THE MANITOBA WAGE DIFFERENTIAL
ITS TREND FROM 1943 to 1965

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AN ABSTRACT OF A THESIS

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The main purpose of this study is to determine the direction and magnitude of the trend, if any, in the level of wages paid to members of the labour force in Manitoba relative to the wage levels elsewhere in Canada. No attempt is made to identify causal factors. However, the influence of agricultural wage levels on the total regional wage structure is briefly considered.

Following a review of some similar wage studies, a research method is formulated. An attempt is then made to analyze the available data.

On the basis of the method used and the admittedly highly qualified and limited data for fifty-two selected occupational titles within twenty selected industries, the evidence suggests the following:

1. At present, Manitoba's wage level is slightly above that of Canada as a whole and approximately ten per cent below that of British Columbia.

2. The relationship between regional wage structures

is essentially stable with the Manitoba wage level showing an adverse relative trend of approximately one-third of one percent per year.

3. Geographic wage differentials are strongly influenced by the industrial mix of a region. Indeed, it may be accurate to speak of a geographic differential only in terms of individual industries.

4. Manitoba's wage level does not appear to be strongly influenced by wage trends in the province's agricultural industry.

Finally, some policy implications of the results are considered. Implied is a need for a national policy for regional economic growth. Failing such a policy, and if a widening geographic differential is considered bad, then, a reversal of the present trend in the Manitoba wage level is necessary. A program to achieve such a result is suggested. It requires the provincial government to intervene in the labour market using whatever means are at its disposal short of wage controls and direct legislation.

ACKNOWLEDGEMENTS

In organizing the approach to the problem and in seeking out the material submitted in this thesis, I found that I was being constantly disheartened by the complexity of wage structures, the inconsistencies in the available data, and the voluminous amounts of economic writings in the field of wages and their variation. I owe an inestimable debt for all the encouragement, advice, and assistance received from numerous patient and selfless individuals including various instructors in the Department of Economics, colleagues, librarians, and officials in government among others. Without such help, this project would never have been completed.

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I sincerely hope that the finished product, in some measure, justifies the faith, time and energy of all who assisted me. For any errors and shortcomings which may remain in spite of their efforts, I alone must be held responsible.

Lawrence Fric

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

It has been asserted frequently in recent years that the wages paid to workers in the Province of Manitoba are lower than wages paid in other parts of Canada. The suggestion is also made that the relative position of Manitoba workers is growing continually worse. Consequently, it is the primary purpose of this study to ascertain wage rates in Manitoba, to compare them to wage rates in Canada as a whole, and to extend the comparison back through time as far as available data will allow in order to describe the trend, if any, in the Manitoba wage differential.

Much of the debate concerning the position of Manitoba's wage level stems from superficial analysis and varying interpretations of figures published by the Dominion Bureau of Statistics showing Industrial Composite, Average Weekly Wages and Salaries by Provinces (see Table 1). Using these figures, the provinces can be ranked according to the average wage reported (see Table 2). It is then shown that in 1939, Manitoba wage rates were the second highest in Canada. By 1947, theyhad slipped to fourth place, and by 1956 to sixth, where they have remained since. However, by 1964 Newfoundland was narrowing the gap between itself and Manitoba and the latter was forced

Year	New found land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Average:					dollars					
1939	-	19.79	21.42	20.21	21.26	24.45	25.69	24.18	25.39	26.01
1940	-	20.86	22.89	21.23	23.14	25.97	26.33	26.00	26.13	27.24
1941	-	21.06	23.44	22.72	24.96	28.02	27.47	26.31	27.28	28.81
1942	-	22.13	26.16	24.31	26.83	29.83	28.77	27.50	29.57	31.23
1943	-	24.00	29.30	26.61	29.16	31.81	29.92	28.86	31.53	34.37
1944	-	25.81	31.84	28.17	30.32	32.79	31.07	30.09	32.95	34.53
1945	-	26.09	31.57	28.94	30.88	32.55	32.03	30.83	33.33	34.72
1946	-	27.12	30.80	30.09	31.37	32.59	33.34	32.15	34.02	35.25
1947	-	29.14	32.60	33.35	34.74	37.16	36.15	35.35	37.19	38.67
1948	-	31.77	35.97	36.21	38.46	41.26	39.93	38.76	41.48	42.47
1949	-	33.56	37.65	38.08	41.19	44.36	42.68	41.50	44.40	45.65
1950	40.10	34.44	39.40	38.76	42.89	46.58	43.84	42.66	45.61	47.70
1951	44.51	37.52	42.51	43.02	47.37	51.69	48.37	46.68	50.37	52.93
1952	51.00	40.08	45.88	46.04	51.66	56.36	51.73	50.90	54.90	59.46
1953	55.74	44.56	48.61	49.09	54.74	59.66	55.05	54.77	59.04	63.61
1954	54.30	44.41	49.56	50.49	56.58	61.36	56.54	56.21	60.19	64.42
1955	54.32	45.76	50.83	52.17	58.62	63.55	58.30	58.02	62.30	66.00
1956	57.57	47.50	52.90	55.10	61.86	66.86	60.88	61.66	66.93	70.15
1957	61.99	50.68	56.36	57.33	65.18	70.56	63.73	65.26	59.62	73.80
1958	62.36	51.15	58.33	58.14	67.69	73.20	66.85	68.14	72.88	75.88
1959	63.68	54.75	60.17	60.39	70.46	76.39	70.16	70.13	75.63	80.09
1960	67.91	55.00	62.65	62.66	73.00	78.71	71.71	72.13	77.83	82.97
1961	71.41	57.03	63.98	63.55	75.54	81.14	73.45	74.19	80.45	85.20
1962	73.19	58.10	65.73	65.72	78.14	83.66	75.52	77.01	82.01	87.44
1963	75.78	60.07	68.46	68.45	81.03	86.59	77.56	79.38	84.12	90.52
1964	78.53	61.67	70.78	71.30	84.51	89.93	79.03	81.47	86.70	94.60

[1]Reproduced from Canada, DBS, Review of Employment and Payrolls 1964, Catalogue 72.201 (Ottawa: Queen's Printer, January 1966), p. 55.

TABLE 2

PROVINCIAL WAGE LEVELS BY RANK[1]

	B.C.	Alta.	Sask.	Man.	Ont.	Que.	N.B.	N.S.	P.E.I.	Nfld.
1939	1	3	5	2	4	7	8	6	9	-
1940	1	3	4	2	5	6	8	7	9	-
1941	1	4	5	3	2	6	8	7	9	-
1942	1	3	5	4	2	6	8	7	9	-
1943	1	3	7	4	2	6	8	5	9	-
1944	1	2	7	5	3	6	8	4	9	-
1945	1	2	7	4	3	6	8	5	9	-
1946	1	2	5	3	4	6	8	7	9	-
1947	1	2	5	4	3	6	7	8	9	-
1948	1	2	5	4	3	6	7	8	9	-
1949	1	2	5	4	3	6	7	8	9	-
1950	1	3	6	4	2	5	9	8	10	7
1951	1	3	6	4	2	5	8	9	10	7
1952	1	3	7	4	2	5	8	9	10	6
1953	1	3	6	5	2	7	8	9	10	4
1954	1	3	6	5	2	4	8	9	10	7
1955	1	3	6	5	2	4	8	9	10	7
1956	1	2	5	6	3	4	8	9	10	7
1957	1	3	4	6	2	5	8	9	10	7
1958	1	3	4	6	2	5	9	8	10	7
1959	1	3	6	5	2	4	8	9	10	7
1960	1	3	5	6	2	4	8	9	10	7
1961	1	3	5	6	2	4	9	8	10	7
1962	1	3	5	6	2	4	9	8	10	7
1963	1	3	5	6	2	4	9	8	10	7
1964	1	3	5	6	2	4	8	9	10	7

[1]Derived from Table 1.

to seventh place for two months of that year. The deterioration in Manitoba's wages thus revealed is held to account for a strong employment pull away from the province, a consequent outflow of population and a resulting lag in economic growth. Therefore, such analysts conclude, in order to achieve a more rapid rate of growth and development, the trend in the relative wage level has to be reversed.

The above analysis makes no attempt to identify the cause of the trend described. Wage theory is ignored, as are the numerous explanations advanced to account for geographical wage differentials such as the differences in natural resources, worker productivity, the capital-labour ratio, the cost-of-living, union organization, worker inertia, population size and growth, degree of urbanization, quality of the labour force and its sex, age, or racial composition. The superficial analysis also ignores the possibility that the adverse effect on the level of average wages in Manitoba is merely the statistical result of the changing industrial and occupational type of employment available to the Manitoba labour force. For example, the relative expansion in Manitoba of occupations, or industries, or both, which customarily pay a low wage, would in itself result in a falling composite average wage even though no industry or occupation were to change its relative geographical wage differential. A secondary purpose of this study is to examine the possibility that

such a relative increase in the number of low paying jobs and not an increasing geographic wage differential in itself, is responsible for the observed deterioration in Manitoba's wage level.

This study is presented in four sections. First, theoretical concepts and empirical studies relative to geographical wage differences were examined (Chapter I). Second, a method of analysis is selected and the construction of the basic statistical tables is discussed (Chapters II and III). The third section (Chapter IV) contains the analysis of the data and the resulting conclusions. The implication of the results, in so far as the policies of Manitoba government are concerned, are the subject of the last section (Chapter V).

CHAPTER I

THEORETICAL CONCEPTS AND EMPIRICAL STUDIES OF GEOGRAPHICAL WAGE DIFFERENCES

Wage theory is a subordinate part of income distribution theory. A number of largely deductive theories of wages have been put forward such as the subsistence theory, the labour-theory of value, the wages-fund theory, the marginal productivity theory, and the various bargaining theories. The more prominent contemporary writers in the field appear to hold some form of a "competitive" theory of wages based upon marginal productivity principles.[1] The major variables in such modern models are the supply of and demand for various kinds of labour. The kinds of labour can be either groups that are non-competitive in nature, or groups that have varying degrees of interlocking supply and demand relationships necessary to account for "job clusters,"

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[1]The following significant works are cited as examples: Richard A. Lester, "A Range Theory of Wage Differentials," Industrial and Labor Relations Review, Vol. V (July, 1952), pp. 483-500; Melvin M. Reder, "Wage Differentials: Theory and Measurement," A Report of the National Bureau of Economic Research Aspects of Labor Economics; A Conference of the Universities National Bureau Committee for Economic Research (Princeton, N.J.: Princeton University Press, 1962), pp. 257-311; Frank C. Pierson, "An Evaluation of Wage Theory," Labor: Readings on Major Issues Richard A. Lester ed., (New York: Random House, 1965), pp. 264-291.

as postulated by John T. Dunlop.[1] However, at present, no deductive wage theory is very highly regarded for "the weakness of deductive analysis in the wage field is that its findings are impossible to prove or disprove by appeal to the facts. . . ."[2] Its level of abstraction is too high, and too many details of the wage determination process are lost in broad averages and trends of too long a term.

On more realistic ground (and consequently of more value in organizing this study) is the work of the more empirical economists. Inductive analysis as a whole suffers from the failing that the studies are too detailed and too varied in the questions posed. Consequently, a unified body of principles of general, predictive value, and useful in analyzing available data has not, as yet, been put forward.

One conceptual problem that is discussed in current literature is the difference between "wage levels" and "wage structures." When the wage level is discussed it appears that some form of a weighted average wage of all the wage earners in an economy is intended. Much of deductive wage theory postulates the existence of such a single wage or wage level and the various formulations of the marginal productivity theory could be cited as examples. However, the inductive researcher has found it necessary to deal with numerous wage

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[1]John T. Dunlop, Wage Determination Under Trade Unions (New York: The Macmillan Company, 1944).

[2]Pierson, p.268.

rates because of the large numbers of occupational, industrial and geographic categories in an economy. Also, in modern economies at similar stages of economic development, when the various groupings or classifications of the different wage rates are ranked in order of their wage levels, a similar "hierarchy" of these classifications becomes evident.[1] These hierarchies of wage levels have been called wage structures. Wage structure theory, then, is only a part of general wage theory. It is the attempt to explain the existence of, and the relative changes within a more or less explicit wage structure. No attempt is made to explain the wage level itself.[2] Clearly, this particular study is an inductive study of the Canadian wage structure centered on relative changes in a geographical classification of wage levels.

The concept of a geographical wage difference in itself has been clarified by the empirical economists. Such differences have been defined as "the relative wage level of workers in the same industry and occupation but in different geographical areas."[3] This definition is, of course, arbitrary

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[1]S. Lebergott, "Wage Structures," Review of Economics and Statistics, Vol. XXIX (November, 1947) pp. 274-85.

[2]Louis R. Salkever, Toward a Wage Structure Theory (New York: Humanities Press, 1964), p. 1.

[3]Lloyd G. Reynolds and Cynthia H. Taft, The Evolution of the Wage Structure (New Haven: Yale University Press, 1956), p. 9.

in that it excludes all differences arising from different age, sex, education or any other differential criterion in the composition of the labour force. There is the further problem that workers who are segregated geographically cannot possibly be in the same plant and are unlikely to be in the same firm. Moreover, different firms are likely to vary in size and serve different markets. Consequently, the defined geographical differential may include wage differences due to factors other than location. However, attempts to account for the type of differences noted are limited both by the complexity of the resulting calculation problems and the difficulty in obtaining the large amounts of data required.

The theoretical concept causing the most difficulty for the empirical research worker in the field of wage theory is the concept of wages. To the theorist wages are merely a special price -- the price of the input factor labour. If labour were compensated strictly on a piece-work basis, then the theoretical and statistical concept of wages could be expected to be fairly close. But the great majority of wage and salary workers are paid on the basis of "time worked."[1] In addition, "supplementary wage payments," such as shift differentials, overtime rates, vacation and holiday pay, pension plans, unemployment insurance benefits, health, accident, sickness and life insurance plans, multiply the

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[1]W.S. Woytinsky and Associates, Employment and Wages in the United States (New York: The Twentieth Century Fund, 1953), p. 419.

various kinds of wage data which could be collected. The resulting variety of statistical wage concepts include wage rates per unit of time, straight-time average hourly earnings, gross average hourly earnings, weekly earnings, and take-home pay on a weekly or annual basis. Also, the researcher has open to him the choice of making his wage comparisons in terms of absolute or percentage differences. Finally, the concept of wages is complicated by the differences between "money" and "real" wages. To consider real wages, the economist must face the "index number problem" including being forced to choose one of wholesale, retail, local or national indices. Any of the resulting concepts can be used (and many have been) depending on the problem to be solved and the availability of the data.

The foregoing are some of the principal problems of transforming theory into verifiable concepts. The work of empirical economists in actually carrying out their studies (the questions asked, the methods used, and the conclusions drawn from their work) will now be examined. A number of case studies exist[1] (especially with reference to the Northern and Southern regions of the United States) which deal with broad geographical differentials. Four studies will be reviewed briefly.

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[1]All the case studies of geographical differentials examined as part of this investigation are included in the bibliography.

The path-breaking work of Richard A. Lester appeared in three articles[1] over the years 1945 to 1947. Lester attempted to examine all aspects of geographical differentials between the South and North in the United States. Specific occupations within industries in specific cities or states were selected and the Southern wage rates were calculated as a percentage of the Northern rates in comparable situations. These ratios were calculated from averages of hourly earnings or wage rates in each case. He notes that the ratios used were not strictly comparable because of the use of different establishments from one period to another, the use of samples which were not necessarily representative of the regions, and because no allowance was made for quality or character of product differences, equipment, nature of job, gratuities, payments in kind, or proportions of male, female, child, handicapped workers, etc.[2] The basic ratios are constructed differently in each case as Lester considers inter-firm, industrial, and occupational aspects of the geographic differential. Also, while many different occupational rates

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[1]Richard A. Lester, "Trends in Southern Wage Differentials Since 1890"; "Diversity in North-South Wage Differentials and in Wage Rates Within the South"; "Southern Wage Differentials: Developments, Analysis and Implications"; Southern Economic Journal, Vol. XI (April, 1945), pp. 312-41; Vol. XII (January, 1946), pp. 238-262; Vol. XIII (April, 1947), pp. 386-394.

[2]Lester, "Trends. . . ," p. 317.

were used, it is worth noting that common labour entrance rates were preferred when comparing wages among different industries and between different regions.[1] Such rates lacked complicating factors such as rewards for experience and skill. A number of conclusions were drawn from the study. It was noted that the South-North differential had been narrowing over the years, the differentials between and within the regions varied widely and irrationally from industry to industry and locality to locality, and that local market differentials were often greater than the South-North differentials. Lester also concluded that neither the amount of capital per worker[2] nor differences in labour productivity[3] accounted for the differentials for there was little evidence that different production functions were used between regions. Further, there was no evidence that manufacturing in the South expanded or contracted as the differential widened or narrowed.[4]

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[1]Lester, "Diversity. . . ," p. 241.

[2]This point is disputed by Lowell E. Galloway, "The North-South Wage Differential," Review of Economics and Statistics, Vol. XLV (August, 1963), p. 271.

[3]This conclusion is supported by Sylvia Ostry, "Inter Industry Earning Differentials in Canada, 1945-1956," Industrial and Labor Relations Review, Vol. XII (April, 1959), p. 349.

[4]This conclusion is supported by Victor Fuchs and R. Perlman, "The North-South Wage Differential," Review of Economics and Statistics, Vol. XLII (August, 1960), p. 295.

In a later article Lester also makes the point that wage differentials exist and persist because of such factors as the role of custom in wage differences, manual workers' attachment to particular firms, a random character in the movement of labour, and widespread anti-competitive practices of managements.[1]

The next significant study was completed by Harry Ober and Carrie Glasser.[2] The authors were concerned with regional inequalities in the standards of living and welfare and particularly with the low levels prevailing in the South. The United States was divided into nine regions. In each, from twenty-seven to thirty-six industries were selected reflecting as many important southern industries as possible (since the relative level of wages in the South was of primary interest in the study). Another factor in the selection of industries was the availability of data. The national average of straight-time hourly earnings in the selected industry for the year 1945-46 was used as the base and an index was then constructed showing the relative position of each industry in each region. The important conclusions of this part of the study were that there is a tendency for differentials to be widest in the low-paying industries[3] and that differentials tended to be less in

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[1]Lester, "A Range Theory. . . ," p. 500.

[2]Harry Ober and Carrie Glasser, "Regional Wage Differentials," Monthly Labor Review, Vol. LXIII (October, 1946), pp. 511-25.

[3]This conclusion is supported by Reynolds and Taft, p. 180, and by Woytinsky, p. 477.

industries in which the South was dominant (as judged by numbers employed). The authors went further and selected various occupations reflecting highly skilled, semi-skilled and low skilled positions in each industry and noted a tendency for higher geographic differentials at lower skill levels. They then suggest that the low wage level of the South is accounted for in large measure by the predominance of agriculture and the relatively large supply of unskilled labour competing for jobs in comparatively few industries.

The third major study to be discussed is that of Joseph Bloch.[1] Bloch tried to establish whether or not there was a trend toward a greater degree of wage uniformity among regions. He selected four periods which he judged to be similar in terms of overall economic conditions. These were the years 1907, 1919, 1931-32, and 1945-46. The United States was divided into four economic regions. For each period covered, the hourly earnings of workers of roughly equivalent skill levels doing essentially the same work in the same industries in each region were compared as percentages of the Northeast region's rates. Bloch suggests that the type of comparison made was not affected by regional differences in the importance of industries and occupations. The results of Bloch's study indicated that differentials in some industries

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[1]Joseph Bloch, "Regional Wage Differentials: 1907-1946," Monthly Labor Review, Vol. LXVI, (April, 1948), pp. 371-377.

had narrowed in percentage terms but on the whole regional differentials did not change despite underlying structural changes.

> The practice of establishing job-rates with relation to prevailing wage levels in the immediate locality appears to be deeply rooted in the Nation's wage-determination methods. Thus, in the absence of stronger counter-forces, regional differences tend to be self-perpetuating.[1]

The final study to be considered separately is that of Harry H. Morritt.[2] Morritt wanted to establish the then current position of the wage level of the Maritime Provinces. The wage level of the Province of Ontario was used as a standard of comparison. He chose identical occupations representing unskilled and skilled labour in twenty industries important to the Maritimes. The selection of industries was further limited by choosing only those with data available covering the entire time span considered - 1945-53. Average hourly wage rates for each occupation (the only kind of wage data available to him) were compared absolutely and relatively. Morritt concluded that wages in the Maritimes were usually twenty per cent lower than in Ontario, and the relative differential increased slightly in the period under review, while the skill differentials narrowed somewhat. He suggests

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[1] Ibid., p. 372.

[2] Harry H. Morritt, Regional Wage Differentials and the Position of the Maritime Provinces (unpublished M.A. thesis, Dept. of Economics, Cornell University, 1959).

that the major influences accounting for the differential are a rapid secular decline in agricultural employment and an overall supply of labour growing more rapidly than employment opportunities.

With respect to the case studies of geographical wage differentials other than the four noted above, an important observation relates to the effect of agricultural wages. The lowest relative wage levels have been long associated with agriculture. As noted by Morritt, this factor seems to be caused by the secular decline in agriculture and high rural birth rates which, in turn, cause a surplus labour supply in the predominantly agricultural regions. In recent years, in the United States, a decline in the geographical wage differential has been noted and this has been associated with rising prices for agricultural products.

