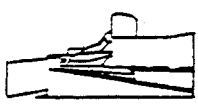
Studien und Berichte 49

Jutta Allmendinger

Career Mobility Dynamics

A Comparative Analysis of the United States, Norway, and West Germany



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Zusammenfassung

Die vorliegende Studie untersucht und vergleicht Determinanten von Karriereverläufen in drei Nationen: den Vereinigten Staaten, Norwegen und der Bundesrepublik Deutschland. Die empirischen Analysen basieren auf retrospektiven Lebensverlaufsdaten deutscher, amerikanischer und norwegischer Männer, die 1930 geboren wurden und deren beruflicher Werdegang bis zum Alter von 40 Jahren nachgezeichnet wurde.

Die Untersuchungen addressieren Themengebiete der Statuserwerbsforschung im Lebensverlauf und die Frage einer internationalen Konvergenz beziehungsweise Divergenz von Mobilitätsprozessen.

In dem ersten Teil der Studie werden zunächst Determinanten von Karriereverläufen diskutiert und operationalisiert (Kapitel 1–5). Es werden zwei Bestimmungsgrößen unterschieden. Zum einen strukturell und institutionell gesetzte Randbedingungen, zum anderen individuelle Attribute. Mit *strukturellen Randbedingungen* ist die wirtschaftliche Entwicklung in den entsprechenden Ländern gemeint, also Faktoren wie Arbeitslosigkeit, Veränderungen des Bruttosozialproduktes, der Beschäftigungsstand im Agrarsektor und der Ausländeranteil. *Institutionelle Randbedingungen* sind insbesondere durch die spezifischen Verknüpfungen des Bildungs- und Ausbildungssystems mit dem Arbeitsmarkt gesetzt. So ist in Ländern, die vertikal stark stratifizierte Bildungssysteme etabliert haben, eine engere Verbindung des erreichten Ausbildungsstandes mit der beruflichen Stellung zu erwarten als in Ländern, in denen das Bildungssystem weniger stark stratifiziert und selektiert. Doch auch der Grad der landesweiten Standardisierung von Erziehungsinhalten ist für die berufliche Entwicklung von entscheidender Bedeutung. In standardisierten Systemen ist ein reibungsloserer Übertritt in das Berufssystem zu erwarten, als das in unstandardisierten Systemen der Fall ist. *Individuelle Attribute* werden schließlich durch die bekannten Variablen „Berufserfahrung", „Schulabschluß" und „beruflicher Status" gemessen, wobei der berufliche Status wiederum mit einer zeit- und nationenspezifischen Skala erfaßt wird.

Der zweite Teil der Untersuchung stellt die empirischen Ergebnisse vor. Zunächst werden die Auswirkungen standardisierter und stratifizierter Schul- und Ausbildungssysteme für den Übergang in das Berufsleben und für die beruflichen Karriereverläufe isoliert dargestellt (Kapitel 6). Dann werden alle weiteren Determinanten zur Bestimmung von Karriereverläufen berücksichtigt, wobei ich die gesamte berufliche Mobilitätsrate (Kapitel 7) von der Rate unterscheide, die sich ausschließlich auf Karrieregewinne bezieht (Kapitel 8).

Die Ergebnisse bestätigen die Annahme, daß institutionelle und strukturelle Randbedingungen Berufsverläufe wesentlich prägen und individuelle Merkmale nur in

Interaktion mit diesen Randbedingungen verstanden werden können. Der internationale Vergleich ergab weitgehende Unterschiede. In den Vereinigten Staaten und Norwegen ist die Gesamtrate beruflicher Mobilität höher als in der Bundesrepublik Deutschland, auch nach Kontrolle wirtschaftlicher Bedingungen. Dieses Ergebnis widerspricht der Annahme einer internationalen Konvergenz beruflicher Mobilitätsraten. Grenzt man die Fragestellung jedoch ein und untersucht lediglich berufliche Veränderungen, die zu Statusgewinnen führen, so reduzieren sich die Unterschiede so erheblich, daß in der Tat von international ähnlichen Opportunitätsstrukturen gesprochen werden kann.

Abstract

This study analyzes and compares career mobility processes in three societies, the United States, Norway, and West Germany. The empirical analysis is based on retrospective life history data for Black American, White American, Norwegian, and German men born around 1930. The career trajectories of these men are studied from entry into the labor force until age 40.

The study seeks, first, to explain and capture institutional, political, and historical features of the three societies under study. Towards this goal, I develop first a classification of educational institutions according to a typology of "standardized" and "stratified" educational and vocational systems. This framework leads to distinct hypotheses regarding the start and development of the work life. Second, I present a scale for occupational prestige that maps nation-specific and time-specific occupational hierarchies of occupations. This scale allows capturing changes in the hierarchy of jobs over time. Third, I use measures of macroeconomic conditions—unemployment rate, change in gross national product (GNP), employment in agriculture, and employment of foreign workers—to define the opportunity structure in a given time and nation.

The analyses address the question of intragenerational status attainment and the question of convergence or divergence of mobility processes across industrial nations. For both questions, the research yields new results. (1) Intragenerational status attainment is determined by both microstructural and macrostructural variables. Hence, career mobility must be conceptualized as a consequence of the interplay between structural determinants (e.g., the institutional and economic environment) and individual attributes (e.g., education and labor-force experience). (2) Career mobility dynamics are dissimilar across the three nation states. This disparity persists when macroeconomic conditions are taken into account, a result which runs counter to the assumption that mobility processes are largely invariant across nations once macroeconomic conditions are controlled. The convergence theory can, however, be supported once a distinction is made between general job transitions and those job transitions leading to distinctive gains in occupational prestige.

Chapter 1
Comparative Study of Intragenerational Mobility in the United States, Norway, and West Germany

1.1 Introduction

This study is in the long-standing tradition of social mobility research. Starting with the path-setting work of Pitirim Sorokin (1927) and early empirical studies by Natalie Rogoff (1953), David Glass (1954), Gøsta Carlsson (1958), Kaare Svalastoga (1959), and Lipset and Bendix (1959), social mobility research has become a major field of sociological inquiry.[1]

Yet, social mobility research is also subject to a long tradition of controversy. Lewis Coser's (1975) presidential address on mobility research as being "in search for substance" immediately comes to mind, as does Nikos Poulantzas' (1975) assessment of mobility studies as a "futile bourgeois problem." Even researchers who spent many years in analyzing mobility data are critical—not so much lacking in theory as in suitable statistical methods. Karl Ulrich Mayer (1980), for instance, concludes his overview on comparative mobility research with the remark that the "described tradition of research must be judged as an utter failure" and Donald Treiman (1975:185) adds that "despite the enormous interest and effort ... our knowledge about societal differences and similarities in rates, patterns and processes of mobility remains surprisingly shaky. Indeed, very little has been firmly established beyond what we find in Sorokin."

This study addresses these challenges. It presents (1) a *cross-national,* comparative analysis rather than a single-country study; (2) a study of *intragenerational* rather than intergenerational mobility dynamics; and (3) an analysis which conceptualizes career mobility as being jointly dependent on the *societal opportunity structure and attributes of the individual.*

1.2 Cross-National Research on Mobility Patterns

The present study considers social mobility processes at the societal level and compares these processes across the United States, Norway, and West Germany.[2] By asking

[1]The popularity of this field is seen by the number of contributions in major sociological journals: Kerbo reports that between 1965 and 1975, 18 percent of all (2,487) articles published in five major sociology journals were primarily concerned with some aspect of social stratification (Kerbo, 1983:330).

[2]For a review of cross-national research of mobility processes see Simkus (1981), Matras (1980), Kurz and Müller (1987), and Kalleberg (1988).

whether or not these countries share comparable rates of mobility, it also addresses the heretofore rather ill-defined issues of convergence and divergence.

The concepts of convergence and divergence are used to address "the convergence of industrialized countries,"[3] convergence between less developed countries and developed countries, and even international "convergence in political and ideological concepts" (Kuznets, 1966). Convergence is in this tradition seen as generated by many social processes, such as bureaucracy and rationalization (Weber, 1986), planning (Galbraith, 1971), and the centrality of managers (Drucker, 1950). For Marxists, the thesis of convergence stands for the downfall of capitalism. The claim of a movement of socialism and capitalism toward each other is rejected.

Objections against the convergence thesis are based on several grounds, the most prominent being those raised by Joseph Schumpeter (1950:12f.) and Wilbert Moore. Schumpeter argues that:

"Social structures, types and attitudes are coins that do not readily melt. Once they are formed they persist, possibly for centuries, and since different structures and types display different degrees of this ability to survive, we almost always find that actual group and national behavior more or less departs of what we should expect it to be if we tried to infer it from the dominant forms of the productive process."

Wilbert Moore states that although common processes of rationalization, and their interplay, will yield somewhat common, or at least comparable, results, there can be "no common destination" because societies have different goals, beliefs, and values.

Empirically, cross-national comparative mobility research argues for convergence in social mobility rates across industrialized nations. In this research tradition, the convergence thesis was originally formulated by Lipset and Zetterberg (1959) who argue that in the process of industrialization similar occupational structures develop, which, in turn, result in similar mobility rates. Featherman, Jones, and Hauser (1975) modify this thesis. They find that absolute mobility rates differ across nations, relative mobility rates (e.g., the underlying mobility regime) show a basic similarity in all societies with market economies and nuclear family systems. This revised version, known as the Featherman-Jones-Hauser hypothesis, has been supported by Erikson et al. (1982), McRoberts and Selbee (1981), Hope (1982), Portocarero (1983), Hauser (1983), Grusky and Hauser (1984),[4] Erikson and Goldthorpe (1987a, 1987b, 1988a), and Jones and Davis (1986). The findings of these researchers[5] seem to suggest a large

[3]For a discussion of the 'Six competing laws of motion' see Kerr (1983) and Lipset and Zetterberg (1966).

[4]Grusky and Hauser, for instance, conclude their reanalysis of the Hazelrigg and Garnier data with the statement that "not only one simple model, quasi-perfect mobility, fit all of these data satisfactorily, but its coefficients do not vary greatly between countries. These findings of cross-national invariance support the Featherman, Jones, and Hauser (FJH) revision of the Lipset-Zetterberg hypothesis. They further suggest an extension of the scope of the FJH hypothesis to state that mobility regimes are much the same in all complex societies, regardless of economic development" (Grusky and Hauser, 1984:26).

[5]It must be noted, however, that the FJH hypothesis has been challenged by Tyree et al. (1979), Hazelrigg and Garnier (1976), and McClendon (1980a) who emphasize cross-national variability. While these studies "were founded on data and classifications of somewhat doubtful quality" (Kurz and Müller, 1987:425) it is still discomforting that they present substantially different results. A good example provides the conclusions of Lenski (1966) and Hazelrigg and Garnier (1976). Studying nine industrial nations with a simple mobility table approach, Lenski concludes that the comparative mobility across manual-nonmanual class boundaries

amount of commonality in the pattern of social fluidity in different nations with only modest national peculiarities. Furthermore, these national peculiarities seem not to be systematically associated with macrosociological variables such as the stage of industrial development or macroeconomic conditions.[6]

It is important to realize that all these researchers work within one paradigm: The results refer to *intergenerational* mobility processes and are obtained by interpreting *relative mobility rates of loglinear models* of mobility using macrosocietal, *cross-sectional data.*

This approach, however, is contested. Many criticisms center on the conceptualization of mobility as a time-dependent process. The researchers classify, in the form of mobility tables, the (occupational) position of individuals at two points in time. In intergenerational studies, these two points span over one generation and are obtained by asking men about their fathers' positions. The resulting intergenerational mobility table is then decomposed in the mobility due to change in the marginal distribution (structural mobility) and the remaining quantity ("exchange," "individual," or "pure" mobility). Hence, while what accounts for structural mobility is defined, it remains conceptually unclear how exchange mobility is generated—although this is the quantity that is compared, and found to be similar, across nations. Further, serious objections against the use of mobility tables challenge conclusions obtained in comparative, intertemporal, or international research. Sørensen (1979, 1987) voices three major problems: (1) The destinations observed in a mobility table are not common destinations but observations of a set of locations for people of different ages; (2) because the origins observed in mobility tables differ with fathers having sons at different ages and at different stages of their career, we cannot know when the process of mobility started and when it ended; (3) different historical periods with different effects on chances for mobility remain unidentified.

These criticisms are convincing, and data, methods, and approaches are needed to avoid such shortcomings. One strategy is to decompose mobility processes in an intergenerational component (the comparison of origin position to the position at the entry into the labor market) and an intragenerational component (the comparison of entry position to position held later in the work history). Such studies have been conducted internationally by Erikson and Goldthorpe (1985), who compare England and the United States; by König and Müller (1986), who compare France and West Germany; and by Annemette Sørensen, Allmendinger, and Aage B. Sørensen (1986), who compare Norway, West Germany, and the United States. A second strategy is to focus entirely on the cross-national comparison of intragenerational mobility.[7] With

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was highest for the United States (34%), that Norway ranked fifth (30%), and West Germany seventh (25%). Hazelrigg and Garnier, using the concept of comparative circulatory mobility, find Norway at the top with a circulation rate of .415, West Germany at position four (.380), and the United States at position five (.369).

[6]See Grusky and Hauser (1984) for an explicit test of effects of exogenous macroeconomic variables on mobility rates and Müller, König, and Lüttinger (1988), for an attempt to elucidate the international peculiarities by examining differences in educational systems.

[7]See Haller, König, and Kurz (1985) on Austria, France, and the United States; Haller and Mach (1981) on Austria and Poland; Kappelhof and Teckenberg (1986) on the United States and West Germany; and Mayer, Selbee, and Colbjørnsen on Norway and West Germany.

the exception of Sørensen et al., these studies rely on loglinear models and cross-sectional data.[8] However, by observing two points in time, job transitions over the work life are not captured. Also, focusing on overall mobility rates, economic determinants of career mobility cannot be identified.

The substantive results of cross-national *intra*generational studies point to international variations of mobility rates and present evidence that work-life mobility is less stable across countries than intergenerational mobility (Erikson and Goldthorpe, 1985). The intersocietal variations are primarily interpreted as the result of international differences in institutional structures. Such an interpretation is confirmed by the results of early cross-national studies which focused on organizations and labor markets within organizations rather than on the societal level and job mobility. Examples are the work of Sengenberger and Köhler (1983) on personnel strategies of American and German automobile firms in times of changing labor-market conditions, the work of Lutz (1976) who analyzes organizational differences in French and German firms, and the research of the "Aix school,"[9] which originally also focused on French-German differences. These studies consistently show that although similar economic developments are observed across nations, the reaction to these trends differs across nations according to specific normative, relational, and institutional environments. In other words, it is argued that socioeconomic developments do not imply convergence in cultural patterns. The conclusion of the Aix school that "effets sociétales et culturelles" do persist rather than disappear over time is a conclusion which strongly resembles the view of Schumpeter cited above.

The existence of such studies on the organizational level was influential for international comparative work in general, and researchers paid greater attention to institutional forces. In particular, the studies imply that labor-market processes must be linked to the educational systems.

Whereas the Aix school[10] takes steps to go beyond a unique set of nation-specific variables and tries to "substitute names of variables for the names of social systems"[11] most researchers who focus on intragenerational mobility processes at the societal level use "institutional" differences to interpret results *a posteriori* rather than to test such differences in the first place.

The present study departs from earlier comparative intragenerational studies in three ways: First, the most complete information available about career mobility is used—namely, information about single acts of moving between jobs (i.e., job shifts, some of which may result in occupational shifts). This information allows us to conceive intragenerational mobility as a *series of job shifts*. Second, the mobility matrix

[8]Because these studies analyze rather short periods in the work life (five or ten years), it is usually assumed that the distribution of occupations does not change: This assumption in turn bypasses the problem of identifying absolute and relative mobility rates (e.g., Müller and König, 1986).

[9]See Maurice and Sellier (1979, 1982).

[10]See Maurice, Sellier, and Silvestre (1982). In this work, the authors provide a typology of an "organizational mobility space" and a "qualificational mobility space."

[11]Przeworski and Teune (1970:8).

approach is abandoned. Instead, models of time-dependent transition rates[12] are used. With such models it is possible to estimate the probability for changing jobs for any stage in the work life of an individual. And third, economic and institutional variables are conceptualized and introduced as explanatory variables for the rate of job transitions over the work life. What follows is a more detailed explanation of this approach.

1.3 Approach of This Study

Work histories are not exclusively shaped by predispositions, preferences, and expectations of the individuals concerned. They are the result of the interaction between social structural opportunity structures and individual resources. The outcome of such interaction, in turn, has important consequences for both individual and society.

"One value of the concept of career is its two-sidedness. One side is linked to internal matters (of the individual); the other side concerns official position, jural relations, and style of life, and is part of a publicly accessible institutional complex" (Goffman, 1961:127).

Whereas Goffman's programmatic definition of career acknowledges "any social strand of any person's course through life," in this study, the concept of career will be restricted to working careers, defined as levels of status individuals attain over their work lives. This more narrow definition does not alter the basic idea that it is the interplay between individual resources and societal conditions that shape career prospects.

Intragenerational mobility is seen here as an interaction of societal conditions which constrain or favor the opportunities to move and the ability of individuals to take advantage of these opportunities. The first component, the specification of opportunities, refers to the set of positions (and the relation among the positions) available in a system. Opportunities to move are provided by vacant positions, which are either newly established positions or positions created by people leaving the system. The second component, the ability of individuals to take advantage of opportunities, is dependent on educational attainment, vocational training, and labor-force experience.

Two levels of analysis are thus distinguished: (1) the microlevel, which describes individual resources and can be studied with microdata; and (2) the macrolevel which describes the socioeconomic opportunity structure and can be studied with macrodata on the society as a whole.[13] By implication, the conceptualization adopted here modifies the established distinction between life-cycle, period, and cohort variables, a distinction commonly[14] used to group variables that shape mobility processes. On previous work, life-cycle effects have by definition been assumed to be independent of the societal environment. It is this claim of independence that is rejected in the present

[12]Tuma (1976), Sørensen (1975, 1977), and Tuma and Hannan (1984).

[13]In this research context, we can think about the macrostructure as providing "vacancies," or open slots, into which individuals can move, or of which they can—depending on their resources—take advantage.

[14]For a discussion of cohort, period, and life-cycle effects, see Ryder (1965), Mason et al. (1973), Carlsson and Karlsson (1970), and Glenn (1977). Empirical research has been conducted by Müller (1978), Hogan (1981), Ornstein (1976), Blossfeld (1986), and Andress (1984) among others.

study. I operationalize all "individual" characteristics in relation to the environment and label this group of variables as "microstructural"[15] (and not "life-cycle") variables. They are distinguished from "macrostructural" (and not "period") variables and from variables indicating the nation in which career trajectories are observed.

(a) Microstructural Effects

Several sociological approaches for the study of career mobility—namely, the Status Attainment Approach and the Human Capital Theory—give prime, if not sole, attention to *personal characteristics* in explaining mobility patterns. Educational attainment, on-the-job training, and labor-force participation are the crucial variables in these supply-side oriented models. Such models assume a world of perfectly competitive labor markets, markets that are in equilibrium and cannot be affected by exogenous change such as economic shocks or technological development. Specifically, the Human Capital Theory, adopted from economics, explains different career outcomes by different levels of individual productivity, measured by the amount of education and vocational (on-the-job) training. The Status Attainment Approach, as developed by Blau and Duncan (1967), emphasizes the importance of family background variables and educational attainment on occupational placement. Changes in occupational standing over time are explained by long-term effects of these two sets of variables. Neither approach is used in this research. The Status Attainment Approach is rejected because it lacks any conceptualization of the process that brings about mobility. The Human Capital Theory, on the other hand, does specify such a process but assumes a perfect match between jobs and persons. Logically, there is no reason to believe that the job distribution and the distribution of individual education or training do match. In fact, individuals are constrained in their attainment process by the availability of jobs supplied by the economy. Social-structural elements therefore influence and pattern microoptions and decisions.

Individual characteristics are indeed conceived as being important. In this study, they are, however, conceptualized as affecting workers' ability to take advantage of the societal opportunity structure and are operationalized in relation to this structure. Indicators for individual resources therefore show the extent to which education and labor-force experience affect an individual's ability to take advantage of the opportunity structure.

(b) Macrostructural Effects

One of the goals of this study is to show that the return to individual resources is dependent on the distribution of vacant positions which define the societal opportunity structure. In sociological work, such positions are usually defined by labor-market concepts such as the kind of (internal or external) labor markets (Doeringer and Piore,

[15]This term signals that educational attainment is neither understood as a universally meaningful individual characteristic nor as a structural variable. Instead, educational attainment is conceptualized in the context of the institutional environment.

1971), by characteristics of firms, such as their size and organizational structure (Spilerman and Peterson, 1987), or by membership in social classes (Carroll and Mayer, 1986). In this study, the opportunity structure will be operationalized by two alternative and complementary strategies.

(1) Opportunities available in a given society shall be assessed by direct indicators for economic conditions at a given point in time. Such indicators shall specify in which years the national labor markets were tight as opposed to loose. In times of loose labor markets, the range of positions into which workers can move decreases, in times of tight labor markets the range of positions increases. The indicators used in the study are "change in GNP," "unemployment rate," and "employment in agriculture."[16] The indicators "change in GNP" and "unemployment" shall control for the impact of changing economic conditions on the development of career trajectories; "employment in agriculture" shall control for the stage in the transition from primary to secondary and to tertiary sector.

(2) The Vacancy Competition Theory (Sørensen, 1973)[17] will be applied. Here, the importance of individual resources is placed in the context of the societal opportunity structure and the structural environment in which career mobility takes place is recognized. Sørensen's theory states that the creation of vacancies (and not change in personal resources) is the central mechanism of mobility: A move to a better job can occur without an increase in individual resources, and an increase of resources may not lead to better jobs if there are no vacancies available. The number and distribution of vacant positions thus defines the opportunity structure of a given society. The vacancy competition model, and the appropriate metric, the Social Attainment Scale (Sørensen, 1979),[18] make it possible to specify and isolate the contribution of opportunities and individual attributes in producing unequal attainment. The term "opportunity" denotes something qualitatively "better," namely, it is the opportunity to move into a better job rather than the opportunity to move into any other job.[19]

(c) Nation Effects

The study analyzes intragenerational mobility patterns of men born around the same time in three industrialized societies. Timing and speed of the industrialization process differ across these nations, as do institutional arrangements. The set of variables

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[16]In West Germany, the macrovariable "proportion of foreign workers in the economy" is also introduced as a control for macroeconomic conditions. In the years under study, the German government pursued active policies for attracting workers from Turkey, Spain, and Italy to fill vacancies created in the years of a rapidly expanding economy. Seen as a macrovariable, employment of foreign workers thus reflects prosperous economic times.

[17]For an application of this model in empirical research see, among others, Sørensen and Tuma (1981), Rosenfeld (1980), and Sørensen and Blossfeld (1987).

[18]In this study, I will apply a slightly modified version of the Social Attainment Scale. To account for intertemporal and intersocietal differences in the occupational structure I developed time- and nation-dependent prestige scores (see Chapter 5).

[19]The two approaches—measuring opportunities directly with indicators for labor-market conditions and applying the Vacancy Competition Theory—should be complementary strategies in analyses that specify the dynamics of upward occupational mobility.

outlined above tries to account for these intersocietal differences in industrialization. According to the convergence theory, internationally similar occupational mobility patterns are expected once economic variables are controlled.

This theory can be tested by pooling all data sets and estimating the transition rates on the basis of the pooled data. Then, parameters for each nation are introduced and unique nation-specific transition rates are tested after the whole set of macrostructural and microstructural covariates has been controlled. If nation-specific effects indeed operate, convergence theory is questioned.[20]

However, even if the overall rate does not vary across nations, the relative contribution of covariates may. For example, "time in the labor force" may be of more relevance for predicting the likelihood of job transitions than educational attainment in one nation, but the opposite may be the case in another nation.

The following questions will be addressed empirically in this study:

(1) Determinants of intragenerational mobility patterns. To what extent are intragenerational mobility rates influenced by microstructural variables, and to what extent are they influenced by macrostructural variables? What is the relation between macrostructural and microstructural variables? Do economic conditions determine the influence of microstructural variables on work trajectories?

(2) The relation between occupational mobility and upward occupational mobility. Do the variables that specify the probability to change jobs also specify the probability of finding better jobs (i.e., experiencing upward mobility)? How is upward occupational mobility dependent on the development of the occupational structure? How is it dependent on macroeconomic conditions? Which institutional arrangements favor (or inhibit) upward mobility processes?

(3) Issues of convergence and divergence of intragenerational mobility processes across industrialized nations. Are observed intragenerational mobility patterns similar across the three nations under consideration? If not, how can cross-national variation in mobility structures be explained—by macroeconomic developments, by institutional structures, or by different returns to personal attributes? How can international similarities, and differences, of upward mobility processes in the course of the work life be explained?

The range of these questions shows the advantage of the present study: (a) by pooling longitudinal data of three nation states that are distinguished by the timing and speed of their industrialization, by economic conditions, and by institutional structures, and (b) by operationalizing both macrostructural and microstructural determinants for intragenerational mobility patterns, we can specify the sources of international similarities and/or discrepancies of mobility rates.

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[20]All empirical analyses will not only distinguish the three nations but also separate White and Black Americans. Previous analyses by other researchers clearly showed that mobility processes differ among White and Black Americans (see Chapter 5).

1.4 Outline of the Study

In *Part One,* I give a description of the social structure of the three nation states under study. This inquiry leads to identification of three processes of particular relevance for determining the occupational life of workers. These are (1) allocative processes generated by educational and vocational systems; (2) allocative processes generated by the decline of the agricultural sector; and (3) allocative processes generated by macroeconomic conditions. At the end of Part One, I discuss how these processes can more appropriately be operationalized.

In *Part Two,* I develop indicators of these three processes. Educational attainment and vocational training are measured with indicators of the "standardization" and "stratification" of educational systems. Occupational prestige is measured with Sørensen's Social Attainment Scale, modified so that it captures the time-dependent relative standing of one job to the hierarchy of all jobs. And macroeconomic conditions are measured using time-series data for the unemployment rate, change in the GNP, and the percentage of the male labor force in the agricultural sector.[21] These macroeconomic indicators capture the economic structure at each point in time when job changes occur.

Part Three uses the measures derived to investigate on three topics: the *start* of the work life, the *move* along work trajectories, and the *gain* associated with job changes. In Chapter 6, the analyses center on how careers start and how the organization of education and vocational training shapes the transition from school to work. In Chapters 7 and 8, job trajectories from entry into the labor force until age 40 are assessed. Dynamic analyses allow for the study of interplay between microstructural variables (education, time in the labor force) and macrostructural variables (unemployment, GNP, employment in agriculture) in affecting career outcomes. In Chapter 7 the entire job trajectory, including lateral, downward, and upward occupational status change, is analyzed; Chapter 8 deals specifically with those job transitions involving upward occupational mobility. Chapter 9, finally, gives a summary of the empirical findings and points to future research on this topic.

[21] In the analyses of the German opportunity structure, the "proportion of foreign workers in the German economy" is a fourth macroeconomic measure.

PART ONE: OPPORTUNITIES

ECONOMIC AND INSTITUTIONAL STRUCTURES IN THE UNITED STATES, NORWAY, AND WEST GERMANY

This part of the study focuses on the macrolevel to provide information on the social context in which the workers lived their work lives. Four major areas that define socioeconomic opportunities and constraints are covered: (1) the stage of economic development of two nations, (2) economic conditions, (3) the structure of (income) inequality, and (4) the institutions of formal and vocational training systems. These areas, and their interconnection, will be placed in the dimensions of time and place.

(1) Time. The decades between 1930 and 1970 provided dramatic, and often traumatic, changes due to political events, economic developments, and concomitant transformations of economic sectors. These changes impinged on the individuals at different points in their career trajectories.

(2) Place. History worked differently in Norway, the United States, and West Germany. West Germany experienced the transition from the Weimar Republic to the Nazi regime and finally to the Federal Republic. The Second World War, for example, and the ensuing loss of one-third of the former empire, war damages, the huge influx of refugees, and the foundation of the new regime imposed discontinuities on the lives of Germans but had less effect on American citizens. West Germany and the United States, to give a second example, did not follow the "Scandinavian route," characterized by a significant expansion of the welfare state, which is claimed to have deeply reorganized Norwegian society.[1]

The next two chapters give an account of the social structure and its changes between 1930 and 1970 in West Germany, the United States, and Norway. The major question to be addressed is how these developments affected the career trajectories of the cohorts under study. Chapter 2 provides information on economic conditions, and Chapter 3 explains institutional structures, in particular educational and vocational training systems.

[1]Rogoff-Ramsøy (1973, 1977) and Esping-Andersen (1987).

Chapter 2
Economy and Social Structure

2.1 Introduction

This chapter describes economic development (2.2), economic conditions (2.3), and the distribution of income (2.4) in the United States, Norway, and West Germany. Each section is of specific relevance for the study of intragenerational occupational mobility. The *stage(s) of economic development* in a given time and society defines the opportunity to find jobs in the agricultural, manufacturing, and/or service sectors. Transformations in the composition of work (e. g., from agriculture to manufacturing) may enforce job shifts in the course of the career trajectory. *Economic conditions* are described using the indicators "change in GNP" and "unemployment rate." Both indicators provide information about the opportunity structure; specifically, it can be assumed that in years of a positive change in the GNP and in years of full employment new vacancies will open up into which workers can move. Information on *income inequality* is important because of the relation between "equality" and "opportunity": The more equal societies are, the less opportunities there are for (upward) job transitions.

2.2 Industrial Distribution of Employment

Over the years in this century, the availability of certain jobs has expanded, while that of others has contracted. These changes in the employment structure can be discussed along several dimensions. Sombart and Rostow distinguish historical *stages* based on the type of exchange between producer and buyer.[2] Clark, Fisher, Fourastié, and Bell argue in terms of economic *sectors* based on work characteristics and the degree of dependence on natural, technical, or human resources. A third dimension of societal change captures socioeconomic *status* groups *(sozialrechtliche Stellungen)* and identifies such developments as, for instance, the trend toward proletarization, bureaucratization, or the transition from "old" to "new" middle classes.

[2]Sombart identifies the transition from "Individualwirtschaft zur Übergangswirtschaft und Gesellschaftswirtschaft."

In this study, I draw on sector models only,[3] which will prove helpful in tracing both quantitative shifts in the composition of employment and qualitative shifts in the career trajectories of individuals. Sector models portray the transformation of production of goods and services by the distribution of the labor force over three economic sectors. The *primary,* or agricultural, sector comprises agriculture, fishing, and forestry. The *secondary,* or industrial, sector includes all goods-producing industries, such as crafts, construction, mining, and manufacturing. The *tertiary,* or service, sector covers government and nongovernment services, such as trade, personal, professional, and business services, entertaining, finance, and real estate. The labor force[4] of the three nations can now be grouped according to the employment in economic sectors in the years between 1940 and 1970. This time frame corresponds to the years in which the members of the birth cohort 1930 were in the labor force.[5]

The relative employment rates in agriculture, manufacturing, and services are displayed in Figures 2.1–2.3.[6] The general *direction* of this change was similar in the three nations: Employment in the primary sector (agriculture) declined, employment in the tertiary sector (service industry)[7] expanded, and the employment share in manufacturing (secondary sector) remained constant in the United States, while slightly expanding in West Germany and Norway.

Agriculture

Figure 2.1 depicts the percentage of males employed in the agricultural sector. In the *United States,* the primary sector declined continuously from 21.7 percent in 1940 to 4.2 percent in 1970. In *Norway,* the primary sector declined from 35.2 percent in 1940 to 13.2 percent in 1970. The outflow rates from agriculture were not continuous, but stagnated between 1940 and 1947 due to the weak Norwegian economy. Shrinking

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[3]The short time frame covered by the three data sets precludes drawing on stage models. The analysis of international differences in change and continuity of status groups (in West Germany: *"sozialrechtliche Stellungen"*) is topic of a separate paper. This analysis models the rate of transition between the status of being self-employed versus employed and between the status of blue-collar versus white-collar positions.

[4]The empirical analyses will be restricted to males, which requires tracing sectoral shifts on the macro-level only for male employment. Reference to the total labor force would result in wrong inferences concerning the connection of structural change and mobility processes of the men under study. On the basis of total employment numbers, for example, one would have to conclude that, in Norway, the industrial sector was always smaller than the tertiary sector (cf. Mayer et al 1987:4 and Table 1).

[5]The German life history data include observations until 1980. To enhance cross-national comparisons, the data have been truncated at 1970. (German data also include women, which, for comparative purposes, were excluded from the data. For further details, see Chapter 4.)

