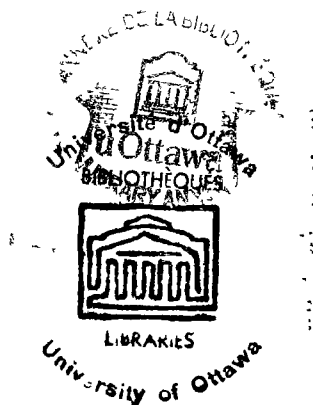


THE IMPACT OF A MILITARY INSTALLATION
ON A LOCAL ECONOMY:

A Case Study of Camp Gagetown
and the Town of Oromocto

by Gordon W. Swartzen

Thesis presented to the Department
of Economics of the Faculty of
Social Sciences of the University
of Ottawa as partial fulfillment
of the requirements for the degree
of Master of Arts



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CURRICULUM STUDIORUM

Gordon W. Swartzen was born November 19, 1914, in Milverton, Ontario. He received the Bachelor of Arts degree in Mathematics and Physics from the University of Western Ontario, London, Ontario, in 1936.

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INTRODUCTION

The characteristics of Army training demand large tracts of unpopulated land suitable for manoeuvres and gunnery ranges. At the same time, a family environment for the soldier and his dependents must be created on a level enjoyed by Canadian society in general.

Provided that national defence requirements are met, the level of military expenditure furnishes the federal government with a means to stimulate both national and regional economies.

This thesis is concerned with the description and measurement of the economic impact of a military installation on the region in which it is located.

For this study Camp Gagetown in New Brunswick has been chosen as the installation to be reviewed. This choice was made because this camp is an excellent illustration of the training and social requirements of the military and, more important, because this Camp Gagetown and Town of Oromocto complex represents the first attempt to mold the requirements of military training and family living conditions together in a community designed to foster a development potential normal to a Canadian municipality.

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This report is in the nature of an economic survey and a regional analysis. Within this area, much has been previously reported and discussed. The bibliography lists some of these efforts. Additionally, New Brunswick, as one of the less fortunate (economically) provinces of Canada, has been the subject of several surveys. Again, some are indicated in the bibliography.

However, the writer has been unable to locate any definitive treatment of the role of military expenditure in a Canadian regional economy. Furthermore, there has not been found any report of the economic success of the unique effort to build a normal municipality using, as its foundation, the need to provide acceptable living conditions for the military family.

The search for such literature has involved discussions with officials of, and the search of files and reference indices maintained by, the following organizations, agencies and appointments.

1. The Federal Departments of Finance, Industry, National Defence, National Revenue, Trade and Commerce.
2. Economic Adviser to the Government of New Brunswick.
3. The Board of Trade, Fredericton, New Brunswick

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4. Canadian Council of Urban and Regional Research
5. Canadian Federation of Mayors and Municipalities
6. Community Planning Association of Canada
7. Atlantic Development Board
8. Central Mortgage and Housing Corporation

The specific aims of this thesis are: first, to describe those federal government expenditures in respect of Camp Gagetown which have a direct impact within the province and to determine what portion they share of the total provincial economic activity in similar areas; second, to analyze the economic and financial structure of the Town of Oromocto with comparisons to other urban municipalities in New Brunswick; third, to develop a measure of the residents' propensity to consume and the associated multiplier effect, and thereby to estimate the effect of changes in personal income on the level of income flow in the town; and finally, to delineate those areas of economic activity having an immediate growth potential.

The thesis opens with a description of Camp Gagetown and the Town of Oromocto, including an account of its unique form of government and an enunciation of its financial problem. The stated aims are then considered in order.

CHAPTER I

THE CAMP GAGETOWN AND TOWN OF OROMOCTO COMPLEX

1. Camp Gagetown

The Canadian Army, immediately after World War II, was established at a strength of approximately 20,000 men. Expanded commitments to the United Nations, participation in the North Atlantic Treaty Organization, and particularly the Korean War, were factors contributing to the present size of roughly 50,000 personnel. Training facilities to meet the needs of this enlarged force were not available in existing installations. Hence the decision was taken to develop a new site which would meet certain conditions.

In the first place, it was considered essential that the new camp be near an Eastern Canada all-weather port to ensure the greatest ease in movement abroad. Second, the area had to be large enough to accommodate training on a divisional level and permit the use of modern long range conventional weapons. It was anticipated that 4000 to 5000 personnel would be stationed in the camp on a continuing basis and at the same time a summer training requirement of double that number would be necessary. Third, the terrain should be suitable for exercises involving both wheeled and tracked vehicles. Fourth, the climate should be suitable

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for both winter and summer training. Finally, the installation should cause only a minimum disturbance to the civilian population.

On August 1st, 1952, the decision was announced that a location for this training facility, to be called Camp Gagetown, had been selected. The camp is located in the south central part of the Province of New Brunswick and includes most of the Gagetown, Hampstead, Petersville subdivisions of Queens County and parts of Blissville and Burton subdivisions of Sunbury County.

The camp - the largest in the Commonwealth - covers an area of approximately 427 square miles or 274,000 acres. The terrain provides not only open stretches with scattered woods, but also areas of dense timber growth. The north end of the camp is near the original village of Oromocto twelve miles down the Saint John river from Fredericton. The camp, roughly egg-shaped, spreads out to a width of twenty-two miles and extends south a distance of twenty-six miles with the south end just twenty-five miles from the city of Saint John.

Of the 274,000 acres, 193,700 acres comprised freehold land, and the remainder was Crown land vested in the Province of New Brunswick.

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2. The Town of Oromocto

With the selection of the training site came the prime problem of personnel accommodation. The housing needs of the unmarried soldier were met in the traditional manner by construction of barracks, but the requirements of the married soldier and his family were considered from a point of view that broke with precedent. Normally the soldier settled his family in an already established nearby civilian community or the Army provided him with married quarters within the military installation. In the latter case the Army also had to establish such facilities as retail outlets, schools and other services.

Fredericton and Saint John were the only urban areas of a size that might be able to provide the necessary living accommodation, but the addition of some 2000 families would have merely aggravated the housing shortage that already existed. For this and other reasons (non-economic in nature) accommodation for the military families was developed in neither of these urban communities.

Moreover, it was considered undesirable to locate the family accommodation and all the attendant services within the training area, and thus create a purely military community of a pattern that had been established in the older training camps. Furthermore, all military installa-

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tions employ civil servants in designated functions and these employees are required to seek accommodation in established civilian communities.

At the north western tip of the training area was the small village of Oromocto with a population of approximately 600 persons.

This, then, was the situation against which the problem of providing living accommodation for some 2000 military families and 700 civilian families had to be considered.

The solution decided upon was the creation of a planned community, not surprisingly called the Town of Oromocto, which, as a by-product, would engulf the small village. The long term hopes were that ultimately the Town of Oromocto, built to satisfy military needs, would grow into a normal self-governing community, the development of which, as time went on, would rely less and less on the military.

This town is unique both in its form of government and in its financial structure.

3. The Town Government

The military population is a transient one in that the soldier is normally transferred every three years. To provide continuity of planning by elected representatives

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of this portion of the total population was considered impossible. On the other hand, it was recognized that the civilian minority should retain their voice in the affairs of the community.

The Town of Oromocto was incorporated on January 1, 1956 under the Town of Oromocto Act¹ of the Province of New Brunswick. In lieu of the usual elected mayor and council, the Act provides that the administration of the fiscal and municipal affairs, and the whole legislative power and government of the town, shall vest in a Board of Commissioners composed of one chairman and three other commissioners appointed by the Governor-General in Council, and an additional three commissioners appointed by the Lieutenant-Governor in Council: one from the ratepayers of the town, one from the members of the Sunbury County Council and, one as a representative of the Government of the Province of New Brunswick.

The chairman is a full time appointee and the three commissioners appointed by Governor-General in Council are, normally, the Army officer in command of the military region known as New Brunswick Area within which Camp Gagetown is located, and a representative from each of the federal Departments of Finance and National Defence.

¹ New Brunswick, Town of Oromocto Act, 4th Session, 42nd Legislative Assembly, 5 Elizabeth II, 1956.

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In addition to the Board of Commissioners, the Town of Oromocto Act provides for a corporation called the "Town of Oromocto Development Corporation" consisting of a president and not more than six other members, all of whom are appointed by the Lieutenant-Governor in Council on the recommendation of the Board of Commissioners.

As its name implies, the Corporation is designed to stimulate and direct the growth of Oromocto. In the absence of the usual private enterprises, it has the authority to engage in any manufacturing, retailing, construction or other commercial activity.

Thus was created a municipal framework within which, it was hoped, a conventional community might develop and grow. As long as federal expenditure for military purposes remains the predominant economic activity that it is today, no change seems likely in the unique administrative organization of Oromocto.

4. The Town's Financial Structure

Under the Municipal Grants Act², the federal government makes grants in lieu of taxes to any municipality in

² Canada, An Act Respecting Grants to Municipalities R.S.C. 1952, c. 182 as amended by 1955, c. 49; 1957, c. 10, Queen's Printer and Controller of Stationery, Ottawa, 1957.

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respect of the federal property situated therein³. Such grants may not exceed an amount obtained by applying the effective rates of the real estate tax levied in the municipality in the appropriate tax year to the assessed value of the federal property. The assessed value is that value which, in the opinion of the Minister of Finance, should be attributed to the federal property by the municipality as the base for computing the amount of real estate tax applicable to that property if it were taxable property.

The Town of Oromocto, if it were the usual municipality in which federal property is located, would be restricted to federal payments under this Act. However, the tax base in Oromocto is not sufficiently broad to provide the required operating revenue. Furthermore, its establishment and development are the direct result of the federal government's responsibility to provide living accommodation for the military families of Camp Gagetown. The situation is thus one which has forced the federal government into incurring additional expenditures in respect of this municipality.

First, to avoid imposing a large burden of debt on the town in its embryonic stages, the federal government

³ The federal property situated within the town boundaries includes the camp administrative and training buildings as well as the military housing.

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turned over to it the seven schools, the roads and services installed in the military housing area, certain lands, and provided a capital assistance grant.

Second, to provide additional capital necessary for its development, the federal government has made capital assistance loans available to the town.

Third, the federal government has established annual operating grants in amounts which equal the difference between the annual operating costs of the town and the town's annual revenue from all other sources.

The federal government's concern with these annual operating grants was succinctly described in the Report of the Auditor General to the House of Commons for the Fiscal Year ended March 1962.

In this connection it was proposed that the initial operating grant should be \$100,000 for 1955-56 with annual increments of approximately \$25,000 during the next five years, the actual amount of each increase to be approved by the Treasury Board. While it was anticipated that the assistance by the Department during these first few years would suffice until the Town could operate normally with the aid of grants under the Municipal Grants Act, this has not turned out to be the case and federal grants towards operating expenses of the Town have continued at a very high level.

Details of the town's financial situation will be presented when the economic activity of this community is considered later in this study.

CHAPTER II

THE ECONOMIC IMPACT ON
THE PROVINCE OF NEW BRUNSWICK

This chapter will describe the federal government expenditures incurred by the establishment and operation of Camp Gagetown as a military training installation, and will assess the economic effect on the Province of New Brunswick.

Not all of the costs associated with the camp have an effect on the local economy. Procurement of items such as arms, ammunition, vehicles and uniforms, is made on an Army wide basis and is not associated with the location of the military installation.

