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Job displacement of established women workers: Correlates and employment consequences

Gagen, Mary G., Ph.D.
The Ohio State University, 1987

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JOB DISPLACEMENT OF ESTABLISHED WOMEN WORKERS:
CORRELATES AND EMPLOYMENT CONSEQUENCES

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By

Mary G. Gagen, B.S.L.H.R.

* * * * *

The Ohio State University
1987

Dissertation Committee:
Stephen M. Hills
Herbert S. Parnes
Stephen L. Mangum

Approved by

Advisor
Labor and Human Resources
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VITA

February 4, 1946.................. Born— Southold, New York

1978-1979............................... Student Research Assistant Center for Human Resource Research, The Ohio State University, Columbus, Ohio

June, 1979............................. B.S.L.H.R., The Ohio State University, Columbus, Ohio

1979-1981............................... William C. Green Fellow, The Ohio State University

1981-1985............................... Graduate Research Associate Center for Human Resource Research, The Ohio State University

1984................................. Visiting Instructor, Ohio Wesleyan University, Delaware, Ohio

1985-Present.......................... Assistant Professor University of Toledo, Toledo, Ohio

PUBLICATIONS


FIELDS OF STUDY

Labor Economics ........................... Herbert S. Parnes
Human Resources Planning .................. S. Clifton Kelley
Social Psychology of Work ................ Don C. Ronchi
Demography—Migration .................... Wen Li
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CHAPTER I

INTRODUCTION

Twenty-two million jobs disappeared between 1969 and 1976 because of plant closings and long distance relocations (Bluestone, 1984). One third of all private sector jobs in 1978 had gone by 1982 (Harris, 1983). While the number of jobs which are no longer available can be estimated with a fair degree of reliability, the number of workers affected by these changes in the U.S. economy is unclear. Many jobs are eliminated by attrition, after their incumbents either quit or retire. The actual correspondence between job losses and job losers varies with the relative rates of job reduction and leaving. But given the large number of jobs which are gone, a substantial number of individuals can be affected by displacement from their jobs.

What leads employers to displace their workforces? Why do some lay off employees while others do not? Who are
these displaced workers? What happens to them when they lose their jobs? Does displacement have a relatively long-term effect on labor force experiences? These are some of the questions this research will address.

The term displacement is used here to mean involuntarily losing a job or an employment relationship which an employee had come to expect would continue indefinitely. This use of the term emphasizes job loss itself, rather than unemployment or industrial or occupational decline, as found in other studies. The objective is to isolate and focus on the event, rather than to presume any causes or consequences of job loss a priori. Therefore, the meaning of displacement differs to an extent from the ways it has been used elsewhere.

Why be concerned with job losers? Aiken, Ferman and Shepard consider displacement and the unemployment which often accompanies it "part of the human condition in contemporary industrial society" (1968, p. 1). Yet despite the sense of inevitability invoked by those words, the fact remains that job loss is not a random process in the scheme of economic things. And the costs of economic change are not borne equally across the labor force and communities.
There is a large body of literature describing the costs of plant shutdowns and their aftermath, beginning with closings which occurred before the Depression (Jahoda, Lazarsfeld, and Zeisel, 1971; Bakke, 1934; Clague and Couper, 1934). From those early studies to the present, outcomes of displacement have been remarkably consistent. Unemployment is common, and with it, economic hardship of varying degree. Older workers, and those with less education, have difficulty finding new employment. Often wage erosion occurs on the next job, or there is further job instability from starting the seniority clock over. A wide range of other consequences of losing a job has also been documented. Pension loss (Parnes, Gagen and King, 1981; Aiken et al., 1968), loss of trust in the system (Bakke, 1934), health problems (Cobb and Kasl, 1977), "economic failure, social alienation, social participation and political extremism" (Aiken, et al, 1968; similarly, Jahoda, et al., 1971) are a just a few of the reported effects attributed to displacement.

There is such an extensive literature on plant shutdowns, that a bibliography on the subject can fill over 80 pages (for example, see Hansen, Bentley and Skidmore, 1981). Why then is another study needed? Actually, little is known about the incidence of displacement across the U.S. workforce. In addition, there are a number of
inadequacies in the existing knowledge base of displacement. In the first place, the cases, although numerous, are very similar in terms of their samples, which limits confidence in applying their results outside their particular niche. Second and furthermore, the basic method for studying displacement has been the case study. While cases are an excellent way to initiate research in a new field (Lofland, 1971), their rich, in situ perspective limits generalization from such works. Third, little distinction has been made throughout the literature between being unemployed and losing a job, the interest of this work. These points will be elaborated below.

The body of displacement cases tends to focus on a select subset of individuals, the elite of the blue collar workers. The remarkable consistency in findings across studies is matched by the remarkable similarity in the plants selected for study. They tend to be relatively large, unionized, manufacturing or processing firms, with nearly all-male workforces which pay relatively well for their local labor markets. It is not clear how well these cases represent an accurate profile of all workers who are displaced from a job. Especially conspicuous for their absence from the studies are women workers, who are clustered in a limited number of occupations and in the low pay range. Is it that women workers truly have much lower
rates of job displacement than men, or are they simply overlooked as an artifact of case selection?

There are indications from a couple of sources that the subjects of plant closing cases in toto do not represent the majority of job losers. The Congressional Budget Office (CBO) conducted a sensitivity analysis to measure "dislocated workers" under various definitions. Their broadest category, job losers from areas or industries which had declined in terms of either employment or population, accounted for less than fifteen percent of the unemployed (1982). In the late 1970's, a substantial portion of the manufacturing sector and the industrial Northeast and Midwest tended to qualify as "declining". The CBO did not attempt to relate their sample to a population of job losers. However, the fact that many displaced workers manage to find new jobs without interruption, suggests that the manufacturing segment is not as large a piece of the displacement picture as it is perceived.

Parnes, et al. used the National Longitudinal Survey (NLS) of Mature Men to identify job losers from a group who had at least five years tenure on the job as of 1966. They found that manufacturing was high in generating displacement, but that trade had an even higher risk of displacement. The job losers, moreover, were from relatively worse
jobs than the non-displaced, in terms of providing benefits and other qualities. Therefore, in considering job loss for women workers, case studies may have less relevance than they do for a general population of men. What happens in the low wage, poor job case?

The second concern about plant shutdowns as the major knowledge base for displacement in general, is that the closing itself is likely to have a significant effect on the local labor market. To the extent that workers are displaced gradually rather than en masse, the labor market may be more congenial than a local market whose major employer has shut the doors. Sampling and research strategies would predispose selecting employers who are more likely to have major impact on a community. Large samples are desirable for statistical purposes. Publicity makes finding relatively important plants more likely than identifying small, relatively insignificant ones, especially in a manner timely for optimal research entry. The result of the propensity to choose relatively major firms is to distort the picture of who gets displaced, as well as to potentially inflate the amount of unemployment associated with job loss. Once again, there would also be a tendency to select relatively high wage workers, to the extent that they are often associated with larger concerns.
The third point about the existing literature on displacement, is that unemployment has been the primary reason for studying job loss. As a result, the two ideas have become virtually synonymous, when in fact they are different ideas. The basic distinction is that unemployment is a state which can follow the event of an involuntary separation. It is a likely outcome of job loss, but not an inevitable one. The mechanics of the survey method technique as well as primary interest in the unemployment experience both reinforce the association between losing a job and unemployment.

In cases using a longitudinal design, starting with Jahoda et al. and Bakke, the research has high rates of attrition for the displaced workers who find jobs. They observe that some workers migrate out of the local area and are not available for follow-up, while others who succeed in finding jobs locally, are either too busy or want to put the experience behind them. The latter group become non-respondents or refuse to continue in the surveys. A number of researchers have reported the phenomenon, most articularly by Cobb and Kasl, who had rather extensive, intrusive and time-consuming health check procedures in their protocols. In other cases, researchers were simply not interested in following workers who leave unemployment, as a matter of choice. For both reasons, the sampling error
is compounded, leading to a peculiar bias in continuing to survey the worst cases, while losing the success stories to attrition or deletion. The problems in longitudinal analysis of displaced workers argue in favor of using other techniques to approach the issue.

The purpose of this research is three-fold. The first part of the study will identify job losers over a ten-year period from a sample of women workers who are nationally representative of an age-truncated cohort. The data will be described at length in Chapter III. The purpose of this section is to classify those who are displaced by industry and occupation among other characteristics, and ultimately to assess how well policies for displaced workers mesh with the characteristics of this group. An additional agenda is to provide information specifically on women workers who lose their jobs, an area sorely underrepresented in the literature.

In order to derive a model for the incidence of displacement, there will be a survey of theories which can contribute to predicting correlates of job loss. Researchers in the area of displacement have been relatively inattentive to theoretical underpinnings, again because the field has remained one which relies heavily on the case/survey method. The larger objective is to move toward a
relatively unified theory base for displacement. That is beyond the scope of this work, however. The immediate purpose in surveying theory is, as mentioned above, to identify appropriate variables for a preliminary model of displacement.

The third stream of this research is to use the sample of displaced women workers identified in the first section and trace the labor market consequences of the job loss itself. Is there a scarring effect in terms of subsequent employment experience? Is there any effect on the wage trajectory that could have been expected had the job not been terminated? This part of the research will follow the general line of questions used in case studies, taking advantage of a different method to begin to triangulate on the phenomenon of job loss.

The research will use national-level household survey data for information on job displacement. A survey of individuals can provide a distribution of displacement across a full spectrum of firms, not just from those specific cases where mass layoffs or closings caught the attention of the media, researchers or the public. People also lose established jobs through gradual reductions in force, from small employers who are economically marginal, from moves to new facilities or from restructuring or
reorganization. These are unrecorded casualties, generally unseen by policy makers, and require a more general survey to come to light. Moreover, this study focuses on women, where the case studies have been most remiss.

In Chapter II the various theories which explain aspects of the displacement story are discussed. After developing the relationship of the theories to displacement, the hypotheses arising from those theories are presented. Chapter III contains the specific methodology for this study. It covers the unique data set, research design, and statistical techniques required for such an undertaking. In Chapter IV the results are presented for the correlates and consequences of displacement for this set of women. Chapter V is the summary and conclusion section. Both policy and theory implications are drawn from the findings.
CHAPTER II

THEORY

Introduction

In Chapter I the term displacement was introduced as meaning simply losing a significant job. Specifically, it is an employment separation with two characteristics: 1) it is employer-initiated, or involuntary from the worker's standpoint, and 2) it is from an established job where an employee could reasonably expect to stay employed, based on performance and commitment to the organization. These two components pose an internal conflict between workers' perceptions of "owning" their jobs and investing career behavior on that premise, and employers' decisions to lay off workers permanently. The first implies that the worker is the decision maker while the second places that power with the employer. They are mutually exclusive and antagonistic perspectives. It is not surprising, therefore, that there is no unified theory of displacement as defined here.
One of the objectives of this research is to provide a general framework for displacement, beyond its current fragmented state. There is no illusion that there can be a single theory of displacement, given the complexity of the phenomenon. However, the case literature tends to ignore any theoretical discussion where correlates of displacement are concerned. It is this deficiency which needs to be considered here, in order to identify suitable variables for a displacement model.

As a point of departure, this chapter will begin with a survey of the different "causes" of displacement cited in the case study literature. Following that, there will be a discussion of a number of theories from both labor economics and industrial sociology which provide rationales for these diverse reasons for displacement. From those theories, the displacement model will be developed, using factors expected to be associated with job loss. The remainder of the chapter will turn to the consequences of displacement, briefly reviewing theories of female employment and wage determinants, highlighting how they pertain to the aftermath of displacement. Female employment in general has been given extensive treatment in the labor economics literature, but rarely in the context of job loss. Therefore, for the sake of economy, the strategy in this section
will be to focus only on the special conditions likely to arise from the selected sample used in this study and by the displacement experience.

DISPLACEMENT THEORY: General Overview

Reasons for layoffs or plant closings are largely ignored in the empirical literature except in the context of incidental background for cases. Gordus et al. concur: "plant closing research has tended to focus on events that occurred after the closing decision, so that the literature on dislocation neither emphasizes the decision making process nor analyzes the reasons for it" (1981, p. 18).

Most reasons for displacement are deduced from market trends or other events preceding the shutdowns or reductions in force. The reasons cited are myriad: international trade (Frank and Freeman, 1978; Jacobson, 1978), "deindustrialization" (e.g. steel, Bluestone and Harrison, 1981), automation (e.g. meatpacking, Shultz, 1964; Conant, 1965; Stern, 1969; Ullman, 1969; Stern, Root and Hills, 1974), reduced product demand (e.g. Packard cars, Aiken, Ferman and Sheppard, 1968; Studebaker cars, Palen and Fahey, 1968), relocations (e.g. the New England rubber industry, Clague and Couper, 1934; Bakke, 1934), union
discipline (e.g. glass, Hammerman 1964); and low profita-

ability (e.g. paints and resins, Slote 1969). Industry con-

solidation/reorganization has also been implicated in sev-

eral brewery shutdowns (e.g. Craypo and Davisson 1983) as

well as lower foreign labor costs (e.g. Atari, Wall Street

Journal 1983).

It is evident that some of the "explanations" for dis-

placement are in direct contradiction to each other. For

example, Aiken, Ferman and Shepard (1963) present displace-

ment as a function of decline, in either the product or

labor market or both, along the lines of discussions often

heard today. On the other hand, of the 1950's shutdowns in

New York State, Adams and Aronson argue the importance of

studying displacement because it is an inevitability of eco-

nomic growth, and "so long as there is growth, there will

be displacement" (1957, p. 6). There is a need to identify

theories which might suggest variables for a model of dis-

placement, which can accommodate this type of diversity.

There are two dominant but competing perspectives of

the labor market: industrial sociology and neo-classical

labor economics. Loveridge and Mok (1979) conceptualize

the sociological and economic perspectives of the labor

market as one of structural versus atomistic approaches,

respectively. They are typically treated as polar
opposites, with little or no connection between them. However, this review will show that beginning with these apparently disparate views, there is a convergence toward a core set of correlates of displacement. What remains poles apart at the extremes of these two disciplines are radically different ideological bases, and interpretations which follow from them. Those differences, however, need not be reconciled, in order to find both traditions useful for displacement research.

At the radical structuralist extreme, the focus is on cultural and institutional rigidities, capital for labor substitution and on jobs rather than individuals. Workers are conceptualized as pawns, powerless entities subject to forces beyond their control, both inside and outside the firm (see for example, Braverman 1971; Edwards 1979). At the other extreme, the market is conceptualized as the sum of myriad individual exchanges. All actors, firms and workers, have the sovereignty to aggressively and rationally pursue their own interests, constrained by available resources and the laws of supply and demand (see Knieser and Fleisher 1978; Ferguson and Gould 1979).

The sociological view tends to look to the firm as a whole, where displacement would be explained through structural characteristics of the firm, either internal or
external, such as employment policies or industry, respectively. Neo-classical labor economists, on the other hand, focus on worker characteristics in the context of theory of the firm to explain permanent layoffs. An analysis of the incidence of displacement across individuals must consider both streams: one to explain why some sites incur displacements while others do not, and the other to account for the unequal chances of permanent layoffs faced by individuals within a given establishment.

This section has two parts. Part One presents structural theories focused on company or industry characteristics to explain differential probabilities of reducing employment levels. Part Two of this section will present theories which focus on individual attributes to predict an individual's chances of being let go within a given firm. The two sets of correlates are not mutually exclusive. For example, individual characteristics probably correlate with a firm's productivity, its preference for relatively valuable personnel as assets and other attributes, which in turn influence its propensity to reduce its work force. By the same token, workers with certain attitudes, educational aspirations and so forth would select certain types of firms, industries etc. The characteristics of the
company chosen to work for would in turn influence certain performance outcomes expected from their particular set of personal characteristics.

CORRELATES OF DISPLACEMENT: Structural Approaches

Three basic theories provide overarching frameworks for the study of the operation of the economy at the industry level which can explain in part the differences in industry dynamics: Marxist theory of production, Segmented Labor Market theory and the Product Life Cycle Theory. Two other theories offer structural explanations at the firm level: Okun's Toll Theory and Cornfield's Proximity-Discretion Model.

Radical (Marxist) Theory

Theories of displacement began with industrialization itself. Marx (1909) foresaw displacement growing systematically as a necessary part of economic growth under capitalism. In the Marxist approach workers are hired as any raw material would be purchased, with one major exception. Labor services are embodied within individuals, so workers control on a day to day, or hourly, basis whether to convert their labor potential to actual effort on the job (Gordon 1981). The function of managers in this scheme is to
increase their control over workers to increase profits out of "surplus value", the difference between the wage paid and the value or productive contribution of that labor.

The classical way to maximize "surplus value" is to have a ready supply of available labor, "the reserve army of the unemployed" (Marx 1909). The presence of an excess workforce serves to keep laborers accepting low wages and working hard by alerting them to their potential replacement. Capital substitution as well as disciplinary layoffs serve to increase managers' control, hence increase workers' "motivation" for hard work. Technological change is also driven by the need for control over productive processes, especially labor. As Schumpeter (1950) saw it, Marx's idea was that there was a secular trend in capitalism toward "the replacement of the variable (wage) capital by constant capital" (p. 36). Although Schumpeter was referring to capitalists' preferences for machines over labor, any technical substitution away from paid employment would provide the same result—to enlarge the size of the "reserve army".

Glazer (1984) offers precisely this scenario for recent changes in the retail industry. She elaborates the systematic and progressive substitution of consumers' (unpaid) labor for paid workers. Industry-wide adoption of "self
service" technology reduces labor demand so that wages can be "set free", in Marxist terminology. In standard labor force measurements, Glazer's reserve army consists of the non-employed, including large numbers of housewives who are out of the labor force yet are "servants to capital". Glenn and Feldberg (1977) similarly detail the change in office organization for clerical workers, as a means of increasing managerial control over the labor process and wages.

To substitute unpaid labor or capital for wage labor serves two purposes: it provides immediate returns in lowered labor costs and it provides long run gains by extending the power of capitalists over workers. Displacement is systematic, in Glazer's model, and is explained in large measure by capitalists' two-fold needs: to accumulate as much as possible out of profit and to extend power over workers in order to realize that profit from depressed wages.

Burawoy (1983) also presents a classic radical interpretation of modern production relationships with respect to labor. His analysis credits two secular trends which have reinforced management's control over workers, creating a "new political order in the workplace". First, capital has become quite mobile. Changes in transportation and
communication have enabled remote coordination of more fragmented production techniques, such as separating assembly plants from components manufacture. Foreign labor is also available to pair with "runaway capital". Second, the "rise of hegemonic regimes" has realigned workers' perceptions of their interests to coincide with their employers'. For example, systematic displacement raises an explicit threat of job loss. Therefore, it promotes the perception that it is the worker's interest being served if the employer is more profitable. The result is that labor accepts negotiated wage concessions and greater work intensity under implicit or explicit threat of displacement. Burawoy's mechanism is a frankly political way to use displacement to achieve the Marxist economic objective of increasing "surplus value".

Segmented Labor Market Theory

The Segmented Labor Market (SLM) Theory (Doeringer and Piore 1971; Edwards 1979; Wallace and Kallenberg 1981; Baron and Bielby 1983; Loveridge and Mok 1983) holds that the labor market is not a single entity, but is fragmented in two or more separate sectors of the economy with little or no mobility between them. For the sake of presentation here, a two-sector model will be developed, the Dual Labor Market model. The economy is stratified into two sectors: the primary or core labor market, and the secondary or
peripheral labor market. The division conceptually follows the economic organization of firms; operationally it is frequently based on industry classification.¹

The primary sector is characterized by medium-to-large firms, each of which has a degree of market power and long-term employment which tends to adopt Okun's "career strategy" model (Okun 1981) in their style of human resource management. These firms tend to be oligopolistic or monopolistic, and as such are in positions to influence their product markets to some extent (Robinson 1934). Hence, they can stabilize their labor demand over both the short and long run. Not only do they have the ability to provide stable employment, according to Edwards (1979), their very size requires the use of bureaucratic controls to manage employees. This in turn mandates a long-term, stable workforce in order for bureaucracy to be effective as a control mechanism.

In contrast, the secondary sector roughly corresponds to the competitive product market of conventional economics. Firms are unable to influence demand for their products except through price; therefore, their labor demand can fluctuate to a much greater extent than firms in the primary sector. The result is that there is little

¹See Wallace and Kalleberg, 1981, for a critical review of this literature.
employment security for employees in this sector. Edwards estimates that nearly 11 out of 12 firms fall into this category, although they account for a much smaller proportion of total employment (1979, p. 34). Peripheral firms tend to be small, often family-run, "entrepreneurial" style companies of two basic types: 1) certain industries such as wholesale and retail trade, light manufacturing and personal and business services and 2) new "leading edge" industries such as the recent crop of "high tech" firms of Silicon Valley.

