	486.9	297.3	408.2	142.7	347.2	156.2	109.0	98.8	0.0	3,003.2
	11	570.3	290.2	177.2	243.3	85.0	206.9	93.1	65.0	58.9	0.0	1,789.9
	12	259.9	132.2	80.8	110.9	38.7	94.3	42.4	29.6	26.8	0.0	815.6
	13	734.7	373.8	228.3	313.4	109.5	266.6	119.9	83.7	75.9	0.0	2,305.8
	14	1,121.0	570.3	348.3	478.2	167.1	406.7	183.0	127.7	115.8	0.0	3,518.1
	15	1,127.6	573.7	350.4	481.0	168.1	409.1	184.0	128.5	116.4	0.0	3,538.9
	16	1,106.5	563.0	343.8	472.0	165.0	401.5	180.6	126.1	114.3	0.0	3,472.8
	17	301.5	153.4	93.7	128.6	44.9	109.4	49.2	34.3	31.1	0.0	946.1
	18	589.6	300.0	183.2	251.5	87.9	213.9	96.2	67.2	60.9	0.0	1,850.4
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		12,197.1	6,205.7	3,790.1	5,202.7	1,818.5	4,425.6	1,990.7	1,389.7	1,259.5	0.0	38,279.6
11	1	204.5	104.0	63.5	87.2	30.5	74.2	33.4	23.3	21.1	0.0	641.7
	2	18.5	9.4	5.7	7.9	2.8	6.7	3.0	2.1	1.9	0.0	58.0
	3	62.6	31.9	19.5	26.7	9.3	22.7	10.2	7.1	6.5	0.0	196.6
	4	212.9	108.3	66.1	90.8	31.7	77.2	34.7	24.3	22.0	0.0	668.1
	5	1,703.5	866.7	529.3	726.6	254.0	618.1	278.0	194.1	175.9	0.0	5,346.3
	6	641.4	326.3	199.3	273.6	95.6	232.7	104.7	73.1	66.2	0.0	2,013.0
	7	559.9	284.9	174.0	238.8	83.5	203.1	91.4	63.8	57.8	0.0	1,757.1
	8	369.3	187.9	114.7	157.5	55.1	134.0	60.3	42.1	38.1	0.0	1,158.9
	9	467.3	237.8	145.2	199.3	69.7	169.6	76.3	53.2	48.3	0.0	1,466.7
	10	747.3	380.2	232.2	318.8	111.4	271.2	122.0	85.1	77.2	0.0	2,345.4
	11	445.4	226.6	138.4	190.0	66.4	161.6	72.7	50.7	46.0	0.0	1,397.8
	12	203.0	103.3	63.1	86.6	30.3	73.6	33.1	23.1	21.0	0.0	636.9
	13	573.8	291.9	178.3	244.7	85.5	208.2	93.6	65.4	59.3	0.0	1,800.8
	14	875.4	445.4	272.0	373.4	130.5	317.6	142.9	99.7	90.4	0.0	2,747.4
	15	880.6	448.0	273.6	375.6	131.3	319.5	143.7	100.3	90.9	0.0	2,763.7
	16	864.2	439.7	268.5	368.6	128.8	313.5	141.0	98.5	89.2	0.0	2,712.1
	17	235.4	119.8	73.2	100.4	35.1	85.4	38.4	26.8	24.3	0.0	738.9
	18	460.4	234.3	143.1	196.4	68.6	167.1	75.2	52.5	47.5	0.0	1,445.1
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		9,525.3	4,846.4	2,959.8	4,063.1	1,420.1	3,456.1	1,554.7	1,085.3	983.6	0.0	29,894.4