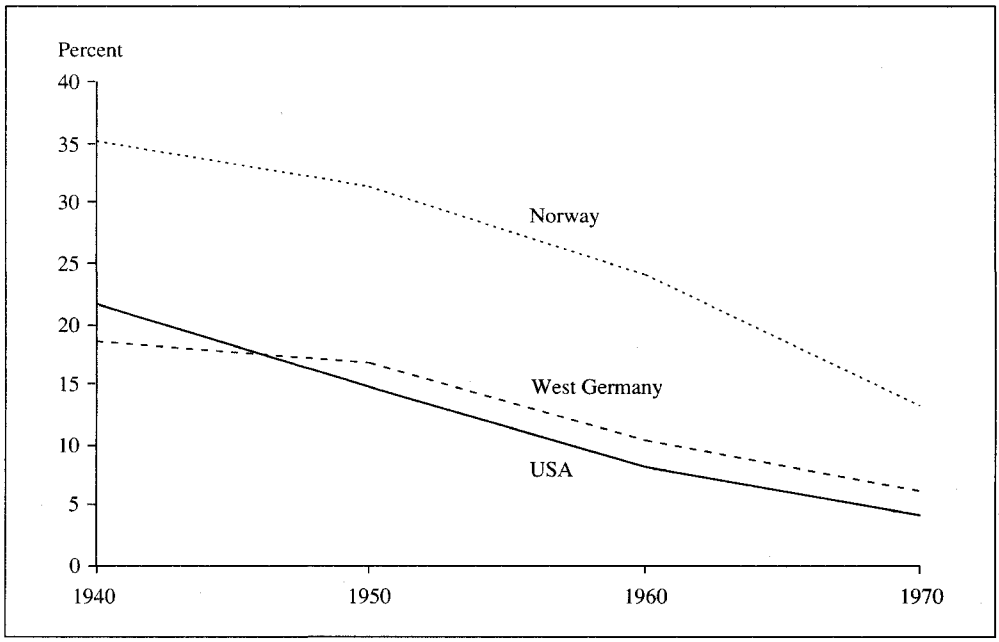
[6]Sources: *United States:* own calculations based on US census, Series D 128–232 and D 182–232. In percentage of persons 14 years old and above, except in 1930 and 1940, in which the census included people 10 years and over. *Norway:* based on Flora (1983:575–580). *West Germany:* based on Flora (1983:515–521). The years listed vary among the nations because the national censuses were conducted in different years.

[7]A large service sector, however, does not necessarily point to a large number of white-collar workers. In the industrial and service sectors, both white-collar and blue-collar workers are employed, and it would be wrong to make inferences from sectoral shifts to shifts in the occupational status composition. This is especially evident in Norway in which most of the workers in the service sector are classified as "blue-collar workers" (at least until 1950, the time period for which the Norwegian census data make it possible to distinguish between blue-collar and white-collar workers).

foreign markets and falling prices severely challenged the export-oriented Norwegian economy. In the late 1940s, economic growth lead to a de-domestication of productive activity, showing in a rapid decrease of employment share in agriculture. In *West Germany,* male employment in agriculture decreased from 18.5 percent (in 1940) to 6.1 percent (in 1970). The outflow of agriculture was not steady and continuous but halted twice: in the decades of the Weimar Republic and during World War II. In the 1950s and 1960s the decline of employment in agriculture was sharp.

We see that in an international comparison, the proportion of the male labor force employed in the primary sector is highest in Norway at any time of the observation period. Further, the *decline* of male employment shares in agriculture was sharpest in Norway, followed by the United States and West Germany. Later empirical analyses address the question of how the decreasing employment share in agriculture affected (a) the transition between school and work, and (b) the career trajectory of the 1930 cohort under study. It is particularly interesting, whether employment in agriculture in Norway and West Germany has effects on the transition from school to work, and how. We assume that especially Norwegians are affected: In lack of alternatives outside agriculture, many Norwegians who left school in these years had not much choice but

Figure 2.1
Percentage of Males Employed in the Primary Sector
United States, Norway, and West Germany, 1940–1970

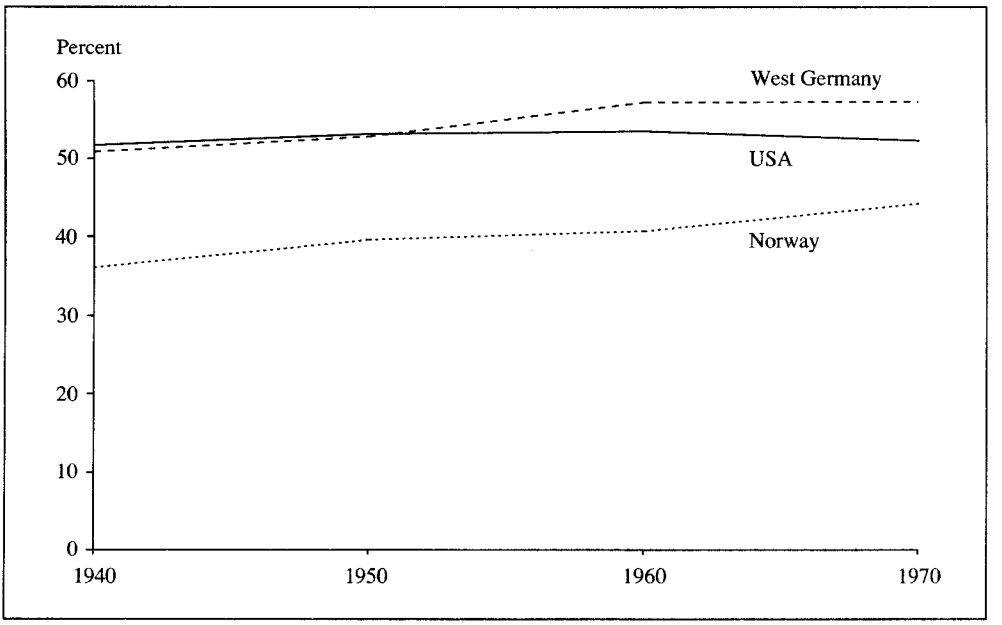


to stay at home, to work as helping family members,[8] or to become farmers and fishermen themselves. This latter process has been called an "individualization" of agriculture and fishing.[9]

Secondary Sector

Figure 2.2 shows the development of employment in the secondary sector. In the *United States,* employment in the secondary sector did not change much in the years under study. It slightly increased between 1940 and 1960 from 51.7 percent to 53.5 percent, and then declined in the decade between 1960 and 1970 from 53.5 percent to 52.3 percent. In *Norway,* employment in the secondary sector increased between 1940 and 1970 by 8 percent, reaching a margin of 44 percent in 1970. In *West Germany,* a similar increase is observed: By 1940, 50.9 percent of all males were employed in the

Figure 2.2
Percentage of Males Employed in the Secondary Sector
United States, Norway, and West Germany, 1940–1970



[8]The proportion of people working in family-owned enterprises amounted to 27 percent of the labor force around 1940. Rogoff-Ramsøy describes this countertrend of the *increasing* proportion of young people entering the primary sector in detail. See Rogoff-Ramsøy (1977:78–79).

[9]Between 1918 and 1934, 50,000 new small holdings were created, an increase of 23 percent in the total number of farms. The number of fishermen increased by 15 percent. These farms were too small to provide for more than housing and food for the family. The needs of the nonagrarian population had to be met with imports. Joerberg (1970:36–38).

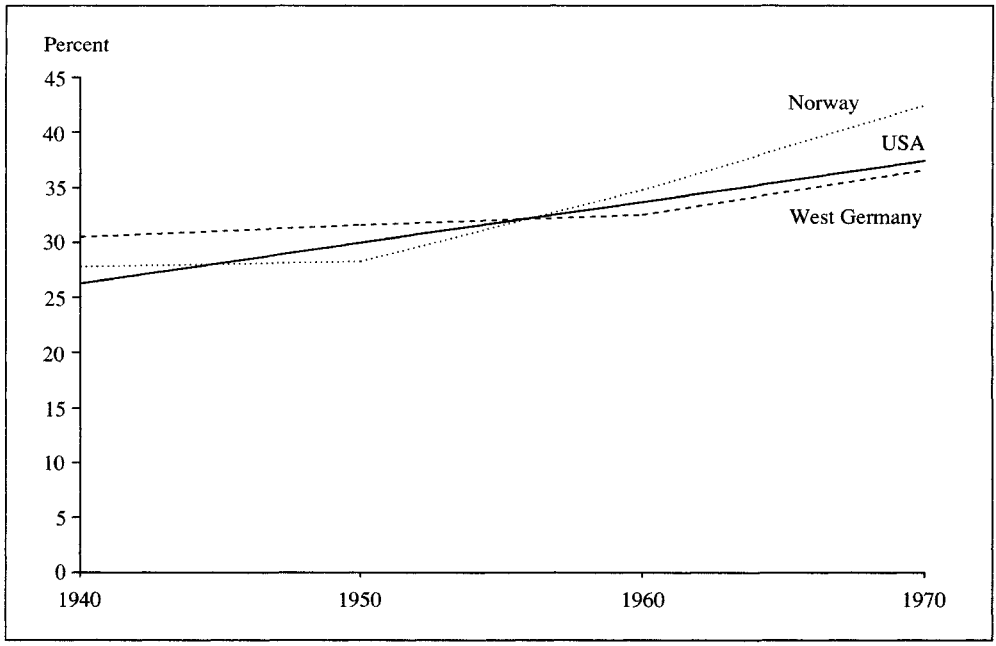
secondary sector, by 1970, this number was up to 57.3 percent. Although this increase was continuous in Norway, in West Germany the figures remained unchanged since the late 1950s.

In sum, similar employment shares in the United States and West Germany are observed between 1940 and 1950. Due to relatively stable employment figures in the United States and West Germany[10] and growth of employment in the secondary sector in Norway, the gap between the three nations had decreased by 1970.

Tertiary Sector

Figure 2.3 shows the employment share in the tertiary sector in the three nations. Employment in the tertiary sector follows a similar route in the three countries, but was subject to slightly different timing. In 1940, the level was highest in West Germany

Figure 2.3
Percentage of Males Employed in the Tertiary Sector
United States, Norway, and West Germany, 1940–1970



[10]It is important to note, however, that the stable number of workers in the secondary sector in West Germany mirrors to a considerable extent successful recruitment policies of workers from Italy, Greece, Turkey, and Spain. Around 1970, two million foreign workers were employed, a number that amounts to 16 percent of all workers in the secondary sector. Excluding these workers, the number of German workers in the secondary sector decreased considerably.

(30.5 percent), while both Norway[11] and the United States had reached a level of about 27 percent. At the end of the observation period, West Germany had reached a share of 36.6 percent, the United States of 37.4 percent, and Norway of 42.5 percent. Thus, Norway had the strongest increase in employment in the service sector (increase of 15 percent), compared to West Germany (6 percent), and the United States (11 percent).

In sum, the three nations differ in the *proportional composition* of industrial employment between 1930 and 1970. In the United States and in West Germany, most male workers were employed in the secondary sector and fewest workers were employed in the agricultural sector. In Norway, the secondary sector did not comprise the majority of male workers until 1946. It was not until 1953 that employment in agriculture constituted the smallest proportion of the male labor force. Taken together, sector changes were most pronounced in Norway.

Do such sector transformations affect the transition between school and work and shape career trajectories? If so, we must also ask whether such processes are similar across the three nations or if different patterns can be detected. The questions will be analyzed by linking macroeconomic conditions to the career trajectories in three nations.[12]

2.3 Economic Growth and Unemployment Rate

In analyzing career mobility, the number of open positions in a given society at a given time is of interest: Without open positions into which workers can move, job transitions are not possible. The number of open positions, in turn, is dependent on labor-market conditions. In general, one can say that during favorable employment conditions the number of open positions expands, whereas in times of economic downswings the total number of positions shrinks. Labor-market conditions are measured here by two indicators—the yearly change in GNP and the percentage of unemployed persons.

Economic growth. The usual indicator of national wealth is the GNP.[13] Rather than presenting the absolute size of the GNP, I will focus on the yearly *change* in the GNP, because change is more informative about the development of open positions. The national growth rates between 1930 and 1970 are displayed in Figure 2.4. In the *United States,* the average increase of GNP between 1950 and 1975 was 3.3 percent.[14] Growth was fastest between 1933 and 1943. Growth rates were negative between 1945 and 1947

[11]The surprisingly high employment share in the service sector in Norway is due to the export of fish and timber and especially to the export of shipping services. The continuous growth of the shipping industry also explains the rise of the service sector in the Norwegian industrial composition. See: Alestalo and Kuhnle (1984:16).

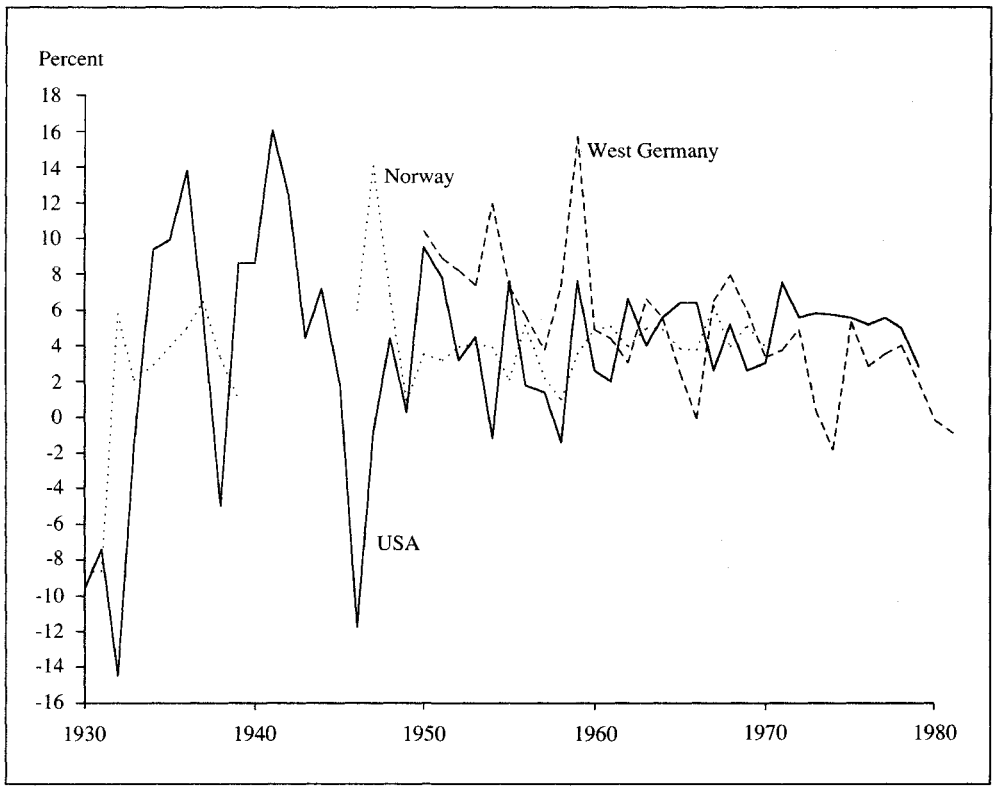
[12]Data are described in Chapter 4, and results are presented in Chapter 7.

[13]Ideally, growth rates should be related to the other three parameters of the "magic cube"—price index, unemployment rate, and trade balance. Such an analysis would show that the rise in GNP in nominal prices is much greater than in real prices, which means that growth is associated with rising prices.

[14]OECD, Kommission der Europäischen Gemeinschaft und Statistisches Bundesamt (1977).

(World War II). A "stabilization" of the business cycle after 1947 is evident—both in regard to the intensity of the cycles and the size of the growth rate. *Norway* industrialized late.[15] Between 1946 and 1948, Norway faced rapid growth with an average rate of 10.5 percent. In the decades between 1948 and 1962, the average increase was at 4.0 percent.[16] During this "golden age of capitalism,"[17] Norway grew to be among the richest countries in the world, and, by 1970, the difference in GNP per capita between Norway and the United States was considerably smaller than in previous years. *West Germany* faced a rapid economic development in the 1950s. After 1960 (with the exception of the depression between 1967 and 1971), the average growth rates declined considerably.

Figure 2.4
Change in GNP in the United States, Norway, and West Germany, 1930–1980



[15]The first upswing occurred between 1925 and 1933, lagging two decades behind the American development.

[16]For Norway, all average growth figures are from SOS, No. 12, 1965:56.

[17]Shipping played the most important role in sustaining this continuous growth. Maddison (1977:103–105).

Unemployment. Changes in the input of labor in the three nations over the last decades is assessed by the unemployment rate, the most relevant measure for analyses of career mobility. The unemployment rate is the ratio of those unemployed to those in the labor force. The measure is crucially dependent on the definition of "unemployment" and "employment." Unfortunately, these definitions differ among the United States, Norway, and West Germany and also have changed intranationally over time. Although it is unsatisfactory to rely on this crude and imperfect ratio,[18] missing alternatives preclude any choice. The following listing of national definitions shall guard against rushed interpretations.

The official definition of unemployment in the *United States,* for purposes of government statistics, includes those who have been laid off by their employers, those who have been fired or have quit and are looking for other work, and those who are just entering or reentering the labor force but have not found a job as yet. The total labor force consists of the employed and unemployed. People who are not employed and are not looking for work or waiting to be recalled from layoff by their employers are not counted as part of the labor force.

In *West Germany,* only those who report to the Labor Exchange *(Arbeitsamt)* to look for work are counted as unemployed. Those who do not officially register are not included. Of further importance is the number of foreign workers who serve as a buffer against market fluctuations. Without their (enforced) withdrawal from the labor force in 1967, the unemployment rate would have amounted to 4.5 percent instead of 2.1 percent.[19]

In *Norway,* official unemployment figures until 1950 are reported as the percentage of trade union members registered as unemployed. These numbers thus represent very conservative measures of the unemployment rate, mainly because the denominator includes the total number of unionized workers only and not the total work force. During the 1950s and 1960s, unemployment was registered by firms and channeled through local labor offices. After 1965, unemployment rates have been estimated through sample surveys based on interviews with a cross section of the adult population.

For convenience, the interpretation of intranational trends in unemployment uses some technical terms provided by labor economics, such as the distinction between a "tight" and a "loose" labor market.[20] A tight labor market indicates that jobs in general are plentiful and hard for employers to fill, and that most of those who are unemployed will find work quickly. When the unemployment rate is high, the labor market is described as loose, in the sense that workers are abundant and jobs are relatively easy for employers to fill.

Figure 2.5[21] displays the overall unemployment rate for the United States, Norway, and West Germany between 1930 and 1970. In all three nations, the range within which the unemployment rates fluctuate was more narrow after World War II compared to earlier decades. This indicates a trend towards an overall more stable labor market.

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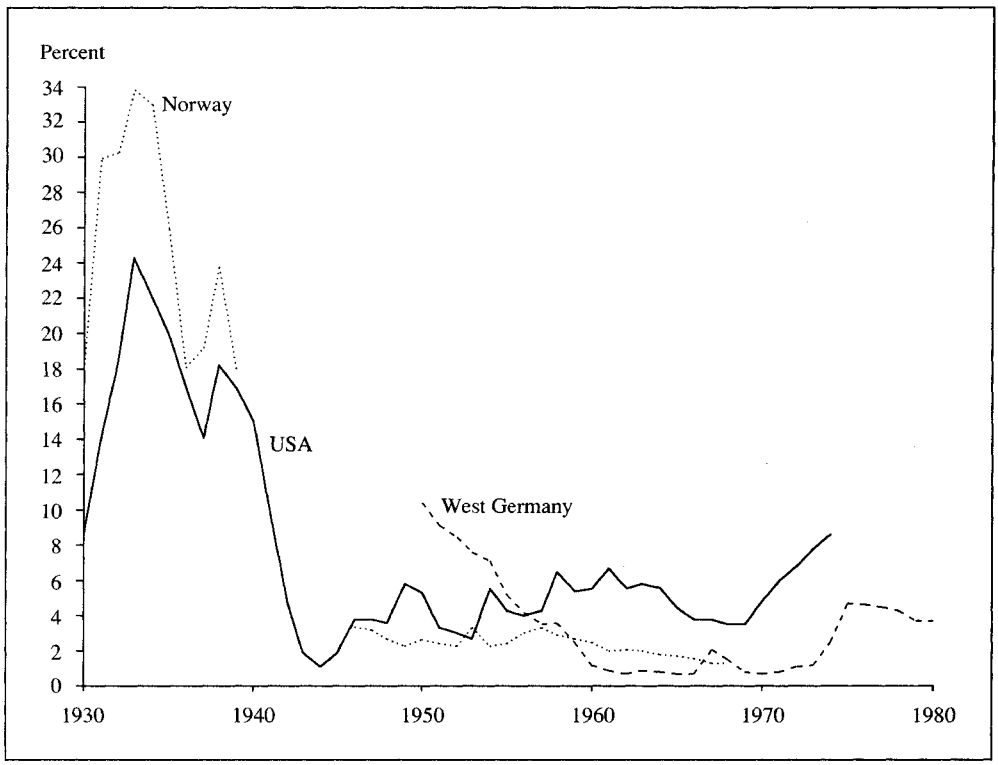
[18]Kommission für wirtschaftlichen und sozialen Wandel (1977:53).

[19]Ballerstedt and Glatzer (1977:487).

[20]In the United States, a tight labor market is defined by an unemployment rate in the 3–4 percent range, a loose labor market by an unemployment rate above 7 percent. See Ehrenberg and Smith (1982:14ff.). In West Germany the *"Sachverständigenrat"* defines full employment as an unemployment rate below .8 percent.

[21]Sources: *West Germany:* Statistisches Bundesamt, Bundesanstalt für Arbeit. *United States:* 1900–1954: Stanley Lebergott, Annual estimates of unemployment in the United States, 1900–1950: NBER Special Committee Conference Series, No. 8, Princeton, 1957:213–239; 1947–1966: US Bureau of Labor Statistics, Employment and Earnings, Vol. 13, No. 7 (January 1967), Table A-1; 1967–1980: US President, Economic Report of the President (Washington, DC: US Government Printing Office, January 1981:267). *Norway:* NOS X 178, 1924, Table 187, SOS No. 3, 1955:29–30; SOS No. 12, 1965:107.

Figure 2.5
Unemployment Rates in the United States, Norway, and West Germany, 1930–1980



The data clearly show an extraordinarily loose labor market between 1930 and 1945 in the United States, Norway, and West Germany.

In the *United States,* the unemployment rate between 1942 and 1970 fluctuated in the range between 1.2 percent (1944) and 6.8 percent (1958). Unemployment below 4 percent occurred between 1944 and 1948, between 1951 and 1953, and between 1966 and 1969. These were years of tight labor-market conditions, most of them during the Korean and Vietnam wars. Rates above 6 percent occurred in 1958, in 1961, and between 1975 and 1978, which were years of recession or recovery.

In *Norway,* pre-World War II unemployment reached its height in 1933 when 33 percent of the trade union members were registered to be unemployed. The reasons for this high number of unemployed workers were partly economic depression, and partly the fact that emigration possibilities were strictly limited from the beginning of the 1920s.[22] After 1947, Norwegians faced an exceptionally tight labor market: Unem-

[22]Seierstad (1974:91).

ployment never exceeded 3 percent and has been well below that level in most years. The exception was a brief period of recession in the Norwegian economy in 1958/59, when 3.2 percent of the labor force was unemployed.

In *West Germany*, three stages may be distinguished: (1) In the immediate post-World War II years, many persons could not find employment. The unemployment rate then steadily decreased, and full employment was reached around 1958. (2) In the years between 1958 and 1972, unemployment was not a problem, with the exception of the recession in 1966/67. (3) After 1973, unemployment was quite a significant threat to the German economy.

2.4 Income Distribution

Information of the income distribution at the macrolevel is important for two reasons. First, *opportunities* for gain in status are determined by the shape of the distribution of positions. In a social structure in which the distribution of positions resembles a flat pyramid (i.e., in which inequality among positions is low), there are fewer opportunities for status attainment than in a social structure in which the pyramid is high and the inequality among positions sharp. Thus, income inequality can serve as an approximation for inequality in social positions; comparing the distribution of income across the three nations reveals the extent to international differences in opportunity structure. If such differences are large, then we have to deal with a "system specific factor"[23] and can expect less upward mobility in the society distinguished by high equality. It also must be assumed that the *perception* of occupational status differs among stratified and unstratified societies. In a truly egalitarian society, it can be argued, conventional prestige rankings of occupations (measured and developed in stratified societies) would be meaningless.

International differences in the distribution of income and the development over time are expected for two reasons. First, Norway is commonly considered to be a society distinguished by less inequality than other nations. This assumption is based on likely effects of the "Scandinavian route," marked by "active social politics of redistribution."[24] Second, the loss of the Second World War could have led to a leveling in the distribution of income and wealth in West Germany. In particular, both the Allies' policy of currency reform in 1948 (whereby every adult received a total of 60 new DM) and the Equalization of Burdens Act of 1952 (exacting levies, payable over a 30-year period) could have induced such leveling.

It is difficult to obtain reliable data on income distribution. High-income strata rarely register their full income and "in natura" income in the primary sector also create problems. The problems increase when long-term or international comparisons

[23]Przeworski and Teune (1970:10).
[24]Esping-Andersen (1987:4).

Table 2.1
Distribution of Income
United States, Norway, and West Germany, 1930–1970

Year	Income of specified groups as percent of total income						Gini coefficient		
	(1) Top 10 percent			(2) Bottom 20 percent			(3)		
	United States	West Germany	Norway	United States	West Germany	Norway	United States	West Germany	Norway
1915	34		42.3			0.1			56
1930	39	33.7	38.2			3.1			51
1935	34	36.0							
1940	34								
1945	31				2.5				
1950	29	36.0	28.6			0.6	42		44.8
1955	30		28.3			1.3	43		43.5
1960	29	39.4	27.2		1.8	2.0	44	48.7	41.3
1965	29	38.6	25.3		1.8	2.2	45	48.1	38.6
1970		33.7	24.7	2.0	4.0	4.8	44		34.9

of income distributions are desired.[25] Data on income distribution are heterogeneous in regard to the definition of the income recipient (household or individuals), the proportion of the population covered,[26] and the measure to be used.[27]

Table 2.1 presents three measures of income inequality in the United States, West Germany, and Norway between 1915 and 1970.[28] In column 1, we see the share of

[25]In regard to long-term comparisons it can be assumed that initial shares are subject to greater margins of error than are recent shares. The reliability also varies by country, being more defective for West Germany (Prussia) than for Norway.

For a discussion of the measurement of income inequality and comparisons of inequality structures in different countries, see, among others, Sawyer (1976), Tinbergen (1975), Stark (1977), Schultz (1969), Lecaillon et al. (1984:25-35), and Kraus (1981).

[26]Incomes of economically active persons are more concentrated than those of households. This is partly so because household data ignore unrelated individuals and partly because household incomes include the incomes of more than one individual.

[27]Official statistics of Gini coefficients for the United States vary greatly (for 1965): *.51* (based on the Current Population Survey; data refer to total monetary income of persons over 14 years of age, including transfer incomes); *.45* (based on tax statistics; data refer to tax units and their taxable income exclusive of transfer incomes and net social security contributions); *.42* (based on the Current Population Survey; distribution on the basis of consumer units (incomes are total monetary incomes, including transfer incomes)); *.41* (Series of the Bureau of Economic Analyses (BEA). Data show monetary incomes, including transfer incomes and net social security contributions, based on adjusted tax statistics.

[28]Definitions and sources: *Norway:* Income refers to personal income after allowable deductions, reliefs, and personal allowances (taxed income). Sources: population censuses (1930, 1910); tax statistics; Flora (1983:661, 662, 663). *West Germany:* Income refers to gross personal income. Sources: wage statistics income assessment statistics; Flora (1983:652–656), the Gini coefficients for 1935 and 1950 are taken from the United Nations 1957, Chapter 9:6, Table 3. *United States:* For income units see source annotations. Source: Stark (1977). Income shares are taken from Table 113:113–114. Gini coefficients are taken from Table 114:172. Stark's figures are based on tax statistics. Data refer to tax units and their taxable incomes exclusive of transfer incomes and net social security contributions.

personal income received by the *richest decile,* an indicator of concentration at the top of the distribution. In column 2, we find the share of personal income received by the *lowest quintile,* an indicator of concentration at the bottom of the distribution.[29] Column 3 shows the *Gini coefficients of concentration,* an indicator of the extent to which the entire distribution deviates from perfect equality.[30]

The top 10 percent of the income distribution receive comparable shares of the total income in Norway and the United States: In both countries, the top 10 percent have around 29 percent of the total taxed income. After 1950, the income share of the top 10 percent remained stable in the United States, but decreased by around 4 percent in Norway. The development of the Gini coefficient supports this observation: Until the 1940s, the Gini coefficient is extremely high in Norway, between 1940 and 1960, it decreased and reached the level of the United States. After 1960, Norwegian society became considerably more "equal" than the United States.

In West Germany, the top 10 percent increased its income share between 1930 and 1960 from 33.7 percent to 39.4 percent of the total taxed income. Between 1960 and 1970, the income share of the top 10 percent decreased to 33.7 percent of the total taxed income. Unfortunately, official sources report Gini coefficients for 1960 and 1965 only, and the development over time cannot be traced with this indicator. In 1960 and 1965, however, the Gini coefficient was considerably higher than in the other two nations.

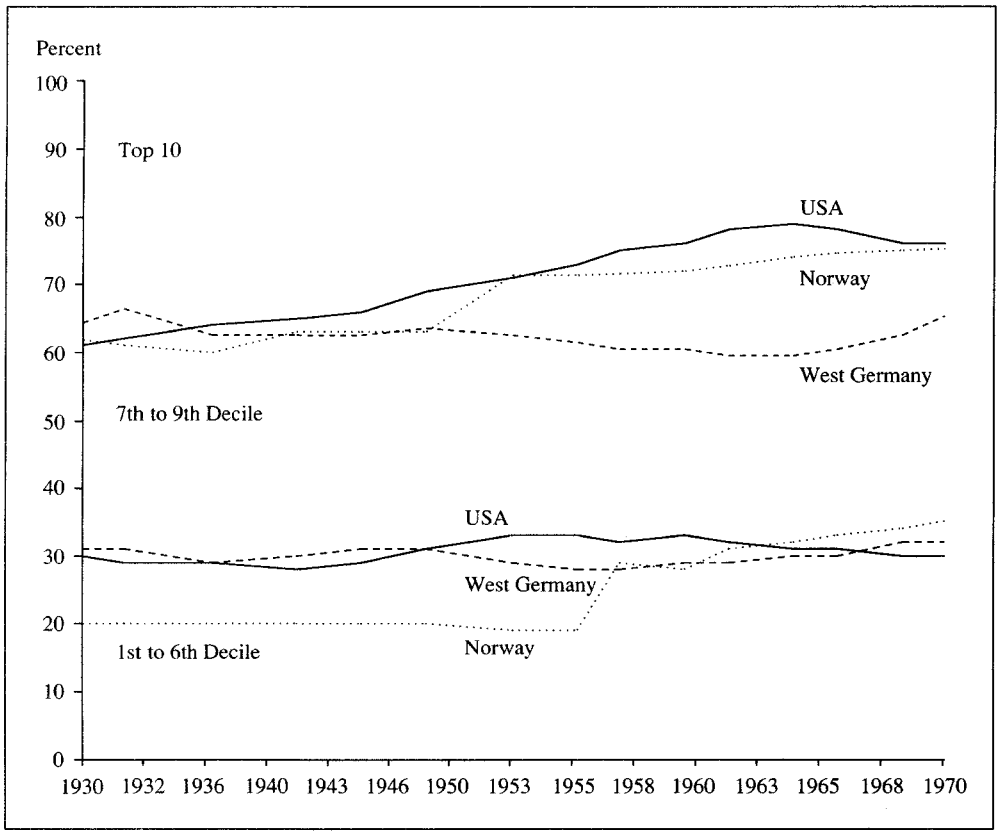
Let us now examine the bottom 20 percent of the income distribution. Norwegians had a share of 0.6 percent of the total income in 1950; this share increased to 4.8 percent in 1970. In West Germany, the bottom 20 percent were comparatively better off in 1950 holding a share of 2.5 percent; by 1970 their share is about the same as in Norway. For the United States, comparable figures for the years until 1970 are not available; by 1970, however, the bottom 20 percent of Americans received only 2 percent of the total income, considerably less than in the other two nations. Figure 2.6[31] plots the structure of income inequality between 1930 and 1970. The development of the top 10 percent, the bottom 60 percent (1st to 6th decile) and the middle group (7th to 9th decile) of the income hierarchy are reported. The figures report the interpretations given above. In Norway, until 1953, the bottom 60 percent of the income distribution earn around 20 percent of the total income. This share is considerably lower than in West Germany and the United States, where the bottom 60 percent earn around 30 percent of the

[29]These measures are so-called "fractile shares." Fractile shares are based on a ranking of "income units" (individuals or couples) by the size of their income. If one takes an income at a certain point of this income hierarchy (e.g., the income of the recipient which marks 75% of the ranked recipients) and relates it to a "typical" income such as the median or the average income, one arrives at quantile ratios.