The strength of segmented labor market theories is that they consider both environmental factors, such as product demand, as well as managerial practices in their models of layoffs. In fact, Doeringer and Piore (1971) actually classify employers on the basis of their commitment to human resources rather than by industry per se. The weakness of segmented labor market theories, for the purpose of explaining displacement, is that they do not distinguish permanent from temporary layoffs, nor do they explicitly examine the displacement decision process. The cyclical nature of layoffs conceptualized in their model is predicated on erratic demand rather than secular decline, changes in technology or other reasons cited for permanent job loss. However, in the context of SLM theories, the difference between temporary and permanent layoffs is minimal, given the sharp
difference in employment conditions usually drawn between the sectors. Secondary workers apparently have few benefits to lose should the separation become permanent (or have little gain from continued employment with a peripheral employer).

Two major predictors of displacement emerge from SLM theory. The industry in which an individual works is a primary determinant, with displacement associated with those industries where market concentration is low. Industries where market concentration tends to be high would likely provide stable work flows and be better able to consider their human resources as fixed or "quasi-fixed" factors of production. The second hypothesis from SLM theory similarly arises from identifiable primary sector employer characteristics. That is, employers with commitment to human resources are less likely to displace their workforce. Human resource policies can be deduced from past behavior: employers who use temporary layoffs have less concern for human resources, therefore they would not be inhibited about displacing their workforce.

Product Life Cycle Theory

The Product Life Cycle (PLC) model (Vernon 1967) is an improvement over the Dual Labor Market theory in accounting for permanent separations. Although primarily a theory of
international trade, it details production and marketing strategies associated with a regular sequence of changes in market structure over the "life" of a product. The PLC has two important advantages as a displacement theory. First, it includes geographic location in its model of production strategy, and second, it is a dynamic rather than static theory. Briefly, the PLC details four stages in a product's "life": 1) the introductory, or innovative period, 2) the early mass production or growth stage, 3) the mature stage and 4) the decline. Although Vernon does not explicitly describe them, each phase in the product's cycle has different human resource requirements. Disjunctions between phases provide hazards of displacement for different types of workers.

In the introductory stage the product is produced in a unit-by-unit fashion close to initial buyers by high-skill workers such as engineers and skilled craft people. The industry is a virtual monopoly. Once the product is well-defined through feedback from customers, it undergoes standardization so that it can be mass produced. In fact, because the market becomes competitive at this point, the product must be manufactured at relatively lower costs. Obviously this strategy entails substituting lower skilled workers and capital for the craft process employees (although initial workers may be retained to develop the new
production technology). Relocation may also occur when the decision is made regarding where to build the new plants required to accommodate mass manufacturing. Higher skilled workers would be at risk of displacement at this point.

In the mature stage, initial expansion of operations abroad begins, in order to develop foreign markets. This is especially likely to happen when the wage gradient is steep between the two markets. Domestic production becomes further consolidated to achieve greater economies of scale. "Automation" is also a candidate here for causing permanent job loss, as wider markets can be found only through lowering the product price. This stage may displace workers as well, through relocation of major production facilities and closing plants with lower efficiency.

In the stage of decline, costs are the major competitive factor. Imports of the product appear, as production technology itself has been exported to be used in conjunction with low cost labor. Domestic workers become displaced through "foreign competition" increasingly encroaching on U.S. manufacture of the good. For some products, local production is virtually abandoned, or at least severely curtailed.
Clearly, the PLC theory has advantages over the dual labor market theory in predicting permanent, rather than temporary layoffs. Its major limitation, as with any life cycle theory, is that it is difficult to predict a priori when a product will change stages. There is no regularity to the length of each phase, either across products or across stages within a given product. Yet the implications of the theory are useful. There has been much displacement attributed to "twilight" or "sunset" industries, such as steel and automobiles, whose deaths have been said to be from "deindustrialization", the systematic diversion of resources from existing capital-intensive facilities to pursue other investment strategies, often direct foreign investment (Bluestone and Harrison 1981; Frank and Freeman 1978). Consolidation/relocation closures have been reported, for example, for brewery workers, (Craypo and Davisson 1983) and were similarly demonstrated for rubberworkers even before the Depression (Bakke 1934; Clague and Couper 1934).

In short the PLC theory provides a framework which appears to account for a large amount of displacement as the product of strategic management decisions based on the comparative advantages dictated by a product's stages. The theory, however, is limited in scope. It explains manufacturing displacement quite well, but ignores the ever more
important service economy where there is not necessarily a well-defined product, and certainly not one amenable to international trading. Also, while it gives a comfortingly unified story of displacement, it still begs the question of the decision process itself. There are, even within manufacturing, choices that can be made to accommodate human resources through various stages across the life cycle, such as active research and development of new products and/or diversification (Wasson 1978). There are aspects of the decision which even so comprehensive and intuitively appealing a theory as the PLC is not capturing, even for manufacturing.

The causes of displacement suggested by the PLC are many, as indicated in the narrative above. In general any stage change can displace at least some if not all workers at a particular establishment. Manufacturing is a prime candidate for displacing workers based on PLC because it has well-defined products which are subject to changing competitive positions. Services are less likely to cause displacement, given their ties to the market in which the service is produced. Regardless of industry, professionals should be least concerned with displacement, since they are involved in research and development in the manufacturing industry and in the locally-tied delivery of personal and business services.
Okun's Toll Theory of Layoffs

Okun (1981) provides one of the few theories to model a firm's strategic decision making specifically about layoffs, although his work is primarily aimed at explaining wage stickiness, rather than layoffs per se. His toll model holds that employers pay a "toll" to hire workers which consists of training and recruitment costs which are incurred on a one time basis at the time of hire. The toll makes it expensive to hire new workers when there are existing employees available, and therefore enforces the manager's part in an implicit contract. That "contract" assures workers of stable wages and employment in exchange for lower turnover on their part, much as Edwards (1979) and Doeringer and Piore (1971) assert. Managers thus are able to retain workers even during periods when the market wage for their skills rises above their current wage. Workers are thus assured of continued wage and employment stability, rather than being replaced when the unemployment rate would allow the employer to hire substitute workers at "bargain wages".

On the product market side, market power, or anything which stabilizes product demand, will result in employers increasingly offering steady employment as a recruitment tool to attract employees. By implication, larger employers or those in relatively stable product markets will be
less likely to use layoffs on two counts: their demand for labor is less variable and the relative costs of a cutback will be higher. In Okun's model workers consider an employer's reputation when deciding to accept a wage offer, therefore layoffs cost employers future wages as well as larger recruiting costs. There is a multiplier effect on the likelihood of cutbacks, because the cost of additional layoffs goes down once they have been used.

Okun's theory is a microeconomic approach to displacement in a macroeconomic context, which bridges structural and individualistic theories. It acknowledges the structural differences of firms based on their market stability, similar to segmented labor market theories. Yet its focus is on the individual acceptance of certain jobs, presumably factoring in the cost of job insecurity to the wage. These interact to select the firm-employee matrix which generates differential displacement rates across the labor force. The implications are that relatively concentrated industries, large firms and companies with relatively stable products, are not likely to displace workers. Moreover, they are likely to have "better" workers and those who highly value job security, but for whom displacement would be quite costly, should it occur. The "invisible handshake", the agreement where employees forego higher earnings opportunities at times to stay with their current
jobs, implies that if a shutdown occurs without prior layoffs, which indicate higher job risk, those workers would have been inadequately compensated.

The employees Okun predicts would be displaced are those who would be easily replaced, or cheaply recruited, those with low firm-specific human capital. Employers take replacement factors into account in decisions on reductions in force, much like workers consider the employer's reputation for stable work in hiring decisions. Therefore, workers who required or acquired little training for their jobs would be most likely to be let go in the event of a temporary layoff or displacement. In essence he posits a potential core/periphery split in the workforce, if layoffs should occur, although he does not elaborate on the particular characteristics of workers attached to the respective segments.

Although Okun's model does explicitly describe the concerns in decisions to reduce the employment level, it suffers as a displacement theory because its major focus is in explaining the mechanics of temporary layoffs (to ultimately explain wage stickiness) rather than permanent ones. In fact, under total shutdown decisions, the model breaks down. Many of the costs associated with temporary layoffs, such as future wages and recruitment costs, simply
disappear if the employer elects to leave a particular labor market. The value of an employer's reputation would be greatly diluted outside its local market, where it would be less well known. If anything, shutdown-relocation decisions would tend to enhance reputations simply by the move alone. Potential employees would not see the shutdown of the old facility but only the fact that they were "the chosen ones" in the choice of location for the new plant. Despite its limitations as an explanation for shutdown decisions, Okun's toll theory does provide insights into partial layoffs. It suggests that certain workers are more likely to be let go than others because of the training investment required for their jobs, not necessarily because of an individual's attributes per se.

Okun's model points to one overriding consideration in deciding to displace workers: the prior use of layoffs. Employers' reputations for steady employment significantly affect their toll in hiring others at a later date, at least in the same labor market, where the reputation would be known. Therefore any partial shutdowns would be severely penalized if there had been no relatively recent layoffs. Unfortunately, the total shutdown is not similarly affected.
Cornfield's Proximity-Discretion Theory of Layoffs

Cornfield (1983) more completely develops the idea of a work force within a corporation experiencing different lay-off probabilities based on their jobs' characteristics. He identifies two basic divisions of labor along which partial reductions in force might affect workers differentially. He argues, reasonably enough, that it is jobs which are primarily eliminated in reductions in force, not employees. The first dimension which segments the internal labor force is the amount of discretion allotted to different jobs within the corporation. Positions which have great amounts of discretion, managerial and professional jobs, presumably are more valuable to the organization than are those which have prescribed repetitive duties. The second split is along the direct-indirect axis. Direct workers have duties which are closely tied to production itself and most closely correspond to variable costs in standard production theory. Indirect employees, on the other hand, are staff, administrative and clerical positions which are not dependent to a large extent on the level of production for their work load.

Putting the two divisions together results in a four-way classification of all positions inside a corporation: 1) discretionary-indirect (managerial jobs), 2) nondiscretionary-indirect (office clerical jobs), 3) discretionary-
direct (engineers or programmers) and 4) nondiscretionary-direct jobs, such as assembly line workers. The proportion of each category in an organization depends primarily on its product or product mix. Proximity to the production process results in layoffs in response to declining product demand, for obvious reasons. However, if the reduction in force is due to adopting laborsaving technology, then the nondiscretionary workers would be hardest hit, since their programmable jobs can more readily be replaced by machines.

On the whole, Cornfield's model stood the empirical test for layoffs in the corporation he studied. Reduced demand caused displacement of direct workers while consolidation and reorganization (specifically ratio maintenance cutbacks) most heavily hit discretionary workers. Therefore the jobs which were eliminated did depend on the reason for the reduction in force and in a predictable way, i.e. based on the division of labor within the organization. Cornfield's major limitation is that he only tested one corporation at one point in time, therefore the results should not be considered robust as yet. However, the work is significant in a number of ways. First, it provides a meaningful framework in which to understand the unequal chances of layoff within a firm. Second, the layoffs were permanent job eliminations. This compares favorably with the job loss concept used in the present research.
The proximity-discretion theory leads to a number of insights into permanent layoffs. Clerical workers would be expected to suffer increasing amounts of displacement through technological changes in the office, while blue collar workers are sensitive to both technological changes and reduced product demand. Given recent changes in trade patterns for U.S. products, it is expected that manufacturing workers are likely to have higher than average displacement rates, from reduced demand.

There is corroboration for Cornfield's internal structure displacement model from other sources. Frank and Freeman (1978) provide support for this theory of displacement based on effects of direct foreign investment (DFI). Their findings show precisely what Cornfield would predict based on his four-way classification. In the Frank and Freeman study, DFI had the following impact on job loss by occupation from the highest to lowest rates: operatives (nondiscretionary-direct), craftsmen, clerical/ professional/technical, and managers (discretionary-indirect).

CORRELATES OF DISPLACEMENT: Individual Theories

Neo-classical economic theory is rooted at the other end of the continuum from structural theories. In the
extreme of this individualistic system, everything, including job security, has a known price and all transactions are voluntary in the extreme. For example, implicit contract theory (Baily 1974; Azariades 1975; Rosen 1983) holds that a worker accepts a wage higher than the value of his marginal product (the equilibrium wage) in exchange for assuming some positive risk of job termination, which is presumed known a priori. Under these theorists' extremely stringent set of assumptions, losing a job poses no cause for concern since the worker has been adequately compensated in advance for foregone job security. Since displacement by definition is a unilateral, employer-initiated termination, there is no room for it in a framework wrought of mutual exchanges: involuntary behavior simply does not exist in this scheme. That is an extreme position, however. Other economic theorists do make predictions about displacement, especially for workers within the same firm.

There are two major theories which explain why employees within the same company would differ in their chances of being laid off in the event of a reduction in force. The first is Schultz's Human Capital Theory, especially as elaborated by Becker (1965). The second is the Job-Competition Model or Queue Theory (Thurow 1978). Only Human Capital theory, however, has been use in the specific context of layoffs. The two theories are similar in that both
are predicated on individual differences. They differ to some extent on the amount of control they assume individuals have over their own destinies. Human Capital theory asserts that individuals' fates in life are largely the result of their past investment decisions. Thurow tends to take a middle ground, with individuals and market conditions jointly sharing responsibility for employment ends.

Human Capital Theory

Human Capital theory is the most widely used theory in labor market research today. It is espoused not only by economists but by sociologists as well in explaining an almost infinite array of social phenomena, from marriage, to poverty, to altruism (Becker 1965). The sociological variant focuses on jobs as a means of status attainment, but essentially employs the same calculus (Blau and Duncan 1965). Its greatest appeal is parsimony, along with its easily understood, almost intuitive approach.

The basic premise of Human Capital theory is that individuals forego current income in order to invest in future knowledge, skills and abilities. They do this because they expect to receive greater returns in future earnings commensurate with their investment. They respond to price signals in making rational choices about whether to accept
current wages or whether to invest. Investment in human capital usually takes the form of acquiring additional education or accepting lower starting wages for a chance to gain specialized training on a job. The theory has come under general criticism for its fairly implausible set of assumptions and rugged individualistic approach (see for example, Cain 1976; Thurow 1979; Granovetter 1981); there is no need to replay them here. Despite the critics, the theory is widely accepted and has been extensively elaborated.

According to the theory, first postulated by Schultz (1967), human capital comes in two forms: general human capital and firm-specific human capital. The distinction is important for displacement research because there are different implications in terms of the probability of being displaced. General human capital is that set of knowledge, skills and abilities which have wide applicability across numerous jobs and organizations. Education and general intelligence are primary indicators of the level of general human capital. Employees with large amounts of general human capital are important assets to their companies because they have high degrees of skill and potential for quick learning. However, possessing large amounts of general human capital also offers the employee wide choice among employers at which to apply their general knowledge.
The result is that an employer has little incentive to invest in additional human capital for such workers because of the uncertainty of the length of a payoff period. This in turn furthers the employee's likelihood of seeking other employers as a means of bidding up his or her returns to investments in human capital, which are usually in the form of formal education.

Specific human capital, on the other hand, is knowledge about a particular job or employer. This type of skill or expertise is usually acquired on the job through experience or employer-provided training. It is therefore even more important to retain human resources high in specific human capital, since the abilities can take a long time to develop and are difficult to replace. Specific human capital therefore, would tend to confer greater protection against permanent layoff than would general human capital on two counts. First, because of the difficulty in replacing an experienced worker, managers would strive to retain such employees, as Okun's toll theory elaborates. Second, from the employee's standpoint, specific human capital skills are only valuable so long as he or she remains with that particular employer. Therefore there are few if any other opportunities for better returns. The worker and employer are thus bound together by human capital with a high specific component. This is the mechanism which generates the
Internal Labor Market of Doeringer and Piore (1971), the implicit contracts of Baily (1975) or Azarides (1976), or the "invisible handshake" of (Okun 1981) presented above.

Firm-specific human capital, operationally expressed as seniority or tenure on the job, has been universally examined in research on plant shutdowns. It is perhaps the one consistent consideration, found in both case studies as well as cross-sectional or longitudinal layoff models. Among the latter designs, Blau and Kahn (1981), Cooke (1981), Cornfield (1982), Haltiwanger (1984), Lipsky (1970), Medoff (1979), Parnes, Gagen and King (1980) and Parsons (1972) all have included specific human capital considerations. Furthermore, all have found strong protection against layoffs with increasing years of tenure on the job. There appeared to be little difference in whether the layoffs were permanent or temporary, although only Haltiwanger (1984) explicitly considered the two side by side. Indeed, seniority protection is generally institutionalized in collective bargaining agreements and in personnel practices of many non-union firms with moderate to large workforces.

Therein lies the rub with "specific human capital" as an independent variable in layoff models: since specific human capital arose in theory to explain the existing
practice of explicitly considering seniority in employment decisions, there is a virtual tautology in using tenure to measure it. In addition, there are rival hypotheses to account for tenure's value to the employer: loyalty (Fox 1979; Cooke 1981, and others), bureaucratic controls (Edwards 1979), Okun's toll (1981) and the simple fact that it is an administratively simple, rational, easily understood means to distribute benefits among the workforce which minimizes the risk of post-decisional dissension among the rank and file. Moreover, tenure with an organization is a two-way variable: long-service workers tend to stay with good employers, but good employers may not actually "invest" in their workers' human capital in order to keep them, despite the assumption of theory. The employer, in contrast, may simply provide considerate treatment, relatively stable employment and acceptable pay. Therefore the direction of the effect is suspect as well when tenure is used to proxy for firm-specific human capital. The alternative explanations are just as plausible as the broad, catch-all term "specific human capital", conventionally connoting skills, knowledge and abilities about the firm.

Nevertheless, because of its wide acceptance and useful framework there are insights to be gained from Human Capital Theory in predicting who is likely to be displaced. Most obvious is that at least some part of tenure actually
consists of acquired skill and ability valuable to managers, which they would want to keep if possible. Furthermore, the distinction between general human capital and firm-specific human capital is a good one. It underscores the differences in replacement costs of certain employees. Firm-specific human capital is not available in the marketplace, therefore, analogous to Okun's toll, there is a high cost to replace a worker who embodies substantial amounts of firm-specific investment. Since general human capital investments yield marketable returns to the holder, employers have low incentive to invest in it because the pay-off period is more uncertain, hence the returns are more risky. But specific human capital investments yield returns only in conjunction with the employer with whom they were acquired, therefore the employer can more rationally take on some if not all investment costs. Given the reinforcing bond of specific human capital, it is likely that tenure would provide greater protection against displacement than would education, other things being equal.

Thurow's Queue Theory

Thurow posits a model in which he asserts that marginal productivity is located not in the worker, as Human Capital theory holds, but in the job. Given that premise, it would appear that he is tied conceptually to the structuralists, such as Cornfield or Edwards. However, in presenting Queue
Theory, or the Job Competition model, as he labels it, the ordering along the labor queue is arranged according to the relative costs of being trained, which employers infer from personal characteristics of potential employees.

As Thurow states: "The key ingredient in the job-competition model is the observation that most cognitive job skills are not acquired before a worker enters the labor market but after he has found employment through on-the-job training programs" (p. 76). The basic scheme is that there exist two queues which clear the labor market by varying the amount of training offered, rather than wages. One is the labor queue just mentioned in which workers are ranked. The other queue is the distribution of job (training) opportunities in the economy, which are conceptualized as job sequences, or "lifetime income ladders" (p. 77). In this respect, still, Thurow appears to be setting up a structural approach, this time the Internal Labor Market model, essential in order for experienced workers to feel secure enough to train newer workers.

The distinguishing mark of the Job Competition model as an individualistic theory is in how the queues are arranged and in how the matching process takes place. The labor queue is arrayed by "...background characteristics (education, innate abilities, age, sex, personal habits,
psychological test scores, etc.)" which affect the cost of training a worker (p. 86). The job queue is ordered according to how much opportunity they afford for entry to a desirable job ladder. When there are job openings (which offer training) the employer will move down both his job queue and labor queue from those with the lowest perceived training costs to those with less desirable background characteristics until all the positions have been accepted.

Workers, or potential workers at the queue stage, will on their part attempt to move themselves up in the labor queue. Since obviously many of the background characteristics are immutable (e.g. race, age, sex, or innate abilities) there are only a couple mobility avenues open to individuals, education being the most accessible. Therefore, that is the channel by which most individuals seek to improve their relative position. The primary competition is actually over entry to a career ladder, where one's relative standing in the queue is the determinant of success. Once on the ladder, after an initial period one becomes the trainer, then job security will prevail.

The displacement implications from this theory should be evident: 1) tenure will provide job security because employers need to assure that training will be passed on to new workers and 2) education will be an important
protection against displacement. Education will have a two-fold effect: first it signals efficient trainees, workers to be hired early in the process, and second, more highly educated workers will have more knowledge and skills to impart to others. Education will hence afford additional layoff protection for given years of tenure.

Besides tenure and education, Thurow uses the Job Competition model to predict other labor market outcomes in terms of personal characteristics. According to the theory, gender will be a predictor of job insecurity. Specifically, women will have lower job protection, other things equal, because the queue process encourages managers to practice statistical discrimination. Because some women leave work to attend to family duties, managers expect any woman to leave the job, without passing training on to new workers. Because of the perception, women would be hired for jobs further down the job queue, in other words, for those with short job ladders. Therefore women would be more likely to be relegated to the secondary labor market, where there is little embodied training requiring transmittal to others. Without the monopolistic advantage acquired through embodied job-specific knowledge or skills, there is little job security. Furthermore, because the labor queue is a single ranking of all potential employees, women would have lower returns to additional schooling, as
Ferber and Lowry (1976) have found. With education, their positions could improve relative to other women, but not enough to gain substantial advantage over other groups.