However, there are other expenditures arising from contracts let locally, and the resultant payments add to the income of the region in which the military installation is situated. Such expenditures are normally associated with construction, maintenance of the military establishment, food, fuel, and military and civilian personnel payrolls. This study will be concerned with these expenditures, since they are directly related to the location of Camp Gagetown. This latter type of expenditure will be referred to as federal Gagetown expenditures.

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Procurement contracts giving rise to federal Gagetown expenditures are considered as being awarded to suppliers located in the Province of New Brunswick. Officials of both the Department of Defence Production and National Defence claim that this assumption is generally valid, even though contractual arrangements may be made with the headquarters of a national organization, - for example, Imperial Oil Limited - because credit for the contract is given to the regional sales outlet.

Thus the initial economic impact of these expenditures is felt in the Province of New Brunswick, and further repercussions will depend upon whether or not the production stages from procurement of raw materials to finished goods take place within New Brunswick. Thus, for example, gasoline sold by Imperial Oil Limited through its New Brunswick sales outlet will have an impact restricted to the additional profits made by the outlet. On the other hand, procurement of foodstuff, for example, vegetables, may have a direct and sustained effect on the provincial economy.

Without a detailed knowledge of the economic structure of the province, an analysis of these secondary repercussions is impossible. Hence, this study of the effect of federal Gagetown expenditures on the province must be limited, of necessity, to a determination of the portion

they contribute to total provincial activity in similar areas.

Three facets of these federal Gagetown expenditures will be considered; land acquisition, federal construction expenditures in the Camp Gagetown and Town of Oromocto complex, and finally, the annual recurring expenditures.

1. Land Acquisition Effects

As indicated in Table I, expenditures in respect of land acquisition totalled just over \$12,500,000. In 1956 the Rural Sociology Unit of the Economics Division of the Department of Agriculture initiated a study of the social and economic impact of expropriation on rural people. This study was especially concerned with the difficulties encountered and the success achieved by 104 farm families that left the Camp Gagetown area to relocate in other farming communities.

The study had a dual purpose. The first was concerned with the immediate problems of relocation, and the results were summarized as follows:

The mass movement of people, sources of income other than farm real estate, and the lack of experience of the operators in buying a farm were important factors in the expropriation and relocation processes. Because they owned little real estate the compensation

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Table I
Land Acquisition Costs,
Camp Gagetown

Year	Amount
1952	\$ 2,447,489.70
1953	5,020,505.77
1954	2,649,148.78
1955	1,001,245.27
1956	1,036,898.80
1957	154,001.82
1958	52,429.16
1959	58,375.00
1960	51,957.20
1961	21,395.00
1962	12,528.75
1963	145.83
1964	13,399.14
Total	\$12,519,520.22

Canada, Department of National Defence,
Unpublished Data.

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received by some of the operators was a small amount for relocating. Together with the apparent desire of the families to settle near old friends and neighbors, and other sociological aspects, the lack of sufficient funds was a factor in the location of the survey respondents in adjoining areas of the ATA¹. The large increase in demand for farms brought about considerable inflation of farm prices in the area. This enhanced the problem of relocating from a financial standpoint and also added to the difficulty of appraising farms for sale by the experienced buyers. The result was that many farmers paid high prices for small and run-down farms².

The second was concerned with the degree of success achieved by the relocated farmer in the period 1956 to 1960. The findings of this part of the study were:

The major changes occurring on the survey farms from 1956 to 1960 may be summarized as follows: (1) ten of the respondents (11 per cent) had ceased to farm and only three of these continued to reside on their 1956 holdings; (2) the proportion of small-scale farmers had increased from 15 to 24 per cent; (3) the proportion of farms with sales of \$3,750 or more had increased from 17 to 26 per cent. Generally, the number of commercial farms with value of farm products sold of from \$250 to \$3,749 had decreased, and the other classes of farms had increased. It may be that part of the movement into nonfarm work resulted from the dislocation of these

1 Army Training Area.

2 D. Dyck and F. Lawrence, "Relocation Adjustments of Farm Families", in The Economic Annalist, Vol. 30, No. 1, February 1960, p. 11.

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families from the Gagetown area, but the information obtained during the survey work does not indicate whether this was a relocation adjustment or an adjustment to low income conditions in agriculture generally; (4) the improved acreage per farm had decreased by six acres on the average; (5) the respondents estimated the value of their farm real estate in 1960 to be about \$1,000 more per farm on the average than the purchase price in 1953 to 1956; (6) the indebtedness per farmer reporting debt had been reduced by \$861 since 1956, but the number of indebted operators had increased by six; (7) only 13 farmers were contemplating a change in their farm organization in the next two or three years and in most cases this change involved an increase in livestock³.

2. Capital Expenditure on New Construction

During the period 1954-1964, new construction expenditure in the province amounted to \$1,324,900,000 (Table II). Federal government expenditure in the Camp Gagetown and Town of Oromocto complex was \$93,900,000 or 7.1 per cent of the total. During the heaviest construction period in this complex (1954-1957), federal government expenditure on new construction amounted to 17.8 per cent of all construction within New Brunswick.

The size and composition of construction expenditures have important direct and indirect effects on the

3 D. Dyck, "Relocation Adjustments of 95 New Brunswick Farm Families, 1956-60", in The Economic Annalist, Vol. 32, No. 5, issue of October 1962, p. 109.

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Table II

New Construction, New Brunswick^a
and Camp Gagetown/Town of Oromocto^b

Year	New Brunswick	Camp Gagetown/ Town of Oromocto	Per cent of Total
(Millions of Dollars)			
1954	78.1	10.5	13.4
1955	125.5	29.0	23.1
1956	136.1	24.3	17.9
1957	108.2	15.9	14.7
1958	131.6	7.6	5.8
1959	137.1	1.8	1.3
1960	119.4	.5	.4
1961	115.4	.4	.3
1962	116.8	.6	.5
1963	115.5	.5	.4
1964	141.2	2.8	2.0
TOTAL	1,324.9	93.9	7.1

Canada, Department of Trade and Commerce,
Private and Public Investment in Canada and
Regional Estimates, Various years.

—, Department of National Defence,
Unpublished Data.

^a Private and Public Expenditure.

^b Federal Expenditure only.

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level of employment. In this context, the direct employment effects refer to the amount of employment required to put the physical capital in place. The indirect employment effects accrue from first, the suppliers of direct goods and services; second, the employment multiplier effect; third, the demand for labour necessary for the operation, repair and maintenance of the new capital; fourth, the demand for attendant permanent services, e.g. insurance, finance, etc., and finally, the improved general environment for new investment.

Investment in New Brunswick creates employment not only in the province but elsewhere. What proportion of this employment takes place in the province depends upon the nature of the investment, and the ability of the province to supply men and materials. Without detailed knowledge of the ability of the province to provide the required materials and, conversely, the need to import into the province, no estimate of the impact of even the first type of indirect employment effect is possible.

However, most of the on-site labour in a construction project is provided by local resources, and there seems to be no evidence that this situation would not pertain in New Brunswick.

Unfortunately, employment records for the period cannot be located, and consequently only an estimate of

the on-site labour can be attempted as a measure of the direct employment effects of this new construction.

The United States Department of Labor made several surveys of the number of man-hours per \$1000 of contract provided by several types of construction during the period 1958-1960.

These surveys estimated that, in respect of schools, out of a total of 212 man hours, eighty-four were devoted to on-site labour⁴; in respect of housing, out of 236 man hours, one hundred and fourteen were on-site⁵; and for office buildings, the total was 227 with ninety-seven man hours on-site labour⁶.

The relationship of on-site to total labour would seem to depend upon the degree of prefabrication, and the total labour content would probably depend upon the extent to which the production of prefabricated construction units is automated.

On the assumption that prefabrication and automation in the construction industry in New Brunswick are

4 United States Department of Labour, Labour Requirements for School Construction, Bulletin No. 1299, July 1961, p. 3.

5 ———, Labor and Material Requirements for Public Housing Construction, Bulletin No. 1402, May 1964, p. 4.

6 ———, Labor Requirements for Federal Office Building Construction, Bulletin No. 1331, June 1962, p. 3.

not applied to a greater extent than in the United States, it does appear reasonable to conjecture that the United States data might be considered to represent a minimum requirement for on-site labour for the construction projects under consideration.

Table III classifies the new construction in the Camp Gagetown and Town of Oromocto complex by type. By applying the United States data it is estimated that a total of over nine million man-hours of on-site employment was involved, with schools accounting for 331,000 man-hours, housing 3,006,000 man-hours, and other construction 6,173,000 man-hours.

Assuming a work year of two thousand hours, a total of 4,500 man years of on-site labour represents the direct employment effects of federal government expenditure over the period 1954-1964 on new construction in the Camp Gagetown and Town of Oromocto complex.

3. Annual Expenditures

Previously in this dissertation federal government expenditure on military operations was divided into two classes. The first type was concerned with the general requirements of the military, in respect of which any economic impact was not related to the location of the

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Table III

New Construction by Type,
Camp Gagetown/Town of Oromocto

Year	Schools	RESIDENTIAL Housing	Other	Annual Total
(Thousands of Dollars)				
1954	-	36.0	10,493.2	10,529.2
1955	121.5	2,126.8	26,769.6	29,017.9
1956	765.7	5,856.8	17,650.1	24,272.6
1957	1,902.4	9,895.2	4,113.8	15,911.4
1958	676.0	5,347.7	1,549.1	7,572.8
1959	425.3	675.6	668.3	1,769.2
1960	47.9	261.5	133.9	443.3
1961	-	75.2	458.6	533.8
1962	-	1.6	587.2	588.8
1963	-	-	475.8	475.8
1964	-	2,095.7	743.3	2,839.0
TOTAL	3,938.8	26,372.1	63,642.9	93,953.8

Canada, Department of National Defence,
Unpublished Data.

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Army installation. The second classification (termed federal Gagetown expenditure) included items of expenditure which become part of the income of the area in which the installation is located.

Table IV portrays the federal Gagetown expenditures for the years 1961, 1962 and 1963. Those items classified in this table as "Other Expenditures" are those which are incurred through procurement contracts. Such contracts are normally let locally under competitive conditions. There may, however, be occasions when local supply can not meet the demand, and hence this data must be considered as representing the maximum possible impact of such expenditure on the local economy.

Conversely, the relative size of payroll costs (approximately 82.5 per cent of the total) is conservatively estimated. These payroll costs represent 2.5 per cent of the total personal income in the province (Table V).

Moreover, a considerable number of jobs within a given installation are open to civilians who are normally drawn from the regional labour force. Camp Gagetown is no exception and provided an annual average employment to civilians as follows: 819 in 1961, 810 in 1962 and 758 in 1963⁷.

⁷ Camp Gagetown, Employment Records, Various Years,

Table IV

Annual Federal Gagetown Expenditures, Camp Gagetown

	1961		1962		1963	
	\$,000	% of Total	\$,000	% of Total	\$,000	% of Total
Payroll Costs						
Total	16,209.2	82.7	16,335.4	82.4	18,445.7	82.5
Military Pay & Allowances ^a	14,205.3	72.5	14,310.9	72.2	16,459.2	73.6
Civil Salaries	2,003.9	10.2	2,024.5	10.2	1,986.5	8.9
Other Expenditures						
Total	3,383.0	17.3	3,491.8	17.6	3,905.7	17.5
Construction Repair	1,061.0	5.4	703.0	3.5	896.0	4.0
Machinery & Equipment Repair	21.9	0.1	18.1	0.1	18.8	0.1
Wholesale Food	886.7	4.6	1,290.2	6.5	1,350.6	6.0
Wholesale Petroleum & Petroleum Products	673.2	3.4	729.5	3.7	877.4	3.9
Laundry & Dry Cleaning	48.2	0.2	54.0	0.3	49.9	0.2
Utilities	692.0	3.5	697.0	3.5	713.0	3.2
Grand Total	19,592.2	100.0	19,827.2	100.0	22,351.4	100.0

Canada, Department of National Defence, Unpublished Data.

