AN INVESTIGATION OF VARIABLES
AFFECTING MALE/FEMALE WAGE
DIFFERENTIALS IN THE RETAIL
FOOD INDUSTRY IN WINNIPEG

A dissertation submitted in partial fulfillment
of the requirements for the degree of Master
of Arts in Economics

by

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The University of Manitoba
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I. INTRODUCTION

Male-female wage differentials occur in all industries and occupations.
This is despite the assurance of purely competitive wage theory that
tells us they should only exist momentarily, as a transitory phase
before long run equilibrium takes place. Therefore, for their con-
tinuing occurence over time, anomolies in market structure or indus-
trial conduct must be present which aid in the development and prolong
the persistence of these differentials. This thesis is an intensive
look at one industry, the retail food industry in Winnipeg, in an at-
tempt to account for the determinants of male-female differentials with-
in the industry.

Wage rates are influenced by a multi-faceted array of factors.
These range from supply and demand imbalances, labour productivity, mar-
ket structure forces, to the institutional considerations of historical
wage relationships and the impact of unionization. Chapter two of the
thesis is an investigation into the impact of these variables on wage
rates to determine their relative importance and to isolate those that
will be used in the analysis of wage differentials in this study.

The third chapter of the thesis investigates the theoretical found-
ations of sex discrimination since male-female wage differentials are
often the result of discrimination. Mechanisms for discrimination and
their underlying influences are discussed so that their manifestation
as wage differentials can be identified in the empirical section of the
study.

The retail food industry was chosen for analysis since it contains within it three sectors of differing structures, conduct and performance. Therefore the impact of market structure on wages can be examined within the context of similar occupations. This enables the effect of different human capital requirements that can be associated with dissimilar occupations, on the wage rate to be minimized. These three sectors are the chain stores, the affiliated independent stores, and the corner stores. Chapter four of this thesis is an industry study of the retail food industry, examining the structure, conduct and performance of each sector to isolate factors that will have an impact on the wage rate and on male-female wage differentials.

Chapter five of the thesis analyses cross sectional wage data from the industry, testing the relative strengths of the pertinent variable in explaining the wage structure and also examining the occurence and magnitude of male-female wage differentials within the industry.

II. AN INVESTIGATION OF VARIABLES AFFECTING WAGE DIFFERENTIALS

A. Introduction

This chapter of the thesis reviews the literature dealing with
concentration, unionism and other variables as they affect wage differ-
entials. The main theories studied here are those proposed by Dunlop;
Ross; Garbarino; Schwartzman; Segal; Weiss; Levinson; Masters; Bailey,
King and Schwenk; and Reder.[1]

The literature in this field has centered around which of the fac-
tors affecting wages are the main determinants, either singly or in com-
bination of industrial wage differentials. Included here are such fac-
tors as industrial concentration, degree of unionization, labour produc-
tivity and the product market environment. Studies investigating the
effects of these variables come up with significantly different results
and many are inconclusive. The divergencies in conclusions derived from
the major studies in this area revolve around the following factors:

1. The choice of industries under study.
2. The development of the industry, whether it is increasing em-
   ployment or cutting back on employment at the time of the
   study.
3. Business cycle behavior and how it affects the industry under
   study.

Overall, there are two hypothesis concerning the effects of con-
centration on wages; the high wage theory and the low wage theory.

B. High Wage Theory

The high wage theory postulates that firms in concentrated indus-
tries will pay higher wages than firms in less concentrated and compe-

titive industries. This follows from the theory that they have higher

long-run profits and are in a better ability-to-pay situation; they may

follow a long-run profit maximization policy and use part of their high-

er profits to pay higher wages in order to forestall industrial unrest;

they have a need for a skilled, dependable work force; and they are

more susceptible to union organization.

Firms in concentrated industries have higher long-run profits, de-

rived from their monopoly or oligopoly position and the type of product

produced. There have been a number of studies relating industry con-

centration with high profit rates.[2] Scheerer[3] sums this discussion on

profitability by saying;

> "It is not easy to obtain appropriate measures of
> profitability and concentration, and different
> analysts have used widely divergent measures and
> statistical techniques. Yet with only one signif-
> icant exception, they have reached the same con-
> clusion; that profitability rises with concentra-
> tion."[4]

With high profits, the firm does not have to adhere strictly to wage

and production policies geared for short run profit maximization. In-

stead they can follow policies such as paying high wages to gain pub-

lic approval, to either forestall or placate unions and avoid costly

labour disputes or to lower labour turnover. That is, they may follow

long run profit maximization policies.

Firms in concentrated industries are often capital intensive and

need skilled, dependable workers for efficient operation. Such work-

ers are more likely to be paid higher wages because of their human

capital characteristics. In addition, these firms are likely to pay

higher wages as a vehicle to reduce labour turnover which, in such

industries, adds significantly to production costs.

Finally, firms in concentrated industries may pay higher wages because of union organization of their workers and the pressure such organization can place on the employer for wage increases.

The fact that concentrated industries are more susceptible to strong union organization and control than less concentrated industries is seldom disputed. Unions are more likely to concentrate their organizational ability where there is the chance of organizing the greatest number of workers for the amount of effort and expense expended. Since firms in concentrated industries are usually large, with a larger labour force than firms in a less concentrated industry, a union concentrating its organizational ability on such firms is likely to succeed in unionizing a large number of workers at one time.

In addition, unions are more likely to succeed in a large firm operating in a concentrated industry since labour-management relations are more impersonal in large plants. One result of impersonal labour relations is the need for formalized grievance procedures which would be provided by a union. This additional benefit provided by the union is a positive factor in making an organizational drive succeed.

The consideration of a need for a skilled and dependable work force is also an advantage for union organization. Such workers are generally easier to organize than unskilled workers because they have lower turnover rates.

The fact that the workers are skilled has another advantage for the union in that they have a stronger bargaining position within the production process. This stems from the fact that they are less easily replaceable and the costs to the firm associated with labour turnover are high.[5] Management is more likely to grant wage gains to such skilled workers because of their high replacement costs and also because of

their need for a stable work force.[6]

It has been argued that firms in a concentrated industry could use
their high profit rate to fight union organization rather than to pay
high wages or to give in to union's demands and avoid labour disputes.
There is evidence to support this proposition for the time period prior
to 1935 since union organization was then more successful in competi-
tive industries. However, the passage of the U.S. Wagner Act in 1935,
restricting anti-union practises, diminished this advantage held by
concentrated industries and facilitated strong union organization in
U.S. oligopolistic industries.[7]

C. Low Wage Theory

The low wage theory hinges on the fact that a monopolist may also
be a monopsonist or a wage leader in the labour market, and will there-
fore pay lower wages than a firm in a less concentrated industry.

In a perfectly competitive industry, neoclassical theory says that
an employer will employ labour up to the point where the marginal net
revenue product of labour (MNRPL) equals the wage rate as determined
by the industry as a whole.

GRAPH 1
Wages and Employment in a Competitive Industry
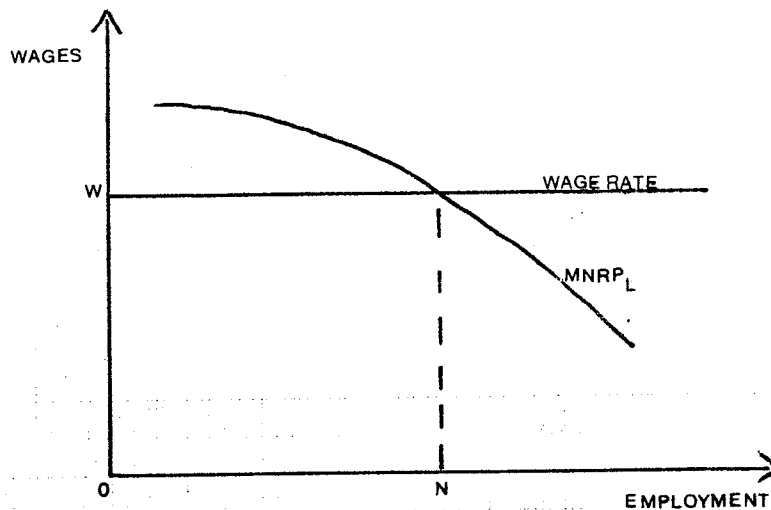
In the case of graph 1, the wage rate as set for the industry is OW and the number of people employed would be ON. At this point the number of labour units employed corresponds to the point where the wage rate (marginal cost of labour and average cost of labour) equals the marginal net revenue product of labour. Employing more labour would be adding more to the cost of production than the labour would be returning, on the margin. Employing fewer labour units would mean there was potential for increasing revenue in relation to cost, and the incentive would be for the employer to increase employment.

The employer in a concentrated industry will also employ labour to the point where the marginal cost of that last worker equals the marginal net revenue product of labour. The only difference in the analysis hinges on the fact that the shape and slope of the cost and revenue curves facing the firm will be different.

Since the employer may either be a oligopsonist, or will employ a significant percentage of the labour force in a given area; employing additional workers will necessitate raising the wage rate. The supply of labour curve faced by a firm in a highly concentrated industry (if you are assuming such a firm to be a monopsonist or an oligopsonist) is upward sloping, similar to the supply of labour curve facing the entire industry in a competitive model.

Employing more labour and raising the wage rate will also mean that the marginal cost of labour will be greater than the wage increment, since all workers, and not just the last worker hired, will have to be paid at the new rate. The marginal cost of labour curve will be above and have a steeper slope than the supply of labour curve.

GRAPH 2
Wages and Employment in a Monopsony
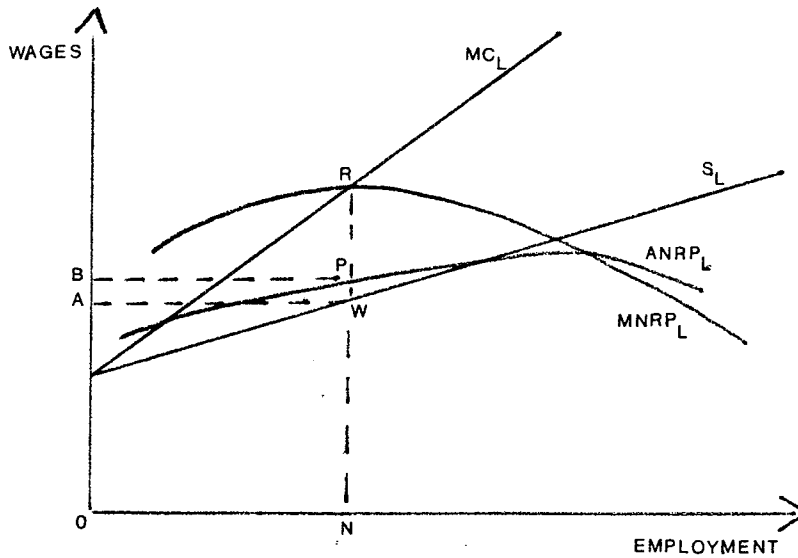
The monopsonist will still hire the number of workers correspond-
ing to where their marginal cost of labour equals their marginal net
revenue product of labour. With reference to graph 2, the firm will
hire ON workers, corresponding to point R. However, the wage rate will
be determined by the supply of labour curve, simarly to the competitive
example, but with the difference that the supply of labour curve lies
below the marginal cost of labour curve. Therefore, the wage rate for
ON workers will be OA, with the monopsonist capturing AB in excess pro-
fits.

Schwartzman[8] states (without citing back-up evidence) that the
monopolists' marginal net revenue product of labour will be lower than
a competitive firm's for any specified quantity of labour. Therefore,
it would follow that the wages paid by the monopolist would be signi-
ficantly lower.

This argument will only hold for cases where the monopolist or
oligopolist is also a monopsonist or oligopsonist. More usually such
firms are located in large labour markets and are competing for labour
with firms producing in other industries. If they are in reality com-

peting in the labour market they will face a relatively elastic supply of labour curve, at least not as inelastic as was assumed in the previous analysis.

If the firm in the concentrated industry employs highly skilled labour, it will in all probability be organized and subject to strong union pressure on the wage rate. In this situation, a monopsonist may be facing a monopolist (a case of bilateral monopoly). The resulting wage rate will reflect the relative bargaining position of each. In any case the final wage rate will probably not be as low as determined by the monopsonist alone. However, a priori the final outcome of the interaction will be indeterminate.

The low wage theory is not given much credance since the assumption that a firm in a concentrated industry is likely to be in a monopsonistic position has limited validity. Even if monopsonistic tendencies are noted, the fact that the firm will probably be facing a strong union on the question of wage rates will tend to wipe out any liklihood of such a firm paying low wages.

The theory that firms in highly concentrated industries are likely to pay relatively high wages would seem to be more plausible considering their ability to pay, their need for skilled, dependable workers and their liklihood of facing a labour union.

D. Previous Studies
Concentration's Effect on Wage Differentials

There have been an abundance of studies undertaken to measure the impact of concentration, unionism and other selected variables on wage differentials. The main ones are summarized here:

Schwartzman's study[9] was designed to test the theory that mono-

polies either raised or lowered wages in comparison to more competitive industries. He compared similar Canadian and U.S. industries that differed only with respect to their concentration ratios. He concluded that concentration was an inadequate determinant of wage differentials since such differences in wages paid by monopolists and those paid by more competitive industries were not significant.

Schwartzman's study started with the basic hypothesis that there is a significant difference between the wages paid by a monopolist and a competitive firm. The study was designed to test the statistical significance of wage differentials emanating from a difference in industrial concentration within the same industry group.[10] Schwartzman concluded that the differences in wages paid by oligopolists compared with competitive or less oligopolistic industries were not significant. Therefore, there was no evidence to back up the assertion that either the monopolists pay high wages or that they pay low wages. The study results showed that the dispersion within each group was greater than the dispersion of the group averages. This fact alone would tend to show that factors other than concentration were the primary factors creating wage differentials.

However, this conclusion of Schwartzman's was challenged by Weiss[11] who claimed that the result was due to the fact that Schwartzman's study rested on nine, relatively minor, industries and that a study using different, more significant industries in terms of their share of the economy's product would show different results.

Weiss designed his own test of the monopoly/wage hypothesis.[12] He tested for two hypotheses; first, that concentrated industries pay high annual rates for labour, and secondly, that these high earnings are higher than can be accounted for by the personal characteristics of the

labour involved.

The results of his study showed that concentrated industries do pay high wages for certain occupations, with the relationship being strongest for male production workers.

However, when Weiss introduces additional variables of personal labour characteristics into his analysis, the relationship between concentration and earnings was no longer significant (ie. it was negative as often as it was positive); although the relationship between unionism and earnings was not significantly affected. Since this relationship between concentration and earnings was strongest for male production workers where the threat of unionization is greatest, this would seem to suggest that employers in concentrated industries pay high wages and receive superior labour in return, the initially high wages prompted by actual (or threatened) unionism.

Therefore, Weiss' first hypothesis that concentrated industries pay high wages holds up although the second one, that these high wages are higher than can be accounted for by the personal characteristics of the workers, should be rejected. Weiss makes the following comments:

> "All of the conclusions of this paper are necessar-
> ily tentative because the indexes of concentration
> used are imperfect, because industry definitions
> are arbitrary, because weights used in combining
> markets to match Census industries are arbitrary,
> and because the Census places some persons in the
> wrong industries. It might be argued that the
> nonsignificance of concentration as a factor in
> income determination once personal variables are
> introduced is due merely to measurement errors.
> On the other hand, the significant results before
> personal characteristics are introduced suggest
> that much of the effect of monopoly power has in
> fact been identified, and that at least this iden-
> tified portion is almost entirely accounted for by
> personal characteristics."13

Other studies made on this point, most notable S. Slichter's[14],
have argued that not all of the variation in wages attributed to con-
centration can be explained by personal characteristics of the la-
bour involved. Slichter made the point that, if personal characteris-
tics were the explanatory variable in the payment of high wages, then
employers under the greatest competitive pressure would pay high
wages. In such a case, paying high wages would assure them superior
labour and they would, in fact, be paying less per productivity unit
for labour.

Despite the many studies casting doubt on Weiss' final results,
Weiss made an important point by including such variables. He under-
lined the necessity for considering variables that could act in com-
bination with those usually considered; concentration and unionism.
He tested the hypothesis that concentration might be a proxy for other
factors, and that accepting a positive correlation between concentra-
tion and earnings might be masking other important correlations. The
fact that his results were not conclusive evidence that personal char-
acteristics explain the concentration/earnings hypothesis is not to
deny the possibility that the productivity of labour is also an impor-
tant variable to consider.

Segal's[15] non-quantitative study centered around the need for var-
iables, in addition to concentration, to explain and predict wage dif-
ferentials. Specifically, his paper investigated;

> "The question of the mechanism through which mar-
> ket structure exerts its impact on union wage-
> gaining ability."[16]

The additional variables Segal singles out as having an important
impact on wages were;

1. The geographical area of production.
2. The characteristics of demand, (ie. the elasticity of the product's demand, whether the product is a producer's or consumer's good, etc.).
3. The number and size distribution of sellers and buyers.
4. The conditions of entry into production.
5. The nature and degree of product differentiation.

> "Accordingly, insofar as the market structure proposition has any validity, each particular feature and any combination of them must be viewed also as factors influencing union ability to make wage gains."17

In order to simplify his study and to investigate polar cases, he limited his analysis to three of the five variables, these being;

1. The geographical boundaries of markets in which the industry's firms operate.
2. The number and size distribution of sellers and buyers.
3. The conditions of entry for new firms.

He then saw the necessity for separating industries by their geographical market size and market structure for the purpose of comparing polar cases. This subdivided the industries into;

1. A non-competitive industry in a national market.
2. A competitive industry in a national market.
3. A non-competitive industry in a local market.
4. A competitive industry in a local market.

which took account of the three variables he considered most important to the analysis.

The conclusion he reached was that, the ease with which unions can negotiate wage increases is positively correlated with the degree of concentration and the size of the product market.

A union can more easily organize and maintain its strength if the industry is concentrated than if it is competitive. Segal explained this with reference to the uniformity of the firm's pricing policies and their ability to pass increases in costs (wages) on to the consumer in the form of increased price. This turned on the fact that the firm

in a concentrated industry is in a better 'ability to pay' situation,

and does not have to worry about losing its market to new entrants.

> "...in the noncompetitive industry union negotia-
> ted wage levels can be instituted without any dan-
> ger of being eroded by departures from the pattern,
> locational shifts to lower wage areas, or a rela-
> tive rise in the nonunion sector. This implies
> that in many cases the union can negotiate wage
> increases without any obvious impact on the em-
> ployment of its members even though, at the time,
> there are no over-all demand pressures or short-
> ages in the relevant labour markets."18

With respect to geographic factors, one could expect, ceteris pari-

bus, that a union in a local industry would have better wage gaining

ability than a national industry of the same concentration. Local union

leaders are in a better position to determine a wage policy that will

be relatively free of intra-industry competition. In addition, a local

market union would be in a relatively better position to organize com-

peting firms in contrast to its national counterpart.

However, regional differences in a union's ability to organize and

maintain its position are also important. The following variables will

influence such regional differences; the degree of industrialization

and urbanization, the region's industrial composition, and the region's

legal framework. An additional point to note here is that, if the union

has only organized a small percentage of the labour in a particular in-

dustry, the nonunion sector will be more important in determining wage

policies than would market structure.

Segal's conclusion was that unions organizing firms in a non-com-

petitive local industry would be in the best wage gaining position, while

a union organizing in a competitive, national industry would be in the

most disadvantaged position.

Segal's argument never dealt with the theory of the market struc-
ture's impact on wage differentials independent of a union's influence.
The manner in which he presented his arguments suggest that the indus-
try's competitiveness or noncompetitiveness will only affect wages in-
sofar as it acts to facilitate and maintain union strength. This
presentation implies, (without explicitly stating) that there is no in-
herent tendency for a concentrated industry to pay either higher or
lower wages in relation to a less concentrated industry. Such ten-
dencies only become manifest through the medium of union organization.

Later in this chapter, arguments will be presented to counteract
this implied assumption. However, the influence of union organization
is an important factor in determining wage differentials. Many studies
(Garbarino[19], and Levinson[20]) give credance to the theory that it is
the combination of unionism and concentration that has a strong impact
on wage differentials; more than the unionism and concentration vari-
ables viewed separately.

Unionism's Effect on Wage Differentials

Major studies investigating the effects of union organization on
earnings have been; Douglas , Ross , Dunlop , and Lewis.[21]

Douglas argued that unions are instrumental in raising the wages
of unionized workers relative to non-unionized workers only in the early
stages of unionization. However, once the union/nonunion wage differ-
entials are established they tend to be stable, and unions meet with
little success in further widening them. Extrapolating then, this means
that the union's development during the specific time of the study is
the important variable to consider, rather than simply the fact of whe-
ther or not the industry is unionized.