12	1	131.7	67.0	40.9	56.2	19.6	47.8	21.5	15.0	13.6	0.0	413.4
	2	11.9	6.1	3.7	5.1	1.8	4.3	1.9	1.4	1.2	0.0	37.4
	3	40.4	20.5	12.5	17.2	6.0	14.6	6.6	4.6	4.2	0.0	126.6
	4	137.1	69.8	42.6	58.5	20.4	49.8	22.4	15.6	14.2	0.0	430.4
	5	1,097.5	558.4	341.0	468.1	163.6	398.2	179.1	125.0	113.3	0.0	3,444.4
	6	413.2	210.3	128.4	176.3	61.6	149.9	67.4	47.1	42.7	0.0	1,296.9
	7	360.7	183.5	112.1	153.9	53.8	130.9	58.9	41.1	37.2	0.0	1,132.0
	8	237.9	121.0	73.9	101.5	35.5	86.3	38.8	27.1	24.6	0.0	746.6
	9	301.1	153.2	93.6	128.4	44.9	109.2	49.1	34.3	31.1	0.0	944.9
	10	481.5	245.0	149.6	205.4	71.8	174.7	78.6	54.9	49.7	0.0	1,511.0
	11	286.9	146.0	89.2	122.4	42.8	104.1	46.8	32.7	29.6	0.0	900.6
	12	130.8	66.5	40.6	55.8	19.5	47.4	21.3	14.9	13.5	0.0	410.4
	13	369.7	188.1	114.9	157.7	55.1	134.1	60.3	42.1	38.2	0.0	1,160.2
	14	564.0	287.0	175.3	240.6	84.1	204.6	92.1	64.3	58.2	0.0	1,770.1
	15	567.3	288.7	176.3	242.0	84.6	205.8	92.6	64.6	58.6	0.0	1,780.5
	16	556.7	283.3	173.0	237.5	83.0	202.0	90.9	63.4	57.5	0.0	1,747.3
	17	151.7	77.2	47.1	64.7	22.6	55.0	24.8	17.3	15.7	0.0	476.0
	18	296.6	150.9	92.2	126.5	44.2	107.6	48.4	33.8	30.6	0.0	931.0
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		6,136.8	3,122.3	1,906.9	2,617.7	914.9	2,226.6	1,001.6	699.2	633.7	0.0	19,259.7
13	1	74.9	38.1	23.3	32.0	11.2	27.2	12.2	8.5	7.7	0.0	235.1
	2	6.8	3.4	2.1	2.9	1.0	2.5	1.1	0.8	0.7	0.0	21.3
	3	23.0	11.7	7.1	9.8	3.4	8.3	3.7	2.6	2.4	0.0	72.0
	4	78.0	39.7	24.2	33.3	11.6	28.3	12.7	8.9	8.1	0.0	244.8
	5	624.2	317.6	194.0	266.3	93.1	226.5	101.9	71.1	64.5	0.0	1,959.0
	6	235.0	119.6	73.0	100.3	35.0	85.3	38.4	26.8	24.3	0.0	737.6
	7	205.1	104.4	63.7	87.5	30.6	74.4	33.5	23.4	21.2	0.0	643.8
	8	135.3	68.8	42.0	57.7	20.2	49.1	22.1	15.4	14.0	0.0	424.7
	9	171.2	87.1	53.2	73.0	25.5	62.1	27.9	19.5	17.7	0.0	537.4
	10	273.8	139.3	85.1	116.8	40.8	99.4	44.7	31.2	28.3	0.0	859.4
	11	163.2	83.0	50.7	69.6	24.3	59.2	26.6	18.6	16.9	0.0	512.2
	12	74.4	37.8	23.1	31.7	11.1	27.0	12.1	8.5	7.7	0.0	233.4
	13	210.2	107.0	65.3	89.7	31.3	76.3	34.3	24.0	21.7	0.0	659.8
	14	320.8	163.2	99.7	136.8	47.8	116.4	52.4	36.5	33.1	0.0	1,006.7
	15	322.7	164.2	100.3	137.6	48.1	117.1	52.7	36.8	33.3	0.0	1,012.7
	16	316.6	161.1	98.4	135.1	47.2	114.9	51.7	36.1	32.7	0.0	993.8
	17	86.3	43.9	26.8	36.8	12.9	31.3	14.1	9.8	8.9	0.0	270.7
	18	168.7	85.8	52.4	72.0	25.2	61.2	27.5	19.2	17.4	0.0	529.5