^a Does not include the value of subsistence issued in kind to the single soldier. The cost is distributed among the items listed under Other Expenditures.

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Table V
 Personal Income,
 New Brunswick and Camp Gagetown^a

Year	New Brunswick	Camp Gagetown	Percentage of Total
(Millions of Dollars)			
1961	637	16.2	2.5
1962	672	16.3	2.4
1963	707	18.4	2.6

Canada, Dominion Bureau of Statistics, National Accounts Income and Expenditure 1963, Table 28, p. 41.

^a Includes only military pay and allowances and salaries to civil servants. See Table IV, p. 21.

Both construction repair and machinery and equipment repair expenditures arising from contractual awards depend primarily upon the repair facilities which are organic to the military installation. Furthermore, the degree of 'in-house' capability will depend upon first, whether or not the repair skills are generally available or whether they are unique to the military requirements, and second, whether repair skills are required by the military under operational conditions which exclude the employment of civilians.

It is for these reasons that, in a relative sense, more construction repairs are done under contract than is the case with machinery and equipment repair. Thus, it is not surprising that, whereas construction repair contracts let by the federal government in respect of the camp and the town approximate two per cent of the provincial total (Table VI), machine repair contracts account for less than .01 per cent (Table VII).

In 1961, the volume of wholesale food sales in New Brunswick amounted to \$98,721,500⁸. In this same year, wholesale food costs in Camp Gagetown were \$886,700 representing less than one per cent of the total. While these

⁸ Canada, Dominion Bureau of Statistics, 1961 Census of Canada, Wholesale Trade, Bulletin 6.2-1, Catalogue: 97-511, Preliminary Data.

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Table VI

Construction Repair Expenditures,
New Brunswick^a and Camp Gagetown/Town of Oromocto^b

Year	New Brunswick	Camp Gagetown/ Town of Oromocto	Percentage of Total
(Millions of Dollars)			
1961	40.9	1.1	2.7
1962	37.9	.7	1.8
1963	42.5	.9	2.1

New Brunswick, Office of the Economic Adviser,
A Statistical Report on the New Brunswick
Economy, September 1964, Table 15.

^a Private and Public Expenditures

^b Federal Expenditure by contract only and does not include construction repairs performed by facilities organic to Camp Gagetown. See Table IV, p. 21.

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Table VII

Machinery and Equipment Repair Expenditures,
New Brunswick^a and Camp Gagetown Town of Oromocto^b

Year	New Brunswick	Camp Gagetown and Town of Oromocto ^c
(Millions of Dollars)		
1961	36.0	.002
1962	36.4	.002
1963	39.5	.002

New Brunswick, Office of the Economic Adviser,
A Statistical Report on the New Brunswick
Economy, September 1964, Table 15.

^a Private and Public Expenditure.

^b Federal Expenditure by contract only and does not include machinery and equipment repairs performed by facilities organic to Camp Gagetown. See Table IV, p. 21.

^c Less than .01 per cent of total provincial expenditures.

food costs increased significantly during the next two years, the absence of change data for New Brunswick precludes comparison for 1962 and 1963. However, if no increase in level of wholesale food sales for the province is assumed (and this would appear unlikely), the military food costs, despite their increase, would account for less than one-and-one-half per cent of the provincial total for 1962 and 1963.

The costs to the federal government for petroleum and petroleum products for Camp Gagetown during 1961 were \$673,200, representing approximately one per cent of the total provincial sales of \$68,210,000⁹. Again, because of lack of provincial data, comparisons for the years 1962 and 1963 are impossible. Assuming that provincial sales have also increased in total, the contribution by the military to this industry cannot exceed 1.7 per cent of the total for 1962 and 1963.

Laundry and Dry Cleaning expenditures are omitted from analysis because they form only a small fraction of total federal Gagetown expenditures.

Because of lack of data, consideration of the expenditures in respect of utilities must be limited to electrical energy, and, because of the complexity of the

9 Ibid.

rate structure, comparisons are possible only in terms of kilowatt hours used.

Table VIII reveals that the electrical energy for which the federal government bore the cost in respect of the Camp Gagetown and Town of Oromocto complex formed less than two per cent of the total used in the province during the period 1961-1963.

4. Anticipated Increased Expenditures

Federal Gagetown expenditures will increase during 1965 for two reasons. First, military pay and allowances have been increased by 6.27 per cent¹⁰, and second, an additional military unit will be added to the population of Camp Gagetown.

The gross income accruing from this additional unit (not including the increase in pay rates), based on December 1964 data, will be \$3,121,000. This will increase military pay and allowance costs to approximately \$19,500,000 computed on the previous rates, and to \$20,700,000 on the new rates. Payroll costs at Camp Gagetown will be increased, therefore, by four million dollars.

¹⁰ Data available to the student in his appointment as Director of Records (Army).

Unless specified to the contrary, all additional data in this dissertation should be attributed to the same source.

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Table VIII

Net Electric Energy Used, New Brunswick
and Camp Gagetown/Town of Oromocto^a
1961-1963

Year	New Brunswick	Camp Gagetown/ Town of Oromocto	% of total
(Millions of Kilowatt Hours)			
1961	1785	34.5	1.9
1962	1924	34.9	1.8
1963	2089	36.0	1.7

New Brunswick, Office of the Economic Adviser,
New Brunswick Economic Statistics, December
1964, Table 23, p. 13.

Canada, Department of National Defence,
Unpublished Data.

^a Includes only electrical energy used in
respect of Army installations.

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Food, laundry and dry cleaning costs will increase in direct relationship to the increase in numbers of unmarried soldiers. It is anticipated that these numbers will increase from 1,400 to 1,800; therefore, expenditures on these items will increase by approximately 29 per cent, that is, about \$406,000.

Costs of wholesale petroleum and petroleum products will increase by reason of the new construction and the additional vehicles. The best estimate available from officials of the Department of National Defence is an increase of \$70,000 annually.

The total increase in annual federal Gagetown expenditures will be of the order of \$4,500,000. Additional capital expenditures have been planned, part of which will include three hundred housing units. It is estimated that this additional investment will total \$5,000,000 of which \$2,800,000 has been spent in 1964¹¹.

5. Summary

The creation of Camp Gagetown as a military training installation had certain economic effects on the region.

¹¹ Supra, p. 19.

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Because of the land area required for training purposes, land acquisition costs had an immediate effect on acreage prices. The displaced residents created a demand for available land adjacent to their former location, and prices rose. The economic measure of this effect has not been determined.

Capital investment in construction formed a significant portion of the provincial total, particularly over a four to five-year period. The direct effects were immediately felt by the regional labour force and accounted for about 4,500 man years of on-site employment during the period 1954-1964. These direct effects, of course, terminated with completion of the construction projects.

Continuing effects from the military operation are significant in two aspects. First, regional employment at the base activity has been provided for 750 to 800 workers, comparable to that of a relatively large firm. Second, if military training can be considered as a service industry, payments from the point of raw material acquisition through the production process and over the usable life of the product are continuous, and become part of the personal income of the region within which the payments are made.

Thus this military training installation makes

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its greatest impact on the economy of New Brunswick by its contribution to the total personal income of the province, approximately 2.5 per cent. It is in this same area of personal income that changes in military rates of pay and allowances and changes in numbers of personnel under training will have their effect.

CHAPTER III

THE ECONOMIC ACTIVITY IN THE TOWN OF OROMOCTO

In Chapter I, the origin, the form of government and the basis of the financial structure of the Town of Oromocto were described.

This chapter will analyze the economic structure of the town, examine its financial situation and, finally, compare its economic activity with other New Brunswick municipalities.

1. The Economic Structure

In 1961 the population of the Town of Oromocto was 12,170 having, in fact, replaced the small village of 661 with the same name¹.

In the same census year, there were 2,128 wage earner families. The average earnings of the head of the family were \$4,409, and of the family \$4,621².

In the retail trade, Oromocto had sixteen outlets with sales amounting to \$3,683,100 representing annual per

1 Canada, Dominion Bureau of Statistics, 1961 Census of Canada, Population, Bulletin 1.1-10, Catalogue: 92-539, Table 6-8.

2 1961 Census, Households and Families, Bulletin 2.1-10, Catalogue: 93-519, Table 85-6.

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capita retail sales of just over \$300. The number of paid employees in the last week of November 1961 was 151 and the total payroll for the year was \$274,500³.

Again, in 1961, six firms within the service trades, having total receipts of \$217,100, were reported for a per capita figure of just under \$18. The total payroll for the year was \$90,300, with fifty-one persons being employed during the last week of November⁴.

In addition to the normal type of retail and service trades usually found in a municipality, two sales organizations unique to the Army exist in Oromocto⁵.

Each military unit operates, under the term of Army Institutes, clubs for officers, warrant officers, non-commissioned officers, and civil servants of equivalent status. The sales activity of these clubs is generally limited to beverages and tobacco products. The volume of sales has been included in the 1961 census figures.

3 1961 Census, Retail Trade, Bulletin 6.1-2, Catalogue: 97-502, Table 4-3.

4 1961 Census, Service Trades, Bulletin 6.2-7, Catalogue: 97-517, Table 31-3.

5 Both of these organizations, under Army policy, are permitted to engage in sales activities which do not compete, either in the price level or in the range of goods and services offered, with normal commercial outlets in the area.

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Personnel to operate these institutes are included in the military and civilian components of the military installation.

The second organization, Maple Leaf Services, provides certain amenities to the soldier. In Camp Gagetown the organization operates clubs, canteens and snack bars for junior personnel, and a theatre. Officials of both the Department of National Defence and the Dominion Bureau of Statistics agree that the 1961 sales, amounting to \$507,500⁶, were inadvertently omitted from the census data for that year. The number of employees has been estimated at thirty-two by the local manager.

No business activity, other than in the retail and service trades, was present in the census year 1961 or at the time of the writer's personal investigation in March 1965.

Thus, the total commercial activity in 1961 resulted in receipts of \$4,407,700 for a per capita value of \$362. These enterprises employed 234 persons during the last week of November and provided an annual payroll of \$364,800 (exclusive of Maple Leaf Services). Other employers (not including the Department of National

⁶ Canada, Department of National Defence, Unpublished Data.

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Defence) with the estimated number of employees were:

The Oromocto School Board	159 ⁷
The Town	100 ⁸
The Oromocto Development Corporation	19 ⁹

Finally, the 1961 census data included 2189 housing units¹⁰. Of these, 1900 were permanent married quarters for the military.

Equally official data for recent years are not available. However, the writer visited the Camp Gagetown and Town of Oromocto area late in March 1965 and, from discussion with officials of the camp and the town, and with various merchants, has been able to make certain estimates which are displayed in Table IX.

Finally, the Town Clerk estimates that the number of housing units (when the three-hundred additional permanent married quarters are completed) will total 2,650.

7 New Brunswick, Report of the Royal Commission on Finance and Municipal Taxation in New Brunswick, Fredericton, N.B., November 1965, Table 4:14, p. 93.

8 Chairman, Board of Commissioners Town of Oromocto, Unpublished Data.

9 Ibid.

10 B. M. Hamilton, editor, 1964-65 Survey of Markets and Business Year Book, Maclean-Hunter Publishing Company, Limited, Toronto, 40th edition, p. 63.