[30]The Gini coefficient is the most popular among several summary statistics, all of which evaluate the actual distribution of income against a hypothetical one of perfect equality. Stated technically, the Gini coefficient is exactly one half of the arithmetic average of the absolute values of differences between all pairs of income. The coefficient ranges from 0, indicating perfect equality, to 1, indicating maximum inequality. See Sen (1973).

[31]Source: The statistics for the United States are the author's calculations based on Kraus (1981:219). The source for the Norwegian and German figures is Flora (1985).

Figure 2.6
Structure of Inequality in the United States, Norway, and West Germany
Distribution of Personal Income Before Tax (Fractile Shares)



national income. After 1955, income inequality in Norway diminishes.[32] In the years between 1955 and 1970, the share of total income received by the bottom 60 percent amounts to about 30 to 33 percent in all three nations.

[32]Much of the improving conditions of the bottom 60 percent is due to the disappearance of the lowest and most disadvantaged strata, the group of "husmen." Husmen were dependent farm laborers that formed a distinctive underclass in Norway until the end of the Second World War. The amount of misery and poverty with which this group was confronted shows an investigation of 1941, which compared the standard of living among German and Norwegian peasants. Wages of Norwegian workers in agriculture were considerably lower compared to West Germany and in fact "under the existence minimum" and "socially irresponsible" (Führerbericht für die Zeit von 1940 bis 1941. Quoted from Milward, 1972:236).

The recruitment of industrial workers from the group of these husmen solved an eminent social problem of Norwegian society. Bull even advances that the disappearance of the husmen constituted a democratization of the whole nation. He contrasted the Norwegian experience with the Finnish experience, where the repressed social groups survived and caused the Finish Civil War (cf. Bull, 1955:54).

To sum up: In Norway, politics of redistribution indeed have led towards an equalization of income shares. Despite this, unequal income distributions do exist and seem to persist. Further, the commonalities in the degree of inequality are more pronounced than international disparities. Thus, the notion of Norwegian equality, even if defined as "equality in poverty"[33] cannot be taken literally. It needs at least two qualifications: First, this phenomenon is a very recent one; and second, Norway can be said to be more egalitarian mainly due to the declining advantage of the "very rich." The bottom 60 percent, however, are comparatively not much better off than in the other two nations.

In West Germany, the Second World War did not lead to more equality in the distribution of income. Quite in contrast: The top 10 percent of the income distribution received in the post-World War II years a higher share of total income than before, and it was not until the 1970s that their share decreased to the 1930 level. This degree of continuity after World War II in West Germany is a proof of wasted chances indeed.

Hence, while differences in the *structure of inequality* certainly exist across the three nation states, these differences do not reach a level which would threaten an international comparison of occupational mobility processes. In particular, in the crucial years in which the 1930 cohort enters the labor market, international differences are small. Nevertheless, the higher amount of income inequality in West Germany points to a steeper pyramid in the distribution of positions and suggests that Germans have more opportunities for upward occupational mobility than do Americans or Norwegians.

Economic conditions vary more over time than across the three nations. By the time of entry into the labor market, workers were confronted with high unemployment in all three nations, and in all three nations unemployment diminished over the years. However, this decline was less uniform in the United States, where business cycles were more pronounced in the post-World War II years than in West Germany and in Norway. This situation suggests that we may observe more occupational mobility in the United States than in Norway and West Germany.

The most crucial distinction across the three nations is the share of employment in agriculture. This share is higher in Norway than in West Germany and the United States, and the decline in employment is more pronounced. Due to this late industrialization, we expect more occupational mobility (outflow of agriculture) in Norway than in the United States.

[33]Esping-Andersen (1985:316).

Chapter 3
The Organization of Formal and Vocational Training

3.1 Introduction

This chapter argues that educational *systems* define occupational opportunities for individuals at entry in the labor market, and that these systems have long-term implications for how people are matched to jobs. According to this view, the amount of schooling a person will attain and the occupational career this person will experience are dependent on the educational environment of this person. Thus, educational attainment cannot be seen as a personal attribute only, without connection to societal opportunities and constraints.

The argument will be developed in three steps: First, I present a *typology* for the classification of educational systems; second, I *evaluate* the educational systems of Norway, the United States, and West Germany according to the typology; and third, I *state hypotheses* on how educational-system characteristics shape labor-market outcomes.

Typology for the Classification of Educational Systems

There are several options for classifying educational systems. Many of them have been developed for comparative educational policy research. One of the most influential studies in this field is Harbinson and Myers "Education, Manpower and Economic Growth" (1964). They argue that educational expansion is a primary cause of economic development. Other studies in this tradition are Meyer et al. (1977) and Meyer et al. (1979).[1] These studies are distinguished by the amount of data they gather and their attempt to present world-standardized, universalistic, formal classification systems. These classifications are, by their nature, very general, stressing international similarities. They do not allow extracting the factors relevant to an analysis of how the organization of education influences work mobility.

Other classification schemes for educational systems do explicitly relate institutionalized features to mobility processes. One example is Ralph Turner (1960), who distinguishes "contest mobility" and "sponsored mobility." Earl Hopper expands Turner's classification, by asking "how," "when," and "why" pupils are selected. Yet

[1]For a literature review, see Hüfner, Meyer, and Naumann (1987).

these studies focus on *inter*generational mobility processes and do not allow analysis of how educational systems relate to *intra*generational mobility.

Because no existing classification scheme is suitable for linking educational systems to labor-market outcomes, it was necessary to generate a new one. This typology centers around two dimensions: the *standardization* of educational provisions and the *stratification* of educational opportunities. Standardization is defined by the degree to which the quality of education meets the same standards nationwide. Variables such as teachers' training, school budgets, curricula, and the uniformity of school-leaving exams are relevant in measuring this dimension.

Stratification is defined by the proportion of a cohort that attains the maximum number of school years provided by the educational system and by the degree of differentiation within given educational levels (tracking). This dimension can be captured by the organizational structure of the educational systems and/or by data that show the proportion of a cohort that exists at a given educational level (attrition rate).

I turn now to the analysis of educational systems in the United States, Norway, and West Germany. I discuss institutionalized structures along the dimensions of standardization and stratification for primary and secondary education (3.2), higher education (3.3), and vocational training arrangements (3.4). Then, in Section 3.5, I discuss the link between the dimensions of standardization and stratification and work-life mobility patterns. This link is illustrated in Sections 3.6 (for primary and secondary education), 3.7 (for higher education), and 3.8 (for vocational training). In each section, specific hypotheses for the transition into the labor market and mobility patterns therein are derived.

3.2 Standardization and Stratification of Primary and Secondary Education

Standardization of Primary and Secondary Education

In the *United States,* education is considered a state and local responsibility, and the school system is characterized by a low degree of standardization in the organization of schools, in their curricula, and in their academic criteria. The curricula differ not only between states (as they do, in part, in West Germany) or between rural and urban areas (as they do in Norway), but also to a considerable degree from school to school. A national or a state curriculum does not exist.[2] The standardization of educational

[2]State departments of education prescribe curricula with varying degrees of specifity, leaving scope for local and individual variations. Subject specialists, teachers, and school administrators are all involved in the process of curriculum development.

In the 1920s, intraschool diversity broadened—the school curriculum expanded, as did students' choice. See, for example, the "Middletown" study which reports that for 1929 "freshmen entering high school may plan to spend their four years following any one of twelve different 'courses of study'; he may choose the sixteen different yearly courses which will make up his four years of training from a total of 102" (Lynd and Lynd, 1929:192). Among the courses offered are shorthand, mechanics, printing, machine shop, all of which are not offered in the German or Norwegian school system.

provisions is further undermined by substantial differences among and within school districts for expenditures per pupil. Some states spend little more than half the national average while others expend more than twice the average per pupil.[3] Variation among school districts is also found in teachers' salaries, which are determined by local school districts. Acquisition of a high-school diploma does not require a formal examination, but rather merely adequate attendance and a satisfactory record of school achievement as determined by the schools or the district, subject to state requirements. Final examinations that are standardized in content and level of difficulty do not exist. Thus, it is obvious that the educational administration in the United States is decentralized, and that the educational provisions are *unstandardized.* Certain segments of the population are disadvantaged because local components of the educational system vary in respect to the quality of the educational program. This has consequences for the body of students' knowledge, the degree to which students seek higher education, and the kind of higher education to which they have access.

The *Norwegian* school system is controlled by the Royal Ministry of Church and Education. Hence, one could assume that the high degree of political centralization leads to educational provisions which are highly standardized. This, however, is not the case. Three factors inhibit standardized educational provisions: the language problem, the organizational differences between country and city schools, and some arbitrariness in the allocation of students to secondary schools.

About three-quarters of the Norwegian people use as their written language Bokmal or Riksmal, while the rest use Ny-Norsk or Landsmal, the names for an amalgam of west-country dialects created in the nineteenth century as a reaction against the influence of Danish.[4] Each municipality decides which language to use in the schools, and only in the grammar schools must both be taught.[5] The language split parallels

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[3]This stratification is mirrored in the different output of graduating students: Over three-quarters of adults in the west graduated from high school compared with under two-thirds in the south. Metropolitan central city schools and rural areas tend to have higher dropout rates than other areas. Minority students demonstrate lower rates of high-school graduation in all regions. In 1950, the proportion of adults who had completed high school was twice as high among Whites as among Blacks (over 30% as compared to 16%).

[4]The "landsmal" movement is an outstanding achievement of the Norwegian peasant movement in the nineteenth century. It dates back to 1840, when Ivar Aasen started to collect information about the rural dialects of Norway and traced them back to the *Old Norse.* He pointed out that the language used by the bourgeosie in speech and writing was actually Danish, which had been introduced as the official language of Norway during Danish rule. His work was in line with the national romantic movement and its academic interest in the "original" national "folk culture." Aasen's interest was far from academic: He developed a standard form of the rural dialects, which was soon to be called landsmal, that is, "country language" as distinct from the "riksmal" or "state language." More and more people adopted the language as a declaration of their identity with the peasant class and the peasant cause. In the 1880s, the Storting declared landsmal as the second official language. The two languages are different in vocabulary and also in structure and style (cf. Munch, 1956:1–104; Boyesen, 1945).

Another characteristic manifestation of the peasant and landsmal movement in its nationalistic and particularistic form is shown in connection with the "folk high-school" movement. This form of adult education originated in Denmark. There, it was an important articulation of the national romantic, democratic movement, particularly among the peasants. It was adapted to the needs of the "common people," stressing the beauty and ethical value of their own traditions of folk art, folk songs, practical skills, and familism (cf. Munch, op. cit).

[5]The coexistence of the two languages virtually cuts Latin out of the curriculum. Latin is as integral in other Scandinavian grammar schools as it is in German grammar schools.

urban-rural differences in the organization of schools.[6] In the towns, children attend school every day, and there is generally one class corresponding to each year group. In the country, many one-teacher and two-teacher schools exist, in which children go to school only on alternate days.[7]

Besides the difference in the school organization there is an urban-rural stratification in teachers' training. Kerr (1960:20) reports that in the smaller village schools, Science and English usually are not taught because the local teacher was not qualified to teach them. Still a further division between rural and urban schools is the institutionalization of the 8th school year in the arrangement of "continuation schools." In 1940, there were 313 continuation schools in the country districts as compared to 223 in towns (Boyesen, 1945:143). If we relate these numbers to the total number of about 3,500 rural districts and 440 urban districts (Lindbekk, 1974:159), we find that every 10th rural district, but every other urban district, provided such a school.[8] Although pupils in the countryside nominally have the same number of primary-school years, their education seems poorer. Their socialization primarily takes place in their homes rather than in the school (which they attend just three mornings a week). Norwegian children spent the vast amount of their time at home, especially compared to the United States, in which the "school is becoming not a place to which children go from their homes for a few hours daily but a place from which they go home to eat and sleep."[9]

In regard to the standardization of school-leaving exams and access to secondary and higher education, various patterns are institutionalized. The transfer between primary and secondary schooling is based solely on the primary school's evaluation,

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[6]As the following table shows, 58 percent of elementary-school pupils attended seven-grade schools. Twenty-one percent attended four-grade schools or schools with fewer grade divisions. Seven percent of urban pupils attended four- or three-grade elementary schools as opposed to 28 percent of rural pupils. These figures, however, relate to the school year 1964/65 and do not depict the situation of the cohorts born about 1920, 1930, or 1940. In the years after 1950, a significant centralization of rural schools took place. Until 1950 many more small schools existed, and the differences in the school organization were by far larger. (These figures have been taken from Lindbekk, 1974:159.)
Children in elementary schools in 1964/65 in urban and rural areas by type of school (percentage):

School type	Rural	Urban	Total
Undivided	.76	0.04	0.80
Two-grade	3.97	0.40	4.37
Three-grade	4.68	0.79	5.47
Four-grade	9.38	1.16	10.54
Five-grade	3.89	0.71	4.63
Six-grade	10.41	6.27	16.68
Seven-grade	36.64	22.90	57.54
Total	67.73	32.27	100.0
N	279.78	133.260	413.041

Source: NOS A 133, Table 7:13. Adopted from Lindbekk (1974:159).

[7]This characteristic feature is said to be due to the nature of the country: fjords and mountains separate the districts, the climate varies considerably, and the population is scattered over wide areas.

[8]Number of districts as of 1964. These figures are a very conservative estimate of the number of school districts in the rural areas due to severe centralization efforts since 1950.

[9]Lynd and Lynd (1929:211).

not on school certificates. This procedure ranks students relative to other students in the school and does not maintain equal standards for all students.[10] Secondary schools, in contrast, are generally more homogeneous and subject to the same standards (curricula, exams) all over the country. The Norwegian school system, although centrally administered, thus displays for primary schooling—despite strong claims to the opposite[11]—very unstandardized features. Secondary schooling, however, can be labeled as being standardized.

In the *Federal Republic of Germany,* the states (Länder) that make up the federation are the legislative and administrative authorities in the organization of education. Although the German school system is less centralized than the Norwegian one, the degree of standardization throughout the nation is considerably higher. To some extent this is merely due to the density of the population: Whereas Norway with an area of 323 mi^2 has a population of 3.5 million (density: 11 inhabitants/mi^2), West Germany with the smaller area of 258 mi^2, has a population of 54 million (population density: 209 inhabitants/mi^2).[12]

More importantly, however, is the establishment of a coordinating organ that prevents much diversity among the Länder. The chief organ for cooperation is the Standing Conference of State Education Ministers (Kultusministerkonferenz). It ensures that the structures, institutions, curricula, and leaving certificates are comparable in all Länder, and that the academic and professional training is equally valid throughout the nation. Although there are 11 distinct and separate bodies and major administrative authorities, the degree of standardization is considerably higher than in either Norway or the United States. All transitions between schools are based on standardized school-leaving examinations. The professional education of teachers (all public servants) does not differ among schools or between urban and rural areas. Expenditures per pupil vary somewhat between Länder, but again to a less significant degree than in Norway or in the United States.

So far we have seen why the American and Norwegian school systems generate unstandardized structures and why the German system can be called standardized. Let us now turn to the second dimension on which educational systems are classified—stratification.

Stratification of Primary and Secondary Education

The degree to which educational systems are stratifying educational systems is determined by the proportion of a cohort selected to attain the maximum number of school

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[10]University entry, however, is based on reaching an adequate standard in a standardized secondary school-leaving certificate (examen artium).

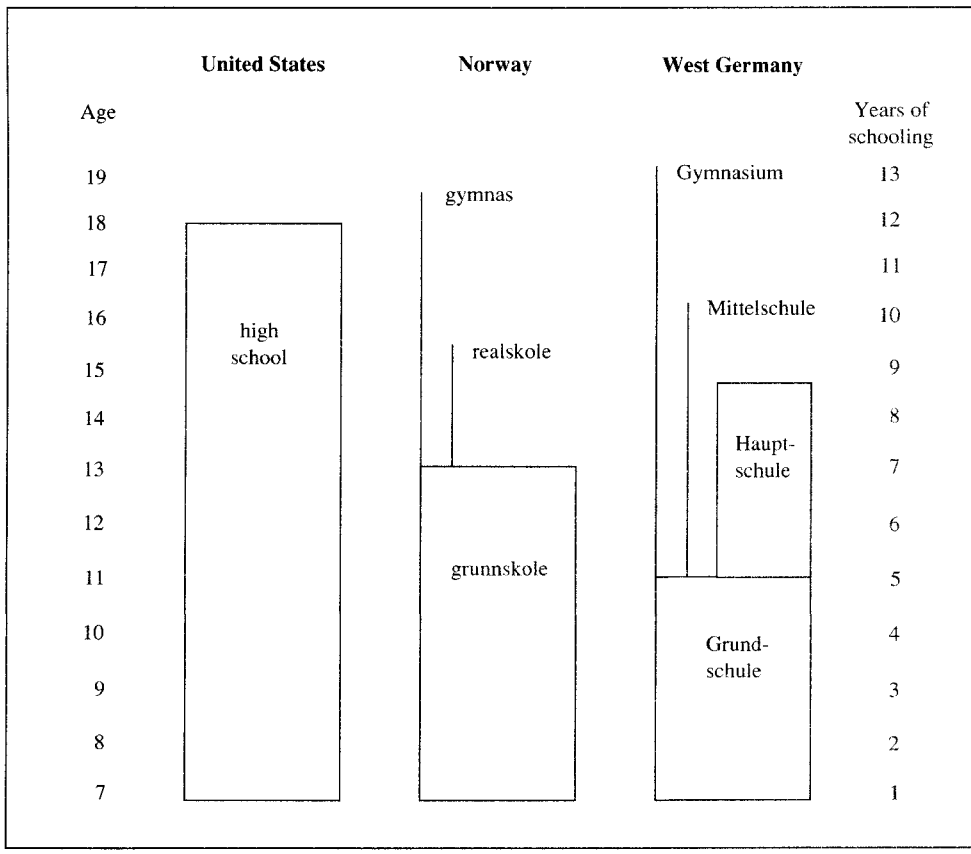
[11]For example, Boyesen, Director of the Board of Education in Norway, expresses the view that equality between rural and urban parts of Norway exists. His explanation is worth quoting: "Rural schooling does not imply poorer schooling. On the contrary we have always been able to count on the children taking part in the daily work at home on the intervening day, the boys as a rule with their father, the girls with their mother, and thus coming under the influence of the home and everyday life. This signified as a rule a maturing of character which also included spiritual development" (1945:141). Other authors that praise the egalitarian Norwegian school system are Kerr (1980) and Munch (1956).

[12]Figures as of 1950.

years provided by the educational systems. The higher this proportion is, the less stratifying is the educational system. The classification of selection procedures is therefore crucial for the classification of educational systems.

Cross-national differences in the selection procedure are most remarkable in regard to the timing of the selection, the finality of the selection, and the consequences of the selection (see Figure 3.1). In *West Germany,* the decision on who can continue is made at approximately age ten. Pupils are selected to pursue either four, six, or nine years of additional schooling. This decision is not subject to review, and later transfers to higher levels are generally more or less impossible (degrading, however, occurs to a considerable degree). *Norway* has an extended primary-school system that is untracked and lasts for seven or eight years. The recruitment to upper levels (either two or four more years of schooling) is delayed until age 14. Later transfers are usually not

Figure 3.1
The Structure of Primary and Secondary-School Systems in the United States, Norway, and West Germany



possible. In the *United States,* the cohort born around 1930 entered an educational system in which the selection of students to tracks of different lengths of training was no longer the task of primary schools. The American school system had already stopped offering an academic education to merely a small minority and turned to a system that is labeled a "mass terminal education."[13]

At this point, the reader may assert that the difference between the United States and the two European nation states is exaggerated due to the (yet unmentioned) "tracking" and "counseling" activities within American high schools. I do not disregard these effects as major structural barriers among American students. However, structural barriers of "tracking" and "counseling" are less significant and of relatively minor importance, compared to the tripartite school systems in Norway and West Germany. The first justification relates to the historical period studied in this research. In the 1940s, the American school system was in the middle of its transformation and expansion. Prevalent ideology mandated that the state should treat all citizens equally, which implied that all students were exposed to the same curriculum and the same school experience. Equality of opportunity was the "opportunity for all to receive such education as will fit them equally well for their particular life work."[14] Thus, the argument is that tracking, as we know it today, was not prevalent in the 1940s and 1950s. Enrollment in strictly vocational tracks remained under 7 percent until the 1960s.[15] Further, tracking occurred "subject by subject."[16] The second, and related, justification in defense of labeling the American school system "unstratified" relates to the curriculum in high schools. In the United States, the curricula stressed education for "life," "citizenship," and mainly "useful" tasks. The high-school curricula originally designed for college preparation (and a homogeneous population) was overhauled in the second and third decade of this century.[17] It was the only way, so it was thought, to adapt to the diversity of students' abilities.

Thus, the contrast between the American and the two European school systems is obvious: In Norway and West Germany, students in secondary schooling were prepared for a career, prepared to enter higher education, and become professional men or women. Vocational training, as part of the curriculum in "Mittelschulen" or "Gymnasien," was inconceivable. In fact tracking, as it is organized today, is still not comparable to the rigidity of a tripartite system that selects at age ten (or 14). "Tracked" high schools do not sift and sort students to so many different levels and with such a degree of finality as do the two European school systems.

International differences in selection procedures show in the *quantity* of education

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[13]See Trow (1961:144–165, 1970:1–42). Trow classifies the historical development of American secondary education in three stages. Until 1910 "a small elite preparatory system," from 1910 to 1950 "a mass terminal institution," and since 1950 "a mass preparatory institution."

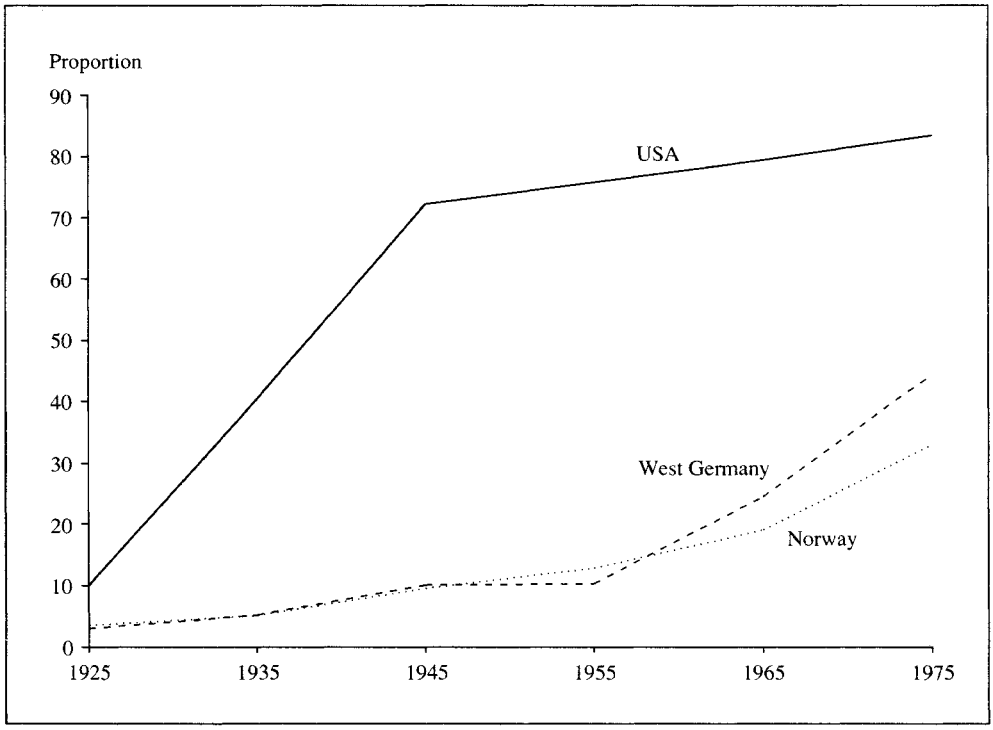
[14]Boston school superintendent in 1908. Quote from Cohen and Lazerson (Socialist Review 2, 1972:61).

[15]Lazerson and Grubb (1972:191).

[16]In 1928, a president of a school board remarked: "For a long time all boys were trained to be President. Then for a while we trained them to be professional men. Now we are training boys to get jobs" (Connant, 1959:49–50).

[17]This statement was given by the president of the school board in Muncie. Quote from Lynd and Lynd (1929:194). In regard to the specifity of the vocational training, see Section 3.3 of this work.

Figure 3.2
Secondary-School Enrollment
United States, Norway, and West Germany, 1925–1975



United States: Proportion 14–17 years old; high schools.
Norway and West Germany: Proportion 10–19 years old.

that citizens of the three nation states obtain. Although the maximum number of years of schooling that students *may* attain is about the same in all three nation states and amounts to 13 years (excluding higher education), the number of years of schooling that students *do* attain is strikingly different. This can be shown on the basis of official data and the three life history data sets under study. I will briefly present both.

Figure 3.2 shows the long-term development of secondary-school enrollment in the United States, Norway, and West Germany. We see that many more Americans enjoy more than the compulsory seven or eight years of schooling than do Germans or Norwegians. During 1950, 71 percent of the 16- and 17-year-old children were enrolled in school, and by 1960 this ratio was up to 83 percent. The comparable figures for West Germany (and Norway) are 10 and 15 percent.

Table 3.1 displays the percentage distribution of educational attainment by highest educational degree on the basis of the life history data sets under study. We find that Norway and West Germany have similar enrollment rates at the top level of the

Table 3.1
Highest Educational Attainment by Population
All Cohorts

	United States White	United States Black	Norway*	West Germany
Elementary	13.3	24.4	51.4	75.6
Some high school	13.7	31.7		
Realskole			36.2	
Mittelschule				14.9
High school	71.0	43.9		
Gymnas			12.5	
Gymnasium				9.5

* Distribution based on the educational history file in the Norwegian Life History Study.

educational hierarchy. At the intermediate level, Norway has higher enrollment rates, a fact that is due to the possibility to enter "realskolen" upon completion of elementary schools after 1949. In the United States, we find the well-known significant differences in the amount of educational training between Whites and Blacks: 71 percent of White Americans in the sample finished high school, as compared to 44 percent of Black Americans.

In sum, the German and Norwegian educational systems of primary and secondary education are stratified; the American system can be labeled unstratified. This observation is important: Generally, it is assumed that structural differentiation of the school system has strong effects on the socialization and allocation of students to occupational levels.[18] This argument will be taken up in Chapter 6, in which I show the importance of both standardization and stratification for labor-market outcomes.

The classification of educational systems at the level of primary and secondary schooling can now be accomplished. If the two dimensions, stratification and standardization, are marked as two axes, the educational structures of each nation occupy different cells in the resulting matrix (see Figure 3.3). The United States offers an unstratified primary- and secondary-school system, but one that is unstandardized. Thus, a range of options is open to all students upon completion of this educational level, but the options are, at the same time, restricted by the unequal quality of the educational provisions throughout the country.

West Germany, on the other hand, provides a stratified, but standardized, school system. Thus, students are stratified by number of school years, and their options for future choices are severely restricted. At each level of schooling, however, the quality of training is the same for all students. Thus, students retain all options for further

[18]Empirical evidence is presented by Meyer, Tuma, and Zagorski (1979), Treiman and Terrell (1975), Kerckhoff (1975), and Himmelweit and Swift (1969).

Figure 3.3
Stratification and Standardization of Primary and Secondary Education

Standardization	Stratification: high	Stratification: low
high	West Germany Norway (secondary)	
low		United States Norway (primary)

moves associated with the level they occupy. Norway displays both a stratified and unstandardized school system for primary schooling and a stratified and standardized school system for secondary schooling. Finally, the two cells on the main diagonal (high standardization/low stratification and high stratification/low standardization) are now occupied by any of the three nations studied.

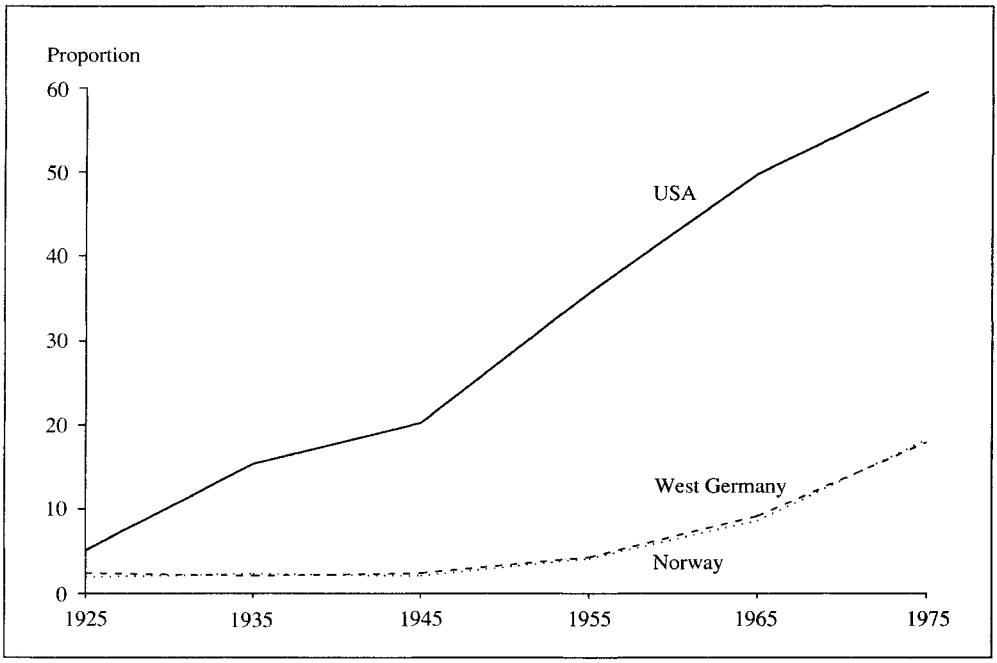
3.3 Stratification and Standardization of Higher Education

Many studies have been undertaken to compare the systems of higher education in Western Europe with those of the United States. Prime attention is mostly paid to the strikingly different enrollment ratios in the nation states (see Figure 3.4). Lipset, for one, gives a US-German comparison for "about 1956" that indicates that 6.6 times as many students are enrolled in US as are in West German universities (proportion of 20 to 24-year-olds). Remarks like this have led to the outcry that West Germany is distinctively "backward" (Picht) and the United States is particularly "advanced." Such a conclusion, which derives qualitative outcomes from quantitative differences, is misleading. As will be seen below, the classification of school systems, already discussed on the primary and secondary level, is helpful for understanding how these quantitative differences in higher education are generated.

Standardization of Higher Education

Let us first examine the degree of standardization of the *American* system of higher education. There is considerable variation in the content and quality of training provided by American colleges and universities. The American college is considered as an educational institution concerned not only with learning, but also with conduct and

Figure 3.4
University Enrollment
United States, Norway, and West Germany, 1925–1975



United States: Proportion 18–21 years old; college and graduate schools.
Norway and West Germany: Proportion 20–24 years old; university.

morals.[19] "The colleges have to stand for something"[20] and are not supposed to adopt the stand of 'value neutrality' of science and scholarship as it is still announced (though not successfully implemented) in West Germany.[21] This implies that college curricula are generally broad and not strongly orientated toward preparing the students for careers. Career training, then, is gained either by passing on to special professional or graduate schools (institutions that do not exist in West Germany and Norway), or on-the-job training upon entry in the labor market. Given this understanding of what a college education should provide, basic differences among universities are not surprising. But heterogeneity in the curricula is just part of the argument. More importantly, American colleges and universities are substantially stratified in terms of status and prestige they confer to the students.

Alain Touraine (1975:141ff.), for example, identifies three main strata of American colleges. The upper stratum, the very best universities, can renew their knowledge

[19]Veysey (1965:219).
[20]Ben-David (1947:27).
[21]Ringer (1967).

constantly by hiring the best scholars. The middle stratum is composed of professionals who depend on the knowledge created at higher levels, but are able, through their occupational practice, to maintain and preserve their own level of technical skill. The lower level is filled with those whose knowledge wears out and eventually becomes "obsolete." The hierarchy of academic institutions reproduces and perpetuates this social stratification. It also ensures the continuity of the social hierarchy, because each level of academic institutions continues to recruit disproportionally from different social levels. This situation reflects unstandardized educational provisions. In the United States, it does not suffice to know the years of college education or the degree attained, because differences among universities according to ownership, size, and quality of faculty produce students with very heterogeneous knowledge and abilities.[22]

West German and *Norwegian* universities are state institutions. As state institutions, they are supposed to adhere to the same standards throughout the nation. A ranking of universities does not exist in West Germany. In Norway, the question of standardization is altogether meaningless because, until 1960, Norway had only one full university. Further, German and Norwegian universities train for specific occupations. Students have to decide on their field of study (i.e., their later occupation). A core curriculum for students of all faculties does not exist.