In summary, the Job Competition model predicts that the probability of displacement would be inversely related to tenure on the job, education, innate abilities and other favorable background characteristics, or those which statistically correlate with perceived lower training costs and a reasonable payback period. On the other hand, there are several personal characteristics which are expected to increase the chances of being displaced. Blacks and women are likely to have higher than average displacement rates because they hold jobs which have relatively low amounts of training, coupled with lower returns to schooling. Without the training monopoly, they are relatively expendable to their employers.

CORRELATES OF DISPLACEMENT: Hypotheses

Correlates of displacement can be considered from two levels: as structural forces acting on or within the firm and/or as arising out of characteristics of the workers themselves. There are four principle structural theories each of which has its own explanation for differential
probabilities of displacement: Segmented Labor Market (SLM) theory, Product Life Cycle (PLC) theory, Cornfield's Proximity-Discretion theory and, considered as a framework for deciding whether to initiate layoffs, Okun's Toll theory. In addition, along with the toll aspect of Okun's decision model, there are two leading atomistic theories used to account for layoffs: Human Capital theory and the Job Competition model or Queue theory, which assign differential probabilities of displacement based on individual differences, rather than characteristics of the firm or industry.

Starting with hypotheses developed from the structural approaches, Segmented Labor Market (SLM) theory predicts two causes of displacement. First, employment in secondary sector industries or small "entrepreneurial" firms are likely to result in displacement, to the extent that there has been a stable relationship in the first place. Second, management's philosophy toward human resources can lead to displacement, as indicated by temporary layoff practices.

The Product Life Cycle (PLC) theory specifically points to the manufacturing industry for generating displacement, even, or especially, during industry growth periods. By extension, PLC theory also leads to the hypothesis that services have lower than average permanent layoff rates,
because the nature of service products is fundamentally different from manufacturing, relative to international trade, automation, low relative wages in foreign markets and relocation. PLC, having a locational dimension, also predicts that the recent geographic shift in the U.S. has led to greater likelihood of displacement from Northern jobs for two reasons: 1) services tend to move with the population and 2) manufacturing labor costs are lower in the South. Along the same logic, workers in the growing rural areas are less likely to become displaced than those from urban areas in decline.

Okun's Toll Theory emphasizes the future costs of doing business in terms of a firm's reputation as a stable employer. As such, displacement will be directly related to prior usage of layoffs. If there have been recent layoffs, the likelihood of displacement will rise because they will be less costly to layoff-prone employers than to stable ones. Toll theory also has an individualistic component: more experienced employees are more costly to replace if job-specific skills are acquired on the job. Therefore, they represent a higher toll to the employer, and are less likely to be displaced in a reduction in force. This suggests a higher displacement rate for blue collar workers, because they are relatively cheaper to replace than most white collar workers, clerical workers excepted.
Cornfield's Proximity-Discretion theory focuses on a firm's internal structure to explain layoffs. From this perspective, two relevant hypotheses are: 1) that reduced product demand leads to blue collar displacement and 2) technological changes cause permanent layoffs for non-discretionary workers such as assemblers, clerical workers or retail clerks. Manufacturing and retail trade employees are likely targets for permanent layoff as a result of industry-wide changes in technology over the recent decade. Blue collar workers, especially operatives, are frequently in both non-discretionary and direct positions; they are vulnerable to displacement from changes in both technology and product demand. They are therefore expected to have significantly higher displacement rates than white collar workers, who, with the exception of clerical workers already noted, are more likely to be found in discretionary and indirect positions. Education, also, will be inversely related to displacement to the extent that it provides the basis for selecting employees for discretionary positions, as reported by Status Attainment theories (e.g. Blau and Duncan, 1965). Tenure is another means by which employees acquire discretionary job duties, therefore it, too, is expected to provide protection against being displaced.

Hypotheses generated by individualistic theories have considerable overlap with predictions arising from
structural approaches. It is not surprising, given that some structural models are derived from or elaborated by Human Capital or Queue theory, such as the Toll model or SLM theory. For example, seniority and education are both incorporated in models which consider employer costs of replacement or training. They are also touted as the vehicles by which workers can obtain high-income, stable occupations.

Only two wholly new predictions can be made from the atomistic approach. First, the Job Competition model would identify married women as particularly vulnerable to displacement, because of the statistical discrimination fostered by queue-type hiring decisions. Second, both Human Capital theory and Thurow's model predict that blacks are more likely to be displaced, ceteris paribus, because of discrimination in the human capital financial market (e.g. educational loans) as well as in the labor market.

In summary, hypotheses about the causes of displacement are:

Hypothesis 1: Industry conditions lead to differential likelihoods of displacement.
   a) MANUFACTURING generates the highest rate of permanent job loss.
   b) SERVICE workers are relatively unlikely to be displaced.
   c) TRADE (wholesale and retail) generates higher than average displacement.
Hypothesis 2: BLUE COLLAR workers will suffer disproportionately high rates of permanent layoffs.

Hypothesis 3: RECENT TEMPORARY LAYOFFS will forecast above-average displacement probabilities.

Hypothesis 4: EDUCATION will be inversely related to displacement.

Hypothesis 5: SENIORITY with the employer will protect workers against permanent layoffs.

Hypothesis 6: SOUTHERN workers will have less than average job loss.

Hypothesis 7: The urban-rural shift has caused rates of displacement to differ by size of the labor market.
  a) RURAL employees will be relatively impervious to job loss.
  b) Workers in LARGE CITIES will have higher than average risk of displacement.

Hypothesis 8: HIGH UNEMPLOYMENT RATES will adversely affect the rate of job loss.

The particular operational variables for testing these hypotheses will be described in the next chapter along with the sample description and methods. The rest of this chapter will outline the theoretical bases for expecting certain outcomes following displacement. There are two obvious adverse labor market consequences of job loss: 1) reduced rates of employment, either in the form of unemployment or labor force leaving and 2) wage erosion stemming from the forced employer change. In the following section on the consequences of displacement, hypotheses relating to employment and wage change outcomes will be developed separately.
CONSEQUENCES OF DISPLACEMENT: EMPLOYMENT

One probable consequence of displacement is being out of work. Displacement often suddenly disrupts an existing employment relationship which an employee could reasonably have expected to continue, so long as performance standards were met. Benefits of accumulating years of service with a single employer have been discussed above in the context of acquired expertise specific to their jobs, increased job security with respect to temporary layoffs, as well as a general sense of security with the familiar, often translated into loyalty, belonging and other affective states.

Workers who believe they are in stable jobs do not usually look for other opportunities, unless they want to make a voluntary job change. In fact, in one study, eighty percent of the managers surveyed claimed they had never seriously considered leaving the company despite their assertion that production workers had greater job security than management (Wood, 1980, p. 791). What happens to those managers and other seemingly "secure" workers after displacement occurs? How do they fare in finding new jobs? What would theory predict?

Employment literature is grounded in two economic theories: Human Capital theory and Queue theory, both treated
in the first part of this chapter. Human capital theory and queue theories are alternative frameworks for understanding individuals' decisions about whether or not to work, and for employers' choices of whom to hire, and at what wages. There is also a large body of post-displacement experience to draw on in predicting the employment effects of displacement.

The extensive plant shutdown literature consistently finds that workers who are older, who have been with their displacement employer longer, and who are less educated (which are all correlated) have the most difficulty in obtaining employment following displacement. They have longer durations of unemployment and are more likely to have to take jobs out of their former industry and occupation (see, for example, the review by Gordus, et al., 1981). However, with the exception of the Flaim and Sehgal analysis of Current Population Survey households (1985), and Yale's two early rubberworker cases, displacement research has generally underrepresented the female experience. Where women workers were included in the studies, there was usually an inadequate number of them to conduct separate analyses by sex (see for example, Ullman, 1969). While there is no reason to believe that women's experiences are likely to be different with respect to the effects of age, education and tenure on reemployment
opportunities, working has been different for women compared to men's patterns in so many respects that generalizations based on male experience should not be the sole basis for prediction here.

The existing job loss literature by itself is inadequate for predicting women's post-displacement adjustments. However, in contrast to the state of theory predicting displacement, employment theories are well developed. Specifically, women's labor supply in the human capital theory framework has been a staple of labor economics research for nearly two decades. This work has been well presented elsewhere (see especially Sweet, 1973; Kahne and Kohen, 1975; Mincer, 1967). Yet despite the large amount of theoretical and empirical work devoted to women's employment decisions, relatively little attention has been given to job displacement and the special considerations that it creates for the usual decision models.

Conventional labor supply models were developed to explain why some women work outside the home and others do not, and then to examine the effects of various factors such as the unemployment rate on a purely discretionary supply of female labor. The basic decision in the models is whether to leave the home to seek paid employment in the market place, or to stay home to pursue non-market
activities. Two characteristics of a displacement study strain the standard operating assumptions of traditional labor supply models: the sample is initially employed and they are making an exit rather than entrance decision. In the first place, candidates for displacement are a special subset of women: they are all established in jobs. Therefore, selectivity has to be reconciled with the variance which is usually found. Second, the relevant decision here is whether or not to remain in the labor force rather than whether or not to enter it.

There are a number of changes to expect when the sample consists of a group of women who have already chosen market work over staying at home. First, the supply of labor from this subset of women is much less likely to be discretionary than in the larger population. Second, the usual problems of state dependence can be addressed without the complications of heterogeneous preferences found in the population at large. Next, everyone in the displacement sample has made the accommodations necessary to work outside the home, at least over the recent past, so psychological and technical hurdles which new or reentrant workers have to face are absent for this group. Therefore, we are facing a decision unlike the home versus market work dilemma customarily found in the models.
In contrast to the usual labor force participation decision, the post-displacement decision is whether to stay in the labor force, and if so, when to accept a job. The mechanics of a decision not to change labor force status are presumably different from those of an active decision to change states. More to the point, leaving the labor force has different determinants from those which propel a woman from the home into market work, meaning the labor force participation decision is asymmetric.

Asymmetry in labor force exits versus entries is an important distinction which has received relatively brief attention. Long and Jones (1980), Blau (1980) and Gitter, Shaw and Gagen (1986) have found that determinants of labor force leaving are in fact different from those which predict labor force entrance. Only Long and Jones actually compared exits and entrances directly in the same study, however. They found that a number of factors do have a mirror-like influence on the two labor force participation decisions, bearing relatively the same weight on the decision, but in opposite directions, which the home-to-work model would imply if applied without modification to a group of displaced women workers. Both race and the potential wage have near-perfect symmetry with respect to entrances and exits, while the change in potential wage has a larger impact on entrance than on exit. Husband's income
and the change in his income affect entrance but not exit. In general, traditional determinants work better in explaining the home-to-work transition than for dropping out.

In the Blau study, exits were sensitive to how much opportunity the local labor market affords women workers, measured by a female labor demand index. Displacement would therefore play a role in leaving the labor force in certain labor markets. For a number of factors which usually contribute to labor force entrances Blau found no influence on exits: unlike entry, exits were impervious to net assets, the unemployment rate and changes in marital status. On the other hand the probability of exits went down as women accumulated more work experience, confirming the "state dependence" reported by Long and Jones. Also Blau found no additional effect of education on exit, once other related factors were controlled.

Felmlee (1984) also studied the dynamics of labor force exits explicitly, for a national sample of women to age 29. germane to women's displacement, she directly compared determinants of voluntary and involuntary transitions from employment to nonemployment. The results were interesting. In the first place her model performs much better in explaining voluntary transitions out of employment. Involuntary and voluntary nonemployment are both sensitive to job
duration, work experience, wages and the number of children under five years old. Layoff-induced nonemployment is additionally influenced by having children over six years old in the household, proxying for either age or unfinished schooling, and by IQ. Important!, involuntary transitions are not vulnerable to socioeconomic status of the job, education (independent of wage) and husband's income, unlike quits into nonemployment.

Felmlee's results are somewhat difficult to interpret in terms of their implications for displaced women workers. Undoubtedly her layoff nonemployment includes a large proportion of temporary layoffs. Her model therefore is capturing to a large extent the probabilities of recall from layoffs, where women would not seek other employment in the interim. Noting that better jobs do not help to predict whether a woman will be employed after a layoff strongly suggests that Felmlee's findings are reflecting a joint likelihood: 1) that the layoff will occur and 2) that she will want to await recall from that job. The two probabilities act in opposite directions: high status jobs have lower likelihoods of displacement yet present more attractive incentives to await recall. The two effects "wash out" the influence of socioeconomic status on layoff-induced nonemployment. It is difficult to extrapolate from
her results to the case where the woman knows that the separation is permanent, the situation facing the displaced worker.

Gitter et al. (1986) explicitly tested whether displacement at any time over a five year interval resulted in labor market withdrawal at the end of the period. They found no significant effect. There were two problems with the study for our purposes here. What they reported for a measure of "displacement" was for the most part seasonal and temporary layoffs. Second, their sample consisted of women who had worked as little as one week in the 52 weeks before the 1977 NLS survey date, leaving their initial work commitment somewhat suspect. Their findings generally support the other exit studies for white women with one notable exception: the 1977 wage did not signal whether or not a woman would be out of the labor force five years later.

From the case studies, it is clear that displacement often causes immediate employment dislocations. It is not clear whether the effects persist. Blau's results suggested that they might, but Gitter et al. did not find any effect. It is not surprising that layoffs of a seasonal or temporary nature would not influence whether a woman would be working at a later date, particularly if she was usually
employed intermittently. On the other hand, displacement from a long-standing job could have a heavier impact on subsequent employment experience.

It is hypothesized that displaced workers will be much less likely to be employed than their non-displaced fellows when observed up to two or three years after displacement occurs. Empirical evidence from the literature details the persisting effect that displacement has on employment patterns. Many workers have difficulty finding new jobs following job loss. Of those who do succeed in finding new positions, some lose the post-displacement jobs because of low seniority or termination from a rigorous probation on the new job. Others quit new employers at rates approximating young workers', revealing patterns of job-shopping which do not often occur with these mature workers (Parnes et al., 1981). The following hypothesis can be drawn from the above discussion.

HYPOTHESIS 10: Displaced workers are less likely to be working, even years after their job loss.

One highly visible and policy relevant consequence of plant shutdowns has been the unemployment faced by displaced workers. It has been well-documented for male blue collar workers, universally in the plant closing cases. However, in contrast to an operating assumption that males work unless some external intervention occurs, throughout
the literature of women's employment behavior, the emphasis has been on their elective employment decisions. Whereas non-employed men within the normal working age range are assumed to be looking for work, non-employed women are often assumed to be out of the labor force, or unemployed because they are returning to the labor force after having been at home. Given a group of established women workers, what influence does displacement have on the dynamics of their labor force status? That is, if job loss does reduce employment, does it lead to unemployment (like the male model) or to labor force withdrawal? Considering the literature reviewed above, a supplemental hypothesis is offered regarding the specific state of non-employment in which displaced women workers would be found.

HYPOTHESIS 11: Displaced workers will be more likely to be both unemployed and out of the labor force. For a committed worker sample, displacement will more likely result in unemployment than labor force leaving.

Job loss, by virtue of requiring a job change to remain employed, quite likely affects the employment status of displaced workers. The persistence of those effects is unclear at this time, however. The next section presents a second type of employment effect which may result from losing a job: deteriorating wage growth.
CONSEQUENCES OF DISPLACEMENT: Wage Changes

Plant shutdown cases show substantial reductions in earnings in the post-displacement jobs from what job losers had been making on the old job. However, generalizability of the findings is suspect because the sampling technique probably biases the consequences toward the negative side. Plant closings are often selected for study because of their dramatic impact upon a local community. Given the proportionately large part of a local labor force that can be displaced after a shutdown, negative consequences may be exaggerated, as local labor market mechanisms become clogged. It is unclear what happens when displacement is gradual or geographically dispersed rather than clustered within a single labor market, the shutdown situation.

Even though findings from plant shutdown cases may exaggerate the extent of wage erosion because the supply of workers with the same skills are available at the same time in the same labor market, there is reason on theoretical grounds why wage growth would be slower for women who involuntarily lose jobs. Human capital theory addresses the loss of specific human capital when the job is terminated. To the extent that other employers in the local market cannot use the skills acquired on the previous job, wages would suffer at least temporary regression. Job search
theory would also predict that wages would drop following an involuntary separation (Lipmann and McCall, 1976). Under a search framework, the cost of searching is higher for job losers, to the extent that they search from unemployment rather than employment because of foregone income.

A job-seeker might take a lower-paying job (or reduce the reservation wage) just to shorten the time unemployed. Displaced workers are likely candidates for this phenomenon. Whether true or not they could come to believe that they cannot command the same income from any other employer than they did from the one they worked for all those years. This could happen for a number of reasons. They could be ignorant of whether or not they have transferrable skills, since they have not had those skills evaluated outside the firm for a number of years. Also to the extent that they lose positions from "declining industries" they may be convinced that their skills are inappropriate to other growing concerns. Finally, and perhaps most significantly, displacement separates a person from "internal labor market" mechanisms. To the extent that the closed system sets wages higher than the open market, particularly for non-scholastically acquired skills, being displaced would have an adverse impact on later earnings.
For women workers, wage erosion might be less severe than for men. The range of wages for women workers is relatively more narrow than the male wage distribution, with women workers tending to be clustered near the minimum wage. The closer a wage is to the wage floor, the less room there is for losing ground. Nevertheless, it is expected that there will be a measurable difference in the rate of wage growth attributable to displacement, which leads to the final hypothesis of this study.

HYPOTHESIS 12: Displacement will retard wage growth for those workers who are reemployed following job loss. This effect will be measurable even more than two years after being displaced.

Chapter III will discuss the special methodological considerations for testing these hypotheses about displacement. The data requirements, the design and statistical techniques for the correlates and consequences of job loss will be presented.
CHAPTER III

METHODS

Introduction

There are three major portions of empirical work in this study of displaced workers. The first section examines the distribution and correlates of displacement for a defined national sample of women workers. Next, the focus shifts to the employment consequences of displacement, with attention to both worker and job characteristics which are associated with reemployment difficulties. Finally, the effects of displacement on later wage growth are treated. The first part of this chapter will describe the overall research strategy and the sample itself. The next sections present the methods used to explore, first, displacement and then employment and wage change effects.

Displacement research has relied heavily on the case method, a method which is usually typical of "first generation" research into a new field. This study attempts to
make knowledge about displacement more general by using a national subset of women workers instead of a plant closing to provide data on displacement. The basic research question is whether the picture of displacement drawn from the numerous case studies in fact reflects the job loss experience for types of workers not typically sampled.

There are now two sources of national data which provide information about job loss: the Current Population Survey (CPS) and The National Longitudinal Survey (NLS). The CPS survey was not available at the time this research was started, but a number of features bear highlighting for comparison purposes. The Bureau of Labor Statistics undertook a special survey in January 1984 to identify the number of job losers in the general workforce, using the CPS as a vehicle. There was a follow-up survey one year later for approximately two-thirds of the original CPS sample (Devens, 1986). The sample is nationally representative of the U.S. civilian non-institutionalized population. The respondents were asked whether they (or any member of their household) had "lost or left a job because of a plant closing, an employer going out of business, a layoff from which they were not recalled or other similar reasons" since January, 1979 (U.S. Department of Labor, 1984). If they had held the job for at least three years, they were considered displaced. They then were asked about later
employment: what kind of job they now held if any, and how the new wage rate compared to their displacement job's pay. Despite its universal coverage, the CPS data is less satisfactory for the purposes of the present study than the NLS data that are used.

The CPS provides insufficient information to adjust for the different lengths of time between the displacement and the survey date at which the post-job loss employment status was assessed. Furthermore, although job loss may have occurred for some of the respondents up to five years before the survey date, for many there was a relatively short period of time over which to observe their adjustments to job loss.

The NLS survey data are superior to the CPS Special Survey precisely because the NLS has employer identification information and it follows the respondents long enough to observe whether they return to the layoff employers within a couple of years. With the CPS it is impossible to distinguish those who are on indefinite layoff from those who are permanently separated. Presumably a number of people on indefinite layoff at the CPS 1984 interview returned to their employer when the economy improved. Because of its longitudinal character, NLS data allow identification of respondents who are later recalled. The
ability to distinguish between permanent job loss and a temporary layoff is important. On an indefinite layoff, there is a positive likelihood of reactivating pension rights and other tenure-based fringe benefits. Feldstein (1975) has found distinct behavioral differences between workers on layoff versus job losers with no recall prospects. Among prime-age male workers, only 12 percent of workers on layoff were looking for work compared to 63 percent of job losers (p. 732).

NLS employer identification codes in conjunction with the relatively longer time horizon can also identify people who return to their layoff employer even after they have worked elsewhere, a pattern which would be masked under the CPS line of questions. This is important for two reasons. First, the definition of displacement can be more precise by excluding longer but still temporary layoffs. Second, an interim job will not be treated as regular post-displacement employment, a mistake which would bias consequences of displacement negatively. If workers on indefinite layoff take other jobs while awaiting recall, they are often casual, temporary positions, rather than what they

2 Admittedly permanent and temporary job loss may differ only in degree. For example, a furloughed worker could decide not to wait for recall, even if the employer intended to recall the employee. For the purposes of definition here, one year was considered a reasonable time to await recall; after that period, workers were defined as displaced provided they did not return to that employer for at least two years.
might consider "regular" jobs (for example, a high wage factory worker might wait tables or tend bar while on layoff).