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Table IX

Estimates of the Level of Employment Activity,
Town of Oromocto, March 1965

	Number of Employees
Retail and Services Trades Outlets	
Groceteria	55
Liquor	11
Variety	56
Hardware and Sporting Goods (2)	7
Jewellery	5
Drugs	8
Ladies' Wear	6
Children's Wear	2
Magazines and Tobacco	2
Men's Wear (2)	13
Shoes	2
Shoe Repair	2
Laundry and Dry Cleaning (2)	14
Restaurants (2)	18
Bowling Alley	8
Banks (2)	30
Finance Company	4
Barber Shop	5
Beauty Parlours (2)	8
Service Stations (4)	12
Movers (3)	12
Taxis (2)	9
TOTAL	<u>299</u>
Other Employers	
The Oromocto School Board	173
The Town of Oromocto	100
The Oromocto Development Corporation	20
Maple Leaf Services	35
TOTAL	<u>328</u>
Total, All Employees	<u>627</u>

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In Table X are found the details of personal disposable income classified according to source. That portion attributed to military pay and allowances and to federal civil service pay is derived from data available to the writer. The balance represents an estimate based on the civil service salary structure applied to all other wage earners.

2. The Financial Situation

Table XI details the source and amount of revenue of the Town of Oromocto for the period 1961-1963. While the subject of the town's revenue is of prime concern in this thesis, expenditures are also presented in Table XII in order to provide a complete picture of the financial structure.

In the statement of revenues, the level of taxation and federal grants are of particular importance.

Only real property forms the basis of tax revenue in the town. Assessment is calculated at 80 per cent of its value and the tax rate has remained at \$2.00 per \$100 of assessment. No distinction is made between residential and other property.

On the basis of this tax rate the assessed value of real private property for each of the years being

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Table X
Personal Disposable Income, Town of Oromocto, 1961-1964^a

	1961		1962		1963		1964	
	No. ^b	\$'000	No. ^b	\$'000	No. ^b	\$'000	No. ^b	\$'000
Military	4,018	14,526.1	4,053	14,635.9	4,275	16,803.3	4,196	16,610.1
Civil Service	819	1,907.9	810	1,928.1	759	1,891.9	833	2,079.8
All Others ^c	512	1,192.3	550	1,316.9	588	1,441.5	627	1,566.1
TOTAL	5,349	17,626.3	5,413	17,880.9	5,622	20,136.7	5,656	20,256.0

^a Includes all personnel employed in the Camp Gagetown/Town of Oromocto complex regardless of place of residence.

^b Average number employed during the year.

^c Income estimated on basis of civil service salary structure. The data for 1962 and 1963 were calculated by interpolation.

Table XI

Revenue, Town of Oromocto, 1961-1963

	1961	1962	1963
Taxation	31,349	34,143	36,019
Licenses and Permits	2,670	7,489	7,918
Rents, Concessions, Franchises	480	480	1,604
Fines	4,484	2,295	3,345
Interest and Tax Penalties	21,175	18,790	13,973
Contributions, Grants, Subsidies	1,493,848	1,679,844	1,881,510
a. Dominion of Canada	1,479,400	1,541,898	1,736,071
b. N.B. Provincial Subsidy	8,496	120,421	121,610
c. N.B. Snow Removal Grant	661	12,170	12,170
d. N.B. Welfare & Civil Defence Grant	4,691	4,755	11,059
e. Lincoln & Burton - Fire Protection	600	600	600
Miscellaneous	13,942	14,112	12,829
Total Revenue	1,567,948	1,757,153	1,957,198
Surplus from Previous Year	128,983	94,489	-
Deficit for Year	-	6,203	91,720
Total (Revenue & Deficit)	1,696,931	1,857,845	2,048,918

New Brunswick, Department of Municipal Affairs, Annual Report of Municipal Statistics, Years 1961-1963.

Table XII

Expenditure, Town of Oromocto, 1961-1963

	1961	1962	1963
General Government	97,458	99,150	89,603
Total Protection	145,283	159,957	160,129
Public Works	200,808	213,548	216,507
Sanitation and Waste Removal	12,659	12,810	12,764
Total Health	4,631	1,169	5,329
Total Social Welfare	6,579	11,724	17,629
Total Education	743,063	942,797	1,131,156
Recreation and Community Services	18,130	26,295	29,091
Debt Charges	362,705	362,696	362,530
Uncollectible Taxes	-	-	-
Special Expenditure	10,000	16,450	15,734
Discount on Taxes	1,106	1,396	1,441
Civil Defence	-	118	802
Other	20	9,735	-
Total Expenditures	1,602,442	1,857,845	2,042,715
Deficit of Previous Year	-	-	6,203
Surplus for Current Year	94,489	-	-
Total (Surplus and Expenditure)	1,696,931	1,857,845	2,048,918

New Brunswick, Department of Municipal Affairs, Annual Report
of Municipal Statistics, Years 1961-1963.

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considered was \$1,567,450 in 1961, \$1,707,150 in 1962, and \$1,800,950 in 1963.

In respect of federal property, the Municipal Grants Act¹¹ provides for grants in lieu of taxes by the federal government on a basis equivalent to a private taxpayer. Officers of the Municipal Grants Section of the Federal Provincial Relations Directorate of the Department of Finance have unofficially estimated the assessed value of federal property in the Camp Gagetown and Town of Oromocto complex as \$33,700,000 for the period under consideration. When complete, current construction will add approximately \$2,407,000 to this estimate.

Thus federal grants in lieu of taxes would approximate \$675,000 whereas, in fact, the operating grant by the Department of National Defence for 1963 was nearly \$1,800,000. Officials estimate that it will approximate \$2,000,000 in 1964. Even with the increased assessed value of federal property currently under construction, the Town of Oromocto, if it is to function as a normal municipality, must increase its net tax revenue by an amount of the order of \$1,200,000 to \$1,500,000.

¹¹ Canada, An Act Respecting Grants to Municipalities, R.S.C. 1952, c. 182 as amended by 1955, c. 49 and 1957, c. 10, Queen's Printer, Ottawa, 1957.

3. Comparisons with Other Urban Centres in New Brunswick

Tables XIII and XIV present comparative data in the Retail and Service Trades respectively. First, data for the province in each of the trades are displayed. Second, urban centres of a size comparable to the Town of Oromocto are considered. Third, urban complexes (Saint John and Lancaster, Chatham and Newcastle, Moncton and Shediac), possessing geographical and communication relationships somewhat similar to the Fredericton, Marysville and Oromocto area, have been grouped.

It should be recalled that sales and receipts of Maple Leaf Services have not been included in these data, and hence total per capita expenditure in these trades for the Town of Oromocto should be increased to approximately \$362 for the year 1961.

Normally, it might be expected that the per capita sales and receipts in urban centres should exceed the provincial average since such centres generally augment their level of economic activity from the rural population.

In the retail sector, only one centre, Lancaster, in addition to Oromocto, fails to meet the provincial level of per capita expenditure.

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Table XIII
Retail Trade, New Brunswick and Selected Urban Centres, 1961

	Population	Number of Stores	Population per Store	Annual Sales \$'000	Annual Sales per Capita \$
New Brunswick	597,936	5,215	114.7	435,806.0	729
Saint John Lancaster	55,153 13,848	541 71	101.9 195.0	77,956.1 8,199.8	1,483 591
Chatham Newcastle	7,109 5,236	74 78	96.1 67.1	7,729.2 10,986.4	1,087 2,098
Moncton Shediac	43,840 2,159	355 31	123.5 69.6	63,811.6 3,260.1	1,456 1,510
Fredericton Marysville Oromocto	19,683 3,233 12,170	197 37 16	99.9 87.4 760.6	45,025.8 2,905.0 3,683.1	2,287 899 303

Canada, Dominion Bureau of Statistics, 1961 Census of Canada, Retail Trade, Bulletin 6.1-2, Catalogue: 97-502, Table 4-3.

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Table XIV
Service Trades, New Brunswick and Selected Urban Centres, 1961

	Population	Number of Locations	Population Served per Location	Annual Receipts \$'000	Annual Receipts per Capita \$
New Brunswick	597,936	2,066	289.4	42,465.9	71
Saint John Lancaster	55,153 13,848	281 42	196.3 329.7	10,697.1 706.9	193 51
Chatham Newcastle	7,109 5,236	26 42	273.4 124.7	496.3 738.7	70 141
Moncton Shediac	43,840 2,159	213 15	205.8 143.9	6,640.7 171.4	151 79
Fredericton Marysville Oromocto	19,683 3,233 12,170	117 8 6	168.2 404.1 2,028.3	4,990.6 83.4 217.1	254 26 18

Canada, Dominion Bureau of Statistics, 1961 Census of Canada, Service Trades, Bulletin 6.2-7, Catalogue: 97-517, Table 31-3.

In the service sector, three centres, Lancaster, Chatham and Marysville, as well as Oromocto, have receipts less than the provincial per capita average.

If both sectors are considered in total, only Lancaster and Oromocto are below the provincial per capita expenditure of about \$800 per year, and the level of activity in Oromocto is less than half that calculated for the province as a whole.

Within the retail trade, a comparison within the food group is possible. Steinberg's Limited is the only outlet and reported sales of \$1,795,000 in 1961¹². Discounting the 1,483 unmarried soldiers (who are provided with food by the Army) as possible food purchasers, and thus reducing the 1961 population of 12,170 to 10,687 for purposes of this comparison, the per capita expenditure within Oromocto was \$168.

In the province, total retail sales in the food group amounted to \$109,391,300 for a per capita expenditure of \$182¹³.

12 Steinberg's Ltd., Steinberg's Supermarket in Oromocto, January 1964, p. 5. A market analysis of the effect of a second supermarket in Oromocto on Steinberg's sales.

13 Canada, Dominion Bureau of Statistics, 1961 Census, Retail Trade, Bulletin 6.1-2, Catalogue: 97-502, Table 5-7.

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As stated previously, the retail and service trades accounted for the total commercial activity in the town.

Since, within the food group, the expenditure per capita in Oromocto closely approximated that of the province as a whole, it may be concluded that the causes of the relatively low level of activity in the retail and service trades lie elsewhere.

CHAPTER IV

CHANGES IN THE LEVEL OF ECONOMIC ACTIVITY
IN THE TOWN OF OROMOCTO

In the previous chapter it was estimated that the net annual tax revenue of Oromocto must be increased by \$1,200,000 - \$1,500,000 before federal grants toward annual operating costs can be reduced to those in lieu of taxes under the Municipal Grants Act.

Aside from the military training installation, the economic activity of the town is limited to the retail and service trades. The level of activity in these trades is well below those of the average New Brunswick municipality of equivalent size.

The personal income of the residents will increase during 1965; first, from an increase in military rates of pay and allowances authorized in March 1965 and made effective 1 October 1964 and, second, from an increase in the number of soldiers stationed in Camp Gagetown.

This increase in personal income should result in an increase in the level of economic activity in the town. While it is beyond the scope of this thesis to define the precise effect on municipal revenue of changes in the level of economic activity, it is assumed, on a priori grounds,

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that both should change in the same direction.

The purpose of this chapter is to examine the effect on the level of economic activity in the town arising from the two sources of change in personal income. In addition, other means to increase the economic activity will be considered.

The increase in rates of military pay changes the level of the town's per capita income. On the other hand, an increase in the military population, while increasing total income in the town, may not have an effect on the per capita income. Hence each will be considered separately and in different ways.

It will be demonstrated that the consumption pattern of the new soldier and his family will approximate that of the present military resident, and that his contribution to the economy of the town will be relatively equivalent.