> To the extent that rural areas supply cities with unskilled labor, earnings of farmers and farm laborers tend to establish a floor for wages of industrial workers: when earnings of farm labor rise, the gap between high-wage and low-wage states necessarily narrows.[1]

Generally speaking, all the empirical studies examined have observed the tendency of every type of wage differential, with the possible exception of the geographical differential,

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[1]Woytinsky, p. 477. These results are also supported by the findings of Reynolds and Taft, p. 247, who extend it to all countries. The same conclusions are also drawn by Melvin Rothbaum, "National Wage Structure Comparisons," New Concepts in Wage Determination, G.W. Taylor and F. Pierson, eds. (New York: McGraw-Hill Book Company Inc., 1957), p. 313.

to decline relatively through time.[1] Also, a second general observation has been that the wage structures, or the hierarchies of wage levels, including geographical classifications, tend to remain stable through time even though the range of each differential is narrowing. It should be noted that this stability of the wage structure appears to be contradicted by the data for the geographical wage differentials of the provinces of Canada as they have been ranked in Table 2. However, Table 2 also shows that the largest changes in the rank order involve only the provinces of Quebec and Manitoba. If these two provinces are excluded (see Table 3) then it can be observed that the Canadian geographical wage structure is largely stable. Indeed, after allowing for the admission of the Newfoundland data, the high ranking of Nova Scotia during the war years 1943, 1944 and 1945, and a 1940 interchange of Ontario and Saskatchewan, no single province has changed its position by more than one rank in the twenty-six years represented by the data. Therefore, it appears that the Quebec wage level has been rising, and at the same time the Manitoba wage level has been falling, through a basically stable wage structure. For this reason this study proposes to test the hypothesis that the geographic differential for the Province of Manitoba has maintained a stable relationship with other regions and that the evident decline of the Manitoba

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[1]Reynolds and Taft, p. 359.

TABLE 3

PROVINCIAL WAGE LEVELS BY RANK EXCLUDING MANITOBA & P.Q.[1]

	B.C.	Alta.	Sask.	Ont.	N.B.	N.S.	P.E.I.	Nfld.
1939	1	2	4	3	6	5	7	-
1940	1	2	3	4	6	5	7	-
1941	1	3	4	2	6	5	7	-
1942	1	3	4	2	6	5	7	-
1943	1	3	5	2	6	4	7	-
1944	1	2	5	3	6	4	7	-
1945	1	2	5	3	6	4	7	-
1946	1	2	4	3	6	5	7	-
1947	1	2	4	3	5	6	7	-
1948	1	2	4	3	5	6	7	-
1949	1	2	4	3	5	6	7	-
1950	1	3	4	2	7	6	8	5
1951	1	3	4	2	6	7	8	5
1952	1	3	4	2	6	7	8	5
1953	1	3	5	2	6	7	8	4
1954	1	3	5	2	6	7	8	4
1955	1	3	4	2	6	7	8	5
1956	1	2	4	3	6	7	8	5
1957	1	3	4	2	6	7	8	5
1958	1	3	4	2	7	6	8	5
1959	1	3	4	2	6	7	8	5
1960	1	3	4	2	6	7	8	5
1961	1	3	4	2	7	6	8	5
1962	1	3	4	2	7	6	8	5
1963	1	3	4	2	7	6	8	5
1964	1	3	4	2	6	7	8	5

[1]Derived from Tables 1 and 2.

wage level is a statistically but not an economically significant problem.

Based on the conclusions of the case studies examined, it is clear that this study of the Manitoba geographical differential can be expected to exhibit some general wage structure characteristics as follows:

1. A geographical difference in wage level of some relative degree will exist and it may decrease, increase, or remain constant through time.

2. The differentials between different industries and occupations will vary without apparent order. For example, in one region an occupation in an industry may be ranked highly in the wage structure, while in a second region it may rank considerably lower.

3. The lowest paying occupations should exhibit the widest differentials.

4. Manitoba's relative position will be best in industries in which the Manitoba economy has a larger than proportionate share.

5. Because wage comparisons are the most significant criterion used by both employers and employees in the determination of wages, and because of the "competitive," "impeditive" and "anti-competitive" factors in the labour market, the relationships between the Manitoba and other regional wage structures will be stable.

6. Whether the first five characteristics are found to be true or not, the major influence on the Manitoba wage level should be related to the wage level in Manitoba's agriculture. This expectation follows from the findings of other research workers (as noted on page 14) coupled with the fact that agriculture and the related food processing industries are absolutely and relatively important to the Manitoba economy.

CHAPTER II

THE RESEARCH METHOD

In the preceding chapter a brief consideration of wage structure theory and research was discussed in order to specify precise questions which could be asked about the geographical wage differential in Manitoba. It is the purpose of this chapter to describe the methods employed in attempting to answer the questions raised.

First, this study makes no attempt to consider the problem of whether or not the Province of Manitoba is, in itself, a viable economic region. For some purposes, it might be more relevant to consider the three prairie provinces as a single economic region; for others, local market areas such as the metropolitan areas of Winnipeg or Brandon might be appropriate. However, Manitoba exists as a definite geo-political area with reference to which policy decisions are made and data are collected. As such, it can be clearly differentiated as a separate physical and economic entity containing a unique mix of natural, human and artificial resources which result in a singular level and pattern of production and a concomitant singular pattern of income distribution. Within this existing economic entity, there is

considerable evidence that a population outflow from the province is occurring. This outflow is thought to be the result of the supposed declining wage level. This fact alone provides the justification for considering Manitoba as a single, independent economic region even though it is clearly evident that considerable variation exists within the whole.

Having chosen the whole of Manitoba as the area of primary interest, and as the problem is one of relative trends, the next problem is the choice of a standard of comparison. In some respects, it would seem appropriate to select some other province as the relevant unit of comparison. Clearly, the use of data from the Province of Quebec, which exhibits an opposite trend to that of Manitoba, might serve to highlight the differences in trend. But it would then be necessary to show which province accounted for how much of the difference. On the other hand, if some form of weighted average of the data of all the provinces were to be used, and if the Manitoba data have only a minor impact on such an average, then differences in the Manitoba from the average trends must be, in the main, the result of economic change or a lack of such change within Manitoba itself. Obviously, the data collected for Canada as a whole provide the weighted average of the data of all the provinces. However, the available data do not always permit comparisons between Manitoba and averages for the whole of Canada. Often, data

are reported only on the basis of various provinces, while at other times, they are reported for various urban areas. A rigorous methodology and precise conclusions become impossible from such a conglomerate of kinds of data. Nonetheless, maximum use of available data to yield inferences if not conclusions seems preferable to no study whatsoever. Consequently, two basic kinds of comparative standards are found to be necessary. In addition, a third type of comparison is used at times to approximate the second basic type.

The first standard of comparison chosen is the preferred Canada-wide wage average. When a Manitoba-Canada comparison is not possible, then a Manitoba-British Columbia comparison is made. The data for the Province of British Columbia were chosen as the standard in such cases because that province has consistently remained the wage leader in Canada. For the Manitoba wage level to be falling through a relatively stable wage structure, Manitoba wages as a percentage of those of British Columbia could be expected to be falling. Also, whenever possible, both kinds of relationships are studied to confirm that the trends shown in the Manitoba-British Columbia comparisons can be extended to the same occupations and industries on a Manitoba-Canada basis.

The third type of comparison made is between Winnipeg-Vancouver data. Such a comparison is used to approximate that of Manitoba-British Columbia when data for

the latter are not available. Of course, because of the rural-urban differentials, the population movement into cities, and the varying significance of each city within its region, no assumption would be tenable concerning any pair of urban areas and their relationship to the wage structure of their respective provinces. But, Winnipeg is the single dominating urban area in Manitoba and includes approximately 52% of the wage earners in Manitoba. Similarly, Vancouver dominates the economy of British Columbia and includes approximately 45% of its wage earners.[1] Moreover, industries can be chosen which are located primarily within the respective urban areas. In such cases, any difference between the two provinces in urban-rural trends of wages would have to be major and obvious in order to overcome each city's weighting influence in its provincial wage averages. Therefore, there seems to be no major methodological problem in the use of city data for selected industries to represent the provincial trends.

It should be noted that either Winnipeg-Vancouver or Manitoba-British Columbia comparisons can be expected to yield different levels of differentials than those obtained from Manitoba-Canada comparisons because British Columbia is

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[1]Calculated from DBS, 1961 Census of Canada, "Industries by Sex: Canada and Provinces," Catalogue 94-518, and "Earnings and Hours of Employment of Wage Earners by Occupations: Metropolitan Areas," Catalogue 94-540, (Ottawa: Queen's Printer).

the leading province in the Canadian wage structure. For example, where Manitoba wages are near the Canadian average, only a small differential would be shown on a Manitoba-Canada basis while a larger one would result from the Manitoba-British Columbia comparison. However, while the level of the differential could be expected to change, its relative trend should remain approximately the same due to the stability (in terms of rank) of the wage leadership. As the relative trend of the wage differential is the primary concern of this study, and as it should be possible to approximate such trends through the use of Winnipeg-Vancouver and Manitoba-British Columbia comparisons, their use together with Manitoba-Canada comparisons seems warranted.

Another factor to be considered is the appropriate time period to be reviewed. As the purpose of this paper is to establish the long term regional wage structure relationships, the period studied should cover more than one business cycle. Beginning at the most recent data available (for the year 1965) it was found that the time series could be continued back only as far as 1943 before data limitations made the estimation of trend a particularly difficult task. The period 1943-1965 clearly covers a number of business cycles and is consequently long enough to provide some estimate of the secular trend. The choice of 1943 also appears to be a satisfactory initial date for a variety of

reasons. First, although the DBS index referred to in the Introduction begins in 1939, it has been argued that this was an unusually favourable year for the Manitoba wage level.[1] Second, 1943 was the approximate mid-point of World War II, a period when strict wage and price controls were in force in Canada. Therefore, a comparatively stable and fixed base period is assured. Third, a major change in wage rates in Canada that is clearly a post World War II phenomenon suggests that any relative adjustments in the wage structure should be occurring more rapidly in the period of rapid wage change, and consequently, these relative changes should be more readily observable. For all the foregoing reasons, the 1943-1965 period seems reasonable for purposes of discovering the long term trends in the geographic wage differential.

The concept of geographical differentials (defined in Chapter I) next requires a selection of a group of industries to be studied. A preliminary survey indicated that the broad averages calculated for the large industrial groups would tend to hide any industry differences. Therefore, it appears necessary to select individual industries using the Dominion

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[1]See, for example, Reynolds and Taft, p. 311, including footnote 16, in which it is argued the high wages of Railroad Transport workers created an upward bias in Manitoba's wage level in that year.

Bureau of Statistics classifications.[1] Also as this study is concerned primarily with Manitoba, it follows that the importance of an industry to the province's economy should be the major criterion for selection. But the importance of the industry can be measured in various ways such as numbers employed, net value of production, value of surplus available for export, etc. The volume of employment is preferable as the significant measure of importance for two reasons. First, the problem in review is, in part, concerned with wage levels -- a concept that involves number of individuals employed at a variety of wage rates. Second, it is possible that it is only the relative expansion of numbers employed at low levels that has led to the relative decline of the industrial composite wage index for Manitoba. Moreover, it is to be noted that this study is not attempting to identify the cause of the wage level in each separate industry. In such a case, marginal productivity principles would dictate the use of the changing volume of employment. But, in this case, where changing averages are being questioned, the effect of the total volume of employment in the weighting of the average appears to be the most significant variable.

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[1]DBS, Standard Industrial Classification Manual, Catalogue 12-501, (Ottawa: Queen's Printer, 1960).

A further requirement of the definition of geographical differentials is the selection of similar occupations within each of the chosen industries. The problem of the selection of occupations has three major aspects.[1] First, the diversity and specialization of the economy results in the fact that some occupations are found only in a specific industry. Consequently, it is not possible to compare the identical occupation in each industry reviewed. Second, the same job title in different industries, or even plants, may not involve the same kind of work. Because of this factor, as well as differences in working conditions, the rate of pay for a given occupation in different industries could be expected to vary. Any measured differential necessarily includes some element of difference merely because the jobs being compared are themselves different. Third, the hierarchy of occupations in terms of wages paid in one industry is not necessarily identical to the sequential ordering of the occupations in a second industry. A fourth aspect can also be noted. The definitions of both an industry and an occupation change over time so it is difficult to follow the identical industry for any time period. To minimize the effects of the foregoing factors, a group of different occupations can be selected in each industry.

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[1]L.G. Reynolds, The Structure of Labor Markets (New York: Harper and Brothers, 1951), p. 184.

In the first case, within each industry the national and provincial rates can be compared for one of the highest paying job titles peculiar to that industry. Such an occupation would probably be highly skilled and subject to a minimum variation in job functions through the years. Any difference between the two regional wage averages would represent as close to a pure geographical differential as it is possible to obtain on a year to year basis for that particular industry.[1] But, considering wage determination theory, such a high-rated occupation would tend to represent a non-competitive group vis-a-vis other industries. Therefore it should have little or no effect on other rates in the wage structure. To counter this problem a second highly-skilled occupation common to a number of industries could be chosen. This type of occupation would represent an inter-industry "linkage" in terms of wage determination theory. Both the foregoing types of occupations would tend to exhibit minimal geographic differentials to the extent that more skilled jobs generally tend to have a narrower range of wage rates. To compensate, the lowest paid occupations in each industry could be selected. Such low paid workers tend to be the unskilled, even inexperienced, common labourers. As such, they are highly mobile from one industry to another providing an

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[1]Lester, "Trends . . . ," p. 318.

effective inter-industry linkage. This factor should tend to minimize the effect of any industry differential. However, the studies previously cited indicate that low-paid occupations tend to exhibit a wider wage dispersion than the more skilled workers. In any event, the observed lack of regional mobility among the low-skilled workers is certain to have the effect of maximizing any geographical differential that may exist. The true, competitive, effective geographic differential for any industry as a whole should fall within a range limited by the geographic differentials of each of its highly skilled and low skilled occupations. Whenever the data permit, each of the foregoing three kinds of occupations is chosen for every industry included in this study.

Once the selection of industry and occupation has been made, it is necessary to choose some statistical equivalent of theoretical wages. The economic problem being considered concerns a population flow; therefore rates of pay, as the most obvious evidence of employer's ability to attract workers, would seem to be the preferable concept. It is conceptually possible to consider actual wages paid to a number of individual workers as opposed to an average wage paid to a group of workers in an occupation. However, most of the Canadian wage data collected annually for occupations in each industry are reported as "the weighted average of

straight-time rates paid on a time basis. . . ."[1] For those workers paid on incentive or piece-rate bases, average straight-time earnings are reported. The time basis generally used is the hourly rate, although some longer time periods such as week or month are also used. While it would be preferable, for the sake of consistency, to use the same concept for all occupations and industries selected, the available data do not permit such rigour. Nonetheless, as the primary consideration of this study is relative differentials, these can be calculated as long as the rate per hour, earnings per week, etc., are consistent in both parts of each ratio calculated. However, all ratios may not be calculated using precisely the same concepts.

An advantage of the use of industry-wide average rates or earnings for each occupation should be noted. The use of average rather than actual wages is a simplification of the data that allows us to ignore differences in the age, sex, skill and experience characteristics of the group of workers employed in each occupation. Also ignored are changes in working hours, the rural-urban distribution of employment, the nature of the product market, the resource base of the regions, the degree of competition due to the influence of

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[1]Canada Department of Labour, Economics and Research Branch, Wage Rates, Salaries and Hours of Labour: 1965, Report No. 48 (Ottawa: Queen's Printer, 1966), p. 7.

unions and oligopolists, and the institutional standards (such as minimum wage laws) brought about by government intervention in the regional labour markets. It is often the case that the effect of one of the above mentioned factors is opposite to that of another. For example, the relatively more aged population of Manitoba caused by the population outflow (which generally involves a high proportion of young adults) should leave the province with relatively higher levels of experience and skill. An upward bias in the wage averages should be the result. Conversely, to the extent that Manitoba has a more rural population distribution, the associated low rural wage rates should lower the overall wage averages. Also, in a region in which the rate of urbanization was more rapid, the trend toward higher wage averages due to higher degrees of urbanization would tend to exaggerate any upward trend in a geographical differential between large regions. This factor might be offset by a more rapid reduction in hours actually worked while time paid for remained the same, (for example the urban worker might want to be paid for time spent travelling to work). Such a shift would imply that wage rate averages would rise less rapidly than might otherwise be possible as the workers chose leisure instead of higher wages.

Similar effects in the trend of wages can be cited

for the other factors. The more inelastic the product market, the greater the potential for more rapidly rising wages. The larger the firm or plant size, and the larger the local market for the product, the greater the opportunities for economies of scale in both production and distribution, and consequently, the more opportunity for higher wages and/or higher profits. The more competitive a labour market (i.e., the lower the degree of unionization, or the fewer the oligopolist, or oligopsonist employers), the lower the average wages which might result in a regional economy. The higher the wage floor (i.e., the minimum wage) the higher the expected wage averages. Doubtless other areas of possible difference can be cited. But, within any large group many such factors should be opposite in effect. It is possible to assume that all such differences are proportional between regions, or alternatively, that their net effect is negligible. Consequently, the use of average wages for large groups of workers can eliminate the need for consideration of such factors. Moreover, these kinds of assumptions necessarily follow from the definition of geographical wage differentials, and from the fact that the separate effects of the plethora of factors influencing wage structures cannot be statistically disentangled.[1]

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[1]A.M. Ross and W. Goldner, "Forces Affecting the Inter-Industry Wage Structure," Quarterly Journal of Economics, Vol. LXIV (May, 1950), p. 280.

An extension of this advantage to the use of industry-wide average rates for selected occupations is that the need to identify precisely identical jobs is minimized as the large groups contain jobs having both positive and negative effects about some central idea of the standard functions for the occupation being studied.[1]

There are also some serious qualifications to the use of average rates or earnings as the equivalent of the theoretical concept of wages. First, such a concept of wages as the average time rate is in itself a drastic simplification which ignores the pecuniary value of fringe benefits such as pension, unemployment, sickness, death, holiday and vacation entitlements. Widely different estimates of the value of such benefits have been made for the United States.[2] Moreover, a precise estimate is not possible because all people are not likely to place the same value on any given fringe benefit. Consequently, despite the fact that these benefits represent such a substantial part of wages and may distort wage comparisons, the lack of accurate, unquestionable data forces us to write as if benefits are proportional to wages. This assumption implies that the differentials calculated from the basic

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[1]Reynolds, p. 185.

[2]Estimates cited for the year 1957 range from 6.9% to 21.8% of total payrolls. See Jules Backman, Wage Determination (Princeton, N.J.: D. Van Nostrand Company Inc., 1959), p. 101.

rates will be unchanged by the value of fringe benefits. Second, the concepts of straight-time hourly rates, average hourly earnings including overtime and other supplementary payments, weekly earnings, etc., do not vary proportionately from one industry or occupation to another. Third, the average rate of wages or earnings concept involves the use of a single measure of central tendency (in this case generally the mean) to indicate a whole frequency distribution of wage payments which often reflect more dispersion within a single occupation, industry, or region than between them. Further, a mean wage might not be a proper indication of actual wages if a few workers in the group receive extremely high (or low) wages. In such cases the mean would reflect a distortion toward the extreme rates. This problem can be minimized by insuring, when data are available, that the average wage is approximately central to the predominant range of wages. The serious qualifications noted have led some writers[1] to suggest that averages of rates or earnings can never be identified with the price of labour, nor can they represent accurate measures of change in the wage structure. Nonetheless, if we are to do any empirical work at all we are forced to use some such equivalents of theoretical concepts.

Another factor which must be considered when using

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[1]Dunlop, p. 23.

average rates or earnings is, should such figures be corrected for changes in the cost-of-living? That is, should real or money wage data be used? Clearly, real wage data would be preferable if the physical well-being of a group of workers was of major interest. However, it is hoped that this study will be able to account for the attractive power of wage differentials given that wages are commonly expressed in money terms. It seems likely that some degree of "money illusion" will be operative. Moreover, problems in the selection of the appropriate price index (local or national, retail or wholesale) and the questionable accuracy of any index, make it doubtful that more precise or accurate results would be obtained by adjusting the money wage data. Further, the price indices available do suggest that there is a greater degree of uniformity in living costs than in wages. This factor has been taken to indicate that the setting of wages and salaries is still more strongly influenced by local wage comparisons and conditions, than are the pricing policies of the larger industrial firms operating in regional or national markets.[1] Because of the foregoing, the conclusion can be safely drawn that differences in money wages geographically tend to be largely differences in real wages.[2] Therefore, for this

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[1]Morritt, p. 12.

[2]Reynolds and Taft, p. 347.

study, the most appropriate kind of data appears to be that showing uncorrected money wages.

In calculating the actual wage difference it is generally accepted that a percentage differential is more significant through time than an absolute differential.[1] The reasons usually cited are: first, a wage relative is a ratio or a percentage, and second, percentage differentials can more easily be compared to one another and to other economic variables (for example, employment changes). A disadvantage of percentage measures is that they are too heavily influenced by the original levels being compared. If the original wage levels in the different industries selected for the study are significantly different, the differences in the original wage structure may dominate the results obtained.[2] A further disadvantage of using only percentage wage differentials is, while such differentials generally tend to narrow through time, absolute differentials tend to widen. For this last reason, some writers[3] use both absolute and percentage calculations in their research.

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[1]See the articles of Lester, also Bloch, p. 373, and Morritt, p. 14.

[2]Ross and Goldner, p. 257.

[3]See Morritt, p. 14, and Ostry, p. 336.

However, absolute differentials have no meaning unless they are interpreted within the framework of existing standards. For example, a five cent wage differential at a rate of twenty cents per hour would be substantial, while at today's rates in excess of two dollars per hour, it is marginal. Clearly, the present wage structure would tend to dominate any analysis carried out solely in terms of absolute wage differentials. In this study, it is the relative position of the Manitoba wage level that is being considered. Consequently, despite the disadvantages cited above, percentage differentials are used in this study.

In calculating the wage differential, data at two points in time are necessarily considered. While the wage determination process is dynamic, especially as described by the wage-leadership or the wage-contour hypothesis, data can only be collected at finite points in time. Therefore, the data restrict analysis to the methods of comparative statics. This factor should represent little if any disadvantage as a considerable amount of data collected on an annual basis is available, and year-to-year, rather than longer time interval comparisons can be made.