DESCRIPTION OF THE DATA

Fortunately the extraordinary data requirements of this three-pronged study can be met very well using the National Longitudinal Survey (NLS). The cohort used for this study is the NLS Mature Women, 5083 women who were 30-44 at the time the survey was initiated in 1967. The sample was nationally representative at the time it was begun and has maintained a high degree of integrity over time. Sample attrition has been remarkably low during the first 15 years of the survey, on which this analysis is based. The overall retention rate is close to 70 percent. Sampling weights have been adjusted annually and the sample as of 1982 was still fairly representative of the population of women in the U.S. who were then 45-59. An additional advantage of the NLS is that blacks were oversampled, which allows for statistical analyses by race if necessary. Although respondents were questioned at least every two years from 1967 through 1984, the present analysis includes only those workers displaced over the period from 1969 through 1982. The earliest years were excluded because of problems of data comparability. The year 1982 was the last displacement
year so that there would be a sufficiently long follow-up period for comparable measurement of the consequences of displacement.

This research is similar in many respects to a previous NLS-based displacement study of men done by Parnes, Gagen and King (1981). Both studies use the concept of a risk population based on duration of employer attachment instead of a sample composed of all workers. They also have similar scope in looking at both the correlates and consequences of displacement. Each study also uses both individual and structural features of the workplace to explain causes and outcomes. The present study differs from the earlier one in its use of more sophisticated statistical techniques and in its research design, which was adapted to better fit the different life cycle stage of the NLS Mature Women. The design will be described fully in the next section.

Because they start with the notion of a population-at-risk, rather than with the entire universe of workers, these two NLS studies are similar in noting that displacement is something which has particular importance when it happens to established workers. In this study, the employment relationship is considered to be "established" if tenure with a firm was two years or more. The adjustment process appears to be over by that time: the employer's
customary probation period is usually somewhat less than two years and voluntary quits decline dramatically after the two year mark (Hall, 1982).

DESCRIPTION OF THE RESEARCH DESIGN

Had the women's NLS cohort been the same age as the mature men's cohort, the earlier Parnes et al. (1981) study could have been replicated to test directly whether there are gender differences in displacement. However, the two cohorts are not comparable in a number of ways. Both samples are age-truncated, but at different places. The NLS Men were 45-59 in 1966 while the NLS Women were 30-44 at the time their survey was initiated a year later. Another obstacle to comparability is the five-year tenure requirement imposed on the men in the Parnes et al. research. The women of this generation, ending their childbearing years, were for the most part just reentering the labor force, the reason that this age group was selected for the survey. Therefore, a five-year tenure requirement would have been unduly restrictive for the women's sample. A very small proportion of working women in the cohort had five years of tenure with their employers by 1967, or even by 1969, so any sample derived from that would have been extremely selective. The intention of this study was to include as
broad a base of working women from this cohort as possible, not just the lifelong career women, who are an elite subset of all women of this age cohort.

The reentry phenomenon also precluded the strictly longitudinal design used for the men's study. The older women who had completed their families would have been far more likely to have two years tenure in the early years of the survey than the women who were then in their early thirties. Therefore the universe would have been disproportionately composed of the older women whose attitudes toward working are different from younger women workers, even within this cohort (Shaw, 1986). In addition to the selectivity problem induced by a simple longitudinal design, the sample size would have been small. Most men work for pay, but roughly only half of the women in this NLS cohort did in the early years of the surveys. For that reason also, the decision was made to follow a pooled design composed of five longitudinal segments.

The longitudinal segments are represented in Figure 1. For each NLS survey year beginning with 1969 a population-at-risk is identified. The members of these groups are then followed for a two-year period and labelled either not displaced or displaced, depending on whether they had involuntarily lost their jobs during the interval. Finally,
their subsequent labor force status is observed one or two years after the end of the risk period. Note that there are three consecutive surveys involved for each sample case.

The first interview of the longitudinal segment provides all baseline data including the tenure requirement. If a respondent indicated she had worked for wage or salary at least two years for her employer, and had information on all the variables necessary for the analysis (which included all but a very few cases) she is included in the population at risk. That population-at-risk is then observed two years later at its next interview where displacement status is assigned. If the respondent indicated at that interview that she had been separated involuntarily from her initial employer, she was coded displaced.\(^3\) It is important for the risk period be of equal length for all respondents, so that probabilities of displacement can be estimated for the group. Therefore, the sample was limited to those who had two years between the first two interviews. As a consequence, two survey years, 1971 and 1976, were excluded as base years because they had no interview two years later.

\(^3\)Only respondents reporting "layoff" were considered displaced. Those who reported "discharge" were coded "not displaced" and deleted from the risk population for that year. The number of discharges was extremely small, less than two-tenths of a percent for the workers with two years tenure.
Base Measures Obtained;

Population-at-risk Identified Here

Displacement Measured Here

Wages, Employment Status Measured Here

RISK PERIOD

Base Year Interview

2nd Interview

Consequences Interview

Two Years

Figure 1. Longitudinal Segments for Individual Observations
The third interview of each segment provides data for the consequences of displacement. For some women that survey is one year after the risk period ends, for others it is two years later. The difference in segment lengths can affect the likelihood of later employment. If a worker is still with her job at the end of the risk period, then the shorter the segment is, the more likely it is she will remain employed until the third interview. Conversely, job leavers are less likely to be employed the closer the third interview is to the end of the risk period, since they were separated sometime within that interval. However, their chances of reemployment are greater the further their separation was from the end of the risk period. Therefore, for women who were neither displaced nor voluntarily left their jobs, the appropriate control for the segment length is simply the number of months between the second and third interviews. For job leavers, whether voluntary or involuntary, the relevant segment length is the number of months between the separation and the third interview. The varying time between the second and third interviews does not by itself cause a comparability problem, because it affects both displaced and non-displaced workers alike, and the effects of displacement are always measured by comparing these two groups.
To highlight an important feature of the design, note that the measurements are synchronized for the entire sample, displaced and not displaced. All pre-displacement data are obtained as of the first interview date of each segment, the time at which the tenure screen is applied to select the population-at-risk for that base year. This is not necessarily the highest wage or income level obtained on the job, especially for those who lost jobs late in the risk period. Therefore, this would likely result in an understatement of the magnitude of wage loss, if any, from job loss, were that the objective. However, the present study does not attempt to calculate costs of displacement per se. Here the interest is in assessing the deviation from what could have been expected had there been no displacement. For that purpose, as argued above, it is important that changes are measured over equal lengths of time for both displaced and non-displaced. Data for post-displacement comparisons are obtained as of the third interview date, for all observations. Wage and income data are all converted to 1981 dollars, for comparability across segments. The only information taken from the middle interview is whether or not the respondent lost or quit her job, and the date of the separation. This sampling design minimizes variation introduced purely by timing differences, which would disproportionally occur among job leavers.
CORRELATES OF DISPLACEMENT

There are two major methodological problems in identifying the correlates of displacement. One is conceptual and the other is statistical. The conceptual problem is defining displacement per se. There is tremendous variation in counts of displaced workers, as well as in what is expected to cause displacement, depending on the operational definition. That issue has been discussed in Chapter I. The definition of displacement used here is simple: a relatively permanent involuntary separation for lack of work which is experienced by workers who have at least two years' tenure with the employer.

A major statistical obstacle to correlating factors with displacement arises because there is a relatively low incidence of displacement in any given time period. Estimates of the extent of displacement in the workforce, vary largely because of differences in definition. Using the definition closest to the one in this research, approximately 1.5 to 4.0 percent displacement per year could be expected (see, for example, Wendling, 1984). That will yield a dependent variable too highly skewed for probabilistic regression analyses estimated through ordinary least squares or other linear methods. To minimize the problem of a skewed dependent variable, logit equations will be
employed to test the correlates of displacement. They have an additional benefit in constraining the probabilities derived from the equations to sum to one. Maximum likelihood estimation techniques used in logit analysis will provide consistent estimates and allow for the usual tests of significance (Pindyck and Rubinfeld, 1981).

Another strategy for increasing the reliability of the results, given that they are such a small proportion of the total population, is to increase the sample size through pooling observations across years. Pooling cross-sectional data across time has some disadvantages. The most potentially serious problem for this analysis is that some variables may be time-dependent, such as tenure and, to some extent, pay, even after adjusting for inflation. In this pooling procedure, however, the sample rotates on a year by year basis: that is, new people achieve the two-year tenure requirement and are added, while others are dropped after they quit or are displaced and subsequently fail the tenure test with their new employers.

To test the appropriateness of pooling observation segments across years, dummy variables were created to capture any year effects which would signal that the process of displacement had changed across the years under observation. In addition, the equations were run separately for each
year, since the number of observations per base year were large, even though the phenomenon of interest was rather sparsely distributed.

Another problem with pooling the populations-at-risk over time is that, in so doing, many women are repeatedly at risk over a number of observation periods because of the longitudinal nature of the data. Although statistical analyses can become complicated by repeated measures on the same individuals, the pooled cross-sectional design was chosen to increase the efficiency of the equations and to get a large enough sample of displaced workers to improve the chance of getting statistically significant results. This technique has been used by others in studying the causes and consequences of layoffs (see especially Blau and Kahn, 1981).

Whatever disadvantages inherent in a design that may include repeated observations for the same individual, they appear to be more than compensated by a number of advantages. First and foremost, pooling observations across time periods gives the greatest likelihood of obtaining a "typical" national sample of displaced workers from this cohort, given the limited number of individuals displaced in any single period. Also, this creates an extremely large pooled sample (approximately 8000 observations). Repeated
measures can sometimes bias error, especially in cross-sectional characteristics. In a sample this size, however, the amount of error introduced by multiple measures would be small relative to total error, because most members of the sample are observed more than once. Also the multiple observations are necessarily greater among the far larger number of non-displaced than among the relatively few displaced workers because of the two-year tenure requirement. This further attenuates the effects of repeated measures.

An alternative design was considered which would have eliminated the potential problem of repeated measures. There could be a random sampling without replacement from the year-by-year populations-at-risk. That is, once an individual had been selected she would be removed from any other base year's population-at-risk before the next draw. This approach was ruled out not only because of its cumbersome mechanics, but because it is statistically inefficient. Furthermore, it simply does not seem reasonable to limit the sample to one risk period per worker in some arbitrary way. In reality there is multiple exposure to displacement, like divorce or widowhood. Categorically excluding multiple risk periods would do damage to measuring the phenomenon. Pooled cross-sectional analyses are more like the actual incidence of displacement over a decade. The labor market actually contains a rotating group analogous to the
study's population-at-risk, which on any given year is replenished as workers gain the required two years tenure while others drop out by quitting or being displaced.

Probability of Displacement

The displacement model is conceived as a double queue, virtually a mirror-image of Doeringer and Piore's internal labor market model (p. 168, 1971). One queue ranks firms according to their vulnerability to reduced labor demand, analogous to their job vacancy queue, and derived from the structural theories reviewed in Chapter II. The second queue ranks individuals within a firm in terms of their vulnerability to layoff comparable to Doeringer and Piore's hiring queue. These have the embodied human capital characteristics described in the atomistic theories. A worker could be permanently laid off because of her relative position within a firm and/or because of the firm's position in the economy. Regardless of how well-placed in terms of job security an employee is within a firm relative to co-workers, displacement will still occur if her establishment goes out of business or relocates. By the same token, even the last-ranked employee on an internal queue will not be displaced if her employer does not reduce the demand for labor.
Note that no assumption of a hierarchic relationship between the two queues is being made here. Therefore there is no need to adopt a two-stage estimation procedure. A single equation will suffice. The characteristics of workers conceptually can influence whether or not the firm is susceptible as well as the other way around. The queues are relative rankings within the respective units, employee or firm. Each employee queue could be higher or lower than another firm's employee queue.

In addition to the employer and individual characteristics embedded in the two queues, there is a third general category of influence on the displacement process. Both queues are sensitive to environmental features. The state of the economy and geographic location are expected to influence the aggregate level of displacement which occurs.

Mathematically, the general form of the equation is as follows:

\[ \text{DISP} = f(X_i, Z_i, E_i) \]  

(1)

where \( X_i \) is a set of employer (or structural) characteristics, \( Z_i \) represents a group of individual (or atomistic) attributes and \( E_i \) are environmental characteristics.
The equation will be estimated using the logit technique, discussed earlier in the chapter. The hypotheses have been discussed in Chapter II. The operational independent variables are described below. In general there is a parallel between the grouped theories and the variables: employer and environmental characteristics correspond to the structural theories, while, as one would suspect, the individual characteristics will test the atomistic views.

**Employer Characteristics:**

There appear to be certain attributes of employers which predispose them to generate displacement. Hypotheses 1 through 3 describe employer-associated factors expected to forecast probabilities of displacement.

**INDUSTRY:** There is a set of four industry dummy variables constructed from one-digit industry codes from the U.S. Census scheme. MANUFACTURING consists of all workers within the classification. SERVICE includes employees in the conventional relatively low-skilled areas, including private household workers but excluding business and professional services, paralleling the primary-secondary labor market distinction usually followed. PROFSERV are workers in professional and business services, the high-growth areas. TRADE consists of those employees working in wholesale and retail trades. The
omitted category is the rest of non-agricultural employment, including public administration. The few agricultural workers in the population-at-risk were dropped from the analysis.

PRIOR LAYOFF EXPERIENCE: Prior layoff experience is the measure of employer commitment to the workforce. It is indicated by the respondent's reporting having had weeks of unemployment in the 52 weeks before the survey date. Since the women have worked for the survey week employer at least two years, and have not reported a recent employer change, it is assumed that those weeks unemployed indicate layoffs.

BLUE COLLAR WORKERS: This is a transitional category between employer and employee characteristics. BLUE COLLAR is constructed from one-digit U.S. Census occupational codes. It consists of craft, operatives and service workers, including private household. In other words, the omitted category is professional, managerial, clerical and sales workers.

Individual Characteristics:

Individuals at a given firm do not all have identical probabilities of being displaced. To account for personal
differences in chances of job loss, worker attributes need to be taken into account. Hypotheses 4 and 5 relate to the vector of individual characteristics expected to determine differential rates for workers within a given firm. The two variables testing these predictions are:

**EDUCATION:** Educational level is measured as the highest grade completed as of the survey date in which the respondent was included in the population-at-risk.

**WHITE:** Race is measured as a dummy variable coded 1 if the respondent was white, 0 if non-white.

**SENIORITY:** This tenure with the employer of record is years of service, rather than any formal seniority plan. It is the same variable used to test workers for inclusion in the population-at-risk. It is constructed by subtracting the date began working for the employer from the date of the initial survey in the observation segment. The result is then truncated to the last full year of service.

**Environmental Characteristics:**

Characteristics of both employees and firms are important in determining who gets displaced and from which types of jobs. Yet those two sets of attributes act within a
particular environment which also has an independent influence. Hypotheses 6 through 8 capture characteristics of the economic climate and geographic area, or the employment setting. Three dimensions are likely to be associated with displacement: the region, size of the labor market and local unemployment rate.

UNEMPLOYMENT RATE: There are two relevant measures of economic activity predictive of displacement. The national annual unemployment rate, URATE, is a measure of overall business conditions, for the year beginning the risk period. The local unemployment rate, URA, is a cross-sectional factor which measures the amount of relative structural and frictional activity in a local labor market, available for each survey year for all but the smallest labor markets. Where the specific local rate was missing, a local unemployment rate was imputed from the 1970 U.S. Census local unemployment rate, indexed to the national annual rate, assuming annual local levels varied in proportion to changes in the national rate between 1970 and the year in question.

SOUTH: Workers in the south are identified by a dichotomous regional variable, coded 1 if the respondent lives in the South, 0 if non-South.
SIZE OF THE LABOR MARKET: The size of the local labor market is expressed as a set of two dummy variables, which roughly distribute the population into thirds. RURAL consists of areas containing fewer than 2500 potential workers. BIGCITY are labor markets with one million or more workers. The omitted category are the mid-sized cities, or those between 2500 and one million workers.

CONSEQUENCES OF DISPLACEMENT: Employment Status

Displacement can lead to diverse outcomes, some positive, others negative. For example, being displaced from a "bad" job, where a worker had stayed merely from inertia, could open up opportunities to find a better job, go back to school, or chart a new career course (Latack and Dozier, 1986). Alternatively, job-loss could be quite devastating in terms of subsequent employment, unemployment or leaving the labor force. Job loss clearly has short run effects. What is less clear is whether the impact persists.

One question which comes up in any study of the consequences of some event is what is the appropriate comparison group? Who represents what might have been if displacement did not take place? The non-displaced as a whole? The other, voluntary, job leavers? The entire NLS cohort who
had work experience? The unemployed part of the cohort? The answer depends on what outcomes are of interest and what foregone opportunities are assumed.

The question is what would have happened to the displaced workers if their employment had not been terminated by the employer? A few might have quit to take better jobs. Others might have voluntarily left the labor force to pursue non-market activities. The overriding assumption, supported by Hall's job stability findings (1982), is that most displaced workers would have continued working for the same employer if they had had that choice. In short, they would have had the same opportunities as their non-displaced counterparts from the population-at-risk with one exception: the displaced are denied the option of continuing with the same employer.

The non-displaced from the population-at-risk are therefore the appropriate reference group in comparing employment and earnings outcomes of job loss. In using the non-displaced for "controls" the proposition tested is: to what extent are displaced workers different from non-displaced workers in their subsequent labor market positions? Does displacement have any statistically significant effect on whether or not a woman will be working at a specific point later in her work history? If she is working, are
the wages and conditions of her employment similar to what she would have had at her previous job had she been able to stay? To answer these questions requires comparing the displaced workers to a group as similar as possible in terms of initial characteristics. For this study it is the population at risk.

The model used here owes a debt to Granovetter (1983) who explicitly considers the employment decision as a matching process, a joint function of employer and employee choices. In the current research, the likelihood of being employed in general is perceived as a function of three things: (1) certain "desirable" features of the individual from employers' standpoints, (2) "motivation" characteristics of the searchers and (3) favorableness of the environment in which the search is conducted. In addition, there will also be separation measures differentiating between voluntary and involuntary job leaving, if any, during the two-year risk period. Essentially, this will control for quitting as distinct from displacement.

The separation distinction is essential to this analysis, given the selected sample of women all employed at the initial observation. Without quitting explicitly included in the model it would be impossible to isolate the effects of job leaving per se from the problems attributed to
involuntary job loss, or displacement. Some women quit their jobs expressly to leave the labor market or to take new jobs. Those workers are at higher risk of not working on the last survey date than the great majority of workers who added to their seniority over the period. Therefore, it is important to control for voluntary job leaving in a model explaining the probability of working at some future date.

The general model is as follows:

\[ P(EMP) = f(X_i, Y_i, E_i, S_i) \]  \hspace{1cm} (2)

where \( X_i \) is a set of job-related characteristics, \( Y_i \) is a set of "motivation" characteristics and \( E_i \) is a set of environmental features expected to affect the likelihood of a job match occurring. Last, but most importantly, \( S_i \) is a vector showing an employment separation during the risk period, that is whether a person was displaced from her job or quit.

These equations are estimated using logit techniques. The rationale was discussed earlier in this chapter in connection with estimating the probability of displacement.
First, the estimates are established for the whole sample. Then they are run for each year separately, to test whether the underlying parameters have remained stable through the changing economic climate.

Finally, the equations are re-estimated disaggregating the two nonemployment states, unemployment and being out of the labor force, using multinomial logit techniques developed by Theil (1970) and elaborated by Schmidt and Strauss (1975). In using a three-outcome dependent variable, the probability of being unemployed and of being out of the labor force (as opposed to being employed) are analyzed separately in terms of their sensitivity to displacement. From this technique it can be shown whether displacement is more likely to push working women back into the home or whether they keep looking for a job after they are displaced.

The multinomial equation will be run weighted, using the NLS population sampling weights from the last year of each observation, i.e. for the year in which each person's employment status (the dependent variable) was observed. Choosing weights from the third interview of each segment adjusts for attrition from dropping out of the NLS survey over the interval. The weight for each observation is then expressed as a proportion of the sum of the weights for the pooled sample. This weighting is necessary to control for
the NLS's systematic oversampling of blacks and to reflect the distribution of the women in the sample relative to the U.S. population. Proportional weighting yields statistics which are based on the actual number of observations in the equation, which can be used for tests of significance.

In all employment outcomes, there are three major actors: the individual, the employer and the environment or situation. The first group of hypotheses center around characteristics of the people involved: are displaced workers from the population-at-risk more or less likely to be employed? Of those who are not employed, does the labor force status differ by displacement? On what personal, demographic or experience-related characteristics does that status depend?

Specific variables are described below.

DISPLACEMENT: Displacement is a dummy variable coded 1 if the individual was involuntarily separated within the risk period and otherwise equals 0.

