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DALHOUSIE UNIVERSITY

**ECONOMIC IMPACT
OF
DALHOUSIE UNIVERSITY
HALIFAX, NOVA SCOTIA**

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Table of Contents

<u>Chapter</u>	<u>Page</u>
Executive Summary	i
1. Introduction	1
1.1 Dalhousie University	1
1.2 Study Purpose and Methodology	1
2. Impact of Expenditures by Dalhousie University	3
2.1 Household Income Impacts	3
2.2 Employment Impacts	3
3. Impact of Expenditures by Dalhousie University Students	5
3.1 Enrolment	5
3.2 Living Costs	5
3.3 Total Expenditures	6
3.4 Household Income Impacts	7
3.5 Employment Impacts	7
4. Analysis of Results	8
4.1 Total Impacts	8
4.1.1 Household Income	8
4.1.2 Employment	8
4.2 Comparison with Other Industries	8
5. Impact on the Halifax-Dartmouth Metropolitan Area	12
5.1 Dalhousie University Expenditures	12
5.1.1 Household Income	12
5.1.2 Employment	13
5.2 Student Expenditures	14
5.2.1 Household Income	14
5.2.2 Employment	14
6. Other Considerations	15
Appendix I Methodology for Economic Impact Analysis	i-1
Appendix II Database and Detailed Tabular Results	ii-1

<u>Chapter</u>		<u>Page</u>
	References	
Tables	4.1 Total Impacts, Dalhousie University	9
	4.2 Household Income and Employment Multipliers, Selected Industries, Nova Scotia	10
	II-1 Household Income and Employment Effects Dalhousie University	ii-4
	II-2 Household Income and Employment Effects Dalhousie University Students	ii-5
	II-3 Household Income and Employment Effects Total Dalhousie University	ii-6
Figure		
	I-1 Illustration of Total Household Income	i-5

Executive Summary

- Dalhousie University spends some \$97 million annually and employs 3,174 persons (about 2,600 personyear equivalents)
- Enrolment at the University in 1982-1983 exceeded 9,700 students, of which 83% were full-time and 17% part-time students.
- These annual expenditures by the university result in a total of \$103.5 million in household income being generated on a yearly basis, of which \$66.5 million accrues directly to university staff while \$37 million in spinoff income is generated as a result of industry and consumer responding of their incomes
- Stated differently, for every dollar in household income generated directly by university expenditures, a further \$0.56 is generated in spinoff household income in Nova Scotia
- Employment which is sustained annually as a result of the university's presence is 2,600 personyears directly and 1,785 spinoff positions, for a total of 4,385 jobs
- For each direct personyear of employment a further .69 of a job is created in spinoff employment
- During the course of their eight-month academic year, students collectively spend a minimum of \$30 million, exclusive of monies expended on tuition, books, residences and other university services
- Student expenditures support a total of \$24.4 million in household income over eight months, \$14.4 million of which is direct income and \$10.0 million in spinoff income
- Student expenditures support 780 direct jobs and 460 spinoff jobs for a total employment of 1,240

- Collectively, university and student expenditures generate \$128 million in total household income annually and 5,625 jobs
- Multipliers for the university and student expenditures are low in relation to manufacturing sector industries but relatively consistent with other service sector industries
- Low multipliers are apparent in service sector industries primarily because the industries the service sector purchases from have a large import component. As well, those industries which devote a large proportion of their expenditures to direct household income tend to have lower multipliers because households also spend their incomes in large part on the same services which have a high import content (or conversely, money leaks from this sector out of the Nova Scotian economy quickly)
- Because of the highly developed nature of the Halifax-Dartmouth metropolitan area, and the nature of the services required by the university, it is estimated that over 90% of the household income and employment impacts which occur in the Province will be localized in the Halifax-Dartmouth area. Thus a total of 4,110 jobs and \$96 million in household income will be generated in the local area as a result of university expenditures
- Some \$23 million in household income and 1,140 jobs are generated annually in the metropolitan area as a result of student expenditures
- The measure of an institution such as a university cannot solely be taken by such a quantitative analysis as contained in this report. Other benefits such as the provision of facilities to the community, the sponsorship of cultural, athletic and intellectual

events, and the availability of a pool of talent from staff and students on which the local business community can draw, should not be overlooked.