In summary the method of analysis will be the use of annual data for money wages, recorded as averages of either straight-time rates or earnings on any time basis, for high

and low paid occupational groups within industries selected on the basis of relative importance by volume of employment in Manitoba, to calculate a percentage reflecting the differential in wage rates between Manitoba and Canada and for Manitoba and British Columbia or Winnipeg and Vancouver. A percentage will be calculated for each year for which sufficient data are available to show the trend of the geographical wage differential. Such a method of analysis ignores many differences in the labour market (see page 31). It must be remembered, however, that a geographical differential is a theoretically defined concept and as such it remains a simplification of reality.

CHAPTER III

DATA SELECTION AND CONSTRUCTION OF THE BASIC TABLES

Following the research method outlined in the preceding chapter, it is first necessary to select a group of industries to be studied. To obtain comparative figures by employment levels for individual industries covering the entire labour force of both Manitoba and Canada, it was necessary to refer to the 1961 Census of Canada. In doing so, labour force data are used to approximate the volume of employment. That is, the census data include both employed and unemployed -- the latter group being associated with the industry in which they last held a job. This difference should not affect the relative importance of industries for it seems safe to assume that, within an economic region, short run economic factors affect all major industries proportionately.

Another problem in using census data is the obvious impracticality of considering each of the several hundred industries covered. Consequently, the first step was to

review all "major groups"[1] (See Table 4). The volume of the labour force in each group was considered in two ways: as a percentage of total Manitoba labour force and as a percentage of the total labour force in the group in Canada as a whole. The importance of the first percentage follows from the fact that volume of employment in Manitoba was selected as the significant variable for measuring the importance of an industry. All those major groups representing at least one per cent of Manitoba's labour force were selected for study, (the cut off point is, of course, arbitrary). However, the different major groups are each defined and statistically measured with varying degrees of precision. The second percentage was then calculated to insure that all major groups selected as being numerically important were also important in that each accounted for a major part of its proportionate share of the respective national major group. This second calculation also revealed that two major groups, Storage and Hunting and Trapping, were of notable importance relatively though unimportant numerically. Nonetheless, the first of these major groups was excluded from this study for two reasons; it was found to reflect principally the grain buyers,

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[1]DBS, Standard Industrial Classification Manual classifies all industries into twelve "Divisions." Each division is further broken down into "Major Groups," of which there are fifty-six in all. Each major group is then broken down into the individual industries.

TABLE 4

LABOUR FORCE FOR INDUSTRIES
BY MAJOR GROUPS FOR CANADA AND MANITOBA, 1961

	Canada[1]	Manitoba[1]	% of Manitoba Labour Force	Manitoba Group as a % of Canadian
All Industry	6,471,850	342,642	100.00	5.29
I. Agriculture[2]	640,786	59,301	17.30	9.25
1 Experimental & Institutional Farms)				
2 Small Agricultural Holdings)	624,180	58,379	17.03	9.35
3 Commercial Farms)				
4 Services Incidental to Agriculture	16,606	922	.27	5.55
II. Forestry	108,580	1,328	.39	1.22
1 Logging	93,866	659	.19	.70
2 Forestry Services	14,714	669	.20	4.54
III. Fishing & Trapping	36,263	1,284	.37	3.54
1 Fishing	30,191	708	.20	2.34
2 Fishery Services	2,320	59	.02	2.54
3 Hunting and Trapping	3,752	517	.15	13.77
IV. Mines, Quarries & Oil Wells	121,702	5,620	1.64	4.61
1 Metal Mines	68,931	4,686	1.37	6.79
2 Mineral Fuels	19,765	53	.02	.26
3 Non-Metal Mines except Coal Mines	11,465	254	.07	2.21
4 Quarries and Sand Pits	6,120	229	.07	3.74
5 Services Incidental to Mining	15,421	398	.11	2.58
V. Manufacturing Industries	1,404,865	46,713	13.63	3.32
1 Food & Beverage Industries	219,185	11,397	3.33	5.19
2 Tobacco Products Industries	8,833	10	-	.11
3 Rubber Industries	18,844	25	.01	.13
4 Leather Industries	33,166	558	.16	1.68
5 Textile Industries	62,252	689	.20	1.10
6 Knitting Mills	19,746	278	.08	1.40
7 Clothing Industries	91,928	5,803	1.70	6.31
8 Wood Industries	98,871	1,320	.38	1.33
9 Furniture & Fixture Industries	35,696	1,938	.57	5.42
.0 Paper and Allied Industries	101,640	2,007	.58	1.97
.1 Printing, Publishing & Allied Ind.	84,265	4,150	1.21	4.92
.2 Primary Metal Industries	90,156	2,016	.59	2.23
.3 Metal Fabricating Ind.	103,216	3,834	1.12	3.71
.4 Machinery Industries	49,821	1,265	.37	2.53

Table 4 (Continued)

Labour Force for Industries
by Major Groups for Canada and Manitoba, 1961

	Canada	Manitoba	% of Manitoba Labour Force	Manitoba Group as a % of Canadian
15 Transportation Equipment Ind.	118,021	5,407	1.58	4.58
16 Electrical Products Ind.	84,924	1,250	.36	1.47
17 Non-Metallic Mineral Products Ind.	47,019	1,545	.45	3.28
18 Petroleum & Coal Products Ind.	16,959	904	.26	5.33
19 Chemical & Chemical Products Ind.	69,510	1,207	.35	1.73
20 Misc. Manufacturing Ind.	50,813	1,110	.33	2.18
VI. Construction Industry	431,093	20,900	6.10	4.84
1 General Contractors	223,572	11,272	3.29	5.04
2 Special Trade Contractors	207,521	9,628	2.81	4.63
VII. Transportation, Communication & Other Utilities	603,286	39,735	11.60	6.58
1 Transportation	385,031	25,186	7.35	6.54
2 Storage	17,677	2,785	.81	15.75
3 Communications	130,074	7,574	2.21	5.82
4 Electric Power, Gas & Water Utilities	70,504	4,190	1.23	5.94
VIII. Trade	991,490	57,348	16.73	5.78
1 Wholesale Trade	289,884	20,208	5.90	6.97
2 Retail Trade	701,606	37,140	10.83	5.29
IX. Finance, Insurance & Real Estate	228,905	12,226	3.57	5.34
1 Financial Institutions	110,936	5,337	1.56	4.81
2 Insurance and Real Estate Ind.	117,969	6,889	2.01	5.83
X. Community, Business and Personal Services	1,263,362	64,042	18.69	5.06
1 Education & Related Services	266,901	13,476	3.93	5.04
2 Health & Welfare Services	307,433	17,571	5.13	5.71
3 Religious Organizations	53,130	2,024	.59	3.80
4 Motion Picture & Recreational Services	39,837	1,930	.56	4.84
5 Services to Business Management	98,987	4,099	1.20	4.14
6 Personal Services	437,518	21,771	6.35	4.97
7 Misc. Services	59,556	3,171	.93	5.33

Table 4 (Continued)

Labour Force for Industries
by Major Groups for Canada and Manitoba, 1961

	Canada	Manitoba	% of Manitoba Labour Force	Manitoba Group as a % of Canadian
XI. Public Administration & Defence	482,925	26,523	7.74	5.49
11Federal Administration	284,953	16,812	4.91	5.89
2 Provincial Administration	68,761	3,274	.95	4.76
3 Local Administration	123,729	6,381	1.86	5.15
4 Other Government Officers	5,482	56	.02	1.02
XII. Industry Unspecified or Undefined	158,593	7,622	2.22	4.80

[1]Taken from DBS, 1961 Census of Canada, "Industries by Sex: Canada and Provinces," Catalogue 94-518 (Ottawa: Queen's Printer), Tables 1A and 1.

[2]No separate major group figures for the Agricultural Division were available so it was necessary to treat the division itself as the major group.

elevator men and agents in Prairie country elevators and as such it was closely associated with Agriculture,[1] and, data were not readily available. The second major group was excluded purely because of its low level of significance absolutely.

The result of the foregoing selection was that twenty-two major groups were selected for study. Of these Metal Fabricating Industries was included despite the fact that it was significantly under-represented in terms of a proportionate share of the national major group. Six major groups, Transportation Equipment Industries, Special Trade Contractors, Services to Business Management, Financial Institutions, Insurance and Real Estate Industries, and Health and Welfare Services had to be excluded because of inadequate data. However, in the last two named major groups, census data alone provided a very rough indication of trends. In both cases it was possible to select occupational categories together with their respective average earnings for jobs found almost totally within the relative group. Further, in the Special Trade Contractors major group, the occupational titles and job functions are nearly identical with those of the General Contractor major group. Therefore the latter can be

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[1]DBS, 1961 Census of Canada, "Industry Groups by Detailed Occupations and Sex: Canada and Provinces," Catalogue 94-531 (Ottawa: Queen's Printer), Table 15, p. 89.

assumed to represent both. Data limitations were not the only reason for not including a major group in this study. Also excluded was Federal Administration because of the fact that pay standards are set nationally. Similarly Communications was ignored because of the involvement of the federal government in the Post Office industry, crown corporations in Radio and Television Broadcasting, and the two major railways (whose wage rates are negotiated largely on a national basis) in Telegraph and Cable Systems. The final result was that fourteen major groups were chosen for study with inferences being drawn about two additional classifications. The selections are shown in Table 5.

Once the significant major groups were selected, the next step was to choose representative individual industries within each group. At this point, a major empirical difficulty was encountered. It was found that the definition of an industry has changed from year to year with the increasing development and specialization in the economy. Many of the changes were in the direction of finer classifications and more precise definitions but some overlapping was also evident. Consequently, it was not possible to select from the data over a long time period, any single consistently defined industry. Indeed, it was sometimes difficult to remain within a specific major group. Further, in the wage data collected by occupations within an industry, the industry

TABLE 5

MANITOBA LABOUR FORCE BY REPRESENTATIVE INDUSTRIES AND SELECTED MAJOR GROUPS[1]

Major Group	Representative Industry	Labour Force 1961
Agriculture		59,301
	Agriculture	59,301
Metal Mines		4,686
	Metal Mining[2]	4,686
Food & Beverage Industries		11,397
	Slaughtering & Meat Packing[3]	3,191
	Bakeries	1,011
Clothing Industries		5,803
	Men's Clothing (Working Clothing & Sportswear)	2,924
	Women's Clothing (Women's & Misses' Suits & Coats)	1,554
Printing, Publishing & Allied Industries		4,150
	Printing & Publishing other than Daily Newspapers	n.a.
Metal Fabricating Industries		3,834
	Metal Stamping, Pressing & Coating (Sheet Metal Products)	999
Construction - General Contractor		11,272
	Construction (Buildings & Structures only)	11,272
Transportation		25,186
	Railways	13,618
	Urban & Suburban Transportation Systems	1,142
Electric Power, Gas and Water Utilities		4,190
	Electric Power	3,274

Table 5 (Continued)

Manitoba Labour Force by Representative Industries and Selected Major Groups

Major Group	Representative Industry	Labour Force 1961
Wholesale Trade		20,208
	Wholesale Trade	20,208
Retail Trade		37,140
	Retail Trade	37,140
Education and Related Services		13,476
	Elementary and secondary schools	11,164
Personal Services		21,771
	Laundries, Cleaners and Pressers	10,743
	Restaurants	n.a.
Local Administration		6,381
	Local Government	6,381
Insurance and Real Estate Industries		6,889
	Insurance and Real Estate	6,889
Health and Welfare Services		17,571
	Hospitals	12,506
TOTAL LABOUR FORCE IN SELECTED MAJOR GROUPS		258,592
TOTAL LABOUR FORCE IN SELECTED INDUSTRIES		21,428

[1]Derived from DBS, 1961 Census of Canada, "Industries by Sex: Canada and Provinces," Catalogue 94-518 (Ottawa: Queen's Printer), Table 1.

[2]Including gold and iron mines.

[3]Excluding poultry processors.

was often defined somewhat differently from the DBS classifications manual and usually on a broader basis. Therefore, the definitions of each industry used in the study were usually dictated by the data. Nonetheless, in selecting the specific industry to be studied, five principles were followed. First in no case were data used in which, in any one year, the definition of an industry differed between the regions being compared. Second, in every industry selected, the definition either remained consistent for the term of this study or was such that two or more presently defined industries could be grouped to represent the equivalent of a previous, broader definition. Third, each chosen industry had to represent a substantial proportion of the labour force associated with the major group. Alternatively, in cases in which more than one or no dominant industry existed, two or more industries were selected. Fourth, preference was given to those industries which contained consistently defined occupational categories. Fifth, the availability of adequate data governed the ultimate selection or rejection of any specific industry. Other than the foregoing general principles, particular reasons for the selection of any specific industry are included with the discussion of occupations selected for that industry. Table 5 also shows the industries finally selected.

Next, it was necessary to make a selection of the

occupations to be studied within each industry. As noted in the previous chapter, wherever possible, for each selected industry, occupations were chosen which are highly skilled and specialized to the industry, highly skilled and general to a number of industries, and low-skilled. The reasons for the specific selections in each industry will be separately discussed. However, most of the data used are drawn from a single source and it is of interest to note the criteria by which the authorities responsible for the publication of the source decided to report data for an occupation. These were, ". . . numerical importance, prevalence throughout the industry or community, importance in the production processes, skill level, and capability of clear definition."[1] The substantial similarity of these criteria to the principles which determined the industries selected for this study should be noted. The occupations selected and their respective wage rates are shown in Table 6.

Turning to the individual occupational selections in each industry, in Agriculture (which is not distinguishable from the agricultural division) there is only one defined occupation. That is the Farm Labourer. All other members of the agricultural labour force are self-employed. However,

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[1]Canada Department of Labour, Economics and Research Branch, Wages, Salaries, . . . , p. 5.

TABLE 6

WAGE RATES IN SELECTED OCCUPATIONS BY INDUSTRIES[1]

Industry & Occupation	Region	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Agriculture[2]																								
Farm Labourer[3]	Canada	9.60	8.70	8.30	8.10	7.90	7.80	7.70	7.60	7.50	7.10	6.60	6.40	6.80	6.70	6.30	5.40	5.29	5.43	5.17	4.95	4.50	4.36	4.42
	B.C.	10.80	10.00	10.70	10.10	9.70	9.60	9.40	9.30	8.50	8.50	8.00	8.00	7.00	7.40	7.20	6.20	6.20	5.97	5.75	5.26	4.64	4.39	4.18
	Manitoba	10.20	9.40	8.80	8.60	8.50	8.40	8.40	8.20	8.20	7.70	7.10	7.20	8.10	7.90	7.20	6.20	6.78	5.84	5.46	5.66	4.98	5.53	4.20
Farm Labour[4]	Canada	208.	190.	183.	178.	171.	169.	167.	154.	153.	150.	136.	139.	140.	139.	135.	120.	114.96	116.67	109.03	100.62	97.22	88.31	84.76
	B.C.	256.	230.	223.	218.	209.	205.	195.	185.	178.	165.	160.	159.	146.	145.	140.	135.	118.	130.	118.	106.	103.	96.	87.
	Manitoba	203.	188.	175.	170.	167.	167.	161.	157.	146.	151.	128.	130.	141.	141.	141.	123.	121.25	115.	102.59	102.81	97.76	91.33	80.11
Metal Mines																								
Cage & Skip Tenders[5]	Canada	2.42	2.33	2.27	2.22	2.21	2.16	2.08	2.07	1.97	1.90	1.78	1.73	1.70	1.35	1.26	1.12	1.05	1.01	.94	.81	.78	.78	.76
	B.C.	2.37	2.27	2.21	2.12	2.06	2.03	1.96	1.87	1.77	1.69	1.59	1.60	1.57	1.44	1.34	1.13	1.12	1.09	.94	.89	.76	.75	.75
	Manitoba	2.65	2.53	-	-	-	-	-	-	2.09[7]	-	-	-	-	1.51	1.38	1.24	1.19	1.10	1.05	.91	.83	.83	.81
Electrician[6]	Canada	2.65	2.58	2.52	2.45	2.44	2.41	2.37	2.34	2.19	2.08	1.95	1.89	1.86	1.61	1.51	1.29	1.23	1.17	1.06	.94	.88	.84	.83
	B.C.	2.76	2.61	2.49	2.38	2.34	2.32	2.27	2.11	2.07	1.96	1.89	1.81	1.77	1.67	1.58	1.32	1.24	1.24	1.05	.99	.88	.84	.87
	Manitoba	2.87	2.69	-	-	-	-	-	-	2.23	-	-	-	-	1.83	1.67	1.46	1.36	1.32	1.16	1.07	.97	.95	.91
Surface Labourer[6]	Canada	1.96	1.94	1.94	1.79	1.78	1.74	1.75	1.71	1.60	1.53	1.44	1.45	1.37	1.20	1.17	1.00	.97	.90	.81	.67	.63	.62	.61
	B.C.	2.06	1.85	1.91	1.79	1.84	1.84	1.76	1.67	1.62	1.55	1.49	1.45	1.43	1.34	1.21	1.09	1.02	1.02	.87	.80	.70	.66	.68
	Manitoba	2.23	2.07	-	-	-	-	-	-	1.74	-	-	-	-	1.37	1.27	1.04	1.03	.88	.82	.71	.64	.62	.55
Slaughtering & Meat Packing																								
Butcher	Canada	2.32	2.22	2.21	2.16	2.11	2.00	1.94	1.88	1.83	1.69	1.63	1.58	1.53	1.46	1.42	1.21	1.15	1.09	.95	.85	.71	.70	.70
	B.C.	2.52	2.49	2.42	2.34	2.22	2.15	2.08	2.02	2.01	1.84	1.75	1.68	1.62	1.62	1.47	1.30	1.22	1.18	1.00	.90	.76	.77	.77
	Manitoba	2.57	2.49	2.46	2.41	2.36	2.30	2.11	2.13	1.93	1.78	1.69	1.64	1.69	1.57	1.54	1.28	1.18	1.15	1.00	.88	.71	.71	.71
Labourer	Canada	2.01	1.95	1.90	1.92	1.86	1.78	1.74	1.63	1.62	1.53	1.41	1.38	1.34	1.28	1.24	1.06	1.00	-	-	-	-	-	-
	B.C.	2.09	2.05	1.93	1.93	1.88	1.85	1.76	1.73	1.66	1.57	1.48	1.41	1.40	1.35	1.31	1.12	1.07	-	-	-	-	-	-
	Manitoba	2.11	2.06	2.04	2.07	1.92	1.90	1.79	1.69	1.59	1.48	1.41	1.34	1.31	1.30	1.20	1.02	1.04	-	-	-	-	-	-
Carpenter	Canada	2.54	2.40	2.41	2.37	2.34	2.23	2.16	2.14	1.98	1.90	1.81	1.72	1.68	1.59	1.54	1.35	1.26	-	-	-	-	-	-
	B.C.	-	-	-	-	-	-	-	-	2.15	2.04	1.99	1.93	1.88	1.78	1.78	1.50	1.44	-	-	-	-	-	-
	Manitoba	-	-	-	-	-	2.27	-	-	-	1.83	1.76	-	1.75	1.65	1.67	1.39	-	-	-	-	-	-	-
Truck Driver[8]	Canada	2.26	2.19	2.11	2.04	1.95	1.91	2.02	1.90	1.77	1.67	1.60	1.54	1.55	1.48	1.44	1.20	1.12	1.06	.94	.81	.68	.64	.62
	B.C.	2.56	2.40	2.32	2.37	2.24	2.20	2.11	2.01	1.92	1.79	1.74	1.65	1.61	1.57	1.48	1.25	1.18	1.08	.96	.86	.72	.73	.70
	Manitoba	1.84	2.02	2.03	1.89	-	-	-	1.91	1.85	1.73	1.65	1.55	1.58	1.60	1.59	1.29	1.16	1.09	.99	.84	.70	.69	.66
Bakeries (Excluding biscuits)[9,10]																								
Mixer (Doughman)	Canada	2.08	1.97	1.92	1.83	1.78	1.76	1.63	1.62	1.49	1.42	1.33	1.26	1.24	1.18	1.11	1.01	.96	.93	.85	.76	.68	.60	29.66
	B.C.	3.21	3.00	2.85	2.75	2.72	2.68	2.63	2.64	2.36	2.13	2.05	1.95	1.96	1.78	1.61	1.38	1.35	1.27	1.08	1.02	.83	-	-
	Manitoba	2.38	2.26	2.27	2.21	2.13	2.05	1.94	1.88	1.66	1.56	1.47	1.40	1.33	1.18	1.17	1.01	.94	.90	.80	.74	.65	.63	28.20