Separation characteristics (in addition to displacement):
QUITs: A dummy variable where 1 = a voluntary separation from the employer of record (that is, the long service employer at the beginning of the observation segment).
The quit, like a displacement, took place within the period at risk, to minimize timing effects.

**Personal characteristics:**

**EDUCATION:** Highest grade completed as of the 1967 survey date.

**WHITE:** A dummy variable for race, where 1 = white, 0 = non-white.

**MARRIED:** A dummy variable where 1 = married and living with a spouse, 0 = otherwise.

**"Motivation" Characteristics:**

**CONTRIBUTION TO FAMILY INCOME:** percentage of family income earned by respondent in the year before the period at risk (in 1981 dollars, in thousands).

**DEPENDENTS:** The total number of individuals including those outside the household who are reported dependent on the respondent and her husband, if any, at the time of the later employment status observation.

**WEEKS WORKED:** The number of weeks worked in the 52 weeks immediately before the period at risk. A measure of work intensity or commitment.
WAGES: The hourly rate of pay (in 1981 dollars) received at the pre-displacement period employer.

Environmental Characteristics:
URATE-U.S.: The annual average national unemployment rate for the year the employment status is observed (in percents).

URATE-Local: The local unemployment rate for the year when employment status is observed. It is a continuous variable created from categorical data by assigning midpoint values. If the local unemployment rate for the pertinent year was missing, it was imputed by using the 1970 Census local rate indexed to changes in the national annual rate from 1970 to the observation year.

LABOR MARKET SIZE: A set of dummy variables constructed to capture three size labor markets. RURAL is less than 2500 in the labor force, BIG CITY is greater than one million. MID-SIZE is the omitted category.

SOUTH: A dichotomous variable where 1 = residence in the south and 0 = living out of the south.
CONSEQUENCES OF DISPLACEMENT: Wage Growth

Even if displacement does not reduce the number of individuals employed, it may have an effect on the quality of jobs subsequently held by job losers. First, job losers miss out on opportunities for promotion and/or wage increases through the internal labor market mechanisms associated with continuous employment. Second, to the extent that the displaced workers go into unemployment directly after job loss, they stand to lose the chances for improving the job which an employed job search affords (Kahn and Low, 1982). For these reasons it is important to consider what happens to wages when workers involuntarily lose job continuity and are forced to seek new employment, possibly from the state of unemployment.

From the earliest studies, plant shutdown cases document substantial reductions in earnings on post-displacement jobs when compared to earnings on pre-displacement jobs. However, again, it is not clear whether case findings are representative of what happens to displaced workers in general because of the non-random sampling. As discussed above, a sample containing only major shutdowns is likely to present an atypically bleak picture. Plant closings are often selected for study because of their negative impact upon a local community. Given the relatively
large part of a local labor force that can be displaced after a major shutdown, negative consequences may be exaggerated, because the impact is more than a local labor market can absorb. The question remains: what happens when less dramatic, or traumatic, displacement takes place?

The wage rate is the conventional measure of the quality of a job, in terms of "human capital", status attainment and other, more casual perspectives. Lower wages received on a post-displacement job, therefore, can indicate lingering effects from losing a job. Wage reductions alone understate the discrepancy between pre- and post-displacement employment. Such measures do not account for seniority-linked benefits such as time off with pay, or other remunerative aspects based on the wage rate, such as promotions.

A major problem in such comparisons is in deciding what wage could have been expected in the absence of displacement. The conventional approach to the problem is to estimate what wage could reasonably have been expected at the end of a given interval. These predicted wages are then compared to the observed wages (see for example, Blau and Kahn). The major disadvantage of this technique in the present instance is that wage equations are much weaker in explaining cross-sectional wage differences among women than among men in part because of less variability in female as
opposed to male wages. Predicted wages are not likely to be very reliable if the initial estimating equations have low explanatory power. Subtracting observed wages from those predicted wages further compounds the error.

An alternative and operationally sound technique is to compare actual annual wage changes for everyone in the population at risk who is employed on the later survey date, statistically controlling for displacement. In this way, the wage changes of the non-displaced serve as "expected" wage change for similarly situated displaced workers. By design, the two groups are relatively homogeneous; the characteristics on which they differ significantly (other than displacement) are not likely to alter the wage change process. Since the two groups both demonstrated similar work propensities before the risk period, there is no need to use some sort of adjusting technique such as Heckman's lambda probit (Heckman, 1979) to allow for differences in the quality of worker employed at the later date.

The proportionate change in wages is seen as a function of a) employee characteristics, 2) characteristics of the earlier job and 3) how similar the current position is to the "old" one. Mathematically this can be expressed as:

\[
AVWGCH = f(S_i, X_i, J_i, C_i) \tag{3}
\]
where AVWGCH is the average annual wage change, where $S_i$ is the set of separation variables, $X_i$ is a set of individual characteristics, $J_i$ is a set of features of the old job expected to influence wage changes, and $C_i$ is the group of change factors which relate how different the new job is from the earlier one, if there has been a job change. For non-changers, of course, the change variables will be zero.

The equations are estimated using standard OLS procedures, weighted with NLS sampling weights from the last interview of the observation. A description of the specific variables in each vector will follow. First, construction of the dependent variable will be described. Next, each set of control variables will be presented.

The dependent variable in this case is the annual proportional wage change, in index form. The wage change variable was constructed from the hourly rate of pay at the beginning of the period at risk (HRPB, or hourly rate of pay before) compared to the hourly rate of pay at the third interview of each observation segment (HRPA, or HRP after). Therefore, the wage differences are across the same length of time for all respondents in each "mini-cohort", or observation segment. The lengths of time between wage points
are either three or four years, depending on the NLS interview schedule following the base year. The form of the dependent variable is:

\[
\text{WAGE CHANGE} = \left( \frac{HRPA}{HRPB} \right)^{1/t} - 1
\]

where HRPA and HRPB are defined above, and \( t \) is the number of years between wage measurements.

Separation variables:

Displacement is the major focus of this research. However, in observing wage changes over the longitudinal segments, it is necessary to control for the possibility of other job changes, especially quitting, given the change factors also included in these equations. Therefore the separation variable set is composed of two dummy variables to distinguish three groups based on their separation status during the period at risk: the displaced, those who quit and those who stayed with their employers. It should be noted that these separation variables are defined as of the end of the period at risk, a minimum of one year before the second wage measure is observed. There may be other job changes after the period at risk, either quits or displacements, which are not accounted for in these equations. The objective here is to measure whether there is an effect on wage growth attributable to displacement, rather than to
assess the determinants of wage growth per se. Counting only separations in the well-defined period at risk will preserve that distinction.

DISPLACEMENT: Displacement has been fully described in the first part of this chapter. If displacement has occurred the variable is coded 1, 0 otherwise.

QUIT: Voluntary job leavers are coded 1, 0 otherwise.

Individual Characteristics:

Personal characteristics play a large part in explaining cross-sectional wage determination. However, since most personal or human capital features stay the same over an interval, most do not help explain changes in wages over time. However, given the persistence in wage differentials for women and by race, there is reason to believe there is a disadvantage to being black in negotiating in the labor market. Therefore race should be controlled in accounting for wage changes.

WHITE: Race is coded 1 if the respondent is white, 0 if non-white.

AGE: The age of the respondent at the beginning of the period at risk.
Change Factors

Since each observation is an individual longitudinal segment, many cross-sectional individual differences are captured in the initial wage and are not expected to influence wage change. Characteristics which are common to both periods, therefore, are fixed effects which do not explain changes in wages. Differences between the old and new positions, however, can be expected to affect the amount of wage growth occurring between the two observation points and should properly be included in the equations. The rationale is that wages would be less volatile if an individual stayed with a particular employer, occupation and/or industry, other things equal. Occupation and/or industry changes are essential in accounting for differential growth rates. The more different the new job is from the old one the less useful are skills acquired on the old job, if the theorists are correct about specific human capital.

OCCUPATIONAL CHANGE: The measure of occupational change is based on the U.S. Census Occupational Classification. OCCH = 1 if there was a one-digit occupational change, in either direction, or 0, if no change.
INDUSTRY CHANGE: Dummy variables indicating industry changes were constructed in essentially the same as the occupational change variable described above, and based also on U.S. Census Industry classification. For industry change, however, two levels of sensitivity were measured. INDCH1 and INDCH3 represent changes at the broad one-digit level and narrow three-digit level, respectively.

Characteristics of the Initial Job:

Two characteristics of the initial job are expected to influence wage growth, other things equal: the wage rate and whether or not the work was in manufacturing. A very high initial wage rate will tend to exert a regression toward the mean effect on wage growth (Thorndyke, 1924; Markus, 1979). Given the major structural shift away from manufacturing jobs, even controlling for high wages generally associated with the industry, it is likely that it will be difficult for a manufacturing worker to negotiate a good wage increase, either staying in the industry or leaving it.

PRIOR WAGE LEVEL: Hourly rate of pay on the long-service job held at the beginning of the observation segment, measured in 1981 dollars.
MANUFACTURING: A dummy variable coded 1 if the initial employer was in the manufacturing industry, or 0 otherwise.

One indicator of the current job is likely to affect the wage change over the interval observed. The number of weeks worked out of the previous year should positively influence the change in wages. It is a measure of both management commitment to steady employment, or primary labor market status, similar to its use above in predicting displacement, and for job changers, it is additionally the length of time on the new job.

WEEKS WORKED ON CURRENT JOB: The number of weeks the respondent has worked over the 52 weeks preceding the second wage observation.

SUMMARY

The analytical approach used in this study will enable tests of a number of implicit policy assumptions, important among them is whether or not displacement is primarily a Northern, manufacturing phenomenon, as the body of case studies would suggest. In the first place, by using a nationally representative sample of established women employees, a population of committed workers at risk of
displacement, it is possible to identify the industries, occupations and individual characteristics which are associated with displacement at the national level. In addition, permanent and temporary layoffs can be differentiated with the NLS data, a critical distinction for displacement research. This will substantially clarify our knowledge of the incidence of displacement across a national segment of the economy. The results found here will also allow the volumes of case studies to be interpreted in the wider context of job loss, which enables the rich information that they provide to be placed in a well-framed perspective.

As far as the consequences of displacement are concerned, again the methods used in this analysis can improve the knowledge base for policies on displaced workers. The fact that this study uses a national rather than local labor market sample to compare displaced to non-displaced workers can help provide a more realistic picture of the effects of displacement aggregated over the U.S. economy. The plan here is to isolate the separate outcomes of displacement into two distinct effects: the employment or labor supply effect and, for those who do succeed in finding jobs, the wage effect. In so doing, there is the possibility of clarifying the relationship of displacement to these labor market problems which in turn can lead to better defined programs.
Again the data set is a major asset in this research. Because the NLS extends over so many years, the long-term effects of job loss on both labor supply and wage outcomes can be observed for many episodes of displacement. In addition, this study explicitly addresses the possibility that displacement may result in more unemployment than labor force withdrawal, outcomes which have quite different policy implications. Instead of using just a two-category classification, employment versus non-employment or in the labor force versus out of the labor force, this analysis is extended to consider the three employment states into which workers can fall.

Finally, the long-term effects of displacement on wages are studied. Given the large number in the pooled sample of the population-at-risk, the fact that here wages are measured over the same intervals for both displaced and nondisplaced, and the dispersed rather than concentrated distribution of the job losers in terms of labor markets, there should be a better sense of the actual wage losses, if any, due to displacement.

The next chapter will present and discuss the results of the research.
CHAPTER IV

RESULTS

Who are the displaced workers? Do the characteristics of the individuals and their jobs reflect the industries in which the likelihood of displacement is high? Can these characteristics reveal the process by which any or all industries reduce their labor forces or shed light on the decision making process? Does displacement affect different kinds of people and jobs over time? What are the consequences of displacement in terms of subsequent labor force experience for the women? This chapter contains results from both univariate and multivariate analyses. It is divided into three sections. The first section will describe the correlates of displacement and relate them to the various theories of layoffs. This is done in two parts: first, univariate descriptions of the displaced sample will be presented, so that this group can be compared to other sets of job losers. Second, multivariate analyses will be shown. The second section will focus on the labor supply consequences of displacement, especially
on whether suffering job loss appears to leave a permanent scar on women's employment histories or does it have a relatively transitory effect, or none at all? Does job displacement lead work-oriented women to leave the labor force, or does it just change the proportion of women employed versus unemployed. Part three will present effects of displacement, if any, on wage growth.

DESCRIPTION OF THE SAMPLE

The NLS Mature Women's cohort has been described at length elsewhere and needs no elaboration here (Center for Human Resource Research, 1984). The population-at-risk is different from the total population of NLS working women, however, because these workers were selected for their employment stability. First, therefore, a summary of the characteristics of the population-at-risk will be presented. Then the displaced sample will be described. All univariate analyses are weighted to reflect the proportion of the total population of U.S. women represented by these samples.

On average, the population-at-risk has completed 11.8 years of school. They are 45.8 years of age as they start the periods at risk of displacement. Seventy-two percent
of the women are married, and 86 percent are white. They typically live in mid-sized cities but about one-quarter live in rural areas and one third live in large cities. Less than one third live in the South.

The jobs held by these stable workers are heavily concentrated in professional services, 42 percent. These are the education, health and business services, which have many of the typically female jobs. The next largest industry is manufacturing, employing 23 percent of the group. Fifteen percent hold positions in trade and six percent work in the traditional service sector (that is, exclusive of business and professional services). Two-thirds of the women are white collar workers.

Job security apparently is high in this selected group. The women have worked on average 8.5 years for their employers, but the range spans from the minimum two years up to forty-four years of service. Only 3.6 percent of the population-at-risk have experienced any weeks of unemployment in the 52 weeks prior to their base year.

Table 1 contains the results of univariate analyses, the method usually used in case studies of plant shutdowns. The incidence of job loss among these experienced workers, shows that displacement does not strike workers
## Table 1. Characteristics of Displaced Sample

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<tr>
<th>Characteristic</th>
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<th>Displaced</th>
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<td>n</td>
<td>%</td>
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<td>%</td>
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<td>Education (grade)</td>
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<td>23.0</td>
<td>50</td>
<td>23.2</td>
<td>23.7</td>
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<tr>
<td>200-499,999</td>
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<td>15.5</td>
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<td>10.6</td>
<td>0.68</td>
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<td>773</td>
<td>11.9</td>
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<td>9.0</td>
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<tr>
<td>3,000,000+</td>
<td>482</td>
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<td>7.4</td>
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<td>24.7</td>
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<tr>
<td>10-19</td>
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<td>25.5</td>
<td>25.7</td>
<td>33</td>
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<td>15.1</td>
<td>0.59</td>
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<td>20-29</td>
<td>511</td>
<td>7.9</td>
<td>7.9</td>
<td>8</td>
<td>3.7</td>
<td>4.0</td>
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<tr>
<td>30 and over</td>
<td>51</td>
<td>0.8</td>
<td>0.8</td>
<td>1</td>
<td>0.5</td>
<td>0.7</td>
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<table>
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<tbody>
<tr>
<td>White</td>
<td>4474</td>
<td>69.0</td>
<td>86.6</td>
<td>141</td>
<td>65.3</td>
<td>84.7</td>
<td>0.97</td>
</tr>
<tr>
<td>Non-White</td>
<td>2013</td>
<td>31.0</td>
<td>13.4</td>
<td>75</td>
<td>34.7</td>
<td>15.3</td>
<td>1.14</td>
</tr>
</tbody>
</table>
randomly. Nor does it fall consistently on the same types of jobs and people across the years investigated in this study. The aggregate statistics will be highlighted, noting briefly conditions which seem to change over time.

First, the individual characteristics will be presented. As expected, having a high school diploma offers a decided advantage in helping women avoid layoffs. Job loss is much more likely to affect those who have not finished high school than any other educational group. That by itself is not surprising. What is unusual is that beyond receiving a high school diploma, additional education does not reduce the probability of losing a job.

Marital status was hypothesized to have an effect on women's displacement to the extent that employers prefer to lay off workers they believe have other means of support and/or that wives value security from their jobs less than single women when choosing jobs. It was therefore expected that wives would be candidates for displacement according to these mutually reinforcing decision rules. While in the aggregate married women were more likely to lose their jobs, there was considerable variation on a year by year basis (data not shown).
Considering how differently white and black women experience the labor market and their different geographical distribution, workers were classified by race for analytical purposes. The hypothesis was, however, that racial factors would have no direct influence on whether or not a woman became displaced. That hypothesis was tentatively confirmed here: there was no meaningful difference in racial characteristics between the displaced and non-displaced women. To the extent that racial discrimination operates in the labor market, it does not appear to influence layoff decisions. From the structural perspective, racially segregated industries are not particularly prone to displacement.

The jobs rather than the women themselves seem to be primarily responsible for whether or not women lose their employment. Women who became displaced worked in markedly different industries from those who did not lose their jobs. Manufacturing generated the greatest number of job losers, with trade a close second. This was expected from the earlier findings for a national sample of men (Parnes et al., 1981). Traditional services also had more displacement than expected. Disaggregating business and professional services (information, health, and business services) from other services undoubtedly has contributed to this counter-intuitive finding, considering that the much hailed service sector boom is really captured largely by those
"information industries". Displacement was lowest in public administration and transportation, utilities and communication, as anticipated from the male experience. There was virtually no change in the relative contributions to displacement by these industries throughout the observed period. This was somewhat surprising. It may not hold when other contributing factors are held constant.

From these univariate analyses, there was inferential evidence for the much discussed secular decline in manufacturing noting the incidence of displacement by occupation. Displaced workers were two to three times more likely to have been operatives than the non-displaced. Service workers as an occupational group were more likely to be displaced despite the tremendous growth of the industry as a whole. The PLC notion of layoffs occurring even in growth industries appears to be supported, at least from preliminary results. As expected there were relatively few professionals among the job losers. Clerical workers were equally likely to be displaced and non-displaced.

The much-acclaimed "Sun Belt Migration" of businesses and people made it seem likely that the layoffs would be found largely in the North. This was true for women displaced from their 1969 employer, but not for any other year, and hence, not in the aggregate. There was no
difference between the displaced and non-displaced women in their regions of residence. If this result holds when the other variables are held constant in multivariate analysis, it might indicate either of two things: that the high unemployment rates experienced in the North are because of temporary layoffs rather than permanent ones, or that the South, with its rapid business growth, is displacing workers at a rate at which new jobs can absorb the displaced as quickly as they lose their jobs.

Turning to the other dimension of job location, size of the local labor market, in the aggregate there was a lower incidence of displacement among rural and small-city workers. This changes markedly over time, however. Through 1974, the rural workforce was substantially immunized against permanent layoffs. From 1974 on, however, areas with a labor force less than 200,000 became the prime staging areas for displacement.

CORRELATES OF DISPLACEMENT

From the univariate analyses presented above there is substantial support for the study's hypotheses. Some of the correlates reported above are probably confounded by associated factors. For example, women working in the
professional service industry are expected to have above-average education and longer working time in service with their employers. Therefore, multivariate analyses were done to identify factors contributing independently to job loss under controlled conditions.

To do that, weighted logit equations were run on samples pooled across survey years, obtaining a general picture of displacement. Two analyses of the likelihood of displacement were run, because of data comparison issues. The first regresses the chances of job loss in a one-year risk period, shown in Table 2, and the second looks over a two-year period, with results in Table 3, with later analyses of the consequences of those displacements.

There were 8087 observations in the pooled population-at-risk and who had the relevant data at the next interview. It was possible to date the displacement event, so that all observations could be checked for displacement within one year of their initial inclusion in the population-at-risk. The displacement rate was extremely low over the one-year period, 1.2 percent, possibly because of errors in dates needed to calculate displacement in this manner. In addition, two NLS survey years, 1971 and 1976, had interview schedules for follow-up information which rendered the data noncomparable with the other years. They
were deleted from the pooled sample for the consequences of displacement analysis, so separate analyses were also conducted on this somewhat smaller sample in terms of their likelihood of displacement. That subset had 6137 cases with valid data for the population-at-risk of displacement over two years. A two-year period exposed to the risk of displacement yielded a job loss rate of 3.1 percent, within the range estimated by other methods (Wendling, 1984). Thirteen of the 249 displaced workers were involuntarily separated more than once. Many of the non-displaced workers appear in every year, since they will continue to meet the tenure criteria until they either become displaced or quit the long service jobs.

For both samples, the probability of displacement was regressed on a number of variables related to displacement. These include a group of characteristics which are particular to the individual, another set related to the job and a third group assessing the environment in which the business operates, specifically geographic and economic conditions. Table 2 shows the results of the weighted logit analyses for one year at risk.