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		3,490.3	1,775.8	1,084.5	1,488.8	520.4	1,266.4	569.7	397.7	360.4	0.0	10,954.0
14	1	24.6	12.5	7.6	10.5	3.7	8.9	4.0	2.8	2.5	0.0	77.1
	2	2.2	1.1	0.7	0.9	0.3	0.8	0.4	0.3	0.2	0.0	7.0
	3	7.5	3.8	2.3	3.2	1.1	2.7	1.2	0.9	0.8	0.0	23.6
	4	25.6	13.0	7.9	10.9	3.8	9.3	4.2	2.9	2.6	0.0	80.2
	5	204.6	104.1	63.6	87.3	30.5	74.2	33.4	23.3	21.1	0.0	642.0
	6	77.0	39.2	23.9	32.9	11.5	27.9	12.6	8.8	8.0	0.0	241.7
	7	67.2	34.2	20.9	28.7	10.0	24.4	11.0	7.7	6.9	0.0	211.0
	8	44.3	22.8	13.8	18.9	6.6	16.1	7.2	5.1	4.6	0.0	139.2
	9	56.1	28.6	17.4	23.9	8.4	20.4	9.2	6.4	5.8	0.0	176.1
	10	89.7	45.7	27.9	38.3	13.4	32.6	14.6	10.2	9.3	0.0	281.6
	11	53.5	27.2	16.6	22.8	8.0	19.4	8.7	6.1	5.5	0.0	167.9
	12	24.4	12.4	7.6	10.4	3.6	8.8	4.0	2.8	2.5	0.0	76.5
	13	68.9	35.1	21.4	29.4	10.3	25.0	11.2	7.9	7.1	0.0	216.2
	14	105.1	53.5	32.7	44.8	15.7	38.1	17.2	12.0	10.9	0.0	329.9
	15	105.7	53.8	32.9	45.1	15.8	38.4	17.3	12.0	10.9	0.0	331.9
	16	103.8	52.8	32.2	44.3	15.5	37.7	16.9	11.8	10.7	0.0	325.7
	17	28.3	14.4	8.8	12.1	4.2	10.3	4.6	3.2	2.9	0.0	88.7
	18	55.3	28.1	17.2	23.6	8.2	20.1	9.0	6.3	5.7	0.0	173.5
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		1,143.8	582.0	355.4	487.9	170.5	415.0	186.7	130.3	118.1	0.0	3,589.8
15	1	13.6	6.9	4.2	5.8	2.0	4.9	2.2	1.5	1.4	0.0	42.7
	2	1.2	0.6	0.4	0.5	0.2	0.4	0.2	0.1	0.1	0.0	3.9
	3	4.2	2.1	1.3	1.8	0.6	1.5	0.7	0.5	0.4	0.0	13.1
	4	14.2	7.2	4.4	6.0	2.1	5.1	2.3	1.6	1.5	0.0	44.4
	5	113.2	57.6	35.2	48.3	16.9	41.1	18.5	12.9	11.7	0.0	355.4
	6	42.6	21.7	13.3	18.2	6.4	15.5	7.0	4.9	4.4	0.0	133.8
	7	37.2	18.9	11.6	15.9	5.5	13.5	6.1	4.2	3.8	0.0	116.8
	8	24.5	12.5	7.6	10.5	3.7	8.9	4.0	2.8	2.5	0.0	77.0
	9	31.1	15.8	9.7	13.3	4.6	11.3	5.1	3.5	3.2	0.0	97.5
	10	49.7	25.3	15.4	21.2	7.4	18.0	8.1	5.7	5.1	0.0	155.9
	11	29.6	15.1	9.2	12.6	4.4	10.7	4.8	3.4	3.1	0.0	92.9
	12	13.5	6.9	4.2	5.8	2.0	4.9	2.2	1.5	1.4	0.0	42.3
	13	38.1	19.4	11.9	16.3	5.7	13.8	6.2	4.3	3.9	0.0	119.7
	14	58.2	29.6	18.1	24.8	8.7	21.1	9.5	6.6	6.0	0.0	182.6
	15	58.5	29.8	18.2	25.0	8.7	21.2	9.6	6.7	6.0	0.0	183.7
	16	57.4	29.2	17.9	24.5	8.6	20.8	9.4	6.5	5.9	0.0	180.3
	17	15.7	8.0	4.9	6.7	2.3	5.7	2.6	1.8	1.6	0.0	49.1
	18	30.6	15.6	9.5	13.1	4.6	11.1	5.0	3.5	3.2	0.0	96.1
	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		633.2	322.2	196.8	270.1	94.4	229.8	103.4	72.1	65.4	0.0	1,987.4
Totals		112,148.2	57,059.7	34,848.3	47,837.2	16,720.2	40,691.6	18,304.2	12,777.7	11,580.9	0.0	351,968.0