Ross's[22] study came to the conclusion that union organization explains much of the variation in wages. However, he divided the industries under study into three groups according to their degree of unionism, and his results showed greater diversity in wage increases within each group than between groups. In addition, none of the industries with the greatest increase in earnings fell within the bounds of the most strongly unionized group. If the existence or non-existence of unionization (and its strength) were a decisive factor in wage determination, these wide divergencies should not exist. Therefore, although Ross's study claimed to demonstrate that unions were the explanatory factor when investigating wage differentials, his findings are to be doubted.

Lewis' study began with a review of the previous studies dealing with unions and wage differentials. See appendix I for his aggregation of these studies showing their estimations of unions' relative wage effects.[23]

His conclusions were that unions' effects have varied throughout time:

> "The evidence is strongest for the period beginning
> in the late 1930's and ending at the end of the
> war or shortly thereafter. Five of the seven stu-
> dies...that provided data for that period show de-
> clines in the relative wage effects of unionism
> from the beginning to the end of the period."[24]

He also observed that, in the short-run, unionism has tended to make the money wages of labour somewhat rigid against general price level movements. His own study showed a negative partial correlation between   wages and the rate of inflation.

> "Throughout the last twenty-five years and very
> likely also in earlier years (except those of
> rapid deflation), the average relative wage ef-

> fect of unionism, as measured ... in per cent per
> percentage point difference in extent of unionism,
> probably at no time exceeded 0.25 and may have
> been 0.05 or less at the end of and just follow-
> ing World War II."25

From his own study, Lewis estimated the average relative wage ef-
fect of unionism to be from 0.10 to 0.20 percent per percentage point
difference in the extent of unionism. Looking at the effect in a dif-
ferent way; unionism changed the amount of relative wage differential
between industries by no more than two to four percentage points in
the late 1920's and by no more than four to eight percentage points up
to 1958 (the time of his study). Thus, Lewis seemed to be saying that
unionization accounted for very little of the observed wage differen-
tials between industries. However, he failed to expand on this and pos-
tulate alternate variables to account for the variation.

John Dunlop, commenting on Lewis' article, claimed that Lewis
failed to acknowledge unionism's most important effect; not on the wage
differential per se; but rather on the fundamental changes it effects
on a firm and its surrounding product and labour markets.

> "All we know about collective bargaining suggests
> that the most important effects involve funda-
> mental changes in an enterprise and its sur-
> rounding product and labour markets. It is
> really not possible to leave the enterprise and
> its markets alone, introduce a union, and then
> see what happens to the wage structure. The in-
> troduction of unionism typically involves a
> wholesale transformation."26

He then cited the important changes unionism introduces as being;

1. A change in the quality of the labour force.
2. A change in the content of jobs.
3. A change in the division of labour.
4. A change in the method of wage payment.
5. A change in the division of compensation between wages and fringe
   benefits.

6. A change in work rules.
and such other possible changes as;
1. A change in the physical productivity of labour including skill,
    training, morale, etc.
2. A change in the workings of the labour market.
3. Changes in information on jobs.
4. Changes in internal management.
5. A change in the marginal rate of technical substitution between
    capital and labour.
6. A change in product market competition.

The fact that unions differ in power and effectiveness (apart from
the percentage of workers in the industry they have unionized), plus
the fact that their initial impact on wage differentials will differ
significantly from their long run impact, and finally the fact that
different unions will have different policy positions which will affect
their wage levels and changes; all have to be accounted for in such a
discussion. These were factors that Lewis (and other researchers) have
failed to internalize into their analysis.

Dunlop's comments moved the analysis away from the effect of one
single variable (i.e. unionism) on wage differentials to argue for the
necessity of analyzing the combined effects of market structure, pro-
duction functions, labour variables, relative power positions, as well
as degree of union organization; to arrive at a realistic picture of
wage movements and relative wage differentials. Dunlop argued, quite
rightly, that an incomplete analysis will give misleading conclusions
that will tend to overestimate the impact of the included variables.

The overall finding of these studies on unionism and wage differen-
tials is that unionism alone is neither a necessary nor sufficient con-
dition to explain such differentials. Additional factors, such as union-
ism's causes and effects, must be included to account for the residual.

Studies Including Other Variables

Other researchers have investigated the effects of additional variables and combinations of variables on wage differentials and have arrived at more convincing, rigorous conclusions regarding the determinants of such differentials.

Levinson[27] argued that it was not unionism or concentration per se that influenced wage differentials, but the combined effect of strong union power facilitated by a "permissive" product market environment. Strong union power would represent the primary, or "initiating" force however.

> "... the relationship between union collective bargaining coverage and an oligopolistic product market structure is not coincidental but follows rather from the relative ease of entry of new firms into production outside the jurisdictional control of the union. Thus, industries having high concentration ratios are characterized by entry barriers imposed by the nature of the industry itself – high capital requirements, patent controls, established brand names, and so forth. Given these entry barriers, a union, once firmly established within all or a large proportion of the existing firms in the industry, is more able to maintain its jurisdictional control against the threat of erosion by the establishment of new non-union firms and hence (other things equal) can press more aggressively for greater wage adjustments ... The high correlation observed in manufacturing between union strength and concentration is therefore not coincidental, but is systematically related by the structural interaction of entry barriers on the maintenance of union jurisdictional control."[28]

In a competitive product market, there may also be factors aiding union organization and maintaining its strength, such as "spacial" entry limitation for new entrants. By "spacial", Levinson meant that due to the particular type of production process in use, a firm is forced to locate within a certain spacial (i.e. physical or geographic) area.

This acts as an "entry barrier", similar to those discussed for the concentrated industries, and facilitates a union's control and strength. Therefore, if a union has succeeded in organizing an industry, there are factors in the concentrated sector (and to a limited extent also in the competitive sector) that will maintain its control. In this case, the union can push for increased wage gains. Levinson's assertion was that the structure of the industry's product market is not a sufficient explanation for observed wage differentials. Rather the explanation lies in the production process' entry barriers and how they act to aid and maintain union organization.

Dunlop[29] argued that wage differentials were best explained by differences in labour productivity (as measured by output per man hour). His study found a 0.47 correlation between wage gains and productivity for all thirty-three industries studied. He also observed the largest wage gains in those industries which had the largest productivity increases.

However, in the industries Dunlop studied, those that had the greatest productivity increases also had expanding employment. Therefore, he maintained the increased wages (made possible by increased productivity) were necessary to attract greater numbers of workers.

Another explanation for the higher wages in expanding employment industries is that expanding employment usually implies expanding investment that would embody inherent rises in productivity, thus allowing for higher wages.

In his analysis though, Dunlop failed to take into account the size of the labour market being drawn on and its tightness or looseness. If the relevant labour market were large with high unemployment, the firm would not have to resort to increasing the wage rate for expansion. The

effects of expanding employment on the wage rate will be a function of the elasticity of the supply of labour facing the industry. This is a factor Dunlop failed to investigate, and one that would have a significant impact on his findings.

Garbarino[30] proposed to test both Dunlop's hypothesis that productivity will explain most wage variations, and Ross' contention that union organization is the explanatory variable.

Garbarino contended that more than one factor will influence wage differentials and it is likely that these various factors will reinforce one another.

He broke these factors into two main groups: "internal" forces and "external" forces. The internal forces affect wages through changes in the firm's demand for labour and result from changes in the marginal products of the factors of production. A change in the productivity of labour is such an "internal" force and acts on the wage rate by reducing unit costs of production. This change in productivity could result from either 1) an increase in the skill level of labour or 2) the improvement of production by the use of more, or better, equipment and organization.

External forces are those that change one of the markets facing the firm. They will change the elasticity of the supply of labour or of other factors or production, as well as possibly changing the elasticity of demand for the final product. These "external" forces are most often described as market forces; unionism being one part.

Garbarino's model attempted to measure four variables affecting the wage rate:

    1. <u>The differential changes in output per man hour</u> attempted to mea-

sure the differential internal developments in various in-
dustries.
2. The degree of concentration of production acted as a proxy
for the likelihood that cost reductions would accrue to the
producer.
3. The degree of union organization predicted the likelihood of
such cost reductions being diverted to increased wages.
4. The degree of expansion of employment acted as an indication
of any upward pressure on wages.

He makes a second distinction between the variables affecting wages,
breaking them into "permissive" and "positive." The "permissive" var-
iables set the parameters within which the "positive" variables acted to
determine the actual effect of the interaction on wages. Productivity
is a "permissive" variable giving the producer scope for increasing
wages. The concentration and unionism variables are "positive", deter-
mining which of the alternatives arising from the change in productiv-
ity will actually materialize (higher wage rates or profits).

His study covered the time period 1923 to 1940 and concluded that
productivity (output per man hour) and concentration are "better" ex-
planations of the behavior of wages during this period, than is the de-
gree of unionization. The correlation coefficient for the productivity/
wage relationship was significant (0.60), as was the coefficient for
the concentration/wage relationship (0.67). When examining the unionism/
wage relationship however, he found as Ross' previous study had done,
that the variation within each group (classified by the degree of union-
ization) was more pronounced than the variation between the groups. He
applied a "Z" test to these results and found that the null hypothesis,
of no correlation between unionism and wages, was not disproved. He
also found a pronounced association between unionism and concentration
that the "Z" test indicated was unlikely to be the result of chance. In
addition, by including the employment variable, much of the observed de-
viation not correlated to productivity and concentration, was explained.

Garbarino's study was a significant development in this wage differential debate. He showed that wages differentials are affected by a combination of variables acting within the well defined boundaries of predictable, feasible outcomes. The final outcome of a change in the permissive variable (productivity) will depend on the relative strength of the positive variables (concentration and unionism); with a change in either the productivity or concentration variables having the greatest effect on observed wage differentials.

Bailey, King and Schwenk[31] investigated the same variables as Garbarino plus the following; geographical region, the capital-labour ratio, establishment size and the skill mix of labour involved. Their regression equations investigated different combinations of the above variables and came to quite different conclusions concerning their relative effects on the wage differential.

Their results showed the union status variable to be an important influence on wages, with its quantitative difference being about 50¢ per hour. This is in conflict with other studies,[32] but reinforced the findings of others.[33] Their union-nonunion wage differential was from 7 per cent to 16 per cent. They did not, however, give any information on the variance within each of the three unionized categories (group 1 - less than 50 per cent of the work force covered by collective agreements; group 2 - 50 per cent to 75 per cent unionized; group 3 - greater than 75 per cent unionized). Scrutiny of the diversification within each group has previously cast doubt on similar studies and could possibly do so with this study's finding too.

They found the size of the establishment (firm) to have a significant impact on wage differentials which gives credence to Master's

study.[34] They found the wage differential between the 250 to 1000

worker plant size and the next level (1000 plus workers) to be 58¢

per hour.

The influence of the geographic location, capital-labour ratio,

and the skill mix of labour were positive and significant to the wage

differential. This finding was consistent with the theoretical argu-

ments put forward defending their initial inclusion.

The surprising result of this study was the relatively weak rela-

tionship between the concentration variable and wage differentials.

When the combined effect of the skill mix and capital/labour ratio were

included, the value of the concentration variable was reduced to almost

zero. The authors explained this finding by saying the positive rela-

tionship between wages and concentration, that is usually assumed, may

be based on differences in production functions, different skill mixes

and capital/labour ratios that the concentration ratio may act as a

proxy for; rather than on the level of concentration per se. The inclu-

sion of these additional variables then leaves the concentration ratio

measuring only the residual, and very insignificant.

However, another explanation is that establishment size is often a

proxy for concentration. Therefore the inclusion of a variable measur-

ing establishment size would diminish the significance of the concentra-

tion variable. In light of this, it is questionable whether the rela-

tionship between concentration and wages is as insignificant as the au-

thors conclude.

This study gave further evidence for the need to include variables

in addition to those usually considered: concentration ratio, degree of

unionization and productivity; when investigating the causation of wage

differentials.

E. Conclusion

The studies cited in this chapter have offered conflicting con-
clusions as to which variables impact on wages. The authors came to no
concensus on which variables offer the best explanation for the exist-
ence of wage differentials. Weiss (1966) and Schlicter (1950) found
the level of industry concentration to be a significant variable impact-
ing on wages. However, Weiss also found that labour productivity was
higher in concentrated industries which he said could explain much of
the concentration level's impact on wages. In contrast with these stu-
dies was Schwartzman's (1960) finding that the level of concentration
was not a significant variable influencing wage differentials.

Bailey, King and Schwenk (1970) found that establishment size (of-
ten considered a proxy for concentration) had a significant impact on
wage differentials also. Dunlop (1948) determined that the productiv-
ity of labour was the most important determinant of wage differentials,
with union organization also affecting the wage rate through the changes
if effected on the firm's labour and product markets.

Other studies by Douglas (1930), Ross (1948), Lewis (1963), Segal
(1964), Levinson (1967) and Bailey, King and Schwenk (1970) have of-
fered evidence that union organization is the significant variable to
be considered when investigating wage differentials. Lewis contended
that although unionization does affect wages, its impact has varied
through time. Segal and Douglas maintained that union organization af-
fects the wage rate only under certain conditions with Douglas limiting
its effect to the early stages of organization and Segal investigating

its effect in conjunction with the geographical nature and structure of the industry in question. Levinson limited unions' impact on wage differentials to the combined effect of union power and a 'permissive' product market environment.

Garbarino (1950) added another variation to the analysis by considering not the impact of concentration and unionism per se, but their effects as external, internal, permissive or positive forces on the wage rate. The first distinction he made was between internal and external forces. He explained that the internal forces will affect wages through changes in the firm's demand for labour. In his analysis, productivity was one such internal variable. External forces are those that change one of the markets facing the firm, unionization being an example. The second distinction he made was between permissive and positive variables. Productivity is a permissive variable, giving the producer scope for increasing wages, that will set the parameters within which the positive variables of concentration and unionization will act to determine where the increase will accrue. He concluded by saying that changes in productivity and concentration are the best variables to explain wage variation.

Therefore, the only concensus to be drawn is that the variables of concentration, unionization and productivity are viewed as having the greatest impact on wage rates and wage differentials.

The hypothesis to be used in this study is that concentrated industries will probably have higher wage rates than less concentrated industries. In a highly concentrated industry, factors such as economies of scale and efficient plant size are more likely to be in operation than they are in a less concentrated industry. Therefore, the productivity of labour is likely to be higher in the concentrated industries. This

higher productivity will give the firm more scope with which to pay higher wages. In addition, concentrated industries are more likely to be unionized than are their less concentrated counterparts, so that the increased revenue generated through high productivity can be used as a bargaining tool in collective negotiations to gain higher wages for the employees. Without a union organization, the power of the concentrated industry may ensure that the revenue generated through productivity will accrue to profits.

Therefore, if the internal variable of high productivity is operating in the industry, there is scope for the employer to raise the wage rate. Likewise, if the external and positive variable of unionization is also present, there is the possibility for that 'scope' for higher wages to be transformed into 'actual' wage increases. Chapter five of the thesis will test wage data for the retail food industry to determine whether or not the highly concentrated, unionized sector of the industry does in fact pay higher wages than its less concentrated, non-unionized counterparts.

Notes

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   D. Schwartzman, "Monopoly and Wages" Canadian Journal of Economics and Political Science, V.26 No. 3, 1960, pages 428-438

   M. Segal, "The Relation Between Union Wage Impact and Market Structure", Quarterly Journal of Economics, V.78, 1964, pages 96-114

   L.W. Weiss, "Concentration and Labour Earnings", American Economic Review, V.56, 1966, pages 96-117

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   W.B. Bailey, H.W. King, and A.E. Schwenk, "Wage Differentials, Establishment Size, Union Status, and Industrial Concentration", American Statistical Assoc. 1970 Proceedings of the Business and Economic Statistics Section, pages 395-403

   M. Reder, "Wage Differentials: Theory and Measurement", Aspects of Labour Economics, Princeton 1962

2. see;
   J. Bain, "Relation of Profit Rates to Industry Concentration", Quarterly Journal of Economics, Aug., 1951, pages 293-324

   D. Schwartzman, "The Effect of Monopoly on Price", Journal of Political Economy, V.26 No. 3, 1959, pages 352-362

   L. Weiss, "Average Concentration Ratios and Industrial Performance", Journal of Industrial Economics, July, 1963, pages 237-253

3. R. Scheerer, Industrial Market Structure and Economic Performance, Rand McNally, 1970

4. _Ibid._, page 184

5. see;
   J.T. Dunlop, _op. cit._

6. see;
   W. oi, "Labour as a Quasi-Fixed Factor", _Journal of Political Economy_, December 1962, V.70 No. 6, pages 538-555

7. see;
   H. Levinson, "Unionism, Concentration and Wage Changes; Towards a Unified Theory", _Industrial and Labour Relations Review_, V. 20, 1967, pages 198-205.

8. D. Schwartzman, "Monopoly and Wages", _Canadian Journal of Economics and Political Science_, V.26 No. 3, 1960, pages 428-438

9. _Ibid_

10. He divided his selected industries into three groups; 1. unconcentrated Canadian industries/unconcentrated U.S. industries, 2. concentrated/unconcentrated and 3. concentrated/concentrated, with the concentrated industry of the second pair being Canadian. His data was limited first of all because of the necessity of pairing identical Canadian and U.S. industries which eliminated many industries without a foreign counterpart. Secondly, the data was limited due to the difference in computing industrial concentration ratios. Canadian concentration ratios measure the three leading firm's share of total employment in each industry (from G. Rosenbluth, _Concentration in Canadian Manufacturing_, Princeton 1957), while U.S. concentration ratios measure the four leading firms' share. This difference necessitated eliminating any industries where the Canadian three-firm ratio is less than 50% and the four-firm ratio, when it can be calculated, has a maximum greater than 50% (while at the same time the U.S. ratio is less than 50%). In this case it is impossible to tell whether it is concentrated or unconcentrated relative to the U.S. industry.

11. L.W. Weiss, "Concentration and Labour Earnings", _American Economic Review_, V.56, 1966, pages 96-117

12. _Ibid._

13. _Ibid._, page 116

14. S. Slichter, "Notes on the Structure of Wages", _Review of Economics and Statistics_, Feb., 1950, pages 80-91

15. M. Segal, "The Relation Between Union Wage Impact and Market Structure", _Quarterly Journal of Economics_, V.78, 1964, pages 96-114

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18. Ibid., page 102-103

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20. H. Levinson, Op. cit.

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22. A. Ross, Op. cit.

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25. Ibid., page 343

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27. H. Levinson, "Unionism, Concentration and Wage Changes; Toward
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28. Ibid., p. 201

29. J.T. Dunlop, Op. cit.

30. J.W. Garbarino, "A Theory of Interindustry Wage Structure Varia-
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31. Bailey, King and Schwenk, "Wage Differentials, Establishment Size,
     Union Status, and Industry Concentration", in the American Statis-
     tical Association 1970 Proceedings of the Business and Economic
     Statistics Section., pages 395-403

32. H.G. Lewis, Op. cit.; J.W. Garbarino, Op. cit.

33. notably L. Weiss, Op. cit.

34. S.H. Master, "An Inter-industry Analysis of Wages and Plant Sizes"
     in Review of Economics and Statistics, August 1969, pages 341-345

III. DISCRIMINATION AND ITS EFFECT ON MALE-FEMALE WAGE DIFFERENTIALS

Introduction

In the previous chapter the economic reasons for wage differentials have been outlined and studies investigating the impact of selected variables on wage differentials have been discussed. However this discussion offers no explanation for the existence of wage differentials between male and female employees working in the same establishment and possibly in the same occupational category. This chapter looks at, not the determination of an industry wage rate by economic factors such as concentration, unionization and productivity; but investigates the causes for wage discrimination and occupational discrimination as explained by various schools of economic thought.

The analysis of discrimination, whether it be pure wage discrimination or occupational discrimination, can take many forms. Given that the wage rate can be influenced by the following variables; personal characteristics, human capital characteristics, occupational characteristics, industry factors, institutional factors and location, discrimination can also be manifest and examined in as many ways. Different schools of economic thinking take different reference points and tacks when investigating the causes and effects of discrimination. This chapter will examine these differing analyses of discrimination.

A. The Neoclassical Analysis of Wage Differentials/Discrimination

Neoclassical analysis assumes a homogeneous labour supply differentiated solely on the basis of worker productivity, with education and training being exogenous factors. It also assumes perfect information with respect to wage rates and job opportunity as well as a high degree of labour mobility. Implicit in this is the assumption of rationality in decision making. Institutional factors are also generally held to be exogenous in this analysis.