However an increase in per capita income of the soldier may result in a change in spending pattern, not only of the soldier but also of the non-military resident; that is, a change in spending pattern of the military may have a "feedback" effect on the income of the non-military income earner and, in consequence, the spending pattern of the latter.

Thus a change in the soldier's income will have a multiplier effect on the income of non-military residents. It is proposed to construct a model of the Oromocto economy under conditions of a change in per capita income of the military resident and to use this model to determine the magnitude of any multiplier effect.

1. The Conceptual Approach to the Model

The construction of the model will rely on the principles of the Economic Base Theory, using as a prime reference a collection of papers edited by Pfouts¹.

This theory views an economic community as a dichotomy of two types of enterprises or activities, the 'basic' and the 'nonbasic'². The basic enterprises are those which

1 R. W. Pfouts, Editor, The Techniques of Urban Economic Analysis, Chandler-Davis Co., West Trenton, New Jersey, 1960, p. 301-306, 348-354.

2 The usual terms are 'basic' and 'service'. However, to avoid ambiguity with the previous use of the word 'service' in connection with service trades, the word 'nonbasic' will be substituted in respect of the Economic Base Theory.

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'export' goods and services to points outside the economic confines of the community, or which market their goods and services to persons who come from outside the economic boundaries. From a trade-flow point of view these enterprises, through their export function, earn a dollar inflow for the community from surrounding regions, the nation, or even from other nations. Without this inflow from export activities, the economic health of the community will suffer. In this sense, export activities of a community become its economic base.

There are, however, certain economic enterprises within the community with the principal function of providing for the needs of persons within the community's economic limits. These enterprises make up the nonbasic activity which is directly supported by the basic activity. Both employment and profitability in nonbasic activities are dependent upon, and sensitive to, changes in the economic base.

Two main requirements are associated with the application of the Economic Base Theory to an analysis of a regional economy.

The first is concerned with identification of the economic base: i.e. not only must the basic or export activity be defined but, in addition, each enterprise must

be identified as being an exporting or a nonbasic activity as the case may be.

The second is a demarcation, economic and geographic in character, between the producing community and the boundary marking the beginnings of its export market.

The Camp Gagetown and Town of Oromocto complex was established to provide military training as part of Canada's defence activity. Military training comprises the basic activity of the town which is considered to be the producing community.

While the other activities of the town may cater to non-residents as well as residents and thus become, in part, a secondary source of export, their principal function is to provide goods and services to the residents. Hence they will be classified as nonbasic activities.

All income derived from the basic activity of military training stems from federal government expenditures. All of these expenditures, less payroll payments, go toward imports into the town. Thus payroll payments represent the volume of 'exports' by the basic activity.

The portion of this personal income spent on consumer goods and services by the residents who are basic employees is divided between consumer 'imports' into the town and local consumer purchases.

The local consumer purchases, plus non-resident purchases, comprise the income of the nonbasic enterprises, and such income is again divided. One part results in imports into the town which are disposed of locally in the form of consumer goods and services. The remaining portion takes the forms of factor incomes, including income to the employees of the nonbasic activities, of taxes, and of purchases from other nonbasic activities. The income to the nonbasic employees is again spent in the same manner as that of the basic employees.

If the personal income and, as a consequence, the local consumption expenditure of the basic employee is changed, then it can be expected that the personal income and local consumption expenditure of the nonbasic employee will also change in the same direction. Thus there is a multiplier effect from the change in personal income of the basic employee.

Thus, the income flow within any community depends upon, first, that portion of personal disposable income spent on consumer goods and services and, second, that portion of consumption expenditure which takes place inside the community.

The Town of Oromocto Income Multiplier must be designed to measure a change in income flow in the town

consequent upon a change in personal disposable income per capita, and involves the relationship of consumer expenditure in the retail and service sales outlets in Oromocto to personal disposable income.

The first problem is concerned with the determination of personal disposable income from personal income data. Since this part of the study is concerned with changes in rates of military pay and allowances, it will be assumed that the personal income of the soldier is derived, in the main, from his military pay and allowances. The Income Tax Act³ requires that there shall be deducted, by the paying authority, all income tax applicable to the soldier's pay and allowances. Thus, within the limits of the above assumption, the personal disposable income of all soldiers is known⁴.

In the development of the model, no portion of personal disposable income devoted to savings may enter the computations.

However, in each soldier's pay account there is an identifiable amount which is spent and which will be termed

³ Canada, An Act Respecting Income Taxes, R.S.C. 1952, c. 148, as amended, Queen's Printer, Ottawa, 1964, p. 100 and 101.

⁴ The writer in his appointment as Director of Records (Army), is responsible for all Army pay accounts and hence has access to the necessary military pay data.

'spendable funds'. The relationship of spendable funds to personal disposable income is defined as the General Purchase Index 'g'. During the calculation of this index, it will be explained why spendable funds generally would not contain any savings, and why spendable funds may form only part of personal expenditure on goods and services.

However, it will be demonstrated that the General Purchase Index is the minimum marginal propensity of the soldier to consume within the retail and service trades, and is a linear function.

The next step in developing the model will be the computation of the Local Purchase Index 't', which will relate consumer expenditure in the retail and service trades in Oromocto to spendable funds. This index will be applied as the marginal propensity to devote spendable funds to the consumption of local goods and services. Because it will be calculated as an average, this second index is also a linear relationship.

Ordinarily, a change in per capita income has an effect on consumption which, in turn, has a 'feedback' effect on income in the second and successive rounds of spending. However, in the Oromocto economy, an increase in consumption has a feedback effect only on the incomes of the nonbasic industries. No such effect is felt by

the employees of the basic industry because wages and salaries of the military and the civil servant are determined exogenously by the Department of National Defence.

Thus, a simple model of the economy under study becomes

$$C = tg (Y + Y_n)$$

where C represents a change in consumption,

Y a change in disposable income of the Department of National Defence employee,

Y_n a change in disposable income of employees and other nonbasic factors.

However, any change in factor incomes of Oromocto residents engaged in nonbasic industries is related to a change in consumption. Hence

$$Y_n = eY$$

where 'e' is the proportion of increased income flow appearing as increased factor incomes to Oromocto residents engaged in the nonbasic industries.

Therefore

$$C = tg (Y + eC)$$

and

$$C = \frac{tg}{1 - tge} Y$$

Thus, the income flow multiplier is $\frac{tg}{1 - tge}$.

2. The General Purchase Index

The General Purchase Index 'g' has been defined as the relationship between spendable funds and personal disposable income. Furthermore, it has been contended that spendable funds generally are spent and not saved.

The basis of this contention lies within an understanding of the privileges under which the soldier may allot a portion of his military funds to various organizations. The remittances are made by the Army authorities in accordance with the soldier's request. The military term for such allotments is 'pay assignments'. All soldiers may make assignments to insurance companies, the Receiver General of Canada, benevolent and welfare funds, medical and hospital plans, and financial institutions.

Since these allotment privileges are a free service, it would appear reasonable to assume that the soldier would use this facility to accomplish any savings.

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For this reason, any residue left to the soldier after deduction of these permissive allotments can be considered, in general, as being devoted to consumer expenditure.

In respect of the single soldier, therefore, spendable funds are those which are paid directly to him each pay day.

While all soldiers have these allotment privileges, the married soldier is required, in addition, to make a minimum assignment to his wife. Consequently, spendable funds, in the case of the married soldier, will include the amount of this compulsory assignment as well as the cash issued directly to him. Again it is assumed that, generally, the family saving is done through permissive allotments.

Allotments to tradesmen and loan companies are discouraged. However, allotments to banks and trust companies are permitted, and some of these undoubtedly are designed to repay borrowings previously used for consumption purposes. For this reason spendable funds are considered as a minimum measure of consumer expenditure within the retail and service trades.

A distinction must be made between the married and the unmarried soldier.

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The income of the married soldier is made up of his pay plus a subsistence allowance and a marriage allowance. If he occupies housing supplied by the Army (termed "permanent married quarters), the rental cost is deducted from his account.

The income of the unmarried soldier does not include the marriage allowance. Moreover, at Camp Gagetown, each unmarried soldier is required to live in barracks and to accept food supplied by the Army. Hence his cash income does not include subsistence allowance.

This difference in income structure warrants the calculation of two General Purchase indices: one ' g_1 ' for the married soldier and the other ' g_2 ' for the unmarried soldier.

Of the total number of married soldiers living in Oromocto, over 86 per cent occupy permanent married quarters (Table XV). Consequently, the General Purchase Index for the married soldier will be calculated from pay account data in respect of only those who occupy permanent married quarters.

In each case, the General Purchase Index will be calculated on the basis of a linear relationship between spendable funds and personal disposable income using the

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Table XV

The Military Population of Camp Gagetown,
31 October 1964

Married living in Permanent Married Quarters	1774
Married living in Civilian Accommodation in Oromocto	274
Married living in Civilian Accommodation Outside Oromocto	656
Unmarried living in Barracks	<u>1283</u>
Total	3987

Camp Gagetown, Unpublished Data

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formula⁵

$$\frac{\sum xy - \frac{(\sum x)(\sum y)}{n}}{\sqrt{\frac{\sum x^2 - (\sum x)^2}{n}}}$$

The degree of correlation related to each General Purchase Index will be measured by calculating the correlation coefficient 'r' employing the formula⁶

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

$$\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}$$

In these formulae, spendable funds is represented by 'y', personal disposable income by 'x', and the number of soldiers involved by 'n'⁷.

5 M. J. Moroney, Facts From Figures, Penguin Books, Baltimore, 1962, p. 284.

6 Paul G. Hoel, Introduction to Mathematical Statistics, Wiley, New York, 1961, p. 122.

7 Both formulae are applicable to the straight line relationship 'y = mx + c' where 'm' expresses the slope, that is, the General Purchase Index and 'c' represents the intercept of the axis of 'y'. This intercept is not calculated since the linear relationship is considered valid only for the ranges of personal disposable income involved. The ranges in monthly terms are \$311 - \$954 for the married soldier and \$169 - \$593 for the unmarried soldier. It should be noted, too, that only in these calculations is personal disposable income designated as 'x'. Elsewhere the upper case 'Y' is used.

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Table XVI displays the detail and results of the calculations. The basic data were monthly figures as at 31 December 1964 and included all soldiers (in the two categories considered) stationed in Camp Gagetown on that date⁸.

The correlation coefficient is a measure of the uniformity of spending pattern of the military. Why, then, is there a greater uniformity among the married soldiers than among the unmarried? This question is particularly pertinent in that both are subjected to a major item of consumer expenditure which is related directly to rank, and hence to personal disposable income. This item of expenditure involves accommodation for the married soldier and both accommodation and food for the unmarried soldier. It is believed that the answer lies in the fact that, generally, the married soldier is older and has been in the Army for a longer period. Consequently, he might be expected to display the effects of the institutional influences towards uniformity to a greater degree than the younger unmarried soldier with less service.

⁸ Statistically, the entire population, rather than merely a sample, was surveyed. Consequently, the reliability of the correlation coefficient is beyond doubt and no mathematical test has been applied.

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Table XVI

The General Purchase Index

Data	Married Soldiers Living in Permanent Married Quarters	Unmarried Soldiers Living in Barracks
n	1,790	1,380
$\sum y$	386,924	143,204
$\sum x$	709,718	313,629
$\sum y^2$	92,317,742	18,064,688
$\sum x^2$	291,689,248	76,236,603
$\sum xy$	160,416,319	35,327,963
General Purchase Index	.681	.561
Correlation Coefficient	.741	.697

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However, in both cases there is a significant degree of correlation between an increase in spendable funds and an increase in personal disposable income.