Projected Plan for 2001-2011

In order to further establish whether the reduction of immigrants from year 1995 will benefit the Canadian economy, we must consider two different scenarios. In the First Scenario we project a further decrease in the number of immigrants starting from 2001 to 2011 based on the 1995 Plan (1995 - 2000); in the Second Scenario we change the immigration strategy in 2001: increase the number of immigrants during the period 2001 to 2011 from 195,000 - 215,000 to 230,000 - 255,000, based on the 1995 Plan. Applying the same procedure to all years, we arrived at the output per capital for each year, as shown in the following table.

Table 6.3 Value Added, Canada 1995-2011

Year	Org.Plan	The 1995 Plan		Scenario 1		Scenario 2	
		{190}	{215}	{150}	{175}	{230}	{255}
		New (Low)	New (High)	Further (Low) Start 2001	Further (High) Start 2001	Change (Low) Start 2001	Change (High) Start 2001
1995	398,245.4	399,107.4	399,107.4	399,107.4	399,107.4	399,107.4	399,107.4
1996	404,303.3	405,745.3	406,116.9	405,745.3	406,116.9	405,745.3	406,116.9
1997	410,200.4	412,243.0	412,998.9	412,243.0	412,998.9	412,243.0	412,998.9
1998	415,947.7	418,605.7	419,758.6	418,605.7	419,758.6	418,605.7	419,758.6
1999	421,529.7	424,814.1	426,377.0	424,814.1	426,377.0	424,814.1	426,377.0
2000	426,963.2	430,884.2	432,869.6	430,884.2	432,869.6	430,884.2	432,869.6
2001	432,160.7	436,725.8	439,145.7	436,725.8	439,145.7	436,725.8	439,145.7
2002	437,141.9	442,357.8	445,224.7	441,730.5	444,598.0	442,984.6	445,851.8
2003	441,887.4	447,760.9	451,086.8	446,485.6	449,812.8	449,035.7	452,361.8
2004	446,428.5	453,149.7	456,948.5	451,204.5	455,004.4	455,094.6	458,893.1
2005	450,668.2	457,876.0	462,154.3	455,242.1	459,520.7	460,509.8	464,787.5
2006	454,644.0	462,528.6	467,297.8	459,184.0	463,953.8	465,873.6	470,641.9
2007	458,353.1	466,922.1	472,191.8	462,846.5	468,116.4	470,998.4	476,266.7
2008	461,825.3	471,086.7	476,865.6	466,259.6	472,038.5	475,915.1	481,691.9
2009	464,989.7	474,949.4	481,244.4	469,352.0	475,646.4	480,548.4	486,841.4
2010	467,882.1	478,546.5	485,364.3	472,160.9	478,977.8	484,934.6	491,750.1
2011	467,995.6	481,704.2	489,049.2	474,512.2	481,857.1	488,898.7	496,242.3

Output Per Capita (in thousands of dollars)