Stratification of Higher Education

Turning now to the second dimension of the typology, the stratification of the systems, we must ask how many students, of those that are eligible to enter, are actually permitted to enter, and upon what criteria. We further must ask what proportion of the students, of those that enter higher education, gain university degrees. *Norwegian and West German* systems of higher education are unstratified, because they permit access to all eligible students (i.e., those with "Abitur" or "matriculation"). These certificates enable students to take on their university studies without further selection, such as tests or examinations. The "numerus clausus"—a prime example of stratifying policies—was not applied during the years in which the considered cohorts entered higher education.

The *American* system stratifies students. The admission of students is highly selective.[23] The selection process is under the control of the universities. They usually do not base selection on high-school diploma alone, but rely on several aptitude tests and on their own admission procedures. The use of tests is frequently interpreted as providing reliable measures of students' abilities. However, test scores are not necessarily related to the quality of teaching provided in the schools, nor are they culture-free, and they

[22]See Ely (1972).

[23]There are two temporary exceptions. In the 1930s, the competitive situation among American colleges led new universities to accept practically everyone, irrespective of qualification (Nevins, 1962:37–47; Elliott 1937:93–99). After World War II, the enactment of the GI bill served the same end. But these conditions did not affect the cohorts studied here.

Figure 3.5
Stratification and Standardization of Higher Education

Standardization	Stratification: high	Stratification: low
high		West Germany Norway
low	United States	

disadvantage certain students.[24] Further, American universities offer degrees at different levels within higher education (A.A. or B.A.), whereas German and Norwegian universities train their students for essentially a single-level university degree. This shows that American universities select students not only at entry into the system, but also within the system. For these reasons, the American structure can be labeled stratified.

Figure 3.5 summarizes the results in the matrix explained above. The American system of higher education is unstandardized and stratified. The Norwegian and German systems are standardized and unstratified. Comparing this result to the evaluation of the primary- and secondary-school systems (Figure 3.3), yields interesting observations. Stratified structures ensue from unstratified structures at the lower level, and unstratified structures ensue from stratified structures at the lower level. In the former case, options are systematically reduced, while in the latter, options for those that "made it" are increased.

3.4 Standardization and Stratification of Vocational Training

It is appropriate to distinguish four different types of vocational training: training in general schools, training in vocational schools, apprenticeships in firms, and on-the-job training.

During the time covered in this study, vocational training, as part of *general schooling,* was only provided by the United States.[25] This training covers a wide array

[24]I do not argue that the total dependence of Norwegian and German students on school exams is a superior selection system for the individual student. For the population of students as a whole, however, it does establish a higher degree of equal treatment.

[25]Since 1950, the Norwegian institution of "continuation schools" and the German arrangement of an optional 10th grade in elementary schools fulfill similar tasks.

of different tasks[26] and cannot be considered as specific professional training.[27] Collins, for one, writes: "Specifically vocational education in the schools for manual positions is virtually independent of job fate, as graduates of vocational programs are not more likely to be employed than high-school drop-outs."[28] Thus, additional vocational training is necessary, which, in the United States, is provided as "on-the-job" training. "Most skilled manual workers acquire their skills on the job or casually."[29]

Vocational schools are often closely attached to the local labor market, and they offer training in occupations that are predominant in the geographical area of these schools. In Norway, they are open to students with elementary schooling and provide an occupation-specific training for (future) manual and white-collar workers. In West Germany, vocational schools are mainly technical schools, open to middle-school leavers; in the United States, they are mainly community colleges.

Two types of in-firm training can be distinguished: apprenticeships and on-the-job training. *On-the-job training,* provided mainly in the United States, is unregulated by state laws, has no clearly defined curriculum, and mostly leads to very firm-specific knowledge. Because the degree of specifity of vocational training has a rather important impact on future career chances, it will be discussed in detail in Section 5.4, which deals with the transition between school and work.

Apprenticeships are the most common vocational training arrangement in West Germany and in Norway. In Norway, apprenticeships are subject to (and protected by) state and guild regulations and last two or four years. In West Germany, the so-called "dual system" prevails,[30] in which apprentices have to attend public schools *and* hold contracts with an employer.

The four vocational training structures—general schooling, vocational schools, apprenticeships, and on-the-job training—can now be analyzed in regard to the two dimensions of standardization and stratification. I suggest that the degree of *standardization* is *relatively* higher whenever the training takes place within public schools and in the form of apprenticeships. Such a training will be broader and will not be firm-specific to the extent to which "on-the-job" training most likely is. Training that takes

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[26]See Lynd and Lynd (1929:195). The Lynds report that "boys study auto mechanics by working on an old Ford car; they design, draft, and make patterns for lathes and drill presses, the actual casting being done by a Middletown foundry; they have designed and constructed a house, doing all the architectural, carpentry, wiring work, and painting."

[27]Community colleges can be neglected here because before 1960 they played a minor role.

[28]Collins (1971:1006). See also Duncan (1964:121–134), and Plunkett (1960).

[29]Clark and Sloan (1966:73). See also Collins (op. cit. 1971:1006). Hamiliton and Wright (1975:341, Footnote 8) further report that the 1960 census lists 85,282 males in the category "apprentices." They write: "Assuming that all of these are males in the age range 16–21, no more than 2 percent of the total would be receiving training of this sort."

[30]The obligatory three years' part-time attendance at vocational schools is a second feature that distinguishes the German system from the structures in the other two countries. This obligation extends to all school-leavers between the ages of 15 and 18, irrespective of whether or not they are in training apprenticeships or under contract. While this prolonged part-time school attendance might encourage the motivation to search for an apprenticeship contract, it does not alter the general evaluation of the German apprenticeship system in the context of this work.

Figure 3.6
Stratification and Standardization of Vocational Training Structures

Standardization	Stratification: high	Stratification: low
high		West Germany Norway
low	United States (on-the-job)	

place in firms depends on characteristics of the firm, the region, and economic conditions.

In regard to the dimension of *stratification,* training in general and vocational schools, as well as apprenticeships, do not stratify people: Everyone is eligible for, and has the option to, participate.[31] Further, the attrition rate is low, and the employers are not allowed by law to fire apprentices. "On-the-job" training, however, stratifies people. It is the decision of employers alone whom to hire; the training is unconstrained by any federal regulations, and the workers are not protected against layoffs or dismissal.

Norway and West Germany provide unstratified systems, the United States a stratified system. Further, the United States offers mainly unstandardized structures, whereas Norway and West Germany mainly furnish a standardized system.

With this discussion, the description of educational systems is concluded, and I can proceed with the analysis of their importance for labor-market outcomes. This is the goal of the next section to which I will turn after some general remarks on cross-national comparisons of educational structures.

On the most general level, it has been shown that the three educational systems differ. Indeed, they have persisted—and even broadened—in the decades between 1920 and 1970, decades in which the countries further industrialized, developed, and modernized.[32] For the three nation states studied, a process of convergence cannot be observed.

The focus on "convergence" theory leads many observers to overlook key differences among modern industrial nations. My data suggest that the structure of educa-

[31]In Norway and West Germany the supply of apprenticeships always exceeded the demand; this changed with the recession in 1967, but did not affect the range of options open to the cohorts studied here.

[32]Norway adapted "integrated school structures," whereas in West Germany these reforms failed; the expansion of educational provisions is more pronounced in the United States and in Norway, whereas urban-rural differences are persistently higher in these two countries than they are in West Germany.

tional systems is not wholly determined by "unescapable" demands of the industrial system. In all three nations, standardized and stratified educational systems coexist. In this matter, a metaphor of Schumpeter comes to mind. He asked the question, "What is needed to make automobiles faster?" and provided the answer, "brakes." In the United States, unstratified school systems are used at the primary and secondary level, and each individual thus has the opportunity to obtain the maximum number of school years provided by the system. But opportunities are curbed by stratified educational systems of higher education that secure status barriers. In West Germany and Norway, where highly selective and restraining mechanisms prevail at the lower levels of the school systems, brakes at the upper level are not needed, and opportunities are more equally distributed among those who reach this level. The effects of these system characteristics will be analyzed by looking at the actual labor-market opportunities available to people as they leave the school systems at different levels, in different nations.

3.5 Education and Labor-Market Outcomes: A Framework

In this section, I will show how educational systems help match people to jobs using the typology of educational systems developed in the preceding pages. In a previous section, it was argued that standardization shapes employers' expectations. In standardized systems employers can rely on information given by (standardized) certificates and do not have to screen and/or train individuals entering the labor force. The effect of standardized training systems then, is a smooth transition between educational and occupational sector, a transition that does not require repeated job shifts to achieve a good "match."

Stratification, on the other hand, affects the match between education and social structure. In stratified educational systems, there is a tight coupling between the educational system and a differentiated occupational structure; in unstratified systems, the coupling is loose. Hence, stratified educational systems also should reduce the frequency of job shifts.

The argument is illustrated in Figure 3.7. Following the format of Figures 3.4 and 3.6, the coordinates are the two dimensions relevant for comparative analyses of the link between educational and occupational systems. Most occupational transitions are expected in unstandardized and unstratified educational systems; least shifts are expected in standardized and stratified educational systems. Educational systems which offer any other combination of standardization and stratification produce a rate of job shifts which falls in between the two extremes.

Some qualifications of these predictions are in order. First, the analytical framework should be understood as an analytic tool, rather than a set of deterministic predictions. No claim is implied that all constraints on labor-market outcomes can be understood as outcomes of the stratification and standardization of educational systems. The advantage of the typology simply is that it yields hypotheses that can be operationalized and tested empirically.

Figure 3.7
Effects of Standardization and Stratified Educational Systems on the Propensity for Lateral and Vertical Career Mobility

Standardization	Stratification: high	Stratification: low	
high	–	+	Tight coupling between educational attainment and labor-market outcome
low	+	++	Loose coupling between educational attainment and labor-market outcome

Second, any full model of the way in which educational structures translate to labor-market outcomes must also include a link with social power structures and social inequality factors that underlie and enforce differentiation in the labor market. This intermediate level between educational outcomes and labor-market outcomes could be based on the concept of social closure, as provided by Max Weber and elaborated, among others, by Frank Parkin (1979) and Max Haller (1982).[33] Unfortunately, this dynamic cannot be addressed with the data collected for the present study.

The following sections elaborate on consequences of educational opportunities and constraints on labor-market outcomes. Section 3.6 focuses on the transition into the labor market following primary and secondary education, Section 3.7 on the transition following higher education, and Section 3.8 on the transition following vocational training.

3.6 Labor-Market Transition From Primary and Secondary Schooling

In Norway as well as in the United States, significant differences in the quality of schooling for the population as a whole were observed. *Unstandardized* structures, such as differences between rural and urban schools or between inner-city and suburban schools seriously affect the choice of occupation upon entry into the labor

[33]The concept of social closure refers to the process by which social classes seek to maximize rewards by restricting access to opportunities to a limited circle of eligibles. Parkin builds on the concept of social closure of the exclusionary kind, closure strategies adopted by the excluded themselves as a direct response to their status as outsiders ("usurpation"). See Parkin (1979:40ff.) and Haller (1982). In the present context, one could argue, for example, that German skilled workers attempt to secure their privileged position in organizations by practicing both exclusion (directed against unskilled workers) and usurpation (directed against white-collar workers).

market. It does not require any imagination to see that the rural education in Norway socializes students to enter occupations that are predominantly "rural occupations," in areas like farming, crafts, and fishing. This restriction can neither be attributed to differentials in years of educational training nor in educational level attained, but is due to an urban/rural partition in the labor market that is upheld by the educational system. The divider does affect both entry into the labor market and movement between jobs, specifically the occurrence of lateral job shifts.

Labor-market outcomes, however, derive not only from strong ties between school location and student, but also from the lack of standardized, and thus reliable, school-leaving certificates which can be universally used as screening devices (Spence, 1974; Stigler, 1962). In West Germany, the "Volksschulabschluß" is a standardized examination and serves as screening devices for employers. In Norway and the United States, however, employers cannot rely on such certificates when allocating people to jobs. Instead, they must develop and employ their own strategies and use their own selection procedures, all of which impose costs on firms. One such selection procedure, reported in studies that analyze American devices for matching people to jobs, is to allocate a large proportion of people into low-level entry positions in the firm, to screen them on the basis of their on-the-job performance, and only then to finally "select" them. Thus, selection takes place within the firm rather than prior to initial employment.[34]

The implications for school-leavers are obvious. The job-search activity for American and Norwegian students that exit the school system after primary school (and do not continue with vocational training) will take a time and involve many job shifts early in these careers.[35] In other words, the matching of people to jobs is unbound, and the link between the educational and occupational systems is loose.

In West Germany and in Norway (at the secondary-school level), on the other hand, the link between the two systems is tight. Employers assume that the educational system channels, selects, and screens their future work force reliably. Compared to American employers, they need fewer screening mechanisms within the firm, hire only as many workers as they actually need, and thus decrease their overall hiring (and firing) activity. This tight coupling between schooling and labor-market entry decreases the probability of many early career job shifts.

Labor-market outcomes that result from *stratified* structures at the level of primary and secondary schooling concern the matching of a differentiated school structure to a differentiated occupational structure. Stratified structures allocate subsequent occupations and status to match positions with the differentiated occupational structure.[36] In the two countries with highly stratified school systems, West Germany and Norway, the educational systems regulate entry into the class and status system on almost all levels: Pupils without any certificates largely join the ranks of the 'unskilled.' The qualifying school-leaving certificate of the *Volksschulen* (the completion of primary

[34]Sengenberger and Köhler (1983), König and Müller (1986), Maurice et al. (1982), Rose (1985), and Haller, König, Krause, and Kurz (1985).

[35]For empirical evidence see Coleman (1984), Blossfeld (1986), and Kappelhof and Teckenberg (1987).

[36]Bowles (1971) and Bowles and Gintis (1976).

schools in Norway) qualify people for entry into apprenticeship and skilled workers' occupations. The *realskolen* and *Mittelschulen,* mainly attended by lower middle-class craft and industrial workers, lead to the Real-Examen, and offer a passage to white-collar jobs. The "gymnasia" lead to "Examen Artium" and Abitur which guarantee university entry. In both countries, stratified school systems correspond to differentiated occupational strata. The effect of the tight link between educational and occupational sector is to reduce the likelihood of many job shifts at the beginning of the work life. Even job shifts later in the work life are unlikely to crosscut the educational partition in the labor market.

Unstratified school systems, on the other hand, do not sift and differentiate people according to occupational levels. American students (if they do not drop out from high school) leave primary/secondary schooling at one level, but are faced with a differentiated occupational structure. The contest is focused on an array of vacancies at different occupational levels. By contrast, Germans and Norwegians who exit the educational system at different levels are constrained to enter narrower ranges of jobs, all of which belong to the same occupational level. Thus, the coupling between educational attainment and occupational status should be higher for Germans or Norwegians than for Americans.

The implications for cross-national studies that analyze nation states with different school structures are frequently neglected. Simple measures of years of schooling and school-leaving degrees, are meaningless measures in comparative studies. Secondary-school degrees in Norway and West Germany cannot be compared to high-school degrees in the United States. Ten years of schooling, for example, refers to high-school drop-outs in the States, but to middle-school leavers in West Germany and Norway. These groups have different labor-market chances. Depending upon the educational system studied, these seemingly common measures imply very different constraints and lead to different strategies, for both school-leavers and employers.

3.7 Labor-Market Transition From Higher Education

As we have seen, the United States provides unstandardized and stratified, West Germany and Norway standardized and unstratified, higher education.[37] This section will briefly summarize the main differences and discuss the consequences for labor-market outcomes.

German and Norwegian students pursue their studies as a "Brotstudium,"[38] realizing that their only chance to attain high status is via academic studies. The degree of professionalization was (and is) high in both nations. Students exit the system of higher education with a certificate of general value, independent of where the training took

[37]American professional and graduate schools are discussed in Chapter 5.5.

[38]See Wundt's (1877) account on why so little attention is paid to his philosophy classes: "(German) students have chosen a profession which is to procure them a future living as a doctor, practicing lawyer, clergyman, or the like, and for which they must establish their fitness in an examination at the close of the university career..."

place. This specific career education permits entry into the professions without further training. The transition can therefore be made quickly and without "noise"—that is, without many shifts at the beginning of the career. This transition will be especially smooth because, in West Germany and Norway, "learning and the learned are thoroughly integrated into the administrative systems,"[39] and many university graduates become employed as public servants with life-long employment contracts. Further, many core enterprises are nationalized (such as railway, postal services, telephone, and other communication services), and this extends the range of vacancies for university graduates.

American students in the 1950s tended to endorse the Horatio Alger myth, celebrating the success of the self-made and self-educated man. School achievement was only one of several paths to success.[40] In America, the higher education system is one mechanism by which college graduates are stratified. Graduates' labor-market chances are affected not only by the number of years of higher education they have received, but even more by the "name" of the institution which awarded the degree. Poorly standardized educational structures deflate the value of certificates as passports for entry in the labor market. The rather general US training, as well as the "missing connection between higher education and government service" (Ringer, 1979:247), suggests that the move into the occupational system will be more erratic, and that entry in the occupational system will occur at different levels of the occupational status system.

It has sometimes been suggested that American college education can be compared to the training that German and Norwegian students receive in the gymnasia. In these latter two countries, however, the baccalaureates almost always transfer to career-oriented university studies, and very few students enter the labor market immediately following the gymnasium. The career unspecific training in gymnasia has, therefore, no impact on labor-market outcomes. In the United States, many students enter the labor market upon college graduation (also called baccalaureate, B.A.), and few transfer to professional or graduate schools. In regard to implications for the transition into the labor market, such a comparison between colleges and gymnasia is unsuited and misleading.

To sum up: The link between higher education and occupational structure is tight in West Germany and Norway and is loose in the United States. Few job shifts should be observed at the beginning of the work life for Norwegian and German graduates and many should be found for American graduates. In West Germany and Norway, the

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[39]Ringer (1967:124). Ringer nicely describes the old privileges coming with the Abitur: As of 1890, a successful completion of grammar school shortened military obligation and granted the right to become a higher public servant or to enter the provincial bureaucracy.

[40]See Ringer (1966), Touraine (1974), Ben-David (1947), and Lynd and Lynd (1929). American studies, undertaken in the 1940s, indeed show that the degree of professionalization was low in the US. Bell (1940) finds that for managerial positions 5 percent of the employers he interviewed require less than high-school level education, 54 percent require a high-school diploma, 2 percent require some college, and 12 percent require a college degree. For professional positions, 9 percent of the employers ask for less than a high-school diploma, 16 percent for a high-school diploma, 23 percent for some college, and 52 percent for a college degree (Bell, 1940:264). Data also analyzed in Collins (1971).

attainment of university degrees "opens the door" to high-status jobs as well as allowing for upward career mobility in the course of the work life. This may be true to some extent for the American university graduate as well, but less certainly so. The key explanation is the coupling between attainment of a college degree and labor-market outcome. This coupling is high in the United States and low in West Germany and Norway, providing evidence that educational systems pattern indeed labor-market processes and do so differently across nations.

3.8 Transition From Vocational Training

In this concluding section, I present hypotheses that summarize the link between vocational training institutions and mobility processes in the labor market.

The major distinction among vocational training arrangements is their degree of standardization. One can think about the dimension of standardization as a continuum reaching from apprenticeships at one end to on-the-job training at the other. Apprenticeship systems should lead to quite different labor-market outcomes than do on-the-job training systems.

Empirically, such a clear division cannot be expected. Analyses by other researchers have shown that completed apprenticeships do not guarantee employment in the occupation in which a worker has been trained. In West Germany, between 1940 and 1960, the supply of apprenticeships always exceeded the demand, but (especially in the crafts) many more journeymen were trained than could find employment.[41] In 1964, 49 percent of all employees who finished an apprenticeship did not stay in the occupation for which they were trained,[42] which means that apprentices acquire skills they often cannot exploit. One reason for this disequilibrium is that Norwegians and Germans who undertake apprenticeships leave school at age 14. At that age, applicants tend to live with their parents, which implies that the decision about which firm to apply for an apprenticeship is shaped by local labor-market characteristics[43] rather than by personal preferences or long-term considerations. For many school-leavers, occupational and firm choice take place *uno actu.*[44] The fact that the supply of apprenticeships in some occupations does not correspond to the supply of open positions in the labor market for those positions leads to a stratification of apprentices.

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[41]Alex, Heuser, and Reinhardt (1973) and Hofbauer and König (1973).

[42]Wirtschaft und Statistik, No. 10 (1967:577). Crusius (1970:14) writes that according to information from firms, 50 percent of the workers employed by *Bosch* were trained in a different occupation, as were 60 percent of the workers employed by *Krupp,* and 54 percent of the workers employed by *Bayer.*

Hofbauer and König (1973) further report that more than half of the 35.1 percent of male skilled workers who changed occupations between 1955 and 1970 reported that they could not use the skills acquired in their vocational training.

[43]Heinen (1972:60) and Alex (1973:77).

[44]The age grading is especially remarkable when compared to the United States: In 1968, 67 percent of American young people aged 16–19 were either in school or in college, institutions that do not provide for career training. In West Germany, only 16 percent of the same age group were in general schooling, and the remaining 84 percent had already decided on their future vocation.

Some individuals enter the labor market in the occupation they are trained for. Others enter in a different occupation but are offered more or less extensive on-the-job training in the firm. And a third group may also enter the labor market to work in a different occupation but without subsequent retraining possibilities.

This situation has long-term implications, for it is known[45] that West Germany[46] has a *"qualification" labor market,* such that occupational training and skills are more important (for job security, wages, fringe benefits, etc.) than is seniority. Thus, the stratification in German enterprises is between skilled and unskilled workers. Workers with apprenticeships that do not "fit," will always remain marginal to "skilled" workers.

Thus, the apprenticeship system itself is standardized. Frictions between supply of apprenticeships and demand of apprentices can, however, lead to transition problems for workers which enter the labor market in some circumstances. Hence, Hamilton and Wright (1975:336) correctly point out that "the mechanisms by which new generations are 'tracked' into occupations differ substantially" (between West Germany and the United States). But their explanation that "the fit between process and structure is closer in West Germany than in the United States" must be qualified. The transition from school to apprenticeship is *not* the crucial link. Rather, the transition from apprenticeship into the labor market, and occupational changes therein, is critical. Cross-sectional data easily hide the most important and the most uncomforting frictions. Only empirical analyses using longitudinal data can determine whether or not the match between apprenticeships and long-term occupations is indeed so drastically different among the nations.

On-the-job training can be considered a rather specific training, completely unregulated by curricula. A change of enterprise almost always implies the need for further training. "On-the-job" training, however, is often followed by work in organizations that follow an *"organizational" and "seniority" labor-market* system, rather than a "qualification" labor-market system.[47] The longer the worker stays in the firm in which he or she has been trained, the more precious this worker is to the firm and the less likely the firm will lay off or fire the worker. Concomitantly, American union policies protect workers with much labor-market experience, even though they may not be the workers with the best training.

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[45]Maurice and Selliers (1982), Sengenberger and Köhler (1983), Haller (1985), and König and Müller (1987).

[46]To my knowledge, none of these studies included Norway, but given the similar structure of apprenticeships in the two nations, there is no reason to suppose that the Norwegian situation should differ from that in West Germany.

[47]Maurice, Sellier, and Silvestre (1979) develop the typology of "qualificational" and "organizational" mobility spaces in their comparison between German and French organizational structures. Organizational mobility spaces mean that the individual firm, its organizational structure (promotion ladders), and the on-the-job experience are mainly relevant for mobility opportunities. Qualificational mobility spaces mean that vocational education has a greater significance for occupational opportunities.

While Maurice et al. use this typology for the French-German comparison, it also suited for the present comparison between the United States, West Germany, and Norway. Here, the United States provides a organizational labor market, West Germany a qualificational labor market, and Norway a mixture of both systems, dependent on the type of vocational training.

3.9 Conclusion

In this chapter, I developed a classification scheme of educational and vocational training institutions according to the dimensions of "standardization" and "stratification." The advantage of this classification is that it addresses the crucial link between educational and occupational systems.

Distinct hypotheses regarding (1) reasons why differences between standardized and stratified educational systems are expected, (2) the rate of job shifts, and (3) the direction of job shifts can be derived.

Differences between standardized and unstandardized, stratified and unstratified educational systems are expected because *employers have more information* about their future work force. Standardized systems provide reliable information on the skills of the future work force. Stratified systems screen and select future workers before they enter the labor market. Another reason for expected differences between standardized and unstandardized, stratified and unstratified training systems is that these systems differentiate between *workers* in regard to their flexibility to quit and find other employment. Unstandardized vocational training systems confine workers less to specific occupations than do standardized training systems (vocational occupation-specific training). In unstratified systems persons leave formal schooling later (around age 17) and with more information on the range of occupations (due to general vocational training within formal education) than in stratified systems. Here, persons leave the school system early (around age 14) and are often confined to apprenticeships close to their family homes.

For these reasons, the *rate* of job shifts is supposed to be highest in unstandardized and unstratified systems and lowest in standardized and stratified systems.

Furthermore, in unstratified and unstandardized school systems the *chance of upward and downward job moves* is greater than in stratified and standardized systems. Stratified systems do not only shield against downward moves but prohibit upward moves in positions which are reserved for persons with a higher formal education. Unstandardized systems enforce training and selection procedures within firms and concomitantly long intrafirm mobility ladders to create incentives to stay with the firm after the training period.

PART TWO: MEASUREMENT

DATA, METHODS, AND VARIABLES

The second part of this study contains two descriptive chapters: Chapter 4 introduces the *data sets* used in the remaining empirical chapters and describes the *methodological approach* with which the data are analyzed.

Chapter 5 explains the operationalization and measurement of *variables.* The operationalization of the indicators is guided by the effort to substitute variables for seemingly "nation-specific" arrangements, such as institutional structures and socio-economic developments. This problem of "substituting variables for nations" can briefly be illustrated by two examples, the measurement of educational attainment and of occupational prestige.

For education, it has been argued above that the same amount of years of schooling, or the nominally same educational degree, means something different across the three nations, and that they confer a different relative advantage to the person who attained it. Nevertheless, the return to education will not be construed as a nation-specific attribute but rather as being dependent on the underlying dimensions of standardization and stratification.

For occupational prestige, it is not assumed that occupational prestige rankings are time and place invariant, but that international differences in the hierarchy of the occupational structure must be considered. The assignment of the same occupational prestige score to farmers in Norway and to farmers in West Germany, for example, would be inappropriate because the relative position of farmers is different across the nations to begin with, and because their relative standing in the occupational structure developed differently over the years. Therefore, I construct a scale that captures nation-specific occupational hierarchies and the change of these hierarchies over time.

Chapter 4
Data and Methods

4.1 Introduction

Most mobility studies are based on cross-sectional data or panel data with two or three waves and are biased by the times of measurement chosen. They do not capture processes, but provide "snapshots."

A reliable measurement of mobility processes requires "movies"—continuously observed variables in continuous time. In the past, such movies were not available or remained silent due to the absence of mathematical models and statistical tools which could serve as speakers. This has changed. Panel data with many waves and life event data are now available, and tools for their analysis have been developed. The present study takes advantage of this progress and analyzes continuous longitudinal data, specifically *retrospective life history data.*

4.2 The Three Life History Studies

Life event data sets for *Norway,* the *United States,* and *West Germany* will be used. All three data sets comprise representative national samples of adult men[1] of different birth cohorts. Data are collected by asking the respondents to recall the exact timing and chronological order of different realms in their life, such as their childhood, their families of origin, and their educational and occupational activities from age 14 until the time of the interview. The major areas covered include place of residence, education, occupation, household status and composition, marital status, and health. For any area, the beginning and ending months of each state that lasted longer than one month is recorded.

The following paragraphs give a brief overview of the three national data sets.[2] A summary account of the design of the three studies is displayed in Figure 4.1.

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[1]Only the German data set also includes women. The comparative focus of this research unfortunately necessitates the exclusion of women.

[2]For further details, I refer to the technical reports on the national data sets: For the *United States,* see Blum, Karweit, and Sørensen (1969) "A method for the collection and analysis of retrospective life histories."

For *Norway,* see the "Codebook and documentation of the Norwegian life history study" by Rogoff Ramsøy, translated by Visher (1984). For further information see Rogoff Ramsøy (1977) "Sosialmobiliet i Norge: et oppdrag for Levekarsundersokelsen."

For *West Germany,* see the paper by Mayer and Brückner (1988) "Lebensverläufe und gesellschaftlicher Wandel."

Figure 4.1
The Design of the Three Life History Studies

Country	Principal investigator	Time of interview	Respondents' birth cohorts	Sample universe	Size of sample	Data structure
USA Johns Hopkins Data	James S. Coleman (Dept. of Social Relations Johns Hopkins University)	1968	1929–1938 (here recoded in 1929–1932, 1933–1935, 1936–1938)	Total population of males 30–39 years old in 1968	Total sample size = 1,589; Whites = 851, Blacks = 738 (here the full sample, not the national weighted sample, is used)	Event files on main activity, residence, formal education, on-the-job training, main occupation, secondary occupation, marital status, children, health, social welfare benefits
Norway Norwegian Life History Study (NLHS)	Natalie Rogoff Ramsøy (Norwegian Census Bureau)	1971–1972	1921 1931 1941	Men living in Norway, 1970 including immigrants	Total sample size = 3,470 1921 = 1,322 1931 = 1,094 1941 = 1,054	Same as above
West Germany German Life History Study (GLHS)	Karl Ulrich Mayer (Max Planck Institute for Human Development and Education)	1981–1983	1929–1931 1939–1941 1949–1951	Universe stratified by cohort and sex. Foreign workers are excluded	Total sample size = 2,172 (men = 1,079) 1929–31 = 348 1939–41 = 376 1949–51 = 355	Same as above

The *American Life History Study (ALHS)* is commonly referred to as the "Johns Hopkins Study." This life history study was conducted as part of the Social Accounts Program at the Center for Social Organization of Schools, The Johns Hopkins University, Baltimore. The Social Accounts Program was initiated by James S. Coleman and Peter H. Rossi. The universe for the Life History Study is the total population of males 30–39 years old in 1968 (the time of the interview). The total number of interviews obtained was 1,589: 738 Black and 851 White respondents.

Two samples are available. One sample is a nationally representative sample which weights White and Black Americans according to their proportion in the population. The second sample overrepresents Black American citizens.

Research on mobility patterns of White and Black Americans provided evidence[3] that work histories differ across the two populations, and that major determinants of

[3]See Coleman et al. (1972).

career trajectories—such as education, labor-force participation, and labor-market conditions—do not have the same effects on career processes across racial lines.

On the basis of these preliminary results and previous research by other investigators, it is clear that all analyses must be stratified by race to avoid biased estimates. The nationally weighted sample would therefore not provide any advantage, and I thus use the unweighted sample (which overrepresents Black American citizens): Black and White American citizens will be treated as two distinct populations.

The Norwegian data are from the *Norwegian Occupational Life History Study (NLHS),* directed by Natalie Rogoff Ramsøy and collected with the help of the Norwegian Census Bureau. The study was modeled, in part, on the Johns Hopkins Life History Study. The sample is comprised of men living in Norway in 1970 whose year of birth was either 1921, 1931, or 1941. The universe excludes women and includes immigrants born in other countries. The total sample size amounts to 3,470 completed interviews, which were conducted between November 1971 and March 1972.

These interviews are not distributed equally across the cohorts. In the Norwegian population, the cohort born in 1921 is significantly larger[4] than other birth cohorts, and the Norwegian researchers accordingly drew a sample which is 25 percent larger than the samples of the other two cohorts.

The West German data are from the *German Life History Study (GLHS),* originated and directed by Karl Ulrich Mayer and collected with the help of the National Center of Methods, Surveys and Analyses (ZUMA) and GETAS between July 1981 and October 1983. A representative sample stratified by cohort and sex was drawn. Three cohorts were selected, born between 1929 and 1931, 1939 and 1941, and 1949 and 1951. Foreign residents (defined as persons not holding German citizenship) are not part of the universe. The total sample size of these three cohorts is 2,172 (1,079 men).

4.3 Comparison of the Three Data Sets

Differences among the three national studies that affect the analyses in this study are: (1) the selection of birth cohorts, (2) the time of the interview, (3) the sample size, and (4) the sample universe.

With respect to *birth cohorts,* only men born in 1931 are included in all three data sets. The cohort born in 1921 (Norway), and the cohort born in 1949/51 (West Germany) are not part of the other samples. The American study is not a cohort study in the more narrow sense of the concept. It was, however, possible to recode the ten consecutive birth years which are covered by the American study such that the "cohort" 1929/31 was artificially formed.