Displacement is clearly a function of the jobs rather than of personal characteristics or location of the firms. Employment in the manufacturing and trade industries are
Table 2. Displacement in One-Year Risk Period, for Pooled Sample, Weighted Logits (n=8087) (asymptotic t-ratios in parentheses)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EDUCATION</strong></td>
<td>-.079*</td>
<td>-.098*</td>
<td>-.093*</td>
</tr>
<tr>
<td></td>
<td>(-2.44)</td>
<td>(-2.10)</td>
<td>(-1.97)</td>
</tr>
<tr>
<td>MARRIED</td>
<td>.233</td>
<td>.007</td>
<td>-.026</td>
</tr>
<tr>
<td></td>
<td>( 1.41)</td>
<td>( .03)</td>
<td>(- .11)</td>
</tr>
<tr>
<td><strong>WHITE</strong></td>
<td>-.244</td>
<td>-.284</td>
<td>-.271</td>
</tr>
<tr>
<td></td>
<td>(-1.21)</td>
<td>(- .96)</td>
<td>(- .92)</td>
</tr>
<tr>
<td>TENURE</td>
<td>-.350**</td>
<td>-.290*</td>
<td>-.304*</td>
</tr>
<tr>
<td></td>
<td>(-4.06)</td>
<td>(-2.43)</td>
<td>(-2.53)</td>
</tr>
<tr>
<td><strong>BLUE COLLAR</strong></td>
<td>.004</td>
<td>.516*</td>
<td>.538*</td>
</tr>
<tr>
<td></td>
<td>( .02)</td>
<td>( 1.98)</td>
<td>( 2.07)</td>
</tr>
<tr>
<td>WEEKS UNEMP</td>
<td>---</td>
<td>.792*</td>
<td>.767*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( 2.25)</td>
<td>( 2.18)</td>
</tr>
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<td><strong>MANUFACTURING</strong></td>
<td>1.039**</td>
<td>1.359**</td>
<td>1.328**</td>
</tr>
<tr>
<td></td>
<td>( 3.57)</td>
<td>( 3.07)</td>
<td>( 3.00)</td>
</tr>
<tr>
<td>TRADE</td>
<td>1.007**</td>
<td>1.266**</td>
<td>1.195**</td>
</tr>
<tr>
<td></td>
<td>( 3.49)</td>
<td>( 2.89)</td>
<td>( 2.72)</td>
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<td><strong>SERVICE</strong></td>
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<td>1.084*</td>
<td>1.053*</td>
</tr>
<tr>
<td></td>
<td>( 2.35)</td>
<td>( 2.09)</td>
<td>( 2.03)</td>
</tr>
<tr>
<td><strong>EDUC/HEALTH</strong></td>
<td>-.609+</td>
<td>-.343</td>
<td>-.366</td>
</tr>
<tr>
<td></td>
<td>(-1.93)</td>
<td>(- .72)</td>
<td>(- .77)</td>
</tr>
<tr>
<td>SOUTH</td>
<td>.053</td>
<td>.229</td>
<td>.248</td>
</tr>
<tr>
<td></td>
<td>( .33)</td>
<td>( 1.02)</td>
<td>( 1.10)</td>
</tr>
<tr>
<td><strong>RURAL</strong></td>
<td>-.290</td>
<td>-.190</td>
<td>-.163</td>
</tr>
<tr>
<td></td>
<td>(-1.58)</td>
<td>(- .76)</td>
<td>(- .65)</td>
</tr>
<tr>
<td><strong>BIG CITY</strong></td>
<td>-.176</td>
<td>-.289</td>
<td>-.280</td>
</tr>
<tr>
<td></td>
<td>(-1.09)</td>
<td>(-1.20)</td>
<td>(-1.15)</td>
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<tr>
<td><strong>URATE-LOCAL</strong></td>
<td>.097**</td>
<td>.021</td>
<td>.038</td>
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<tr>
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<td>( 3.48)</td>
<td>( .52)</td>
<td>( .91)</td>
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<td><strong>URATE-U.S.</strong></td>
<td>-.328**</td>
<td>---</td>
<td>-.356**</td>
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<td>(-5.73)</td>
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<td>(-4.44)</td>
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<td><strong>INTERCEPT</strong></td>
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<td>-2.310**</td>
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<tr>
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<td>(-3.01)</td>
<td>(-5.43)</td>
<td>(-2.65)</td>
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</table>

-2 X log L ratio: 1841.18 1038.47 1019.31

**p < .01, *p < .05, +p < .10
again significant correlates of displacement, with manufacturing having only a slight edge. Trade becomes the leading industrial source of displacement when tenure is not included in the equation, indicating that whatever job security there is in trade accrues from employees' tendencies to stay longer with employers in trade, rather than from an inherent stability in the industry.

Traditional services (excluding business and professional services) are also significantly associated with displacement, to almost the same extent as are the manufacturing and trade industries. The notion that even growth industries, particularly services, displace workers is thus supported. Service industries tend to be tightly tied to their consumer markets geographically. The displacement effect of this industry is probably the result of decline in small local outlets combined with some capital/labor substitution. The fact that establishments in services tend to be small puts them at greater risk of either bankruptcy or acquisition. In either event, displacement is likely.

The professional and business services industry, on the other hand, generates significantly below average displacement. The association is as strong as that of either trade or manufacturing, but in the opposite direction. Choice of industry is clearly one strategy a worker might consider if
long-term job security is high on her list of job-related needs, although there is no guarantee that current trends will continue, nor that a particular employer within an industry will not be an exception to industry trends, as the next section suggests.

With industry controlled, working for an employer who has recently used temporary layoffs appears to greatly increase the risk of displacement. The layoffs could be early warnings of poor managerial performance, outdated capital, a product's impending demise, or they could indicate some weak commitment to a stable workforce on the part of the employer. It should be noted that this effect is independent of industry practices, thus it reflects intra-industry variation on the part of individual firms. The layoff effect is nearly as strong as industry effects, which are substantial. It is highly significant.

The last employer-related variable, tenure, not surprisingly confers substantial immunity against permanent layoffs. This effect is clearly related to a process of reductions-in-force, rather than total shutdowns, and lending weight to the notion that overall displacement is largely a matter of partial closings rather than whole plant shutdowns, in contrast to what case studies would suggest.
Two of the environmental variables also had significant impact on the likelihood of displacement. Both the national and local unemployment rates influenced the chances of job loss but in different ways. The national unemployment rate, also an indicator of the base year of the sample, tends to reduce the chance of losing a job, rather surprisingly. There are only seven different years observed in this pooled sample, so the interpretation to follow should be considered tentative. However, it is consistent with the PLC theory to argue that increased economic activity does lead to higher permanent job loss, through accelerating the rate of change in technology, plant expansion, or other means of accommodating to expanded opportunities. The finding underscores the need to distinguish permanent from temporary layoffs.

The local unemployment rate, however, does have a positive effect on the chances of becoming displaced, as expected. A more specific predictor, however, is a worker's own experience with recent layoffs, because once her own layoff background is controlled in the equations then the unemployment rate of her local economy becomes non-significant. Evidently, the local unemployment rate can be construed as a composite indicator of community practices regarding layoffs, industry composition, and labor demand. Its effect on displacement is sensitive to the model specification.
The personal variables were not major factors in accounting for the incidence of displacement. Not surprisingly, education confers some protection against displacement. That is somewhat encouraging because it is the one factor in the model which is directly within an individual's control, independent of her employer. Even with this model explicitly controlling for occupation (white collar versus blue collar), which absorbs some of the value of an education in terms of labor market outcomes, education still helps prevent job loss. From the univariate analysis at the beginning of this chapter, however, it appears that the major value, at least for women of this age cohort, is in obtaining a high school diploma. It may be that for younger women, college will be more critical.

With education controlled, white collar jobs are not statistically significant in preventing displacement, unless the layoff experience has been controlled. Blue collar workers at firms where layoffs take place apparently are disadvantaged compared to their white collar colleagues. This underscores the employee-oriented management approach as a possible explanation for different displacement probabilities.

The results for workers displaced when exposed to the risk of job loss over two-year long periods largely confirm
Table 3. Displacement in Two-Year Risk Period, for Pooled Sample, Weighted Logits (n=6137) (asymptotic t-ratios in parentheses)

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<td>-.066+</td>
<td>-.063+</td>
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<td>(-1.81)</td>
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<td>(-1.81)</td>
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<td>.336+</td>
<td>.316+</td>
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<td>( 1.83)</td>
<td>( 1.86)</td>
<td>( 1.75)</td>
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<td>(- .75)</td>
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<td>-.346**</td>
<td>-.357**</td>
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<td>(-3.91)</td>
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<td>-.066</td>
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<tr>
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<td>(- .61)</td>
<td>(- .43)</td>
<td>(- .36)</td>
</tr>
<tr>
<td>WEEKS UNEMP</td>
<td>***</td>
<td>.664*</td>
<td>.612*</td>
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<td>( 2.39)</td>
<td>( 2.21)</td>
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<td>.919**</td>
<td>.878**</td>
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<td>( 3.07)</td>
<td>( 2.94)</td>
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<td>.942**</td>
<td>.886**</td>
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<td>( 3.01)</td>
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<td>.818*</td>
<td>.784*</td>
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<tr>
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<td>( 2.21)</td>
<td>( 2.32)</td>
<td>( 2.22)</td>
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<td>-.693*</td>
<td>-.718*</td>
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<td>-.042</td>
<td>-.018</td>
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<td>(- .10)</td>
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<td>RURAL</td>
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<td>(-1.76)</td>
</tr>
<tr>
<td>BIG CITY</td>
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<td>-.198</td>
<td>-.196</td>
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<tr>
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<td>(-1.16)</td>
<td>(-1.15)</td>
<td>(-1.14)</td>
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<td>URATE-LOCAL</td>
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<td>.048</td>
<td>.076*</td>
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<tr>
<td></td>
<td>( 2.60)</td>
<td>( 1.64)</td>
<td>( 2.50)</td>
</tr>
<tr>
<td>URATE-U.S.</td>
<td>-.268**</td>
<td>***</td>
<td>-.262**</td>
</tr>
<tr>
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<td>(-3.96)</td>
<td></td>
<td>(-3.87)</td>
</tr>
<tr>
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<td>-3.358**</td>
<td>-2.122**</td>
</tr>
<tr>
<td></td>
<td>(-3.24)</td>
<td>(-5.94)</td>
<td>(-3.31)</td>
</tr>
</tbody>
</table>

-2 X log L ratio: 1584.90  1598.62  1584.22

**p < .01, *p < .05, +p < .10
the correlates found for one year. The findings are presented in Table 3. Notable exceptions are with the education and occupation results discussed immediately above, as well as in the influence of the local unemployment rate.

The results in Table 3 are based on a smaller population-at-risk who are observed for a two-year risk period. In this sample, the impact of education in reducing a woman's chances of displacement has become less significant over the longer period at risk. The magnitude is slightly lower as well, but in the two-year period, education is only marginally significant. In contrast to the experience of the sample of workers who lost their jobs within a one year interval, it makes no difference whether one is blue collar or white collar. It should be noted that even the direction of the correlation between type of occupation and displacement has reversed, even though the variable is not significant. Since there is a larger proportion of displaced workers in this two-year sample, it appears that personal career choices are less important in mitigating the chances of job loss. This is a rather distressing finding, because it is one of the few factors under an individual's control, independent of her employer.

The local unemployment rate essentially behaves as it did in the one-year model except that for this group, it is
also significant when both the national rate and the weeks on layoff are controlled. With two years at risk, it could be that we can now observe a lagged effect which is undetected when displacement is assessed only one year after the unemployment measure. In other words, any "ripple effect" takes longer than one year to be felt in the local economy (see Bluestone and Harrison 1983). This dynamic is supported by the behavior of the individual layoff variable.

Only one variable, living in a rural area, became significant at the .05-level, but only in one specification. Rural workers were less likely to lose jobs only when weeks of layoff were accounted for and the national unemployment rate was excluded. It was of marginal significance when the national unemployment rate was added to the equation. The finding is difficult to interpret. Considering that the coefficient is not strong and the effect was not present with the one-year sample, no interpretation will be offered, beyond reporting it.

In summary, the major factors connected with job-loss are characteristics of the jobs rather than the people or geography. Working in manufacturing, trade, and services as traditionally construed, and working for an employer with a recent history of layoffs are all significantly and substantially related to becoming displaced. These factors
are at least partially offset by length of time in service to the employer. A better strategy to avoid displacement, however, is to get a high school diploma and work in the professional services industry, where, other things being equal, displacement has been much less likely to occur.

All the new interest in displacement, though, would suggest that displacement has changed over the observation period. Certainly over the period in question, 1969 to 1982, a number of major structural changes have taken place, not the least of which is the radical jump in the relative prices of energy precipitated by the 1973 "Oil Crisis". The differences over time warranted testing each year for possible changes in the model itself. Therefore, separate logits were run for each of the populations-at-risk by base year, that year in which they were identified as having at least two years seniority at their jobs. The results were spotty; there were so few job losers in each of the years that few coefficients were significant. Most variables that were significant were inconsistent across years, but could not be considered reliable of any trend. Therefore, the results are not presented here.

From these data, it would appear that on the whole, the structural theorists have the strongest case for being able to predict displacement. The strong positive influence of
three distinct industries and equally strong negative correlation of professional services lead to the conclusion that industry characteristics must be paramount in any explanation of displacement. Since theories differ in their interpretation about why certain industries generate job loss, and this research was not designed to test those differences, no particular theory can be touted at this point as the key to understanding displacement, except the suggestive evidence for PLC noted in the text above. Nonetheless, the fertile field for pursuing such a theory belongs to the structuralists.

In contrast, on the basis of these results for women workers, Human Capital Theory and its close derivatives do not explain much of the likelihood of job loss, in the aggregate. It cannot be dismissed completely, however, on these results alone. Education did show some evidence of intervening in a person's chances of avoiding displacement. These data are too highly aggregated, by industry, region, occupation and by type of displacement, to be able to preclude the impact of individual variables in other displacement models. Perhaps doing an analysis of displacement for a particular industry might uncover the significant operation of those variables. That is a matter for future research. What follows here is a discussion of the consequences of job loss for this group of women workers.
In this section, a number of labor market outcomes will be explored. First, the likelihood of being employed will be analyzed for each population-at-risk cohort, with attention paid to those characteristics which determine "success" in becoming reemployed. Second, results are presented for a multinomial logit model which allowed a person a choice of three states: employed, unemployed, or out of the labor force. The multinomial specification is a more realistic model of choices facing the job losers. Third, for those who are employed, wage changes will be presented testing whether displacement per se had any long term effect on wage progress.

In the case of employment outcomes, displacement is an independent rather than the dependent variable. The skewed distribution of the displacement variable is not as serious a statistical problem for estimating the probability of employment, as it was above. Therefore equations were estimated for each base year. Overall the model tended to explain more for the earlier years than for the later part of the 1970's. Results by year are presented in Table 4.

The primary focus of this research is on the impact of displacement on later employment status. However, these
samples are unusual because they have been selected especially for job stability (at least two years). Therefore, the behavior of the "control" variables is not entirely clear, given these groups. Because of the atypical nature of the samples, and because they are of some interest in their own right, results of the "control" variables will also be briefly included, to the extent they are significant. Of course, any substantial influence on the behavior of the control variables by including displacement in the model, will also be discussed.

In the 1969 sample, there were 844 women from the population-at-risk who had valid data on all the relevant variables (data from all three interviews of their respective segments). In 1972, 83 percent of the group were employed. Five percent of this sample had lost jobs subsequent to 1969. Displacement had a large adverse effect on the likelihood that a woman would be employed at the 1972 survey date. Quitting had an even stronger negative impact. The latter is not unexpected because many workers quit expressly to follow non-market opportunities. It was expected, and confirmed, that those who worked most of the year before the period at risk would find jobs more easily than others. They have a stronger commitment to working and would therefore appear more attractive to employers and/or search harder to find a job. It was surprising, however,
Table 4. Likelihood of Being Employed by Base Year Weighted Logits (asymptotic t-ratios in parentheses)

<table>
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<tr>
<th></th>
<th>1969</th>
<th>1972</th>
<th>1974</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUCATION</td>
<td>.027 (.59)</td>
<td>.103** (2.84)</td>
<td>.124** (2.53)</td>
</tr>
<tr>
<td>MARRIED</td>
<td>-.042 (-.16)</td>
<td>-1.026** (-4.29)</td>
<td>-.446 (2.53)</td>
</tr>
<tr>
<td>WHITE</td>
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<td>-.221 (-.78)</td>
<td>.203 ( .57)</td>
</tr>
<tr>
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<td>-.005 (-.21)</td>
<td>-.045* (-2.08)</td>
<td>-.013 (-.48)</td>
</tr>
<tr>
<td>DEPENDENTS</td>
<td>-.059 (-.97)</td>
<td>.020 (.36)</td>
<td>.007 ( .10)</td>
</tr>
<tr>
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<td>-.001 (-.07)</td>
<td>.093* (2.38)</td>
<td>-.024 (-.50)</td>
</tr>
<tr>
<td>WEEKS WORKED</td>
<td>.033** (4.02)</td>
<td>.047** (4.09)</td>
<td>.038** (2.67)</td>
</tr>
<tr>
<td>RURAL</td>
<td>.924** (3.12)</td>
<td>.376+ (1.69)</td>
<td>.533+ (1.85)</td>
</tr>
<tr>
<td>BIG CITY</td>
<td>.099 (.41)</td>
<td>.188 (.92)</td>
<td>.417 (1.53)</td>
</tr>
<tr>
<td>SOUTH</td>
<td>.049 (.20)</td>
<td>.133 (.68)</td>
<td>.394 (1.46)</td>
</tr>
<tr>
<td>URATE-LOCAL</td>
<td>.025 (.46)</td>
<td>.051 (1.35)</td>
<td>.055 (1.06)</td>
</tr>
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<td>.061 (.22)</td>
<td>-2.302** (-9.66)</td>
</tr>
<tr>
<td>DISP</td>
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<td>-1.307** (-3.46)</td>
<td>-2.985** (-8.38)</td>
</tr>
<tr>
<td>INTERCEPT</td>
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<td>.224 (.17)</td>
<td>-.111 (-.06)</td>
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</table>

-2 X log L ratio: 628.30 969.15 582.01
<table>
<thead>
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<td>-.032</td>
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<tr>
<td></td>
<td>( 2.34)</td>
<td>(- .70)</td>
</tr>
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<td>-.888**</td>
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<td></td>
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<td>(- 3.75)</td>
</tr>
<tr>
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<td>.084</td>
</tr>
<tr>
<td></td>
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<td>(.26)</td>
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<tr>
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<td>-.068**</td>
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<tr>
<td></td>
<td>(- 3.08)</td>
<td>(- 2.78)</td>
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<td>.210*</td>
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<td>(.22)</td>
<td>( 2.45)</td>
</tr>
<tr>
<td>PRIOR WAGE</td>
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<td>.018</td>
</tr>
<tr>
<td></td>
<td>( 1.81)</td>
<td>(.49)</td>
</tr>
<tr>
<td>WEEKS WORKED</td>
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<td>.018</td>
</tr>
<tr>
<td></td>
<td>( 2.92)</td>
<td>( 1.31)</td>
</tr>
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<td></td>
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<td>( .53)</td>
</tr>
<tr>
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<td>.124</td>
</tr>
<tr>
<td></td>
<td>(- 1.03)</td>
<td>( .53)</td>
</tr>
<tr>
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<td>-.349</td>
</tr>
<tr>
<td></td>
<td>(- .68)</td>
<td>(- 1.62)</td>
</tr>
<tr>
<td>URATE-LOCAL</td>
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<td>-.078*</td>
</tr>
<tr>
<td></td>
<td>(- 2.14)</td>
<td>(- 2.21)</td>
</tr>
<tr>
<td>QUIT</td>
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<td>-2.195**</td>
</tr>
<tr>
<td></td>
<td>(- 6.58)</td>
<td>(-10.00)</td>
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<td>-1.792**</td>
</tr>
<tr>
<td></td>
<td>(- 1.02)</td>
<td>(- 4.37)</td>
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<td>INTERCEPT</td>
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<td>6.247**</td>
</tr>
<tr>
<td></td>
<td>( 2.24)</td>
<td>( 3.83)</td>
</tr>
</tbody>
</table>

** -2 X log L ratio: 930.87 757.34

** p < .01, *p < .05, +p < .10
that women living in rural areas would be more likely to be employed than those in larger labor markets. One would expect that they would have fewer opportunities. Perhaps there is a hurdle effect. That is, once a rural woman has made the decision to work and has demonstrated a propensity toward working, her work attachment is apparently stronger than another woman's.

What are the consequences in other years? Do these patterns persist? Results for the 1972 sample are shown in the next equation. This sample consists of 1310 women of whom 86 percent are employed in 1976. They also have a displacement rate of slightly over five percent for the period 1972-74. Displacement consistently has the predicted large negative effect on being employed. In addition, working a full year in the year before the risk period, whether interpreted as the women's earlier "commitment to working" or to employment in the primary sector, again translates into finding and accepting employment four years later. Once again rural women are more likely to be employed than others in larger labor markets, although the effect is only marginally significant (at the .1 level).

Two demographic characteristics reduced the probability that a woman would be working at the 1976 survey date. Married women were considerably less likely to be employed, as
expected, for this age group in particular. Age, also, had a significant negative effect on being employed in 1976. The finding echoes that of Shaw and O'Brien (1982) who found work commitment to be substantially lower among the older part of this cohort. If the age effect were because of discrimination, it would tend to be greater for the women applying for new employment. In that case, controlling for displacement could have been expected to substantially change the coefficient of AGE. Instead there was virtually no difference across equations.