Year	Org.Plan	The 1995 Plan		Scenario 1		Scenario 2	
		{190}	{215}	{150}	{175}	{230}	{255}
		New (Low)	New (High)	Further (Low) Start 2001	Further (High) Start 2001	Change (Low) Start 2001	Change (High) Start 2001
1995	14.3	14.3	14.3	14.3	14.3	14.3	14.3
1996	14.5	14.5	14.5	14.5	14.5	14.5	14.5
1997	14.6	14.6	14.6	14.6	14.6	14.6	14.6
1998	14.7	14.7	14.7	14.7	14.7	14.7	14.7
1999	14.8	14.9	14.8	14.9	14.8	14.9	14.8
2000	15.0	15.0	15.0	15.0	15.0	15.0	15.0
2001	15.1	15.1	15.1	15.1	15.1	15.1	15.1
2002	15.2	15.2	15.2	15.2	15.2	15.2	15.2
2003	15.3	15.3	15.3	15.4	15.3	15.3	15.3
2004	15.4	15.5	15.4	15.5	15.5	15.4	15.4
2005	15.5	15.5	15.5	15.6	15.6	15.5	15.5
2006	15.6	15.6	15.7	15.7	15.7	15.6	15.6
2007	15.7	15.7	15.7	15.8	15.8	15.7	15.7
2008	15.8	15.8	15.8	15.8	15.8	15.8	15.8
2009	15.9	15.9	15.9	15.9	15.9	15.9	15.9
2010	15.9	16.0	16.0	16.0	16.0	16.0	16.0
2011	15.9	16.1	16.1	16.1	16.1	16.1	16.2

Under Scenario 1, the number of immigrants is seen to decrease further in 2001. We then compare the output per capita between the 1995 Plan and that of Scenario 1. In year 2011, under the 1995 Plan, the output per capita is the same (\$16,100 - **Table 6.3**) as the outputs per capita from Scenario 1. From here on, we can conclude that the outputs per capita will be the same even when the number of immigrants decreases further.

Under Scenario 2, the number of immigrants will be increased to 230,000 - 255,000 in 2001. Comparing the 1995 Plan to that of Scenarios 1 and 2, we see that the outputs per capita of Scenario 2 are also close to those of the 1995 Plan and Scenario 1.

6.5 Conclusions

According to the results previously shown, we may reach some important conclusions from this analysis. For simplicity, we will express them in point form:

1. Population projections, under the methodology of demographic accounting, and its socio-demographic standard matrix approach, can be performed in a concise, and clear form. Since each component of the matrix is related to the rest, the use of the input-output concept helps us to figure out the future behaviour of the population.

2. Under Scenario 1, the number of immigrants will decrease further from (190,000 - 215,000) to (150,000 - 175,000) in year 2001, while under Scenario 2 it will increase to (230,000 - 255,000). However, there is not much difference on the output per capita among these cases (the 1995 Immigration Plan, Scenarios 1 and 2). We may conclude that increase or decrease the numbers of immigrants within a range of 50,000 may not make much difference on the growth of the economy, at least in the short-run.

3. When the two scenarios are compared, in the long-run (year 2011), Scenario 2 has a slightly higher output per capita, although, this policy may not seem better in the short run. The result tells us that more immigrants may make Canada better off in the long-run.

4. In order to design an efficient immigration policy, we must find a way to link the output of the economy to the immigration policy adopted. An immigration policy should be characterized by the number of immigrants accepted annually, their age and occupation structures. These are the control variables; they should be chosen to maximize income per capita at the end of the planning horizon if the immigration policy adopted is to be efficient. If more young immigrants are accepted, there will be more workers to support an aging Canadian population. In the same manner, if immigrants have higher skill levels, the occupational structure of the Canadian labour force will improve through time. However, modelling an optimal immigration policy in this manner will force the researcher to endogenize the age as well as the occupational structures of the Canadian population through time, a task that lies beyond the scope of this essay.

5. Classification of immigrants by age and occupations (skills) are also very important. Different age groups of immigrants would affect the Canadian economy differently. The Canadian government must provide different social programs for different needs of those newcomers. For example: job training for those who do not have any job experience in Canada. In this way, Canada will benefit in the future from these immigrants after the training. By using the social accounting matrix, age groups are further disaggregated into occupations. Eventually, there should be a finer economic analysis which will benefit Canada greatly.

6. Starting from 1995, the Canadian government has decided to reduce family class immigrants. They also blame older immigrants as a burden on Canada's social security system. However, if we look at the percentage of older immigrants say in 1995, there are only 15.5% immigrants that are in the age group of 45 and up. And within that, there are only 6.5% that are in the age group of 60 and up. There is only a very small percentage of immigrants in the old age group; the burden from these older immigrants is not significant.