TABLE 6 - Continued

Industry & Occupation	Region	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Bakeries (Excluding biscuits) cont'd.																								
General Bakery Helper (Male)	Canada	1.71	1.61	1.57	1.50	1.47	1.43	1.31	1.30	1.20	1.13	1.02	.98	.94	.89	.85	.76	.72	.67	.60	.53	.50	.45	22.39
	B.C.	2.58	2.59	2.40	2.36	2.48	2.50	2.53	2.38	2.08	1.85	1.29	1.31	1.63	1.28	1.18	1.15	1.11	.92	.53	.71	.62	-	24.16
	Manitoba	2.18	1.96	1.90	1.82	1.76	1.43	1.53	1.53	1.35	1.21	1.15	1.06	.98	.94	.93	.81	.72	.68	.58	.50	.47	.41	23.10
General Bakery Helper (Female)	Canada	1.30	1.28	1.18	1.19	1.12	1.12	1.04	1.04	1.01	.89	.82	.81	.78	.74	.68	.63	.56	.52	.48	.41	.39	.37	17.31
	B.C.	1.56	1.72	1.57	1.74	1.75	1.70	1.94	2.08	1.69	-	1.06	1.07	1.34	1.17	.97	.89	.85	.77	.68	.47	.46	.47	21.50
	Manitoba	1.96	1.73	1.52	1.59	1.67	1.03	1.43	1.43	1.31	1.15	1.12	1.03	.98	.88	.86	.77	.69	.64	.56	.43	.40	.37	16.95
Work Clothing and Sportswear[9,10]																								
Cutter	Canada	1.98	1.85	1.85	1.75	1.71	1.61	1.56	1.57	1.53	1.47	1.38	1.34	1.31	1.20	1.11	1.10	1.03	.99	.90	.80	.76	.61	30.75
	B.C.	2.26	2.10	2.12	2.04	1.93	1.86	1.86	-	1.81	1.66	1.56	-	1.40	1.30	1.29	-	-	1.11	-	.97	-	.79	-
	Manitoba	1.86	1.83	1.79	1.70	1.69	1.53	1.44	1.45	1.44	1.38	1.29	1.28	1.27	1.15	1.05	1.10	1.06	1.15	.94	.86	.83	.74	31.72
Sewing Machine Operator (Female)	Canada	1.04	.94	.91	.84	.80	.85	.82	.82	.78	.72	.70	.85	.80	.78	.73	.68	.60	.58	.50	.46	.43	.40	17.77
	B.C.	1.14	1.18	1.10	.83	-	.81	-	-	.75	.73	-	.93	.85	.87	.96	.62	.75	.66	.56	.54	-	.42	-
	Manitoba	1.07	.87	.84	.84	.87	.93	.89	.93	.89	.82	.71	.83	.84	.81	.76	.73	.62	.59	.51	.50	.46[12]	.45	18.74
Women's and Misses' Suits & Coats[10,11]																								
Cutter	Canada	2.56	2.50	2.47	2.31	2.19	2.18	2.13	2.01	1.95	1.89	1.81	1.78	1.74	1.64	1.61	1.58	1.52	1.50	1.27	1.18	1.08	1.01	41.37
	Winnipeg[13]	2.07	1.81	1.84	1.80	1.68	1.46	1.65	1.47	1.45	1.50	1.44	1.35	1.38	1.30	1.22	1.47	1.18	1.09	.91	.91	.85	.83	34.97
Button Sewer (Female)	Canada	1.21	1.15	1.13	1.06	1.00	1.02	.96	.93	.97	.87	.79	-	-	-	-	-	-	-	-	-	-	.48	19.62
	Winnipeg[13]	.98	.97	.94	.92	.88	.86	.81	.80	.73	.74	.71	-	-	-	-	-	-	-	-	-	-	.35	18.13
Printing & Publishing Other than Daily Newspaper[10]																								
Compositor-Hand	Vancouver	3.31	3.20	3.17	3.08	2.94	2.76	2.73	2.60	2.53	2.28	2.26	2.17	2.10	2.06	1.81	1.67	1.58	1.43	1.28	1.14	1.10	1.09	45.99
	Winnipeg	2.78	2.72	2.63	2.53	2.45	2.42	2.23	2.05	1.99	1.91	1.91	1.90	1.82	1.69	1.55	1.40	1.37	1.25	1.10	.97	.93	.93	37.98
Bindery Girls	Vancouver	2.05	1.95	1.88	1.77	1.74	1.72	1.68	1.54	1.42	1.36	1.30	1.28	1.24	1.22	1.04	.91	.91	.81	.69	.56	.54	.53	22.72
	Winnipeg	1.44	1.38	1.32	1.32	1.25	1.17	1.09	1.01	.96	.96	.93	.93	.91	.87	.80	.70	.66	.60	.50	.43	.39	.38	19.58
Sheet Metal Products[14]																								
Sheet Metal Worker	Canada	2.55	2.37	2.38	2.30	2.31	2.24	2.16	2.14	2.07	1.92	1.87	1.86	1.78	1.75	1.62	1.38	1.33	1.31	1.13	.97	.94	.91	.65
	B.C.	3.39	3.13	3.13	3.03	2.96	2.88	2.76	2.72	2.55	2.31	2.30	2.27	2.19	2.02	2.00	1.70	1.62	1.61	1.42	1.25	1.16	1.15	1.09
	Manitoba	2.28	2.15	2.21	2.12	2.14	2.06	2.05	1.99	1.91	1.83	1.75	1.66	1.49	1.46	1.29	1.11	1.14	1.10	.91	.93	.91	.80	.60
Labourer	Canada	1.75	1.72	1.66	1.59	1.47	1.46	1.46	1.44	1.40	1.35	1.29	1.39	1.34	1.26	1.18	.90	.83	.77	.69	.60	.57	.54	.51
	B.C.	2.35	1.91	1.99	1.94	-	-	1.74	1.88	1.65	-	1.48	1.65	1.50	1.39	1.30	-	.93	.95	.76	.62	-	-	.59
	Manitoba	-	-	1.71	1.70	-	1.42	1.45	1.36	1.22	1.30	1.27	1.24	1.18	1.13	1.04	.88	.79	.74	.68	.64	.55	.52	.53
Construction - Buildings and Structures only[15]																								
Bricklayer	Vancouver	3.51	3.39	3.17	3.09	2.99	2.99	2.87	2.75	2.60	2.50	2.40	2.40	2.32	2.10	2.10	1.88	1.80	1.75	1.60	1.45	1.29	1.29	1.29
	Winnipeg	3.05	2.80	2.80	2.80	2.70	2.70	2.60	2.50	2.35	2.25	2.25	2.10	2.10	2.00	1.85	1.75	1.60	1.55	1.45	1.35	1.25	1.20	1.20
Electrician	Vancouver	3.97	3.80	3.53	3.43	3.26	3.26	3.00	3.00	2.81	2.42	2.42	2.38	2.30	2.10	1.95	1.78	1.70	1.70	1.50	1.35	1.19	1.19	1.10-1.24
	Winnipeg	3.00	3.00	2.90	2.80	2.80	2.75	2.65	2.55	2.35	2.20	2.10	1.90	1.90	1.90	1.65	1.50	1.40	1.35	1.25	1.15	1.05	1.00 -1.05	1.00-1.05

TABLE 6 - Continued

Industry & Occupation	Region	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Carpenter	Vancouver	3.49	3.34	3.14	3.02	2.92	2.92	2.80	2.68	2.44	2.25	2.22	2.22	2.17	2.10	2.00	1.68	1.60	1.55	1.40	1.25	1.12	1.12	1.12
	Winnipeg	2.80	2.60	2.60	2.60	2.50	2.50	2.40	2.30	2.15	2.05	2.10	1.90	1.90	1.80	1.65	1.50	1.40	1.35	1.25	1.15	1.05	1.00	1.00
Labourer	Vancouver	2.67	2.47	2.37	2.19	2.19	2.19	2.07	1.95	1.81	1.66	1.63	1.60	1.55	1.50	1.40	1.20	1.00	1.00	.90	.80	.71	.65-.81	.60-.75
	Winnipeg	1.95	1.65	1.65	1.65	1.65	1.65	1.55	1.45	1.30	1.20	1.10	1.05	1.05	.95	.88	.80	.75	.75	.70	.63	.63	.52-.65	.50-.55
Railway Transport[16,17]																								
Electrician	Canada & Manitoba	2.49	2.38	2.29	2.23	2.21	2.05	2.05	1.90	1.90	1.81	1.71	1.71	1.71	1.71	1.53	1.29	1.22	1.22	1.05	1.05	.95	.95	.95
Shop Labourer	Canada & Manitoba	1.86-1.88	1.68-1.79	1.68-1.71	1.63-1.64	1.61-1.62	1.48-1.49	1.48-1.49	1.36-1.37	1.36-1.37	1.30-1.31	1.22-1.24	1.22-1.24	1.20-1.29	1.20-1.29	1.05-1.14	.89-.96	.82-.89	.82-.89	.66-.68	.66-.68	.56-.58	.56-.56	.56-.58
Urban and Suburban Transport System																								
Operator - Bus or Trolley[18]	Vancouver	2.76	2.54	2.54	2.47	2.33	2.27	2.20	2.10	1.89	1.82	1.68	1.68	1.59	1.51	1.39	1.27	1.21	1.10	1.05	.85	.85	.85	.78
	Winnipeg	2.40	2.34	2.23	2.18	2.12	2.04	2.00	1.80	1.68	1.63	1.58	1.50	1.50	1.25	1.20	1.05	1.05	1.00	.89	.87	.79	.79	.75
Electrician	Vancouver	3.00	2.72	2.72	2.65	2.51	2.44	2.34	2.23	2.03	1.96	1.82	1.82	1.70	1.56	1.46	1.36	1.32	1.20	1.15	.92	.92	.87	.77-.84
	Winnipeg	-	2.47	2.35	2.29	2.23	2.14	2.00	1.90	1.78	1.73	1.68	1.60	1.60	1.37	1.31	1.16	1.16	1.10	.99	.93	.85	-	.75-.85
Janitors and Labourers[19]	Vancouver	-	-	2.25	2.20	2.07	2.01	2.01	1.89	1.69	1.62	1.48	1.48	1.39	1.31	-	1.15	1.03-1.09	.94-.99	.78-.84	.69-.79	.70-.74	-	.58-.63
	Winnipeg	1.97	1.94	1.93	1.58	1.54	1.48	1.38	1.31	1.35	1.30	1.25	1.17	1.17	1.00	.94	.79-.84	.79-.84	.75-.80	.69-.79	.67-.77	.59-.69	.59-.69	.56
Electric Light, Heat and Power[14]																								
Lineman	Canada	2.75	2.60	2.56	2.47	2.36	2.34	2.19	2.15	1.97	1.86	1.76	1.68	1.59	1.50	1.32	1.17	1.06	.96	.89	.86	.79	.79	.81
	B.C.	3.34	3.29	3.19	3.04	3.02	2.99	2.83	2.71	2.39	2.33	2.29	2.22	2.15	2.14	1.72	1.55	1.49	1.39	1.23	1.08	1.01	1.02	1.00
	Manitoba	2.90	2.63	2.74	2.64	2.50	2.51	-	2.33	1.97	1.85	1.94	1.71	1.61	1.38	1.46	1.21	1.24	1.18	1.03	1.04	.99	.91	.94
Electrician	Canada	2.80	2.69	2.67	2.61	2.50	2.46	-	-	2.12	1.99	1.89	1.82	1.76	1.60	1.44	1.25	1.21	1.15	1.04	.94	.89	.84	.83
	B.C.	3.19	3.08	3.12	2.95	2.94	2.84	-	-	2.38	2.30	2.21	2.17	2.10	2.03	1.72	1.54	1.55	1.42	1.26	1.11	1.08	.90	.87
	Manitoba	2.69	2.58	2.63	2.54	2.47	2.34	-	-	2.08	1.99	1.82	1.75	1.70	1.49	1.36	1.24	1.27	-	1.11	1.05	.96	.89	.90
Labourer	Canada	1.90	1.84	1.77	1.65	1.59	1.53	1.45	1.44	1.38	1.31	1.18	1.12	1.10	1.01	.93	.80	-	-	-	-	-	-	.54
	B.C.	2.32	2.27	2.20	1.94	1.92	1.74	1.75	1.69	1.57	1.53	1.45	1.43	1.41	1.37	1.22	1.11	-	-	-	-	-	-	-
	Manitoba	1.64	1.60	1.73	1.51	1.50	1.45	1.51	1.42	1.35	1.26	1.19	1.17	1.13	1.02	.89	.84	-	-	-	-	-	-	.56
Wholesale Trade[20]																								
Warehouseman	Vancouver	87.	84.	82.65	80.19	79.62	76.14	73.98	70.43	65.73	60.92	57.19	54.06	51.40	48.13	42.87	39.00	36.65	33.03	31.13	29.68	27.05	26.71	-
	Winnipeg	67.	63.	62.35	67.31	60.91	58.39	58.52	55.74	54.43	50.39	47.98	45.22	42.86	39.95	39.79	34.58	32.30	31.53	29.16	25.45	24.96	27.61	-
Truck Driver	Vancouver	97.	91.	90.76	90.52	89.02	85.50	83.28	81.39	80.44	74.32	72.95	69.40	66.67	62.26	58.88	50.56	46.42	45.32	40.26	36.94	29.70	-	-
	Winnipeg	71.	69.	69.68	64.82	64.42	68.63	70.68	65.06	60.31	57.77	52.04	50.59	47.55	44.73	43.93	39.76	36.19	34.78	31.60	28.52	27.27	-	-
Packer	Vancouver	78.	74.	74.26	73.00	72.54	69.86	62.86	64.31	58.51	56.24	51.87	52.92	-	-	-	-	-	-	-	-	-	-	-
	Winnipeg	58.	57.	56.11	57.47	56.69	55.20	49.99	46.70	46.98	44.27	42.46	41.78	-	-	-	-	-	-	-	-	-	-	-
Retail Trade[20]																								
Sales Clerk, Male Type B	Vancouver	81.	78.	78.18	76.97	74.23	72.24	71.29	69.16[21]															
	Winnipeg	77.	75.	73.34	72.62	69.14	62.26	61.02	59.80															
Sales Clerk, Male Type A	Vancouver	76.	58.	55.82	49.98	48.30	-	-	--	67.37	63.35	61.99	58.54	57.81	55.69	49.73	41.86	41.86	38.95	36.24	33.88	32.56	31.55	-
	Winnipeg	62.	60.	48.55	48.66	40.80	38.49	36.58	34.97	63.15	59.00	55.62	52.26	51.76	53.38	51.81	43.81	39.91	37.69	35.46	34.02	31.96	30.84	-

TABLE 6 - Continued

Industry & Occupation	Region	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Sales Clerk, Female Type B	Vancouver	57.	54.	54.41	52.94	50.36	50.81	49.69	46.11[21]															
	Winnipeg	55.	53.	55.25	54.25	-	38.59	38.02	37.27															
Sales Clerk, Female Type A	Vancouver	55.	55.	52.38	50.92	53.10	47.97	43.90	48.42	43.59	41.10	40.82	40.61	38.14	34.08	32.45	27.89	26.38	24.64	22.84	21.14	20.01	19.64	-
	Winnipeg	50.	45.	44.21	43.08	-	27.71	26.90	25.86	38.95	37.17	35.48	34.04	33.18	32.96	31.80	26.99	25.73	21.95	21.71	19.88	18.27	17.94	-
Warehousemen	Vancouver	83.	85.	77.51	79.25	77.73	75.13	73.52	67.75	63.29	60.01	59.61	56.78	52.62	52.58	45.45	38.37	36.29	34.33	31.90	31.18	31.27	31.90	-
	Winnipeg	60.	57.	57.22	55.14	56.77	57.49	57.02	57.40	50.06	46.04	46.00	44.30	39.69	-	45.21	37.68	37.44	33.02	-	-	30.21	27.05	-
Truck Driver	Vancouver	107.	99.	95.54	94.54	91.63	89.24	85.65	82.63	77.38	73.51	66.95	65.72	63.75	62.59	58.26	49.61	46.65	45.94	40.88	39.04	34.37	34.54	-
	Winnipeg	80.	77.	72.20	72.88	69.15	72.76	69.08	65.26	61.36	58.90	57.78	54.21	53.24	50.54	48.05	42.09	41.49	39.60	35.71	32.07	30.27	30.01	-
Store Cashier, Female (other than groceries etc.)	Vancouver	58.	55.	54.12	51.24	50.86	48.77	49.48	50.69	48.13	45.75[21]													
	Winnipeg	51.	45.	47.76	49.33	48.04	44.63	43.69	42.13	40.89	40.07													
Store Cashier, Female, Groceries	Vancouver	78.	76.	74.12	72.96	72.15	65.41	59.97	59.19	53.88	51.92	43.60	42.71	41.67	38.48	34.59	28.51	27.58	26.74	23.66	21.89	20.61	20.50	-
	Winnipeg	67.	61.	58.06	56.52	51.18	50.34	45.74	44.70	43.31	41.38	39.55	37.73	37.41	33.90	32.38	26.85	25.14	23.95	21.66	20.54	18.68	18.00	-
Elementary and Secondary Schools[22,23,24]																								
Average Salaries, All Teachers & Principals	Canada	5393.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B.C.	6214.	6006.	5825.	5743.	5665.	5287.	4913.	4343.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Manitoba	4744.	4642.	4518.	4421.	4414.	4389.	3568.	3383.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Median Salaries, All Teachers & Principals	Canada	4954.	4722.	4522.	4414.	4247.	4055.	3757.	3470.	3162.	2979.	2840.	2654.	2510.	2308.	2050.	1965.	1855.	1689.	1446.	1308.	1207.	1098.	1057.
	B.C.	5775.	5640.	5466.	5442.	5416.	5094.	4710.	4172.	3855.	3785.	3644.	3589.	3510.	3112.	2770.	2668.	2502.	2249.	2042.	1675.	1552.	1471.	1407.
	Manitoba	4250.	5173.	4039.	3968.	3946.	3914.	3244.	3058.	2818.	2667.	2530.	2306.	2136.	2133.	1782.	1689.	1593.	1418.	1304.	1211.	1093.	982.	880.
Laundries and Dry Cleaning																								
Washman	Canada	1.52	1.43	1.44	1.41	1.37	1.35	1.28	1.27	1.20	1.14	1.13	1.08	1.02	.96	.89	.84	.80	.74	.70	-	-	-	-
	B.C.	2.16	1.91	1.85	1.79	1.71	1.69	1.73	1.64	1.50	1.47	1.44	1.39	1.27	1.28	1.16	1.03	.99	.91	.87	.73	.64	.64	30.46
	Manitoba	1.50	1.31	1.28	1.37	1.29	1.17	1.12	-	1.08	1.08	1.07	1.09	.99	.98	.87	.79	.72	.75	.63	-	-	-	-
Driver Salesman[20,25]	Canada	79.	73.	69.43	68.97	64.67	62.90	60.62	61.20	57.98	57.99	52.38	59.64	58.86	55.20	53.08	48.20	45.78	43.30	41.51	-	-	-	-
	B.C.	97.	94.	83.44	83.37	71.97	70.81	79.17	78.55	63.32	66.24	56.64	63.57	63.15	58.42	57.98	51.21	47.79	43.22	44.51	43.72	-	-	30.09
	Manitoba	71.	57.	66.30	61.25	62.44	56.45	55.23	52.78	50.41	52.39	52.40	56.32	51.83	50.86	48.25	42.73	41.33	44.01	36.85[25]	-	-	-	-
Presser (Machine,[26] Female)	Canada	1.02	.94	.91	.85	.81	.80	.80	.81	.71	.65	.61	.64	.59	.58	.53	.51	.49	.46	.44	-	-	-	-
	B.C.	1.37	1.27	1.23	1.18	1.14	1.14	1.15	1.15	1.02	.97	.89	.90	.81	.80	.69	.64	.61	.55	.54	.43	.38	.37	17.11
	Manitoba	.90	.87	.88	.85	.82	.84	.81	.77	.70	.60	.62	.69	.63	.61	.54	.48	.46	.41	.38	-	-	-	-
Restaurants[20]																								
Cook - Male (General)	Vancouver	82.	74.	63.07	64.39	60.27	61.51	64.07	52.66	53.06	51.92	-	48.80	49.45	47.50	47.34	45.06	45.87	45.40	-	-	-	-	-
	Winnipeg	70.	63.	57.81	62.55	60.29	61.25	63.11	57.90	52.20	51.84	-	47.16	45.95	43.29	42.10	38.12	40.83	33.22	-	-	-	-	-
Cashier - Female	Vancouver	47.	50.	45.86	46.35	45.98	43.47	42.04	39.85	38.65	34.38	34.64	34.78	32.21	31.72	29.99	28.04	27.99	25.71	-	-	-	-	-
	Winnipeg	55.	47.	45.67	43.08	42.94	41.59	41.25	40.25	38.08	35.18	36.19	32.40	30.44	29.44	30.64	23.96	24.67	21.70	-	-	-	-	-
Dishwasher - Male	Vancouver	52.	46.	43.14	39.37	36.23	37.27	33.49	34.54	32.87	30.42	29.72	29.17	27.64	28.03	27.11	27.08	27.07	28.02	-	-	-	-	-
	Winnipeg	51.	-	-	-	38.96	36.07	-	-	-	-	-	-	-	-	25.69	26.36	23.73	20.66	-	-	-	-	-
Dishwasher - Female	Vancouver	44.	42.	41.52	37.23	34.44	35.23	34.63	32.31	31.07	29.98	29.33	28.00	28.02	28.34	24.91	24.84	23.72	22.91	-	-	-	-	-
	Winnipeg	37.	35.	33.69	30.83	31.43	32.36	31.15	31.86	28.66	29.38	29.45	27.43	27.51	26.97	23.83	21.68	20.60	20.23	-	-	-	-	-

TABLE 6 - Continued

Industry & Occupation	Region	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Local Government Administration																								
Police Constable[27]	Vancouver	6408.	6132.	5952.	5796.	5700.	5604.	5412.	5100.	4764.	4332.	4188.	3948.	3948.	3816.	3372.	3012.	3012.	2580.	2400.	2280.	2280.	2060.-2171.	2060.-2171.
	Winnipeg	5928.	5640.	5484.	5376.	5064.	5064.	4776.	4464.	4140.	3900.	3996.	3480.	3480.	3290.	3146.	2712.	2712.	2580.	2400.	2082.	2160.	2004.-2052.	2004.-2052.
Fire Fighter[27]	Vancouver	6288.	5940.	5940.	5796.	5700.	5592.	5412.	5100.	4764.	4332.	4128.	3888.	3948.	3816.	3372.	3012.	3012.	2820.	2340.	2220.	2220.	2010.-2118.	2100.-2111.
	Winnipeg	5772.	5436.	5172.	5172.	4872.	4644.	4548.	4332.	4044.	3780.	3564.	3480.	3480.	2964.	2964.	2712.	2712.	2580.	2400.	2082.	2160	2004.-2052.	2004.-2052.
Labourer	Vancouver	2.28	2.19	2.09	2.04	2.01	2.01	1.95	1.84-1.91	1.71-1.83	1.57-1.68	1.52-1.63	1.36-1.40	1.41-1.56	1.36-1.46	1.24-1.34	1.10-1.23	1.09-1.13	1.00	.56-.90	.78	.78	.66-.71	.66-.71
	Winnipeg	1.22-2.03	1.73-2.03	1.68-1.87	1.64-1.83	1.55-1.73	1.55-1.73	1.45-1.55	1.38-1.47	1.28-1.37	1.20-1.35	1.12-1.29	1.12-1.27	1.12-1.32	1.02-1.07	.94-1.00	.85-.91	.85-.91	.78-.83	.70-.75	.55-.60	-	.47-.55	.47-.54

[1]Unless otherwise specifically noted, data were obtained from Canada Department of Labour, Economics and Research Branch, Wage Rates, Salaries and Hours of Labour, Annual Report. (Ottawa, Queen's Printer, various volumes.) For the period under review the wage statistics were gathered from substantially all firms having fifteen or more employees. The wage rates shown in the table represent a weighted average of all rates reported by firms for the last normal pay period preceeding October 1. They are shown as dollars per hour.