By resolving the international difference in the selection of birth cohorts in this way, it is possible to identify and analyze a cohort of males born around 1930.

With respect to the *date of interview,* it must be noted that the German data were collected one decade later than in the United States and Norway. Life histories of

[4]Forty percent larger than the 1931 and 1941 cohorts in the years of birth and 25 percent larger by 1970.

German men of the same birth cohort are reported until age 50 in West Germany, but only until age 40 in Norway and the United States.

It is undisputed that career trajectories are dependent on chronological age. In later career stages, fewer job transitions can be expected, and the transitions might be generated by different mechanisms. Moreover, basic counts such as the number of jobs and the number of firm, employer, or sector changes will be influenced by longer labor-market exposure.

It is possible to adjust for such disturbances. The German data file that will be used in all comparative parts of this research has been truncated by one decade; all observations which refer to events after 1970 will be neglected.[5] The variable which indicates whether or not the event is completed has also been adjusted.[6]

With respect to sample size, the German and American samples are half as large as the Norwegian sample. This has two consequences: A larger sample size more likely generates statistically reliable results, and subgroup analyses (such as a breakdown of cohorts by occupational groups) are constrained by the sample size of the German and American data.

Hence, subgroup analyses will be restricted to a level which is feasible for all data sets, and reliance on the level of statistical significance for making interpretations will be avoided.

With respect to the *universe of the samples,* the exclusion of foreign workers in the German data is consequential. The proportion of foreign workers in the total German work force was about 10 percent in the years under investigation. In lower manual occupations, this proportion was significantly higher because foreign workers are overrepresented in low-level blue-collar jobs.

It follows that even if German blue-collar workers had the opportunity to leave low-level jobs, it cannot be known whether this outcome was due to a general upgrading of the occupational structure or to the influx of foreign workers which filled low-level positions. In other words, we have to consider that the occupational structure has not changed at all, and that the upward occupational mobility of German workers is due to sample bias—namely, to the exclusion of exactly those workers who filled the vacated positions and gave German workers the opportunity to move in higher level jobs.[7]

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[5]This truncation is only meaningful in comparative studies. Any study which focuses only on the German data, will, of course, analyze the full data set and not disregard ten years of observation. The truncation has furthermore been necessary only for (a) descriptive analyses, that is, interpopulation comparisons of the number of jobs held, the number of employer, sector, and firm changes and (b) the creation of the macroeconomic indices which are constructed as indicating the average economic conditions during the time a job was held. Without truncation, these average numbers would result in considering German labor-market conditions after 1970, quite in contrast to the three other populations for which economic conditions are only considered until 1970.

[6]Differences in the time of the interview have possible implications over and above those due to different observation periods and are related to the specific (retrospective) nature of the data. This problem will be discussed in the following section on the quality of retrospective data.

[7]If this reasoning is correct, the proportion of foreign workers in the work force (introduced as time-series data) should show positive and significant effects on the rate of upward job shifts for German workers. This hypothesis is open to empirical testing: In all analyses performed for the German data set, the percentage of foreign workers in the German economy will be controlled.

These differences in the properties of the three national samples are not trivial. Appropriate adjustments of the national data sets are, however, possible to an extent that ensures basic comparability across the three nations. The common features of the three data sets—their design as nationally representative, retrospective studies of similar age groups and their coverage of similar life domains—thus meet the most basic requirement for meaningful empirical comparative work. Before describing the construction of the major variables used in this study, one further property of the data must be addressed: the properties of retrospective data in general and their possible impact on this study in particular.

Quality of Retrospective Life Event Data

I argued in the introduction to this chapter that retrospective life event data are better suited for mobility research than are cross-sectional data. Despite this advantage, there is one possible drawback: The properties of retrospective data, and in particular the extent of recall bias, have yet not been carefully studied in relation to life event data.[8]

In this study, recall errors may lead to biased estimates and flawed interpretations of individual career mobility patterns for three reasons: (1) They increase the random error; (2) they can affect inferences about causal outcomes; and (3) they can introduce bias into the comparative analyses.

(1) Memory effects increase the amount of error. This general effect can be assumed to be distributed equally across the four samples, because there is no reason to assume innate differences in the ability to recall past events across the four populations.

(2) It is likely that the precision with which life events can be remembered varies with the *nature of these events.* The dates of crucial events, such as marriage, the birth of children, or graduation might be remembered more easily and precisely than dates of job shifts—especially when those shifts occurred frequently. Thus, if the timing of change in educational attainment can be better recalled than the timing of a job change, and if we use educational attainment as a time-dependent covariate in calculating the probability of job transitions, then analyses that try to causally link educational attainment and job shifts are not possible. Consider the following specific example.

Assume that a respondent reports having attained an additional educational certificate in June 1950 (correct answer). Some time later in the course of the interview, the respondent is then asked to recall his occupational history. He reports a promotion into a better job in January 1950 (wrong answer) instead of September 1950. Under certain modeling conditions, a researcher would in this case (falsely) conclude that education has no effect on the gain in status attainment.

(3) Whereas what was addressed so far are general problems of retrospective studies and affect the data of all samples equally, the fact that the respondents have been interviewed in different years in different nations (i.e., around 1970 in Norway

[8]A series of studies on the ability to recall past events have been conducted by social psychologists, who studied some subjects under laboratory conditions. See, among others, Bernard, Killworth, Kronenfeld, and Sailer (1984) who studied health histories and the survey article written by Bradburn, Rips, and Shevell (1987). For a discussion of the reliability and validity of retrospective data in sociological research, see Schuhmann and Presser (1981), Tuma and Hannan (1984:145–150), and Jabine et al. (1984).

and the United States and 1980 in West Germany) poses an additional, specific problem, namely, that the *same event* (e. g., labor-market entry date) has to be recalled after a *different length of time.* To illustrate, a job shift at age 26 (in 1955) has to be recalled after 16 years for Norwegian men, but after 26 years for German men.[9]

It is reasonable to assume that events which occurred in the immediate past are better recalled than events that occurred many years ago. If this is correct, then Norwegian (and American) men are likely to recall more events, and to recall them more precisely, than German men. Analyses that found more shifts in the Norwegian and American samples might then falsely conclude that the Norwegian and American opportunity structures were more favorable to job shifts than those in West Germany.

On the basis of the data at hand, neither the extent nor the impact of recall bias can be addressed. Researchers who have studied the validity of the German life event data, however, reported confidence in the quality of those data.[10] Researchers must rely on their judgement—in part because this is the only relevant longitudinal data available.

4.4 Design of the Empirical Analyses

The data to be analyzed cover three national environments which differ in relevant structural features. The educational and vocational systems of Norway and West Germany are clearly distinguished from those in America. The industrial composition of labor and the timing of change in employment shares in agricultural, industrial, and service sectors also differ substantially across the three countries. Additionally, the macro-economic conditions that shape job opportunities change drastically over time and across nations. The data also allow one to test whether the same structural conditions have the same impact on job opportunities for all members of one particular society. This test is possible on the basis of the American data which are stratified for White and Black Americans. In sum, the data appear to be uniquely suitable for an empirical investigation of career mobility dynamics.

The empirical analyses are designed so that the career trajectories of workers born in the *same historical time* are compared and, simultaneously, the career trajectories of workers are *observed over the same amount of time.* This design allows for the assessment of (a) the impact of major historical events (e. g., World War II) on the employment of workers who are in about the same stage of their work life, (b) the interaction between political events and economic development on employment structures, and (c)

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[9]The truncation of the German data file does not solve this problem.

[10]Cf. Mayer (1984, 1986), Blossfeld (1985, 1986), and Brückner (1985). As Mayer and Carroll write (1985): "Our confidence in the quality of the data on objective life events such as job change, marriage and migration is based on three pieces of circumstantial evidence: (1) a successful ten year follow-up pilot study of residential, familial and occupational changes of 35 men (Tölke, 1980; Papastefanou, 1980); (2) checks of the life history protocols which included a high number of second contacts with the respondents by interviewers, mail and telephone; (3) a favorable statistical comparison of the data with comparable data drawn from the 1971 and 1981 microcensus (Blossfeld, 1986) and census data on fertility (Tuma and Huinink, 1986)."

direct comparisons of basic measures of change such as number of jobs, firm changes, or upward gains.

This approach, however, departs from the design of other studies that address similar questions. Some researchers[11] have suggested the substitution of the developmental time of the societies into which cohorts are born for the historical time of birth. I did not follow this suggestion for three reasons:

(a) A comparison across cohorts born in different decades would risk interpreting international differences as cohort or life-cycle effects rather than as outcomes of period effects.

(b) The goal of studies that compare across cohorts is to control for different stages in the economic development of societies. This requires measures that can identify stages of economic development as well as the temporal succession of such stages. It is clear that Norway became industrialized late. The question, however, is how much later "late" is—and it is impossible to answer without subscribing to a world view which assumes complete determinism of economic development. In other words, a decision to compare the 1920 American cohort to the 1930 German and the 1940 Norwegian cohort to control for different stages in economic development would be arbitrary and without empirical or theoretical legitimation.

(c) Even if the stage of economic development could be measured, it is not desirable to smooth differences in economic development by limiting the analysis to the study of one particular stage in economic development. The more general question of how macroeconomic conditions and their change shape career dynamics is interesting in itself and demands heterogeneity rather than homogeneity in economic development.

4.5 Methods

The analyses of career mobility patterns will focus on jobs—their duration, number, and succession. The succession of jobs (or the move from one job into another job) can be considered as a qualitative change (event) that occurs in time. It is therefore appropriate to use event history analysis to model the determinants of the timing of such events, that is, the rate at which job moves occur.[12] In models of life event analyses, the dependent variable r(t) is a hazard rate, defined as the instantaneous probability of an event (here a job shift) occurring in the next moment of time. The definition of the hazard rate is

$$r(t) = \lim 1/t * P(t < T < t + t/T > t). \quad (1)$$

[11] See, for instance, Teckenberg and Kappelhof (1987) who compare (on the basis of cross-sectional data) the occupational mobility of American men in 1973 to mobility patterns of German men in 1984 with the argument that West Germany lags ten years behind the United States. For a similar argument in the context of a Norwegian-German comparison, see Mayer, Selbee, and Colbjørnsen (1988).

[12] For a description of specifications, models, and estimation procedures of life-event analyses, I refer to Tuma and Hannan (1984), Allison (1984), Kalbfleisch and Prentice (1980), and Blossfeld, Hamerle, and Mayer (1986).

I will estimate the influence of exogeneous variables which influence the rate of job transitions using Cox's proportional hazard model (1972). This model is defined as

$$r(t/x) = r'(t) * \exp(x'\beta) \quad (2)$$

whereby r'(t) is the hazard rate, x' is a vector of covariates, β are the parameters to be estimated, and t is the waiting time until a job shift occurs.

The following covariates will be analyzed: labor-force experience, social prestige (SAS) of each job, microstructural variables (such as educational attainment), macrostructural variables (such as the unemployment rate), and indicators for the four populations.[13]

The analyses will proceed by introducing the covariates in a hierarchical manner. First, time in the labor force will be considered, then microstructural variables and the prestige score of the job are added, then macrostructural variables are added, and finally the indicators for the populations are introduced. This procedure makes it possible to determine whether each set of covariates adds important information to estimating the probability that a job shift will occur. Statistically, this is assessed by a log likelihood test that *compares the fit of the alternative models.* To compare two models, one calculates twice the positive difference between their log likelihoods. Under the null hypotheses of no difference, this statistic will have an asymptotic chi-square distribution (Allison, 1984:20). The associated degrees of freedom are the numbers of constraints that distinguish the two models, which is the difference between the number of variables in the two models.[14]

I study two different processes of work-life mobility: the process of mobility between jobs in general and the process of upward occupational mobility. Accordingly, I estimate two different models of intragenerational mobility. The distinction between the two models is the *definition of the waiting time* until the next event occurs.

(1) Analyzing the transition between jobs in general, the waiting time (t) is defined as the duration (in months) from the date the respondent entered jobn (origin job) until the date he entered the next job (destination job). This next job may be status lower, status equal, or status higher. If the event of a job shift does not occur before the time of the interview, the observation is censored.

(2) Analyzing upward occupational mobility processes, the waiting time (t) is defined as the duration between the date the respondent entered jobn (origin job) until the date the respondent entered a job which has a higher occupational prestige.

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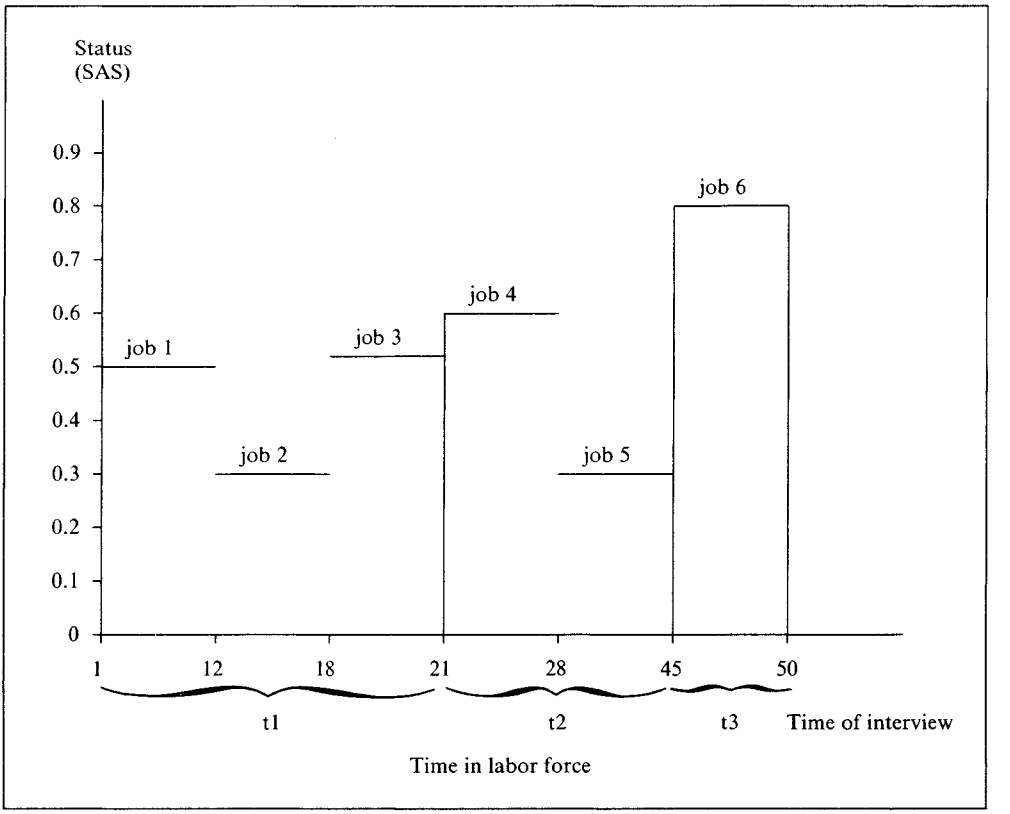
[13]For a detailed *description* of these variables, see Chapter 5. The *interpretation* of the estimated parameters of the independent covariates is as usual: A positive parameter indicates that the independent variable increases the rate, in other words, that it increases the probability of changing a job at any point of time. A negative value of the parameter indicates that the covariate reduces the likelihood to leave a job and that it increases job stability.

[14]For example, a chi-square of 112 indicates the fit of one model in which only labor-force experience is estimated. A chi-square of 461 indicates the fit of the model which also includes microstructural variables and the prestige of the job. Twice the positive difference between 112 and 461 is larger than the critical value for the .01 level of significance. Thus, there is evidence that the hazard rate varies with microstructural variables.

Figure 4.2
A Hypothetical Work History With Six Observed Job Spells and Two Upward Job Spells



The metric for measuring occupational prestige is the Social Attainment Scale.[15] Upward occupational mobility is defined as a transition between two jobs in which the destination job has a prestige score at least 10 percent higher than the origin job. Any job transition which does not result in a (10 percent) higher SAS is not considered in this analysis.[16] Figure 4.2, which depicts a hypothetical work history, shows the logic of this design. The worker represented in Figure 4.2 has six jobs and three events of SAS. His origin SAS was .5. His second job entails a drop in occupational prestige and is therefore ignored. His third job has a SAS of .52, which is higher than job 1, but the

[15]The measure for occupational prestige, the Social Attainment Scale, is based on 1940, 1950, 1960, and 1970 census data of the United States, Norway, and West Germany, and only men are considered (cf. Chapter 5.4.)

[16]The choice of a 10-percent difference is rather arbitrary; it is dictated by the wish to ignore minor improvements in status as noise.

magnitude of increase is below 10 percent. Job 3 is therefore also ignored. Job 4 has a SAS of .6, which is 10 percent higher than the origin SAS. This means that an upward shift is observed. The second event of SAS begins with job 4. Job 5 has a SAS of .3, which is lower than job 4 and is ignored. The SAS of job 6 is clearly higher than the SAS of 4, and the third event of SAS gains, which is censored, begins.

The rate of experiencing an upward shift in occupational prestige will then be estimated as being dependent on the waiting time measured in months from the beginning of job 1 to the end of job 3. The second rate will be estimated as being dependent on the waiting time between the start of job 4 and the end of job 5, and the third rate depends on the waiting time between the start of job 6 and the date of the interview.

Chapter 5
Operationalization and Measurement of Variables

5.1 Introduction

This chapter describes the set of variables available in all three data files that are relevant for the study of intragenerational mobility. The presentation is structured as follows: First, the central variable *"job spells"* is defined, and it is explained why my definition deviates from definitions employed in earlier studies by other researchers. Measures that control for variations across nations in the *transition between school and work* are described in Section 5.3. Specifically, I define the point of "career start," explain the calculation of the indicator "labor-force experience," and show how it is possible to take labor-force participation into consideration while a person is still in school. In Section 5.4, the measurement of *educational attainment* is given, following the rationale developed in Chapter 3 for assessing the degree of standardization and of stratification of educational systems. The development of the *metric for occupational prestige* is presented in Section 5.5. This metric follows the rationale of the Status Attainment Scale as developed by Sørensen (1979), but incorporates nation-specific and time-specific variations in the hierarchy of occupations. Finally, in Section 5.6, the *indicators for macroeconomic conditions* are explained, namely, the unemployment rate, change in GNP, employment in agriculture, and employment of foreign workers (for West Germany only).

Each section addresses (a) the underlying rationale of the proposed metric, (b) the development of the metric, and (c) its application to the present analyses. Because most operationalizations have not been used previously and are sometimes based on data sources other than the life event data sets described above, this descriptive chapter is lengthy. At the beginning of each section, summary definitions are therefore presented which allow the reader the option of skipping detailed explanatory and technical details.

5.2 Job Spells

Summary Definition

Job spells are defined as all reported job episodes with more than 25 hours of work per month.[1] *The duration of jobs* is the difference (in months) between beginning and ending date of each job spell.

(a) Rationale

In models that estimate the rate of transition between jobs, job spells are the unit of analysis. It is therefore crucial to decide whether all reported job spells should be considered, or if specific subsets of jobs can be, or should be, excluded.

In previous research, criteria for job spells permitted to enter the analyses involve the duration of the job spell, typically covering a range between three months and two years of minimum duration.[2] Jobs held less than three months are almost always excluded and considered to create "noise" in the data.

The exclusion of short job spells is not warranted in this study. The three major research questions of this study—assessment of cross-national differences in career trajectories, assessment of effects of macroeconomic change on individual career patterns, and analysis of the long-term impact of labor-market entry patterns on the work life as a whole—require that I opt for the most comprehensive criteria for a defining of job spells. Therefore, *all* job spells are considered while acknowledging that job spells may result from a changing occupational structure or from labor-market upswings and downswings. Short job episodes signal transition and adaptation dynamics in the work force, and their exclusion would wipe out precisely those processes in which I am interested.

(b) Measurement

In order to admit as many job episodes as possible, I exclude only (1) part-time jobs—that is, jobs that involve less than 24 hours of work per month and (2) jobs with missing information on occupational title or with manifest coding or recall errors.[3]

Additional indicators are (a) the time spent in a job *(duration),* which is the dependent variable in the hazard models which are used in the analyses, and (b) the *number of jobs* per person, which when aggregated defines the total number of firm, industry, sector, and occupational changes.

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[1]This is the general definition of what *constitutes* a job spell. Not all of these job spells, however, are part of the career trajectory. Dependent on the timing and duration of a particular job spell, this spell will only be used to indicate a certain transition pattern between schooling and work. For a detailed documentation, see the next section on labor-market entry patterns.

[2]See Mayer, Selbee, and Colbjørnsen (1988), Tuma and Sørensen (1976), Coleman (1984), and Sørensen and Featherman (1981).

[3]The first two criteria lead to the exlusion of 1,778 job spells in the Norwegian sample and 2,014 job spells in the American sample. Such job spells are: jobs with unspecified periods of unemployment (Norway = 104), with unidentifiable work (Norway: 475; West Germany: 2), with missing information of the occupational titles (Norway = 693). Thirty-eight spells in the American sample and 16 spells in the German sample had to be excluded because the job ended earlier than it began.

5.3 Labor-Market Entry, Transition from School to Work, and Labor-Force Experience

Summary Definition

Labor-market entry is defined by the date of the first job after last exiting school. The *transition from school to work* is measured by (a) the total number of jobs prior to last leaving education and (b) whether at least one of these jobs was held for more than one year. *Labor-force experience* is defined as the number of months spent in all jobs from the date of entry in the labor market until the beginning month of each new job spell.

(a) Rationale

Institutional differences lead to different patterns of labor-market entry across the nations. This observation is crucial for the present research because it points to the need to construct variables that capture processes in the transition from school to work. Three indicators are relevant:

(1) Labor-market entry date. This variable must be constructed such that a common starting point for the beginning of the career life can be established.

(2) The occupational history prior to labor-market entry date. In the years in which American workers leave and reenter school to join and exit the labor market, West German workers pursue a very regulated and institutionalized vocational training. Whereas the impact of vocational training on career trajectories is almost always analyzed, labor-force experience while still in school is not. However, affiliation with the labor market while still in school may provide a person with a kind of "on-the-job training," knowledge about how labor markets work, and occupational contacts and networks—all of which may be influential in the later occupational life.[4] Such experiences can take one of two directions. It can ease the job search and speed up the rate of transition between jobs due to the expertise gained while still in (and out of) school. It also can reduce the rate of job transitions due to the "holding power" of jobs in which persons were employed for some time before quitting temporarily to upgrade their educational proficiency.

(3) Labor-force experience. The definition of a common starting date for occupational histories is particularly important because time spent in the labor market is a crucial determinant of career trajectories.

(b) Operationalization

(1) Labor-market entry date is identified by simply noting the beginning month of the first job after last leaving full-time education.

(2) Occupational history prior to labor-market entry. The definition of labor-market entry as the date of last leaving school requires additional indicators to determine whether the person had contact with the labor force before he entered the labor market "for good." Two indicators are used: "number of jobs in the transition stage," which is the total number of jobs held prior to entry in the labor force after last exiting school,

[4]This argument will be developed in Chapter 6.

and "length of job in transition" which specifies whether one of these jobs held before last exiting school lasted for more than one year.

The variable "entry into the labor market" and the indicators for labor-force exposure prior to last exiting school make it possible to capture nation-specific patterns in the transition between school and work *and* can be operationalized in the same way for all four populations. Both unidirectional (West Germany) and recurrent (United States) transitions between school and work are thus defined in relation to school exit dates.

(3) Labor-force participation. This measure is obtained by summing up the duration of all job spells from "career start" until the beginning month of the new job. If the respondent interrupted the occupational career to join the military, or if the worker was temporarily unemployed, these times are not counted as providing labor-force experience, nor are jobs held prior to "career start" considered as providing labor-force experience.[5]

5.4 Educational Attainment and Vocational Training

Summary Definition

Educational attainment is measured by the variables "years of formal and vocational training" and "highest level of formal education."

(a) Rationale

In comparative research, educational attainment must be operationalized so that individual achievement can be linked to the educational structure. Only such a measure will allow the impact of school on individual career placement and career advancement to be assessed. In other words, educational attainment cannot be understood simply as an individual characteristic whose significance is independent of the national environment.

The underlying rationale for this suggestion was developed and discussed in length in Chapter 3. I argued there that two properties of educational systems and vocational training are crucial for intragenerational mobility research: stratification and standardization. It was further shown that the educational and vocational systems in the three societies differ on these dimensions. This importance for career outcomes can be empirically tested by studying the allocative power of educational systems that differ in two dimensions. Controlling for the amount of educational training individuals received, their career placement and career development should differ across the three nations in accord with the properties of the institutional structures.

[5]Labor-force exposure while still in schooling is, however, controlled for by the two separate indicators number of jobs held in the transition period and the variable indicating whether at least one job was held longer than one year.

(b) Measurement

In this study, educational attainment and national educational structures are relevant only to the degree that they affect labor-market outcomes. Because such outcomes are measured by attributes of jobs (such as occupational prestige, income, and working conditions), one has to locate jobs before one can assess the degree to which education matters.

The general criteria for what constitutes job spells and which particular criteria apply in locating the first job in the career trajectory were specified earlier. In that context, the date of the last exit from school and the amount of labor-force experience acquired prior to this date were shown to be critical. How *vocational training* can be measured was not discussed, and we turn to that question now.

There are three ways to deal with vocational training: (a) to perceive it as part of the occupational structure, (b) to measure it separately, or (c) to conceptualize it as part of formal education.

(a) To treat vocational training as part of the occupational structure implies equating vocational training as it occurs in Norway and West Germany with the American form of on-the-job training. It was pointed out earlier, however, that American high schools and junior colleges already provide elements of general vocational training. This is one reason why the average American worker has considerably more years of "formal" education than does the typical Norwegian and West German worker. On the other hand, West German and Norwegian vocational training include elements of formal education and do not offer a specific on-the-job training in the American sense. To measure vocational training as part of the occupational structure (or to ignore it altogether) would therefore make it impossible to compare formal educational attainment across the nations.

(b) For the same reason, it is not reasonable to measure vocational attainment with a separate variable. Although this would be feasible for a West German-Norwegian comparison, the American structure precludes development of such a measure. There, the amount of vocational training cannot be divorced from formal education and specific on-the-job training.

(c) To conceptualize vocational training as part of the educational system would fail to acknowledge that formal and vocational training are valued differently. In all three societies, formal education provides higher prestige and higher rewards to people than does vocational training.

These considerations make it necessary to measure educational attainment with two separate variables, one for formal *and* vocational training, and one for formal education only. The first variable measures the number of *years* of training, and the second captures the highest *level* of education attained.

(1) Years of Formal and Vocational Training

The variable "years of training" simply indicates the total length of time spent in either formal education or standardized vocational training.

(2) Level of Educational Attainment

The variable "level of educational attainment" controls for the actual degree, or certificate, the respondent holds. It is required because not only years of training but also degrees matter, particularly in stratified and standardized educational systems such as Norway and West Germany. The measure is designed as a dummy variable that specifies whether or not a given academical degree has been attained.

In West Germany and Norway, an academically relevant degree is given upon completion of gymnasium or gymnas. Because the two educational systems are very similar, these two degrees can be assumed to measure the same relative educational standing across these two nations. In the United States, high-school graduation is usually considered to be the functional equivalent to gymnas/gymnasium degree. In comparative research, this opinion can be justified only when *age* at exiting school is viewed as the most critical factor in determining future career outcomes. If this assumption is made, then gymnas/gymnasium and high-school leavers should be compared. But in this study, the relative position in the hierarchy of educational attainment—not age—matters most. And relative position is best measured by the proportion of people who leave a given level of formal educational training. It turns out that the proportion of American students with high-school degree is considerably higher than in West Germany and Norway. This suggests that the relative standing of American high-school graduates is lower and confirms that it is inadequate to directly compare the effects of completed studies at a gymnas or gymnasium with those of earning a high-school degree.

The technical procedure to construct the two variables "years of schooling" and "highest level of formal schooling" is straightforward.

The variable years of formal and vocational training is a time-dependent, additive measure, involving summing up all spells of training attained until the beginning month of each single job spell.

The variable "level of formal education" is a dummy variable that reflects whether or not the respondent holds a college, gymnas, or gymnasium degree. It must be noted that the technical construction of the indicator "gymnas degree" in the Norwegian sample was severely constrained by the decision of the Norwegian researchers to treat formal and vocational training as equivalent. Such a coding runs counter to the ideological basis of a school system which was as hierarchical as the Norwegian system was in the time period under study. A complete recode of the Norwegian educational variables could not be avoided. Using the "educational history file" as a data base, a new variable was created that does yield an appropriate distribution of educational attainment level.[6]

[6]I wish to thank Nancy Williamson for her extensive and thorough programming work and Hege Skjeie for sharing with me her knowledge about the Norwegian vocational-school system.

5.5 Occupational Prestige (SAS)

Summary Definition

Occupational prestige is measured using the Status Attainment Scale (Sørensen, 1977, 1979). This SAS has been modified such that it captures change in occupational prestige over time and nation.

(a) Rationale

Sørensen (1975) developed the rationale of the SAS metric in the context of his vacancy competition model of the status attainment process. The basic idea underlying the SAS is that status is exponentially distributed. That is, the status of a given occupation is dependent on how many persons hold this occupation and how many persons hold occupations that are status higher. It follows that ordinal status or prestige measures must be transformed in such a way that the order of the ordinal scales is preserved. This is reached by computing the cumulative frequency distribution of the number of employed persons based on some ordinal status scale and by calculating the negative logarithms[7] of these values. The resulting numbers are the desired SAS scores.

But whereas Sørensen developed his scale for the measurement of relative occupational standing for only *one* point in time, I propose to compute scores for the occupational distributions in each distinctive set of years. Such a construction will result in different scores for a single occupation (e.g., clerks) in 1950, 1960, 1970, and 1980, dependent on the distribution of occupations at these four points in time.

(b) Development

The construction of the Status Attainment Scale requires three elements: (i) a way to rank order occupations in relation to each other, (ii) census data giving the distribution of people over all occupations, and (iii) the derivation of the SAS scores.

(i) Basic scale. The SAS metric requires first a basic ranking of occupations in relation to each other. The comparative focus of this research requires a ranking in terms of occupational prestige or status that can be applied to the data sets of all three nations. Thus, scales that previously have been developed for one nation only cannot be used, and it was necessary to construct the SAS from *one ranking*—even though this necessarily blurs distinctions that are important for a particular country.[8]

The scale from which the social attainment scores will be calculated is Treiman's Standard International Prestige Scale.[9] The Treiman prestige scale is based on a compilation of roughly 50 studies in 60 countries. Treiman used as his coding frame the revised version of the International Standard Classification of Occupations (ISCO),

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[7]For a detailed description and the derivation of the metric, see Sørensen (1979:370).

[8]Some parts of the national category schemes are broken into finely detailed groups: for instance, fishermen in Norway are listed in many categories (according to the type of fish), whereas in West Germany and the United States the census lists only one category.

[9]Treiman (1977). The Treiman scale is used specifically to maximize the validity of cross-national comparisons. Use of this scale will result in a very conservative test of his basic assumptions (status invariance over time and nations) because the SAS scores developed in this study are constrained to be a rank-preserving, nonlinear transformation of the Treiman scale.

developed by the International Labor Office in 1969. The ISCO scheme consists of a four-level nested set of occupational titles: "major groups," "minor groups," "unit groups," and "occupations." On the basis of major and minor occupational ISCO categories, the Treiman scale assigns to each occupation a value between 18 and 80. The Treiman prestige scale is especially appropriate for present purposes because of his explicit effort to develop a scale useful in cross-national comparative research. An option of this scale does not imply any agreement with Treiman's underlying assumptions, especially his position that occupational status structures are fundamentally similar over time and across societies.[10] The Treiman scale is used only as a basis for ranking occupations, and it will be shown later how the scale can be transformed in a way that captures both variance among nations and over time.

(ii) Census data. Each census-identified occupation is assigned a Treiman score. Census tabulation schemes are by no means comparable intranationally, over time, or across the three nations. Extensive recodes were required to attain ISCO scores (and then Treiman scores) for all censuses in the three nations within the observation period.

For the *United States,* census data from 1950, 1960, and 1970 were used. All occupations listed in the three census observations were coded using the Treiman prestige scale. This transformation of census classifications to Treiman classification was simplified by recoding schemes provided by Treiman (1977).[11] For the United States, I thus obtained three different distributions (for 1950, 1960, and 1970) displaying the number of people employed in occupations with the same ISCO (and finally Treiman) score.