7. Economic immigrants are one of the main targets of immigration policy. However, entrepreneurs, investors and self-employed persons constitute only 12.7%⁴³ of total immigrants in 1993. Their numbers are so small that the benefits from these immigrants are not significant.

⁴³ Facts and Figures: Overview of Immigration. Canada. 1994
p.8.

Table 6.4 Population Projections by Age Group (Figures in '000)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
0 - 4	1,982.0	1,813.1	1,793.7	1,778.2	1,765.8	1,755.8	1,747.8	1,741.3	1,736.1	1,731.9
5 - 9	1,884.8	1,856.7	1,853.7	1,847.3	1,839.1	1,830.0	1,820.6	1,811.5	1,802.9	1,794.9
10 - 14	1,867.2	1,849.4	1,855.3	1,859.4	1,861.3	1,861.2	1,859.2	1,855.7	1,851.1	1,845.6
15 - 19	1,840.6	1,823.6	1,832.7	1,841.2	1,848.7	1,855.0	1,860.0	1,863.5	1,865.6	1,866.3
20 - 24	1,979.2	1,959.2	1,940.8	1,927.9	1,919.2	1,913.7	1,910.4	1,908.7	1,908.0	1,907.8
25 - 29	2,296.8	2,174.1	2,142.5	2,113.5	2,087.6	2,065.0	2,045.7	2,029.4	2,016.0	2,005.1
30 - 34	2,460.1	2,416.9	2,374.8	2,334.7	2,296.7	2,261.0	2,227.8	2,197.2	2,169.4	2,144.4
35 - 39	2,319.4	2,315.3	2,337.2	2,346.2	2,345.2	2,336.8	2,322.7	2,304.8	2,284.2	2,262.1
40 - 44	2,073.7	2,065.4	2,112.5	2,154.4	2,189.6	2,217.5	2,238.1	2,251.6	2,258.7	2,260.2
45 - 49	1,738.4	1,809.3	1,856.3	1,903.2	1,949.0	1,992.6	2,032.9	2,069.2	2,100.9	2,127.5
50 - 54	1,356.9	1,412.2	1,487.1	1,556.2	1,620.8	1,681.6	1,738.8	1,792.5	1,842.6	1,888.9
55 - 59	1,209.3	1,211.5	1,244.5	1,285.8	1,332.5	1,382.6	1,434.6	1,487.6	1,540.5	1,592.6
60 - 64	1,174.4	1,182.1	1,176.2	1,177.8	1,187.1	1,203.7	1,226.8	1,255.3	1,288.5	1,325.4
65 - 69	1,059.0	1,071.1	1,074.4	1,075.6	1,076.6	1,078.9	1,083.7	1,091.8	1,103.6	1,119.3
70+	2,167.1	2,257.2	2,345.0	2,431.6	2,516.6	2,599.9	2,681.5	2,761.8	2,841.5	2,921.5
Total	27,408.9	27,217.1	27,426.8	27,633.0	27,835.7	28,035.1	28,230.4	28,421.9	28,609.5	28,793.4