[2]Data from 1965 to 1952 are obtained from DBS, Farm Wages in Canada, Catalogue 21-002, Quarterly reports for August 15 annually, earlier data were obtained from Department of Labour, Economics and Research Branch, Wage Rates, Salaries and Hours of Labour, various annual reports.

[3]Wages without board, average per day to male hired help as at August 15.

[4]Wages without board, average per month to male hired help as at August 15.

[5]Basic rate per hour including basic rates of those on incentive bonus plans.

[6]Wage rates per hour of workers on time work only.

[7]The rate for 1957 is the rate for the Prairie Provinces. The error due to this variation should be negligible due to the interlocking of the industry at Flin Flon for the two major producing provinces of the three.

[8]The wage rate data 1963-65 included drivers of both "light" and "heavy" trucks. From 1959-63 both categories were reported but only light truck rates were selected as these seemed most consistent with the remainder of the data. For 1958 and preceeding years motor truck driver rates generally are again reported.

[9]All "Manitoba" rates for occupations shown for the Bakeries and Clothing Industries for 1946 and previous years are averages reported for the three Prairie Provinces. However, an examination of the data for the late forties for all three provinces showed that little error would result by using "Prairie" rather than "Manitoba" data in these cases. For the Bakery Industry, the inter-prairie difference was minor but it tended to increase the average rate shown, thus moderating the Manitoba-Canada differential and thereby running counter to the trend.

[10]The 1943 data are shown as weekly average wage rates.

[11]The 1944 and 1943 data are of dubious value in this table as they represent Manitoba-British Columbia (also noted as Winnipeg-Vancouver) averages.

[12]British Columbia has been included in the figure shown for 1945.

[13]Winnipeg data only was available for this industry - all comments in text.

[14]The "Manitoba" rates for 1946 and previous years are averages calculated for the Prairie Provinces. As a result, the average rates shown for these early years show a slight upward bias.

[15]The rates shown are "Fair Wages". These tend to be the "prevailing rates" in a community and as such would be analagous to modal rather than mean rates.

[16]The rates shown are not average rates but rather the minimum rates for the occupational title negotiated in the collective agreements between the major railway and their unions.

[17]In addition to the basic rate a flat six cents additional was paid to all workers in all railway occupations in 1943, 44 and 45.

[18]Rates for this occupation for both urban areas are not average but maximum wage rates per hour based on length of service.

[19]Janitor's rates are shown from 1958-1965 and Labourer's rates are reported for 1957 and earlier.

[20]Rates are shown as dollars per week.

[21]See comments relative to this occupation in the text.

[22]Rates are dollars per year.

[23]The "Canada" figures exclude the Province of Quebec as salaries paid the numerous teachers in parochial schools would tend to unduly distort the averages elsewhere in Canada.

[24]Data are derived from various volumes DBS, Education Division, Salaries and Qualifications of Teachers in Public, Elementary and Secondary Schools, Catalogue 81-202. (Ottawa: Queen's Printer, various annual reports.)

[25]Average rates for 1953 and before include commissions.

[26]1956 and prior this occupation was titled "Flatwork Ironer" but the job functions were similar. Prior to 1949 the occupation "Laundry Operator" the then lowest rated female title, is used as an approximate equivalent.

[27]Rates represent maximum basic wages per year.

the assumption can be made that trends in the wages of the farm labourer reflect economic conditions for farmers generally. Therefore, only one occupation is shown for this industry.[1] On the other hand, two kinds of wage rates have been reported for this occupation, a daily and a monthly rate. Presumably, the daily rate would reflect the more temporary transient labour force (especially as the date for which the data are collected coincides with the beginning of the harvest season), while the monthly rate would tend to reflect the more permanent farm work force. The daily rate should be influenced more by local and annual conditions and as a consequence should exhibit more variation both geographically and annually.

The second industry to be studied is the Metal Mining industry. All types of metallic minerals are included in this industry. However, data for iron mines since 1955 and gold mines since 1953 have been reported separately and have been excluded from the figures shown. Only minor error can result from this variation as gold and iron mining are very small parts of the Manitoba industry. This data make possible a selection of three representative occupations. An obvious highly skilled specialized occupation is that of the Miner.

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[1]Of the 59,301 associated labour force members (Table 5), 19,055 are classed as Farm Labourers (DBS, 1961 Census of Canada, "Industry Groups by Detailed Occupations...," Table 15, p.2). Of the latter 3,086 are classed as Paid Year Round Workers (DBS, 1961 Census of Canada, "Agriculture: Manitoba" Catalogue 96-537, Table 31, p. 7).

However, miners' wages tend to be complicated by incentive bonus plans as are the rates of many underground workers. Consequently it seemed preferable to choose an underground occupation which had a high basic rate and showed little variation due to incentive plans. The Cage and Skip Tender title was found to satisfy these requirements. For the second kind of occupation, a number of tradesmen generally employed in various industries could have been selected. The Electrician classification was chosen because it is common to many industries and is one of the highest paid groups. The third occupation selected was that of the Surface Labourer. This occupation was judged to be more general than the underground labourer also employed by the industry.

The next industry to be studied is Slaughtering and Meat Packing. In recent years this industry has excluded animal oil and poultry products although both appear to have been included in earlier broader industry definitions (prior to 1949). This slight difference was disregarded. The selected specialized occupation is the highest rated, the Butcher. The only general occupation representing some level of skill for which data were available was the Truck Driver. Consequently, this was the second occupation selected despite the fact that the job functions varied slightly during the term of the study. Some data were available for Carpenters rates and these were included as some indication of the more skilled trade rates in the industry. Again the Common Labourer was selected as the low-skilled occupation.

Within the Food and Beverage major group, a second industry was found significant to the economy of Manitoba. This was Bakeries (excluding biscuits). The highest paid specialist within the industry was the Mixer (Doughman). While skilled maintenance trades are employed in this industry, sufficient comparative data were not available and no high-skilled linking occupation could be included. However, the competitive linkage is operative in the third type of occupation. In this case data for two jobs were plentiful so both were included. These were General Bakery Helper - Male, and General Bakery Helper - Female.

In the next major group, the Clothing Industries, the wage data were gathered on the basis of individual industries defined quite differently from the standard census classifications. However, wage data were reported for the full term of this study, on the basis of a consistent definition. Following the definition adopted for wage rate reporting purposes, two industries, Work Clothing and Sportswear, and Women's and Misses' Suits and Coats were selected. In Manitoba these groups are analogous to census groups in that the first represents Men's Clothing, and the second, Women's Clothing. In neither of these industries was it possible to obtain rates for a highly skilled general occupation. On the other hand, both industries had well-paid, clearly defined, specialized and skilled categories. In both cases the chosen occupation

was described as Cutter. Both industries also had clearly defined low-paid, low-skilled categories titled Sewing Machine Operator - Female, and Button Sewer-Female, respectively. A complicating factor in these industries is that both time rates and incentive systems are used for the low-skilled occupations. Consequently wage data are reported either as average rates or straight-time average earnings. However, only the straight time rates were selected for this study. A final point to be noted concerns the location of Manitoba's clothing industry. The major group was associated with 5,803 workers in 1961, of which 5,365 were located in Winnipeg.[1] Thus, despite recent tendencies for some industries to migrate to less populous areas, the clothing industry in Manitoba in 1961 was still 92.5% in Winnipeg. Such a domination of the provincial industry permits the assumption that the Winnipeg and the Manitoba wage averages in this industry are virtually identical. As Manitoba data were not available for the Women's and Misses' Suits and Coat Industry, Winnipeg data were used directly in the comparisons with the Canada figures. Also, as this industry is not significant in British Columbia, no comparison with that province was possible.

Turning to the major group, Printing, Publishing and

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[1]DBS, 1961 Census of Canada, "Industry Groups by Detailed Occupations. . . ," Table 15, p. 31, and "Industries by Sex, Metropolitan Areas," Catalogue 94-519 (Ottawa Queen's Printer), Table 2, p. 16.

Allied Industries, only for Printing and Publishing other than Daily Newspapers were adequate occupational wage data reported. Moreover, the data were collected only for specialized workers on the basis of urban areas. Therefore, the only kinds of occupations which could be chosen were the high rated, Compositor - Hand and the low-rated, Bindery Girls. Of course, the low rated occupation provides some indication of the inter-industry linkage effect. The urban area data also made possible only a Winnipeg-Vancouver comparison.

In this industry the use of cities to represent their respective provinces causes very little distortion to the analysis, for of the 4,150 Manitoba and 7,020 British Columbia members of the labour force associated with the major group, 3,603 and 4,691 were in Winnipeg and Vancouver respectively.[1] That is, in each case at least two-thirds of the industry was located in the urban area. It should be noted that employment data is available only for the major group. Therefore, the further assumption is necessary that the two parts of the group (i.e. that part covering daily newspapers and the remainder of the group as a whole) are proportionately shared between each selected city and the balance of the respective province.

The Metal Fabricating major group contained no

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[1] Ibid., Table 15, p. 42, and Table 2, p. 18 respectively.

predominant industry. However, the single largest industry and one containing similar occupational titles to much of the rest of the group was Metal Stamping, Pressing and Casting. In the wage data, the most comparable grouping was called Sheet Metal Products. In this industry, selection of only two of the three desired occupational types was possible. The highest rated, skilled title was the Sheet Metal Worker. The lowest rated and least skilled occupation was again that of the Common Labourer.

Within the Construction industrial division, wage data have been collected for the industry called Construction-Buildings and Structures Only. This classification appears to be analogous to the census data major group defined as General Contractors. Further, the data reported are not average rates actually in force. Rather they represent,

> . . . rates determined by the Industrial Relations Branch of the Department of Labour, under the provisions of the Fair Wages and Hours of Labour Act, for use on construction contracts of the Government of Canada at October, 1. . . . These are 'fair wages' as defined in the Act, namely wages generally accepted as current for competent workmen in the localities indicated, but in all cases wages that are deemed to be fair and reasonable.[1]

While "fair wages" as defined are closer to modal rather than

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[1]Canada Department of Labour, Economics and Research Branch, Wages, Salaries. . . , p. 182.

mean wages, they should nevertheless provide an indication of the wage trends. Also, it is once more necessary to use Winnipeg-Vancouver data. However, in this industry the urban areas represent a rather low proportion of the relative labour force in Manitoba and British Columbia: 53.5% and 50.9% respectively.[1] Nonetheless, these figures are still high enough, to insure that averages of wages reported for the industry from the urban areas will represent the weighted averages of the wage rates for the provinces as a whole.

An advantage of the data for the industry, Construction-Building and Structures Only, is its complete nature for a number of clearly defined occupations. The Electrician and the Carpenter can both be selected to represent the high-paid, skilled, inter-industry linkage groups. The Bricklayer is clearly the highest paid specialist in the industry, while manual Labourers are clearly the lowest rated and the most unskilled group.

It is of some interest to note in both compared provinces, a construction boom has been underway since 1961. This boom would, of course, invalidate much of the previous argument if it did not affect both provinces substantially to

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[1] Calculated from figures shown in DBS, 1961 Census of Canada, "Industries by Sex, Canada and Provinces," Table 1, p. 8, and "Industries by Sex, Metropolitan Areas," Table 2, p. 20.

the same extent. A check of the employment indices in the Construction division for each province reveals that the Manitoba index increased 10.2 points while the British Columbia index increased 13.4 points.[1] Therefore, it is apparent that both provinces were similarly affected by their respective construction booms.

Turning to the next industrial division, Transportation, Communication and Other Utilities, the largest major group is Transportation and within it, the largest single industry is Railway Transport. This industry is characterized by the two major railway companies which with their unions negotiate wage contracts covering the whole of the country. Consequently with the exception of inter-divisional differences in some occupational categories virtually no geographical differentials exist in this industry. Nonetheless as this industry is of particular importance to the economy of Manitoba, the rates for the two kinds of inter-industry occupations have been included in the table. The specific occupations selected were, Electricians as the highest rated and the Shop Labourer as the lowest rated. For the latter, it was necessary to show a narrow range of rates in which the low figure was the minimum divisional rate and the high figure the maximum divisional rate in the country. While it was not clear from

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[1]DBS, Review of Employment and Payrolls, 1964, Catalogue 72-201 (Ottawa: Queen's Printer), Table 9, pp. 40 and 41.

the source which divisional rate was applicable to Manitoba, all of western Canada is one wage division for the railroads. Therefore, the high rate seems the most appropriate. Further, the narrowness of this range, particularly in the initial and terminal periods of this study coupled with the fact that many occupations have no inter-divisional variation in rates, is evidence of the virtual lack of a geographic differential in this industry.

A second significant industry in the Transportation major group, and one which could be expected to show a maximum geographical differential, is Urban and Suburban Transportation Systems. There has been some change of definition of this industry -- from Electric Street Railways to the present title -- but its skilled occupational categories have remained clearly defined. A highly rated specialist occupation was the Operator - Bus or Trolley, and the Electrician was again selected as the highly-skilled inter-industry job title. The lowest rated occupation in recent years has been the Janitor. However, this title has been recorded in the data only since 1958 and prior to that time it is necessary to use the rates recorded for Labourers. These rates are not strictly comparable, for in the Manitoba figures in recent years, both rates were recorded and Labourers tended to be paid fifteen to twenty cents more per hour. However, in the year 1953 rates for both occupations were recorded in both cities. At that time, in

Winnipeg the rates were identical while in Vancouver the Labourer benefitted by a two cent differential. Also, in this industry it is again necessary to use a Winnipeg-Vancouver comparison. In this case the distinction between city and province is almost meaningless, especially in Manitoba, simply because of the definition of the industry.

Another major group which can be selected in the industrial division is titled, Electric Power, Gas and Water Utilities. For this group, wage data are reported only for the Electric Light and Power Industry. The highest rated occupation in Manitoba is that of the Lineman. Electricians are representative of the common but skilled classification, and Labourers are the lowest rated workers.

Turning to the Industrial Division, Trade, each of the two major groups is very significant to the Manitoba economy. Wholesale Trade is less important in absolute terms but is more important relatively. However, for neither group are required wage data reported for any more specific industry classification. Consequently, each major group must be dealt with as a separate industry.

In the Wholesale Trade industry, wage rate data are reported for urban areas. Therefore it is once more necessary to resort to a Winnipeg-Vancouver comparison of the data. In this industry, of the 20,208 labour force members in Manitoba, 16,055 are located in Winnipeg while of the 32,074 labour

force members in British Columbia, 22,757 are located in Vancouver.[1] Again, it is clear that the urban area data must approximate that of the respective province. To represent this industry three occupational titles were selected. These were determined almost exclusively by the available data. Warehouseman was selected as a high rated industry specialist, Truck Driver was selected as the high rated occupation common to many industries. The low rated job titles were represented for recent years by the Packer (Male), but data limitations did not permit a complete study of this nor of any other low-rated job.

In the Retail Trade industry a number of problems were encountered with changing concepts. First, prior to 1956 wage averages were calculated for Retail Trade as a whole. After this time, the industry was divided into two classifications -- Retail Trade, Grocery, Meat and Produce Stores and Other Retail Trade. However, the occupational title Cashier - Store, Female, was common to both classifications of the industry and could be used as an example of the effect on the averages of the change in grouping. Other occupations selected were reported only in the latter classification. Also, data were continuous for the entire term of the study for only two occupations -- Warehouseman and Delivery Truck Driver. The

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[1]DBS, 1961 Census of Canada, "Industries by Sex: Canada and Provinces," Table 1, p. 10, and "Industries by Sex: Metropolitan Areas," Table 2, p. 22.

first, although only moderately rated in terms of wages, was taken as being representative of a speciality to the industry, while the second was taken as the skilled occupation general to a number of industries. The previously noted Female Cashier was the lowest rated occupation for which data were available. To be more representative of this very important industry to Manitoba and to include higher rated workers, two additional occupational titles were chosen. These were Sales Clerks - Male, and Sales Clerks - Female. However, the sales occupation was defined as three separate job titles after 1957. Type A required little knowledge of the goods sold and working behind a counter selling inexpensive items; Type B required knowledge of the products and involved selling wearing apparel, small appliances, jewellery, china, general hardware, etc., while Type C required detailed knowledge and skill in salesmanship, sold higher priced appliances, followed up sales by calls on the customer and often received wages both as salary and commissions.[1] For the purposes of this study it appears that types A and B would be the more comparable by job function to the previous general clerk classification. Both were included in the table. It should be noted only the rates of time workers are being considered. Therefore all commission basis sales persons are

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[1]Canada Department of Labour, Economics and Research Branch, Wages, Salaries . . . , p. 207.

excluded from this study.

As wage data for the Retail Trade industry were reported only for urban areas, the data once more forced a Winnipeg-Vancouver comparison. Retailing, obviously, is carried on throughout each province but 67.8% of the Manitoba industry is located in Winnipeg and 58.2% of that of British Columbia is in Vancouver.[1] Consequently, the assumption that the urban wage averages must closely approximate those of each province continues to be warranted.

Elementary and Secondary Schools is the one industry in the Education and Related Services major group for which occupational wage data on a provincial basis are available, and Teacher is the only occupational title. However, of the 11,164 labour force members[2] associated with this industry in 1961, 7,460 were teachers.[3] Clearly, the industry is well represented despite the lack of occupational titles. However, the only data available for the entire term of this study are in terms of median annual salaries although for recent years, both mean and median data are available on a provincial basis. Both kinds of wage averages were included

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[1]DBS, 1961 Census of Canada, "Industries by Sex: Canada and Provinces," Table 1, p. 10, and "Industries by Sex: Metropolitan Areas," Table 2, p. 22.

[2]DBS, 1961 Census of Canada, "Industries by Sex: Canada and Provinces," Table 1, p. 12.

[3]DBS, Education Division, Salaries and Qualifications of Teachers in Public, Elementary and Secondary Schools 1964-65 (Ottawa: Queen's Printer), Table 1, p. 16.

in the table. It is to be noted from Table 7B that the two kinds of averages exhibit essentially the same relative trends although the amount of the relative differential is increased slightly (that is the calculated percentages are lower), when median figures are used.

The next major group to be considered is Personal Services. In this group, Laundries and Dry Cleaning is the one industry which has wage and employment data reported on the basis of a consistent industry definition. All three types of occupations were reported. Washman was selected as the high-rated industry specialist, Truck Driver was chosen as the high-rated general skill type while the Presser (Female) was the representative of the low-rated occupations. Both Manitoba-Canada and Manitoba-British Columbia comparisons were made. A second industry in this major group is Hotels, Restaurants and Taverns. Wage data are available for a Manitoba-British Columbia comparison for a part of this industry, Restaurants. This information was included in the tables. The Cook, and the Dishwasher, (both male and female are separately reported) were obvious choices as the high and low skilled occupations. It was not possible to select a title that was both high rated and general to a number of industries. However, a medium-rated title, Cashier-Female was available and it was included as the representative of the third occupational type.

The final major group with available occupational data was Local Administration. As in the case of Urban and Suburban Transportation Systems the distinction between city and province is virtually meaningless so little accuracy is lost in using only a Winnipeg-Vancouver comparison. As for the job titles chosen, only three occupations were consistently reported for the entire term of this study so all three were included. Of these, two titles, Police Constable and Fireman represented the high-rated specialists and the other was the low-rated Labourer. Nonetheless, these occupational titles were highly representative of the industry in that they represented 41.7% of the associated labour forces.[1]

The completed Table 6 records wage rate data for a total of eighteen industries and forty-nine representative occupations. From this information it was necessary to calculate percentages which would reflect the relative wage differentials. These are shown in Table 7; Part A, recording the Manitoba-Canada relatives and Part B recording essentially the Manitoba-British Columbia relatives as calculated from both the Manitoba-British Columbia and Winnipeg-Vancouver wage rates. Of course, it was not possible to include the Railway Transport industry in this table.

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[1]DBS, 1961 Census of Canada, "Industry Groups by Detailed Occupations. . .," Table 15, pp. 161-62.