CHAPTER I

INTRODUCTION

This impact study of Dalhousie University expenditures and the expenditures of its students was undertaken at the request of the university. Dalhousie University is a post secondary institution located at Halifax, Nova Scotia, with a physical plant extending over 67 acres. Student enrolment at the facility has almost topped the 10,000 mark in its 1983-1984 enrolment, up 6% from its 1981-1982 level. Staff now number 3,174. The university offers degree programs at the undergraduate, post-graduate and doctoral levels as well as diploma courses and professional training programs.

1.1 Study Purpose and Methodology

The purpose of the study is to assess what effects annual expenditures by the university and its students have on the Nova Scotia economy on an annual, ongoing basis. One-shot effects such as those occasioned by a major capital project are not considered. The following analysis concentrates on household income and employment effects as derived using the 1979 version of the Nova Scotia Input-Output System (prepared for the Nova Scotia Department of Development). While Appendix I provides more details on what each of these impacts entail, they can be characterized in general terms as follows:

- a) direct effect - the expenditure by the university for labour, goods and services.
- b) indirect effects - the industries which supply the university with goods and services themselves require purchases from other industries, although in lesser amounts as money leaks from the economy to pay for imports. The indirect effect

- is the sum total of these rounds of respending.
- c) induced effects - individuals spend the income they receive from the direct and indirect effects on consumer goods and services. This consumer demand gives rise to the same kind of rounds of respending as in the indirect effect.

The indirect and induced effects are also referred to as the spinoff effects.

The results of this study are based on data for the 1982-1983 academic year. This was the most recent year for which the best detailed data were available on the university's operations, for purposes of estimating economic impacts. The 1982-1983 expenditure profile is considered to be closely approximate to the university's 1983-1984 expenditure pattern.

CHAPTER 2

IMPACT OF EXPENDITURES BY DALHOUSIE UNIVERSITY

In the year 1982-1983, Dalhousie University expended some \$96.6 million dollars. Of that total \$66.5 million (69%) went to the 3,174 staff as household income.

Other major expenditure items include:

- ° externally contracted services including cleaning, catering, security and grounds maintenance - \$5.3 million
- ° energy, electricity, water and taxes - \$5.0 million
- ° interest and bank charges - \$3.5 million
- ° scholarships, bursaries and prizes - \$2.4 million.

2.1 Household Income Impacts

As a result of this annual expenditure, direct household income of \$66.5 million is generated and leads to further spinoff household income of \$37.0 million for a total household income generated in the Province of \$103.5 million each year.

For each dollar of direct household income, therefore, an additional \$0.56 in household income is generated.

2.2 Employment Impacts

The university lists a total of 3,174 persons on its payroll. Not all of these positions are full-time, however, and the personyear equivalent reduces this figure to about 2,600.

In addition to these 2,600 personyears of employment, Dalhousie annual expenditures result in additional employment of 1,790 jobs. Total employment created is therefore 4,385.

For every direct personyear of employment, a further 0.69 of a position is supported elsewhere in the economy.

CHAPTER 3
IMPACT OF EXPENDITURES BY
DALHOUSIE UNIVERSITY STUDENTS

3.1 Enrolment

In 1982-83, the enrolment at Dalhousie University (including Kings College) reached a total of 9,727 students, of which 8,034 were full-time and 1,693 were part-time students.

Of those 8,034 full-time students, 43% were from the Halifax-Dartmouth metropolitan area, a further 35% hailed from the remainder of Maritimes and Nova Scotia, 13% from the remainder of Canada and 9% from other countries. The breakdown by place of origin for part-time students is roughly the same, although a somewhat larger proportion of these part-time students originate in the Halifax metro area (48%).