Wages are determined by the market forces of supply and demand in the general context of equilibrium analysis. Therefore the existence of wage differentials are explained by differing worker productivity and short-run disequilibrium. Wage rates then, reflect the marginal productivity of the workers, with productive workers earning more in relation to the less productive.

In this model, pure discrimination[1] cannot exist in the long run since competition would act to force discriminating employers to either stop production or modify the discriminatory practises. Implicit is the assumption that employers are profit maximizers who

maximize output and profits. If an employer were to discriminate on the basis of sex, preferring male workers and paying them a higher wage rate than the women workers, the total labour cost of production would rise. In this situation other firms could gain a competitive advantage by hiring women. By hiring women and lowering the cost of production, the firm(s) could undersell the discriminating firm, either forcing it out of business or forcing it to change its wage practises. Therefore, in neoclassical analysis, discrimination is at best a short-term phenomena that will disappear in the long-run due to the operation of competitive forces.

There are two theories of discrimination in a competitive situation; deterministic and statistical. The deterministic theory postulates that employers have a "taste" for discrimination where they act as if they were willing to forego income to favour certain characteristics in employees. Put another way, they are willing to forego income to avoid hiring workers who possess certain characteristics deemed undesirable.

Gary Becker[2] postulated a theory of wage determination incorporating such "tastes" for discrimination by the use of a discrimination coefficient (D.C.). According to his theory, the money costs of a transaction do not always completely measure the net costs and his D.C. acts as a bridge between the money and net costs. If the wage rate for a certain group of workers is "w", an employer will act as if $w(1+D_i)$ were the net wage rate, with D_i as the D.C. If the D.C. is positive, inferring disutility in hiring a certain type of worker (discrimination), it represents a non-monetary cost of production. If the D.C. were negative, it would infer nepotism.

> "...an employer tries to find the optimal combination of factors for each level of output.
> Classical economic theory assumes that he chooses the combination that minimizes money costs;
> at this point the ratio of the marginal product of any two factors equals the ratio of their prices, assuming competitive labour markets ...
> Discrimination does not alter the criterion of minimizing net costs, and the ratio of any two marginal products still equals the ratio of their net factor prices.
> However, equilibrium factor combinations would be quite different in situations of discrimination from those obtained with classical assumptions: there would be a smaller demand for factors discriminated against, and the money cost of producing each output would be greater than the minimum money cost"[3]

The statistical theory of discrimination suggests that employers
are adverse to hiring workers possessing certain traits because of eron--
eous assumptions about their productivity. For example, many employers
may not be willing to hire a woman worker because of a belief that she
will be absent more often and therefore less productive. This theory
has its basis in risk aversion. Since there is risk in hiring a less
productive worker, an employer, through no inherent dislike of certain
groups of workers, will fail to hire them. Alternately, an employer
will only hire certain workers, women for example, at a lower wage rate
to minimize the potential costs associated with the risk.

The result of this process is discrimination against certain groups
of workers, with their only undesirable traits being that of expected
low productivity. Since there is an added cost associated with acquir-
ing more complete information on a worker's productivity and since em-
ployers are assumed to be profit maximizers/cost minimizers, they will
not incur the additional cost of finding out the undesired group's actual
productivity. Hence certain groups of workers find they can not command
high wages due to an untrue belief about their work performance and pro-
ductivity. The costs of this risk are passed from the employer to be born
by the employee.

Theories of discrimination in noncompetitive situations are not given
much credence in neoclassical analysis. Monopoly is expected to result
in discrimination only under some limited conditions. Unions do not of-
ten discriminate with respect to race, colour, sex, etc. and a lack of
certain groups of workers in their ranks is usually a result of their
absence in the unionized industries not the result of union discrimina-
tion per se. Discrimination could result from a monopsony situation but

monopsony is thought to be unlikely in neoclassical analysis with its assumptions of labour mobility. Janice Madden[4] however has proposed a model of monopsony discrimination contending that, "The greater the monopsony power, the greater the opportunity to discriminate".[5] Although this is qualified with the statement:

> "Discrimination, then, does not follow from monop-
> sony power. It is also necessary that:
> 1. the labor supply can be grouped into separ-
> ate pools;
> 2. these labor groups have different elastici-
> ties of supply."[6]

Her model rests on the assumption that employers will implicitly collude, forming any effective monopsony, to subdivide the labour market into "female" jobs and "male" jobs so that both wage and occupational discrimination can be practised.

Jackson[7] postulates a similar model to explain the existence of discrimination in a neoclassical framework. In his discussion of discriminating monopsony he suggests;

> "In dealing with monopsonistic conditions, it has
> hitherto been assumed that the supply of labour
> can be regarded as coming from a single source.
> Even though each worker had his own individual
> supply price... it may be impossible for the em-
> ployer to pay one worker less than another. The
> employer would clearly maximize his profits if
> he could pay each workers only his supply price...
>
> In certain circumstances, it may be possible to
> distinguish between two distinct groups in the
> labour force, and to pay different wages to the
> two groups, even though their efficiency is the
> same. It may, for example, be possible to pay
> women less than men for doing the same work."[8]

In his model, men and women offer their employment at different supply prices with the male starting wage being higher than the females'. This situation results in two distinct labour supply curves facing the employer. The following diagram illustrates this:

GRAPH 3
Wages and Employment Under Discriminating Monopsony
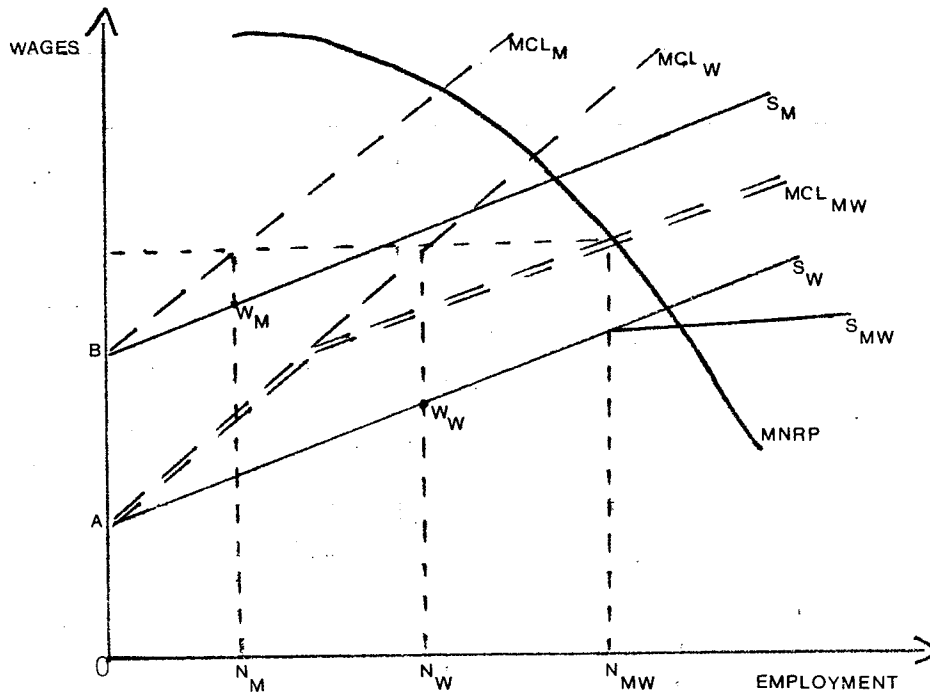
Source: J.M. Jackson, Wages and Labour Economics

The supply curve for women is ASw with a minimum wage of OA, the
supply curve for men is BSm with their minimum wage being OB. The re-
sulting marginal cost curves are MCLw (for women) and MCLm (for men).
The total marginal cost curve for the employer's labour force is MCLmw
and is the horizontal summation of MCLm and MCLw.

Given the possibility for minimizing the wage bill by adjusting
the proportion of men and women employed, the employer will hire N_{mw}
workers since this is the most profitable level of employment. The num-
ber of women workers hired will be Nw and the number of men hired, Nm.
Their corrresponding wage rates will be Ww and Wm with the wage for
males higher than the females' wage rate.

In this way, by differentiating the total labour force available

into two distinct groups with separate supply curves, the employer can
profitably discriminate against one group. This concept of discrimin-
ating monopsony is useful in explaining the occupational discrimina-
tion obvious when one looks at the position occupied by women in the
labour force.

Conclusion

Competitive neoclassical theories seem to be inadequate in ex-
plaining wage discrimination against women. First of all, their empha-
sis on the competitive process to eliminate discrimination fails when
the economy does not exibit such competitive tendencies. The neoclas-
sical remedy for discrimination, the movement of nondiscriminating firms
into markets held by firms that do discriminate because of profit po-
tentials, does not occur when barriers to entry are prevalent in those
markets. Current economic literature has given evidence that substan-
tial barriers to entry exist in most industrial sectors. creating oligo-
poly or monopoly situations. With the operation of effective barriers,
the movement of firms to counteract discriminatory practises is not
feasible and discrimination will not be eliminated.

Janice Madden's explanation of discrimination against women being
the product of employer collusion to relegate women to certain occupa-
tions and wage scales, creating an effective monopsony facing women in
the labour market is the best neoclassical based theory explaining dis-
crimination. It incorporates the factors of social custom and institu-
tional practises that are generally ignored by other neoclassical analy-
sts.

Jackson's theory of discriminating monopsony adds another dimen-

sion to this by justifying the model in terms of efficient profit max-
imizing/cost minimizing.

B. Human Capital Analysis of Wage Differentials/Discrimination

Human capital theory is the neoclassical analysis of production
applied to the investment decisions of the individual worker. The wage
rate is determined by the supply of, and demand for, certain skills and
arrived at through the equilibrating process of the labour market. The
supply of various labour skills is a result of the equalization of the
rate of return from investment discounted over the earnings years with
the marginal cost of acquiring that skill. If the market is in dis-
equilibrium with a shortage of a specific skill, the result will be an
increase in the wage rate for labour possessing it. This will increase
the rate of return of investing in training to acquire the skill and
more labour will undertake such investment. However, as more workers
with the skill become available, the supply increases and will have a
depressing effect on the wage rate. The wage will then fall to the point
where the rate of return on the investment will equal the marginal cost
of investing, returning the market to equilibrium.

In the theory, the worker is viewed as a producing unit with his/
her product being human capital. The worker will consume education and
training[9] in accordance with marginal product theory, i.e. the marginal
cost of acquiring human capital must be offset by an equal marginal in-
crease in expected earnings discounted over the life of the earning
years. Each acquisition of human capital increases the worker's poten-
tial earnings.

Human capital theorists believe this model to be the best explan-
atory look explaining wage differentials.

> "The characteristic features of earnings distri-
> butions, such as aggregate skewness, and the re-
> lation of inequality to skill (or schooling)
> and age (or experience) have puzzled observers
> since detailed statistical data became available
> ....   In the human capital model, most features
> can be explained by the correlation between the
> stock of human capital at any stage in the life
> cycle and the volume of subsequent investment."10

Observed income differences are then thought to be differences in the
acquisition of human capital between workers, i.e. differences in worker
productivity. The higher a worker's wage, the greater the investment in
human capital must have been or the greater the return on investment.

Wage differentials and wage discrimination can exist, according to
human capital theory, in two instances. The first is where labour is
segmented into noncompeting groups and the second is where the human
capital earned by certain types of workers is not valued as highly as
that of other workers.

Wage differentials and discrimination between males and females
could be a result of either occurance or, more than likely, a combina-
tion of the two. The analysis of noncompeting groups is similar to that
discussed in the case of Jackson's discriminating monopsony with employ-
ers facing two supply curves, one for male workers and one for female
workers. Males and females could be viewed as two groups competing for
different jobs with different wage rates and scales. The existence of
wage differentials between males and females can be explained as a fac-
tor of labour immobility and institutional constraints as a result of
their separation into noncompeting groups.

Even with their division into noncompeting groups, male and female

workers may be undertaking similar tasks and still be receiving different wages. This will happen if the human capital acquired by the female workers is valued less than that acquired by the male workers.

Human capital theory also postulate other reasons for the female wage to be lower than the male wage. Jacob Mincer and Solamon Polachek[11] attribute the lower earnings of women to their lower acquisition of market-oriented investment as a result of their restricted planning horizon and intermittant commitment to the labour force. This is because first of all, they expect to commit less time to the labour force and secondly, their life participation will be lower and broken into periods of labour force attachment and periods of time outside the labour force. The intermittant nature of female workers' participation means that their work experience will be less at any point in time. Since the wage rate will be determined, in part, by work experience, their lower experience level will depress the female wage in relation to the male wage.

Human capital theory explains part of the existing wage differential between males and females. However it is by no means complete. In empirical tests of the theory, wide variances were found in earnings within educational and experience groupings. As well, a large part of the wage differentials were left unexplained by human capital theory. Certainly, education and work experience (as well as the other factors considered "human capital") have an effect on the wage a worker earns. However, they have been shown to explain only part of the male-female differential in earnings.

C. Queue Theory and Job Competition Theory
   of Wage Differentials/Discrimination

An offshoot of neoclassical analysis, incorporating human capital

theory, is queue theory. According to the theory workers form a queue,
with the most productive (with the highest human capital accumulation)
at the front and the unskilled (lowest human capital accumulation) at
the rear. Employers will hire starting with workers at the front of
the queue, moving back and taking people with lesser skills until their
employment needs are met.

In the system, workers also rank jobs according to their desira-
bility and form a "job queue". The system will work by meshing the worker
queue with the job queue until all available employment is filled. The
workers remaining unemployed at this time will be those whose stock of
human capital (marginal productivity) is low relative to other workers'
and who are deemed less desirable by employers.

The job competition theory proposed by Lester Thurow[12] is very
similar to the queue theory.

> "In the job-competition model, instead of competing
> against one another based on the wages they are
> willing to accept, individuals compete against one
> another for job opportunities based on their rela-
> tive costs of being trained to fill whatever job
> is being considered...
>
> The key ingredient in the job-competition model is
> the observation that most cognitive job skills are
> not acquired before a worker enters the labour mar-
> ket but after he has found employment through on-
> the-job training programs. Thus, the labour market
> is not primarily a bidding market for selling exist-
> ing skills but a training market where training
> slots must be allocated to different workers."[13]

A main point of this theory is that wages are not determined by the
equilibrating movements of the supply of and demand for labour. Rather,
wages are determined by the technological training requirements of the
job and the institutional/historical structure of wages. Workers com-
pete for jobs not on the basis of expected wage rates but in terms of

their potential trainability. Employers will hire workers in the labour queue who they believe will minimize their marginal training costs. Wage differentials arise, not from personal labour characteristics, but from the institutional wage structure of jobs.

Wage differentials between groups of workers (i.e. males and fe-males) will exist, according to the queue theory, if they occupy differ-ent positions in the queue. If women are being paid lower wages than men, it is because they have not acquired sufficient human capital or the employers do not recognise or place equal value on their human capital acquisitions. The remedy for this situation would be, boosting their relevant human capital stock to move them further ahead in the queue; and, stimulating the economy via monetary and fiscal policies to increase aggregate demand forcing employers to move down the queue to fill vacant positions.

D. Dual Labour Market Theory and Wage Differentials/Discrimination

During the 1960's, widespread attention was focused on poverty and the resulting social problems it caused. In the United States' large city ghetto areas increasing numbers of black people and other minority groups were living in poverty either because they could not find jobs, could not keep jobs, or the jobs available to them were low paying. The problems caused by the resulting social problems took national attention and economists and policy makers devoted their time to finding a solution to these problems.

> "As both experts and the government became increas-
> ingly concerned with those central city areas in
> which unemployment rates remained especially high
> in the midst of general prosperity, employment
> concepts changed. A variety of additional labour

market characteristics joined "unemployment" as
symptoms of labour market disadvantage. For many
workers in the ghetto, unemployment seemed a small
component of a much broader syndrome of connected
labour market difficulties. Problems like low
wages, job instability, menial work, low skills,
poor worker motivation, discrimination, poor job
information, and inadequate job access seemed equ-
ally to demand attention. Each problem seemed
somehow causally related to the others. If you
had one problem, you were likely to suffer from
some of the others as well. Some of the percep-
tions were especially fueled by the results of
government programs, according to which it ap-
peared that efforts to remedy one disadvantage re-
quired simultaneous and complementary efforts to
cure some others."14

The human capital theory (and its offshoot, the queue theory) had

gained widespread acceptance during this time as they appeared to offer

a reasonable explanation for the poverty prevalent in ghetto areas. If

people were poor it was because they were deficient in education and job

related skills, ie. they could not obtain well paying jobs because of

their low marginal productivity. The remedy was seen to be education

and training programs specifically designed to give relevant job skills

to the unemployed.

The U.S. instituted many social welfare programs in the 1960's to

reeducate the ghetto poor and to aid them in finding jobs. Unfortunately

the result was that instead of having uneducated, unskilled poor, there

existed a large number of skilled poor. The graduates of the manpower

training programs were still unable to find decent, well paying jobs.

It was then apparent that education and skills training did not

affect the employment opportunities of a certain segment of the labour

force. At this time investigations were undertaken into the nature of

the working poor's employment; what was their work history, what jobs

were available to them and what were these jobs' requirements. The dual

labour market theory[15] evolved out of these investigations as a theory

to explain why education and training was largely irrelevant to certain

people in the labour force.

In neoclassical theory, the labour market is viewed as a homogen-

eous entity with jobs differentiated on the basis of differing skill

requirements and workers differentiated on the basis of their marginal

productivity. In this view of the world virtually any worker can fill

any job given sufficient education and training. Mobility is assumed

possible given the right training, opportunity and information. However,

the dual labour market theorists postulate two separate and distinct la-

bour markets in place of this homogeneous entity, with little or no mo-

bility between them.

> "This theory (dual labour market) argues that the la-
> bour market is divided into a primary and a second-
> ary market. Jobs in the primary market possess sever-
> al of the following characteristics; high wages, good
> working conditions, employment stability, chances of
> advancement, equity, and due process in the admini-
> stration of work rules. Jobs in the secondary market,
> in contrast, tend to have low wages and fringe bene-
> fits, poor working conditions, high labour turnover,
> little chance of advancement, and often arbitrary and
> capricious supervision. There are distinctions between
> workers in the two sectors which parallel those be-
> tween jobs; workers in the secondary sector, relative
> to those in the primary sector, exibit greater turn-
> over, higher rates of lateness and absenteeism, more
> insubordination, and engage more freely in petty
> theft and pilferage.
>   Disadvantaged workers, the theory asserts, are
> confined to the secondary market by residence, inade-
> quate skills, poor work histories, and discrimination."[16]

In the primary sector, the jobs usually require an initial high skill

requirement or continual on-the-job training. Therefore, workers are

recruited who appear to offer stability and high marginal productivity

potential. The worker will usually enter the firm or plant at an "entry

level" position and work his/her way up the job ladder to higher paying,

higher skill requirement jobs. Jobs in the primary sector are therefore part of an internal labour market and are only open to members of that labour market. Because of the high cost of investment in primary sector workers, only those workers who are viewed as stable, career oriented and productive are initially recruited.

In contrast, jobs in the secondary sector are low paying, menial and have low skill requirements attached to them. Employers do not have to pay high wages, or invest in a worker's training so the qualities of stability and high productivity are not as important, and high turnover will not result in an appreciable cost to the employer. Because of the nature and skill requirement of the work, low wages are prevalent in the secondary sector and jobs and workers are interchangable. As a result of low wages, menial work and interchangability of jobs, workers in the sector are often unstable, quitting one job to move into another. This instability then reinforces the payment of low wages as the employer seeks to minimize the turnover costs. Therefore, the nature of both jobs and workers in the secondary sector reinforce and perpetuate the characteristics of low paying jobs and instable, unreliable workers, forming a vicious circle for those involved.

The problems encountered by ghetto workers can be more easily explained by this theory than by the neoclassical theory of human capital. Once workers are entrenched in the secondary labour market, there is little upward mobility and the primary market is virtually closed to them. Even with additional training, they are still stigmatized with the secondary labour market label of an "unstable, unreliable" worker, and viewed as unsuitable for employment in the primary sector.

The dual labour market theory can also offer an explanation for the position of women in the labour force and the discrimination they face.

Women's role in society has traditionally been one of childbearing, child rearing and keeper of the household. Women will often work for a number of years after completing school, then drop out of the labour force to have children, returning in between children or after their children are in school. Employers view this periodic participation as a mark of instability, and women as unsuited for jobs within the internal labour market. Women are therefore often relegated to jobs within the secondary labour market where their unstable work history, or expected future instability, is no liability.

The explanation of discrimination in dual labour market theory is similar to that given by J. Madden's effective monopsony and J. Jackson's discriminating monopsony theories. Instead of having separate supply curves facing employers in the same labour market, there exist two distinct labour markets with separate supply and demand curves for each.