For *Norway,* all available census data between 1930 and 1970 were used to construct the occupational scores. The transformation of census categories into ISCO categories with identical Treiman scores caused considerable difficulty because Norwegian occupational distributions are provided only in terms of Nordic occupational scores. It was therefore necessary to first recode Nordic occupational scores into the International Standard Classification of Occupations (ISCO).[12] Then, these ISCO scores[13] were transformed into Treiman scores on the basis of Treiman's (1977) recode scheme.[14] This procedure yielded four different distributions (for 1930, 1950, 1960, and 1970), showing the number of people in occupations with the same Treiman prestige score.

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[10]Treiman (1977:223). Most criticisms of the Treiman scale apply equally to most other prestige and status scales, whose authors usually are less explicit about underlying assumptions than Treiman is.

[11]Treiman (1977, Table C 3:299).

[12]This part of the analysis could not have been accomplished without the help of Annemette Sørensen who translated the 1950 occupational titles from the Norwegian.

[13]In the Norwegian Life History Study, four-digit Nordic occupational codes are supplied, and it would have been feasible to translate the four-digit Nordic scores into four-digit ISCO scores and the four-digit ISCO scores into Treiman scores based on occupational units. This procedure would have resulted in a superior measurement of Norwegian occupational mobility due to a finer gradation. The impact on a cross-national study, however, would have been detrimental, because equally fine gradations were not available for either the United States or West Germany. If Treiman scores had been used on the occupational level for Norway, but on unit groups for the United States and West Germany, the number of moves in *different* jobs would not have been comparable.

[14]Treiman (1977, Appendix A).

For *West Germany,* four occupational census distributions were used to create measures for occupational prestige: 1950, 1961, 1970, and 1980.[15] As in the case of Norway, the classification of occupations in the census distribution deviates from the scores of the International Standard Classification of Occupations.[16] Therefore, the West German classification of occupational groups was recoded into the ISCO scores and then transformed into Treiman scores. The West German occupational status scores are thus constructed on the basis of four underlying distributions of the total number of persons employed in occupations with the same Treiman score.

The idea of occupational prestige as invariant over time and place has thus been modified by developing a scale that (a) incorporates occupational census distributions for the total labor force in different years and (b) allows for different but comparable scores for the same occupation in the United States, Norway, and West Germany.

(iii) Derivation of SAS scores. To finally obtain the SAS scores used in the analyses, Sørensen's metric was applied to the Treiman distributions obtained as described above. For each of the eleven distributions,[17] cumulative frequencies were obtained, ranging from the top Treiman score (80) to the bottom (18). The SAS scores were then calculated by taking the negative logarithms of the cumulative percentiles.

The resulting SAS scores have a range between 0.0001 and 6.900. For any given occupation, the SAS scores change over the census years; the correlation coefficients between the SAS scales of different census years are generally high (above .96), a result which is comforting because it suggests validity in the transformation procedures used to obtain the Treiman scores from the census categories. In the United States and West Germany, the correlation coefficients between the SAS scores of subsequent censuses range between .99 and .97; in Norway the figures are between .98 to .96. In all three nations, the correlation coefficients decline with time between the census observations.

Evaluation of the SAS Metric

Figures 5.1–5.4 document in detail the relation between conventional prestige scales and the SAS metric. Figure 5.1 lists the Treiman scores which were used to generate the SAS metric, the ISCO scores, which served as a basis for recoding the national census classifications, the occupational title, and the range of deviation between highest and lowest SAS score across census years for the United States, Norway, and West

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[15]The oldest cohort (1929/31) entered the labor market around 1945. The 1950 census distribution was most appropriate for the development of the occupational status score for occupations held in the late 1940s. The most recent census took place in 1970. To allow for the measuring of change in the decade between 1970 and 1980, the microcensus distribution of 1980 has been used. ("Ergebnisse des Mikrozensus. Erwerbstätige im April 1980 nach Berufsordnungen, -gruppen und Altersgruppen." Unpublished material of the Census Office, Table 80.5.1.1.)

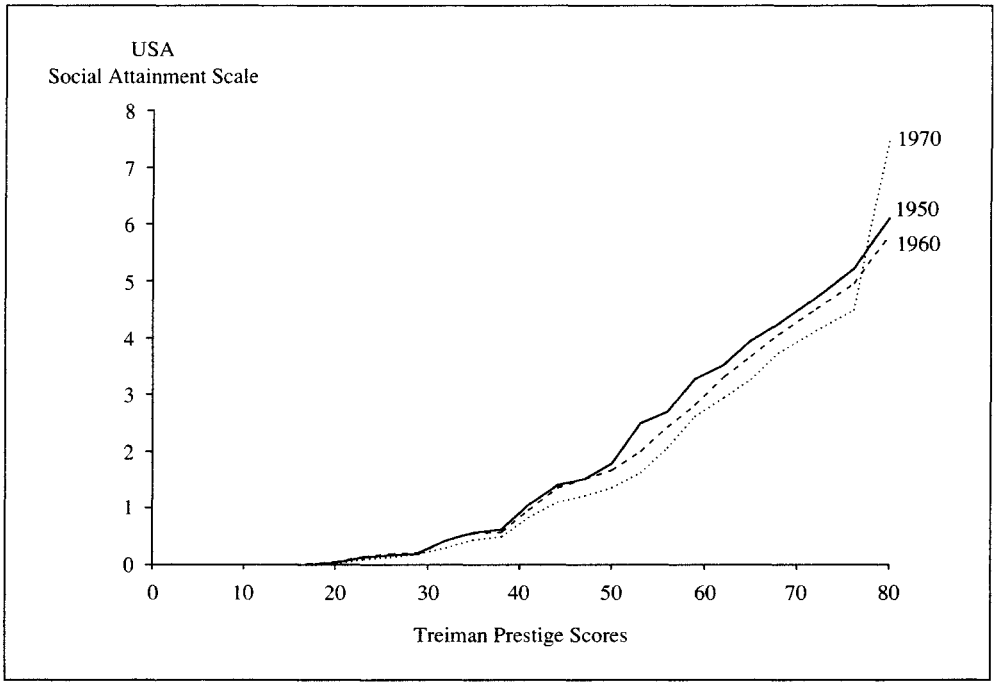
[16]In the appendix to the 1970 census data, a table is provided that lists comparable classification units for the years 1961 and 1970. In the microcensus of the 1980 publication, a table is provided that contains the "Klassifizierung der Berufe." (Systematisches und Alphabetisches Verzeichnis der Berufsbenennungen. Überarbeitete Fassung der Berufsklassen mit Zuordnung der Berufsbenennungen zu Berufsklassen für die Statistik der Bundesanstalt für Arbeit:23–44.)

[17]Three census years for the United States, four census years for Norway, and four census years for West Germany.

Figure 5.1
Selected Occupations by ISCO and Treiman Scores
Maximal Distance Between Census-Based SAS Scores by Nation

Treiman	ISCO	Occupation	SAS-USA 1950–1970	SAS-Norway 1930–1970	SAS-West Germany 1951–1980
78	61,131	professor, physician	0.72	4.41	0.59
70	22, 63	civil engineer, dentist	0.47	3.88	0.43
66	24, 25, 41	airline pilot, navigator, psychologist, mechanical or chemical engineer, high government administrative manager	0.67	3.47	0.27
64	67, 202, 212	pharmacist, production manager, member of legislative body	0.64	2.25	1.03
60	26, 43, 75, 90, 132, 219	secondary-school teacher, ship's engineer, metallurgist, optician, economist	0.61	2.56	0.99
56	53, 159, 194, 351	designer, agronomist, journalist, author, personnel or occupational specialist, railway stationmaster	0.64	3.87	0.83
52	54, 69, 193, 421, 929	social worker, sales supervisor, dietician	0.41	3.93	0.86
44	64, 68, 72, 320, 392, 393, 843, 855	dental, pharmaceutical, or nursing assistant, telephone or telegraph operator, auto mechanic, electrician	0.31	2.26	0.43
40	172, 500, 582, 611, 791, 811, 832, 839, 859	policeman, tailor, cabinetmaker, restaurant manager, farmer, choreographer	0.04	0.91	0.22
37	399, 510, 520, 745, 891, 954, 359	carpenter, clerk, dispatcher, glass former, working proprietor	0.13	1.01	0.41
29	591, 599, 731, 751, 755, 939, 981, 984	sailor, brakeman, service worker, knitter	0.02	0.25	0.21
21	532, 622, 623, 626, 627, 942	waiter, bartender, gardener, field crop worker	0.04	0.05	0.10
18	631, 999	farm laborer, garbage collector, counter worker, shoe shiner	0.04	0.01	0.00

Figure 5.2
Treiman Scores and SAS Scores by Census Years and Nation
United States



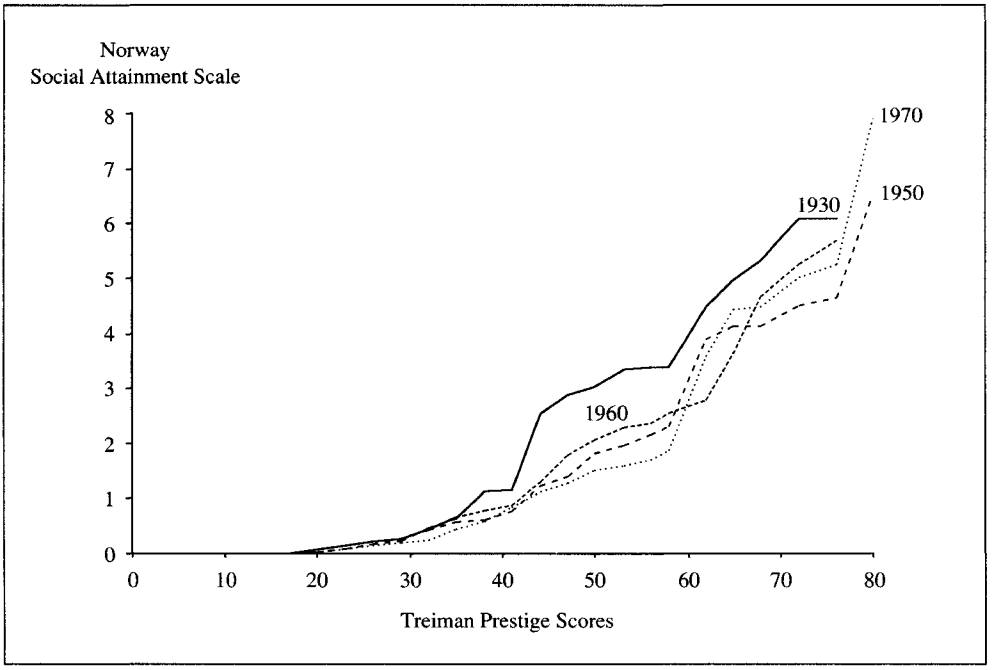
Germany. This table demonstrates that the degree of change in the relative occupational standing of occupations with the same Treiman score varies (1) intranationally across occupations; (2) internationally in regard to the same occupations; and is (3) significantly higher in Norway than in the United States and West Germany.

A graphic display of these findings is provided in Figures 5.2–5.4 which represent the relation of the basic (Treiman) scale[18] to the new metric by census years and nation. It is again evident that single Treiman scores generate different SAS scores once we allow for variation in time, and that the degree of change in SAS scores over the decades differs across nations.

These results show that the *relative standing* of persons employed in the same occupation changes over time and over place. The conclusions to be drawn thus substantially differ from Treiman's assumption that the *evaluation of occupational prestige* is invariant over time and over space. In the remainder of this section, a substantive discussion of these empirical results will be provided. Drawing on two examples, the change in status scores over time and across nations will be illustrated. I

[18]It must be noted that the displayed metric of the Treiman scale is arbitrary and open to any transformation.

Figure 5.3
Treiman Scores and SAS Scores by Census Years and Nation
Norway



will then turn from the macrodata to the three life event data sets and describe how the new SAS metric has been applied to the measurement of prestige at the microlevel. Finally, some basic statistics will be reported which demonstrate that the new SAS metric leads to significantly different results and interpretations than do other operationalizations of prestige.

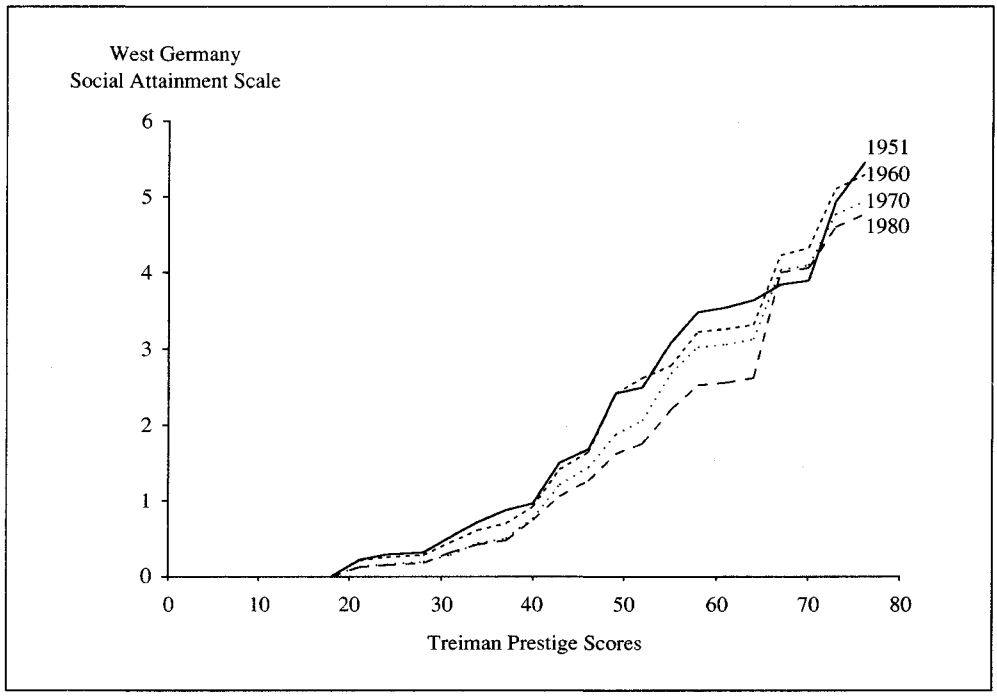
Change of Status Scores Over Time

The status of a given occupation within the overall status hierarchy of occupations changes over time in all three nations. This change will be illustrated by two examples of occupations which underwent particularly pronounced change in occupational prestige: farmers and schoolteachers.

The first example focuses on an occupation which is located in the middle of the Treiman prestige scale for Norway—namely, farmers.

In Norway, farmers (Treiman score: 42) had a considerably higher relative standing in 1930 (SAS: 2.1) than in 1970 (SAS: 0.9). This decrease is due to an increase in employment in higher status positions, particularly in the service sector. As Figure 5.3 shows, the change occurred in the decades between 1930 and 1950, the time in which

Figure 5.4
Treiman Scores and SAS Scores by Census Years and Nation
West Germany



more jobs with a higher prestige were created. Between 1950 and 1970, the relative standing of farmers remained unaltered. This development is explained by the timing of historical change in the composition of industrial sectors in Norway (cf. Chapter 2). Although the outflow from agriculture continued until 1970, the increase in lower level service occupations (with Treiman scores comparable to farmers) since 1950 prevented a further drop in the relative standing of farmers after 1950. This example thus demonstrates an important achievement in the measurement of prestige: incorporating change at the macrolevel into the measurement of prestige. The operationalization through the SAS metric allows one to capture macroeconomic developments, in particular change in the distribution of occupational employment.

The second example focuses on West Germany and a higher ranked occupation—schoolteachers (Treiman: 60[19]). Employment of schoolteachers at all levels (elementary schools, middle schools, and high schools) greatly expanded between 1951 and 1980. This increase in the number of teachers has no impact on the relative standing of

[19]This score refers to teachers at the intermediate level. The Treiman score of elementary teachers is 58, of middle-school teachers 60, and of teachers in gymnasiums 62.

teachers between the census years of 1951 and 1970 (SAS score around 3.6). After 1970, however, a considerable drop in the SAS score (from 3.6 in 1970 to 2.6 in 1980) occurs, a drop that is explained by more persons employed in positions above the status level of teachers (see Figure 5.4). This change mainly reflects higher educational attainment at the tertiary level of cohorts born after 1950. The example demonstrates again the superiority of the SAS metric over time-invariant status scales.

Change of Status Scores Across Nations

The degree of differentiation, or the degree of change in the relation of single-year SAS scores to each other, is quite different across the nations. In the period under study, Norway faced more change in the status hierarchy of occupations than did West Germany and much more than did the United States. This result can be explained by the different stages and different timing of industrialization across the three nations. Variations in social organization associated with industrialization affect occupational prestige structures. This explanation is supported by the findings described in Chapter 2. Norway industrialized late and thus experienced more drastic changes in the relative standing of occupations in the observation period than did the United States and West Germany, both of which experienced comparable transformations before 1930. Thus, the periods of considerable change in the occupational structure in West Germany and the United States are not captured in this study and do not affect the work-life opportunities of the cohorts born in the decades after 1920.

(c) Application of the SAS Metric on Microdata

It was necessary to match the SAS scores and the three national data sets[20] to obtain the status rankings of all occupations held by the respondents of the three studies. The 1930 scores were applied to all occupations which were held until 1935, the 1940 scores to occupations held between 1935 and 1945, the 1950 scores to jobs held between 1945 and 1955, and so on. This procedure yields different status scores for the same occupation in the event that this occupation has been held throughout the work life. It thus controls for changes in the hierarchy of occupational positions over the decades in which the career trajectories of the respondents are recorded.

5.6 Macroeconomic Indicators

Summary Definition

Four indicators assess *economic conditions* at the macrolevel: the national unemployment rate, change in the GNP, the (male) employment stock in the agricultural sector, and the (male) employment stock of foreign workers in the West German economy.

[20]For the Johns Hopkins Data, the 1960 census categories were used as a reference variable; in Norway, the nordic occupational scores were recoded in Treiman scores, which served as a merging variable; in West Germany, the Treiman scores were already available and could be merged to SAS.

(a) Rationale

In the analysis of work histories, attention must focus on the interplay between social structural opportunities and individual resources. Research aimed at addressing the dynamics that underlie such an interplay must therefore measure both levels. Thus, indicators of the socioeconomic opportunity structure are as much needed as are indicators that describe characteristics of individuals.

Although the influence of macroeconomic conditions on intragenerational career opportunities is one of the most discussed problems among researchers who work on mobility dynamics, the actual impact of macroeconomic conditions on microoutcomes has received little empirical assessment. The present study is one attempt to remedy this insufficiency by incorporating measures of labor-market conditions as independent variables in models that estimate the probability of job shifts.

In analyzing the rate of transition between jobs, the number of open positions in a given society is of interest. Without such open positions into which workers can move, job transitions are not possible. The number of open positions is, in turn, dependent on labor-market conditions. In general, many vacant positions are available in times of favorable employment conditions, whereas in times of economic disarray, there are fewer positions available—which limits the opportunity individuals have to move into other positions.

(b) Development

Measurement of labor-market conditions is not easy. Ideally, one would like to have *one* direct measure of the number of open positions, or vacancies, but no such measure is available.[21] An alternate strategy, to include *all* available indices of labor-market conditions, is not possible because such measures tend to be highly correlated.[22]

As an approximation of labor-market conditions, three separate indicators of macroeconomic conditions will be used: the *national unemployment rate,* the *national* (yearly) *change in the GNP,* and the percentage of male *employment in the agricultural sector.*[23] These indicators have the advantage of being available for all three nations throughout the time period studied, and they measure cyclical labor-market developments across nations in similar ways. Their intercorrelations are low and do not pose problems of multicollinearity.

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[21]In West Germany, the number of vacant positions in dependent jobs is officially registered. This measure is, however, not very reliable because many employers fail to report openings. In the United States and Norway, such a measure is not available. But even if this measure were available, it is doubtful that it would adequately reflect change in the opportunity structure at an aggregate level.

[22]I opted against a factor analysis of these indices for the following reasons: (a) not many time-series data were available for all three nations over the entire observation period, (b) it is impossible to extract the same factors for all nations, and (c) the relative contribution of different labor-market indicators to the factor scores is likely to differ across nations and hinder interpretation across nations.

[23]In West Germany, the indicator "percentage of foreign workers in the German economy" will also be used.

The indicators "unemployment rate," "change in GNP," and "employment in agriculture" are constructed on the basis of official publications of the three nations. For a discussion of cross-national differences in the calculation of unemployment and GNP see Chapter 2, where the macroeconomic development of the three nations are described.[24]

The expected effects of these indicators on the observed rate of job shifts is as follows: A high unemployment rate indicates unfavorable labor-market conditions. Many workers compete for few open positions. Because employed people are studied, increasing national unemployment figures should show a decrease in the number of job shifts (negative effect on the probability to experience job shifts).

A high yearly change in the GNP signals favorable labor-market conditions, and new jobs are available into which the workers can move. An increase in the GNP should therefore facilitate shifts into other jobs (positive effect on the likelihood to experience job shifts).

The measure of employment in agriculture captures transition and adaptation processes. In Norway, transitions in and out of agriculture still take place not only over the life cycle but also over the seasons of a year because the transformation of Norwegian society from a rural society to an industrial and service society occurred later than in West Germany and the United States. The employment figures in agriculture thus show how many workers will (or must) make the transition from agriculture to manufacturing and services. Such transition processes in a changing occupational structure manifest themselves in a large number of occupational movements. We therefore expect that in economies with considerable employment in the agricultural sector, more job transitions will be observed than in economies with a lower stock of employment in agriculture (i.e., in societies where the transformation from agriculture to services is more advanced).

The fourth indicator for macroeconomic conditions, the percent of *foreign workers* in the economy, will only be applied in analyses of the West German data. In West Germany, recruitment policies have attracted foreign workers from Italy, Greece, Turkey, and Spain since the 1960s. Around 1970, two million foreign workers were employed, a number amounting to 16 percent of all workers in the secondary sector. These workers were employed mainly in mining and the textile industry—in structurally disadvantaged parts of West Germany—and assigned to work in unskilled jobs at the lowest levels of industrial work. Foreign workers therefore enhance the prospects of West German workers to gain higher status positions.

The rationale for using this additional measure is twofold. First is to acknowledge that foreign workers—although not part of the German Life History Study—are an important segment of the West German work force. Second is to test empirically whether foreign workers indeed influence the opportunities for job transitions of West German workers.

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[24]In that chapter, I also presented a graphical display of the yearly change in GNP and the development of the unemployment rate and employment in agriculture for all three nations between 1940 and 1980.

(c) Application on Microdata and Estimation in the Proportional Hazard Models

The four macroeconomic indicators are treated as attributes of each job spell in the life event history files. Thus, average scores over the time in which the jobs have been held are calculated, assuming the annual rate for each month of the year.

In the proportional hazard models, the three measures will be introduced as *time-constant covariates.* This procedure is not optimal. What one would ideally like to know is how the hazard of experiencing a job shift is affected by macroeconomic conditions at any given point in time. This could be achieved by introducing the four time-series variables as time-varying explanatory variables. The computer algorithms for constructing and maximizing such likelihood functions are, however, very complex and enormously increase the computing time (by a factor of about 15 per time-dependent covariate). A precise estimation of the impact of the time-series variables on the rate of job shifts would furthermore require collecting these data on a monthly, rather than a yearly basis because the time-dependent covariates should be measured with the same frequency with which the occurrence of job changes is reported. Given that this research covers the occupational histories of men with up to 40 years of labor-force participation and analyzes four data files with a total of 44,000 job spells, the increase in computing costs and manpower precluded proceeding with this approach.[25]

Figure 5.5
Summary of Variables

Job spell	All jobs with more than 25 hours of work per week
Labor-market entry	Beginning month of first job after last leaving full-time education
Transition between school and work	(a) Number of all jobs before last leaving schooling (b) Dummy variable whether at least one of these jobs was held for more than one year
Labor-force experience	Months spent in all jobs from the date of entry into the labor market until the beginning month of each new job spell
Educational and vocational training	(a) Years of formal and vocational training (b) Dummy variable whether college, gymnas, or gymnasium degree has beeen attained
Occupational prestige	Nation- and time-dependent prestige scores, calculated following the Status Attainment Scale (Sørensen, 1977, 1979)
Macroeconomic indicators	(a) National unemployment rate (b) Change in GNP (c) Percentage of males in agriculture (d) Percentage of foreign workers in the German economy

[25] Along with these nonoptimal estimation procedures, two other deficiencies of the present measurement of unemployment rate and change in GNP must be acknowledged. First, it would be advisable to use disaggregated data on the economic condition in specific industries and sectors, and, second, models should be estimated which allow for a time lag between change in the aggregate rate of unemployment (and change in GNP) and the observed change in the rate of job shifts.

5.7 Conclusion

This chapter specified and described variables that will be used in the empirical analyses to be reported next. These variables, which are summarized in Figure 5.5, make it possible to capture institutional differences across the three nations, to capture differences in the hierarchy of occupations across nations and over time, and to capture labor-market conditions.

PART THREE: ANALYSES

INTRAGENERATIONAL MOBILITY DYNAMICS

The third part of this study focuses on three topics: the *start* and the first years of the work life, the *move* along work trajectories, and the *gain* associated with job changes. The three chapters compare career mobility of American, German, and Norwegian men born between 1929 and 1931.

One of the most basic measures of work histories is the number of jobs a person holds over the work life. In the total sample of American, Norwegian, and German men, workers reported an average of 7.1 job spells. Figure 6.1 shows the average number of job spells in each population as deviations from this mean. Norwegian and White American men of the birth cohort 1930 reported on the average more jobs (around 9) than Black Americans (6) and Germans (3.5). One of the main questions to be addressed in the next three chapters is what processes account for such dramatic differences.

Institutional factors are considered first. The institutions of formal and vocational training lead to different patterns of entry into the labor market, and these specific entry patterns may also affect the total number of jobs a worker holds in his work life. I therefore decompose the reported job spells into those which were held before last exiting education and those which were held after the respondent finished school. By plotting the second component, jobs held after last exiting school, one obtains the

Figure 6.1
Average Number of Job Spells in the Total Work History
Cohort 1930

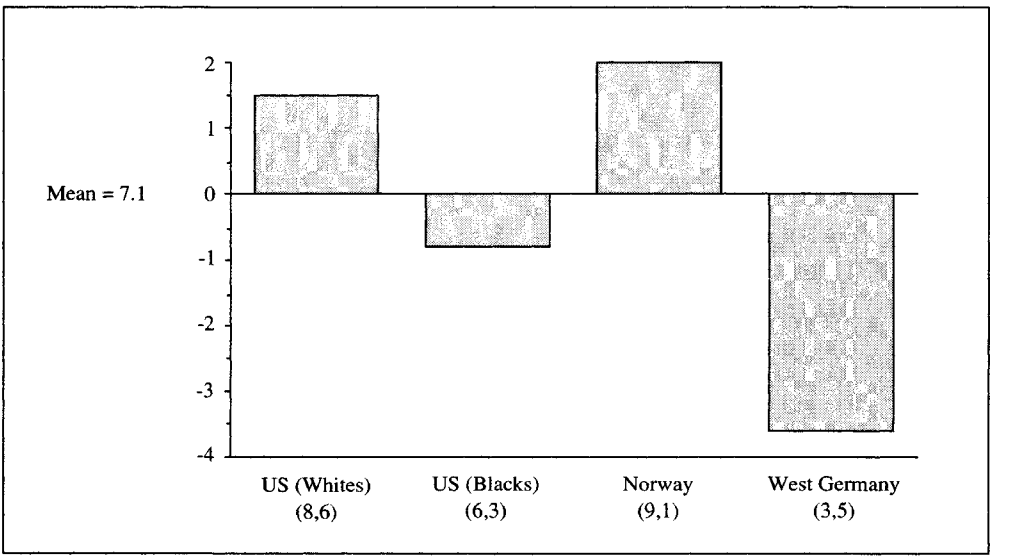
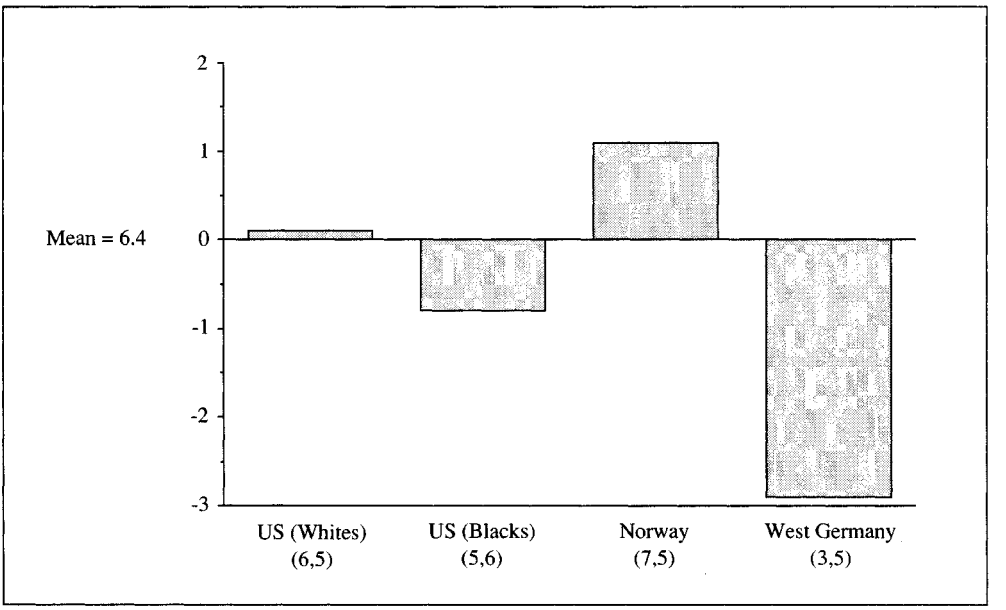


Figure 6.2
Average Number of Job Spells in the Career History
Cohort 1930

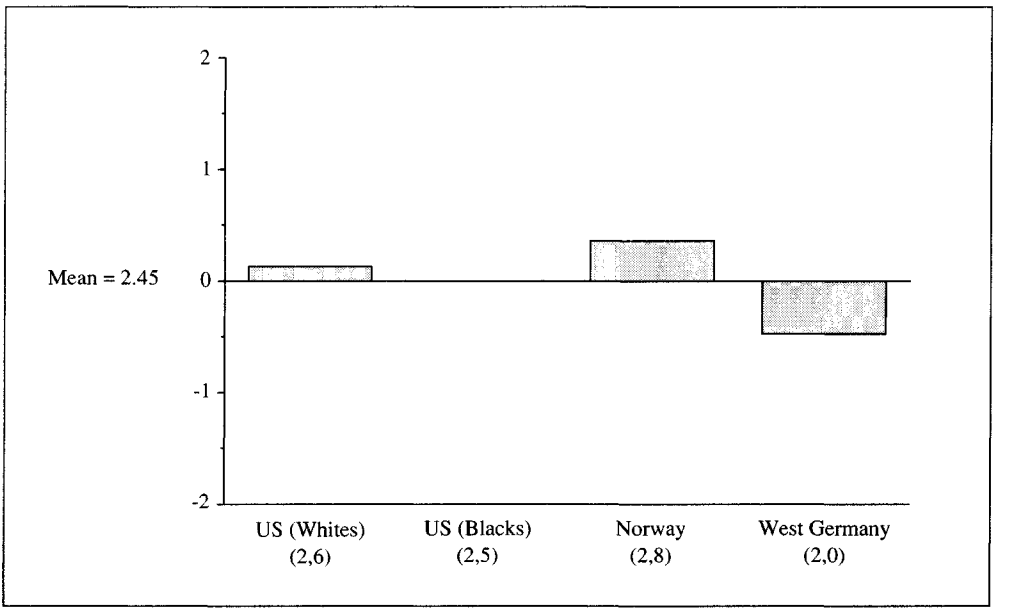


distribution presented in Figure 6.2. For each population the average number of jobs held in this stage of the work life is smaller. A comparison with Figure 6.1 further shows that differences in the number of jobs are diminished across the four populations. I conclude that one of the processes generating different career mobility patterns has to do with institutional factors, in particular with distinctions in the transition between school and work.

Economic factors also can help explain the variations in the number of jobs held by American, Norwegian, and German workers. These variables, which will be introduced as covariates in proportional hazard models, indicate the extent to which the rate of job shifts is shaped by macroeconomic conditions.

Finally, it is informative to explore how a given job relates to the subsequent job—that is, to focus on the *direction* of job transitions. I distinguish among transitions that lead to upward, downward, and lateral occupational mobility. On the basis of this distinction, I again plot the occurrence of job shifts cross-nationally (see Figure 6.3). White and Black Americans experience 2.5 job shifts with distinct status gains, which is about the average computed over all four populations. Norwegians experience slightly more (2.8) and Germans somewhat fewer (2.0) upward transitions. Thus, while differences in the overall number of reported jobs are considerable, the number of upward job transitions is very similar across the three nations. This finding makes it important to analyze separately (a) the overall career trajectory and (b) the trajectory which leads to status attainment.