3.2 Living Costs

According to the Dalhousie University Awards Office, an undergraduate student can expect to incur the following expenses during the academic year (8 months):

° Tuition and fees	\$1,500
° Books and academic supplies	393
° Lodging	2,070
° Food	1,100
° Local Transit	192
° Personal maintenance (laundry, entertainment, toiletries)	880
	<hr/>
	\$6,135

In deriving the figures for this study, the following key assumptions were made:

- ° a 10% contingency fund was added to all student discretionary expenditures
- ° 15% of all full-time students live in university-provided housing
- ° expenditures on tuition and books as well as residence fees for those in university housing are reflected in university expenditures on goods and services and are therefore not included here
- ° a full-time student whose permanent home is in the metro area would not pay rent but otherwise would have the same expenditures as an out-of-town student
- ° aside from tuition and books, the only additional expense for a part-time student is transportation. It is assumed that a part-time student would be living in the area irrespective of his/her involvement with the university.

Overall, though, the cost to student figures remain decidedly modest. For example, figures based on a recent Statistics Canada report show that in 1982 a one-person household spent \$1,276 on food in an 8-month period (or \$39.88 weekly). By contrast, the university figures allow for only \$27.30 for food weekly or \$1,100 over the academic year. Similarly, no allowance is made for within Province transportation to and from Halifax. Information is not available with respect to the number of married students with non-student spouses and dependents which would increase expenditures of student households.

3.3 Total Expenditures

Students at Dalhousie and Kings College pumped some \$30.2 million dollars into the Halifax-Dartmouth metropolitan region during 1982-1983.

3.4 Household Income

As a result of a direct expenditure of \$30.2 million, a total of \$24.4 million in household income was generated in the Province. Of that total, \$14.4 million was direct household income, and \$10.0 million was generated in spinoff effects. For every dollar of household income generated by student expenditure, therefore, an additional \$0.69 is created in spinoff income.

3.5 Employment

Employment generated during the students' eight-month stay annually at the university included 780 direct jobs and 460 spinoff jobs. Total employment generated is therefore 1,240 jobs.

Note that many of these positions that are created and maintained by student expenditures would be in the trade and service sectors of the economy and since many of these positions in those sectors are part-time positions they are often filled by these same students.

For every direct job created, an additional 0.59 of a spinoff job is created.

CHAPTER 4

ANALYSIS OF RESULTS

4.1 Total Impacts

Expenditures by both the university and its students benefit the community on an annual, ongoing basis.

4.1.1 Household Income

In sum, these joint expenditures result in \$80.9 million in direct household income and \$47.0 million in spinoff income for a total of \$127.9 million annually (see Table 4.1).

Overall, therefore, the multiplier effect is:

- for every direct dollar in household income, a further \$0.58 spinoff income is created.

4.1.2 Employment

Employment figures, when summed, result in a grand total of 5,625 jobs, of which 3,380 are direct jobs and 2,245 are spinoff jobs. Thus for every job created, a further 0.66 of a job is generated elsewhere in the economy.

4.2 Comparison with Other Industries

As Table 4.2 illustrates, the multipliers generated by Dalhousie University are low in relation to other industries in the economy, particularly the manufacturing sector. In order to achieve higher multipliers, an industry must have strong links to the remainder of the economy. Thus, for example, a fish processing plant which obtains its fish from local fishermen, and purchases the bulk of its other requirements (such as packing materials) from in-province sources, will create larger multiplier effects since the money generated from the plant will recirculate in the economy for a greater period of time before the money "leaks" from the provincial economy as payment for

Table 4.1
Total Impacts
Dalhousie University

<u>Household Income</u>	<u>Direct</u>	<u>Spinoff</u> (\$ millions)	<u>Total</u>
University	66.5	37.0	103.5
Students	<u>14.4</u>	<u>10.0</u>	<u>24.4</u>
Total	80.9	47.0	127.9
 <u>Employment</u>			
University	2,600	1,785	4,385
Students	<u>780</u>	<u>460</u>	<u>1,240</u>
Total	3,380	2,245	5,625

Source: Derived from the Nova Scotia Department of Development, Input-Output System, 1979. Model 2.