Wage discrimination against women is practised by separating their supply of labour and directing it into the secondary sector of the dual labour market. In this market, wages are based on the competitive forces of supply and demand. The increasing rate of participation of women in the labour force means their supply of labour curve shifts to the right and therefore effectively keeps the wage down.

Wages in the primary sector of the dual labour market are determined by the marginal productivity of the worker in the job, or, an institutionally set scale based on the human capital necessary to perform the job. A priori, a job requiring more skill or more on-the-job experience has a higher wage. Even when a labour union imposes an artificial wage structure, the wage is usually based on the length of service, or seniority, which can be thought of as a proxy for job experience and skill.

Discrimination against women can also be practised in the primary la-
bour market if the human capital, or job experience, obtained by women
is not valued as highly as that attained by men and does not carry
the same opportunities for increasing renumeration.

E. Conclusion

Discrimination against women, either pure wage discrimination or
occupational discrimination, can occur when the labour supply of women
is separated from the male labour supply and either directed to a separ-
ate wage path, separate occupational grouping or separate segment of
the industry.

Madden (1973) and Jackson (1970) investigated this possibility in
a neoclassical framework of monopsony power. Madden's analysis focused
on the implicit collusion of employers to subdivide the labour market
into "female" jobs and "male" jobs so that both wage and occupational
discrimination could be practised. Jackson analysed the problem in terms
of the monopsonist employer taking advantage of the differing supply
price of male and female labour and adjusting the proportion of low
priced female labour with higher priced male labour to minimize the wage
bill. Both of these authors explain discrimination against women as
being the result of separating women's labour supply into separate wage
and occupational categories.

Human capital theory explains discrimination as being the product
of segmentation into noncompeting groups where males and females are
viewed as two separate groups competing for different jobs. Male-female
wage differentials can then be explained by the labour immobility and
institutional constraints resulting from their separation into noncom-

peting groups.

Dual labour market theory explains discrimination as being the separation of males and females into two separate labour markets, the primary labour market and the secondary labour market. Discrimination against female workers is manifest by their labour supply being directed into the secondary labour market where wages are low, while male workers will be hired predominantly in the higher wage primary labour market. In this way both wage and occupational discrimination can be practised as each labour market has separate wage and occupational characteristics.

Therefore, discrimination is explained in all schools of thought as being the product of separate supply of labour curves, either offered by the worker or created by the employer. If women can be treated as a separate group, their labour can be directed into certain wage paths, occupational groups or market sectors where they can be paid at a different wage scale than male employees.

Therefore, as discussed in the previous chapter, industry wage rates and wage differentials are influenced by such factors as the level of concentration in the industry, the productivity of the industry's labour and the extent of unionization, with the supply of labour considered homogeneous and arising from a single source. Male and female wage rates and differentials however are the result of the separation of the homogeneous, single source supply of labour into two separate labour supply curves. While the overall level of wages in an industry is influenced by the aforementioned variables, this does not mean that the wage rates within that industry will be uniform. If female labour supply can be separated from the male, wage and occupational discrimination is possible.

Notes

1. Pure discrimination exists if two workers of equal ability are paid different wage rates for the same job simply because one has the desired characteristics of race, sex, age, etc. and the other worker has one or more undesirable characteristics.

2. Gary Becker, The Economics of Discrimination, (University of Chicago Press, 1971)

3. Ibid., page 41

4. Janice Fanning Madden, The Economics of Sex Discrimination, (Lexington, Books, 1973)

5. Ibid., page 70

6. Ibid., page 71

7. J.M. Jackson, Wages and Labour Economics, (McGraw-Hill, 1970)

8. Ibid., page 51

9. Other factors such as job experience, job search, labour mobility and health can also be considered human capital variables.

10. Jacob Mincer, Schooling, Experience, and Earnings, National Bureau of Economic Research, (New York, 1974). A further discussion of the human capital theory can be obtained from;

    Gary Becker, Human Capital, National Bureau of Economic Research, (New York, 1964)

    Y. Ben – Porath, "The Production of Human Capital and the Life-Cycle of Earnings", Journal of Political Economy, V.75 No. 4 pt. 1, August 1967, pages 265-352

    Jacob Mincer, "The Distribution of Labour Income: A Survey with Special Reference to the Human Capital Approach", The Journal of Economic Literature, V. 8 No. 1, March 1970, pages 1-26

11. J. Mincer and S. Polachek, "Family Investments in Human Capital: Earnings of Women", Journal of Political Economy, V. 82 No. 2 part 2, March/April 1974, pages S76-S108

12. Lester C. Thurow, Generating Inequality: Mechanisms of Distribution in the U.S. Economy, (Basic Books Inc., 1975), pages 75-128

13. _Ibid_, pages 75 and 76

14. David M. Gordon, _Theories of Poverty and Underemployment_, page 6

15. Discussions of the dual labour market theory can be found in:
    Michael J. Piore, "On-the-Job Training in the Dual Labor Market" in _Public-private Manpower Policies_, A.R. Weber, F. Cassell and W.J. Ginsberg Ed., (University of Wisconsin, 1969)

    Harrison; Bennett, _Education, Training and the Urban Ghetto_, (John Hopkins University Press, 1972)

    Peter B. Doeringer, and Michael J. Piore, _Internal Labor Markets and Manpower Analysis_, (Heath Lexington, 1971)

    Barry Bluestone, "The Tripartite Economy, Labor Markets and the Working Poor" in _Poverty and Human Resources Abstracts_, July/ August 1970, V.5 (4) pages 15-35

    David M. Gordon, _Theories of Poverty and Underemployment_, (Heath Lexington, 1972)

    Paul J. Andrisani, _An Empirical Analysis of the Dual Labor Market Theory_, PH.D dissertation, Ohio State University, 1973

16. Peter B. Doeringer and Michael J. Piore, _Internal Labor Markets and Manpower Analysis_, page 165-166

IV. THE RETAIL FOOD INDUSTRY

A. Introduction

The purpose of this thesis is to investigate the occurence of male-female wage differentials within the three groups cf stores that operate in the retail food industry. Therefore, this chapter will examine the industry by looking at the structure, conduct and performance of its three subgroups to determine whether the differences could result in differing wage rates and male-female wage differentials.

B. An Overview

"The day when the housewife sent her daughter down
to the corner grocery for a loaf of bread and a
pound of butter is passing. The practice of mak-
ing frequent trips to the neighbourhood store is
being replaced today by a single trip to 1 or 2
stores where the housewife does bulk of her shop-
ping. A recent survey conducted by the Canadian
Grocer showed that over 75% of Edmonton house-
wives shopped at only 1 or 2 stores a week and
that over 60% visited the store where they did
their main shopping only once a week. This ap-
parent preference of consumers for one-stop shop-
ping has eliminated the need for many specialty
food shops and neighbourhood groceries.

The supermarket offers quite a different bundle
of goods and services than does the neighbour-
hood grocery. It owes its original success to a
policy of low prices, low profit margins and
high turnovers. It is a mass marketer and must
attract a large number of customers in order to
survive."[1]

The retail food industry has undergone major structural changes

since the early 1900's. The industry was very competitive (with a large number of neighbourhood grocery and specialty, stores serving the consumers of a small geographical area) until the merger movement in the 1920's. Due to the nature of demand, these small neighbourhood stores were the most efficient way of distributing foodstuffs. Consumers did not have conveniences such as refrigerators or freezers, so perishable food had to be freshly bought. Also, consumers shopped on foot so did not buy food in large quantities which furthered the need for frequent shopping. The food stores they shopped at had to be close to their homes, hence each store only served consumers from a small geographical area around it.

There was also a historical trend favouring specialty food stores, specializing in only one line of foodstuffs. Therefore, although many neighbourhood stores were general food stores, many were butcher shops, bakeries, etc. These stores were owner operated by people living in the neighbourhood and so were an integral part of the social make-up of the neighbourhood. Their operators were well known members of the community and gave special treatments (i.e. credit buying, special food lines, special cuts of meat, etc.) to their customers. Many of the surviving neighbourhood stores today still employ these business methods to cater to, and keep, their clientele; however, the large chain stores, because of their size and volume of sales, are unable to.

In the 1920's there was a movement establishing chains of stores under one central organization. These chain store organizations were also in control of their wholesale suppliers and this backward integration gave them cost advantages over the competing independent stores on the market. This cost advantage gained by the joint control of the wholesale and retail operations was passed along to the consumer in the form

of lower prices. These lower prices resulted in a larger volume of sales for the chain stores, which afforded economies of scale in wholesaling and retailing, and resulted in even lower costs to the retailer and customer.

The independent retailers were forced by this chainstore competition to join together and form voluntary associations. These voluntary associations either formed co-operative wholesale operations themselves, or approached a wholesale supplier as a large buying unit. In this way, the independent retailers were able to capture similar cost advantages to their chainstore competitors.

An additional structural change occurred as a result of this chainstore movement and their integration backwards into wholesaling; the movement into the supermarket form of retailing. The introduction of the supermarket was a natural extention of the previous vertical integration into wholesaling. The chainstores and voluntary associations realized that cost reductions could be acquired through the horizontal integration of many types of grocery operations under one roof. Previously the retailing operations were split between the corner general grocery store and other small stores specializing in specialty foodstuffs. To bid customers away from the small store competition, the supermarkets offered a large number and variety of goods within one store. Also, with a larger volume of sales, per unit costs were lower and the supermarkets gained cost advantages that allowed them to undersell their smaller competitors.

> "In order to attract the widest range of tastes, supermarkets stock a wide assortment of products. Nonchain stores with annual sales of $1,000,000 and above handled an average of 6,750 different items in 1966. The largest reported stocking over 8,000

items and this number has been increasing over
time. Mr. R.G. Meech of Loblaw Groceterias Co.
Ltd. testified before the Special Joint Committee
that Loblaw stores carried 450 items in 1919,
900 in 1928, 4,000 in 1952, 6,000 to 8,000 to-
day, and that by 1970 they expect to stock
12,000 items. The rationale behind this poli-
cy is that the average shopper has certain fav-
ourite brands or sizes which she buys regularly.
If she does not find her favourite in a parti-
cular store, she will go elsewhere."2

At this point in time many consumers had refrigerators and cars,
which meant that shopping in large quantities in one location was con-
venient. This fact, coupled with the lower prices supermarkets were
able to offer, meant that the sales of supermarkets grew at the ex-
pense of the small independent corner stores. The number of corner
stores gradually dropped, and the number of supermarkets grew until
they had absorbed the majority of the corner store's sales and these
stores were no longer regarded as competition.

"All categories of stores with annual sales be-
low $300,000 declined in numbers during that
period (1948 to 1963), with the smaller stores
dropping out fastest. Stores with annual sales
less than $5,000 dropped 86 per cent."3

With the declining numbers of small corner stores, the supermarkets
soon found their market saturated with their sales stagnating. This
meant they were competing with each other for sales, instead of with
the corner stores. Many found their stores to be too large (capacity
in relation to sales volume) for the number of customers they serviced
and started campaigns to increase their sales volumes and decrease
their unit costs. This marked a further structural change in the re-
tail food industry; the store itself was now viewed as a marketable
commodity and competition moved from price to non-price.

Each supermarket then started on a campaign to increase their sales

volume by offering various services and mix of products designed to differentiate themselves from the other supermarkets in the area. They expanded their sections of specialty and ethnic foods, introduced many non-food items, added parking lots, extended their shopping hours, added more check-out stands for faster service and put in air conditioning. They also stepped up their advertising campaigns and increased their number of "specials" and "loss-leader" items.

C. The Retail Food Industry in Winnipeg

In Winnipeg, the retail food industry is effectively dominated by three corporate chains; Safeway, Dominion, and the Weston corporation (Loblaws, Economart, Shop Easy, Tomboy and Lucky Dollar).[4] Together, they control over three-quarters of the Winnipeg market. Graph 4 and appendix III give a picture of the ownership structure and market shares of the retail food stores operating in Winnipeg.

Canada Safeway Ltd. operates the greatest number of supermarket stores in Winnipeg (30 in 1972 and 31 in 1973) and has been increasing its share of the market over the past 10 years from 35.6% in 1964 to 47.3% in the first quarter of 1974.[5] The Weston group operated 12 chain stores in 1972 and controlled 18 independents (Tomboy and Lucky Dollar); however their market share has dropped from approximately 22% in 1964 to approximately 16.5% in the first quarter of 1974. The Weston group was a casualty of the 1970 price war, with Loblaws losing 1.8% of its market share, Tomboy 0.1% and Shop Easy 0.3% during that year. They captured a further 6.7% of the market however, by opening a new chain (Econo-Mart) in 1971.

Dominion operated 9 stores in 1973 and its market share has
increased from 8.0% in 1964 to 17.0% in the first quarter of 1974.
Dominion was the main beneficiary of the price war, increasing their
market share 7.7% between 1970 and 1971.

The independent stores involved in voluntary group associations
presently hold about 10% of the market. The remaining corner and
convenience stores combined hold under 10% (8.7% in the first quarter
of 1974). In 1972, Winnipeg had 60 supermarket chain stores, 75 as-
sociated independent stores, and 87 chain convenience stores. The
total number of independent stores was 408 (see appendix IV). The
grocery wholesaling operations in Winnipeg are either solely, or close-
ly, associated with a major retail chain or group. Appendix III and
table 1 give a picture of the integration and linkages in this in-
dustry.

The supermarket chain stores in Winnipeg are scattered throughout
the city, with the exception of the downtown core area and the south
part of the North End. They are distributed along main traffic arter-
ies (as are the majority of convenience stores), and many are in shop-
ping centres. The small corner stores, on the other hand, are con-
centrated in the older areas of Winnipeg, the southern part of the
North End, the older part of the West End, the core area of Urban Re-
newable Area II, Fort Rouge, Elmwood and Brooklands.

This distribution of retail food stores in Winnipeg is rational
considering the different shopping practices of the residents in each
area. A 1971 study found;

>"whereas in suburban areas under 10% of households
>shopped primarily at corner groceries, in the core

GRAPH 4
GROCERY SHOPPING SHARES

	64	65	66	67	68	69	70	71	72	
All others	11.1	11.3	15.0	14.0	16.0	18.5	11.4	9.7	9.5	
Econo Mart								7.3	6.9	
Tom Boy	5.5	5.2	5.5	5.9	6.2	5.9	5.6	5.5	4.6	Solo
Co-op	3.7	3.2	5.3	5.9	5.5	5.1	5.0	2.4	2.2	
IGA	3.8	4.1	3.8	3.7	5.3	4.7	4.2	3.5	3.6	
Loblaw	6.0	5.6	5.8	5.1	5.5	5.2	4.1	2.5	2.3	
Eaton's / A&P									5.2	
Dominion	11.9	9.9	9.3	8.2	5.4	5.1	6.3	4.5		
	2.8	3.1	3.0	2.4	2.4	2.1	2.1			
	6.3	4.9	4.8	4.6	3.5	3.6	3.4			
Shop Easy			6.5	8.1	8.8	7.1	8.9	16.0	11.0	
	8.0	8.6								
			4.4	5.1	3.1	1.1				
	4.1	6.3								
Safeway	35.6	37.8	36.6	40.0	38.3	40.9	42.1	44.6	47.6	
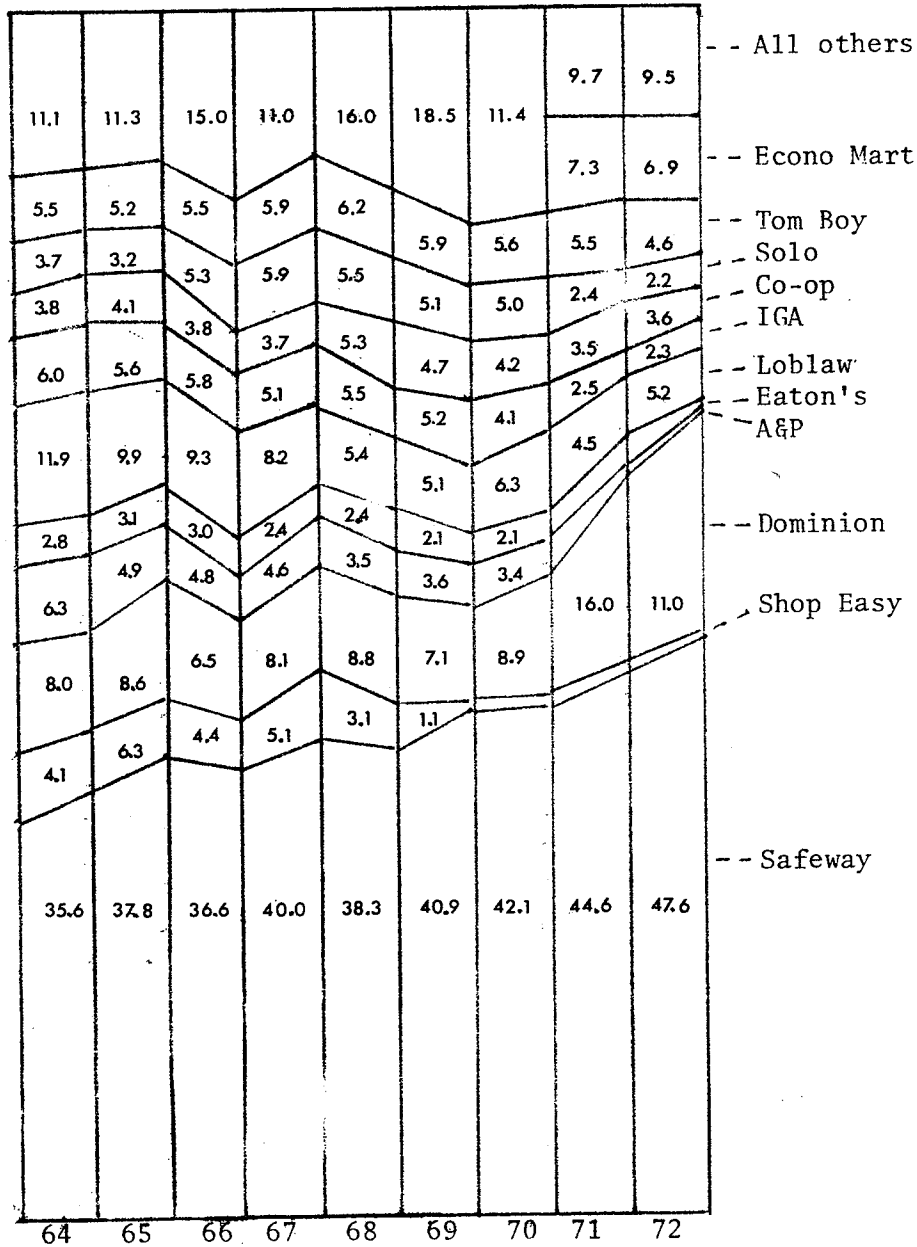
Source: Davies and Thompson,
The Food Industry in
Manitoba

Table 1
Wholesale and Retail Linkages

Wholesaler   Retailer

Macdonald's Consolidated ———⟨——————— Canada Safeway

Westfair Foods ——————————⟩——————— Loblaws
                                              Economart
                                              Shop Easy

Weston Grocers   Tomboy
                                              Red & White
                                              Lucky Dollar

G. McLean   Mac's Milk

Oshawa Group   Independent

Codville   Locomart

Hazelwood-Davis   IGA
                                              Much More

Federated Cooperatives   Coops

Merchants Consolidated   Solo Stores

J.M. Schneider   Redi Mart

Weidman Bros   Payfair

Eastern Wholesaler   Clover Farms
                                              Best Valu

                                              Dominion

Ownership ⟶—   Franchise ————   Supply — — —

area, 42.1% of households did so. In the modern
suburbs, over 80% of households shopped at large
supermarkets, over 90% owned a car and used it
for shopping, and less then 5% each walked or
took a bus to shop. In the core area, only 40.1%
of households shopped at large supermarkets,
42.0% used a car to shop, while 44.6% walked
and 9.8% used public transit. 55.5% of house-
holds did not own a car."6

The structure, conduct and performance of the retail food indus-

try in Winnipeg will be examined in the following three sections of

the study. The factors influencing structure to be examined are; con-

centration, product differentation and advertising, scale economies

and integration, plus other barriers to entry. The conduct section

will examine the industry's pricing and trade practises, with the per-

formance section investigating its efficiency.

D. Structure

Concentration

"Usually the most important structural factor
which affects economic performance in terms
of efficiency, profit margins and ultimately
price and inflation is considered to be econ-
omic concentration."7

"The fundamental findings of this study are that
the Canadian Retail Food Trade does have very
high levels of economic concentration in urban
areas; that these levels are rapidly growing;
that the four national giants play the major
role in this phenomenon; that barriers to shop-
ping center sites and economies of local adver-
tising appear to be the basic determinants of
concentration; that the negative impacts of
high concentration include A) "overstoring,"
and extra profits which lead to higher price
levels; and B) less product variety and less
free service."8

The level of concentration in an industry directly influences

its trade practices and pricing practices (conduct), and its efficiency in allocating resources, both human and material (performance).