Figure 6.3
Average Number of Upward Job Spells in the Career History
Cohort 1930



The presentation of findings will follow the above sequence. In Chapter 6 the transition between school and work is analyzed, in Chapter 7 the entire career trajectory, and in Chapter 8 the dynamics of upward occupational mobility.

The goals of Chapter 6 are to establish (1) when *careers start,* (2) how *labor-force experience* acquired before last leaving education is associated with occupational rewards at the beginning of the career trajectory, and (3) how the organization of *education* and vocational training influences the transition from school to work.

Chapters 7 and 8 focus on job trajectories from career start until age 40. Dynamic analyses allow the study of the *interplay between microstructural* (education, time in the labor force) *and macrostructural variables* (unemployment, GNP, employment in agriculture). These chapters ask (1) how microstructural variables determine the rate of job shifts and how great the impact of these variables is, and (2) how the interplay between microstructural and macrostructural variables differs across nations and why this is so. The crucial difference between Chapter 7 and Chapter 8 is the unit of analysis. In Chapter 7, the entire *job trajectory* is analyzed, including lateral, downward or upward occupational status changes. The rate of job shifts is modeled as being dependent on the time spent in a *job spell* before the transition into another job. In Chapter 8, only job shifts involving *upward occupational mobility* are studied. The probability of experiencing such transitions is modeled as being dependent on the time spent in the *state* of no upward mobility.

Chapter 6
Start: The Transition from School to Work

6.1 Introduction

Organizational structures of formal and vocational training systems frame individual attainment processes not only during the years in which the individuals are members of these organizations, but also by awarding certificates upon graduation. Organizational structures also pattern the transition from school to work and movements along career trajectories.

The effects of institutionalized training arrangements on individual career trajectories is the focus of the following analyses. I first define when careers actually start (6.2) and show that in some institutional environments the transition between school and work is a sequence from full-time education to full-time work, while in other environments people work while in schooling, and return to schooling after spells of labor-force participation. Then I show how resources acquired prior to the start of the career trajectory are rewarded in the course of the work life. Two resources will be distinguished: labor-force experience and educational attainment. Labor-force experience acquired before last exiting education (6.3) is examined first. I briefly discuss why and to what extent young persons work while they are still in education and then analyze benefits and/or disadvantages of such labor-force participation for the occupational standing.

Effects of educational attainment will be shown next. The hypothesis here is that different educational systems generate different allocative processes for matching people to jobs at the beginning of the career. The analyses in this section (6.4) are based on my typology that classifies school systems according to the degree of standardization in educational provisions for the population as a whole and the availability of equal opportunities for citizens at different educational levels (stratification). The results will show that the importance of individual educational resources for future career rewards covaries with the organizational structure of educational systems.

6.2 Career Entry and Age Grading at Career Entry

To assess the impact of resources acquired prior to entry into the labor force on occupational rewards, it is necessary to define a starting point for a career history. In most analyses by other researchers, career start is defined as the very first (reported) entry into the occupational structure. This first "real" job, however, is sometimes

different from the first position in a career history. Summer jobs of all kinds, or labor-force experience during school, may define crucial moments in the biography of a worker, but often imply work tasks that have little or no connection to the person's future occupation. Such jobs provide labor-force experience to adolescents but are not a genuine part of career trajectories of adults.

While this suggests excluding such jobs from the analysis of careers entirely, labor-force experience in the transition stage is very important in a cross-national perspective. Systematic differences across nations in the location of the first job and its relation to the entire trajectory require studying the effects of labor-force participation acquired while still attached to the educational system.

As discussed in the previous chapter, I define the start of the work trajectory as the first job which meets the following requirements: (1) the job must be a full-time job, and participation in the occupational sector may not be combined with enrollment in the educational sector, and (2) being enrolled in the occupational sector may not be succeeded by a return to school.

Analyzing the job spells in the samples under study, one finds that jobs at the start of the career differ greatly along these criteria.

In the *United States,* school and work are often not mutually exclusive: 25 percent of all workers report job spells while they are still in school. Moreover, the transition between school and work is not unidirectional: 23 percent report job spells which will be followed by additional schooling.

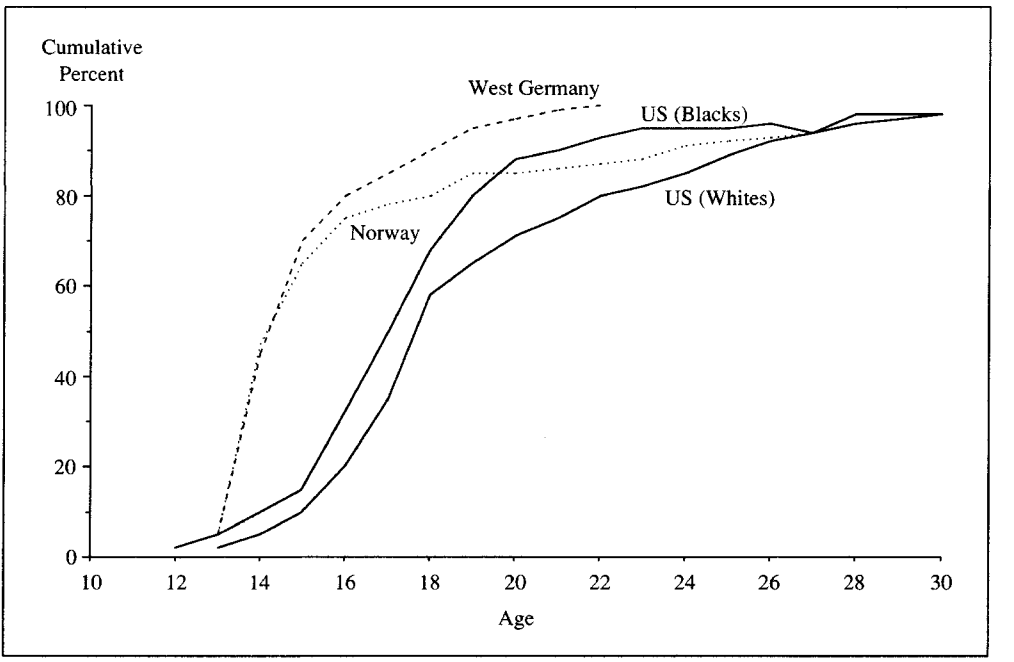
In *West Germany,* the route which leads to the first job entails a distinct passage from the educational system into the vocational system and mandatory military service. A person is in only one of these systems at a time, and once the system has been left, it has been left. A return to school, to vocational training, or to military service is relatively rare. The sequence is institutionalized. Hence, in West Germany, school and work are exclusive systems, and entry into the labor force follows school—recurrent school is rare.

The *Norwegian* pattern falls in between these two extremes. The educational system is much like the German one, but vocational training is somewhat less regulated. Empirical evidence shows that 19 percent of all people work while they are in school, and an additional 15 percent work full time before all educational spells are completed.[1] Given that the Norwegian educational and vocational structure is similar to that of West Germany, the finding that actual transition patterns are more similar to the United States is surprising. Macroeconomic conditions (high unemployment at the time of entry into the labor force), political events (World War II), and dramatic industrial sector changes obviously overrode institutionalized transition patterns for members of the Norwegian sample.

These international differences in the relationship between school and work can be controlled by defining *the first job after last leaving full-time school as the* "career

[1]These figures are based on a reclassification of educational attainment (and age at exiting school) that considerably differs from the "official" distributions supplied by the Norwegian investigators. For details, see Section 5.3.

Figure 6.4
Age Grading at Time of Last Leaving Full-Time Education



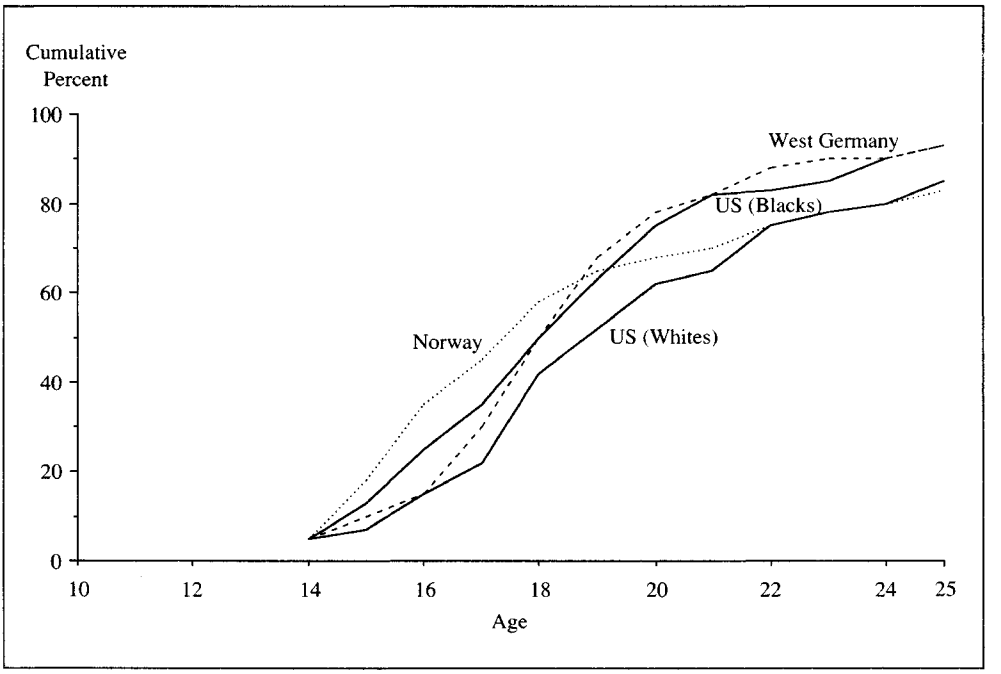
start."[2] School and work are now exclusive categories, and the start of the career trajectory occurs later than last exiting the school system. Conceptually, career start represents a point in time which is relevant for all workers and is comparable cross-nationally. Empirically, this definition allows study of both (a) the impact of labor-force experience acquired prior to career start and (b) the impact of school on career start and on the career trajectory as a whole.

Before turning to these analyses, let us briefly examine the age of workers at the time of their very first job and at the time of career start.

Figure 6.4 displays the average age at which White Americans, Black Americans, Norwegians, and Germans left the educational system for the last time. The cross-national comparison of "age at last exiting school" shows that, in the aggregate, German men leave school earlier than Norwegians, and Black American men leave earlier than White American men. Around 70 percent of German and Norwegian men exit the school system at age 14, but only 2 percent of White Americans and 4 percent of Black Americans exit the school system for good at this age. At age 17, only 21 percent of Norwegians and 13 percent of Germans are still at school, compared to 52 percent of all Black Americans and 68 percent of White Americans.

[2]This definition resembles the definition of career start used by Blau and Duncan (1967), Featherman and Hauser (1978), and Coleman (1984).

Figure 6.5
Age Grading at "Career Start"



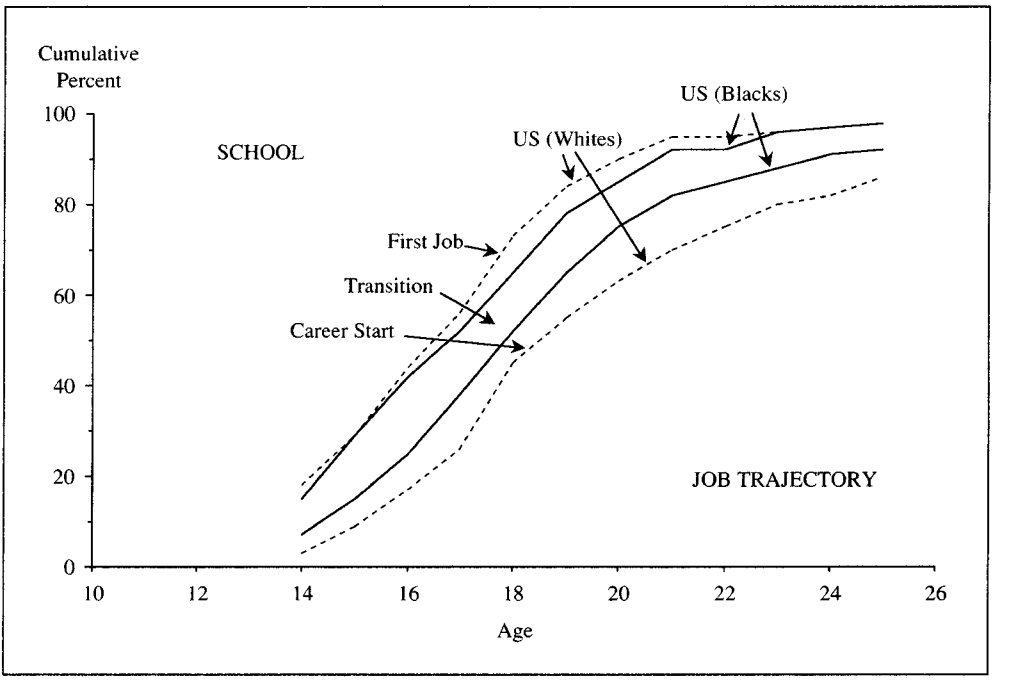
If we turn to the *age distribution at career start* (see Figure 6.5), and compare this distribution to the age at exit from school within each nation, one finds a slight gap between "exit" and "entry" for White and Black Americans. A considerable time gap between "exit from school" and "entry into labor market" is, however, observed for German and Norwegian men. As further analysis shows, this gap is explained by intermediate spells of military service and vocational training. More importantly for international comparisons is that there are differences across populations in the age of last exiting school—but not in the age of career start. American, Norwegian, and German men start their career lives at about the same chronological age.[3]

6.3 Labor-Force Experience in the Transition Period

What did workers born around 1930 do before the point of career start, that is, before they entered the labor market after last leaving the educational sector? To answer this

[3]This result further indicates that the German system of educational training is neither "more efficient" nor "functionally superior" (Hamilton and Wright, 1975) in matching people to jobs if efficiency is measured by the age distribution at "career start" rather than exiting school.

Figure 6.6
The Sequence of the Stages School, Transition, and Trajectory
United States, Blacks and Whites



question, some further definitions are needed. Because these persons spent time not only in school but also in the labor market before career start, we must distinguish jobs held before career start (this period will also be called the "transition period") from those held afterwards (this period will also be called the "trajectory period"). Accordingly, labor-force experience acquired before career start is defined as the *total number of months spent in all job spells during the transition period,* and labor-force experience obtained after career start is defined as the *total time elapsed in all jobs in the trajectory period.* Hence, the distinction between transition jobs and trajectory jobs refers only to the location of such jobs in the life cycle. It does not imply any evaluation[4] in the sense that trajectory jobs are "better," more "orderly," or "longer" than transition jobs. The different stages in the transition from school to work are illustrated for American men in Figure 6.6. The figure shows the age grading of Black and White Americans in a succession of stages including *full-time school* (left-hand side of Figure 6.6), *the*

[4]I thus depart from a frequent use of the term "career" which most often denotes a succession of jobs which lead to status *gains,* a succession of *related* jobs (Wilensky, 1960), or a succession which leads to occupational *expertise* (Sorge, 1984).

transition period (starting with the first job and ending with career start, and *the trajectory period* (after career start). We see, first, that the transition period spans a considerable period of time. Second, the length of time spent in transition varies not only within but also across populations. Black Americans, for example, tend to enter the transition period later, but start their career trajectories earlier than White Americans. This means that Black Americans have on the average less school *and* spend less time in the transition stage. What we do not learn from the figure is what people do in the transition period. Do White Americans acquire more school, while Black Americans have more and longer spells of labor-force participation, as common sense would suggest? Does this mean that only Whites increase their resources for future labor-market outcomes? Or does labor-force experience acquired in the transition period also affect future labor-market outcomes? And if so, in what direction? And why?

The main questions to be analyzed in this section are: (1) What is the proportion of workers who experience a transition period? (2) How long is the transition period and how much time in this period is allocated to working rather than to education or other activities? (3) What do we know about the average number and duration of jobs in the transition stage? Having established the quantitative extension of labor-force experience in the transition stage, I will suggest (4) that returns to labor-force experience in the transition stage on labor-market outcomes are dependent on (a) organizational and societal characteristics that promote the acquisition of labor-force experience, and (b) the number and length of jobs held in transition. The interaction of both factors then allows us to derive specific hypotheses about the impact of labor-force experience in the transition stage on labor-market outcomes in terms of status attainment.

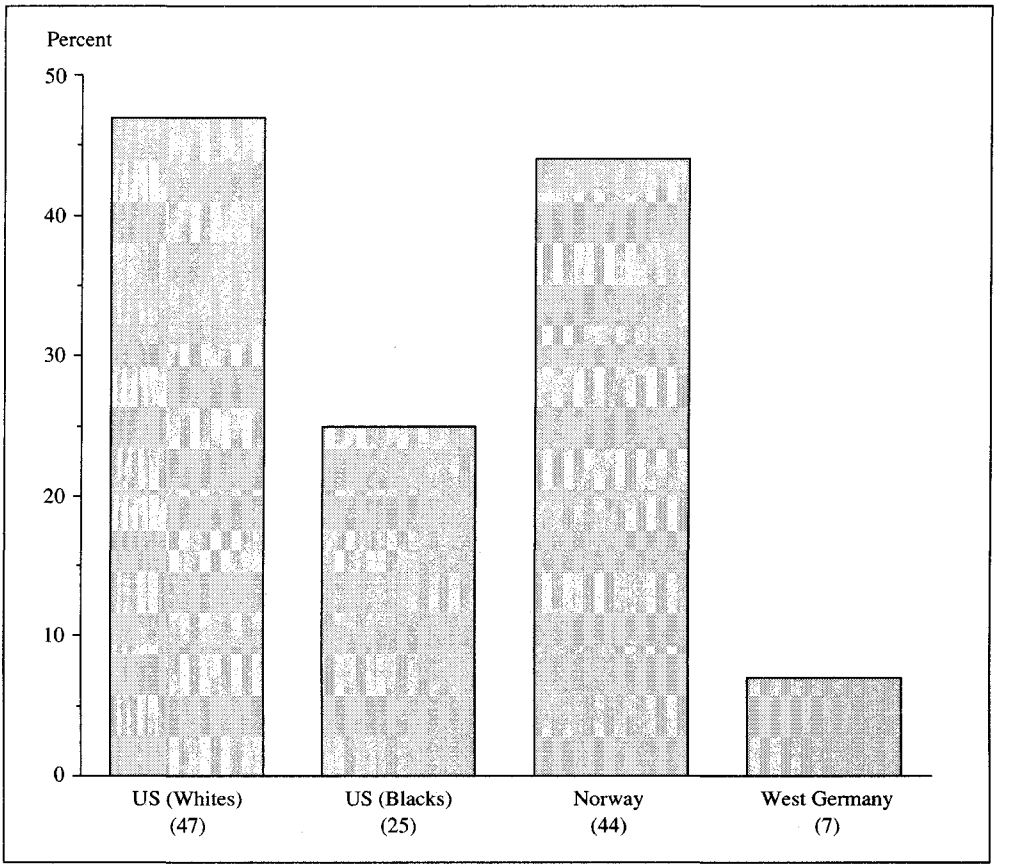
(1) How Many Workers Obtained Labor-Force Experience Prior to Career Start?

Labor-force experience in the transition stage is frequent, but differs considerably across the four populations (see Figure 6.7). On the one extreme, more than 47 percent of White Americans and 44 percent of Norwegians reported at least one job prior to entry into the career trajectory. On the other hand, just 7 percent of Germans experienced a transition period.

The extremely low figures for West Germany were anticipated. Bouncing in and out of the labor market and returns to education are rare. Instead, the transition from formal school to work is accomplished via the sequence of military service and vocational training. Labor-market participation outside vocational training and prior to last exiting education does not represent an entry pattern into the labor force of any significance.

Although it might be tempting to argue that vocational training in West Germany can be compared to labor-market experience acquired in the transition period, this parallel does not hold. In the United States, some vocational training is acquired in formal education (in high schools and junior colleges) and some in on-the-job training. Vocational training is thus acquired during school, during the transition period, and during the trajectory period. In Norway, workers often return to school to be retrained for occupations outside agriculture. Confronted with the alternative of either drawing parallels which are at least questionable or excluding the German sample from this

Figure 6.7
Percentage of Workers With Jobs in Transition Time
Cohort 1930

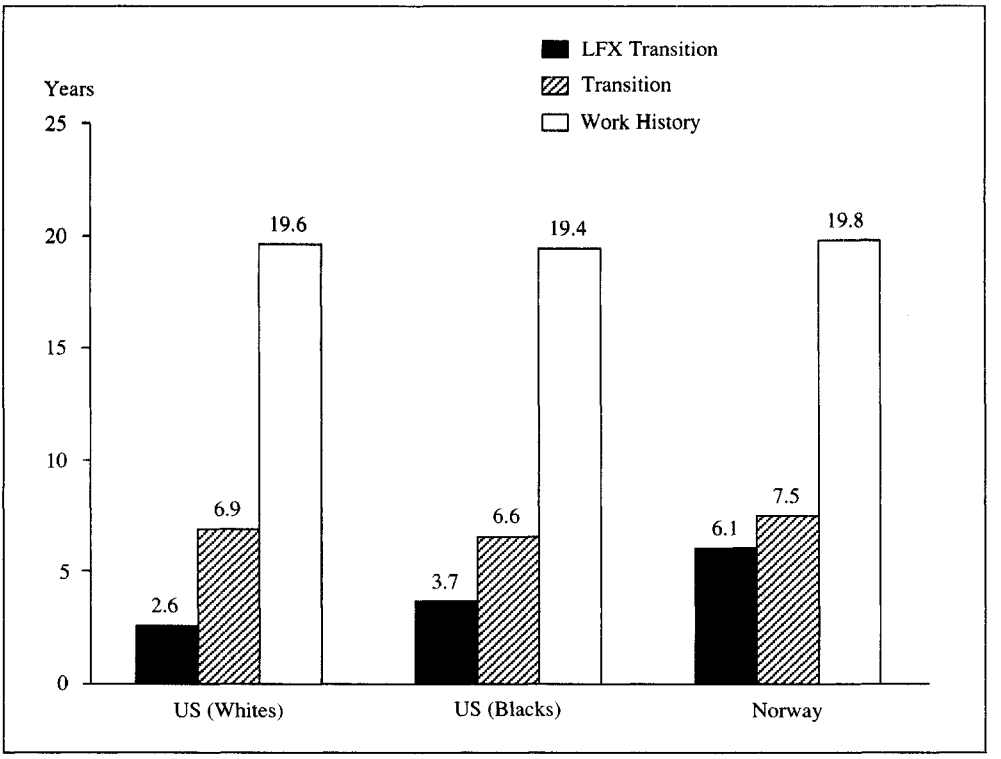


subanalysis, I decided on the latter and *restricted the analyses of labor-force experience in the transition stage to the American and Norwegian samples.*

(2) How Long Does the Transition Period Last and How Much of This Time is Spent in the Labor Market?

The length of time spent in the transition period and in the career trajectory are presented in Figure 6.8. For each nation, the first box represents the months spent in the work force while in the transition period, the second box represents the overall time spent in transition, and the third box represents the total number of months spent in the work force until age 40. The difference between the first box and the second box shows the number of months in transition spent in either school or military service.

Figure 6.8
Labor-Force Experience in Transition and Trajectory
Cohort 1930



The overall time spent in transition is very similar across the three populations and amounts to 6.9 years for Whites, 6.6 years for Blacks, and 7.5 years for Norwegian men. Strong differences emerge, however, in the total amount of labor-force participation. White Americans spent 2.6 years in the labor force, Black Americans 3.7 years, and Norwegians 6.1 years. These numbers mean that Whites use 64 percent of the overall time in transition for activities outside the occupational structure; Blacks use 45 percent of their time for such activities, while Norwegians use just 26 percent. Enrollment in the educational structure in the transition stage is far more pervasive in the United States than in Norway. This finding can be illustrated in relation to the educational attainment of these workers. Nine out of ten White Americans with college degrees (but only three out of ten without college degrees) hold jobs in the transition stage. In Norway, the difference between workers with university degrees (six out of ten hold jobs in transition) and workers without university degrees (four out of ten hold jobs in transition) is far less pronounced. This result is a first indicator that labor-force participation in the transition period is an outcome of different generating mechanisms across the nations. Whereas in the United States, labor-force participation in the

transition period seems to be part of the "educational career" and is seen as a temporary intermission from enrollment in the educational sector, the relation between education and work is reversed in Norway. Here, enrollment in the educational sector seems to be part of the "occupational career" and is a temporary intermission from working.

This interpretation is supported by analyzing the type of education accomplished in the transition period. Whereas Americans enroll in formal education to finish high school but mostly pursue college training or training in a graduate school (law schools, medical schools, business schools), Norwegians enroll in vocational training. In many cases, this vocational training is offered in evening courses, especially designed to train workers in agriculture and fishing in order to take jobs in either manufacturing or services. Furthermore, Norwegian men who experienced a transition period are raised primarily (60 percent) in municipalities with a population of less than 1,500; they come from families where in more than 65 percent of the cases farmers are the heads of households. Their jobs in the transition period are located in regions in which farming and fishing dominate. Forty-two percent report that they were "helping family members," and 21 percent report to have worked as a "farm laborer." Labor-force experience in the transition stage in Norway is an expression of constrained opportunities in finding employment outside agriculture, and it seems to be the only option vis-à-vis a changing economy. Men who started their working lives in agriculture can be assumed to have a competitive disadvantage compared to men who were able to find employment outside agriculture immediately at the start of their work lives. Given the rural-urban split, they also live in an environment in which alternative and more lucrative job opportunities do not open up.

(3) How Many Jobs Are Held in the Transition Period?

The average duration of jobs in the transition period amounts to more than two years for Norwegians and Black Americans, while White Americans have a mean duration of just nine months.

White Americans report 4.4 jobs, Black Americans 2.4 jobs, and Norwegians 3.3 jobs on the average. In Table 6.1 the number of jobs in the transition and in the total work history is broken down by educational attainment. There is a strong association between (final) educational attainment and time spent in the transition period. Both White and Black Americans who have more job spells in transition have a higher level of final educational attainment. Workers with a college degree hold on the average 5.6 jobs (3.4 for Blacks), while workers with elementary schooling hold only 1.3 jobs. In Norway, this pattern is reversed, and persons without college hold more jobs (3.9) in the transition period than do those with college degrees (2.6).

Interesting patterns emerge when we relate the total number of job spells to the number of jobs held in the transition time. Table 6.1 shows the ratio of the total number of jobs to the number of jobs held in the transition stage. The ratio in column 3 is the percent of all job spells completed prior to last exiting the school system. A ratio of .4, for example, means that 40 percent of all job spells occurred prior to career start. These ratios show that White American men with high educational attainment have well over

Table 6.1
Number of Job Spells by Final Educational Attainment

Educational attainment	Total number of job spells	Number of spells in transition	Ratio
United States: Whites			
Elementary	8.56	1.26	0.21
Some high school	7.50	1.59	0.26
High school	7.62	2.21	0.32
Some college	7.83	2.74	0.36
College	9.18	5.65	0.63
M.A., Ph.D	10.64	7.61	0.72
United States: Blacks			
Elementary	6.29	1.27	0.27
Some high school	5.97	1.30	0.27
High school	5.57	1.62	0.34
Some college	6.02	1.92	0.32
College	6.13	3.40	0.62
M.A., Ph.D	5.88	3.50	0.59
Norway			
Elementary	11.88	3.90	0.40
Realskole	8.33	3.23	0.42
Gymnas	7.37	2.16	0.31
University	8.72	2.62	0.26
Ph.D	8.66	2.00	0.21

70 percent of all their job shifts during the transition period. This percentage decreases with level of education: White American men with low educational attainment complete only 20 percent of their job spells during this stage. The same pattern emerges for Black American men—those with high education complete around 60 percent of all job shifts during the transition period, those with low education complete only 27 percent during this stage.

For Norwegian men, the relationship between education and number of job spells is reversed. The higher the level of education, the fewer job spells have been experienced upon the time of last exiting education. While workers with elementary schooling experience 40 percent of all job shifts in transition, this ratio decreases to 24 percent for persons with doctorates.

(4) Is Labor-Force Experience Obtained in the Transition Period Relevant for Future Career Mobility?

The previous sections show that participation in the educational system is not the only activity young persons pursue before they enter the career trajectory. Working before career start is not an exception but rather an activity pursued by a substantial proportion of workers. Moreover, workers spend a remarkable amount of time in a remarkable number of jobs in transition. Labor-force experience acquired in such jobs

prior to career entry can be perceived as an outcome of the organization of educational training systems. Educational systems can prevent young persons from allocating time for activities outside the educational system. Reentry into the educational sector, once it has been left, may be impossible. School may be a year-long, full-time activity which hinders temporary employment during school vacations. And, employment opportunities may not be provided for persons without specific educational degrees. Yet if the educational structure does allow for labor-force participation prior to entry into the career trajectory, it is important to know whether such participation has any long-term impact on career placement and/or career development.

Labor-force participation should affect the future career if we assume that *any* type of work socializes and familiarizes workers with the "rules" of the labor market. Upon last exiting school, workers with prior participation may have a competitive advantage because they have "connections" that were established earlier, they may know behavioral patterns that increase the likelihood for promotions, or they may have gained the knowledge needed to choose jobs which well match their abilities and preferences. The effects of this transitional pattern on future career outcomes may result directly from labor-force *experience* (in the sense of understanding the "rules" operating in the labor market), or it may derive from specific knowledge that relates to a particular occupation which will be pursued upon last exiting full-time schooling. In either case, the effect on future career opportunities should be positive.

These positive effects may, however, be offset when the length of job spells in the transition period is long. If two workers spent exactly the same amount of time in the transition period and acquire the same amount of labor-force experience in this stage, their outcomes may nevertheless be different if worker A holds three short jobs while worker B holds one long-duration job. This suggests that positive returns to labor-force experience in the transition stage might level out when the length of jobs is long and information about vacancies and opportunities is therefore restrained. Moreover, working for a long time in jobs during the transition period may reduce workers' flexibility in making transitions to other, and possibly more prosperous, jobs.

Hence, labor-force experience in the transition stage may have two opposite effects on later occupational rewards. Given the same time of labor-force participation in the transition period, I predict that (1) holding many jobs will have a positive impact on career placement, while (2) holding a long-duration job should be less favorable for career outcomes. In addition, the stage of economic development in a given society should affect these outcomes. If the economy is in a transitory stage, and if labor-force experience in the transition period is acquired in occupations that wane, then negative effects of labor-force experience in the transition stage on status attainment are expected.

The following analyses assess the relation of labor-force experience in the transition period and the *occupational status* of (a) the first job held and (b) the job held after ten years in the labor force. Labor-force participation in the transition period will be measured by two indicators: a continuous variable indicating the *number of jobs* held in the transition period and a dummy variable indicating whether at least one of these jobs was held for more than one year *(length).*

Table 6.2 presents the results of regression analyses in which occupational status

Table 6.2
Regression Coefficients of the SAS Level in the First Job and the Job Ten Years Later on Number and Length of Jobs

	Whites		Blacks		Norway	
	Coefficient	t	Coefficient	t	Coefficient	t
First job						
Number of jobs	.051*	2.0	.053**	2.3	-.029**	-3.3
Length	-.286	-1.8	.048	.5	-.031	-.5
Average status	.857		.442		.719	
R^2	.434		.195		.518	
N	335		273		1.067	
Job ten years later						
Number of job	.002	.2	.053*	1.9	-.029*	-2.0
Length	-.198	-1.8	.027	.2	-.049	-1.0
Average status	1.096		.515		1.064	
R^2	.386		.257		.499	
N	279		226		900	

* $p < .05$.
** $p < .01$.
All coefficients after controlling for "years of schooling," "educational degree," "unemployment rate," "change in GNP."

(SAS) of the first job is regressed upon the number of jobs in the transition time and the variable which controls for the duration of jobs in transition. Variables also included in the regression model (but not shown here) are educational attainment (years of school and highest educational degree) and macroeconomic conditions (percentage of males employed in agriculture, unemployment rate, change in GNP).

For Blacks and Whites, the coefficients of the *number of jobs* in transition are in a positive direction and are statistically significant at the .05 level or above. This means that jobs in transition lead to higher status in the first job, even after controlling for educational attainment. The lower panel of Table 2 shows the corresponding coefficients for the job held after ten years, which tests whether the number of jobs in transition has long-term consequences. For White Americans, the effect of number of jobs in transition is not significant. For Black Americans, the coefficient is still positive and significant. Thus, we can conclude that in the United States, the number of jobs in transition is important and that it provides labor-force experience that increases occupational rewards in the first job, be it through connections, information, or getting to know the occupational system.