Table 4.2
Household Income
and
Employment Multipliers
Selected Industries
Nova Scotia

	<u>Household Income Multiplier</u>	<u>Employment Multiplier</u>
Agriculture	1.76	1.56
Coal Mining	1.90	1.73
Fish Products	2.92	2.90
Pulp & Paper Products	2.35	3.17
Printing & Publishing	1.92	3.01
Transportation Equipment	1.68	1.72
Petroleum Refineries	3.47	9.92
Trade	1.61	1.48
Personal Services	1.72	1.91
Business Services	1.75	2.74
Museums	1.60	1.68
Dalhousie University	1.56	1.69
Dalhousie University Students	1.69	1.59
Total Dalhousie University	1.58	1.66

Source: Derived from the Nova Scotia Department of
Development Input-Output System 1979, Model 2.

imported goods. Other industries, such as the petroleum refineries, clearly contain a large import component in their production process and it cannot be argued therefore that they have a high degree of linkage with the rest of the provincial economy. Multipliers for the refinery are high, however, because few direct jobs are created, at a high wage level, allowing for a greater degree of consumer responding. Since the multipliers stated are a ratio, these few direct jobs support a higher proportion of spinoff jobs. In the service sector, on the other hand, many of the required goods are imported into the Province, a large number of persons work in the sector, often at low wages (particularly in the trade, food and accommodation sectors), dampening the responding effect.

CHAPTER 5

IMPACT ON HALIFAX-DARTMOUTH METROPOLITAN AREA

The Nova Scotia Input-Output Model cannot be applied at the regional level, even by some proportional scaling down of impacts. Of necessity, therefore, the methodology for assessing regional impacts is more subjective.

It is expected, however, that the Nova Scotian economic impact of Dalhousie University is concentrated in the Halifax-Dartmouth area, although some of the impact will spill over into the remainder of the Province.

5.1 Dalhousie University

5.1.1 Household Income

The province-wide impacts of Dalhousie University expenditures on an annual basis are estimated as:

- ° \$66.5 million direct
- ° \$9.3 million indirect
- ° \$27.7 million induced
- ° \$103.5 million total.

It is assumed that 95% of the direct income will be received by metro residents with the remainder accruing to staff who live beyond this geographic boundary.

A second assumption is that 80% of the indirect income is realized by metro households, since Halifax-Dartmouth is the focal point in the Province for many of the services required by the university (including such firms specializing in communications, utilities, construction, etc).

A third assumption relates to the induced income generated in the metro area. Induced income is created by the expenditure of household incomes on consumer goods and services. Household expenditure patterns in Canada show that about 42% of household outlays go for food, health and personal care, recreation and tobacco and alcohol. These goods and services are generally purchased locally. Expenditures on housing (34%) clothing (8%) and transportation (16%) account for the remainder. It is assumed that about 80% of transportation expenditures will be made within the metro area and 95% of housing and clothing outlays.

On the basis of the above assumptions, the total annual household income generated in the Halifax-Dartmouth metropolitan area is estimated at \$96 million, or about 93% of the total annual expenditures in the Province.

5.1.2 Employment

At the provincial level, the person-year equivalents of direct employment at the university amounts to 2,600 and an estimated total impact of 4,385.

The direct impact on Halifax-metro is 2,475, somewhat less than the total direct figure. In arriving at this figure, the category "geographic full-time" staff was taken to mean those employed by the university but not based in the Halifax area (125).

The spinoff effects on the metro area are estimated by applying the same proportionality factors as were used in estimating household income effects. As a result 4,110 spinoff jobs are estimated to remain in the local area.

5.2 Student Expenditures

Student expenditures generate annually during the eight-month school term:

- ° \$14.4 million in direct household income
- ° \$10.0 million in spinoff household income (indirect and induced).

As only expenditures relating to the school year are included in the above estimates, it is assumed that these student expenditures are highly concentrated in the metropolitan area. The assumptions previously made with respect to the locational pattern of expenditure by the university are continued with respect to student expenditures.

5.2.1 Household Income

Total household income remaining in the metropolitan area annually is therefore \$22.5 million of which \$13.7 million is direct household income.

5.2.2 Employment

The proportion of employment attributable to the metro area is again derived in a manner consistent with the assumptions previously cited. Annual direct employment accruing locally therefore assumed to be 740, with an additional 400 spinoff jobs.