There are also many important factors, partly determining industrial concentration that affect this industry and will be included in the analysis. These additional factors are 1) product differentation, 2) scale economies, 3) vertical and horizontal integration, 4) advertising, and 5) barriers to entry.

Measures of Concentration

There has never been a definite, widely accepted measure by which industries can be classified as competitive, oligopolistic, or monopolistic. Mallen, in his study, reviews the main measures used; which are: 1. Kaysen and Turner:[9]

They define a "tight oligopoly" market as one where eight (or fewer) firms supply 50% of the market with the largest firm having at least a 20% share. A "loose oligopoly" market is where less than twenty firms supply 75% of the market and no one firm has more than a 10-15% share.

In their study of U.S. manufacturing, they used an eight firm index with "high" concentration meaning 50% (or more) of shipments by the top eight firms, "medium" as 33-49% of shipments, and "low" as 33%. They also propose an alternate measure where "high" concentration has four (or fewer) firms with 80% of the industry's sales, or the top firm having 50% (or more).

2. Bain:[10]

Bain also uses a four firm concentration ratio where "high" con-

centration means four firms having over 65% of the market, "medium"
as a 35-65% share, and "low" as only 35% of the market attributed
to the top four firms.

3. Blair[11]

Blair's index is also based on the market share of the top four
firms, with "high" concentration being a 50% (or greater) share,
"medium" as 25-49%, and "low" as less than 25%.

4. Neal[12]

Neal is another proponent of the four firm measure, since his
definition of high concentration is where 70% or more of the market
is serviced by the top four firms.

5. Stewart[13]

Stewart's measure is more of a relative index than the preced-
ing ones. He concentrates on the number of firms accounting for 80%
of shipments. His study focused on Canadian manufacturing and min-
ing. He defined "high" concentration as eight firms or less ac-
counting for 80% of shipments, "medium" as nine to twenty firms, and
"low" as more than twenty firms.

When investigating the retail food industry, it seems reasonable
to use a four firm index for measuring concentration since there are
only four giant corporate chains that operate in this product area.
These are Dominion, Safeway, Weston-Loblaws, and Steinberg's. In the
Winnipeg area there are only three of these, since Steinberg's do not
operate in the west.[14]

By looking at the number of chain stores, associated indepen-
dents, and corner stores operating in the Winnipeg area there would
seem to be sufficient competition among firms (independent of collu-

sion) because there are such a large number of stores. The follow-

ing table gives the number of stores operating for a six year period.

Table 2
Retail Food Stores in Winnipeg

	1968	1969	1970	1971	1972	1973
All Stores	681	653	660	660	630	n.a.
Supermarket Chains	60	64	66	65	60	59
Associated In- dependents	115	111	105	88	75	n.a.
Chain Convenience	33	40	51	72	87	83
Independent Stores	473	438	438	435	408	n.a.

Source: The Food Industry in Manitoba prepared for the
Planning and Priorities Committee Secretariat by J. Dav-
ies and L. Thompson, Aug./73, p. 28.

The number of chain stores has remained relatively stable showing

that there are high enough barriers to entry to prevent new entrants

and, at the same time, high enough profits to prevent withdrawals.

(These two points will be discussed in a later part of the chapter.)

At the same time, the other sector of the industry (smaller indepen-

dent and convenience stores) has been more volatile with larger numbers

of entrants and withdrawals.

A further examination of the markets served by these two types of

stores however suggests another approach to the problem. The market

of the retail food industry can be divided into two distinct parts;

the "general shopping" market and the "convenience shopping" market.

The former of these two markets is dominated by the giant cor-

porate chains (Safeway, Dominion, and the Weston group) and the asso-

ciated independents groups. These stores control the greatest part

of the overall retail food market with the three corporate chains

themselves controlling over 75%. Graph 4 shows the market shares of

these companies and also shows that their share has been increasing

over the past decade.

The "convenience shopping" market is very volatile, with smaller stores participating. These stores are not designed to service a customer's general grocery shopping needs but meet their needs when it comes to convenience items (i.e. milk, bread, and other small items they may need in a hurry). Since these stores are located in residential areas, they are geographically close to their customers (within walking range) and are able to service this market. They do not stock a great variety of products and are generally higher priced (due to factors that will be discussed later), so do not lend themselves to general grocery shopping. Their numbers have been declining, as has their market share, from 473 stores and a 16% market share in 1968 to 408 stores and a 9.5% market share in 1972. The last figures on their market share showed a further drop to 8.7% in the first quarter of 1974.

The three studies of the retail food industry[15] all conclude that the structure of this industry is oligopolistic with the three major corporations controlling the largest part of the market. The "general shopping" market is effectively controlled by these three groups, with their market share growing at the expense of the associated independents. Their control of the market is such that they practise tacit collusion with respect to prices (the price leader is Canada Safeway Ltd.) and their marketing policies are identical. The "convenience shopping" market, on the other hand, is highly competitive with a large number of entrants and withdrawals from year to year. The barriers to entry in this market are few (to be discussed later). However, their profit rates are not high and uncertainty regarding future

operations is very high. This market is not large and with a general market share of 8-9%, does not influence the practices of the general oligopolistic market and its controlling corporations.

In 1966, the three largest chain store companies held 77.04% of the Manitoba market for chain stores and 36.33% of the Grocery and Combination Store sales. In Winnipeg, the concentration was even higher, with the three largest chains holding 79.77% and 47.66% respectively. The sales of all chain stores as a percentage of all retail food stores sales for Manitoba has been increasing from 42.22% in 1966 to 61.7% in 1974 indicating further concentration. These figures came from Mallen's study, but Dooley's study confirms them. In his study the following figures were quoted:

Table 3
Concentration Ratios, 1966
(Winnipeg)
% of Market Sales by Largest Enterprises

1. Assuming Groups are not Centrally Controlled
   Top Four   48.7
   Top Eight   52.6

2. Assuming Groups are Centrally Controlled
   Top Four   70.8
   Top Eight   80.9

Source: P. Dooley, Retail Oligopoly, op. cit., p. 6.

He also shows that the market share of all chain stores have been increasing over time by giving the following figures:

Table 4
Market Share of all Chain Stores

	1930	1941	1951	1961	1966
Winnipeg	32.1	41.7	44.2	51.0	51.9

Source: P. Dooley, Retail Oligopoly, op. cit., p. 7.

The Winnipeg market, with 48.7% of the market controlled by the

top four companies, and 70.8% if one assumes the groups to be centrally controlled (i.e., the Weston group not only controls Loblaws but also the top independent), fits into a moderate to high industrial concentration category. These figures are defined as "tight" oligopoly by Kaysen and Turner; "medium" concentration for the 48.7% share and "high" if the 70.8% share is considered, by Bain; "high" concentration by Blair; and possibly "high" concentration by Stewart.

Therefore the retail food industry in Winnipeg is considered to be moderately to highly concentrated. The market is effectively dominated by three large corporate groups.

Although one can split the overall retail food market into two separate ones for purposes of analysis (the "general" market and the "convenience" market), with the former being highly concentrated and the latter highly competitive; the competitive sector is not large enough to influence the practices of the corporations dominating the "general" market. The competitive sector only holds a 8-9% share of the market and is no threat against the 75% share of Canada Safeway Ltd., Dominion, and the Weston group.

The market control held by the large corporations is intensified by the fact that they are highly integrated, both vertically and horizontally, and in some instances are the source of supply for the independent associations. By being their competitor's suppliers, they are able to dictate terms of trade for these independents and expand their control over the market.

> "In 1973 the top four corporate organizations held
> a 54 per cent share of the large urban market in
> Quebec but held a 73 per cent share in the Atlan-
> tic Provinces, 62 per cent in Ontario, 70 per

> cent in British Columbia, and 84 per cent in
> the Prairies. When voluntary and co-opera-
> tive chains are included, the figure moves
> (to) ... 90 per cent in the Prairies."16

If you accept that the top corporations hold anywhere from

48.7% to 90% of the market depending on whether integration and

sphere of influence factors are included in the measurement, this industry

is considered highly concentrated by most economist's measures. The

high concentration has important effects on the conduct and perfor-

mance of the industry and will be discussed in later sections of this

chapter.

The following sections will examine the factors contributing to

this concentration and its effects in the market.

Differentiation

> "In the retail grocery business the product is a
> complex of commodities, services, store facili-
> ties, and location. While the consumer may be
> directly concerned with a bundle of food items,
> the store owner must sell consumers on shopping
> at his store as much as he must sell the items
> which the consumer buys. From the point of
> view of the retail grocery market the product
> is the store, its merchandise. and its method of
> doing business."17

Product differentiation is an important way for a producer to ex-

pand and keep his share of the market. By differentiating the product

sold from similar ones, the producer is able to benefit from brand

loyalty. The more successfully differentiated a product is, the more

inelastic its demand curve will be. This means that the producer is

able to raise prices and increase total revenues without a significant

drop in sales.

The retail food stores have become products themselves, products

that can be promoted separately from the goods they sell, so that
a shopper will prefer to shop in one store rather than another sim-
ply for the different services, mix of goods, or atmosphere it pro-
vides.

Dooley, in his study, itemizes the following factors that are
used to differentiate retail food stores:

1.	Number of items in grocery department	21.	Service fish counter
2.	Lineal feet of frozen food	22.	Snack bar
3.	Lineal feet of frozen meat	23.	Soft goods
4.	Type of meat department	24.	Glassware
5.	Lineal feet of delicatessen	25.	Greeting cards
6.	Type of delicatessen	26.	Phonograph records
7.	Nursery items	27.	Toys
8.	Bakery delivery	28.	Plants
9.	Type of bakery items	29.	Magazine stand
10.	Gourmet items	30.	Premium stamps
11.	Number of health and beauty aids	31.	Cheque cashing booth
12.	Number of other nonfood items	32.	Utility bill payment
13.	Type nonfood delivery	33.	Vending machines
14.	Store hours	34.	Parcel pickup station
15.	Parking space	35.	Air-conditioning
16.	Store age	36.	Music
17.	Store size	37.	Automatic doors
18.	In-store bakery	38.	Rental floor polishers
19.	Rotisserie or barbeque	39.	Hardware
20.	Donut machine	40.	Utensils
		41.	Appliances

Source: P. Dooley, Retail Oligopoly, pp. 6-7

The corporate chains offer the customer a physically attractive
(usually air-conditioned) well laid out store, with a large and var-
ied mix of goods along with convenient locations and large parking
lots. The small corner stores and convenience stores do not offer the
variety of goods, but do offer the advantage of staying open long
hours. The larger independent stores offer the customer a range of
services such as telephone shopping, free delivery, credit and cheque
cashing, rather than a physically attractive store setting or large mix

of goods. The following table shows the size of store and services
it is likely to offer:

Table 5
Services Offered by Different Type Stores

	Nonchain Stores (Classed by sales in thousands of dollars)					Chain Stores
	0–49	50–99	100–149	150–249	Over 250	
Percent of all stores . . .	29.2	27.1	11.6	9.2	10.1	12.8
Percent with any off-street parking	28.4	38.0	46.9	62.7	82.1	95.7
Percent in shopping centre	1.3	6.0	6.3	15.7	33.3	37.9
Percent having telephone shopping	37.7	54.7	70.3	74.5	57.1	0.0
Percent having home delivery	37.7	54.7	76.6	92.2	85.7	7.7
Percent with fresh meat . .	60.8	69.3	73.0	94.1	98.2	88.4
Percent with meat cutting .	22.2	36.7	48.4	80.4	83.9	88.4
Percent that cash cheques .	36.4	57.3	60.9	84.3	92.9	100.0
Percent that sell on credit	51.9	54.0	57.8	60.8	39.3	0.0

Source: P. Dooley, Retail Oligopoly, p. 18.

The high degree of differentiation in the retail food industry
is a contributing factor to its high degree of concentration. Each
store has customers which prefer to shop at it either for its loca-
tion, goods offered, prices or services offered. Through the process
of the industry's evolution, the independent stores have offered cus-
tomers services and prices that bid them away from the smaller corner
stores. The corporate supermarkets were then able to offer even lower
prices and a larger mix of goods that in turn bid customers away from
the independents. This had the effect of increasing concentration in
the industry. The optimum size of store had increased, as had the vol-
ume of sales necessary for efficient operation. A retailer wanting to
open a new store is currently faced with a large capital cost, prohib-

itive to all except corporations and large members of voluntary as-
sociations. (More will be said about these latter points in sub-
sequent sections.)

In conclusion then, differentiation has been a contributing fac-
tor to high concentration due to the nature of the store and services
that have resulted from it.

Scale Economies:

In the retail food industry there are certain scale economies
operating that make the optimum size of store and the sales volume
relatively large. There are also advertising and technological econ-
omies that the large operators are able to utilize.

Absolute size of the store does not afford significant economies
in the retail food industry. The large store does not operate more
efficiently than the small store per se because there are diseconomies
of certain operating costs (occupancy, wages) associated with larger
stores. However, the large store has the opportunity of operating at
lower cost per volume of sales than its smaller counterpart due to the
opportunity for lower in-store operating costs. These lower in-store
operating costs result from the savings of volume buying, wholesaler
discounts, volume advertising and integration.

The U.S. National Commission on Food Marketing found that the var-
iation in costs attributed to the size of the store rarely amounted to
more than 2¢ when moving from very small to very large stores. However,
the variation in utilization costs often varied more than 10 per cent.

Mallen's study found the optimum store size (for maximum sales
per square foot) to be 14,245 square feet of selling space at a util-

ization rate of $11.25 per square foot per week. This size and utilization rate generated a lowest average cost of 10½ per cent of sales. The optimum store size described in the Mallen study will be a medium sized supermarket.

The optimum store size then is quite large, and will be an important factor when examining barriers to entry. However, the size of the store is not significantly influenced by any scale economy, rather it is the utilization rate that is important. Dooley's study found that the average percentage fall in in-store operating costs as the rate of utilization rises from 25 to 50 per cent was 22.4, and the percentage fall of costs from 50 to 100 per cent utilization was 23.4.[18]

The larger stores have the opportunity to take advantage of advertising, buying, and technological economies not available to the smaller businessman.

The most important of these is the buying advantage. Due to the large turnover of goods in the supermarkets, they are able to purchase their supplies at lower costs per unit. Wholesalers give discounts to stores who purchase in carload or truckload quantities as a result of the saving in manhours and handling time afforded them by such bulk orders. Smaller stores who do not sell that volume, must order in smaller quantities, and as a result, pay a premium for doing so. As an example, the Gerber Products Company baby food price list is:[19]

Price Brackets	Percentage of Average Price
100 to 2,499 lbs.	100.0
2,500 to 11,499 lbs.	95.6
11,500 to carload, truckload	94.9
carload, truckload and over	94.3

Large chains are also able to bargain for trade discounts and advertising allowances, which are also unavailable to the smaller businessman. This buying advantage allows the retailer to substantially lower costs once he has attained a certain volume of sales and is able to buy from the supplier in large carload or truckload quantities.

The large chains also have an advantage over the smaller stores with respect to advertising. The chain is able to take advantage of advertising economies by running one advertisement for all its stores in a city. Also, because the chains run large advertisements regularly, they are often able to bargain for a reduced rate. In addition to these two cost reductions, it was previously mentioned that large chains often obtain advertising allowances from the food processors they deal with for advertising their particular brand of product.

The voluntary group associations are also able to offer their members lower rates in advertising for the same reasons. The associations will run one advertisement for all of its affiliated stores (Tomboys, Solo, IGA, etc.). They will then charge each owner a percentage of the total cost which would be substantially lower than if the owner advertised independently. Also, they act as the wholesaler for the independent stores and as a result they can also obtain advertising allowances from the processors.

The small independent operators cannot take advantage of these savings though. Their sales volume is low so they have no bargaining ability for obtaining advertising allowances. They only have one store, so cannot spread the cost of advertising. The result is that they rarely advertise, and if they do, it is usually in the form of flyers delivered in their immediate neighbourhood.

Advertising then can offer significant economies to the chains.
The following table shows the advertising expenditures as a percen-
tage of sales for the Safeway and Dominion. It illustrates that, as
sales have increased, the percentage of sales spent on advertising
by Safeway and Dominion stores has decreased showing that advertising
does afford economies as sales volume increases.

Table 6
Total Advertising and Promotional Expenditures of Canada Safeway
and Dominion Stores as a Percentage of Sales, 1966-72

| | Safeway[a] | | Dominion | |
	Adv.	Total Sales	Adv.	Total Sales
1966	1.09%	$448.3m	1.09%	$ 539.6m
1967	0.96	482.7	.99	580.1
1968	.88	525.0	.96	597.6
1969	.85	551.2	.97	645.0
1970	.81	638.5	.86	759.8
1971	.77	686.9	.52	943.9
1972	.75	775.0	.62	1,087.8

[a]Canadian Operations only

Source: House of Commons Special Committee on Trends in Food
         Prices, Minutes of Proceedings....., Nos. 24 and 26,
         p. 51 and p. 69 respectively.

The fact that the larger chains have an advantage over the smaller
chains in that they spend less (as a percentage of the store's sales)
on advertising is illustrated by appendix V. The large chains spend
0.38-0.39% (Dominion and Safeway) and 1.05% (Loblaws); whereas the in-
dependent association stores pay from 1.45% (Tomboys) to 2.22% (Solo).
Advertising then affords economies of scale for the large chains and in-
dependent associations. These savings reduce in-store operating costs
as sales volume increases.

Certain technological developments ocurring in the industry over
the last few years have opened up new areas for lowering in-store oper-
ating costs. These developments have been the "universal product code"
method of marking products and its accompanying computer method of check-
out (electronic cash register scanning systems), and inventory control.

The equipment necessary for this system is expensive and can only be afforded by the large chains. For a store with 8-10 lanes, the following are estimates of costs for the equipment:

1. in-store computer (approx. $20,000-40,000)
2. ECR terminal   (approx. $ 2,200-2,500 per terminal)
3. scanner   (approx. $ 6,000 per scanner)
4. in-store printer (approx. $10,000)[20]
5. manager terminal (approx. $15,000)

Members of the Retail Food Industry have estimated that sales of $35,000 to $60,000 per week (different sources gave different estimates) would be needed if the equipment were to be profitably operated.[21]

However, this initial capital investment can generate substantial savings for the store in terms of labour costs, equipment maintenance costs, in-store inventory control, advertising analysis, new item tracking, etc. A U.S. chain, Giant Food Stores, have implemented the system and have estimated that an investment of $150,000 per store would return $120,000 per year in cost savings of the type described above.[22] Therefore, large stores can make profitable use of recent technological developments and can further reduce their in-store operating costs.

In the retail food industry then there are certain economies operating that make the most efficient store size quite large (a medium sized supermarket). There is little economy from absolute size per se; the economies are gained through bulk buying, advertising and technology which act to reduce the in-store operating costs and allow the store to minimize its costs per unit of sales. The small corner grocery stores are unable to make use of these advantages.

Barriers to Entry

Barriers to entry in an industry are formed when existing firms
have advantages that a new firm would not have and as a result force
the new firm to operate at a higher average cost and be unable to
compete with the existing firms, or a barrier to entry could be a
high initial capital requirement needed to establish in the indus-
try. If there are high barriers to entry in the industry, the in-
dustry is likely to be highly concentrated with the existing firms
facing little threat of competition from new entrants.

There are barriers to entry in the retail food industry that
protect the chain supermarkets and large independents from new en-
trant competition. These barriers are the initial capital cost re-
quired to build and stock such a supermarket as well as the buying
and advertising advantage gained by these stores.

Table 7 gives the capital cost required to open various sizes
of food stores. The cost quoted to start a small supermarket is
$225,000 if the premises are leased, and $700,000 if they are bought.
To open a large supermarket, the figures are $450,000 and $1,400,000
for leasing and buying respectively. The small independent operator
may find these costs prohibitive. To obtain financing, an independent
operator would have to show that the store could be profitably run
in its location, and given the large number of independent grocery
stores' failures in Winnipeg over the years, this might be hard to
do. The chains and larger independent group association stores would
not have this same problem in obtaining the financing and would not
find the initial capital cost prohibitive.