The General Purchase Indices were developed in order to relate spendable funds to personal disposable income. Each can now be interpreted in specific terms. In respect of the increase in per capita income in Oromocto due to the latest change in military rates of pay, the married soldier will spend in the retail and service trades sixty-eight cents out of every dollar by which his personal disposable income has been increased, and the unmarried soldier will spend fifty-six cents.

What proportion of this spending will be done in the sales outlets of Oromocto is the subject of the next section.

3. The Local Purchase Index

Two types of sales outlet can be identified in the Town of Oromocto: those which are operated by private enterprise and those which function under Army control. The latter are the Army Institutes and Maple Leaf Services which, for the purpose of this section, will be combined under the term "Army outlets".

The municipal tax revenue of the town does not depend upon the activity within the Army outlets. There-

fore, this study is directed solely toward a possible increase in the sales and receipts of the private enterprise outlets.

The total sales and receipts in all outlets amounted to \$4,407,700 in 1961⁹, including \$507,500¹⁰ and \$337,800¹¹ in Maple Leaf Services and the Army Institutes, respectively. Hence, sales and receipts in the private enterprise outlets were \$3,562,400.

The problem involved in developing the Local Purchase Index is to relate this last figure to the amount of spendable funds available to the Oromocto resident for spending in the private enterprise outlets.

In 1961, the spendable funds of all the soldiers stationed at Camp Gagetown amounted to \$8,237,000, of which \$5,915,000 or 72 per cent accrued to the military (married and unmarried) residents of Oromocto, and the remainder to the soldiers living elsewhere.

To these figures must be added an estimate of the spendable funds of other Oromocto residents. In 1961, there were 289 civilian housing units and nineteen hundred permanent married quarters in the town¹². The spendable

9 Supra, chap. III, p. 34.

10 Ibid.

11 Camp Gagetown, Unpublished Data.

12 Supra, p. 48.

funds of the military who occupied the permanent married quarters amounted to \$4,266,000. On the assumption that there was no significant difference in income pattern between the military and the civilian occupant, it is believed that the spendable funds of the families living in the civilian housing units would be directly proportional to those of the military families, and therefore are estimated at \$648,900.

Consequently, in 1961 the married residents had \$4,914,900 available for spending in Oromocto's private enterprise outlets and the single residents (unmarried soldiers) had \$1,649,000.

Total sales and receipts amounted to \$3,562,400 of which sales in the food group (comprised solely of Steinberg's Limited) accounted for \$1,794,864¹³.

From these data, two Local Purchase Indices are calculated as the ratio of sales and receipts to spendable funds.

The first index, applicable only to the married resident, measures the proportion of spendable funds available for, and devoted to, food purchases in Oromocto, will be symbolized as ' t_f ' and is calculated to be

¹³ Steinberg's Ltd., Steinberg's Supermarket in Oromocto, January 1964. A market analysis of the effect of a second supermarket in Oromocto on Steinberg's sales.

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$$\frac{\$1,794,864}{4,914,900} \quad \text{or} \quad .306$$

However the spendable funds of all soldiers were available to the other private enterprise outlets in which sales and receipts amounted to \$1,767,536. Total spendable funds were \$6,563,900 and the second index, 't_o', which measures the proportion of spendable funds devoted to other than food purchases in the private enterprise outlets, is calculated to be .270.

Mathematically, the method of calculating the Local Purchases Indices produces linear functions coming out of the origin. An analysis of the validity of this method of calculation is necessary before combining these indices with the General Purchase Indices in the Oromocto model. This analysis involves consideration of two questions.

First, are they linear relationships, or, in other words, is it likely that a significant change has occurred in either value since 1961?

The spendable funds of the military married resident rose from \$4,266,000 in 1961 to \$4,705,000 in 1963, a 10.3 per cent increase. During the same period Steinberg's Limited reported an increase in sales from \$1,794,864 in 1961 to an estimated \$1,950,000 in 1963; approximately 8.6 per cent¹⁴. Furthermore, in 1961, this one retail food

14 Ibid.

outlet accounted for over 50 per cent of the retail and service trade activity in the private enterprise outlets. Thus, in the area of economic activity accounting for half of the total, increased expenditure was of the same order as the increase in spendable funds. Hence it is concluded that no significant change in the values of the Local Purchase Indices has taken place in the three years since 1961, and that therefore, they are linear relationships.

Second, do these linear relationships come out of the origin? If this is true, then the consumer activity in the town would be reduced to zero if spendable funds of the resident ceased to exist.

Undoubtedly some sales and receipts arise from purchases made by non-residents. Is the size of such consumer 'exports' significant to the calculations?

No data in respect of these non-resident purchases are available, and the writer has had to rely on conclusions reached from discussions with the town authorities and local merchants. All were agreed that very little,

if any, business was received from the non-resident not employed in the town. On the other hand, the non-resident who is employed in the town may make some contribution to the sales activity.

However, several factors lead to the belief that this contribution is relatively small and does not have a significant effect on the calculation of the Local Purchase Index. The family purchasing, in general, is done by the wife or by the husband and wife combination, and not by the husband alone. Also such purchases would be done near the place of residence which, in the majority of cases under consideration, is Fredericton. Since Fredericton has many more outlets¹⁵, and hence a greater variety of goods and services available than Oromocto, it appears highly unlikely that the non-resident of Oromocto spends a significant amount in the town, and hence the level of economic activity relies heavily on the spendable funds of the resident.

Thus it appears safe to assume that the Local Purchase Indices calculated as averages express the marginal relationships, existing for the past several years, between spendable funds and consumer expenditure in the private enterprise outlets in the town.

¹⁵ Supra, chap. III, p. 43-44.

4. The Model of the Oromocto Economy Reconsidered

In the model of the Oromocto economy, developed in Section 1, that is,

$$C = \frac{tg}{1 - tge} Y,$$

'e' was defined as the proportion of the change in income flow appearing as a change in the factor incomes of the Oromocto residents engaged in nonbasic industries.

Further, the General Purchase Index 'g' was defined as the minimum marginal propensity of the soldier to consume within the retail and service trades. In addition, the Local Purchase Index, 't' was calculated as the marginal propensity to devote spendable funds toward the consumption of local goods and services.

Thus, the general expression 'tg' can be defined as the marginal propensity to consume local goods and services.

However, because there is a difference in salary pattern between the married and unmarried soldier, two values of the General Purchase Index were determined, 'g₁' applicable to the married soldier and 'g₂' to the unmarried soldier.

Furthermore, the unmarried soldier is required to accept food supplied by the Army and only the married soldier is a potential food purchaser. Hence, the marginal propensity of the married soldier to devote spendable funds to

local food consumption, ' t_f ', was calculated. Similarly, since all soldiers are potential consumers of local goods and services, other than food, the marginal propensity to devote spendable funds to the consumption of local (non-food) goods and services, ' t_o ' was determined.

In consequence, the values of the General and Local Purchase Indices must be combined as follows:

1. The expression ' $t_f g_1$ ' (to be abbreviated to ' a_{f1} ') becomes the marginal propensity of the married soldier to consume within the private enterprise food outlets in Oromocto.

2. The expression ' $t_o g_1$ ' (a_{o1}) becomes the marginal propensity of the married soldier to consume within the private enterprise outlets (other than food) in Oromocto.

3. The expression ' $t_o g_2$ ' (a_{o2}) becomes the marginal propensity of the unmarried soldier to consume within the private enterprise outlets (other than food) in Oromocto.

This separation of the private enterprise outlets into food and non-food categories forces consideration of two possible values of ' e '; ' e_f ' applicable to the food outlets and ' e_o ' to the other outlets.

Logically, then, any change in consumption consequent upon a change in per capita income must be considered both in respect of food and of other goods and services.

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Also, the division of income pattern between the married and unmarried soldier warrants separate consideration of the per capita change in income of these two groups; designated 'Y₁' and 'Y₂' respectively.

Thus,

$$C = C_f + C_o$$

where 'C' is the total change in consumption, 'C_f' the change in consumption of food, and 'C_o' the change in consumption other than food.

Furthermore,

$$C_f = a_{f1} (Y_1 + Y_n)$$

$$C_o = a_{o1} (Y_1 + Y_n) + a_{o2} Y_2$$

$$Y_n = e_f C_f + e_o C_o$$

Substituting for Y_n in the first two equations, the model becomes the two - equation system

$$(1 - a_{f1} e_f) C_f - a_{f1} e_o C_o = a_{f1} Y_1$$

$$- a_{o1} e_f C_f + (1 - a_{o1} e_o) C_o = a_{o1} Y_1 + a_{o2} Y_2$$

which reduces to

$$C_f = \frac{a_{f1} Y_1 + a_{f1} e_o a_{o2} Y_2}{1 - a_{f1} e_f - a_{o1} e_o}$$

$$C_o = \frac{a_{o1} Y_1 + (1 - a_{f1} e_f) a_{o2} Y_2}{1 - a_{f1} e_f - a_{o1} e_o}$$

and
$$C = \frac{(a_{f1} + a_{o1}) Y_1 + a_{o2} (a_{f1} e_o + 1 - a_{f1} e_f) Y_2}{1 - a_{f1} e_f - a_{o1} e_o}$$

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5. Increased Income Flow and Increased
Factor Incomes

In the model of the Oromocto economy developed in the previous section, consideration was given to the proportion of increased income flow appearing as increased factor incomes of Oromocto residents engaged in the nonbasic industries.

Increased sales should produce increased profits in the private enterprise outlets. What proportion of these increased profits will accrue to the Oromocto residents must be considered before attempting a calculation of increased income flow, that is, an increase in consumption expenditure.

Of the total sales and receipts in 1961, amounting to \$3,562,400, Steinberg's Limited accounted for \$1,794,864 and the Oromocto outlet of the New Brunswick Liquor Control Board \$920,638¹⁶. These sales made up more than 75 per cent of the total.

Ownership of both is, of course, vested in non-residents. The level of employee income will probably not be affected by the increased profit, although some additional labour may be required to handle increased sales. The number of additional employees may not be significant

¹⁶ Thirty-Fifth Annual Report of the New Brunswick Liquor Control Board, p. 7.

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and some, no doubt, will be non-residents.

Furthermore, both outlets occupy rented accommodation and consequently any increase in investment resulting from increased profits will be limited to equipment - a relatively small consideration in both these types of businesses.

Of the remaining private enterprise outlets, local ownership provided two restaurants, a bowling alley, a hardware and sporting goods shop, a shoe store, a shoe repair shop and two taxicabs¹⁷.

Regrettably, insufficient data is available on which to base any accurate estimate of the proportion of increased income flow appearing as increased factor incomes of Oromocto residents. Realistically, it is believed that, under conditions of non-resident ownership, occupation of rented accommodation, wages determined exogeneously, (all applicable, at least, to the food and liquor outlets considered above) no appreciable portion of the increased consumption appears as increased factor incomes to residents.

Of the remaining outlets only the relatively small businesses are owned by individuals, all of whom are not Oromocto residents.

The conclusion, then, is forced that increased factor incomes to the resident employees or owners of the nonbasic industries consequent upon an increase in per capita income

¹⁷ Supra, chap. III, p. 36.

of the military resident must be insignificant. Hence for the purpose of calculating the change in consumption, the value of both ' e_f ' and ' e_o ' will be considered as zero.