CHAPTER 6

OTHER CONSIDERATIONS

This study has focused on one relatively narrow aspect of the university's contribution to the community - namely the actual expenditures on goods and services and wages and salaries. The university, however, provides additional amenities to the community which cannot be measured in strictly quantifiable terms. For example, the 1982-1983 annual report cites the following cultural and sports events that occurred as a result of its presence and were available to the community at large:

- Dalhousie Arts Centre, is the only performing arts complex of its kind in Nova Scotia. Facilities include the 1,041-seat Rebecca Cohn Auditorium, the 220-seat Sir James Dunn Theatre, two small studios, the Dalhousie Art Gallery, a sculpture court and the university's music and theatre departments.
 - o Since it opened in 1971, Dalhousie Cultural Activities has sponsored year-round programmes of performances (classical and "pop" music, modern dance and ballet, and theatre and film) by national and international entertainers.
 - o During 1982-1983 audiences at events sponsored by Cultural Activities and other organizations and staged in the Cohn Auditorium totalled nearly 150,000. In addition to entertainers, the events in the Arts Centre included craft markets, sculpture exhibition and flower shows. More than 60 major entertainment productions were held in the Cohn Auditorium.
 - o Dalhousie Art Gallery staged a total of 18 exhibitions between April, 1982 and March, 1983, a third of which exhibited the works of local artists.

- Art Gallery collaborated with the Nova Scotia College of Art and Design, Mount Saint Vincent University and the Art Gallery of Nova Scotia in a variety of events.
 - Attendance at exhibitions, films and other Art Gallery events totalled 134,000, an increase of almost 40% over the previous year.
 - In addition, members of the Theatre Department were involved in more than 20 theatrical productions, and members of the Music Department presented over 100 performances, in Halifax and throughout the world.
- Dalhousie's Athletics and Recreational Services, Dalplex, the Memorial Arena and Studley Field provide four acres of floor, pool, field and ice for faculty staff, alumni and the local community and the region.
- Alumni and community use of Dalplex increased substantially. Corporate membership, involving hundreds of people, rose to 17. Dalplex also had during the year 2,500 membership units, each with an average of three people; these included alumni, senior citizens and others outside Dalhousie.
 - Major events in Dalplex and Dalhousie Memorial Arena: Gold Cup Basketball Championships, Orientation concert, Kermesse, the President's Sports Festival.

- Several hundred visitors helped to enrich the life of the Dalhousie community during the year.

The visitors, who came from as far afield as Australia and China, included government leaders, diplomats, high-ranking civil servants, university heads, prominent academics, captains of business and industry and many other experts in their own fields. Many of the visitors gave public lectures and, with others, took part in conferences, symposia and special events organized by Dalhousie.

- o The Dalhousie campus is host to many conferences in the summer. For example, nearly 60 events were held at Dalhousie between May and August, 1983.

The events included conferences, tours, and training camps for small and large groups, and for people aged between six and 60. School children were on campus for tours, sports camps and music festivals; and for people over 60 there was an Elder-hostel program. During the academic year, as well, Dalhousie is host to many organizations holding a variety of events.

The library complex on campus as a reference source to the community can also not be overlooked. The talent pool of faculty and graduate students which is available to the community further enhances the resources on which the community at large can draw.

Faculty and students, by virtue of their financial transactions, also aid in expanding the asset base of the financial institutions in the area.

As well, expenditures by out-of-town visitors to students also aid in the expansion of economic activity. A study prepared at the University of North Dakota in 1975 provided a conservative estimate of \$2.1 million in visitor expenditures at that university. After taking into account inflation, exchange rate adjustments, and the difference in the respective school enrolments, it is estimated that a similar amount is now spent annually by visitors attracted to Halifax because of Dalhousie's presence.

METHODOLOGY FOR ECONOMIC IMPACT ANALYSIS

Input-Output Model Characteristics

Impact analysis is conducted by the application of an input-output model. An input-output model is an analytical tool that describes the structure of an economy and the interdependence of, or linkages between, the industries that make up an economy. An essential feature of the model is that it quantifies the inputs an industry requires to produce a given volume of output. The Nova Scotia Input-Output System describes the input requirements of an industry in value terms per dollar of output.

An industry uses three classes of inputs, each from different sources:

- i Intermediate inputs, which are purchases of outputs of goods and services produced by other industries in the economy.
- ii Primary inputs, consisting of labour and capital services.
- iii Imported goods and services.