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
0 - 4	1,728.5	1,725.7	1,723.5	1,721.6	1,720.1	1,718.9	1,717.9	1,717.0	1,716.3	1,716.0
5 - 9	1,787.6	1,781.1	1,775.3	1,770.1	1,765.6	1,761.7	1,758.2	1,755.3	1,752.7	1,750.6
10 - 14	1,839.6	1,833.3	1,826.9	1,820.6	1,814.5	1,808.7	1,803.2	1,798.1	1,793.4	1,789.1
15 - 19	1,865.7	1,863.9	1,861.2	1,857.7	1,853.6	1,849.1	1,844.2	1,839.2	1,834.2	1,829.2
20 - 24	1,907.6	1,907.3	1,906.7	1,905.5	1,903.8	1,901.6	1,898.9	1,895.6	1,892.0	1,888.3
25 - 29	1,996.1	1,988.9	1,982.9	1,977.9	1,973.6	1,969.7	1,966.0	1,962.5	1,959.0	1,955.5
30 - 34	2,122.1	2,102.4	2,085.1	2,069.9	2,056.7	2,045.2	2,035.1	2,026.2	2,018.3	2,011.1
35 - 39	2,239.4	2,216.6	2,194.3	2,173.0	2,152.7	2,133.9	2,116.4	2,100.3	2,085.5	2,071.8
40 - 44	2,256.9	2,249.6	2,239.1	2,226.2	2,211.5	2,195.6	2,179.0	2,162.1	2,145.3	2,128.4
45 - 49	2,149.1	2,165.5	2,177.1	2,184.2	2,187.2	2,186.5	2,182.7	2,176.2	2,167.6	2,156.9
50 - 54	1,931.2	1,969.1	2,002.7	2,031.7	2,056.2	2,076.2	2,092.0	2,103.7	2,111.7	2,116.1
55 - 59	1,643.5	1,692.3	1,738.8	1,782.5	1,823.1	1,860.3	1,893.8	1,923.6	1,949.5	1,971.7
60 - 64	1,365.0	1,406.6	1,449.3	1,492.5	1,535.5	1,577.6	1,618.5	1,657.6	1,694.5	1,729.0
65 - 69	1,138.9	1,162.1	1,190.1	1,219.1	1,250.4	1,283.6	1,318.2	1,353.7	1,389.4	1,424.9
70+	3,002.4	3,084.6	3,169.0	3,256.0	3,346.1	3,439.9	3,537.7	3,639.7	3,746.1	3,856.8
Total	28,973.6	29,149.1	29,322.1	29,488.5	29,650.5	29,808.4	29,961.8	30,110.8	30,255.4	30,395.4

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Appendix A. Total Fertility Rate *

Year	Rate	Year	Rate
1921	3.536	1954	3.828
1922	3.402	1955	3.831
1923	3.234	1956	3.858
1924	3.221	1957	3.925
1925	3.132	1958	3.880
1926	3.357	1959	3.935
1927	3.319	1960	3.895
1928	3.294	1961	3.840
1929	3.217	1962	3.756
1930	3.282	1963	3.669
1931	3.084	1964	3.502
1932	2.864	1965	3.145
1933	2.864	1966	2.812
1934	2.803	1967	2.597
1935	2.755	1968	2.453
1936	2.696	1969	2.405
1937	2.646	1970	2.331
1938	2.701	1971	2.187
1939	2.654	1972	2.024
1940	2.766	1973	1.931
1941	2.832	1974	1.875
1942	2.964	1975	1.852
1943	3.041	1976	1.825
1944	3.010	1977	1.806
1945	3.018	1978	1.757
1946	3.374	1979	1.764
1947	3.595	1980	1.746
1948	3.441	1981	1.704
1949	3.456	1982	1.694
1950	3.455	1983	1.680
1951	3.503	1984	1.690
1952	3.641	1985	1.670
1953	3.721	1986	1.670

* average number of children that would be born if women were to pass through all child-bearing years conforming to the age-specific fertility rates of a given year.

Source: Statistics Canada (1984). Current demographic analysis.
Fertility in Canada: from baby-boom to baby-bust.
Data from 1921 to 1982.

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provinces and territories. Data from 1983 to 1986.

**Appendix B. Index of Industry value multifactor
productivity for selected industries,
Canada. (1986 = 100)**

Year	Business	Manufacturing
1961	75.0	56.0
1962	78.3	61.1
1963	80.7	63.7
1964	83.0	67.1
1965	84.5	69.6
1966	85.6	69.6
1967	83.6	67.8
1968	86.1	71.1
1969	87.9	74.3
1970	87.9	72.1
1971	90.9	75.3
1972	93.4	79.7
1973	96.6	84.9
1974	93.9	84.7
1975	91.9	78.7
1976	95.3	84.0
1977	95.5	88.6
1978	95.7	90.6
1979	95.9	90.5
1980	94.8	87.1
1981	94.9	89.7
1982	90.0	82.2
1983	93.6	89.8
1984	97.9	98.7
1985	99.0	101.8
1986	100.0	100.0
1987	101.4	101.0
1988	101.9	100.8
1989	100.7	97.9
1990	98.6	93.1
1991	96.9	89.6

Source: Statistics Canada , 1992
Aggregate productivity measures. Catalogue 15-204 E