Two additional factors raise the probability that a woman will be working at the 1976 survey date: higher prior wages and education. Earning high wages in 1972 decidedly increased the likelihood that she would be employed at the later date. A relatively high wage generally signifies having a better type of job. The idea that she might have difficulty in the labor market because she was "priced out" of it is undoubtedly overwhelmed by the number of high wage earners who remained employed. The economic importance of the earlier job, expressed as a proportion of earned family income (equation not shown), made no difference in employment status. High contributors were no more likely to be employed than those whose relative contributions were small. The idea that a high-paying job is
qualitatively better is also suggested by the significance of education in raising the chances of working.

The separations all took place at minimum two years before the 1976 interview date. Therefore, it is evident that job loss has prolonged adverse effects on a woman's employment. The negative employment effect of displacement appears to be more severe on wives, substantiating the findings of Clague and Couper (1934) from one of the earliest shutdown studies in the U.S. They attributed the problem then to lower mobility, hence a restricted job search, which is still a valid explanation.

The 1974 sample had 1123 respondents who had sufficient information both before and after the period at risk for displacement. By 1977, 89 percent were employed. Nearly four percent had been displaced between 1974 and 1976. There was the same story: displacement had a substantial depressing effect on the chances of working at the later survey date. Uninterrupted work in the year before the risk period had its positive effect once more. This year quitting also negatively affected the likelihood of being employed, slightly less than job loss did. For this group, education was influential in predicting a greater probability of working, but marital status was surprisingly not significant. Once again rural workers were more likely to be
working at the survey date, although the effect was only marginally significant. In sum, with the exception of marital status, the 1977 employment status had essentially the same determinants as the previous two base years.

Before turning to the results of the 1977 base year sample a word should be said about the unusual dynamics of the economy across the 1977-81 longitudinal segment. Displacement was measured in the interval of 1977-79, from approximately June to June. Late in 1979, the economy experienced a pronounced downturn which persisted through 1981. The dependent variable, employment status, was observed in June, 1981 at the end of a sharp recession. Its drop probably does not represent a true change in the underlying mechanism of employment chances, but rather reflects the disrupted economic conditions of that time. In support of that analysis are the results themselves.

The 1977 sample contained 1314 women of whom 86 percent were employed in 1981, somewhat lower than the employment rate of the total labor force for that early recession year (Monthly Labor Review, 1985). In addition, there were substantially fewer women displaced over the 1977-79 period than previous years. The displacement rate was only 1.6 percent of the population-at-risk. Furthermore, considering the abrupt economic downturn between 1979 and 1981, it
is probable that many women lost their jobs, at least temporarily, shortly before the 1981 survey date. In other words, some women probably became displaced in the "recovery period", i.e. after the period at risk had ended for this sample. Therefore, there could be more nonemployment among the group subject to recent layoffs than in the group who permanently separated from their employers during the risk period. The special labor market dynamics of this interval may not be as well controlled by the regular set of environmental/economic variables.

The model performs as for other years in most of the control variables. Demographic variables have significant effects in their usual directions: education increases the likelihood of being employed, while being older and married each depress the probability of working. Again receipt of higher wages from the initial employer seems to proxy for either of two things: omitted yet attractive employee qualities, or having more opportunities to get better jobs. Whichever the interpretation, those who earned higher pay in 1977 are more likely to be working in 1981 than low-paid women. Women who worked without interruption in the year before the period at risk also had better chances of working at the later date.
There was evidence from three sources that the labor market was not like other years. For the first time, the local unemployment rate significantly reduced the chances of working. Labor markets with high unemployment rates had a lower proportion of their women working. Furthermore, quitting the base period employer still had a substantial negative influence on being employed on the 1981 survey date. Although quitting had an impact in other years, voluntary leaving was significant over one-year, but not two-year intervals. However, the most important difference in the 1977 base year's results is that displacement has no significant effect on the likelihood of being employed. Furthermore, it has virtually no effect on any other variables in the model. Two factors most likely account for the anomaly. First, the "official" displacement rate was abnormally low for the risk period. Second, there was everywhere an extremely high rate of layoffs at the time of the 1981 survey, as mentioned above. The result is that there was possibly more (untallied) displacement that occurred between the end of the risk period and the 1981 survey date. The combination of those two conditions made it highly unlikely that there would be a measurable displacement effect, under this study's definition and design.
Experiences of the 1979 sample corroborate some of the speculation in discussing the problems with the 1977-1981 interval. The sample consists of 1181 women with data from both the 1979 and 1982 interviews complete enough to perform the analysis. Their employment rate is up from that of 1981, to over 87 percent. In addition, the displacement rate for the group is also higher at 2.5 percent, confirming that there was more permanent job loss during the 1979-1981 period than between 1977 and 1979.

Displacement between 1979 and 1981 once again had a major depressing influence on the later probability of being employed. Quitting had an even larger effect, typical for the shorter, one-year interval before the employment survey date. The personal characteristics had effects similar to other years.

There were three unusual results for this base year. For the only time, working steadily in the year before the base period had no effect on the likelihood of working at the survey date. This may represent many first-time layoffs from the economic turbulence in the 1979-82 period. Second, like 1977, but unlike earlier years, there was no increase in the likelihood of rural women working. This may signal a new trend, or it may simply mean that new job creation in rural areas had outpaced job loss until the
recession. Third, for the first time, the more dependents a woman had the more likely she was to be working. Children or dependent parents of women in this age group represent less of a time constraint than a financial drain to be countered by working.

In summary, on a year by year basis, the odds of being employed depends on a fairly consistent set of factors. Both displacement and voluntary job separations substantially reduce the likelihood of working. Displacement tended to have a more persistent effect than quitting, which suggests that there is a scarring from job loss which carries relatively long term impact and that quitting is elective rather than involuntary. There was only one year in which displacement had no measurable effect on employment rates. In the 1977-81 interval, while the rest of the model had greater influence on being employed at the end of the period, displacement had no measurable employment consequence of its own, given the high overall unemployment around the time employment status was measured. In general, though, displacement had a substantial negative impact on the likelihood of working which persisted anywhere from one to four years post displacement.

Overall there was a fairly consistent, if sketchy, picture of who would be employed at the end of the period.
Table 5. Probabilities of Being Employed for Selected Characteristics\textsuperscript{a}
By Separation Status and Base Year\textsuperscript{b}

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Displaced</td>
<td>.70</td>
<td>.55</td>
<td>.42</td>
<td>.84</td>
<td>.64</td>
</tr>
<tr>
<td>Quit</td>
<td>.61</td>
<td>.83</td>
<td>.59</td>
<td>.71</td>
<td>.54</td>
</tr>
<tr>
<td>Stayed</td>
<td>.91</td>
<td>.82</td>
<td>.93</td>
<td>.90</td>
<td>.91</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Probabilities were calculated for white, married women who lived in non-south, mid-sized labor markets. They were assumed to have mean values on all other characteristics, from Table 4.

\textsuperscript{b}Employment status was observed for the respective years 1972, 1976, 1977, 1981 and 1982.

It was just shown that displacement has a fairly consistent and negative influence on the likelihood that a woman worker would later be employed. While that confirms the model's general appropriateness for employment odds, and the qualitative place of displacement in that model, it does not say how much employment chances are reduced by earlier job loss. Furthermore, although the equations in Table 4 can show the impact of displacement on being employed relative to the other variables, it does not allow easy comparison across years. In Table 5, the equations in Table 4 have been converted to actual probabilities of employment, under the assumptions given in the legend.
The probability of being employed for the women who did not separate from their employers during the risk period (but who may have done so after the risk period ended) is very high for a group of women. It emphasizes the special character of the sample, selected for stable employment before the base year interview. From the probabilities, it is evident that displacement has considerable effect on the working pattern of its victims, although the amount of disruption varies. From a modest six percentage point reduction in the 1977-81 interval, to a massive fifty-one percentage point drop over 1974-77, it is clearly a labor market force which has serious implications, at least from the experience of the women workers sampled here. The involuntary nature of job loss makes it a required issue for employment policy.

Significantly for this study, displacement led to a substantial amount of nonemployment. Just what form the nonemployment took also needs to be addressed. Are the displaced workers still seeking work or looking again after being laid off? Do they leave the labor force? The next section will describe the results of the multinomial model in which not working is decomposed into either unemployment or being out of the labor force.
Multinomial model

The dichotomous model of labor force choice presented above allows a person to be either employed or not employed. Often, however, it is important to know whether or not someone is actively seeking work or whether he or she is not an active labor force participant. For example, in the case of displacement, many would argue that nonemployment is not a serious consequence if the displaced workers decided to stay home rather than look for another job. On the other hand, if the former employees were all pounding the pavement in search of new jobs to no avail, those same observers would have grave concerns about the effects of displacement. Therefore, it is important to differentiate the two states of nonemployment. In addition to the policy implications, the search/nonsearch behavior of this experienced sample has value of its own.

A naturalistic version of employment decision making considers three possibilities for future employment status. An individual can be employed, unemployed or out of the labor force. Therefore, a trichotomous dependent variable sets up a more accurate array of choices. Multinomial logit models offer an opportunity to test the results of the dichotomous model against a trichotomous one. For the year-by-year analyses, there were not enough displacement cases to test a multinomial model, but it was
examined for the pooled sample of experienced workers. The question was: does displacement have an effect on later employment status when three distinct possibilities are open?

Multinomial logits were performed on the pooled sample consisting of longitudinal segments which began with five survey years: 1969, 1972, 1974, 1977 and 1979. Over 86 percent of the sample were employed at the end of their respective observation periods, corresponding to the employment years discussed in the preceding section. Only 2.2 percent of the population-at-risk who were still in the sample at the last interview of their observation segments were unemployed. Five times as many women, 11.2 percent of that same sample, were out of the labor force. In estimating the equations, the log odds of being employed was the omitted equation in the multinomial logit system. The log odds of being either unemployed or out of the labor force (as opposed to being employed) were the two dependent variables of the equations.

In using the multinomial technique the question of interest is whether displacement has differential impacts on the three labor force states. First the determinants of unemployment and of being out of the labor force will be presented. Then in the remainder of this section, discussion will center around actual probabilities of being in
any one of the three employment states given displacement status and other selected characteristics.

Results of the weighted multinomial logit are presented in Table 6. Even a casual inspection reveals that the determinants of unemployment differ remarkably from those leading to labor force exits. Obviously, from the number of significant coefficients, the model explains leaving the labor force better than it predicts unemployment. This result should be expected, considering that the model was drawn largely from empirical literature which focused on the labor force participation decision. It is also evident that displacement has large, statistically significant impacts, on both unemployment and the labor supply, at the expense of employment. Quitting also has similar influence on labor force states, although the magnitude is larger for exits than for unemployment.

What is interesting about disaggregating labor force outcomes, are the apparently different underlying mechanisms for being not employed at the relevant survey date. For example, the greater likelihood that rural women were found employed was not because they were less likely to be unemployed, but that they were less likely to leave the labor force. Similarly, this technique provides further support for the age effect on employment being because the
Table 6. Likelihood of Being Unemployed or Out of the Labor Force
Weighted Multinomial Logit (n=5747)
(assymptotic t-ratios in parentheses)

<table>
<thead>
<tr>
<th></th>
<th>UNEMPLOYED</th>
<th>OUT OF THE LABOR FORCE</th>
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</thead>
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<tr>
<td>EDUCATION</td>
<td>-.109**</td>
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</tr>
<tr>
<td></td>
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<td>.728**</td>
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<td>(6.26)</td>
</tr>
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<td>.054**</td>
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<tr>
<td></td>
<td>(1.94)</td>
<td>(5.21)</td>
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<td>-.032</td>
</tr>
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<td>(0.79)</td>
<td>(-2.26)</td>
</tr>
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<td>PRIOR WAGE</td>
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<td>-.129*</td>
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<td>(-1.86)</td>
<td>(-2.26)</td>
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<td>-.040**</td>
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<td>-.034</td>
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<td>(-0.64)</td>
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<td>1.357**</td>
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<td></td>
<td>(2.79)</td>
<td>(14.15)</td>
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<td>1.764**</td>
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<td></td>
<td>(6.24)</td>
<td>(9.56)</td>
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<tr>
<td>INTERCEPT</td>
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<td>-3.050**</td>
</tr>
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<td></td>
<td>(-3.06)</td>
<td>(-5.13)</td>
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</tbody>
</table>

-2 X log L ratio: 4677.77

** p< .01, *p< .05, +p< .10
older part of the cohort has a greater propensity to leave the labor force, rather than its inability to find jobs despite continued searching. The same explanation applies to the effect of marriage on reemployment outcomes. The behavior of the unemployment variables would tend to reject any argument that this is a "discouraged worker effect". The national unemployment rate had no impact at all on either employment state. The local unemployment rate significantly increased the likelihood of being unemployed, yet had no effect on labor force exits.

The rest of this three-way model also deserves brief mention because of the technique and the unique nature of this sample. Besides job-leaving from whatever cause, only two other factors predict both unemployment and being out of the labor force. Working all weeks in the year before the base year still predisposes a woman to be working instead of either form of nonemployment. The other consistent predictor is education. The higher the educational attainment the less likely an experienced worker is to be either out of the labor force or unemployed, ceteris paribus. Education has a greater effect in reducing the chances of being unemployed. All other factors in the model had disparate influence on the probabilities of being either unemployed or out of the labor force.
A more useful way to view the results is to translate the equations into probabilities for representative types of cases. Table 7 presents a set of probabilities for white women with average characteristics on the core variables shown in Table 6. Specifically, they were 45 years old, had 11.5 years of schooling, had average pay for their respective base year, had 1.7 children, worked 48.9 weeks in the year before the risk period and the unemployment rate was 5.6 percent. They were 45 years old. The table clearly shows that under a wide range of conditions displacement substantially reduces the probability of working at the expense of increasing unemployment and leaving the labor force.

Displacement raises the probability of being unemployed to a greater extent than it increases the likelihood of leaving the labor force. This is an important finding, particularly for a sample of women workers whose labor force dynamics are more complex than men's. Regardless of size of the labor market, region of residence, marital status, or any combination thereof, displacement raises the unemployment rate by five times over the rate of "stayers". At the same time, it roughly quadruples the rate of labor force exits.
Table 7. Probabilities of Being Employed, Unemployed or Out of the Labor Force for Selected Characteristics
By Separation Status

<table>
<thead>
<tr>
<th>Mid Sized City</th>
<th>Employed</th>
<th>Unemployed</th>
<th>OLF</th>
<th>Employed</th>
<th>Unemployed</th>
<th>OLF</th>
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<tbody>
<tr>
<td>North:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stayed</td>
<td>.887</td>
<td>.016</td>
<td>.097</td>
<td>.936</td>
<td>.015</td>
<td>.050</td>
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<td>.292</td>
<td>.810</td>
<td>.023</td>
<td>.167</td>
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<tr>
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<td>.066</td>
<td>.365</td>
<td>.709</td>
<td>.071</td>
<td>.219</td>
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<tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stayed</td>
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<td>.013</td>
<td>.107</td>
<td>.933</td>
<td>.012</td>
<td>.055</td>
</tr>
<tr>
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<td>.315</td>
<td>.799</td>
<td>.019</td>
<td>.182</td>
</tr>
<tr>
<td>Disp</td>
<td>.554</td>
<td>.053</td>
<td>.393</td>
<td>.701</td>
<td>.059</td>
<td>.240</td>
</tr>
<tr>
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<tr>
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<td>.128</td>
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<tr>
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<td>.766</td>
<td>.062</td>
<td>.172</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Stayed</td>
<td>.909</td>
<td>.011</td>
<td>.080</td>
<td>.949</td>
<td>.010</td>
<td>.041</td>
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<tr>
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<td>.252</td>
<td>.844</td>
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<td>.140</td>
</tr>
<tr>
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<td>.048</td>
<td>.324</td>
<td>.759</td>
<td>.051</td>
<td>.189</td>
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</tbody>
</table>
The table shows graphically the differential probabilities of being employed, unemployed and out of the labor force, given marital status, region and labor market size. The predicted unemployment rate of 7.1 percent is worst for single or separated women who were displaced and who live in mid-sized Northern cities. Their high unemployment rates are because they are substantially less likely to leave the labor force than similarly located married women. The regional effect is more complicated than it is usually argued: although displaced Southern single women have more than a percentage point lower unemployment, it is not because they move more easily into new jobs. Instead, from this decomposition it is apparent that the lower unemployment rate is because Southern women are more likely to leave the labor force rather than continue to look for work. The same dynamic is true of all groups of Southern women.

Employment opportunities look better in the North at least for this group of NLS women. The quality of employment, however, in terms of job security against temporary layoffs looks somewhat better in the South. The unemployment rates for stayers are slightly higher in the North, probably indicating layoffs, since there was no greater likelihood for Northern women to have higher displacement. If the assumption is that stable workers would prefer to
keep working, then job loss has the largest destabilizing impact on married women, as shown by their low employment probabilities.

These data corroborate findings from plant closings, in this case using a group of workers who are not tied to the same labor market. Higher unemployment following displacement is less sensitive to local labor market conditions than shutdown cases could allow one to conclude. Also important to remember is that the employment status is measured at least one year and as many as four years after displacement, depending on whether job loss took place early or late in the risk period.

Evidently there is an aftermath of job loss which reduces employment long after the event. Losing rather than leaving a job is more likely to increase unemployment; voluntary job leavers are likely to go directly into other jobs or out of the labor force. Displacement also significantly reduces the labor supply, to even a greater extent than quitting. Although this method can distinguish correlates of being in any of three employment states, it cannot directly identify the paths taken into the observed category. The research was designed to bypass the immediate effects, in favor of longer run consequences.
From adjustment dynamics that have been reported in the case studies, beginning with Marienthal (Jahoda, et al., 1971), and the early Yale studies (Clague and Couper, and Bakke, 1934), there appears to be a gradual, or two-stage withdrawal from the labor force following job loss. First, there are attempts to find jobs, followed by discouragement. After a period of time, the frustrated job searcher leaves the labor market. For the NLS older men the final stage was to become "retired" (Parnes et al., 1981). These NLS women are nearly all below retirement age but their generation has other socially acceptable non-market activities to which they could "retire". From this study it is apparent that certain groups withdraw more easily than others or are more quickly subject to harsher realities from displacement.

In summary, through the multinomial logit technique, consequences of displacement can be decomposed into effects on unemployment and on labor force exits, an important distinction. Separating the two different nonemployment states provides a better sense of the mechanisms underlying displacement. If women leave the labor force rather than persist in looking, then programs for these job losers may need, for example, child care subsidies for job search.
CONSEQUENCES OF DISPLACEMENT: Average Wage Changes

Finding a new job is important but it is only half the picture. Even after finding a job, there still could be deleterious effects from displacement. Many plant shutdown cases and the national study of displaced men by Parnes et al. reported long-term reductions in wages as well as a greater likelihood of working intermittently. From the multinomial logit results for women reported immediately above, there may be a fair amount of interrupted work resulting in unemployment. Separate analyses of average annual wage changes were performed for those women who were employed on the later survey week. The equations were estimated using OLS method and weighted to be representative of the general population of the cohort. The equations were computed separately by year for two reasons. First, over the period studied, wage growth changed considerably. The late 1960's and very early 1970's were years of tremendous growth in real wages. Later, by the end of the 1970's and into the 1980's real wages declined substantially. Therefore, separate equations are appropriate. Secondly, given the turn toward wage erosion, the question also arises as to whether the underlying dynamics generating wage growth have changed over time. Since it is a testable proposition, the model was run for each year rather than for the pooled sample.
Average wage change is a function of a number of factors. Some are features of the job and some are associated with personal characteristics. In addition, wage changes can be influenced by whether an individual changes employers or works in the same place. Staying with a single employer, though it could mean annual and regular increases, does not present the opportunity to shop for substantially higher wages. On the other hand, if there is difficulty finding a job, there is not much chance to improve and a greater likelihood of having to accept lower wages. In other words, the rate of pay is likely to vary more for employer changers. Of course, all the displaced workers by definition have to find new employers. The question is whether the opportunity was positive or negative, in terms of relative pay.

Results of the wage change equations are presented in Table 8 and Table 9. Table 8 shows the determinants of wage changes for the pooled sample while Table 9 provides a year-by-year analysis to test whether the determinants have changed over the observation period. All equations were estimated using ordinary least squares weighted for the distribution of the sample throughout the U.S. population in the year of the second wage observation. Table 8 shows the results of different factors on changes in wage growth for the pooled sample. All wages have been converted to
real dollars (1981), to remove effects of inflation over time. Overall, wages grew only one-tenth of a percent over the entire period 1969 to 1982. The beginning of the period was characterized by rapid wage growth. By the late 1970's, however, real wages declined for the first time since World War II. Table 9 (to follow) will provide more detail on the year-by-year changes in wage growth. The dependent variable in all these equations is an index of the later wage to the beginning wage taken to the root of the number of years elapsed.

Displacement is the single largest predictor of wage loss regardless of the different specifications shown in Table 8. It is important to note here again that some of the post-displacement wages are observed up to four years after the separation occurred, so the wage effects apparently are persistent long after the event. Case studies which do longitudinal analyses of the displaced workers usually end their analysis at most two years after the shutdown, leading to the possibility that their reported wage losses were transient. Table 8 provides evidence of more lasting wage consequences from job loss.