In the previous section, the change in consumption was calculated as

$$C = \frac{(a_{f1} + a_{o1}) Y_1 + a_{o2} (a_{f1} e_o + 1 - a_{f1} e_f) Y_2}{1 - a_{f1} e_f - a_{o1} e_o}$$

and, on the basis that $e_f = e_o = 0$, reduces to

$$C = (a_{f1} + a_{o1}) Y_1 + a_{o2} Y_2.$$

In the same section ' a_{f1} ' was an abbreviation of ' t_{fg1} ', ' a_{o1} ' of ' t_{og1} ', and ' a_{o2} ' of ' t_{og2} ' and the following definitions were applied:

- (a) The symbol ' a_{f1} ' represents the marginal propensity of the married soldier to consume within the private enterprise food outlets in Oromocto.
- (b) The symbol ' a_{o1} ' represents the marginal propensity of the married soldier to consume within the private enterprise outlets (other than food) in Oromocto.
- (c) The symbol ' a_{o2} ' represents the marginal propensity of the unmarried soldier to consume within the private enterprise outlets (other than food) in Oromocto.

The increase in per capita income of the married and unmarried soldier were symbolized respectively by

'Y₁' and 'Y₂'.

In March 1965, changes in rates of military pay and allowances were approved from October 1, 1964. The effect on the personal disposable income of all soldiers in camp Gagetown was an increase of 6.27 per cent.

Applying this factor to the data in Table XVI¹⁸, the annual increase in personal disposable income will be \$534,000 for married soldiers living in permanent married quarters and \$236,000 for unmarried soldiers living in barracks.

Applying these data to the model of the Oromocto economy previously constructed, the change in consumption or income flow is calculated to be \$245,000.

Thus, the increase in income flow in the town in respect of private enterprise outlets will be less than 32 per cent of the total per capita increase in personal disposable income.

6. Changes in Income Flow Due to the Planned Increase in Population

In the latter part of 1965, an additional military unit will be stationed at Camp Gagetown. As at the

¹⁸ Supra, p. 62.

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31 December 1964 this unit was composed of 400 married soldiers and 404 unmarried soldiers. At current rates of pay the married soldiers have an annual personal disposable income of \$2,224,000. Of these additional married soldiers, not more than 300 can be accommodated in married quarters, and hence the personal disposable income of married soldiers living in Oromocto will increase by approximately \$1,668,000.

The unmarried soldiers have an annual personal disposable income of \$1,268,000, and will be accommodated in barracks.

Thus the total personal income in Oromocto will increase by \$2,936,000 before the end of 1965.

This increase in population will bring additional business to the private enterprise outlets in the town. This additional revenue may add to the personal disposable income of the individual owner and, perhaps, of each member of his staff. But the total number of people involved, about 300¹⁹, (not all of whom may be residents), bears such a small relationship to the total population that it can be safely assumed that the additional population will not change the present per capita level of personal disposable income.

19 Supra, chap. III, p. 36.

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The question now arises: will this addition to the population change the values of the a_{f1} , the a_{o1} , and the a_{o2} ? In other words, will the new residents have a marginal propensity to consume that differs from that of the older residents?

The military population can be considered as transient in nature. The soldier's career progression is firmly linked to the acquisition of training and experience which is broad and varied. A regular pattern of transfer from one region to another is an accepted facet of military life. Consequently his consumption function is a product, inter alia, of the sociological influences of all of the locations in which he has been living, but is not shaped significantly by any particular one.

Hence it can be assumed that the a_{f1} , the a_{o1} , and the a_{o2} will not change because of the increase in population. Also, because both the General Purchase Index and the Local Purchase Index are linear functions, the a_{f1} , the a_{o1} and the a_{o2} are constants.

By applying the appropriate values ($a_{f1} = .306 \times .681$, $a_{o1} = .270 \times .681$, $a_{o2} = .270 \times .561$) to the annual personal disposable incomes of the two classes of new resident, it can be predicted that the level of activity in the Oromocto private enterprise outlets will be increased by an annual amount of \$845,000

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after the new military unit arrives at Camp Gagetown. This increase represents less than 29 per cent of the total additional personal disposable income in the town.

7. Additional Sources of Population Growth
and Possible Effects

Thus far in this chapter income flow of the town has been considered from two points of view: first, the per capita increase to personal disposable income arising from an increase in rates of military pay, and second, a planned increase in the number of soldiers to be stationed in Camp Gagetown.

Another source of a possible increase in total personal disposable income is the wage earner who does not reside in the town.

Table XV²⁰ indicated that, as at 31 October 1964, 656 married soldiers found accommodation outside the town, and that 274 occupied civilian housing units which totalled 450 in March 1965²¹. The balance of the civilian accommodation presumably was occupied by federal civil servants or other wage earners who numbered approximately 1,460²².

20 Supra, p. 59.

21 Supra, chap. III, p. 35.

22 Ibid., p. 38.

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Moreover, 100 married soldiers will have to seek civilian housing accommodation toward the end of 1965, since only an additional 300 permanent married quarters await the expected 400 new families.

Thus, by the end of 1965, there will be approximately 2,000 wage earners in Oromocto who, because of the housing shortage, will be forced to live elsewhere.

The civilian non-resident wage earner, for the purpose of this analysis, will not be considered: first, because there may be more than one wage earner in the family, making it impossible to estimate how many households might be involved; and second, there might be an understandable reluctance on the part of the civilian wage earner to move to Oromocto, particularly if his residence is within reasonable commuting distance and had been established prior to securing employment in the town or at the camp.

However, these same sociological influences should not apply to the married soldier who might be expected to seek accommodation as close to his employment as possible.

It is estimated that there will be over 700 married soldiers who, under present day housing conditions, will not be able to find accommodation in the town. In December 1964, the 930 married soldiers not occupying Army accommodation had an annual personal disposable income of \$4,092,000

at current rates of pay. On a proportional basis, if 700 additional married soldiers lived in Oromocto, total personal disposable income would probably increase by \$3,080,000. Using the value of .208 as the a_{p1} and .184 as the a_{o1} , the annual sales in the private enterprise outlets might increase by \$1,207,000.

In 1961, the median value of owner occupied dwellings in Oromocto was \$11,010²³. Using this figure as a basis, 700 additional houses should produce directly a gross tax revenue of \$123,000 per year²⁴.

8. The Effects of Increasing the Propensity to Consume Locally

In the Province of New Brunswick, the per capita expenditure within the retail and service trades was \$800 in 1961²⁵. In the Town of Oromocto the sales and receipts totalled \$3,562,400²⁶ in private enterprise outlets for a population of 12,170²⁷. Thus the per capita expenditure

23 B. M. Hamilton, editor, 1964-65 Survey of Markets and Business Year Book, Maclean-Hunter Publishing Company Limited, Toronto, 40th edition, p. 63.

24 Supra, chap. III, p. 37.

25 Ibid., p. 43 and 44.

26 Supra, p. 64.

27 Supra, chap. III, p. 32.

in these outlets in the town amounted to \$293 for the same year.

Generally, most urban centres have per capita sales greater than the provincial average. This is true because purchases by non-residents (consumer exports) usually exceed purchases made elsewhere by residents (consumer imports). In Oromocto the reverse is true.

To the writer, a reasonable level of activity that should be sought by private enterprise is the point at which consumer exports would offset consumer imports. In more specific terms, sales and receipts in the private enterprise outlets should equal, at least, the spendable funds available for spending in these outlets. If this had been the case in 1961, the consumer expenditures would have been \$5,915,000²⁸, rather than the actual \$3,562,400.

Also, if this level of activity were achieved, the Local Purchase Index would become unity and the values of the propensities to consume locally would approximate the General Purchase Indices .681 and .561 respectively. In consequence, the additional population planned for the latter part of 1965 would create additional activity in the private enterprise outlets in an amount of \$1,857,000 rather than the \$845,000 previously calculated²⁹.

28 Supra, p. 65.

29 Supra, p. 73.

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Under the same conditions, the 700 additional families referred to in the previous section would increase sales in these outlets by \$2,097,000 and not by the estimated \$1,207,000.

9. Summary

Table XVII presents the writer's forecast of what the income flow in the Town of Oromocto will be and could be, under the various conditions discussed in this chapter.

First, the basis of all the calculations is the known personal disposable income of the military (at current rates of pay) increased by an estimate of the personal disposable income of the families living in civilian housing accommodation. This latter estimate is calculated on the basis of the ratio of the number of civilian to military housing units.

Second, the predicted income flow is estimated by applying the a_{f1} , the a_{o1} and the a_{o2} . In the case of the residents in civilian housing accommodation, the a_{f1} and the a_{o1} are used.

Third, the possible income flow is calculated on the assumption that the level of sales activity within the private enterprise outlets could reach an amount equal to the spendable funds available for spending in these out-

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Table XVII

Predicted and Possible Levels of
Income Flow in the Town of Oromocto

Source	Predicted Income Flow	Possible Income Flow
	(Thousands of Dollars)	
Present Population	4,607	9,229
Planned Increase to the Population	845	1,857
Possible Increase to the Population	-	2,097
Total	5,452	13,183

lets; that is, the General Purchase Indices become the propensities to consume locally.

Finally, there is displayed an estimate of the possible income flow that could be derived from an additional 700 families under conditions of equality between consumer exports and imports.

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Camp Gagetown is the largest Army training installation in Canada. Capital expenditures for the camp on land and construction by the federal government have exceeded \$100,000,000. Annual operating costs, including only those having a direct regional impact, rose from \$19,592,200 in 1961 to \$22,351,400 in 1963. Over 82 per cent of these operating costs represented military and civilian payroll payments. A recent increase in the rates of military pay and the planned addition of a military unit will raise annual costs to over \$26,000,000 by the end of 1965.

Associated with Camp Gagetown is the Town of Oro-mocto, especially created to provide housing and other living facilities for the soldiers' families. In 1961 there were 289 civilian housing units and 1,900 military. By March 1965 the number of civilian units had increased to 450, and by the end of this same year an additional 300 military units will have been completed. The average number of wage earners employed in the town was 5,656 in 1964.

1. The Economic Effect on the Province
of New Brunswick

Land acquisition costs involved in the establishment of the camp were just over \$12,000,000. According to previous studies, expropriation of these properties

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inflated values of adjacent land. While these same studies did not measure the degree of inflation involved, it is believed that it was of little consequence and of short duration.

Construction expenditure by the federal government in the Camp Gagetown and Town of Oromocto complex amounted to nearly \$94,000,000 in the period 1954-1964, and accounted for over 7 per cent of all new construction in the province for the same period. During the peak year of 1955, the contribution to the provincial total reached 29 per cent. By the end of 1964, a total of about 4,500 man years of on-site employment had been provided to the regional labour force.

Payroll payments account for approximately 82.5 per cent of the annual operating costs. The balance represents procurement of goods and services, of which wholesale food products, the largest item, form over a third of the total.

However, the military food purchases contribute less than 1 1/2 per cent to the provincial total. A similar situation exists for each of the remaining procurement areas, which are mainly construction repair, petroleum and petroleum products, and utilities.

These areas form only a part of the total provincial economic activity, and federal government expenditure accounts for only a small fraction in each area. Hence it

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must be concluded that no significant contribution is made to the provincial economy by that part of the annual operating costs of Camp Gagetown associated with the procurement of goods and services.

However, the same conclusion cannot be reached in respect of the effect of payroll payments.

First, Camp Gagetown provides employment for 750 to 800 workers in the regional labour force - equivalent to that of a relatively large firm.