Table 7
Capital Costs

	$/sq. ft. of selling space	Con- venience Store $1,000 sq. ft.	Medium Sized Store $5,000 sq. ft.	Small Super- Market $10,000 sq. ft.	Large Super- Market $ 20,000 sq. ft.
Equipment					
lease (1 yr.)	3.50	3,500	17,500	35,000	70,000
buy	20.00	20,000	100,000	200,000	400,000
Building					
lease (1 yr.)	9.00	9,000	45,000	90,000	180.000
construct	40.00	40,000	200,000	400,000	800,000
Inventory	10.00	10,000	50,000	100,000	200,000
Total					
lease (1 yr.)	22.50	22,500	112,500	225,000	450,000
buy *	70.00	70,000	350,000	700,000	1,400,000

* land cost not included

Source: Davies and Thompson, op. cit., p. 59

Researchers have disagreed on whether capital costs are a bar-
rier to entry in this industry. Mallen[23] includes them as a barrier
to entry, while Dooley[24] does not. Dooley maintains:

> "A small store is easily set up with a few years'
> savings, particularly if the store is rented.
> It is even possible for a man to accumulate
> enough in a lifetime to finance a large super-
> market . . . The capital requirement to estab-
> lish a single store is an unimportant bar-
> rier to entry."[25]

For the purposes of this study, one can say that the capital
cost of starting a food store might prove to be a barrier to entry,
depending on the success of the individual proprietor in obtaining

the financing.

Over the past decade the locational advantage gained by the chains and large independent associations has become an effective barrier to entry. Shopping centres have gained a large share of market sales. In 1972, they held 22.5% of grocery and combination store sales and in 1973, the figure had climbed to 25.9%.[26] The following table shows the number of chain stores and independent stores in shopping centres.

Table 8
Number of Grocery and Combination Stores
in Shopping Centres - Canada

	Shopping Centres (SC) With 5 to 15 Outlets		S.C. With 16 to 30 Outlets		S.C. With Over 30 Outlets		All S.C.	
	1972	1973	1972	1973	1972	1973	1972	1973
Chain Stores	329	356	131	153	98	119	558	628
Independents	140	147	30	24	16	7	186	178
Total	469	503	161	177	114	126	744	806

Source: Statistics Canada, Shopping Centres in Canada 1972 and 1973, Ottawa, Queen's Printers, #63-214, p. 20 and pp. 18-19.

There are only a small number of independent stores compared with the number of chain supermarkets in shopping centres. This gives the chain supermarkets an advantage over the independents since these shopping centres now account for over a quarter of all grocery and combination store sales.

> " Almost all stores in the largest shopping centres, and the vast majority of stores in the medium sized centres were owned by the four national giants; while significantly less than half of the stores in the smaller centres were part of these chains ... The main reason usually

> noted for the disproportionate share of shop-
> ping centre locations enjoyed by the chains is
> that they are favoured by landlords not only
> because they are the best credit risks as ten-
> ants, but because their well known names can
> draw both customers to the centre and capital
> from the financial institutions to the dev-
> elopers. Furthermore, their own subsidiaries
> are sometimes the landlord. Also, if the
> chains exercise veto power over what other
> tenants may be accepted and/or are given lower
> rental rates, as some commentators have sug-
> gested, these too would contribute to their
> higher share of shopping centre locations."27

Since a good location, with available parking are necessary for

a supermarket's success, the preference of landlords and developers

for chain supermarkets gives them a distinct advantage over the inde-

pendents. This locational advantage then constitutes an effective bar-

rier to entry for the smaller independent stores.

An additional barrier to entry operating in this industry is the

result of scale economies of buying, advertising and technology. As

outlined in the previous section (entitled "scale economies"), the

large chain supermarkets, and to a lesser extent the large voluntary

group association stores, are able to reduce their in-store operating

costs by taking advantage of bulk buying discounts, bulk advertising

advantages, advertising allowances from producers and manufacturers,

and the cost savings generated by the modern ECR equipment. These ad-

vantages mean that the existing large supermarkets can operate at a

lower average cost than could new competitors. A new competitor want-

ing to match the existing stores' size and prices would have to operate

at a lower profit level until their in-store costs were similar. These

advantages then constitute an effective barrier to entry in this indus-

try. Both Dooley and Mallen agree that advertising economies are the

most important of these barriers, with Dooley including volume buying

as the second most important barrier.

The final barrier to entry is that of vertical integration. As shown previously, all major supermarket chains control, or are part of a larger enterprise which control warehousing and distribution facilities and food processing facilities. These generate cost savings by allowing the stores to purchase goods at a lower cost and pay less in handling costs than their counterparts without these facilities. These lower costs are an additional advantage to the large chains and large voluntary associations which again constitute an effective barrier to entry in the industry.

Conclusion

The structure of the retail food industry has been shown to be moderately to highly concentrated depending on the method used to determine market shares. Differentiation has played a large part in this degree of concentration due to the drive by store and chain owners to increase their market share. They have succeeded in increasing their market share by offering large, comfortable store facilities with a large mix of products and low prices which can only be efficiently carried out in the large supermarket form of retailing.

The large number of barriers to entry in this industry have also played an important role in creating the high degree of concentration. The factors of high capital costs, locational advantages, scale economies of volume buying, advertising and technology, and integration are the most important in determining these barriers. These barriers to entry give the chains and large voluntary associations advantages that allow them to operate more profitably, offering lower prices

than could new, unaffiliated entrants. This high degree of concentration has important effects on the conduct and performance of the industry which will be discussed in the following section.

E. Conduct

In this section, we shall examine the pricing policies and business practises of stores in the retail food industry.

A retail food store can follow one of four standard methods of pricing its goods; they can follow a price leader, they can meet the lowest price in the market, they can use the manufacturers' suggested prices, or they can use a standard mark-up.

Since this industry deals with many varied products, bought under varied agreements from producers and distributors, and sometimes bought from one of its own subsiduaries; its pricing policies are not uniform. The store also has many factors to consider when arriving at the price of a product. When the product is perishable, its price must be determined with respect to its demand to ensure it is sold. When the product is not perishable, its price must ensure a reasonable turnover rate, since the store's profitable operation relies on large volume and quick turnover. The product's price can reflect any special discounts or "deals" given to the store by either the producer or distributor. The price must also allow for the store's profit. Finally, the store must take into account what other competitors are charging for the product. This last point is especially important since Dooley's study found retail food stores to have a very high cross elasticity of demand.[28]

In his study, Dooley found that the major chain stores in the industry had to agree on the prices charged for their products; since if

one chain were underselling the others it would significantly cut

into the other stores' sales.

> "The demand structure of the grocery trade
> makes an agreement on prices necessary. Each
> large firm faces a kinky demand curve. When
> one firm sets prices, it must consider the
> prices of others. The high direct elasticity
> of demand between stores mean that the poli-
> cies of each large company affect the opera-
> tion of other large companies immediately and
> substantially."[29]

The Prairie Provinces Cost Study Commission surveyed chain and

nonchain stores for their pricing rules, the results of which are sum-

marized in the following table:

Table 9
Pricing Rules Used

		Nonchain Size of store by sales in thousands of dollars						Chain
		0–40	50–99	100–149	150–249	250–499	500–& over	
Meet lowest price:	1st	8.6	15.3	7.8	29.4	6.1	21.7	0.0
	2nd	4.9	4.0	12.5	15.7	15.2	13.0	11.1
Standard markup:	1st	68.5	65.3	59.4	47.1	54.5	39.1	44.4
	2nd	7.4	6.7	14.1	9.8	18.2	4.3	11.1
Follow price leader:	1st	8.6	2.7	3.1	9.8	0.0	4.3	11.1
	2nd	1.9	5.3	4.7	7.8	12.1	39.1	0.0
Manufac- turer's prices:	1st	18.5	12.0	10.0	7.8	3.0	0.0	0.0
	2nd	9.9	8.0	9.4	11.8	12.1	4.3	0.0

Source: PPCSC survey of chain and nonchain stores.

The large nonchain and the chain stores use a standard markup or fol-

low a price leader when determining prices. The smaller nonchain
stores also use a standard markup but also use manufacturers' pric-
es or meet the lowest price more often. The chain and large nonchain
stores keep in touch with their competition by using price checkers
on a regular basis and are also more likely to meet other stores' ad-
vertised specials than the smaller operations.

The easiest way for stores in the industry who recognise that
they must comply with existing demand conditions and set uniform pric-
es, is to use a price leader and follow that store's pricing decisions.
Canada Safeway Ltd. is recognised in all major Prairie cities as being
the price leader. The following table illustrates this:

Table 10
Which Store is the Price-Leader
(Percentage indicated by those recognizing a price-leader)

	Winnipeg	Regina	Saskatoon	Calgary	Edmonton
Safeway . . .	81.6	100.0	64.7	100.0	77.6
Loblaw	4.1		35.3		12.1
Dominion . . .	4.1				5.2
Other	10.2				5.1

Source: PPCSC survey of chain and nonchain stores. The size of the sample on
which this table is based is indicated by the percentage an-
swering "yes" to the question "Is there a recognized price
leader?"

This type of pricing policy (price leadership, price checkers and
meeting advertised specials) is consistent with the high concentration
of the industry's structure. Since there are only three major compan-
ies selling in the market (comprising over 75% of sales) they all face
a downward sloping demand curve, and since their products are perfect
substitutes so they will face a kinked demand curve. In this situa-
tion, firms are interested in maintaining similar prices in order to

maximize revenue. To illustrate this point, consider the following
diagram:

GRAPH 5
Price and Quantity Sold Under an Oligopoly
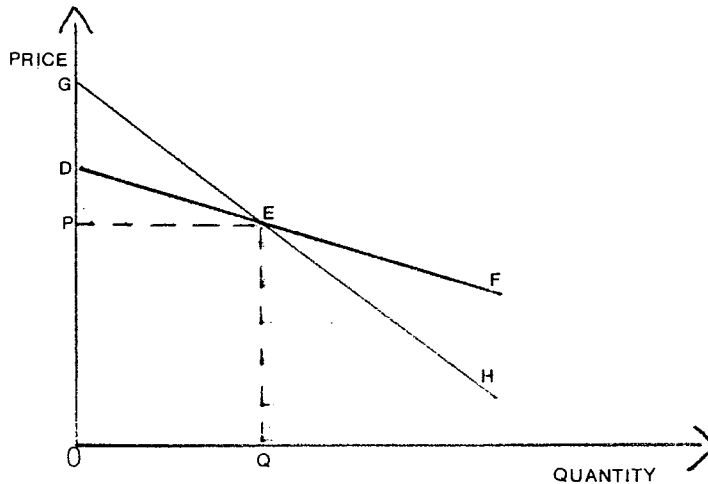
Firm A in an oligopoly situation will be faced with two different
demand curves. The curve DEF will prevail if firm A can raise or
lower price without being matched by other firms in the industry, and
curve GEH will prevail if the other firms match firm A's price cuts
or increases. If you make the rational assumptions that a price cut
will be matched and a price increase won't, then firm A's demand curve
becomes DEH with a kink at the prevailing market price of OP.

Since a price increase would decrease firm A's sales, reducing
revenue, it is unlikely to choose this alternative. A price decrease
would substantially increase sales and revenue if the other firms
didn't match it. This is unlikely to happen since the other firms
would lose part of their market share, prompting them to match the price
cut. A price cut by firm A then would result in a move onto part EH
of its demand curve.

Therefore, firms in a oligopolistic industry are unlikely to ini-

tiate price cuts, or price their products lower than their competitors, because such a move would place them on the more inelastic portion of their demand curve. The most adventageous position for firms in a highly concentrated industry then is to have similar prices and price movements. This is easily achieved by following a price leader and employing price checkers.

Competition then takes the form of advertising, location and services. This type of competition also follows from the industry's highly concentrated structure, since in an oligopoly, competition can not be in the form of price competition; it must be non-price. Competition based on advertising, location and services provided all favour the large supermarket form of retailing at the expense of the smaller grocery store.

F. Performance

"The usual hypothesis regarding concentrated industries is that "pure" or excess profits will exist, and that there exists a positive correlation between concentration and profits. Profit levels are considered an important measure of economic performance, because excess profits are indicative of a pricing and output policy which deviates from that which is ideal for consumer welfare, ie. prices are higher and so output is less than it need be."30
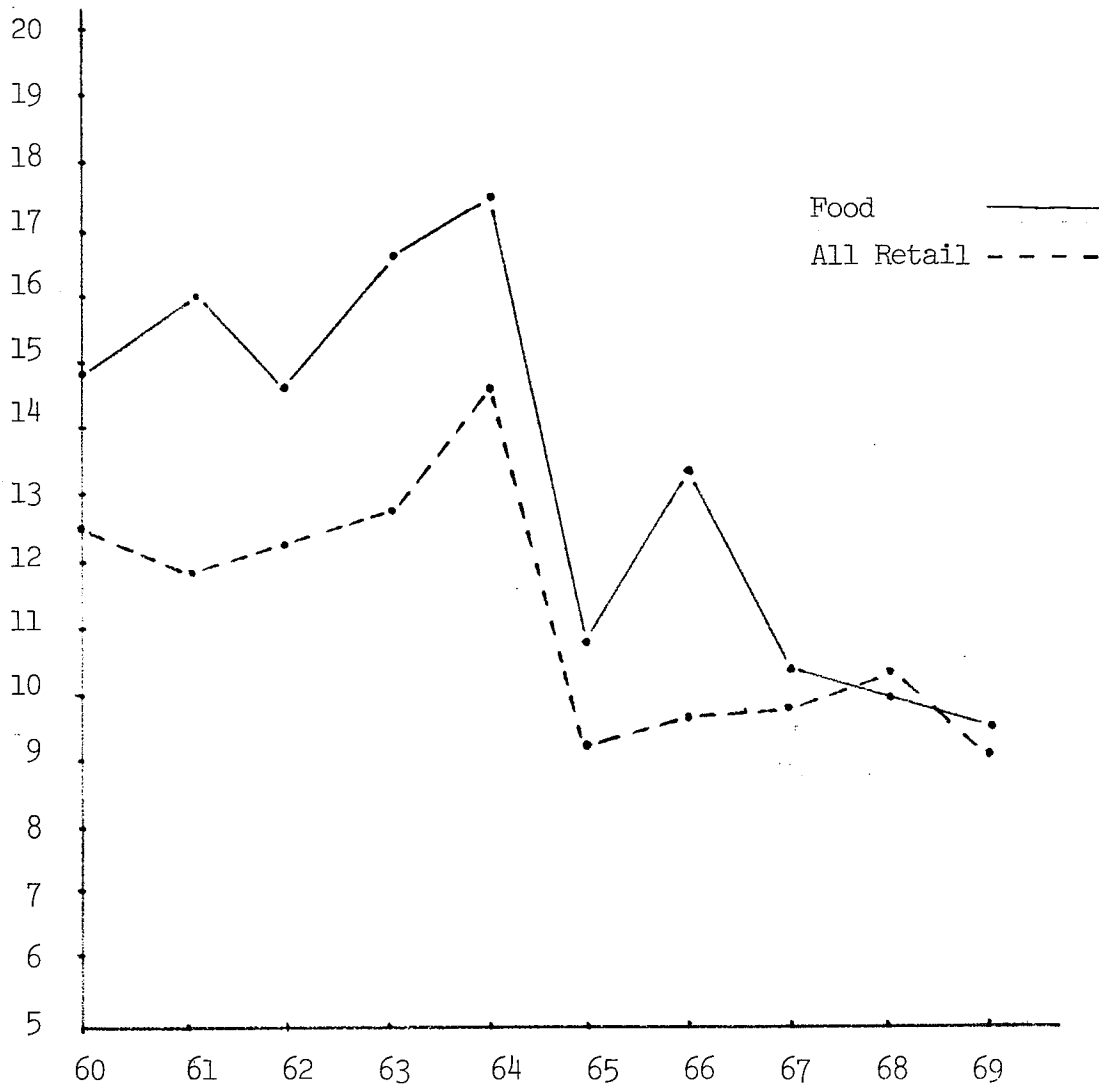
The retail food industry in Manitoba earns profits that are above the average of all retailing in the province according to Davis and Thompson. The 1960 to 1969 annual average rate of profit in food retailing was 18.7% higher than for all retailing.31

Dooley's study concurs with this finding. He found that for unincorporated grocery stores (independent and affiliated), their operating

profits were 23.7% above the Canadian average. For corporations (chain stores) and co-operatives, profits were 38.5% higher. Defining profits another way, he found that operating profits before taxes (as a % of net worth) were 28.7% higher for unincorporated stores, and 75.6% higher for incorporated stores on the Prairies than they are in Canada as a whole.[32] Graph 6 illustrates Davies and Thompson's findings.

Therefore the high concentration in the retail food industry does generate a high profit rate, significantly higher than for other forms of retailing that are not as concentrated.

GRAPH 6

Food Industry Profits, 1960-1969

G. Conclusion

This investigation of the retail food industry in Winnipeg has shown that the make up and operation of the three groups of stores within it are different and therefore there are grounds to believe that it is possible for their labour practises and wage rates to also be different.

The chain store sector is moderately to highly concentrated depending on which method is used to determine market share. The three corporate chains control over three-quarters of the Winnipeg grocery shopping market. They can attain significant economies of scale and benefit from many barriers to entry operating in the industry. These incorporated chain stores have profits that are approximately 38% higher than the Canadian average.

The affiliated independent stores hold about 10% of the grocery shopping market and can benefit from limited scale economies of bulk buying, advertising and technology. However, their opportunity in this area is not as great as that of the chain stores. Their profit rate is higher than that of the small corner stores, but not as high as that of the chain stores.

The small corner grocery stores hold under 10% of the market and are in the least advantageous position in this industry. They cannot take advantage of scale economies or entry barriers. Their costs are significantly higher and their profits lower than the chain and affiliated independent stores. The uncertain position of the corner stores is demonstrated by the volatile nature of this segment of the industry with its large number of entrants and exits each year.

Given that each sector within the retail food industry has a different structure, conduct and performance, it is likely that their wage rates and male-female wage differentials are not identical. Since the chain store sector is highly concentrated, with a high profit rate and relatively higher labour productivity, the possibility of high wages are greatest in this sector. Conversely, the small corner stores are in the least advantageous position and their wage rates are likely to be low. The following chapter will examine wage data from each of these sectors to demonstrate this point.

Notes

1. D.C. Dooley, Retail Oligopoly: An Empirical Study of the Structure, Conduct and Performance of the Grocery Trade on the Prairies, Supporting Study #3, Saskatchewan Royal Commission on Consumer Problems and Inflation, p. 20.

2. Ibid., p. 21.

3. National Commission on Food Marketing, Task Study #7, Organization and Competition in Food Retailing, Washington, U.S. Government Printing Office, June/66, p. 165.

4. For a description of these corporate chains, see Appendix II.

5. See graph 4 and appendix IV.

6. From A Study of the Quality of Life in Winnipeg, 1971; as reported in the Food Industry in Manitoba prepared for the Planning and Priorities Committee Secretariat by J. Davies and L. Thompson, 1973, p. 15.

7. B. Mallen, The Levels, Causes and Effects of Economic Concentration in the Canadian Retail Food Trade: A Study of Supermarket Market Power, Food Prices Review Board, Feb/76, p. 18.

8. Ibid., p. x.

9. Kaysen and Turner, Anti Trust Policy (Cambridge, Harvard University Press, 1959).

10. J. Bain, Industrial Organization (John Wiley and Sons Inc., 2nd edition, 1968).

11. See Mallen, Op. Cit., p. 21.

12. B. Boch, Concentration, Oligopoly and Profits (New York: The Conference Board, 1972), pp. 38-40, 51.

13. M. Stewart, "Industrial Organization," in L. Officer and L. Smith (ed.), Canadian Economic Problems and Policies (McGraw-Hill, 1970).

14. For an additional discussion of concentration measures see: G. Rosenbluth, "Measures of Concentration" in Business Concentration and Price Policy (Princeton, 1955), pp. 57-95; and F.M. Scheerer,

Industrial Market Structure and Economic Performance (Rand Mc-
Nally, 1970), pp. 50-57.

15. Mallen, Op. Cit.; Dooley, Op. cit.; Davies and Thompson, Op. Cit.

16. Mallen, Op. Cit., p. 62.

17. P. Dooley, Op. Cit., p. 15.

18. Dooley, Op. Cit., p. 29.

19. Dooley, Op. Cit., p. 36.

20. Source: Manpower Effects of Technological Change: Retail Stores
prepared for the Manitoba Department of Industry and Commerce,
Manpower Branch, 1976, by C. Swan, p. 7.