TABLE 7[1]

PART A

MANITOBA-CANADA WAGE DIFFERENTIALS BY PERCENTAGE

FOR SELECTED INDUSTRIES

Industry & Occupation	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Agriculture																							
Farm Labourer	106.25	108.04	106.02	106.17	107.59	107.69	109.09	107.89	109.33	108.45	107.57	112.50	119.11	117.91	114.29	114.81	128.16	107.55	105.60	114.34	110.66	126.83	95.02
Farm Labour	97.59	98.94	95.62	95.50	97.66	98.81	96.40	101.94	95.42	100.66	94.11	93.52	100.71	101.43	104.44	102.50	105.47	98.56	94.09	102.17	100.55	103.41	94.58
Metal Mines																							
Cage & Skip Tenders	109.50	108.58	-	-	-	-	-	-	106.09	-	-	-	-	111.85	109.52	110.71	113.33	108.91	111.70	112.34	106.41	106.41	106.57
Electrician	108.30	104.26	-	-	-	-	-	-	101.82	-	-	-	-	113.66	110.59	113.17	110.56	112.82	109.43	113.82	110.22	113.09	109.63
Surface Labourer	113.77	106.70	-	-	-	-	-	-	108.75	-	-	-	-	114.16	108.54	104.00	106.18	97.77	101.23	105.97	101.58	100.00	90.16
Slaughtering & Meat Packing																							
Butcher	110.77	112.16	111.31	111.57	111.84	115.00	108.76	113.29	105.46	105.32	103.68	103.79	110.45	107.53	108.45	105.78	102.60	105.50	105.26	103.52	100.00	101.42	101.42
Labourer	104.97	104.56	107.36	107.81	103.22	106.74	102.87	103.68	98.14	96.73	100.00	97.10	97.76	101.56	96.77	96.22	104.00	-	-	-	-	-	-
Carpenter	-	-	-	-	-	101.79	-	-	-	96.31	97.23	-	104.16	103.77	108.44	102.96	-	-	-	-	-	-	-
Truck Driver	81.41	92.23	96.20	92.64	-	-	-	100.52	104.51	103.59	103.12	100.64	101.93	108.10	110.41	107.50	103.57	102.83	105.31	103.70	102.94	107.81	106.45
Bakeries (Excluding biscuits)																							
Mixer (Doughman)	114.42	114.72	118.22	120.76	119.66	116.47	119.01	116.04	111.40	109.85	110.52	111.11	107.25	100.00	105.40	100.00	97.91	96.77	94.11	97.36	95.58	105.00	95.07
General Bakery Helper (Male)	127.49	121.73	121.01	121.33	119.72	100.00	116.79	117.69	112.50	107.07	112.74	108.16	104.25	105.61	109.41	106.57	100.00	101.49	96.66	94.33	94.00	91.11	103.17
General Bakery Helper (Female)	150.76	135.15	128.81	133.61	149.10	91.96	137.50	137.50	129.70	129.21	136.58	127.16	125.64	118.91	126.47	122.22	123.11	123.07	116.66	104.87	102.56	100.00	97.92
Work Clothing & Sportswear																							
Cutter	93.93	98.91	96.75	97.14	98.83	95.03	92.30	92.35	94.11	93.87	93.47	95.52	96.94	95.83	94.59	100.00	102.91	116.16	104.44	107.50	109.21	121.31	103.15
Sewing Machine Operator (Female)	102.88	92.55	92.30	100.00	108.75	109.41	108.53	113.41	114.10	113.88	101.42	97.64	105.00	103.84	104.10	107.35	103.33	101.72	102.00	108.69	106.97	112.50	105.45
Women's and Misses' Suits and Coats																							
Cutter	80.85	72.40	74.49	77.92	76.71	66.97	77.46	73.13	74.35	79.36	79.55	75.84	79.31	79.26	75.77	93.03	77.63	72.66	71.65	77.11	78.70	82.17	84.52
Button Sewer (Female)	80.99	84.34	83.18	86.79	88.00	84.31	84.37	86.02	75.25	85.05	89.87	-	-	-	-	-	-	-	-	-	-	72.91	92.40

TABLE 7 - PART A Continued

INDUSTRY & OCCUPATION	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Sheet Metal Products																							
Sheet Metal Worker	89.41	90.71	92.85	92.17	92.64	91.96	94.90	92.99	92.27	95.31	93.58	89.25	83.70	83.42	79.62	80.43	85.71	83.96	80.53	95.87	96.80	87.91	92.30
Labourer	-	-	103.01	106.91	-	97.26	99.31	94.44	87.14	96.29	98.44	89.20	88.05	89.68	88.13	97.77	95.18	96,10	98.55	106.66	96.49	96.29	103.92
Electric Light, Heat and Power																							
Lineman	105.45	101.15	107.03	106.88	105.93	107.26	-	108.37	100.00	99.46	110.22	101.78	101.25	92.00	110.60	103.41	116.98	122.91	115.73	120.93	125.31	115.18	116.04
Electrician	96.07	95.91	98.50	97.31	98.80	95.12	-	-	98.11	100.00	96.29	96.15	96.59	93.12	94.44	99.20	104.95	-	106.73	111.70	107.86	105.95	108.43
Labourer	86.31	86.95	97.74	91.51	94.33	94.77	104.13	98.61	97.82	96.18	100.84	104.46	102.72	100.99	95.69	105.00	-	-	-	-	-	-	103.70
Elementary and Secondary Schools																							
Median Salaries, All Teachers and Principals	85.78	88.37	89.31	89.89	92.91	96.52	86.34	88.12	89.12	89.52	89.08	86.88	85.09	92.41	86.92	85.95	85.87	83.95	90.17	92.58	83.56	89.43	83.25
Laundries and Dry Cleaning																							
Washman	98.68	91.60	88.88	97.16	94.16	86.66	87.50	-	90.00	94.73	94.69	100.92	97.05	102.08	97.75	94.04	90.00	101.35	90.00	-	-	-	-
Driver Salesman	89.87	78.08	95.49	88.80	96.55	89.75	91.10	86.24	86.94	90.34	100.03	94.43	88.05	92.13	90.90	88.65	90.27	101.63	88.77	-	-	-	-
Presser (Machine, Female)	88.23	92.55	96.70	100.00	101.23	105.00	101.25	90.58	98.59	92.30	101.63	107.81	106.77	105.17	101.89	94.11	93.87	112.19	86.36	-	-	-	-

TABLE 7

PART B

MANITOBA-BRITISH COLUMBIA WAGE DIFFERENTIALS BY PERCENTAGE

FOR SELECTED INDUSTRIES

Industry & Occupation	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Agriculture																							
Farm Labourer	94.44	94.00	87.12	85.14	87.62	87.50	89.36	88.17	96.47	90.58	88.75	90.00	115.71	106.75	100.00	100.00	109.35	97.82	94.95	107.60	107.32	125.96	100.47
Farm Labour	79.29	81.73	78.47	77.98	79.90	81.46	82.56	84.86	82.02	91.51	80.00	81.76	96.57	97.24	100.71	91.11	102.75	88.46	86.94	87.12	94.41	95.13	92.08
Metal Mines																							
Cage & Skip Tenders	111.81	111.45	-	-	-	-	-	-	118.07	-	-	-	-	104.86	102.98	109.73	106.25	100.91	111.70	102.24	109.21	110.66	108.00
Electrician	103.98	103.06	-	-	-	-	-	-	107.72	-	-	-	-	109.58	105.69	110.60	109.67	106.45	110.47	108.08	110.22	113.09	104.59
Surface Labour	108.25	111.89	-	-	-	-	-	-	107.40	-	-	-	-	102.23	104.95	95.41	100.98	86.27	94.25	88.75	91.42	93.93	80.88
Slaughtering & Meat Packing																							
Butcher	101.98	100.00	101.65	102.99	106.30	106.97	101.44	105.44	96.01	96.73	96.57	97.61	104.32	96.91	104.76	98.46	96.72	97.45	100.00	97.77	93.42	92.20	92.20
Carpenter	-	-	-	-	-	-	-	-	-	89.70	88.44	-	93.08	92.69	93.82	92.66	--	-	-	-	-	-	-
Truck Driver	71.87	84.16	87.50	79.74	-	-	-	95.02	96.35	96.64	94.82	93.93	98.13	101.91	107.43	103.20	98.30	100.92	103.12	97.67	97.22	94.52	94.28
Labourer	100.95	100.48	105.69	107.25	102.12	102.70	101.70	97.68	95.78	94.26	95.27	95.03	93.57	96.29	91.60	91.07	97.19	-	-	-	-	-	-
Bakeries (Excluding biscuits)																							
Mixer (Doughman)	74.14	75.33	79.64	80.36	78.30	76.49	73.76	71.21	70.33	73.23	71.70	71.79	67.85	66.29	72.67	73.18	69.62	70.86	74.07	72.54	78.31	-	-
General Help																							
Male	84.49	75.67	79.16	77.11	70.96	57.20	60.47	64.28	64.90	65.40	89.14	80.91	60.12	73.43	78.81	70.43	64.86	73.91	69.87	70.42	75.80	-	95.61
Female	125.64	100.58	96.81	91.37	95.42	60.58	73.71	68.75	77.51	-	105.66	96.26	73.14	75.21	88.65	86.51	81.17	83.11	82.35	91.48	86.95	78.72	78.83
Work Clothing & Sportswear																							
Cutter	82.30	87.14	84.43	83.33	87.56	82.25	77.41	-	79.55	83.13	82.69	-	90.71	88.46	81.39	-	-	103.60	-	88.65	-	93.67	-
Sewing Machine Operator (Female)	93.85	73.72	76.36	101.20	-	114.81	-	-	118.66	112.32	-	89.24	98.92	93.10	79.16	117.74	82.66	89.39	91.07	92.59	-	107.14	-
Printing & Publishing Other than Daily Newspaper																							
Compositor	83.98	85.00	82.96	82.14	83.33	87.68	81.68	78.84	78.65	83.77	84.51	87.55	86.66	82.03	85.63	83.83	86.70	87.41	85.93	85.08	84.54	85.32	82.58
Bindery Girls	70.24	70.76	70.21	74.57	71.83	68.02	64.88	65.58	68.30	70.58	71.53	72.65	72.58	71.31	76.92	76.92	72.52	74.07	72.46	76.78	72.22	71.69	86.17

TABLE 7 - PART B Continued

Industry & Occupation	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Sheet Metal Products																							
Sheet Metal Worker	67.25	68.69	70.60	69.96	72.29	71.52	74.27	73.16	74.90	79.22	76.08	73.12	68.03	72.27	64.50	65.29	70.37	68.32	64.08	74.40	78.44	69.56	55.04
Labourer	-	-	89.52	87.62	-	-	83.33	72.34	73.93	-	85.81	75.15	78.66	81.29	80.00	-	84.94	77.89	89.47	103.22	-	-	89.83
Construction - Buildings & Structures only																							
Bricklayer	86.89	82.59	88.32	90.61	90.30	90.30	90.59	90.90	90.38	90.00	93.75	87.50	90.51	95.23	88.09	93.08	88.88	88.57	90.62	93.10	96.89	93.02	93.02
Electrician	75.56	78.94	82.15	81.63	85.88	84.35	88.33	85.00	83.62	90.90	86.77	79.83	82.60	90.47	84.61	84.26	82.35	79.41	83.33	85.19	88.24	84.03-88.23	90.90-84.67
Carpenter	80.22	77.84	82.80	86.09	85.61	85.61	85.71	85.82	88.12	91.11	94.59	85.58	87.55	85.71	82.50	89.28	87.50	87.09	89.28	92.00	93.75	89.28	89.28
Labourer	73.03	66.80	69.62	75.34	75.34	75.34	74.87	74.35	71.82	72.29	67.48	65.62	67.74	63.33	62.85	66.66	75.00	75.00	77.00	78.75	88.73	80.00-80.24	83.33-73.33
Urban and Suburban Transport System																							
Operator - Bus or Trolley	86.95	92.12	87.79	88.25	90.98	89,86	90.90	85.71	88.88	89.56	94.04	89.28	94.33	82.78	86.33	82.67	86.77	90.90	84.76	102.35	92.94	92.94	96.15
Electrician	-	90.80	86.39	86.41	88.84	87.70	85.47	85.20	87.68	88.26	92.30	87.91	94.11	87.82	89.72	85.29	87.87	91.66	86.08	101.09	92.39	-	97.40-101.19
Janitors and Labourers	-	-	85.77	71.81	74.39	73.63	68.65	69.31	79.88	80.24	84.45	79.05	84.17	76.33	-	68.69-73.04	76.69-77.06	79.78-80.80	88.46-94.04	97.10-97.46	84.28-93.24	-	96.55-88.88
Electric Light, Heat and Power																							
Lineman	86.82	79.93	85.59	86.84	82.78	83.94	-	85.97	82.42	79.39	84.71	77.02	74.88	64.48	84.88	78.06	83.22	84.89	83.73	96.29	98.01	89.21	94.00
Electrician	87.33	83.76	84.29	86.10	84.01	82.39	-	-	87.39	86.52	82.35	80.64	80.95	73.39	79.06	80.51	81.93	-	88.09	94.59	88.88	98.88	103.44
Labourers	70.68	70.48	78.63	77.83	78.12	83.33	86.28	84.02	85.98	82.35	82.06	81.81	80.14	74.45	72.95	75.67	-	-	-	-	-	-	-
Wholesale Trade																							
Warehouseman	77.01	75.00	75.43	83.93	76.50	76.68	79.10	79.14	82.80	82.71	83.89	83.64	83.38	83.00	92.81	88.66	88.13	95.45	93.67	85.74	92.27	103.36	-
Driver	73.19	75.82	76.77	71.60	72.36	80.26	84.87	79.93	74.97	77.73	71.33	72.89	71.32	71.84	74.60	78.63	77.96	76.74	78.48	77.20	91.81	-	-
Packer	74.35	77.02	75.55	78.72	78.15	79.01	79.52	72.61	80.29	78.71	81.85	78.94	-	-	-	-	-	-	-	-	-	-	-
Retail Trade																							
Sales Clerk, Type B Male	95.06	96.15	93.80	94.34	93.14	86.18	85.59	86.46															
Sales Clerk, Type A Male	81.57	103.44	86.97	97.35	84.47	-	-	-	93.73	93.13	89.72	89.27	89.53	95.85	104.18	104.65	95.34	96.76	97.84	100.41	98.15	97.74	-
Sales Clerk Type A Female	96.49	98.14	101.54	102.47	-	75.94	76.51	80.82															
Sales Clerk Type B Female	90.90	81.81	84.40	84.60	-	57.76	61.27	53.40	89.35	85.21	86.91	83.82	86.99	96.71	97.99	96.77	97.53	89.08	95.05	94.03	91.30	91.34	-
Warehouseman	72.28	67.05	73.82	69.57	73.03	76.52	77.55	84.72	79.09	76.72	77.16	78.02	75.42	-	99.47	98.20	103.16	96.18	-	-	96.61	84.79	-
Truck Driver	74.76	77.77	75.57	77.08	75.46	81.53	80.65	78.97	79.29	80.12	86.30	82.48	83.51	80.74	82.47	84.84	88.93	86.19	87.35	82.14	88.07	86.88	-

TABLE 7 - PART B Continued

Industry & Occupation	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Retail Trade																							
Store Cashier Female (other than groceries etc.)	87.93	81.81	88.24	96.27	94.45	91.51	88.29	83.11	84.95	87.58													
Store Cashier Female (Groceries)	85.89	80.26	78.33	77.46	70.93	76.96	76.27	75.51	80.38	79.69	90.71	88.33	89.77	88.09	93.61	94.17	91.15	89.56	91.54	93.83	90.63	87.80	-
Elementary and Secondary Schools																							
Average Salaries, All Teachers and Principals	76.34	77.28	77.56	76.98	77.91	83.01	72.52	77.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Median Salaries, All Teachers and Principals	73.59	73.98	73.89	72.91	72.85	76.83	68.37	73.29	73.09	70.46	69.42	64.25	60.85	68.54	64.33	63.30	63.66	63.05	63.85	72.29	70.42	66.75	62.54
Laundries and Dry Cleaning																							
Washman	69.44	68.58	69.18	76.53	75.43	69.23	64.73	-	72.00	73.46	74.30	78.41	77.95	76.56	75.00	76.69	72.72	82.41	72.41	-	-	-	-
Driver Salesman	73.19	60.63	79.45	73.46	86.75	79.72	69.76	67.19	73.78	79.09	92.51	88.59	82.07	87.05	83.21	83.44	86.48	101.82	82.79	-	-	-	-
Presser	65.69	68.50	71.54	72.03	71.92	73.68	70.43	66.95	68.62	61.85	69.66	76.66	77.77	76.25	78.26	75.00	75.40	74.54	70.37	-	-	-	-
Restaurants																							
Cook - Male (General)	85.36	85.13	91.66	97.14	100.03	99.57	98.50	109.95	98.37	99.84	-	96.63	92.92	91.13	88.93	84.59	89.01	81.98	-	-	-	-	-
Cashier - Female	117.02	94.00	99.58	92.94	93.38	95.67	98.12	101.00	98.52	102.32	104.47	93.15	94.50	92.81	102.16	85.44	88.13	84.40	-	-	-	-	-
Dishwasher-Male	98.07	-	-	-	107.53	96.78	-	-	-	-	-	-	-	-	94.76	97.34	87.66	73.73	-	-	-	-	-
Dishwasher-Female	84.09	83.33	81.14	82.80	91.26	91.85	89.95	98.60	92.24	97.99	100.40	97.96	98.17	95.16	95.66	87.27	86.84	88.30	-	-	-	-	-
Local Government Administration																							
Police Constable	92.50	91.97	92.13	92.75	88.84	90.36	88.24	87.52	86.90	90.02	88.25	88.14	88.14	86.21	93.29	90.03	90.03	100.00	100.00	91.31	94.73	97.28-94.51	97.28-94.51
Fireman	91.79	91.51	87.07	89.23	85.47	83.04	84.03	84.94	84.88	87.25	86.33	89.50	88.14	77.67	87.90	90.03	90.03	91.48	102.56	93.78	97.29	99.70-96.88	95.42-97.20
Labourer - Low	58.65	78.99	80.38	80.39	77.11	77.11	74.35	75.00	74.85	76.43	73.68	82.35	79.43	75.00	75.80	77.27	77.98	78.00	81.39	70.51	-	71.21	71.21
High	89.03	92.69	89.47	89.70	86.06	86.06	79.48	76.96	74.86	80.35	79.14	90.71	84.61	73.28	74.62	73.98	80.53	83.00	83.33	76.92	-	77.46	76.05

[1]Percentages calculated from data recorded in Table 6.

Further, Tables 8 and 9 include data selected from the 1941 and 1961 censuses for two additional major groups representing two different industries.[1] These two census dates obviously are not identical to the dates of this study. However, using the census data provides rough figures for three additional clearly defined occupations (for both males and females), which are employed primarily by one major group or a specific industry within it (as shown by Table 8). Other employment of these occupations represents too few numbers to affect either the labour market or the average wage for the occupation except in a marginal way. Also, the census wage data are reported in terms of average annual earnings but a relative wage percentage can be calculated on this basis for both Manitoba-Canada and Manitoba-British Columbia comparisons. This has been done in Table 9. Of course, two figures widely separated in time are not adequate to show a precise trend nor can non-competitive occupations alone serve to demonstrate the wages in an industry. All that can be anticipated is that the data for these industries will be compatible with the findings based on the next chapter's more detailed analysis of the calculations presented in Table 7.

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[1]The data for the 1951 census did not provide average earnings figures but only numbers employed at various levels of earnings. Using this frequency table, averages were calculated but the same methods applied to the 1941 and 1961 figures showed that the results obtained were not sufficiently accurate to justify including the 1951 figures in this study.

TABLE 8

1941 AND 1961 EMPLOYMENT DATA
FOR SELECTED INDUSTRY MAJOR GROUPS AND OCCUPATIONS

A) NUMBERS IN SELECTED OCCUPATIONAL GROUP[1]

Occupation	Canada	British Columbia	Manitoba
Real Estate Salesmen and Agents	11,186	2,111	619
Insurance Salesmen and Agents	28,038	2,458	1,371
Registered Nurses	61,533	7,130	3,025

B) EMPLOYMENT BY LARGEST EMPLOYING MAJOR GROUP[2]

Major Group and Occupation	Canada	British Columbia	Manitoba
Insurance and Real Estate Industries			
Real Estate Salesmen and Agents	10,678	2,058	579
Insurance Salesmen and Agents	27,266	2,379	1,330
Health & Welfare Services			
Registered Nurses	56,165	6,638	2,860

[1]DBS, 1961 Census of Canada, "Occupation and Industry Trends," Catalogue No. 94-551 (Ottawa: Queen's Printer), Table 8.

[2]DBS, 1961 Census of Canada, "Industry Groups by Detailed Occupations and Sex: Canada and Provinces," Catalogue No. 94-531 (Ottawa: Queen's Printer), Table 15, p. 114.

TABLE 9[1]

AVERAGE EARNINGS AND WAGE DIFFERENTIALS FOR SELECTED OCCUPATIONS FOR 1941 AND 1961

PART A

Average Earnings		Average Annual Earnings	
Industry & Occupation		1961[2]	1941[3]
Insurance & Real Estate Agencies			
Insurance Salesmen & Agents (Male)	Canada	$ 5,832	$ 1,752
	British Columbia	5,317	1,665
	Manitoba	5,018	1,699
Insurance Salesmen & Agents (Female)	Canada	2,944	950
	British Columbia	2,846	938
	Manitoba	2,868	880
Real Estate Agents & Salesmen (Male)	Canada	4,623	1,662
	British Columbia	4,546	1,404
Real Estate Agents & Salesmen	Manitoba	4,401	1,685
(Female)	Canada	2,893	923
	British Columbia	3,345	711
	Manitoba	2,513	900
Health & Welfare Services			
Registered Nurses (Male)	Canada	3,459	865
	British Columbia	3,733	900
	Manitoba	3,727	763
Registered Nurses (Female)	Canada	2,752	702
	British Columbia	2,983	757
	Manitoba	2,816	632

[1]Wage Earners were those 15 years of age and over in 1961 but 14 years of age and over in 1941. This definitional change has been ignored.

[2]DBS, 1961 Census of Canada, "Earnings, Hours, and Weeks of Employment of Wage Earners by Occupations, Provinces," Catalogue 94-539 (Ottawa: Queen's Printer), Table 21.

[3]DBS, 1941 Census of Canada, Vol. VI, "Earnings, Employment and Unemployment of Wage Earners," (Ottawa: Queen's Printer), Table 6.

Table 9 (Continued)

Average Earnings and Wage Differentials
for Selected Occupations for 1941 and 1961

PART B

Wage Differentials

Manitoba-Canada		% Differential[4]	
		1961	1941
Insurance Salesmen and Agents	Male	94.98	96.97
	Female	97.41	92.63
Real Estate Salesmen and Agents	Male	95.19	101.38
	Female	88.51	97.50
Registered Nurses	Male	107.74	88.20
	Female	102.32	90.02
Manitoba-British Columbia			
Insurance Salesmen and Agents	Male	94.37	102.04
	Female	100.77	93.81
Real Estate Salesmen and Agents	Male	96.81	120.01
	Female	75.13	126.58
Registered Nurses	Male	98.78	84.77
	Female	94.40	83.48

[4]Calculated from Part A.