Second, and more important, these payroll payments, both military and civilian, have contributed an average of 2.5 per cent to the total personal income in the province, and probably an equivalent amount to consumption expenditure over the period 1961-1963. Since consumption expenditure is the *raison d'être* of any economy, a contribution of 2.5 per cent to total personal income will have a significant effect on the provincial economy.

In the retail and service trades, this significance can be measured by application of the General Purchase Indices to the personal disposable income of the wage earners on the federal government payroll, and to the estimated personal disposable income of other wage earners¹. In the

¹ The income of these wage earners must be included because their employment depends directly on the income of the federal government employees in the camp.

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retail and service trades, it is estimated that, in 1961, these wage earners spent \$11,576,700, representing 2.4 per cent of the provincial total of \$478,271,900.

2. The Economy of the Town of Oromocto

Under the provisions of the Municipal Grants Act, federal government grants to the town in lieu of taxes would be of the order of \$675,000. However, annual operating grants approximated \$1,800,000 in 1963 and will probably be about \$2,000,000 in 1964.

Consequently, if this town is to develop as a normal municipality with dependence on the federal government limited to the provisions of the Municipal Grants Act, its net tax revenue must increase by an amount in the range of \$1,200,000 - \$1,500,000.

In terms of the Economic Base Theory, its economic base is military training at Camp Gagetown. Its nonbasic enterprises are outlets within the retail and service trades.

In these trades, an urban community could normally anticipate per capita sales and receipts greater than the provincial average simply because of patronage from non-residents. Consumer 'exports' should exceed, or at least equal, consumer 'imports'.

In Oromocto the reverse is true with economic

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activity in these trades considerably lower than the provincial average. In 1961 the per capita expenditure in the private enterprise outlets was \$293 against \$800 for the province as a whole. However, in the food group, per capita expenditures were nearly equivalent; \$168 for the town against a provincial figure of \$182.

While no attempt has been made, in this study, to relate, in specific terms, the municipal tax revenue to the level of economic activity, it has been assumed that an increase in economic activity would similarly affect revenue. Hence attention has been given to sources of potential economic growth.

Generally, the economy of a municipality includes an industrial sector, and a wholesale trade activity as well as the retail and service trades.

The writer believes that, at least in the short term, neither industry nor the wholesale trade is a feasible source of economic growth.

In respect of industry, it is contended that the town will find it difficult to attract manufacturing firms, particularly because there is not an adequate source of labour. In Oromocto, the potential labour force is limited, in the main, to the dependents of the married soldiers. Many wives have young children and are barred from accepting employment. Also, a large portion of the children are

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still attending school. Moreover, the soldiers are normally transferred to new locations every three or four years, and therefore any firm employing their dependents can anticipate a higher rate of staff turn-over than would be expected from a less transient population.

These factors, too, would affect the growth of the wholesale trade in the same way. More important is the fact that, generally, wholesale procurement contracts are let considerably in advance of delivery requirements, and hence no appreciable advantage would accrue to Oromocto outlets from an ability to make quick delivery. It is also believed that transportation costs per unit of item would not be reduced through bulk shipments to Oromocto warehouses, because the quantities ordered are normally large enough to ensure that transportation costs per unit remain at a minimum.

Consequently it is considered that any economic growth potential of the town in the short term lies within the retail and service trades. Within these trades, the accent should not be on the food group, because consumer expenditures in this group already approach the provincial average.

Hence any effort to expand the economic activity in the town should be directed to the remaining groups within the retail and service trades.

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There appear to be two ways by which sales and receipts in these groups might be increased: first, by an increase in population, and second, by attracting a greater portion of the spendable funds available to the residents.

There seems to be a requirement for a minimum of 700 units to satisfy the housing needs of the military as well as an undetermined number for the civilian non-resident wage earner. With this possible increase in population, not only would the municipal revenue increase as an indirect result of the expansion in economic activity, but the additional housing units would immediately enlarge the real property tax base.

The relatively low level of per capita expenditure in the town appears to stem from the fact that the variety of goods and services available in the private enterprise outlets is so restricted that only a small part of consumer demand can be satisfied. It would seem logical to assume that if the variety were expanded to meet the needs of the residents, then purchases by non-residents might also increase.

Finally, if the population were increased minimally by the 700 military families who will not be able to find housing accommodation in Oromocto in 1965, and if sales and receipts in the retail and service trades can be expanded only to the point where purchases by non-residents offset

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purchases made outside the town by the residents, then the income flow in the town will increase from a predicted annual amount of \$5,452,000 to a possible \$13,183,000.

BIBLIOGRAPHY

Books

Friedman, John and William Alonso, Editors, Regional Development and Planning, A Reader, The M.I.T. Press, Cambridge, 1964, 722 p.

A series of papers arranged in four broad groups; space and planning, location and spatial organization, theory of regional development, and national policy for regional development. Several mathematical models are developed. Provides a good guide to literature on the subject of regional economics.

Grasberg, Eugene, and Hugh, Whalen, The New Brunswick Economy and the Proposed Passamaquoddy Tidal Power Project 1936-1980. A Maritime Economic Study for the International Passamaquoddy Tidal Power Survey of October 1, 1959, University of New Brunswick, Fredericton, N.B., November 10, 1958, 158 p.

This study tries to determine the power requirements of the Maritimes, particularly New Brunswick, and the possible effects on the economy of New Brunswick of this power project. Part Four contained a regional study of Charlotte county.

Isard, Walter, in association with Bramhall, David F., et al, Methods of Regional Analysis: an Introduction to Regional Science, New York, Wiley, 1960, 784 p.

A study of various techniques of regional analysis designed to yield estimates of basic magnitudes for an economic system and for each region of the system. The techniques described range from the relatively elementary to the highly sophisticated.

_____, and John H. Cumberland, Editors, Regional Economic Planning, Techniques of Analysis for Less Developed Areas, European Productivity Agency, OEEC, Paris, 1961, 450 p.

A series of papers presented at the first study conference on problems of economic development organized by the European Productivity Agency in Italy 1960, with an introduction, synopsis and summary by the editors. Their synthesis of operational methods in Regional Analysis is of particular interest.

BIBLIOGRAPHY

90

Parks, A. C., The Economy of the Atlantic Provinces, 1940-1958, Atlantic Provinces Economic Council, Halifax, N.S. and Fredericton, N.B., June 1960, 179 p.

A regional survey by province covering eight sectors. In section IX, the impact of defence activities is portrayed in employment and expenditure figures in a very cursory fashion.

Pfouts, R. W., Editor, The Techniques of Urban Economic Analysis, Chandler-Davis Co., West Trenton, New Jersey, 1960, 410 p.

This work considers three theories in the field of urban economics; the economic base theory, the community income multiplier, and the input-output approach. Various writers trace the development of each, assess their validity, and describe examples. The economic base theory and the concept of the community income multiplier have been applied in this thesis.

Periodicals

Dyck, D., and F. Lawrence, "Relocation Adjustments of Farm Families", in The Economic Annalist, Vol. 30, No. 1, February 1960, p. 3-11.

Dyck, D., "Relocation Adjustments of 95 New Brunswick Farm Families, 1956-60", in The Economic Annalist, Vol. 32, No. 4, August 1962, p. 87-93.

_____, "Relocation Adjustments of 95 New Brunswick Farm Families, 1956-60", in The Economic Annalist, Vol. 32, No. 5, issue of October 1962, p. 101-109.

This study, which is in two parts, was conducted by the Rural Sociology Unit of the Economics Division of the Department of Agriculture, and was designed to gain some understanding of the social and economic impact of expropriation on rural people, and the problems involved in their relocation.

Hamburg, Morris, University of Pennsylvania, "Economic Base Studies for Urban Planning and Development in Pennsylvania", in a publication by Department of Internal Affairs, Bureau of Statistics, State of Pennsylvania, April 1962, 47 p.

This monograph describes and evaluates economic surveys that have been completed in Pennsylvania under the Urban Planning Assistance Program. An excellent resume of the scope and purposes of regional economic surveys.

Hamilton, B. M., Editor, Survey of Markets and Business Year Book, Maclean-Hunter Publishing Company Limited, Toronto, 38th, 39th and 40th editions.

Annual market surveys of Canadian provinces, cities and towns. The Town of Oromocto appeared first in the 38th edition (1962). Some attempt is made to indicate changes in certain economic activities.

Joyce, Robert K., "The Development of Oromocto", in Habitat, Volume III, Number 1, January-February 1960, p. 16-22.

A short description of Oromocto written by an employee of Central Mortgage and Housing Corporation. Has some interest as an historical account of the town's development.

Tiebout, Charles M., "The Community Economic Base Study", in Supplementary Paper No. 16, Committee for Economic Development, New York, N.Y., issue of December 1962, 84 p.

This monograph presents a description and evaluation of economic surveys usually referred to as economic base studies. It contains an excellent summary of the various meanings and definitions attached to economic surveys and economic base studies, and delineates between the two. While the monograph does not contain a detailed bibliography, a survey of the footnotes does provide a wide range of reference material.

Government Publications

Canada, Department of Labour, Economics and Research Branch, Employment and Manpower Utilization in New Brunswick 1950 to 1960, Ottawa, November 1963, 202 p.

A joint study prepared by the Federal and New Brunswick Department of Labour. Of particular interest is the consideration of both the direct and indirect effect of the size and composition of investment expenditure on the level of employment.

BIBLIOGRAPHY

92

Canada, Department of National Defence, various subject files as well as financial accounts.

These provide the basis of the narrative descriptions of Camp Gagetown and the Town of Oromocto as well as the financial expenditures and personnel numbers involved.

———, Department of Trade and Commerce, Dominion Bureau of Statistics, Tenth Census of Canada, 1961.

This data provides the statistical base for this thesis.

New Brunswick, Department of Municipal Affairs. Annual Report of Municipal Statistics, various years.

An annual report compiled from the audited financial statements of New Brunswick municipalities. Provided data of the financial structure of Oromocto.

———, Office of the Economic Adviser, A Statistical Report on the New Brunswick Economy, No. 1, September 1964, 40 Tables.

———, Office of the Economic Adviser, New Brunswick Economic Statistics, No. 1, December 1964, 29 p.

The above two publications are complementary; the first is issued annually and the second quarterly. Both bring together statistical data pertinent to New Brunswick. The sources are generally the Dominion Bureau of Statistics, the National Employment Service, and the Departments of Trade and Commerce and National Revenue.

Other References

Canada, Departments of Finance and National Defence, Reports of Advisory Committee - Municipal Affairs - Housing - Developments, 1957 (Unpublished).

In January 1957, a conference of consultants was held in respect of the planning for Oromocto. Reports on municipal affairs, housing, and development were presented to representatives of the two federal government departments. They are of historical value only.

Marketing Analysis Institute, Report on the Retail Facilities at Oromocto, Montreal, November 1955, (Unpublished).

An analysis of the marketing potential of Oromocto

BIBLIOGRAPHY

93

made for H. Spence-Sales, McGill University, who was a consultant to the Department of National Defence in the planning for the town. This analysis was one phase of the town planning study.

Spence-Sales, H., A Report to the Board of Commissioners of the Town of Oromocto, February 1960, 42 p. (Unpublished).

This report consists of three papers. The first reviews the concepts which led to the initial town planning. The second describes the 1960 state of the town in respect of physical, social and governmental circumstances. The third considers, in broad terms, future objectives.

Steinberg's Limited, Steinberg's Supermarket in Oromocto, January 1964, 16 p.

A market analysis which considers the effect of a second supermarket in the Oromocto shopping centre. Its prime value was the revelation of sales activity in the food group of the retail trade in Oromocto.