21. Ibid., p. 7.

22. Ibid., p. 8.

23. Mallen, Op. Cit.

24. Dooley, Op. Cit.

25. Dooley, Op. Cit., pp. 57-58.

26. Mallen, Op. Cit., p. 107; Statistics Canada, #63-214, p. 17.

27. Mallen, Op. Cit., pp. 107-109.

28. Dooley, Op. Cit., pages 48 to 51.

29. Dooley, Op. Cit., pages 63-64.

30. Mallen, Op. Cit., page 129.

31. Davies and Thompson, Food Industry in Manitoba, page 79.

32. Dooley, Op. Cit., pages 79-80.

33. Davies and Thompson, Op. Cit., pages 124 to 127.

V. ANALYSIS OF THE EMPIRICAL DATA

A. Introduction

This chapter analyses the empirical data collected to determine
the impact of concentration and unionism on male-female wage differen-
tials in the retail food industry. The analysis centres, first of all
on the relative importance of product market concentration and the
sex of the employee in determining the wage rate, secondly on the in-
cidence of wage discrimination in each level of concentration within
the industry and lastly, on the incidence of occupational discrimina-
tion.

Previous studies, discussed in the first chapter, have looked at
the impact of different variables on wage differentials. Although they
do not agree on the relative impact of any one variable, or indeed, on
the combination of variables that best explain the existence of wage
differentials; most concede that the two factors of product market
concentration and the extent of union organization do explain much of
the variation in wages between industries.

The hypothesis developed previously is that there will probably
be more than one factor operating in each industry sector to allow for
the creation of wage differentials. On the supply side, the existence
of unionization can act as an external factor to affect the supply of
labour and create an upward pressure on the wage rate. On the demand
side, a change in productivity can act as an internal factor affecting

the firm's demand for labour and similarly put pressure on the wage rate. If there is a rise in the firm's productivity (a permissive variable giving the producer scope for either raising wages or increasing profits), the relative strengths of the positive variables of unionization and concentration will determine whether labour will receive higher wages or the producer will receive increased profits.

The Winnipeg retail food industry has three levels of concentration; the chain store sector, the affiliated independent sector and the corner store sector. The aforementioned factors of unionization, concentration and productivity are represented in varying degrees within these sectors.

Segal's[1] study postulated that the ease with which a union can oranize, maintain its strength and bargain for wage increases is directly correlated to the competitiveness (or non-competitiveness) of the industry and the geographical size of its market. He claimed that a union could be in the best bargaining position if the industry were oligopolistic with a local product market.

The chain stores in the retail food industry are in such a position. It was shown in chapter three that the general grocery market is controlled by three corporations (chain stores) holding a 75% share of the market. This is considered to by highly concentrated. The industry is also local in scope due to the nature of the product sold. Unions then can organize effectively and are in a strong bargaining position within the chainstore sector.

Union organization will be more difficult and less effective in the other two sectors. This section of the industry is more competitive and volatile, with large numbers of entrants and exits each year. Because of this fact, union organization has not succeeded and due to

this section's uncertain profit position, would not necessarily be successful in bargaining for wage increases in any case.

Therefore, the unionization variable is only present in the chain store sector and acts to positively affect the wage rate only in that sector. If there was a tight labour market in the industry, the higher wages in the unionized sector may spill over to the non-unionized sectors; however there is no evidence of excess labour demand in the industry and the prevailing wages in the chain stores do not significantly affect the wages paid in the other two sectors.

As demonstrated in chapter three, labour in the chain store sector is more productive than in the other sectors' with labour in the affiliated independent's sector being more productive than that in the small corner stores. This is the result of the chain sector's ability to achieve scale economies and take advantage of productivity boosting technology.

An additional variable to be used in conjunction with productivity to act as a parameter determining variable for ability to pay higher wages, is the profit rate. If the profit rate is higher in one sector of the retail food industry, then the employer is in a better position to pay a higher wage rate. In this study of retail food stores, the profit rate is only available for the most concentrated sector (chain stores) on a regular basis, since these are the only incorporated businesses. This means that data for two-thirds of the study group is unavailable.

However, it has been previously argued[2] that profitability rises with concentration. Therefore, the use of product market concentration to replace the profit rate seems reasonable for the retail food in-

dustry as one of the conclusions that Mallen's study[3] came to was

that:

> "There is a definite correlation between high
> concentration and high profits"[4]

In addition, it was concluded;

> "The concentration levels of the top four sup-
> ermarket corporations in Canada's larger urban
> areas is very high by any standard."

> "The prairies are the most concentrated econ-
> omic region."

This evidence, coupled with the studies previously mentioned dealing

solely with profitability and concentration, demonstrate that product

market concentration is the best proxy available for profitability in

this industry.

Therefore, the variables of unionization, high productivity and

high concentration (profitability) are active in the chain store sec-

tor with the variable of medium productivity in the affiliated indepen-

dent sector. This leaves the small corner store sector with no strong

factors to impact on the wage rate. Continuing with this analysis, the

chain store sector is in the best position to pay high wages, although

the two opposing positive variables of unionization and high concentra-

tion create the possibility for either higher wages or increased profits.

The affiliated independent sector is in the position to pay higher wages

than the corner store sector, but not as high as those possible in the

chain stores. However, there is a lack of unionization in this sector

so that the increased scope to pay higher wages may not accrue to the

labour component but may instead go to increase profits. The corner

stores are in the least advantageous position to pay high wages. The re-

sults of the tests on the empirical data will show which sector does in

fact pay the higher wage rate.

In the analysis of male-female wage differentials, it would be expected that the differentials in the chain store sector would be narrower than the differentials in the other sectors within specific occupations because of the unionization factor. One would expect that wage rates in the unionized sector would be uniform and decided by the collective bargaining process, with variations within an occupation being based on seniority. In this case one would expect to find narrow male-female differentials. In the other, non-unionized, sectors there is more scope for wage discrimination and one would expect to find larger differentials within occupations.

It is necessary to also test for wage discrimination disguised as occupational discrimination in the chain store sector as this would be the only option open for the employer to minimize the wage bill by discriminatory practises.

B. Data and Methodology

Data was collected for 291 employees in the retail food industry; 180 employees in the chain store sector, 75 employees in the affiliated independent sector and 36 employees in the corner store sector. For chain store employees the following information was available; wage rate, sex of the employee and whether or not they belonged to a union. This information was made available through a special tabulation of the Manitoba Department of Labour's Annual Wage and Salary Survey (September 1975) and the occupations of checker-cashier, cashier and wrapper were used because these were the occupations employing the majority of women in the industry and also employing a large number of males. The other occupations within the chain store group were poorly represented by women.

The other reason behind using these particular occupations is that they were similar to the occupations surveyed in the other two sectors of the industry.

Data on the wage rate, sex of the employee, whether or not they belonged to a union and whether they worked full time or part time was available for each employee surveyed in the affiliated independent and corner store sectors. This data was collected through a primary survey of stores in the Winnipeg area.

The first test performed on the data was to find the impact of the level of concentration and the sex of the employee on the employee's wage rate. In all, four linear multiple regressions were run using the wage rate as the dependent variable and the employee's sex, store size worked in and whether or not they belonged to a union as the independent variables. An additional independent variable of whether or not the employee worked full time or part time was used for the corner store and affiliated independent sectors. Due to the nature of the data, it was necessary for dummy variables to represent the independent variables in the regression equations.

Secondly, the male-female wage differentials were examined for each sector, for both intra-occupational differentials and inter-occupational differentials.

C. Summary of Conclusions

The results of the regression analysis undertaken supports the expected results. The conclusion of the total sample regression (chain store, affiliated independent association store and corner store samples) was that men were paid more than women and that employees working

in the unionized chain stores were paid more than employees of the
smaller store sizes. This gives credence to the theory that the level of concentration, unionization and sex of the employee are all variables significantly influencing the wage rate.

Affiliated independent association stores paid their employees
more than employees in corner stores; however this difference was not
as great as that between the independent association stores and chain
stores. The fact that an employee worked full time or part time was a
more important variable determining wages than either the size of the
store, or the sex of the employee in these two sectors.

Analysing the data with respect to male-female wage differentials
within each of the sectors for similar occupations also bears out the
theory discussed in previous sections. It was postulated that the
large, unionized chain stores would, in all probability, have narrower
wage differentials between their male and female employees. This turned
out to be the case as the average female wage was 98.9% of the average
male wage in the chain store sector as compared with 78.7% of the average male wage in the affiliated independent and corner store sectors.
Therefore, within occupations, there was virtually no differential between wages of male and female employees in the chain store sector. The
corner stores and affiliated independent stores had wider differentials
lending substance to the theory that firms in a low concentration, competitive industry are more apt to discriminate with respect to wage
rates.

However, when the possibility of occupational discrimination was
examined, it was found that the chain store sector does engage in occupational discrimination. Female employees in chain stores are sadly under-represented in the higher paying of the occupations. When all oc-

cupations are taken into account, instead of only occupations that
have large numbers of male and female employees, the average female
wage falls to 86.5% of the average male wage. This inter-occupational
wage difference is significantly greater than the intra-occupational
differential of 98.9%.

D. Analysis of the Data

Four regression equations were run to find the relative impact
of the independent variables (sex of the employee, store size worked
in and whether or not the store was unionized) on the wage rate of an
employee. One regression was run for all three store sizes' data to-
gether, one was run for the corner store sector and affiliated indepen-
dent sector's data separately and one for these two groups together.

Linear multiple regression 1; (291 observations)

$$w = B_1 Sx + B_2 SS_1 + B_3 SS_2 + C$$

    where:

    w = hourly wage rate

    Sx = sex of the employee

        0 = male

        1 = female

    SS_1 = chain store

        0 = corner store

        0 = affiliated independent store

        1 = chain store

    SS_2 = affiliated independent store

        0 = corner store

1 = affiliated independent store

0 = chain store

C = constant term

The B_1 coefficient picks up the variation in wages attributed to being a male or a female employee in this industry. The B_2 coefficient will demonstrate the effect of the largest store size on wages and will also show the effect of unionization on wages since this is the only unionized sector within the industry. The B_3 coefficient picks pick up the increase in wages as a result of being an employee in an affiliated independent association store as opposed to being an employee in a corner store or a chain store, with the residual picking up the effect of being an employee in a corner store.

The results of the regression are as follows;

$$W = -45.6 \ Sx + 285.4 \ SS_1 + 57.2 \ SS_2 + 398.3$$

$$(21.83)^a \quad (32.00) \quad \quad (35.41) \quad \ (31.76)$$

$$(-2.09)^b \quad \ (8.92) \quad \quad (1.62) \quad \quad (12.54)$$

$$R^2 = 0.3215$$

$$F_{(3,287)} = 45.34$$

From these results, it would seem that the sex of the employee and whether or not they worked in a chain store are important variables affecting wages. The Sx and SS_1 variables are significant at the 97.5% level of confidence ($\alpha = 0.025$)

These results are consistent with the theory outlined previously. Men are traditionally paid more than women within occupations in a single enterprise or plant. The significant negative value of the B_1 coefficient indicates that this is also the case in the retail food industry.

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a; standard error of estimate
b; t-statistic

The chain store and union coefficient is the most significant with in this equation. In the previous theory it was postulated that the wages in the unionized chain store sector would be higher than the other two sectors and the regression results indicate that this is in fact the case. It was impossible to isolate the effects of unionization from the effects of the chain store size due to the fact that the chain store sector was the only one unionized and problems of multicollinearity would have arisen if dummy variables had been used to measure both these effects separately.

The relationship between higher wages in the independent association stores over the corner stores is not as strong as in the chain store/independent association store case. Since the confidence interval is only $\alpha = 0.1$, the null hypothesis cannot be rejected with any assurance. Therefore, it is uncertain from the results of this regression equation whether or not the affiliated independent stores pay significantly higher wages than corner stores.

Linear multiple regression 2 and 3;

Due to the uncertainty over the significance of the SS_2 coefficient in the previous equation, a multiple linear regression equation was run for the corner store and independent association samples separately to determine the relative effects of these variables in their wages. For these two samples, data on whether the employee was working on a full time or part time basis was available, so an additional coefficient was included.

Corner store sample; (36 observations)

$$w = B_1 \ Sx + B_2 Ti + C$$

where; W = hourly wage rate

Sx = sex of the employee

0 = male

1 = female

Ti = full time or part time worker

0 = part time

1 = full time

The results of the regression equation are as follows;

$$w = {}^{-}0.49 \ S_x + 1.11 \ Ti \ + \ 3.50$$

$$(0.29)^a \quad\quad (0.28) \quad\quad (0.26)$$

$$(-1.72)^b \quad\quad (3.91) \quad\quad (13.25)$$

$R^2 = 0.3864$

$F_{(2,33)} = 10.39$

This linear multiple regression equation shows that the variation in corner store employee's wages is largely due to their status as either full time or part time workers, more than their sex. This can be explained by the fact that their part time workers are frequently high school or junior high school students whose wages are minimum wage regardless of whether they are male or female. There are proportionately more part time workers than full time workers in this sector. The t-statistic for the time coefficient is significant at the $\alpha = 0.0005$ level of confidence, whereas the t-statistic for the sex variable is only significant at the $\alpha = 0.05$ level.

Independent association sample (75 observations)

$$w = B_1 \ Sx + B_2 \ Ti + C$$

where; w = hourly wage rate

Sx = sex of the employee

                    0 = male

                    1 = female

        Ti = full time or part time worker

                    0 = part time

                    1 = full time

        C = constant

The results of this regression are as follows:

    w = $^{-}$0.78 Sx + 1.72 Ti + 3.92

            (0.23)^a (0.23)   (0.21)

            (-3.41)^b (7.54)   (18.79)

    R^2 = 0.5317

    $F_{(2,72)}$ = 40.87

For the independent association's stores, employees' wages are sig-
nificantly determined by both their sex and their working status. The
t-statistics for both the Sx and Ti coefficients are significant at the
α = 0.005 level.

    To make a comparison with the corner store sector; a male working
in the independent association sector will earn proportionately more
than a female worker, than would a male working in the corner store sec-
tor.

    The coefficient associated the the impact of working full time over
part time on hourly earnings is large relative to the sex coefficient
This would indicate that the status of the worker (ie. full time or part
time) explains more of the variation in hourly earnings than does the
sex of the employee, although both have an impact.

Multiple linear regression 4   (111 observations)

    The next test was to run a multiple linear regression for the cor-

ner and affiliated independent association stores data together to give a comparison with the total sample including chain stores.

$$w = B_1 \, S_x + B_2 \, SS + B_3 \, Ti + C$$

where; w = hourly wage rate

Sx = sex of the employee

0 = male

1 = female

SS = size of store worked in

0 = corner store

1 = affiliated independent store

Ti = full time or part time worker

0 = part time

1 = full time

C = constant

The results of this regression are as follows;

$$w = -0.69 \, Sx + 0.54 \, SS + 1.52 \, Ti + 3.43$$

| (0.18)[a] | (0.19) | (0.18) | (0.21) |
| (-3.82)[b] | (2.84) | (8.42) | (16.18) |

$R^2 = 0.5090$

$F_{(2,107)} = 36.97$

In this sample, all coefficients were significant at the $\alpha = 0.005$ level. The sex coefficient indicates that males are paid at a higher hourly wage rate than females. The store size coefficient indicates that employees in an independent association store will earn a higher wage than employees in a corner store. The time coefficient shows that full time workers also have a higher hourly wage rate than part time.

The conclusion to be drawn from the regression analysis are that

the level of concentration, unionization and sex of the employee are all important determinants of an employees' wage rate. The results show that being female has a negative impact on the wage rate, working in a unionized chain store has a positive impact, increasing the wage above what it would be in the nonunionized affiliated independent and corner store sectors.

E. Male/Female Wage Differentials

Analysing the data with respect to male-female wage differentials within each of the sectors also bears out the theory discussed in previous sections.

It was postulated that the large, unionized chain stores would have narrower wage differentials between their male and female employees. This turned out to be the case, as demonstrated by the sample of 291 observations. The differentials were as follows:

Table 11
Male/Female Wage Differentials

	Average Female Wage $/hr.	Average Male Wage $/hr.	Female Wage as Percentage of Male Wage
Chain store	6.49	6.56	98.9%
Independent assoc. & corner stores	3.67	4.67	78.7%
Independent assoc. stores	3.79	4.91	77.2%
Corner stores	3.44	4.10	83.9%

A surprising result, however, was that the male-female differential in the affiliated independent association stores was larger than the differential in the corner stores. This could have been a result of one of the following three factors though. First of all, it could

just be a quirk in the particular sample that was available. The sample size for these two groups was small (36 for corner stores and 75 for the independent association stores) so it is possible that these samples are not representative of the total employee population.

Secondly, it could be a result of different employee characteristics in the two types of stores. Although there were no personal characteristics of the employees available for analysis, discussions with store owners brought out the possibility of different types of employees working in the two sectors. The corner stores, if they had any employees at all, were more likely to have worked with that same store for a number of years. The independent association stores were larger, hired more employees and these employees were likely to be students working part time. Therefore, the narrower wage differentials could be the result of different human capital, especially job experience, factors associated with the labour involved.

Thirdly, since the corner stores are small and the owner has more personal contact with the employees than does the owner of the larger independent association stores, there might be more of a psychological barrier against discriminating on the basis of sex with respect to wages.[6] Unfortunately, without further survey work there is no way of validating any one of these explanations.

The overriding result however, is that the male-female wage differential is narrower in the chain store sector than in the other more competitive sectors.

The preceeding analysis was undertaken with wage data for males and females working within similar occupations. Since corner stores and independent association stores are small (employing fewer than 20 people) their male and female employees are interchangeable in the major-

ity of cases, performing similar duties of shelf stocking and working at the cash desk. The only exception to this was if the store had a butcher or produce manager, who turned out to be male in each instance. Therefore all observations were used in the analysis.

Therefore, within occupations, there was virtually no differential between wages of male and female employees in the chain store sector. The corner and independent association stores had wider differentials lending substance to the theory that firms in a low concentration, competitive industry are more apt to discriminate with respect to wages in order to lower their wage bill, compensating for their lower profit position.

The incidence of low wage differentials in the chain stores sector is more likely the result of union organization than high concentration, per se; although as discussed previously, the high concentration would be the major contributing factor to union organization and these two factors are highly correlated.

Unfortunately no human capital factors were available to add to the analysis, so it was impossible to determine whether the individuals within these occupations were discriminated against in areas other than wage. For example, if the majority of women working as checker-cashiers had a number of years experience on the job, while the men working in the occupation were students working part time, with no previous experience, there would be definite discrimination that wouldn't necessarily show up as wage discrimination. However, this is an area that couldn't be investigated given the limited resources for sampling, so the analysis was confined to pure wage discrimination.

F. <u>Areas of Discrimination</u>

A form of wage discrimination that is apparent within the chain store sector however, is that of occupational discrimination. The following table shows the number and salary level of males and females in occupations within the chain store sector.

Table 12

Classification	Sex	Number of Employees	Salaries		
			Lowest	Average	Highest
1. grocery clerk,					
	M	267	520	859	965
	F	16	565	830	860
2. meat clerk	M	21	630	785	845
	F	7	650	694	715
3. produce clerk	M	83	695	806	960
	F	2	860	860	860
4. checker-cashier	M	154	400	783	785
	F	309	385	707	860
5. cashier	M	–	–	–	–
	F	95	415	566	950
6. wrapper	M	137	475	629	645
	F	174	455	673	860

Source: Manitoba Department of Labour, <u>Annual Wage and Salary Survey</u>, September 1975.

From this table, it can be seen that female employees are under-represented in the higher paying of the occupations.

When all occupations are taken into account (making a simplifying assumption that each employee is earning the average salary), the average female wage falls to 86.5% of the average male wage. This inter-

occupational differential is significantly greater than the intra-occupational differential of 98.9%. Even though this wage differential is smaller than that in a corner or independent association store (where the woman's wage is respectively 83.9% and 77.2% of the man's wage) it does show that there is an area open for discrimination in the chain store sector.

Notes

1. M. Segal, "The Relation Between Union Wage Impact and Market Structure", Quarterly Journal of Economics, V. 78 1964, pages 96-114.

2. J. Bain, Industrial Organization, 2nd Ed. (John Wiley and Sons Inc., 1968).

   D. Schwartzman, "Monopoly and Wages", Canadian Journal of Economics and Political Science, V. 26 No. 3, 1960, pages 428-438.

   L. Weiss, "Concentration and Labour Earnings", American Economic Review, V. 56, 1966, pages 96-117.

   B. Mallen, The Levels, Causes and Effects of Economic Concentration in the Canadian Retail Food Trade: A Study of Supermarket Power, Food Prices Review Board, February 1976.

   F.M. Scheerer, Industrial Market Structure and Economic Performance, (Rand McNally, 1970).

3. B. Mallen, Op. Cit.

4. Ibid., page xi.

5. Ibid., page x.

6. An additional consideration is that the majority of employees working in this sector are earning the minimum wage. The payment of minimum wage sets a base and affords no opportunity to discriminate with respect to the wage rate. The payment of a lower wage to one employee or group of employees is not possible.