A powerful property of an input-output model is that it can measure the economic impact of a change in output in one industry on household income and employment in an economy. The size of economic impacts per dollar of output will depend upon the extent to which an industry obtains its intermediate inputs from local industries and, in turn, the interdependence of these suppliers with other industries in the economy. The greater these linkages the greater the

impacts. Conversely, the larger the import content of production the smaller the impact on household incomes and employment.

Household Income and Employment

Household income is defined to include wages and salaries received for labour services, and other financial returns to individuals such as rent, interest, profits and dividends.

Employment is defined as person-years of employment. A person-year is synonymous with a full-time job. Part-time jobs are also included but on a person-year equivalent basis. For example, two jobs each lasting for one-half year are counted as one person-year.

Economic Impacts

The Nova Scotia input-output model assesses the impact of an industry on household income and employment as generating three distinct, additive effects:

- i Direct effect
- ii Indirect effect
- iii Induced effect

Direct Effect

The local expenditures by the industry for labour, goods and services are called the direct effect. The household income portion of this effect paid by the industry and accruing to residents of the province is termed direct household income, and the employment provided the industry, direct employment.

Indirect Effect

The local industries which supply equipment, materials and services to the industry themselves require purchases from other industries. In turn, these industries require purchases from yet other industries, but of lesser amounts. The process continues until the effects become too small to be measured. The sum total of these secondary purchases of intermediate inputs in the province is termed the indirect effect.

The strength, or magnitude, of the indirect effect will depend critically upon the extent to which intermediate inputs are imported. The greater the import leakage the smaller the indirect effect. This will depend, in the first instance, upon the nature of the industry's purchases from local industries, and, secondarily, on the dependence of the industry's local suppliers on industries in the province for their intermediate inputs.

The household income portion of the indirect effect accruing to residents of the province is termed indirect household income. The resulting employment created is designated indirect employment.

Induced Effect

Individuals spend household income, generated by the direct and indirect effects, on consumer goods and services. The demand for goods of various industries gives rise to further but successively smaller rounds of spending and respending as in the indirect effect. (The diminishing size of successive rounds of spending is due to the withdrawal of

funds from circulation in Nova Scotia through taxes, saving and purchases of imports.) The sum total of this activity is called the induced effect.

The household income portion of the induced effect accruing to residents of the province is termed induced household income. The employment generated by this activity, stimulated by the direct and indirect effects, is termed induced employment.