CHAPTER IV

ANALYSIS AND CONCLUSIONS

While it is fairly clear for the period under review that wage increases are directly related to the passage of time, no such trend is obvious for wage differentials. Consequently, it is first necessary to determine that the fluctuations in wage differentials occur either in random fashion or with some time trend. A simple statistical test, a "runs test," is available for this purpose.[1] A notable feature of this test is that it requires no assumptions about the distributions of the underlying data.

Table 10 records the results of applying the runs test to each of the seventy-eight individual lines of wage data included in Table 7. In summary, the results are as follows:

1) At a probability level of .99, thirty of the tests are significant; that is, a time trend is highly probable in these thirty cases.

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[1]This test is described in John E. Walsh, Handbook of Nonparametric Statistics: Investigations of Randomness, Moments, Percentiles, and Distribution (Princeton, N.J.: D. Van Nostrand Co. Inc., 1962), pp. 65-66.

TABLE 10

MEDIAN RUNS TEST FOR TREND IN DATA[1]

PART A - Manitoba-Canada Data

Industry & Occupation	A[2]	B[2]	C[2,3]	D[2,3]
Agriculture				
Farm Labourer	11	9	7	10[a]
Farm Labour	11	11	7	10
Metal Mines				
Cage & Skip Tender	6	5	4	5
Electrician	6	7	4	5
Surface Labourer	6	4	4	5[a]
Slaughtering & Meat Packing				
Butcher	11	4	7[a]	10[a]
Labourer	8	3	5[a]	7[a]
Carpenter	6	2	4[a]	5[a]
Truck Driver	10	8	7	9[a]
Bakeries (Excluding biscuits)				
Mixer (Doughman)	11	2	7[a]	10[a]
General Bakery Helper - Male	11	6	7[a]	10[a]
General Bakery Helper - Female	11	4	7[a]	10[a]
Work Clothing & Sportswear				
Cutter	11	9	7	10[a]
Sewing Machiner Operator (Female)	11	6	7[a]	10[a]
Women's and Misses' Suits & Coats				
Cutter	11	11	7	10
Button Sewer (Female)	6	8	4	5
Sheet Metal Products				
Sheet Metal Worker	11	6	7[a]	10[a]
Labourer	10	7	7	9[a]

Table 10 (Continued)

Median Runs Test for Trend in Data

Industry and Occupation	A[2]	B[2]	C[2,3]	D[2,3]
Part A - Manitoba-Canada Data				
Electric Light, Heat & Power				
Lineman	11	8	7	10[a]
Electrician	10	8	7	9[a]
Labourer	8	6	5	7[a]
Elementary & Secondary Schools				
Average Salaries - All Teachers	11	11	7	10
Laundries & Dry Cleaning				
Washman	9	8	6	8
Driver Salesman	9	13	6	8
Presser (Machine-Female)	9	7	6	8[a]
PART B - MANITOBA-BRITISH COLUMBIA DATA				
Agriculture				
Farm Labourer	11	4	7[a]	10[a]
Farm Labour	11	4	7[a]	10[a]
Metal Mines				
Cage & Skip Tender	6	8	4	5
Electrician	6	7	4	5
Surface Labourer	6	2	4[a]	5[a]
Slaughtering & Meat Packing				
Butcher	11	8	7	10[a]
Carpenter	3	3	-	3
Truck Driver	10	5	7[a]	9[a]
Labourer	8	2	5[a]	7[a]
Bakeries (Excluding biscuits)				
Mixer (Doughman)	10	7	7	9[a]
General Bakery Helper - Male	11	9	7	10[a]
General Bakery Helper-Female	11	8	7	10[a]

Table 10 (Continued)

Median Runs Test for Trend in Data

Part B - Manitoba-British Columbia Data Industry and Occupation	A^2	B^2	$C^{2,3}$	$D^{2,3}$
Work Clothing & Sportswear				
Cutter	8	8	5	7
Sewing Machine Operator-Female	8	9	5	7
Printing & Publishing (Other than Daily Newspaper				
Compositor	11	11	7	10
Bindery Girls	11	8	7	10[a]
Sheet Metal Products				
Sheet Metal Worker	11	7	7	10[a]
Labourer	7	7	5	6
Construction - Buildings & Structures Only				
Bricklayer	11	12	7	10
Electrician	11	10	7	10
Carpenter	11	6	7[a]	10[a]
Labourer	11	4	7[a]	10[a]
Urban & Suburban Transport System				
Operator - Bus or Trolley	11	12	7	10
Electrician	10	11	7	9
Labourer - High	9	7	6	8[a]
Low	9	7	6	8[a]
Electric Light, Heat & Power				
Lineman	11	13	7	10
Electrician	10	7	7	9[a]
Labourer	8	3	5[a]	7[a]
Wholesale Trade				
Warehouseman	11	6	7[a]	10[a]
Driver	10	8	7	9[a]
Packer	6	8	4	5

Table 10 (Continued)

Median Runs Test for Trend in Data

Part B - Manitoba-British Columbia Data Industry and Occupation	A[2]	B[2]	C[2,3]	D[2,3]
Retail Trade				
Sales Clerk Type B-Male	11	3	7[a]	10[a]
Type A-Male	9	8	6	8
Sales Clerk Type B-Female	10	6	7[a]	9[a]
Type A-Female	10	5	7[a]	9[a]
Warehouseman	9	6	6	8[a]
Store Cashier - Female (Other than groceries, etc.)	11	11	7	10
Store Cashier - Female (Groceries)	11	3	7[a]	10[a]
Truck Driver	11	4	7[a]	10[a]
Elementary and Secondary Schools				
Average Salaries - All Teachers and Principals	4	6	3	4
Median Salaries - All Teachers and Principals	11	6	7[a]	10[a]
Laundries				
Washman	9	7	6	8[a]
Driver Salesman	9	4	6[a]	8[a]
Presser	9	5	6[a]	8[a]
Restaurants				
Cook - Male (General)	8	3	5[a]	7[a]
Cashier - Female	9	8	6	8
Dishwasher - Male	3	4	-	3
Dishwasher - Female	9	5	6[a]	8[a]
Local Government Administration				
Police Constable	11	5	7[a]	10[a]
Fireman	11	5	7[a]	10[a]
Labourer - Low	11	7	7	10[a]
High	11	6	7[a]	10[a]

[1]As detailed in John E. Walsh, Handbook of Nonparametric Statistics (Princeton, N.J.: D. Van Nostrand Co. Inc., 1962), pp. 64-65.

Table 10 (Continued)

Median Runs Test for Trend in Data

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[2]Lettered column headings have meanings as follows:

A - the number of values both above and below the median as calculated from Table 7.

B - the observed number of "runs" in the above and below median values of column A.

C - the expected number of runs at a probability of .99 in any given sample containing the same number of values as the relative line of data.

D - the expected number of runs at a probability of .90 in any given sample containing the same number of values as the relative line of data.

[3]Values shown are from the table in Walsh, p. 65. For the data to show a trend, the observed number of runs must be less than the expected number at the respective probability level. Each case for which the line of data reflects a time trend is indicated by a small "a".

2) At a probability level of .90, fifty-two of the tests are significant.

3) Twenty-four of the remaining twenty-six cases would yield significant results (a time trend), if the level of probability were reduced as low as .60.

4) There appears to be some direct association of the level of skill with the probability of rejection of a time trend in the wage data. However, the cases of the low skilled Button Sewer, Female and the Wholesale Trade-Packer together with the high skilled Cook are notable exceptions.

5) Each separate industry tends to show trend or not as a unit for each of its respective occupational titles. Wherever both trend and lack of it are shown in an industry, it is the low skilled jobs which tend to be associated with the time trend.

An overall conclusion based on all the runs tests would have to be that the data of Table 7 demonstrate a trend through time. Nothing can be said with certainty or even with a high degree of probability about either the amount or the direction of the observed trend.

In order to answer the question of direction and amount of trend a regression line calculated by the method of least squares was fitted to the data for each individual case.[1]

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[1]The raw data was processed by the University of Manitoba Computer Centre utilizing a computer program prepared by F. Chebib, titled Simple Covariance Program. This program provided the required results as part of its output.

In so doing it was recognized that any existing trend might not necessarily be linear; indeed, no simple class of curves would be likely to fit such extremely variable data. Further, it was recognized that there is no particular reason to expect any specific kind of trend.[1] However, knowing that a trend of some sort exists and being concerned about a possible gradual deterioration of the Manitoba wage level, it was felt that a linear estimation of this trend would be as good as any other. In addition, the procedure had attractions. First, it is easily understood. Second, it would provide results clearly comparable from one case to another, thereby providing a basis for some generalized conclusions. Table 11 records the results of the regression analysis.

Before attempting to draw any conclusions from Table 11, it seems appropriate to check to see whether or not assumed results are confirmed. First (on page 23) it was hoped that the trends in the same occupations and industries would support each other, whether the comparison was made from Manitoba-Canada or Manitoba-British Columbia data. This was found to be true for the high-skilled inter-industry titles such as that of Electrician. The high-skilled industry specialists showed comparable trends in four of the available

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[1]Paul G. Hoel, Elementary Statistics (New York: John Wiley & Sons, Inc., 1960), p. 211.

TABLE 11

THE TREND LINE OF AND THE DEVIATIONS IN THE WAGE DATA[1]

PART A: Manitoba-Canada Data

Industry and Occupation	a[2]	b[3]	r[4]	s[5]
Agriculture				
Farm Labourer	114.76	-.32	-.30	7.17
Farm Labourer	100.84	-.16	-.31	3.57
Metal Mines				
Cage & Skip Tender	109.35	.00	.02	2.50
Electrician	112.93	-.32	-.62	3.64
Surface Labourer	98.97	.63	.68	6.54
Slaughtering & Meat Packing				
Butcher	101.00	.51	.81	4.26
Labourer	93.49	.55	.69	4.01
Carpenter	109.82	-.65	-.53	4.19
Truck Driver	110.22	-.76	-.77	6.74
Bakeries (Excluding biscuits)				
Mixer (Doughman)	93.35	1.19	.90	8.98
General Bakery Helper - Male	92.56	1.32	.88	10.18
General Bakery Helper - Female	104.72	1.59	.69	15.64
Work Clothing and Sportswear				
Cutter	108.99	-.77	-.68	7.64
Sewing Machine Operator (Female)	107.87	-.24	-.27	6.01
Womens' and Misses' Suits and Coats				
Cutter	80.42	-.25	-.33	5.13
Button Sewer (Female)	83.57	.03	.05	5.35
Sheet Metal Products				
Sheet Metal Worker	86.74	.23	.29	5.29
Labourer	96.44	.00	.00	5.90
Electric Light, Heat and Power				
Lineman	117.47	-.74	-.60	8.46
Electrician	106.62	-.55	-.71	5.45
Labourer	108.37	-.72	-.73	5.77
Elementary and Secondary Schools				
Median Salaries All Teachers and Principals	86.43	.16	.32	3.29
Laundries and Dry Cleaning				
Washman	97.12	-.20	-.24	4.84
Driver Salesman	94.45	-.25	-.26	5.23
Presser (Machine, Female)	102.27	-.25	-.20	7.07
Composite Manitoba-Canada	101.04	-.02	-.01	12.05

Table 11 (Continued)

The Trend Line of and the Deviations in the Wage Data

PART B: Manitoba-British Columbia Data

Industry and Occupation	a	b	r	s
Agriculture				
Farm Labourer	110.39	-1.07	-.69	10.46
Farm Labourer	96.97	-.78	-.70	7.57
Metal Mines				
Cage & Skip Tender	105.85	.27	.41	4.77
Electrician	110.19	-.25	-.60	3.01
Surface Labourer	87.48	1.12	.85	9.37
Slaughtering and Meat Packing				
Butcher	94.50	.41	.65	4.34
Carpenter	100.05	-.77	-.83	2.14
Truck Driver	104.52	-.87	-.71	8.43
Labourer	86.80	.76	.81	4.74
Bakeries (Excluding biscuits)				
Mixer (Doughman)	70.23	.24	.41	3.69
General Help, Male	75.31	-.20	-.13	9.60
General Help, Female	78.13	.69	.34	14.05
Work Clothing and Sportswear				
Cutter	93.62	-.54	-.56	6.33
Sewing Machine Operator (Female)	98.45	-.20	-.09	14.25
Printing and Publishing Other than Daily Newspaper				
Compositor	85.43	-.11	-.29	2.47
Bindery Girls	76.72	-.37	-.58	4.34
Sheet Metal Products				
Sheet Metal Worker	68.19	.20	.26	5.26
Labourer	88.21	-.42	-.31	7.94
Construction - Buildings & Structures Only				
Bricklayer	93.67	-.26	-.58	3.03
Electrician	87.57	-.26	-.44	3.99
Carpenter	91.59	-.38	-.65	3.97
Labourer	77.59	-.38	-.40	6.35
Urban and Suburban Transport System				
Operator - Bus or Trolley	91.98	-.18	-.26	4.49
Electrician	94.42	-.39	-.54	4.55
Janitor and Labourers - High	92.58	-1.00	-.68	8.99
Low	87.33	-.67	-.54	7.69
Electric Light, Heat and Power				
Lineman	87.57	-.31	-.29	7.21
Electrician	90.72	-.42	-.43	6.90
Labourer	81.13	-.13	-.13	5.08

Table 11 (Continued)

The Trend Line of and the Deviations in the Wage Data

Part B: Manitoba-British Columbia Data

Industry and Occupation	a	b	r	s
Wholesale Trade				
Warehouseman	97.06	-.99	-.87	7.38
Driver	80.00	-.26	-.32	4.95
Packer	84.49	-.38	-.52	2.60
Retail Trade				
Sales Clerk-Type B (Male)	99.36	-.40	-.49	5.21
Type A (Male)	100.51	-.49	-.51	6.51
Sales Clerk-Type B (Female)	96.69	-.04	-.04	7.65
Type A (Female)	97.59	-.98	-.50	12.75
Warehouseman	100.89	-1.40	-.80	11.14
Truck Driver	89.01	-.57	-.87	4.29
Store Cashier Female (other than groceries, etc.)	91.59	-.15	-.27	3.63
Store Cashier Female (Groceries)	95.37	-.83	-.76	7.09
Elementary and Secondary Schools				
Average Salaries - All Teachers and Principals	78.57	-.06	-.05	2.83
Median Salaries - All Teachers and Principals	63.13	.47	.68	4.73
Laundries and Dry Cleaning				
Washman	79.55	-.43	-.57	4.32
Driver Salesman	96.18	-1.11	-.66	9.56
Presser	77.24	-.39	-.50	4.37
Restaurants				
Cook - Male (General)	88.05	.38	.28	7.33
Cashier - Female	85.33	.77	.54	7.61
Dishwasher - Male	80.44	1.03	.67	10.56
Dishwasher - Female	98.40	-.49	-.43	6.16
Local Government Administration				
Policeman Constable	94.93	-.28	-.48	4.00
Fireman	95.32	-.48	-.56	5.73
Labourer - Low	75.89	-.01	-.01	5.01
High	74.78	.56	.62	6.05
Composite Manitoba-British Columbia	89.78	-.34	-.20	11.18

[1]Clearly the regression line calculated would be identified by the equation $y = a + bx$ where y is the wage percentage for the time period x, x is the time period associated with a given year such that 1943 = 1, 1944 = 2, 1945 = 3, etc.

[2]"a" is the wage rate of Manitoba as a percentage of Canada or British Columbia as the case may be.

Table 11 (Continued)

The Trend Line of and the Deviations in the Wage Data

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[3]"b" is the regression coefficient showing the amount the "a" percentage increases or decreases for each time period. A negative value shows a declining Manitoba wage percentage hence a widening wage differential in the usual case where "a" is less than 100.00.

[4]"r" is the correlation coefficient showing the degree to which increases in the time periods are associated with the increases in wages and vice-versa. It should be noted that as the x values are pre-selected, they influence the calculated "r" value. Moreover, the values calculated have not been tested for their reliability as estimates of the real relationship between x and y. Therefore, the trend line calculated cannot be said to be statistically valid for predictive purposes. However, the line is some estimate of the past time trend and "r" is provided for whatever additional information it may provide.

[5]"s" is the standard deviation in the "y" values.

eight cases while differences occured in the others. Notable were Bakeries, which showed a much larger positive trend in the Manitoba-Canada data, and Electric Light, Heat and Power which showed a larger positive trend in the Manitoba-British Columbia figures. The unskilled occupational titles showed comparable "b" coefficient values in only two of eight cases but in each case the direction of the trend was the same. Generally, some relative improvement was shown for the British Columbia worker although notable exceptions were the Agriculture, and again, the Bakeries industries. From the trends observed it seems clear that the relative well being of an industry in a region affects primarily the high-skilled specialized occupations and the low-skilled groups employed in that industry. However, the fact that the skilled linking groups showed comparable trends by both amount and direction, while the other categories were at least comparable in direction, leads to the conclusion that generally, the hoped for confirmation of trends is evident in the data.

A similarity of trends was assumed also in the situation where the wage data were in the form of different measures of central tendency. The one case where two kinds of data were available was in terms of a Manitoba-British Columbia comparison for the occupational title Teacher for which both median and mean data could be compared in recent years. The values of the "b" coefficients shown in Table 11

are both of different magnitude and opposite in direction. However, the table values are not for the same period of time. The median values cover the entire period of twenty-three years while the mean values cover only the last eight years. A close examination of the year-to-year change for both lines in the last eight years shows that the underlying trend for that period is essentially the same but there is slightly less deviation in the median data. Consequently there would seem to be little or no distortion in trend arising from the substitution of median for mean values. It appears that the coefficient calculated from the median data represents the longer term trend while that based on the mean figures represents a short term trend, possibly being influenced by some cyclical factor.

Another preliminary matter to be considered is the comparison of the data in Table 9 with the results of Table 11. Unfortunately, very little of conclusive nature can be said. It is clear that the relative increase in the wage rates of Nurses compares very roughly with the relative increase recorded for Teachers. However, based on Teachers' salaries (the most comparable group) the Manitoba-Canada improvement was larger and the Manitoba-British Columbia was less than would have been expected. For the other two occupations in Table 9, not even crudely approximate cases can be identified in Table 11. All that can be said is that the relative

deterioration in the Manitoba wages shown for these occupations is in agreement with the trend shown in Table 11, but it is of a more serious dimension.

The final preliminary matter to be dealt with refers to the two kinds of wage rates for Farm Labour. In this connection it was expected (page 56), that the monthly farm wages (the second line in Table 11) would show less fluctuation and less geographical differential than the daily Farm Labour rate. In both the Manitoba-Canada and Manitoba-British Columbia comparisons, the lower "s" values and the approximately 14% lower wage levels confirm this expectation.

Having confirmed some previously noted, tentative statements, what then are the significant conclusions of this study? These can best be drawn by comparison with the expected wage structure characteristics outlined at the end of Chapter I.

It is quite clear that a geographic differential does exist between Manitoba and Canada as a whole. The maximum differential for a specific occupation was 19.58% below the Canadian average but a figure of 17.47% above average was also recorded. However, individual industries seemed to be consistently above or below average and within 10% of the Canadian figures. Contrary to expectations, there seemed to be no association of size of differential with the skill level of an occupation. Indeed, the data seem to show the opposite

results from those obtained in previous studies in that the maximum positive and negative differentials were both recorded by high skill occupational titles. The major association of the size of the differential and its trend appears to be with the industry; the high paying industries being associated with negative trends and the low paying industries associated with positive trends. The directions of these trends imply a tendency toward a narrowing in the geographic differential as a whole, Further, the composite results indicate that the Manitoba wage level may still be slightly above average (to the extent of 1.04%), while the trend has been insignificantly negative (a decreasing wage differential and deteriorating Manitoba relative wage to the extent of 0.02% per year). Of course the values of these figures would be depreciated by including those industries in which no geographic differential exists (i.e., Railway Transport and Federal Government). Such results would be consistent with the conclusion that geographic differentials are narrowing and Manitoba's relative position is unchanged. However, such a conclusion would not be consistent with the results of the Manitoba-British Columbia comparisons. In the latter the composite results show that Manitoba is 10.22% below the British Columbia wage level in the occupations studied and that the gap is growing by 0.34% per year. (A decreasing trend moving away from the mean).

Moreover, the wage differential is increasing for most occupational titles and the fastest deterioration of the Manitoba relative wage is being recorded in those occupations which are comparatively the highest paid. The British Columbia wage data suggest that geographic differentials are widening.[1] This fact implies that all those areas with above Canadian average wage levels should be recording a positive wage trend in order to maintain their relative positions. Therefore, the small negative Manitoba trend becomes more ominous. Further, when this trend is coupled with the trend in the high skilled, inter-industry occupations, it appears that the Manitoba wage level is falling relatively in the amount of approximately one-third of one per cent each year. The Manitoba-British Columbia data do confirm the Manitoba-Canada figures in that the largest differentials are again recorded by high skill groups, but generally no association can be made between the skill level and the amount of the wage differential. Also, it is again evident that an industry's differential and its trend tend to dominate the relative occupational wage levels and trends.

The second characteristic of wage structures which was expected to be revealed was that differentials between different industries and occupations would vary without

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[1]This agrees with the results for Canada by Reynolds and Taft, p. 314, and for the Maritimes-Ontario results by Morritt, p. 23.

apparent order. This seems to be borne out by the data for occupational wage rates. For example, Linemen were relatively worse off than Electricians in the Electric Light, Heat and Power industry if the comparison were being made against British Columbia rates but, the reverse was true when Canada rate comparisons were made. Nevertheless, a substantial amount of rank order in occupational wage levels between regions is apparent. The study did not permit any conclusion about the inter-industry wage rankings.

The results also showed the usual tendency of low rated occupations to show the greatest variations in wage differentials (the high "s" values). Some of the more skilled titles also showed considerable variation but these were usually less than the variations for the other occupational titles in the respective industry. A notable exception was the occupation, Lineman. However, while showing the greatest fluctuation in wage differentials, it has already been noted that low paid groups were not generally associated with the largest differentials.