VI. CONCLUSION

The purpose of this thesis has been to examine the reasons behind the occurence of male/female wage differentials in the retail food industry in Winnipeg. There are four broad factors that have the ability to affect wage differentials; the nature of the industries under consideration, the economic condition of an industry (whether it is growing or declining), economic cycles, and the forces of market structure that affect wage rates.

The first of these factors, the nature of the industries under consideration, influences wage rates since labour productivity, historical wage patterns and geographical location differ between industries. These differences result in a similar occupation not having a uniform wage rate among industries. Wage rates change considerably between industries and within one industry operating in many geographical locations. However for the purpose of the study this factor was not relevant; only one industry and one location were being considered.

The second factor, the economic condition of an industry is also not applicable in this case. If an industry is expanding it is likely that wage rates are rising. In an expanding industry production will be increasing and new equipment may be purchased which potentially translates into increasing labour productivity. Increases in labour productivity is a positive influence on wage rates. Quite apart from this, the need for an increasing work force may induce the employer to boost wage rates in an effort to attract additional workers. However since

this study deals with a cross sectional sample, the behavior of wage rates in an expanding or declining industry will not be brought into play.

The third consideration, economic cycles, has a significant influence on wage rates. Economic conditions for expansion, stagnation or recession direct business intentions for future growth or retrenchment and influence current production. These variables affect the payment of factors of production, including labour. Cyclical movements of the economy also control labour market conditions that direct the supply price of labour. However, as discussed above, this consideration is not pertinent to the problem under study as the sample utilized was cross sectional.

The fourth factor, market structure, is significant for the discussion of male/female differentials in this study. Industry concentration on the demand side and the existence or nonexistence of a labour union on the supply side were found to have a considerable influence on the wage rate and male/female differentials.

The results from the data analysis are consistent with the hypothesis presented in chapter one: that the concentrated industries will have higher wage rates than the less concentrated industries. The results of the regression analysis undertaken on the sample of wage data were that the level of concentration, unionization and sex of the employee were all variables that significantly influenced the wage rate. In the sample, the concentrated sector of the industry (the chain stores) had the highest wage rates with the least concentrated (the corner stores) having the lowest. The reasons behind these high wage rates in the chain stores are those discussed in chapters one and three: the higher profit rates and labour productivity in comparison with the other

sectors of the industry, coupled with the existence of a labour union. In chapter one it was postulated that the presence of high wage rates was most likely where both favourable labour supply and labour demand forces operated. The existence of high profit rates and high labour productivity presented the opportunity for higher wage rates on the demand side, while the existence of a labour union increased the possibility for turning the increased capacity to pay higher wages into actual wage gains. The operation of these two forces results in the payment of higher wages in the chain store sector of the retail food industry over wages paid in the less profitable and productive nonunionized sectors of the industry which are also less concentrated.

It was demonstrated in the analysis that, overall, female employees were paid less than male employees with the chain store sector having the narrowest male-female wage differentials for employees within occupations. Therefore, it can be stated that, on the basis of the sample data, the chain store sector discriminated less in terms of wage rates than did the other two industry sectors. The reason for this can be most easily explained by the existence of a labour union which bargains collectively for the setting of occupational wage rates and would pressure for uniformity. As discussed previously, the higher concentration in the chain store sector would have been a major contributing factor in the establishment of a labour organization, and as such, would be a major factor behind the narrower male-female wage differentials.

However, it can not be stated that the chain stores do not discriminate on the basis of sex since there was ample evidence of occupational discrimination. In this sector, inter-occupational wage differentials were significantly greater than the intra-occupational differentials.

As discussed in chapter two, discrimination against female employees occurs when the labour supply of women is separated from the male labour supply and directed to a separate wage path, separate occupational grouping or separate segment of the industry. Madden (1973) and Jackson (1970) explain this discrimination in the neoclassical framework of monopsony power. Madden's explanation focuses on the implicit collusion of employers to subdivide the labour market into "male" jobs and "female" jobs so that both wage and occupational discrimination could be practised. Jackson's analysis explained discrimination as being the monopsonist employer taking advantage of the differing supply prices at which males and females offer their labour (assuming that women offer their labour at lower prices than males) and adjusting the proportion of low priced female labour with the higher priced male labour to minimize the wage bill. Dual labour market theory explains discrimination as being the result of the separation of female and male labour supply into two separate labour markets with women directed to the secondary labour market where wages are lower than in the primary labour market where males are hired predominantly. In this way both wage and occupational discrimination can be practised. Therefore, the best explanation for the existence of both the wage discrimination and occupational discrimination that was found in this industry is in the separation of male and female labour supply into two separate and distinct supply curves. In the lower levels of concentration (the affiliated independent store sector and the corner store sector) the female labour is directed to a lower wage scale for a similar occupation to males, while in the highest level of concentration (the chain store sector) female labour is directed into lower paying occu-

pations than is male labour.

The human capital theory of discrimination can not be rejected
as an explanation of the existence of wage differentials in this
industry due to the lack of human capital factors available for analy-
sis. Ideally, human capital variables such as educational attainment,
length of service and training within the industry, and personal abil-
ity should have been examined concurrently as these can also impact
on the wage rate. However, these data were not available so that the
conclusions reached as a result of this analysis can at best only offer
a partial explanation. On the basis of the evidence presented here how-
ever, industry market structure on both the demand and labour supply
sides appears to be a major influence in the industry's wage structure.
The separation of a homogenous labour supply into two supply curves (one
for women and one for men) appears as the major explanatory factor be-
hind the sex discrimination apparent in the industry.

Study Number and Author	Estimated Effect and Date
6. Ross	0.08–0.09 (Jan. 1945)
7. Ross and Goldner	0.04 (1946) (1946 < 1938–42)
8. Tullock	< 0.25 (1948–52)
9. Goldner	0.14–0.20 (1951–52)
10. Garbarino	0.15 (1940)
11. Sobotka and others	0.22–0.29 (1956)
12. Scherer	0.00 (1939); 0.06–0.10 (1948)
13. Craycraft	0.01 (1948); 0.10 (1954)
14. Rees	0.00 (1945–48); (1939 > 1945–48)
15. Rapping	0.08–0.35 (1950's)
16. Friedman and Kuznets	< 0.25 (1929–34)
17. Lewis	0.00 (1948–51)

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13. Joseph L. Craycraft, "A Cross-Section Analysis of the Effect of Unionism on the Relative Earnings of Barbers," unpublished M.A. paper, University of Chicago, Summer 1957.

14. Albert E. Rees, "The Effect of Collective Bargaining on Wage and Price Levels in the Basic Steel and Bituminous Coal Industries, 1945-1948," unpublished Ph.D. dissertation, University of Chicago, September 1950; "Postwar Wage Determination in the Basic Steel Industry," American Economic Review, June 1951, pp. 389-404; "The Economic Impact of Collective Bargaining in the Steel and Coal Industries during the Post-War Period," Proceedings of the Third Annual Meeting of Industrial Relations Research Association, 1950, pp. 206-212, Lloyd Ulman, "The Union and Wages in Basic Steel: A Comment," American Economic Review, June 1958, pp. 408-426; Rees, "Reply," American Economic Review, June 1958, pp. 426-433.

15. Leonard Napping, "The Impact of Unionism and Government Subsidies on the Relative Wages of Seamen," unpublished PH.D. dissertation, University of Chicago, 1961.

16. Milton Friedman and Simon Kuznets, Income from Independent Professional Practice, New York, National Bureau of Economic Research, 1945, Chapter 4.

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APPENDIX II

Source:
B. Mallen, A Preliminary Paper on the Levels, Causes and Effects of
Economic Concentration in the Canadian Retail Food Trade:
A Study of Supermarket Market Power.

THE RETAIL FOOD GIANTS IN CANADA[17]

There are eight organizations which could be classified as giants.

Four of these are "pure" corporate chains - Dominion Stores Limited,

Canada Safeway Limited, Steinberg's Limited and A & P of Canada Ltd.

One is a mixed corporate chain and voluntary group - Weston-Loblaw;

two are basically voluntary chains - I.G.A. Canada Limited, and Provi-

go Inc., and one is a consumer cooperative group - Federated Co-oper-

atives Limited. Following is a brief description of each of these or-

ganizations with approximate figures for 1973 - 74:

> Dominion Stores Limited, headquartered in Toronto,
> operates a chain of supermarkets and stores in
> seven provinces across Canada. At March 23, '74
> there were 394 stores. Sales for the 53 week per-
> iod ended March 23, 1974 were $1,320,732,000.
> 235 stores are in Ontario and 110 in Quebec. (For
> the year ended March 22, 1975 sales were at
> $1,649,502,000).
>
> Steinberg's limited, headquartered in Montreal,
> is engaged in the operation of supermarkets,
> self-service department stores, restaurants and
> small bars and catalogue sales rooms, as well
> as in the manufacturing and processing of a var-

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[17] Information for this section comes from the Financial Post Corpor-
ation Service (Financial Post Cards), Canadian Grocer, August 1974
and 1975 editions on Survey of Chains and Groups and company annual
reports. No confidential data is here used.

iety of food products, and real estate develop-
ment. At July 27, 1974, it had 191 supermar-
kets; 137 of which are in Quebec and 54 in On-
tario. Consolidated sales in 1973 - 74 of all
its retail and manufacturing operations were
$1,186 million. Probably close to one billion
of this was from supermarket operations.

Canada Safeway Ltd., headquartered in Winnipeg,
is a subsidiary of Safeway Stores Inc., Oakland,
California. It operates a chain of retail gro-
cery stores from Ontario to British Columbia as
well as food stores overseas. It has 271 stores,
95 of which are in B.C. and 153 on the Prairies.
Sales of Canadian operations, excluding over-
seas divisions were $893,016,000 in 1973. Prob-
ably over $800 million of this was from super-
market operations.

The Great Atlantic & Pacific Company of Canada
Limited, headquartered in Toronto is a wholly-
owned subsidiary of the U.S. A & P Tea Company.
As of June 30, 1974 it had 172 stores, of which
140 were in Ontario and 32 in Quebec. Sales
for the year ended February 23, 1974 were
$314,984,000.

Weston-Loblaws refers to a group of companies,
which through various wholesaler operations, as
well as the retail operation of Loblaws Ltd., op-
erate grocery stores under various names.18 The
controlling company for this entire group is
George Weston Ltd., headquartered in Toronto,
which also controls many and various food-proces-
sing organizations. The single largest Canadian
food retail operation of this group is Loblaws
Ltd., headquartered in Toronto. In Canada, Lob-
laws Ltd. operates 155 stores in Ontario. There
are nine Loblaw stores on the Prairies, which,
however, are operated through a controlled whole-
saler - Westfair Foods Ltd. Westfair Foods also
operates 12 Z Mart stores in Alberta, 10 Econo-
marts on the Prairies and one in Thunder Bay, 5
Shop-Easy stores in Manitoba, and 39 O.K. Econ-
omy stores in Saskatchewan and Alberta, and is
voluntary wholesaler for Shop-Rite, Red & White,
Lucky Dollar and Tom Boy in the Prairies. Anoth-

18 Recent detailed analysis of this group can be found in David Culbery,
John Keys, D. Robertson, "Weston's: A Canadian Corporate Empire,"
"Montreal Gazette, (August 30, 1975), pp. 6-7 and continued (Sept-
ember 2, 1975), p. 9; Business Week, "Bringing Order To A Billion-
Dollar Empire," (September 8, 1975), pp. 50-56.

er controlled wholesaler Kelly, Douglas &
Company, Ltd. operates 44 Super-Value super-
markets in B.C. and services another 36 on a
franchised voluntary basis. Kelly, Douglas
also is voluntary wholesaler in B.C. for 156
Red & White stores, 12 Shop-Easy stores, 45
Lucky Dollar stores, etc. Other controlled
wholesalers are Atlantic Wholesalers Limited
in the Atlantic provinces which sponsors Save-
Easy (21 of 59 of which are owned), Red &
White, and Lucky Dollar; and National Grocers
Company Limited in Ontario which sponsors Red
& White, Lucky Dollar and Maple Leaf. The Wes-
ton-Loblaw group also controls the 12 Dionne
Ltd. stores in Montreal, the 25 Zehr's Market
supermarkets in Kitchener and surroundings, and
has a 40% interest in Sobey's Store Limited,
which has 62 stores doing a volume of $152
million in 73 - 74 fiscal year in the Atlantic
Provinces, (this had moved to over $180 in
74 - 75). Finally, smaller retail organiza-
tions controlled, include Gordon's Supermar-
kets, Power, and Busy Bee, all in Ontario. Dur-
ing 1973 $538 million of sales of Loblaw Com-
panies came from Loblaws Limited (includes
Power, Busy Bee, Gordon Supermarkets), Zehr's
Markets and Dionne Ltd. The $690 million Lob-
law-Sobey '73 - '74 total excludes the West-
fair Foods and Kelly Douglas owned stores, as
they are direct subsidiaries of George Weston
Ltd. rather than Loblaw Companies Ltd. and com-
prise the Wholesale and Retail Division of
George Weston Ltd.19 It also, of course, ex-
cludes voluntary stores' sales. In 1973 sales
of the Wholesale & Retail Division of George
Weston Ltd. were $715.4 million. Probably
total sales of owned Weston-Loblaw food stores
in 1973 (including Sobeys) were about $1 bil-
lion, making it second only to Dominion Stores
Ltd.

I.G.A. Canada Ltd. is Canada's largest volun-
tary chain, with 1973 retail sales of approxi-
mately $715 million ($105 million of which is
through the Much More stores). There are 729
stores using the I.G.A. name and 724 using the
Much More Label. I.G.A. is controlled by two

19 In April 1975 Westfair Foods Ltd. was acquired by Kelly, Douglas
& Co., and the combined firm (Westfair and Kelly, Douglas) was ac-
quired by Loblaw Co. from feorge Weston Ltd. These transactions do
not change the Weston-Loblaw market share as such.

large merchandisers, M. Loeb Ltd. 20 of Ot-
tawa, and the Oshawa Group Ltd. of Toronto.
Together these two organizations had sales of
over $1.5 billion, in a wide variety of op-
erations. Oshawa had $176 million of its
sales from its owned retail food operations;
primarily from Food City's 39 supermarkets
in Ontario.

The giant voluntary chain in Quebec is Prov-
igo, Inc. headquartered in Montreal, with 1973
sales of $301 million ($365 million in 1974).
849 stores are under the names Provigain,
Provigop and Provibec; retail and other members
total 556. In addition the company owns 15 A.
V.A. Food Markets, 31 Presto Cash and Carry
depots, and 23 other company owned food markets.
Twenty-five percent of sales comes from company
owned stores.

Federated Co-operatives Limited is owned by re-
tail co-operatives throughout the four Western
Provinces. FCL supplies 435 consumer owned
co-operative stores, and had wholesale sales
of $117 million.

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[20] Weston holds an 18% interest in M. Loeb Ltd. which are said to
be in a blind trust awaiting sale.

APPENDIX III

OWNERSHIP COMPLEXES IN MANITOBA FOOD MERCHANDISING

Retail	Wholesale	Processing
	Canada Safeway (subsidiary of Safeway stores (U.S.), one of the two largest American grocery retailers)	
Safeway	Macdonald's Consolidated	Lucerne Foods Empress Foods Clearbrook Frozen Foods
	George Weston	
Loblaws Economart Shop Easy	Westfair Foods Western Grocers Dominion Fruit McLeans	McCormick's William Neilson Paulin Chambers Williard's Chocolate
Associated Independents: Tomboy Lucky Dollar Red & White	Dickson Importing Archibald Brokerage	Bowes Weston Bakeries Nabob Foods W.H. Malkin Soo Line Mills B.C. Packers (Cloverleaf) Sommerville Industries Display Fixtures Rupert Fish Company
	Dominion Stores (Argus Corporation holds a 25.5% controlling interest)	
Dominion		

Retail	Wholesale	Processing
	The Oshawa Group	
Locomart	Codville	
	Hazelwood-Davis	
Associated		
Independents:	Midland Fruit	
I.G.A.	Allied Fruit & Produce	
Much More		
	Co-operatives	
	(Local stores owned by	
	members; central whole-	
	saler owned by retail	
	stores)	
Co-op	Federated Co-operatives	
	Merchants Consolidated	
	(Owned by retailers)	
Associated		
Independents:		
Solo	Merchants Consolidated	
United		
Redi-Mart		
	Weidman Food Distributors	
	(subsidiary of J.M. Schneider)	
Associated		
Independents:	Weidman	J.M. Schneider
Clover Farm		
Best Valu		
	Silverwood Industries	
Mac's Milk		
Mini-Mart		Silverwood Dairies
	Southland Corporation	
	(operates large 7-Eleven	
	chain in U.S.)	
7-Eleven		
	Burns Foods	
	Scott National (major	
	fruit wholesaler)	Burns Foods
	Payfair Stores	
	(local company)	
Associated		
Independents:		
Payfair		

APPENDIX IV

Trends in the Number of Grocery and
Meat Stores in Winnipeg, by Categories, 1968 - 1973

	1968	1969	1970	1971	1972	1973
All Stores	681	653	660	660	630	n.a.
Supermarket Chains	60	64	66	65	60	59
Safeway	29	33	33	31	30	31
Loblaws	7	6	6	6	6	6
Econo-Mart	4	4	5	5	5	4
Shop Easy	1	1	1	1	1	1
Dominion	8	8	9	9	9	9
A & P	6	7	7	6	1	–
Locomart	–	–	–	2	3	3
Red River Co-op	3	3	3	3	3	3
Eaton's and The Bay	2	2	2	2	2	2
Associated Independents	115	111	105	88	75	n.a.
I.G.A.	19	16	15	10	9	12
Payfair Stores	7	7	8	9	12	17
Solo	54	54	49	36	30	24
Clover Farm	4	4	4	6	5	n.a.
Lucky Dollar	7	6	6	6	2	n.a.
Tom-Boy	24	24	23	21	16	17
Chain Convenience	33	40	51	72	87	83
Minimart	26	30	36	36	33	–
Mac's Milk	–	–	9	16	17	40
Kwik Shop	7	9	2	–	–	–
Seven Day	–	–	2	9	12	14
7-Eleven	–	1	2	9	19	23
Other	–	–	–	2	6	6
Independent Stores	473	438	438	435	408	n.a.

Method: Data is basically from Henderson's Directory 1969 - 1973.
As listings for Henderson's are collected in the year previous to
publication, figures for each year in the tables were compiled from
the following year's directory. Since not all associated independents
include the group label in their name, phone book yellow page list-
ings of associated groups were used.

APPENDIX V

WINNIPEG NEWSPAPER ADVERTISING BY ALL TYPES OF
GROCERY STORES

November 27, 1972 –
February 24, 1973

STORE	AV. WEEKLY PAGES – Tribune – Free Press – Total	TOTAL YEARLY COST AT THIS RATE $	% OF STORE's 1972 SALES	ESTIMATED 1972 SALES –$000–
1. Safeway	2.80	164,964		
	2.97	216,833		
	5.77	381,797	.39%	96,700
2. Tom–Boy	.96	56,559		
	1.08	78,848		
	2.04	135,407	1.45	9,345
3. Dominion	1.12	65,985		
	.89	64,977		
	2.01	130,962	.38	34,536
4. I.G.A.	.81	47,721		
	.89	64,977		
	1.70	112,698	2.41	4,672
5. Loblaws	.81	47,721		
	.87	63,516		
	1.68	111,237	1.05	10,564
6. Solo	.74	43,597		
	.76	55,486		
	1.50	99,083	2.22	4,469
7. Eaton's	.30	17,674		
	.30	21,902		
	.60	39,576	2.44	1,625

STORE	AV. WEEKLY PAGES - Tribune -Free Press - Total	TOTAL YEARLY COST AT THIS RATE $	$ OF STORE'S 1972 SALES	ESTIMATED 1972 SALES -$000-
8. Econo-Mart	.28 .29 .57	16,496 21,172 37,668	.27	14,017
9. Payfair	.19 .26 .45	11,194 18,982 30,176		?
10. The Bay	.21 .24 .45	12,372 17,521 29,893		?
11. Red River Co-Op	.19 .21 .40	11,194 15,331 26,525	.36	7,313
12. Other	.22 .38 .60	12,961 27,743 40,704		?
13. Others & Payfair & The Bay	.62 .88 1.50	36,527 64,246 100,773	.50	20,112
All Stores	8.63 9.14 17.77	508,445 667,293 1,175,738	.58	203,151

Sources: Our own newspaper advertising survey; Estimates of percentage market shares by private consulting firm; Estimate of 1972 Winnipeg sales = .60 x 1972 Manitoba sales.

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