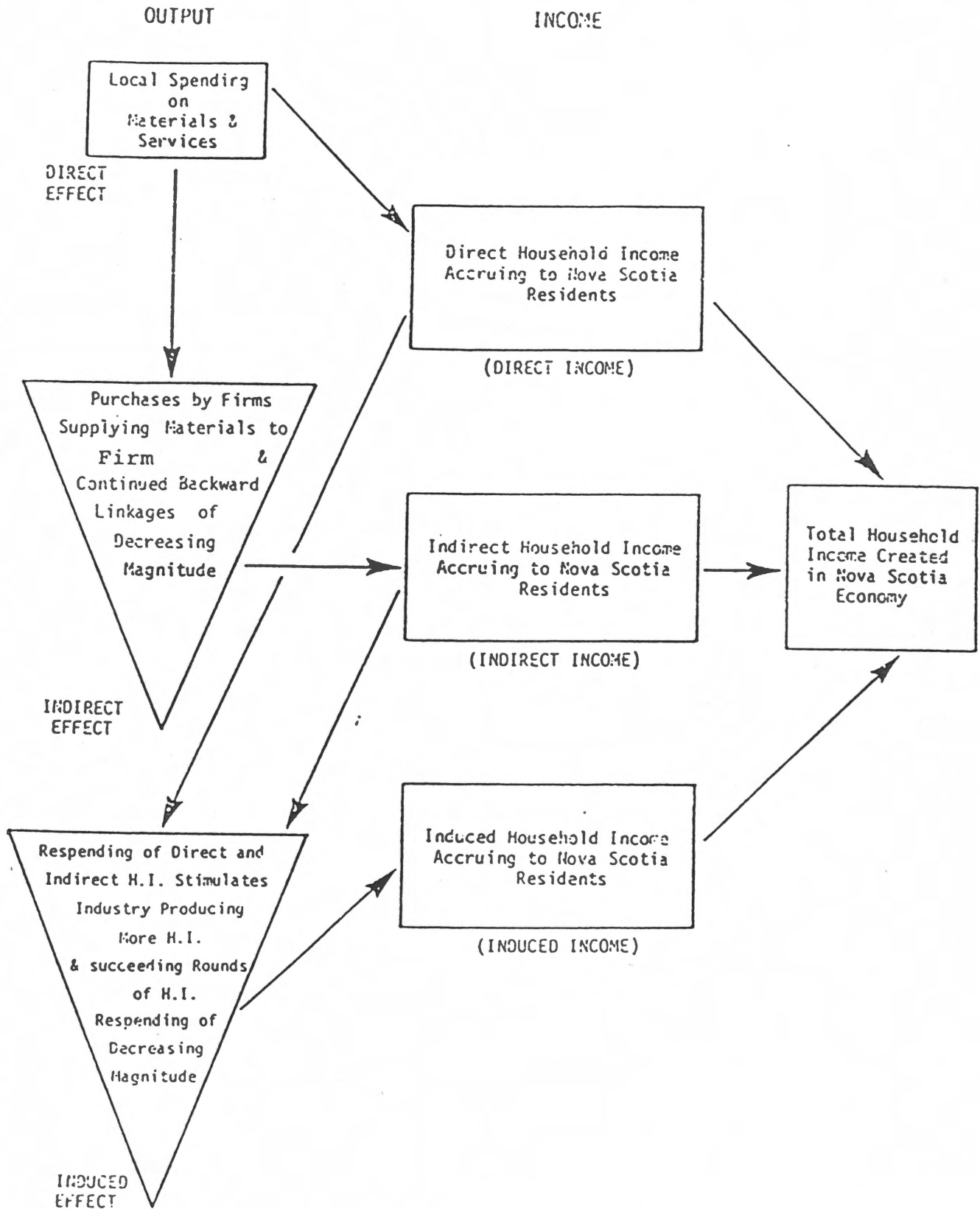
Total Impact

The total impact of the industry on the province's economy is the sum of the direct, indirect and induced effects. Thus, the total household income impact is the sum of the direct, indirect and induced incomes generated. Similarly, the total employment impact is the sum of the direct, indirect and induced employment created.

Figure 1 illustrates the three separate effects and the way they are combined to generate household income impacts. Impacts on employment can also be illustrated in analogous fashion.

FIGURE I-1

ILLUSTRATION of TOTAL HOUSEHOLD INCOME



APPENDIX II
DATABASE AND DETAILED TABULAR RESULTS

DALHOUSIE UNIVERSITY
STATEMENT OF REVENUE AND EXPENSES
FOR THE PERIOD ENDED MARCH 31 1983
WITH COMPARATIVE FIGURES FOR 1981-82

<u>REVENUES</u>	<u>82/83</u>	<u>81/82</u>
Government Grants	61,886,379	56,041,437
Academic Fees	9,307,767	7,996,344
Non-Credit and Other Fees	2,208,473	1,693,256
M.S.I. - Recoveries	4,043,799	3,080,912
Recoveries - Salary, Services	1,231,721	1,438,529
Endowment Income	5,258,416	4,541,256
General Income	4,033,327	4,117,165
Ancillary Income - Residences	4,615,470	4,055,631
Ancillary Income - Bookstore	1,787,183	1,609,203
Ancillary Income - Dalplex & Other	<u>1,151,851</u>	<u>160,782</u>
<u>TOTAL REVENUES</u>	<u>95,524,386</u>	<u>84,734,515</u>
 <u>EXPENDITURES</u>		
<u>SALARIES & BENEFITS</u>		
Academic	41,874,048	36,990,474
Library	2,216,706	2,348,876
Administrative & Clerical	15,635,466	13,481,955
Technical	4,247,001	3,714,791
Plant Maintenance	<u>2,545,176</u>	<u>2,207,135</u>
<u>TOTAL SALARIES</u>	<u>66,518,397</u>	<u>58,743,231</u>
Bookstore Purchases	1,454,986	1,312,954
Communications	1,221,117	1,090,828
Library Acquisitions	1,645,362	1,481,899
Externally Contracted Services - Cleaning	2,682,418	2,741,184
Externally Contracted Services - Other	2,577,551	2,958,361
Laboratory & Teaching Supplies	914,153	1,163,801
Legal, Audit & Professional Fees	609,480	646,162
Repairs & Renovations	508,880	222,352
Travel	1,123,807	1,000,353
Scholarships, Bursaries & Prizes	2,422,732	2,136,015
Stationery & Office Supplies	590,792	687,119
Energy, Electricity, Water & Taxes	4,995,270	4,745,300
Interest & Bank Charges	3,494,850	4,258,027
General Expenses	3,551,618	4,057,816
Computer Rentals & Service	559,177	423,212
Equipment, Service & Rentals	<u>1,776,550</u>	<u>1,847,223</u>
<u>TOTAL EXPENDITURES</u>	<u>96,647,140</u>	<u>89,515,837</u>
 <u>EXCESS OF EXPENSES OVER REVENUE</u>	 <u>\$1,122,754</u>	 <u>\$4,781,322</u>