Besides the internal versus external labor market theory implied by lower wage growth after displacement, other explanations have centered on human capital theory's
Table 8. Average Annual Wage Changes over Observation Periods for Pooled Sample (n=4970) Weighted OLS (t-ratios in parentheses)

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Table 8 (con't.)

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</tr>
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</tr>
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<td>---</td>
</tr>
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**p < .01, *p < .05, +p < .10
notion of specific versus general human capital. Therefore, in addition to employer changes lowering firm-specific human capital, occupation and/or industry changes would be expected to lead to reduced wage growth for the same reason, at least over the period wages were observed. The findings are interesting: industry changes at either the one-digit or three-digit level do in fact lead to substantial reductions in wage growth, to a lesser extent when job loss is controlled. On the other hand, occupation changes promote wage growth, and to a greater extent with displacement explicitly in the model. Perhaps the occupational change represents the proactive job search strategy recommended for displaced workers by Latack and Dozier (1986). The industry findings do tend to support the idea of losing industry-specific human capital. A less arcane explanation, however, would note the growth in the relatively low-paying service sector during this period and expect that a significant proportion of industry changers ended up in service jobs.

There were two other significant correlates of wage loss and one of wage gains. Women who earned relatively high wages at the beginning of the period were much more likely to suffer wage erosion than low wage earners. Obviously, if there is a rather fixed distribution of wages facing workers, those at the high end have much greater
chance of slower growth or of slipping backwards in real terms. Two reasons could account for the result: a simple regression-toward-the-mean phenomenon, or the result of receiving absolute rather than percentage wage increases. Another source of wage loss or slow wage growth is age. Women who are older have lower rates of wage growth than the younger women. To some extent this is probably explained by the long tenure stayers in this selected sample: they are at the relatively flat part of their age-wage profile. Younger women are more likely fairly new re-entrants who have not yet hit their wage plateau.

The last contribution to wage growth is a positive one: the greater the number of weeks worked in the year before the second wage time point (in contrast to the variable used in the employment equations) the higher the ending wage relative to the starting wage. This variable is difficult to interpret, and in fact may represent a number of constructs. For job changers, the weeks worked is a measure of length of time on the new job. As such it might proxy for the inverse duration of job search and pick up the higher reservation wage of those who had a prolonged (subsidized) search. Alternatively, like its counterpart in the prior equations, it may represent employment in the primary sector, which typically has infrequent use of layoffs, along with higher wages. Whatever interpretation,
its effect in increasing wage growth again underscores the importance of uninterrupted employment in getting favorable labor market outcomes.

The results from the pooled sample may mask qualitative changes over time in what causes wages to change. To test that possibility, separate equations were run using the best model from Table 8. Table 9 shows the results of these equations estimated with and without displacement in the model. The wage growth for each segment is also in the table. There was 2.7 percent growth between 1969 and 1972, a decline of 0.3 percentage points between 1972 and 1976, an upswing in the 1974-77 interval to 1.2 percent, followed by declines of 1.1 and 0.6 percent respectively for the intervals beginning with 1977 and 1979. These rates of wage growth are consistent with those found by Shaw (1984), using this NLS cohort, but with a less select sample.

Overall, the results were similar for every interval except the 1979-82 period. A number of variables which were significant for the pooled sample are not significant in the individual years. For example, age is only effective in the 1977-81 sample. Changing industries appears to have become important as a wage dampener only recently, in the 1980's. The effect could signal a new trend or it may be tied only to the recessionary climate of those years.
Table 9. Average Annual Wage Change over Observation Period by Base Year
weighted OLS (t-ratios in parentheses)

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<td>1153</td>
<td>951</td>
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Table 9 (con't.)

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<td>-4.463**</td>
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<td>(-.16)</td>
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<td>INTERCEPT</td>
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**p < .01, *p < .05, +p < .10
The most surprising result of the disaggregated set of equations is how wage consequences of displacement change from year to year.

Even in the halcyon years 1969 to 1972, displacement had a severely depressing effect on earnings. That interval had the highest wage growth rate of any base year and the explanatory power of the model was the best for this segment over any other. Adding displacement to the equation increased the explanatory power by nearly ten percent over what was explained without considering job loss. Although displacement had consistently negative effects in every year, it was not a significant factor in the 1972-76 period nor in 1979-82. Those two intervals were marked by increasing unemployment levels. It is possible that in times of economic downturns, variation in wage growth increases, as more people face negative growth in real terms. When it had significant impact, displacement was the largest single determinant in diminished wage growth. Evidently, displaced workers are not in a position to bargain with prospective employers. It could be that employers are biased against people who search for work from unemployment, as some researchers have found in comparing the relative returns to job search from employed versus unemployed states (Kahn and Low 1982). Alternatively, as plant shutdown cases have revealed, the local
labor market can become saturated for particular skills, requiring workers to settle for any job they can find without concern for wages beyond a certain minimum.

If bargaining power contributes to higher wages, one would expect that the workers who changed employers through voluntarily quitting would capture most of the gains. After all, many workers wait until they find a better paying employer before they quit their old job. Results from these equations do not support the hypothesis except in the 1979 to 1982 interval, when the positive influence of job changing is the largest factor in the model. In all other years, there is no systematic relationship between quitting and getting higher wages. Two possibilities could account for the 1979-82 effect. Wage growth in real terms lagged during the period as raises did not keep up with inflation. Therefore, the internal labor market was not as providential as it had been. Given that, more people had to change jobs in order to receive increases. In addition, in other years with greater perceived opportunities, more quitting is done without a particular job in mind, or even to leave the labor force for a while. The belief under good conditions is that when one is ready to find employment one can readily do so. That would not operate in bad times. So
there is most likely a selective type of quitting going on between 1979 and 1981 (the risk period during which displacement or quitting is assigned).

If the labor market is saturated, some workers will likely have to change occupations just to get jobs. It was hypothesised that changing occupations would reduce wages, while the new sets of skills were learned. This was not found in any year. There was only one period in which changing occupations had any significant impact on wage growth and in that case it was positive, highly significant and large. Interestingly enough that was the last year, the 1979 to 1982 period, when overall wages fell slightly.

There were two consistent findings across all years. First, the higher the beginning salary, the lower the wage growth, other things equal. Second, the longer or more intensively a person worked, the greater the growth in wages. The effects of initial pay level on wage growth was entirely expected. For the displaced or job changers, the closer one is to the top of a local wage distribution, the harder it is to find a job with better pay. In addition, for those in an internal labor market throughout the period some undoubtedly receive absolute amount increases instead of percentage increases. That would make the relative growth greater for those earning less to start with.
The number of weeks worked in the year before the later survey date measures employer attachment of sorts. That is, it is the result of a double selectivity: a healthier employer can both afford to pay well and is not likely to be laying off, and those job changers who found their jobs earlier than the others in their group have probably accepted better jobs and are better workers than the people who worked less than the full year. By "better" workers it is meant that they have higher work commitment and are therefore more motivated toward finding opportunities for full-year work. By the same token, they are more attractive to employers and would be selected earlier for hire (as Queue theory would predict).

Several other factors were included in the wage-change model with at best mixed results. It had been hypothesized that race would have a depressing effect on wage growth. That was substantiated in only two of the five periods: 1969 to 1972 and 1974 to 1977. Those two intervals had the two largest wage increases, and faster wage increases among black women than among their white counterparts. Both periods also saw legislated increases in the minimum wage, and extensions in coverage. Given the much lower average wage of black women relative to whites it is likely that blacks benefitted more from the legislated increases because they were in the affected jobs.
The other demographic factor included in the model was age. It was thought that there might be some age discrimination which would be reflected in lower wages. Evidently if it did exist, as the displaced male workers had reported, it operated to exclude older women from jobs altogether, rather than to lower their wages. A second reason for including wage in the model was to consider the age-wage profile. That theory states that as one ages, wages increase at a decreasing rate. There is no evidence from these data of that phenomenon in any year. Either that pattern is actually a tenure-wage profile and women postpone the onset of slower growth by returning to the market at an older age, or their jobs do not follow that pattern.

The results presented in the three sections above have basically confirmed the hypotheses developed in Chapter II, with a few notable exceptions. In addition, the correlates of displacement and the consequences that were found here have a number of policy implications. Those issues will be summarized and discussed in Chapter V, to which we will now turn.
CHAPTER V

SUMMARY AND CONCLUSIONS

The incidence, correlates and consequences of displacement were investigated for a nationally representative sample of women employees. From these results, it is clear that displacement is not a random occurrence in the labor force. By and large, the incidence of displacement found from this sample of workers from all types of firms, differs substantially from the profile of displaced workers described in case studies. The portrait of the displaced worker in front of his rusting steel mill or closed automobile factory does not represent the type of displaced workers identified in this study. The difference is not because this sample is female. On the contrary, there are many parallels between the experiences of this NLS cohort of women and those of the previous NLS study which used similar sampling technique for identifying male displaced workers. In contrast, the consequences of displacement,
in terms of both the likelihood of employment and the pattern of wage changes upon reemployment, generally support the pattern found in plant shutdown research.

These data indicate that, the incidence of displacement is highly associated with the employers' characteristics, rather than with specific worker characteristics, although the latter do sometimes play a significant part. Among the job-associated contributors to displacement, the industry in which the employer operates carries the greatest weight. Contrary to popular perceptions, manufacturing is only one of several industries generating significant rates of job loss. Trade and the non-professional service sectors each displace workers with roughly as high a probability as manufacturing. An employee in the professional/business services industry has a much lower likelihood of losing a job than one in any other industry, at least for the period observed in this study. Even in the most stable industry, however, there is still some displacement. The displaced are more likely than the non-displaced workers to have been on temporary layoff in the 52 weeks immediately before the risk period.

Another job-related characteristic hypothesized to be related to job loss was occupation. Blue collar workers
were significantly more likely to be displaced out of the one year at risk sample, but when there was a longer exposure to the risk of displacement, the occupational difference in the chances of losing a job disappeared. The increased odds of blue collar workers being terminated were apparent only when the model explicitly accounted for recent unemployment. Evidently, the relationship between bouts of unemployment and displacement is different for white collar and blue collar workers, perhaps attributable to a high proportion of teachers in a sample of women workers, who may face annual summer unemployment, yet not displacement.

Tenure is jointly a firm-related and a personal characteristic. To no surprise, the longer time in service with a particular employer, the less likely displacement is to occur. Interestingly, the break point, where the odds of being displaced shift to the employee's favor, is at or around the five-year mark, with another boost at ten years. After that tenure seems to afford no more protection against job loss. Since the tenure effect does not continuously increase, which I would have expected, it suggests that more than one process is captured here. Perhaps the leveling off represents some bare minimum odds of job loss, the rate corresponding to the proportion displaced from total shutdowns, where seniority is
immaterial. If so, then the variable, or tenure-dependent, aspect is attributable to partial closings, or reductions in force.

The strictly personal factors which were hypothesized to be associated with displacement are educational level, race and marital status. In the aggregate, the three variables had only a minor impact on the odds of displacement for the pooled sample. Race had no effect at all. Married women were more likely to be displaced only when exposed to the risk of displacement over a two-year period, but only marginally so. For one year at risk (where the proportion was only 1.2 percent displaced), being married presented no greater risk than being the sole breadwinner. The more educated women were afforded some protection against permanent layoffs over the shorter risk period, but the effect was fairly small compared to industry effects. Over the two year interval, the importance fell to only marginal significance.

On a year-by-year basis, with the exception of 1969, when women living with their husbands were more likely to be displaced, none of those demographic attributes had any effect on the likelihood of being displaced. That reinforces the notion that individual attributes are less
germane to the termination process than what job an employee holds, and what type of firm she works for.

A third major category of risk factors are the environmental features: the unemployment rates and geographic characteristics. The unemployment rates, both local (cross-sectional) rates and annual average rates, had mixed results. The overall economic conditions had substantial negative impact on displacement probabilities, while local conditions tended to raise the likelihood of job loss, once the annual rate was controlled.

For the pooled sample, also contrary to popular belief, workers in the North were no more likely to be displaced than were workers in the South. In addition, there was little difference in the chances of being displaced regardless of whether the labor market was urban or rural. Some differences emerged on a year by year basis, but they seemed to be anomalies rather than significant of any time trend. There was only one year when a regional difference in separations was detected. In 1972, surprisingly it was southern employers who generated significantly more displacement than their northern counterparts. In 1969 only, workers in the largest cities were much less likely to lose a job than other employees. Rural employers were less likely to displace their workers in the 1972-1974 period.
After the incidence of displacement was established, its effects on later employment status and wage growth were then examined. Being displaced negatively affected both the probability of being employed and, if employed, relative wage growth. This was true even though the women were observed more than two years after the event. Displacement depressed employment in nearly every year except when employment status was observed during economic recessions. Temporary layoffs which started after the risk period was over may have outweighed the permanent job losses, diluting the usual depressing effect that displacement has on employment. Overall, however, job loss led to an increase in women's unemployment and to their leaving the labor force, suggesting underutilization as well as reduced labor supply are the legacies of displacement for women.

One unique contribution of this study is to identify just how displacement has its negative impact on employment and gain insight into why the unemployment consequences vary for different subgroups of women. Through the use of multinomial logit, it was found that the probability of both unemployment and labor force leaving was increased, but that the model was better suited for labor force participation decisions than for predicting unemployment.
Even when women were reemployed following displacement, there were lingering effects from being displaced. Their wages grew less than the women who stayed with their employers or who had voluntarily left the initial job for another. Once again the two recessionary years provided exceptions. Displacement had no influence on wage growth when the end of the period, the time at which the second wage rate was measured, fell in bad economic times. Only two other variables in the model explained any substantial wage growth. After displacement, a higher initial wage was the next largest predictor of wage erosion. Last, the longer tenured employees had lower annual growth in wages.

THEORY IMPLICATIONS

On the whole, the contributing theories have supplied numerous variables and a basis for organizing them that was quite useful in identifying correlates of displacement. The substantial number of hypotheses generated from the theories that were confirmed, shows the merit of progressing beyond the case method to research displacement. For a long time lack of data left no options but the case approach. Today, however, in addition to the NLS, there are also the CPS data which could be used to refine our
knowledge about displacement on a national level, perhaps to work toward a typology of displacement.

It is evident from these results and from the case studies that displacement has more than one impetus. While this research was not designed to test various theories, it did appear, at least for displacement at the aggregate level, that the structural theories consistently explained more job loss than did theories based on individual characteristics. Industry was the primary correlate with displacement. Indeed, there was consistent evidence that manufacturing, trade and the traditional (low-skilled) services greatly increase the odds of losing a job, while there are relatively low displacement rates out of the professional/business services. What is it about those industries which cause them to generate significant displacement? That is the next question which needs to be covered in displacement research, as it is defined here. The research agenda will have to be based on the structural theories, given the centrality of industry characteristics to displacement.

If the sample was analyzed at a more disaggregated level, for example, by industry, then there may be more reliance on individual characteristics to account for the remaining variance. However, using these data, the
displacement sample was too small to disaggregate to that level, where different theories might emerge as more salient than others. This is a key area for future displacement research and should be given high priority.

As shown in Chapter II, many of the theories are variations of the same fundamental principles, most commonly some form of cost benefit analysis, approaching the layoff problem from slightly different perspectives. They are therefore difficult to disentangle, on one hand. On the other hand, the similar approaches to displacement are convenient for model building as they were used here. As discussed, the theories tend to converge on a relatively small set of variables to explain displacement. At the same time, they differ on the story line used to describe the employer's motivation in workforce reduction decisions, ranging anywhere from the malevolent to the reluctant, rational decision. Assembling these diverse theories, adapting them to the case of displacement, is in itself a contribution to future streams of displacement research. It lays a foundation from which others may build.
POLICY IMPLICATIONS

Public policies and programs have been formulated to alleviate or remedy some of the adverse side effects of economic change, as those effects have been portrayed in both academic and journalistic literature. There are several ways to approach pathology from a public policy perspective. Treating the symptoms is often a first line strategy because symptoms are directly observable. Much displacement policy takes this approach, treating the unemployment, through extended income support, retraining programs and placement assistance. Another method to treat displacement is to identify its cause and "vaccinate" the susceptible population against it. Individuals often adopt this strategy on their own when they attempt to find employers who offer stable employment and accrue tenure to improve their chances of surviving layoffs. A third way is to eradicate or contain the sources. Import policies, advance notice plant shutdown legislation and related strategies operate on that principle. Are these policies based on an accurate assessment of job losers, or are they biased by the information sources into treating the wrong diseases or the wrong patients?

Some insight can be gained from these results. In the first place, the distribution of displacement by industry,
over an age-specific part of the female workforce strongly suggests that there are a great number of job losers who are not covered by current programs, or would not be served well by them if they did qualify. For example, the JTPA Title III provision that to qualify, job losers "...are unlikely to find new employment using their familiar skills at or near their customary rates of pay," keeps the program aimed at high skilled, high wage workers. Evidence from this study shows that, controlling for displacement and quitting, high wage workers are 1) more likely to be working than others and 2) more likely to suffer wage erosion. Given the structural shift toward relatively fewer high wage jobs for all but the most educated, the potential efficacy of existing programs has to be questioned. It would appear that inadequate demand is the limiting factor, which only college training might off-set, by qualifying people for the new type of high-wage job. It is difficult to see how assistance in finding jobs could help correct the wage erosion problem.

In the aggregate, for these women, occupational changes mean higher wages, rather than lower. However, changing industries has a large adverse effect on wage growth, larger than the positive effect of changing occupations. Again, the findings suggest that the problem resides in the
demand side of the market, rather than the supply, unless college education is considered for the displaced workers.

Job loss over the decade of the 1970's was not confined to manufacturing, the primary concern today. Manufacturing is only part of the displacement picture. Given the recessionary economy with which analysts are currently steeped and the concern over foreign competition, it is easy to lose sight of industries which do not cry out for attention. However, these results show that wholesale and retail trade, and the "traditional" services, (composed for the most part of personal services and entertainment, eating and drinking places) displace as many workers together as manufacturing does. These findings for women workers are not anomalous, nor gender-specific: they corroborate the earlier study of NLS men, by Parnes et al. Yet national and state programs still target manufacturing as the industry to help.

The rationale for that choice is both political and economic. Politically, plant closings generate public attention and outcries, especially because they are often the major employer in a labor market, and a substantial portion of the tax base can be eroded. The economic argument is that manufacturing jobs are relatively high wage, especially for individuals without college
backgrounds. Therefore loss of a manufacturing job repre-
sents a greater income loss, and hence costs more for the
community and society as a whole. That logic presumes that
the wage is an accurate measure of a worker's productivity,
which is therefore a lost resource to the economy.

To the extent that productive capacity is captured by
the wage, society loses when a displaced worker has to take
a lower paying job. But that is only a partial accounting.
What is likely to happen to the low wage job loser, the one
whose wages are less than the wage cuts of the blue collar
elite served by displaced worker programs? Some of those
workers cannot afford to look for work when they are un-
employed, because the search process entails out of pocket
expenses. This is particularly a problem for women with
children, because child care costs are large relative to
other search costs. In addition, low wage workers often
have no savings to fund a job search because income levels
were too low to be able to save when they were working.

It was found here that the lower the wage rate, the
more likely a woman was to leave the labor force, other
things equal. These women have been selected for recent
work histories showing high commitment to working, so they
are less likely to be opting out of the labor force out of
"preference" for home work than women in the population at
large. It is not clear whether the low wage drop outs were heavily concentrated among the displaced, but it is suggestive. The emphasis in displacement policy to date, however, is focused on job loss of high-wage earners. Given the growing number of female-headed households below the poverty line, the role of job loss on this phenomenon needs attention. This sample could be used for further research in this area.

Considering that the probability of job loss appears to be the same for the female workforce as well as can be estimated from these data, one type of program appears to be essential. There needs to be job search assistance for low wage job losers effective immediately upon displacement, not after some number of weeks of unemployment, or after a person qualifies for welfare. These are women who have demonstrated a preference for working, not the marginal worker who is in and out of the labor force. Unemployment compensation does not provide sufficient replacement wages to cover the expense of child care as well as ordinary living expenses. Therefore, that would be a major concern for a displaced worker program. A comprehensive Job Service could combine search assistance, a job club approach and general social, as well as technical, support for job losers, particularly those who have had long-standing jobs. It cannot be determined from the data
available what proportion of workers are displaced from complete shutdowns and how many have jobs which are abolished in relative isolation. Those are the displaced workers who need a central place to find assistance, and to receive the kind of support employers often provide their managerial, technical and professional staff in the form of outplacement.

Job displacement is a phenomenon which occurs on an apparently regular basis in a dynamic economy. The burden of the experience falls on relatively few individuals at any one time, but it can have persisting adverse effects on subsequent labor market success. If the market is to continue to function relatively unfettered by controls over shutdowns or other restrictions, there should be provisions to assist those who are victims of such major disruptions.
BIBLIOGRAPHY


_________. Industrial Dislocation and Its Implications for Public Policy. In Displaced Workers: Implications for Educational and Training Institutions, Kevin Hollenbeck, Frank C. Pratzner and Howard Rosen, editors. (Columbus: Ohio State University, 1984).