The industries, together with their included occupations, in which the Manitoba workers were at their best relative position vis-a-vis both Canada and British Columbia were Agriculture, Metal Mining, and Slaughtering and Meat Packing. Characteristically, these were industries in which Manitoba was relatively important in terms of numbers employed.

Turning to the original hypothesis, the problem of the stability of the Manitoba wage structure, this study certainly indicates that long run changes, if any, take place slowly. It seems clear that changes in specific wage rates take place sporadically as evidenced by the generally large "s" and the usually low "r" values. Clearly there is little or no stability in the short run. In the long run, the gradual deterioration of the Manitoba wage level, at the most probable rate of about one-third of one per cent per year, could certainly be considered stable when compared to other changes in the economy such as the rates of inflation and economic growth. In statistical terms, the amount of trend revealed in the data would seem likely to be insignificant, and the hypothesis of relative stability in the wage structure would have to be accepted.

The final conclusion which was expected as a result of other case studies in wage structures was that the agricultural wage level and its changes would influence the whole. In this respect, the Manitoba-Canada wage differential and trend for monthly rated Farm Labour, seem to approximate the position of the remainder of the wage structure. For the daily rated workers and for both categories in the Manitoba-British Columbia comparison, the level and trend of agricultural wages would indicate that Manitoba wage rates on average should be at a higher level and declining faster through time. Consequently,

it does not appear that agricultural wages can be considered to be the major influence on the Manitoba wage structure as a whole.[1]

Table 11 also reveals two other significant factors. First, there is a tendency for the lower paid occupations in all industries to be either losing any advantageous position more slowly or increasing adverse differentials less rapidly than the more highly paid occupational titles. This is consistent with the narrowing of skill differentials. However, not all industries exhibit this characteristic so no firm conclusion is possible. Secondly, in the twelve cases in which wage data are provided for female or predominantly female occupational titles, nine are associated with wage rates improving relatively (in this sense including less rapid rates of deterioration) to other rates in the associated industries. This would be consistent with a narrowing male-female skill differential which would be expected as a result of the relative increase in the demand for female labour.[2]

This chapter, drawing together the results of this

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[1]The lack of correspondence noticed here confirms the conclusion drawn by the Manitoba Economic Consultative Board in its Fourth Annual Report (Winnipeg: Queen's Printer, 1967), p. 22. Its study, based on per capita incomes, noted that Manitoba's position relative to Canada did not improve in the last two years despite the best years on record for agriculture.

[2]Manitoba Economic Consultative Board, Fourth Annual Report, p. 15, notes that female employment has accounted for essentially all of the new numbers employed in Manitoba in recent years.

study, would not be complete without some warning as to the limitation of the work and its conclusions. The very limited number of occupational titles covered, the fact that they represent primarily the "blue collar" workers in the manufacturing industries and provide only minimal coverage of the tertiary sector (in which the major changes in employment demand have taken place in recent years) must necessarily limit the validity of the results. The results are further qualified by the limited amount and variety of kinds of wage data used. Consequently, the calculation of wage percentages and coefficients of trend, correlation, and deviation to the second decimal place of values, provides a spurious air of accuracy and precision to the results. Also, a major question unanswered by the study was what are the causal elements, if any, which might be acting as the determinant of the observed trends. In this respect, the author was particularly disappointed in being unable to obtain data recording numbers employed by occupation within each industry.

Nonetheless, although all significant questions about Manitoba's wage structure could not be answered, and even though the conclusions drawn must be considered as being tentative as well as being imprecise, they do serve to indicate broad orders of magnitude and direction. In summary, the more significant conclusions are:

1. At the present time, Manitoba's wage level is slightly above that of Canada and approximately 10% below that of British Columbia.

2. The relationship between the regional wage structures is essentially stable with the Manitoba wage level showing an adverse trend of not more than one-third of one per cent per year. This is substantially less than the trend derived from a brief analysis of "Industrial Composite-Average Weekly Wage and Salary" data as discussed in the Introduction.[1]

3. Geographic wage differentials are strongly influenced by the industrial mix of a region. Consequently it would be more accurate to speak of a geographic differential only in terms of a specific industry rather than in terms of regional averages.

4. Manitoba's wage level does not appear to be strongly influenced by trends in the province's agricultural industry.

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[1]The research method of this study does not permit a precise evaluation of change in rank of all the wage levels of all the provinces. It does suggest however, that if the composite-average weekly wage were adjusted for changes in employment at various wage rates, little or no change in rank order could be expected.

CHAPTER V

PUBLIC POLICY IMPLICATIONS FOR MANITOBA

Such an important factor as the wage level cannot help but be a crucial variable in any set of economic conditions. In the sense that wages are the price of the commodity labour, the wage level performs the price functions of calling forth appropriate quantities and qualities of labour and of allocating them to some economic use. Just as the price of other factors of production are the concern of governments, so too should the wage level receive attention. Of course, the wage level also has important effects in terms of providing the incomes through which an effective demand for all goods produced is achieved. In view of such a substantial role in a regional economy, the wage level should fall within the orbit of public policy.

However, the wage level appears to be one variable which, for the most part, has been ignored by the various levels of government in Canada. Turning specifically to the Province of Manitoba, it is found that the government has become involved in the wage question through only two kinds of legislation: minimum wage laws and fair wage standards in the construction

industry. Of course, there is also an indirect involvement through the wages and salaries paid to its own employees and the employees of crown corporations. But, in the sense that many of these rates are set by such bodies as the Civil Service Commission, which attempts to establish rates comparable to those in industry, or by applying those rates established as fair wages (the rate most prevalent in the community for a given occupational group), the government is a "wage-taker" and not a pace setter in the economy. The government is involved in other ways as well. For example, the other legislative acts of the government which bear on labour and labour relations, such as the Labour Relations Act, are important. All of the foregoing considerations indicate that whatever public policy regarding wage levels may exist, it is an unconscious one which results from attempts to achieve somewhat limited goals with little or no regard for the effect of such action on the regional wage structure.

It is not intended to suggest here that the provincial authorities have not been cognizant of the well-being of the citizens. Considerable attention has been paid to per capita incomes and the methods by which such incomes can be improved.[1] It is argued that the means to increase per-capita incomes is through regional economic growth. Specific policies have been

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[1]A factor contributing to the concern with per capita incomes is the fact that, since 1962, they have been falling rapidly in a relative sense - see Manitoba Economic Consultative Board, Fourth Annual Report, p. 22.

suggested. These include support of a national policy for balanced regional growth with special consideration for higher development costs in Manitoba, increasing productivity through investments in science and technology, research and development, education, development of managerial capacity and development of natural resources, including in particular, development of a more diversified agriculture.[1] Concrete efforts have been made to implement such policies and the activities of the Manitoba Development Fund can be cited as an example. More than forty-three million dollars has been loaned out to encourage the development and improvement of industry, 31.9% of the total being for the purpose of building construction while 53.5% was for the purchase of machinery and equipment.[2]

The provincial government has not been alone in emphasizing economic growth and the means to achieve it as the answer to the problem of regional income disparities. The Economic Council of Canada has said,

> The historical and more recent evidence shows that the key requirement in comprehensive, long-run regional growth policies is to increase opportunities for high-productivity employment and bring about a

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[1]Manitoba Economic Consultative Board, 3rd Annual Report (Winnipeg: Queen's Printer, 1966), pp. 90-95.

[2]Manitoba Development Fund, 8th Annual Report, 1965-66 (Winnipeg: Queen's Printer).

> rapid and widespread improvement in productivity in the lower-income provinces.[1]

Improving productivity, then, becomes the theme central to all government growth and income policies. This appears to have been the guiding principle underlying the activities of the Government of Manitoba. But the Economic Council has also noted that, despite various rates of economic growth, there has been little or no relative long-run change in regional income disparities in Canada over the past forty years.[2]

The difference in income levels have had important consequences for each region.[3] For example it has been noted that Manitoba receives less revenue per capita with a 23% rate of income tax than either Ontario or British Columbia with 17% rates.[4] Further, low wage level provinces tend to lose population to those paying higher wages, for,

> . . . increasingly, internal movements of population have come to be the dominant expression of changes in the fundamental economic relationships among regions

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[1]Economic Council of Canada, Third Annual Review, "Prices, Productivity and Employment," (Ottawa: Queen's Printer, 1966), p. 263.

[2]Economic Council of Canada, Second Annual Review, "Towards Sustained and Balanced Economic Growth," (Ottawa: Queen's Printer, 1965), p. 65.

[3]In addition to the economic consequences, different income levels tend to affront a general sense of social equality. In this study such philosophical considerations are not discussed.

[4]Manitoba Economic Consultative Board, Fourth Annual Report, p. 103.

within a nation.[1]

For Manitoba, this population outflow amounted to 12,300 people in 1965, more than one-half of whom moved to British Columbia.[2] This movement of people from Manitoba clearly represents the loss of a substantial investment in human capital and, in effect, a subsidy of an already more affluent region. Moreover, not only is there a population loss but, the frequently observed tendency for high geographical mobility to be directly associated with high-skill implies a relative productivity loss as well. Policies designed to foster higher per capita income through economic growth and increased productivity in themselves do not appear to be the answer.

To digress briefly, it may well be in the best interests of Canada as a whole that, for the national economy to achieve a maximum rate of economic growth, a relative shift in population away from Manitoba is necessary to attain the most efficient arrangement of labour and other factors of production. Income disparities should then be welcomed as the mechanism which induces the required population flow. In such circumstances a national development policy, in which each region would fulfill its assigned role, would appear to be

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[1]Manitoba Economic Consultative Board, 3rd Annual Report p. 26.

[2]Ibid., p. 33.

the logical outcome. Of course, those regions acting as suppliers of labour would have to be compensated for the development costs incurred in making a productive labour supply available to all. If such a national development policy could not be established, or if each region preferred to develop independently, or if, for one reason or another, the policy of all levels of government was to develop each political unit of the nation at some "balanced" rate which would eliminate geographic differentials in incomes (and this last alternative seems to be the basis for most current policy suggestions), then it would be in the self-interest of each region to minimize the cost of human capital which it provided to others. This could best be achieved by stopping the population outflow (of course, it would be even better to reverse it). Other than by means of restrictive legislation, this could only be done by intervention in the market.

To return to the main thread of the discussion, it appears that conclusions of this study regarding the relative level of and trend in Manitoba's wages are economically significant in the long run. Coupled with the assumption that Manitoba authorities should act to reverse the trend and eliminate the geographic differential, the conclusions imply that the Manitoba Government must intervene in the

market. It is not enough just to act as it is now doing, that is, in a way that some concept of average per capita income will be made to increase. In addition, assuming the rejection of direct wage controls to retain the labour force, the government should attempt to act in a manner that will increase both the price of labour - the wage rates - and its productivity at the same time. Only by increasing the price of labour will the attractiveness of high wages elsewhere be diminished. Only by increasing productivity will unit wage costs be kept low and local industry be encouraged to grow despite the fact that the total wage bill might be rising. To achieve such results the government might employ any number of techniques some of which are listed below. It is not suggested that the list provided is exhaustive nor that that any or all of the techniques are either necessary or sufficient. Further, other considerations (perhaps political or administrative) may make any specific approach impractical. Nevertheless, the list has been provided to indicate that some appropriate kinds of government action can be taken. The following are suggested:

1. Encourage high-wage, highly productive industries by tax structure, provision of new capital, etc., and discourage low wage industries. Especially attractive would be industries having high capital labour ratios and widespread occupational

impact through "linkage" or "transmission" effects. Farm implement, construction and mine machinery manufacturers appear to be examples of desirable types of activity in that such firms require substantial capital and yet employ fairly large numbers and a variety of skilled workmen.

2. Act as a "wage leader" in its own and its agencies' employment practices, especially in those occupations which provide maximum linkage to other employers in the region.

3. Consider wage rates paid by suppliers when the goods being purchased are of local origin. High wage employers should receive preference in government purchasing. At a minimum, in the case of identical bids by suppliers, the highest wage firm should be awarded the order. This consideration could be extended further so that the lowest bids would not necessarily be accepted if the bidding company paid low wages. Of course, this latter step would require a decision regarding how much more the government should pay for purchases when dealing with high wage firms.

4. Encourage high standards of competence and proficiency among workmen. This might be done by providing free, self-improvement types of education. Extra benefits for more qualified workers might be written into labour standards legislation (i.e., periodic long vacations). At the same time, more control might be exercised over the

qualifications of all kinds of workmen.

5. Regarding agriculture, small inefficient producers might be encouraged to move off the land by providing them with a means to sell out and obtain alternative employment. The process might be hastened by denying improvements to the basic infrastructure of the poor agricultural area (i.e., irrigation projects, communications systems and public services). The latter action might involve adverse political repercussions. However, it may be possible to minimize such problems by providing more encouragement than discouragement to the affected population or by engaging in offsetting activities in more productive agricultural areas.

Taken together the foregoing five techniques, particularly the first, may pose a fiscal dilemma for the government authorities. Revenues might fall because of the tax structure designed to encourage new, highly productive industries, while the other elements in the program clearly involve increasing government expenditures. Of course, no problem would arise if the productivity of the economy increased as rapidly as the program was applied. Similarly the existing progressive income tax structure might yield more revenue if wage rates, and thus incomes, rose quickly. However, should the results of the program lag behind revenues, (and this seems likely) deficit financing might be necessary. To minimize such a problem, the techniques suggested and others might be introduced gradually, applying

the least costly methods first.

In employing the suggested techniques or others, three principles should guide the provincial authorities. First, they should endeavour to establish economic forces such that the high-skilled, efficient worker and industry would both be encouraged to stay in the region. If emigration must be accepted, it should be the low-skilled and least efficient who are encouraged to leave. Clearly such a state of affairs is not the case when higher wages in any occupational group can be obtained elsewhere. Second, in no case should an effort be made to attract industries by projecting an image of Manitoba as a low-wage, and therefore low-cost, region. The wage rates recorded in this study for each occupational title show that generally, Manitoba is not such a low-wage region. Far better to develop the image, and better still to insure, that Manitoba is simultaneously a high-wage, but low-cost - due to high productivity - region. Only if such a change can be brought about will Manitoba improve its wage level and trend. Finally, rapid results cannot be expected. The stability of wage structures and the problem of financing the suggested program are both against immediate change. Therefore, the program described, or any other, should be implemented over a considerable period of time. As might be anticipated whenever dealing with long run problems, long run planning is required.

BIBLIOGRAPHY

I. Public Documents

Canada. Department of Labour, Economics and Research Branch. Wage Rates, Salaries and Hours of Labour, Annual Report. 1943-1965 inclusive.

Canada. Dominion Bureau of Statistics. Farm Wages in Canada Catalogue 21-002, Quarterly Report for August annually 1952-1965 inclusive.

_____. 1941 Census, Vol. VI "Earnings, Employment and Unemployment of Wage Earners."

_____. 1961 Census
"Earnings, Hours and Weeks of Employment of Wage Earners by Occupations: Provinces," Catalogue 94-539; "Earnings and Hours of Employment of Wage Earners by Occupations: Metropolitan Areas," Catalogue 94-540; "Industry Groups by Detailed Occupations and Sex: Canada and Provinces," Catalogue 94-531; "Industries by Sex: Canada and Provinces," Catalogue 94-518; "Industry Groups by Sex: Metropolitan Areas," Catalogue 94-519; "Occupation and Industry Trends," Catalogue 94-551; "Agriculture:Manitoba" Catalogue 96-537.

_____. Review of Employment and Payrolls, Catalogue 72-201. Annual, 1966.

_____. Salaries and Qualification of Teachers in Public, Elementary, and Secondary Schools, Catalogue 81-202, Annual Report. Annual, 1945 to 1964-65 inclusive.

_____. Standard Industrial Classification Manual, Catalogue 12-501, 1960.

Economic Council of Canada. Second Annual Review: 1965, "Towards Sustained and Balanced Economic Growth."

_____. Third Annual Review: 1966, "Prices Productivity and Employment."

Economic Council of Canada. Staff Study No. 14, S.E. Chernick, "Interregional Disparities in Income."

Manitoba Development Fund. Eighth Annual Report: 1965-66.

Manitoba Economic Consultative Board. Third Annual Report: 1966.

Manitoba Economic Consultative Board. Fourth Annual Report: 1967.

II. Books

Backman, Jules. Wage Determination. Princeton, N.J.: D. Van Nostrand Company Inc., 1959.

Dunlop, John T. Wage Determination Under Trade Unions. New York: The Macmillan Company, 1944.

Hoel, Paul G. Elementary Statistics. New York: John Wiley & Sons Inc., 1960.

Reynolds, Lloyd G. The Structure of Labor Markets. New York: Harper and Brothers, 1951.

Reynolds, Lloyd G., and Taft, Cynthia. The Evolution of Wage Structure. New Haven: Yale University Press, 1956.

Taylor, G.W. and Pierson, F., eds. New Concepts in Wage Determination. New York: McGraw Hill Book Company Inc., 1957.

The Theory of Wage Determination. Proceedings of a Conference held by the International Economic Association, John T. Dunlop, ed. London: Macmillan and Co. Ltd., 1957.

Salkever, Louis R. Toward a Wage Structure Theory. New York: Humanities Press, 1964.

Walsh, John E. Handbook of Nonparametric Statistics: Investigations of Randomness, Moments, Percentiles, and Distributions. Princeton, N.J.: D. Van Nostrand Co. Inc., 1962.

Woytinsky, W. S. ed. Employment and Wages in the United States. New York: The Twentieth Century Fund, 1953.

III. Articles and Periodicals

Bell, Philip W. "Cyclical Variations and Trends in Occupational Wage Differentials in American Industries Since 1914," Review of Economics and Statistics, Vol. XXXIII (November, 1951), pp. 329-37.

Bloch, Joseph. "Regional Wage Differentials: 1907-1946," Monthly Labor Review, Vol. LXVI (April, 1948), pp. 371-77.

Bowley, A.L. "Relative Wages and Earnings in Different Occupations," Oxford University Institute of Statistics Bulletin, Vol. III, (December, 1941), pp. 383-89.

Fuchs, Victor F., and Perlman, R. "The North-South Wage Differential," Review of Economics and Statistics, Vol. XLII (August, 1960), pp. 292-300.

Gallaway, Lowell E. "The North-South Wage Differential," Review of Economic and Statistics, Vol. XLIV (August, 1963), pp. 264-72.

Garbino, J.W. "A Theory of Inter-Industry Wage Structure Variation," Quarterly Journal of Economics, Vol. LXIV (May, 1950), pp. 282-305.

Harris, Seymour E. "Interregional Competition: with Particular Reference to North South Competition," American Economic Review, Papers and Proceedings, Vol. XLIV (May, 1954), pp. 367-80.

Huggins, H.D. "Regional Differentials in Wages: Some Considerations," Social and Economic Studies, Vol. IV (September, 1955), pp. 206-15.

Jarrell, Alexander N. "Job Pay Levels and Trends in all Metropolitan Areas," Monthly Labor Review, Vol. LXXXV (May, 1962), pp. 510-16.

Kanninen, Toivo P. "Occupational Wage Relationship in Manufacturing," Monthly Labor Review, Vol. LXXVI (November, 1953), pp. 1171-78.

_____. "Wage Differentials among Labor Markets," Monthly Labor Review, Vol. LXXXV (June, 1962), pp. 614-20.

Keat, Paul G. "Long Run Changes in Occupational Wage Structure: 1900-56," The Journal of Political Economy, Vol. LXVIII (December, 1960), pp. 584-600.

Lebergott, Stanley. "Wage Structures," Review of Economics and Statistics, Vol. XXIX (November, 1947), pp. 274-85.

Lester, Richard A. "Trends in Southern Wage Differentials Since 1890," Southern Economic Journal, Vol. XI (April, 1945), pp. 317-44.

_____. "Diversity in North-South Wage Differentials and in Wage Rates Within the South," Southern Economic Journal, Vol. XII (April, 1946), pp. 238-62.

_____. "Wage Diversity and Implications," Review of Economics and Statistics, Vol. XXVIII (August, 1946), pp. 152-59.

_____. "Southern Wage Differentials: Developments, Analysis, and Implications." Southern Economic Journal, Vol. XIII (April, 1947), pp. 386-94.

_____. "A Range Theory of Wage Differentials," Industrial and Labor Relations Review, Vol. V (July, 1952), pp. 483-500.

Ober, Harry. "Occupational Wage Differentials: 1907-1947," Monthly Labor Review, Vol. LXVII (August, 1948), pp. 127-34.

Ober, Harry and Glasser, Carrie. "Regional Wage Differentials," Monthly Labor Review, Vol. LXIII (October, 1946), pp. 511-25.

Ostry, Sylvia W. "Inter-Industry Earning Differentials in Canada: 1945-56," Industrial and Labor Relations Review, Vol. XII (April, 1959), pp. 335-52.

Pierson, Frank C. "An Evaluation of Wage Theory," in Richard A. Lester, ed., Labor: Readings on Major Issues. New York: Random House, 1965.

Reder, Melvin C. "The Theory of Occupational Wage Differentials," American Economic Review, Vol. XLV (December, 1955), pp. 833-52.

_____. "Wage Differentials: Theory and Measurement," in A Report of The National Bureau of Economic Research, Aspects of Labor Economics, A Conference of the Universities National Bureau Committee for Economic Research. Princeton, N.J.: Princeton University Press, 1965.

Reynolds, Lloyd G. "Wage Differentials in Local Labor Markets," American Economic Review, Vol. XXXVI (June, 1946), pp. 366-75.

Ross, A.M. and Goldner, W. "Forces Affecting the Inter-Industry Wage Structure," Quarterly Journal of Economics, Vol. LXIV (May, 1950), pp. 254-81.

Van Sickle, John. "Regional Economic Adjustment: The Role of Geographic Wage Differentials," American Economic Review, Papers and Proceedings, Vol. XLIV (May, 1954), pp. 381-92.

IV. Unpublished Material

Morritt, Harry Herbert. Regional Wage Differentials and the Position of the Maritime Provinces. Unpublished MA Thesis, Department of Economics, Cornell University, Ithaca, N.Y., 1959.