**ALLOCATION OF EXPENDITURES BY DALHOUSIE UNIVERSITY
ACCORDING TO THE INPUT-OUTPUT INDUSTRY STRUCTURE**

<u>Industry No.</u>	<u>Category</u>	<u>Amount</u> (\$'000's)
19	Petroleum Refineries	2,645
21	Construction	2,062
22	Transportation	66
23	Communications	1,221
24	Utilities	2,114
25	Trade	3,471
28	Accommodation and Food Services	1,347
29	Personal Services	203
30	Business Services	6,092
31	Travel and Entertainment	562
34	Household Receipts	66,518
37	Municipal Government	235
41	External Transfers	<u>3,763</u>
	TOTAL	90,299

NOTES:

Certain expenditures were not included in the input-output analysis since they would bias the model results without a corresponding increase in actual economic activity. These figures included the \$3.5 million in interest and bank charges and a further \$0.6 million in mortgage interest payments (subsumed under general expenses).

Similarly, the \$2.4 million expended in scholarships was not included since this money would primarily be returned to the university in payment for tuition, books, etc. and would be picked up in university outlays to provide these services.

**ALLOCATION OF EXPENDITURES BY
DALHOUSIE UNIVERSITY STUDENTS
ACCORDING TO THE INPUT-OUTPUT INDUSTRY STRUCTURE**

<u>Industry No.</u>	<u>Category</u>	<u>Amount (\$'000's)</u>
25	Trade	15,660
26	Finance, Insurance and Real Estate	7,096
28	Accommodation and Food Services	3,568
29	Personal Services	<u>3,897</u>
	TOTAL	30,221

Table II-1
Household Income
and
Employment Effects
Dalhousie University

	<u>Household Income</u> (<u>\$ Millions</u>)	<u>Employment</u>
Direct	66.5	2,600 ^a
Indirect	9.3	395
Induced	<u>27.7</u>	<u>1,390</u>
TOTAL	103.5	4,385
Multipliers	1.56 ^b	1.69 ^c

a personyear equivalents

b for each dollar indirect household income generated, an additional \$0.56 in spinoff household income is generated.

c for each personyear of direct employment, an additional 0.69 of a position is created elsewhere in the provincial economy.

Source: Derived from the Nova Scotia Department of Development, Input-Output System, 1979. Model 2.

Table II-2
Household Income
and
Employment Effects
Dalhousie University Students

	<u>Household Income</u> (\$ millions)	<u>Employment</u>
Direct	14.4	780
Indirect	3.7	170
Induced	<u>6.3</u>	<u>290</u>
Total	24.4	1,240
Multiplier	1.69	1.59

Source: Derived from the Nova Scotia Department of Development, Input-Output System, 1979. Model 2.

Total II-3
Household Income
and
Employment Effects
Total Dalhousie University

	<u>Household Income</u> (\$ Millions)	<u>Employment</u>
Direct	80.9	3,380
Indirect	13.0	565
Induced	<u>34.0</u>	<u>1,680</u>
Total	127.9	5,625
Multiplier	1.58	1.66

Source: Derived from the Nova Scotia Department of Development, Input-Output System, 1979. Model 2.

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