The coefficients for the second indicator of labor-force experience in the transition period, the length of jobs, is negative for White Americans and positive, but nonsignificant for Black Americans. It therefore does not seem to matter how long Blacks stay in jobs; jobs of any kind which are held prior to career start increase future career

rewards. For White Americans, however, the "length" variable is close to being significant and suggests that those workers who have long-lasting transition jobs are disadvantaged in status attainment in both first and later jobs compared to workers who had only short job spells or no transition labor-force experience at all. This result gives support to the argument that duration and number of jobs matter. Long jobs appear to restrict the range of helpful information, knowledge, and connections. Short jobs, which are primarily summer jobs, do not hurt future status attainment.

For further evidence, compare the results presented in this study to the results reported by James Coleman (1984). Coleman operationalizes early labor-force experience by the length of labor-force experience in the transition period and finds much smaller coefficients. One explanation for the different results in his analysis as compared to mine is that he does not distinguish number of jobs and duration of jobs and thus confounds the two opposing effects on labor-market outcomes.

Consistently negative returns to prior labor-force experience are found for Norwegian men born in 1931. The more jobs a worker held prior to career start, the lower the occupational rewards in the first and later job. This result indicates that effects of labor-force experience in the transition stage are dependent on organizational and economic characteristics. In an economy which around 1946 was still depressed, and in a society which still faced sectoral shifts from agriculture to services, jobs in the transition stage signal that there are problems in the society in matching people to jobs. Norwegian men with labor-force experience in transition seem to be trapped in declining industrial sectors. While employment in declining sectors clearly is not helpful, it does appear that those who leave the agrarian sector right at the start of their work life are advantaged.

This analysis has shown that labor-force experience in the transition stage affects both initial and long-term standing in the occupational structure and is an important determinant for career placement and career development. Let us now turn to the second resource acquired before career start—educational attainment.

6.4 Effects of Education on Career Placement and Career Trajectory

The task of this section is to show how educational training systems define the occupational opportunity structure for groups of individuals at entry in the labor market and to explore their long-term implications for matching people to jobs. To analyze these effects, I use the typology of educational systems presented in Chapter 3, in which educational systems are characterized by their degree of "standardization" and "stratification."

Does educational attainment lead to different levels of occupational prestige and to different career trajectory patterns as a function of the degree of standardization and stratification of the educational system in which the training was pursued? First, I will examine the effects of stratified systems on occupational status attainment and then turn to effects of standardization.

(1) Effects of Educational System Stratification on Career Placement and Career Trajectory

Effects of educational system stratification on labor-market outcomes can be assessed by measuring occupational rewards, as measured by occupational prestige (SAS). It is expected (a) that workers with the same amount of formal education are rewarded differently in stratified and unstratified systems; (b) that occupational rewards in the first job are more disparate in stratified than in unstratified systems; and (c) that formal certificates are more important in stratified systems than in unstratified systems.

(a) Are Workers With the Same Amount of Formal Education Rewarded Differently in Stratified Versus Unstratified Systems?

To test whether educational systems produce system-specific outcomes in occupational prestige, we can simply compare the average occupational prestige scores for each level of formal education across the four populations. Table 6.3 displays the breakdown of SAS scores by educational level. At each level, American men are rewarded with less occupational prestige in the first job than Norwegian and German men. For the two lowest levels, elementary schooling and "some high school," this finding is not surprising, because in West Germany and Norway these levels represent formal exits of the educational system, whereas in the United States they are perceived as levels attained by high-school "drop-outs." More informative are the returns to high

Table 6.3
Level of Formal Education and Average Status Attainment
By Population, All Cohorts

Highest formal attainment	Mean SAS	s	V	N
US Whites				
Elementary	0.30	0.41	1.39	109
Some high school	0.37	0.49	1.33	111
High school	0.72	0.87	1.22	593
US Blacks				
Elementary	0.30	0.41	1.36	225
Some high school	0.45	0.93	2.07	225
High school	0.90	1.57	1.74	333
Norway				
Elementary	0.44	0.68	1.54	1,635
Realskole	0.69	0.78	1.13	1,152
Gymnas	2.13	1.39	0.65	396
West Germany				
Less than elementary	0.45	0.30	0.65	88
Elementary	0.53	0.38	0.71	724
Mittelschule	1.00	0.86	0.86	160
Gymnasium	1.91	1.29	0.67	101

Note: s = standard deviation; V = coefficient of variation (see Section 6.4.2); N = number of cases.

school, gymnas, and gymnasium. On the average, a White American worker attains a job with a SAS score of .7, a Black American worker with .9, a Norwegian worker with 2.1, and a German worker with 1.9. Those different returns in occupational prestige for the same number of years of formal schooling is striking and clearly supports this first hypothesis of stratification effects: The more people attain the highest formal education, the less their average prestige score.

(b) Do Stratified Educational Systems Lead to More Distinct Status Hierarchies?

This hypothesis can be tested with the same breakdown of Table 6.3. In all four populations we see a positive linear relation between educational resources and occupational rewards: The more education people acquire, the higher the status of the first job. Simple difference scores, however, show that White Americans with a high-school diploma on the average gain slightly more than twice the prestige of Whites with elementary schooling, while Norwegians with gymnas degree gain an average prestige which is five times as high as the prestige of elementary-school leavers. In West Germany, gymnasium graduates attain jobs four times "better" than elementary-school leavers.

The results confirm that the relative standing of a person at the beginning of the career trajectory is not only an outcome of individual educational attainment, but also of the organizational structure in which the educational credentials have been awarded. Stratified educational systems (Norway, West Germany) indeed channel the work force in distinct occupations with distinctively different occupational status.

(c) Is the Formal Degree Attained in Education More Important in Stratified Systems?

To test whether a specific degree or certificate matters more in one rather than another educational system, the SAS level of the first job is regressed on the variables "years of formal and vocational training" and "highest educational degree attained." "Years of schooling" in Norway and West Germany is the sum of years of formal schooling and years spent in vocational training. "Degree of formal educational training" is measured with two dummy variables, corresponding to "high-school" (gymnas, gymnasium) graduation and "some high school" (realskole, middle-school graduation). Elementary schooling is the reference category. Table 6.4 shows two models. The reduced model (Model 1) includes only the variable "years of schooling." The full model (Model 2) includes also "degree of formal education." We see that in Norway and West Germany, the full model is superior to the reduced model. Both the realskole and gymnas degrees significantly increase status attainment in the first job even when "years of schooling" are controlled. In the United States, the reduced model is sufficient: A "high-school" certificate is neither significant for the prediction of occupational status attainment nor does it reduce the error variance of the whole equation. In sum, in stratified systems the degree attained in the educational system matters. This conclusion is supported by further analyses in which the information of whether Americans attained a college degree is substituted for the information for whether they attained a high-school degree. Results for this modified regression equation indicate that for both American samples "college degree" is a significant covariate. Further, returns to

Table 6.4
Regression Analysis of the SAS Level in the First Job on Years of Schooling and Type of School

	Model	R^2	Constant	Years of schooling	Level	
					Real	Gymnas
US Whites	1	.26	−.41	.35**		
	2				n.s.	n.s.
US Blacks	1	.08	−.01	.22**		
	2				n.s.	n.s.
West Germany	1	.19	.06	.20**		
	2	.33	.14	.13**	.26**	.93**
Norway	1	.30	−.96**	.54**		
	2	.48	−.91**	.44**	.46**	1.01**

** $p > .01$.

college degree in the United States are very similar compared to the returns to the gymnas/gymnasium degree in Norway and West Germany.

The results indicate (1) that the coupling between educational attainment and occupational status is higher for Germans and Norwegians than for Americans; and (2) that the level, or the degree itself, matters more than the length of educational training in stratified systems. In unstratified school systems, people are not sifted and differentiated according to occupational levels.

(2) Effects of Educational System Standardization on Career Placement and Career Development

Effects of standardized educational and vocational training systems can be assessed by examining the amount of variation in key measures for standardized relative to unstandardized educational systems. Specifically, I predict that (a) in standardized educational systems, the variation in occupational prestige within each educational level is smaller than in unstandardized educational systems, and (b) workers who trained in unstandardized educational systems overall have *more job shifts* than do those from standardized systems.

(a) Is Variation in Occupational Status Smaller for Workers From Standardized Educational Systems?

The breakdown in Table 6.3 and the regression analysis displayed in Table 6.4 give evidence that occupational rewards are indeed less dispersed for workers with the same educational attainment in standardized compared to unstandardized systems. In Table 6.3, we focus on the coefficient of variation (V), a measure that allows us to compare the deviation around the mean across populations. This coefficient is 1.22 for the dispersion of occupational prestige of White Americans with high-school degree.

For Black Americans it is 1.74, but for Norwegians and Germans with gymnas or gymnasium degree it is only 0.6. The earlier observation that the Norwegian elementary-school system is rather unstandardized is also supported by the considerably higher dispersion of status scores for elementary-school leavers in Norway (V = 1.54) as compared to West Germany (V = .65).

Another way of showing the effect of unstandardized systems on status attainment is shown in Table 6.4. More variation in SAS level should be accounted for in standardized systems than in unstandardized systems. The results support this hypothesis: 26 percent of the variance in status attainment (R^2) is explained by educational attainment for the White American population, 33 percent is explained for Germans, and 48 percent is explained for the Norwegians. For Black Americans, educational attainment matters least, with an R^2 of only .08.

(b) Are There More Job Spells in Unstandardized Systems?

Vocational training systems which are set up as apprenticeships lead to professional knowledge which is bound to one occupation. Workers acquire occupation-specific training, and the boundaries among occupations can be crosscut in the course of the occupational life only with difficulty. In unstandardized systems, some students acquire vocational training in high schools or junior colleges, but the variation in both length and content of such vocational training is considerable. Workers generally are not committed to pursuing only one occupation. Employers, on the other hand, know what professional expertise to expect from workers who have finished long-term apprenticeships. In unstandardized systems, however, employers cannot rely on any clear signals. Instead, they hire workers to train and to screen "on-the-job." The consequences for both voluntary and involuntary job shifts are obvious: Standardized vocational training systems decrease the likelihood that many jobs will be held over the course of the work history, and unstandardized systems increase this likelihood.

The overall number of jobs varies considerably across the populations: White Americans report 6.5 job spells, whereas Black Americans report 5.6, Norwegians 7.5, and Germans 3.5. Table 6.5 reports the percentage of workers with 1–5 job spells in each population. The last row gives the percentage of persons with more than 5 jobs. In the United States, 57 percent of all White Americans and 44 percent of all Black Americans have more than 5 job spells. In Norway, 58 percent of all workers have more than 5 job spells as compared to only 14 percent of German workers.

The clear division between West Germany and the United States represents the first support of the hypothesis that as systems are more standardized, there are fewer job shifts. The Norwegian case, however, challenges this assertion. Although the Norwegian educational structure is far less standardized than the German structure, it is clearly more standardized than the structure in the United States. It was therefore expected that the number of Norwegian job shifts falls somewhere between the number reported in the United States and West Germany, rather than being higher than both. The explanation for this Norwegian pattern includes macroeconomic conditions and considerable differences in the number of job changes among different occupations. The decline of the agricultural sector required major adjustments of young persons

Table 6.5
Percentage of Workers by Number of Job Spells Over the Career Trajectory

Total number of Spells	United States Whites	United States Blacks	Norway	West Germany
1	3.3	7.3	5.1	10.1
2	7.1	5.9	7.5	23.1
3	12.3	11.4	9.4	28.5
4	11.9	14.7	10.7	13.5
5	9.8	17.2	9.7	11.2
More than 5	55.6	43.6	57.6	13.6

with farming backgrounds. Such persons cannot stay in farming; they also have severely restricted opportunities for good schooling, and their choice of occupations is constrained: At age 14, they have to find employment, which is most likely in the (rural) area where their parents live. This implies, however, that they will be trained in vocations in declining (agrarian) economic sectors, with declining demand. Long job-search activities are thus induced by economic change which overrides "normal" transitions.

(c) Do Unstandardized Systems Lead to More Job Transitions at the Beginning of the Career?

Vocational training in the form of apprenticeships ends with a standardized examination that serves as a screening device[5] for employers. Employers need few screening mechanisms within the firm, hire as many workers as they actually need, and thus decrease overall hiring and firing activity. In systems without such standardized exams, however, employers cannot rely on signals when allocating people to jobs. Instead, they must develop and employ their own screening strategies and use their own selection procedures. One such selection procedure is the allocation of a large proportion of workers into low entrance positions in the firm, the screening of their on-the-job performance, and subsequent selection.[6] By implication, the job-search activity for students from unstandardized systems will take some time, and many job shifts are likely to occur at the beginning of the career.

This difference among workers who are trained in standardized vocational systems and those trained in unstandardized systems, however, is likely to diminish over time. If workers are trained on-the-job and stay in a firm for a long period of time, they acquire training which is tailored to the needs of the firm. Employers will try to hold trained workers to compensate for their initial training costs.

To provide evidence that the organization of schooling matters for the timing of job

[5]Spence (1974) and Stigler (1962).

[6]Sengenberger and Köhler (1983), Haller et al. (1985), König and Müller (1986), Maurice et al. (1982), and Rose (1985).

Table 6.6
Ratio of Job Spells Completed After 2, 5, 7, and 10 Years of Labor-Force Participation (LFX) to the Overall Number of Job Spells in the Trajectory

Years of LFX	United States Whites	United States Blacks	Norway	West Germany
1. No college				
2 years experience	30.7	32.1	25.8	48.7
5	56.4	53.1	52.3	57.4
7	67.8	62.8	61.2	68.5
10	75.5	71.9	70.8	78.4
Number of jobs	887	839	3,244	1,162
Number of persons one job only	210	206	832	281
2. College/gymnas/gymnasium				
2 years experience	48.4	53.5	56.9	53.3
5	63.5	65.5	70.0	68.6
7	77.4	73.8	78.8	73.8
10	84.3	82.5	88.0	81.6
Number of jobs	234	63	501	84
Number of persons one job only	63	16	123	21

transitions in the course of the work trajectory, I calculated the ratio of job shifts accomplished at distinct points of labor-force experience to the overall number of job shifts. The discrete points are two, five, seven, and ten years of labor-force participation. Table 6.6 reports these ratios for workers with high educational attainment (college, gymnas) and for workers without such degrees. The interpretation of Table 6.6 will focus on White Americans (with an unstandardized educational system) and Germans (with an standardized vocational system). West Germans without a secondary-school degree completed about 50 percent of all job transitions after two years of labor-force experience. By the time these workers have been in the labor force for ten years, more than three-fourths of all transitions have been accomplished. White Americans without a college degree completed around 30 percent of all job transitions after two years of labor-force participation (18 percent less than Germans). After ten years of labor-force experience, three-fourths of all job shifts are completed (2.9 percent less than Germans). From the German-American comparison[7] the following findings can be reported:

[7]The timing of job transitions over the work life for Black Americans and Norwegians is similar to the White American pattern. In the case of Norway, this similarity is due to a considerable heterogeneity in the vocational training of workers. For those who acquired vocational training within apprenticeships, the timing of transitions is much similar to West Germany. This finding again provides evidence that vocational training arrangements matter and that they stratify people not only across nations, but also within nations which are distinguished by different vocational training arrangements, with different degrees of standardization.

(1) For half of all German workers, the final job match is completed within two years after entry in the labor force. In the United States, this process takes more than twice as long.

(2) The remainder of job transitions is distributed more evenly in West Germany than in the United States.

(3) After five years of labor-force experience, the timing of job shifts is very similar for the two populations, as is the proportion of completed job transitions.

In sum, organizing vocational training as on-the-job training leads to a loose match between jobs and persons. The first five years of the career trajectory is a stage of trial and error and involves many job shifts. After this initial stage is completed, however, workers trained on-the-job have obtained firm-specific occupational knowledge and skills which are valuable for the employer and have made investments that they themselves value (through entitlement to firm benefits, such as pension plans and seniority rights). It seems that firm-specific training ties workers to their firms and jobs just as much as occupation-specific training ties workers to their occupations. Thus, the difference between the two types of systems inducing job shifts is concentrated in the first few years of labor-force participation.

6.5 Conclusion

This chapter analyzes the transition from school to work. It shows that the age at which men (born around 1930) enter the labor market for the *first* time differs cross-nationally. The age at which these men enter the labor market for the *last* time, however, does not differ across the four populations studied.

To explain this observation, the crucial period between first entry into the labor market and last entry into the labor market is analyzed, a period I label the transition period. Only few German workers have a transition period. Most of them leave education and vocational training systems and then start working without ever leaving the occupational sector again. On the other hand, a substantial proportion of Norwegians and Americans do experience a transition period. The proportion of time in the transition period spent at work rather than school is considerably higher in Norway than in the United States.

Because American and Norwegian men participate in the educational sector *and* in the occupational sector before last leaving the educational system, both the impact of education and of labor-force participation on the career trajectory are considered. In regard to *effects of labor-force participation* (in the transition period) on occupational rewards, I find that many short jobs increase occupational rewards at the beginning of the career and have long-term effects on occupational standing. Holding long jobs in the transition period, however, has a negative impact on occupational attainment.

Effects of educational attainment on occupational rewards are dependent on the educational system in which training has been pursued. For workers educated in a stratified system, occupational status is more closely determined by educational attainment than is the case for those educated in an unstratified system. The educational system also affects the likelihood of job changes. Workers educated in standardized systems change jobs less frequently than do those educated in unstandardized systems.

The final chapters will expand these analyses. The dependent variable will no longer be the status of a particular job or the overall number of jobs but the *rate of transition* between jobs. Independent variables will include not only microstructural variables but also macrostructural variables, that is, indicators of the economic context. These chapters will thus present a more inclusive and more dynamic picture of career mobility processes than has been possible so far.

Chapter 7
Move: Job Mobility Dynamics

7.1 Introduction

In this and the next chapter, I will look at the entire career trajectory and ask which factors influence the timing of the succession of jobs. The key questions are: (1) Which individual resources lead to an increase (or decrease) in the rate of job shifts? (2) Is it important to know under which economic conditions workers live their work lives? (3) Is it important to know in which national environment workers live their work lives? (4) What is the relative importance of individual resources, economic conditions, and national environment for predicting the rate of job mobility?

First, these questions will be examined on the basis of the *entire* job trajectory,[1] including lateral, downward, and upward occupational status changes. The probability of experiencing an occupational transition is modeled as being dependent on the time spent in a *job spell* before the transition into another job occurs. The analysis proceeds as follows: Section 7.2 presents models which are estimated on the basis of a data set which pools the data of all four populations. These models specify the impact of microstructural variables (labor-force experience, labor-force experience prior to career start, education) and of macrostructural variables (GNP, percentage of males employed in agriculture). Section 7.3 explicitly addresses the convergence theory. Because this theory specifies that mobility rates should be similar across nations once macroeconomic conditions are controlled, variables which represent the four populations should not significantly affect the rate of career mobility. Because I must reject this hypothesis, in Section 7.4 models estimated for each population separately are presented. In Section 7.5, I then return to the comparison across nations and discuss the way in which the size of, and the interplay among, macrostructural and microstructural variables differ for the four populations. Section 7.6 summarizes the findings of the chapter.

[1]The unit of analysis is all job spells which occurred after career entry (i.e., after last exiting school). Job spells that occurred prior to this point in time are excluded, but will be controlled for statistically.

7.2 Effects of Microstructural and Macrostructural Determinants on Job Mobility

The empirical findings pertaining to three models of job mobility are reported. In Model 1, the time of labor-force participation is introduced as a predictor of mobility. In Model 2, indicators for educational attainment, labor-force experience prior to career start, and prestige level of the job are added. In Model 3, indicators for macroeconomic conditions (GNP, percentage of males employed in agriculture) are also incorporated. These three models are estimated to test (a) whether macroeconomic variables improve the fit of the model to the data, and (b) whether the effects of *micro*structural variables change once macrostructural variables are added. All models are presented in Table 7.1.[2]

Model 1: Labor-Force Experience

Table 7.1, Model 1 has one independent variable—labor-force experience at entry into the origin job. Theoretically, labor-force experience is expected to have a negative effect on the likelihood of job shifts. Indeed, two very different theories generate the same prediction.

The *supply-side approach* (Human Capital Theory) links effects of labor-force participation to educational attainment; increases in educational attainment and vocational proficiency are the main forces behind job shifts. According to my definition of career entry as the first job after last leaving education, educational training is completed before entry in the labor market. On-the-job training[3] is usually concentrated in the early stages of a career. In the Human Capital Theory, job shifts occur only as reactions to changes in the educational and vocational resources of a person. This leads to the prediction that the likelihood of job transitions decreases with time spent in the labor market.

The *demand-side approach* (Vacancy Competition Theory) predicts the same (negative) effect of labor-force participation on the rate of job transitions. The rationale behind this prediction, however, is not based on effects of educational or vocational attainment. Instead, time spent in the labor force captures the gap between realized and expected rewards. According to the Vacancy Competition Theory, the gap in the optimal match between persons and jobs will be smaller the longer a person is exposed to the labor market because the longer the time in the labor force, the more the gap will be reduced.

The empirical result is consistent with the theoretical prediction. As can be seen in Table 7.1, Model 1, the (additive) parameter estimate which reflects the effect of "time

[2]Table 7.1 also includes Model 4, which tests for nation-specific job transition rates and will be discussed in Section 7.3.

[3]Early versions of the Human Capital Theory attributed the variation in worker's labor-market outcomes to variation in the amount of institutionally acquired skills among workers. The significance of noninstitutional forms of human capital, such as postschool job experience, was suggested by Arrow (1962), Becker (1975), and Mincer (1975).

Table 7.1
Partial Likelihood Estimates of Models for Transition Rates to Any Job
All Populations, Cohort 1930

Estimates for model	1	2	3	4
-Log likelihood	100,997	100,746	100,546	100,405
Chi-square	112	461	855	1084
df	1	6	8	11
Labor-force experience	-.0014**	-.0013**	-.0004**	.0005
	(.0001)	(.0001)	(.0001)	(.0004)
Number of transition jobs		.0271**	.0352**	.0302**
		(.0048)	(.0049)	(.0056)
Duration of transition jobs		-.0654**	-.1519**	-.1120**
		(.0277)	(.0281)	(.0305)
Years of schooling		-.0529**	-.0127*	.0051
		(.0057)	(.0062)	(.0069)
College/gymnasium		.3253**	.2169**	.1596**
		(.0426)	(.0432)	(.0446)
Prestige (SAS)		-.1541**	-.1748**	-.1595**
		(.0143)	(.0144)	(.0145)
Change in GNP			.0482**	.0214**
			(.0052)	(.0056)
Percentage of males in agriculture			.0261**	.0511**
			(.0014)	(.0074)
United States: Whites				.6304**
				(.1116)
United States: Blacks				.3929**
				(.1167)
West Germany				-.1033
				(.1076)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of episodes: 13,610.
Percentage of censored observations: 14.86.
Note: Data basis is the pooled data file. German data have been truncated at 1970.

spent in the labor force" on the log of the rate is negative and significant. The value of the coefficient depicts that the log of the rate decreases by .0014 for each month of labor-force experience. From this model, it is clear that time spent in the labor force is an important factor in determining who experiences job shifts at a higher rate than others. Those who are in early stages of their career experience a high rate of job shifts. This effect is very consistent throughout the models.

Model 2: Resource and Reward Variables

Model 2 introduces the indicators for educational attainment, labor-force experience in the transition period, and occupational prestige. The "resource" measures (education and labor-force experience in the transition period) will be addressed first and then the "reward measure" (occupational prestige) is analyzed.

Educational and vocational training. Theoretically, educational attainment is expected to have a positive effect on the rate of job shifts. The Human Capital Theory approach predicts that education works as a signal to employers and is the most frequently used personal attribute in matching persons to jobs. According to Status Attainment Theory, education always leads to better job opportunities, and according to the Vacancy Competition Theory, better educated people are better able to compete for available opportunities.

Educational attainment is measured with two variables, one indicating "years of formal and vocational training," the second indicating whether or not a gymnasium, gymnas, or college "degree" has been attained. For the second measure, a positive coefficient is expected and is obtained. Persons with a high (relative) educational standing are more likely to experience job shifts. Table 7.1 shows a coefficient of .33 for college/gymnas degree. The magnitude of this effect is ascertained by taking the antilog (multiplicative parameter), which shows that the rate of change for persons with gymnas degree is 38 percent higher ($100(e^{.325} - 1)$) than for persons without such a degree.

The first indicator for educational attainment, years of schooling, has a smaller and negative impact on the rate of job shifts. This result is unexpected and will be explored further in Section 7.5.

Labor-force participation before career start. According to the rationale for studying "early" labor-market exposure presented in Chapter 6, enrollment in the occupational sector increases the knowledge about how labor markets work, and labor-force participation itself increases the range of contacts and networks of the individual worker. Many short job spells prior to career entry should increase the likelihood of later job transitions, whereas early labor-force experience acquired in few long-duration jobs should have either no impact (because it does not substantially increase the scope of networks) or a negative impact (because workers might go back to, and stay in, the old job after leaving school for the last time).

The results testify to the importance of any form of labor-force experience for the development of the career trajectory: Both the number and duration of jobs held in the transition stage significantly influence the rate of job change. The higher the *number of jobs* held in transition, the higher the rate of job shifts in the career trajectory. Workers who held jobs with a *duration* of more than one year have a job transition rate in the trajectory stage which is 6 percent smaller than those who only held short-duration jobs.

Occupational prestige. Most researchers predict that the higher the prestige score of the job of origin, the lower the opportunity to move into a position with even higher prestige. This phenomenon is called the "ceiling effect" and leads to the expectation of a negative effect of occupational status on the transition rate between jobs.

As expected, the coefficient of occupational prestige is negative and significant. Men who hold jobs that are high on the occupational prestige hierarchy have a considerably smaller chance of moving to other jobs than men who hold jobs lower in prestige.

Model 3: Macrostructural Variables and Microstructural Variables

Model 3, the full model, contains all variables of interest. Before I discuss the findings for this model, the theoretical and empirical importance of macrostructural variables in understanding job transitions are reviewed.

Macroeconomic indicators. The two economic indicators "change in GNP" and "percentage of males in agriculture" are introduced to measure opportunity structure.[4] According to the standard economic theory, times of a positive change in GNP indicate many available positions into which people can move. Following this argument, a *positive coefficient of change in GNP* on the rate of job shifts is expected.[5]

The indicator "percentage of males in agriculture" measures macroeconomic conditions indirectly. It is a proxy which captures the stage of economic development in a given nation in terms of the proportion of males employed in the agrarian, industrial, and service sector. One should expect a negative relation between the proportion of males employed in agriculture and the likelihood of job change simply because farmers are less likely than other workers to change jobs. However, in the years under study employment in agriculture dropped considerably, and this change in employment in agriculture decreased the overall likelihood of job changes. Hence, I expect that the higher proportion of males employed in agriculture, *the higher the rate of job moves* (upward, lateral, downward) due to transition and adaptation problems of the labor force.[6]

Empirically, the coefficients of the indicators "change in GNP" and "employment in agriculture" are highly significant (see Table 7.1, Model 3). All are in the expected direction: A positive change in GNP increases the likelihood of job shifts, as does a decrease in the number of people employed in agriculture.[7]

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[4]Due to statistical problems, the indicator "unemployment" has not been estimated in the "pooled data model." This problem stems from a high correlation between "unemployment" and "time in the labor force." Although for the pooled data file, the correlation between "time in the labor force" and "unemployment" amounts to only .25, analyses on the basis of the German and Norwegian samples found strong collinear effects between the two variables. These nation-specific statistical properties (which are explained in detail below) distort the estimates of the pooled data.

[5]To my knowledge, the indicator "change in GNP" has not been previously used as a covariate in hazard models that estimate the rate of job mobility. A comparison of the results obtained in this study with other empirical research was therefore not possible.

[6]Whereas the indicator "employment in agriculture" is particularly relevant to capturing the "Norwegian" setting (but can be evaluated in all three societies), the indicator "percentage of foreign workers" is applicable only for West Germany. The discussion of this macroeconomic measure is presented in Section 7.3.

[7]The positive indicator means that there are more job shifts the more people are employed in agriculture. This is counterintuitive only in times of stable overall employment in agriculture. In times of declining employment in agriculture, we indeed expect a positive coefficient because people are forced to move out of agriculture and thus to change jobs.

Evaluating Model 3: The Relation Between Microstructural and Macrostructural Variables

Two main findings appear from the evaluation of Model 3. First, the indicators for macroeconomic conditions are important variables for modeling the rate of job transitions. A log likelihood test[8] indicates that Model 3 clearly outperforms the previous two models.

Second, macroeconomic conditions do *not* modify the effects of microstructural variables. Although the coefficients of the microstructural variables do change once macrostructural variables are included, the changes do not reach statistical significance. Stable coefficients indicate that the rate of job shifts decreases or increases according to the size of the microstructural covariates irrespective of "good" or "bad" macroeconomic conditions.[9]

In sum, this section established the following results:

(1) The coefficients of all independent variables and the contribution of all variables to the overall fit of the model are significant for predicting job shifts.

(2) The direction of the coefficients is not always in line with results expected on the basis of theoretical premises (Human Capital Theory, Vacancy Competition Theory). In particular, a negative return to years of schooling and a positive return to unemployment run counter to predicted effects.

(3) Macrostructural variables do not moderate the effects of microstructural variables.

7.3 Nation Effects on the Rate of Job Mobility

Empirical results presented earlier (Chapter 6) show that the importance of microstructural variables varies with the national context. Labor-force experience acquired in the transition stage leads, for example, to higher returns in occupational status in the United States but decreases occupational rewards in Norway. The return to educational attainment also depends on the organizational structure in which educational activities have been pursued. These results lead us to suspect that macroeconomic variables impinge on career patterns in population-specific ways. It would be surprising indeed if we would not find international differences in the return to microstructural and macrostructural variables (and their interplay) on the *transition rates among jobs.* It is this question which will be investigated next.

Nation effects are tested by introducing three dummy variables (representing White

[8]The value of the chi-square statistics is computed as follows: Let L_1 be the log likelihood for a hazard with the added variables and L_0 for the hazard with those variables excluded. Minus twice the difference between L_0 and L_1 yields the value of the chi-square statistics. The degrees of freedom is equal to the number of parameters added between the model with L_1 and the model with L_0. In this example, the calculated chi-square statistics is $2(355) = 710$ with $df = 3$, which is significant at the 0.01 level.

[9]The effect of "years of formal/vocational training" does drop considerably (from −.053 to −.005), but this drop is not statistically significant ($t = 1.2$).

Americans, Black Americans, and Germans) in the hazard model (see Table 7.1, Model 4). Norway is the reference variable. There are three main findings. First, the *overall fit of Model* 4 is significantly better than Model 3, using a likelihood ratio test. This indicates that nation-specific mechanisms operate in addition to microstructural and macrostructural variables.

Second, for *international differences in the extent of job shifts,* we find significant positive effects for the White and Black American sample and a nonsignificant negative effect for the German sample. White Americans have, after the inclusion of all variables, a rate of job moves 87 percent larger than the rate for Norwegians, and Black Americans have a rate of job moves 48 percent larger than the rate for Norwegians. The levels of statistical significance obtained suggest that the German and Norwegian rates do not differ. This result implies that the macrostructural variables account well for differences in job mobility rates of Norwegian and German workers,[10] but insufficiently capture differences between the two European and American samples. While this might be due to unsatisfactory indicators of macroeconomic conditions in the United States, a more plausible interpretation is that macroconditions are less potent in shaping careers in that nation.[11]

Third, the *stability of other covariates* is of interest. The coefficients of the covariates "labor-force experience in transition," "educational degree," and "change in GNP" shift upon introduction of the nation dummies. Specifically, the coefficients for the two education indicators drop in magnitude (and the indicator "years of schooling" turns slightly positive), a result in line with the earlier finding (Section 6.4) that education operates differently across nations. The coefficient of "GNP" drops significantly, from .048 to .021 ($t = 3.58$), and that of "percent in agriculture" increases significantly from .026 to .051 ($t = 3.33$). This result confirms the assumption that macroeconomic variables are more influential for shaping career trajectories in some nations (here Norway and West Germany) than in others (here United States).

In the introduction to this chapter, it was asked whether it is necessary to know the national context in which one observes career trajectories to understand their dynamics. The results provide a preliminary answer. If one is interested in the overall probability of experiencing job transitions, one has to know the national environment. I must reject the assumption of an international convergence of mobility rates.

7.4 Job Mobility Dynamics in the United States, Norway, and West Germany

Empirical evidence so far shows that macroeconomic conditions modify career mobility patterns. Yet knowledge about labor-market conditions (which, of course, differ

[10]This reasoning is based on the results of a model which does not include macrostructural variables and incorporates only the nation dummies and the microstructural variables. In this model (not shown here), the "German" coefficient is highly significant and negative. The coefficients for White and Black Americans are also highly significant and negative. The introduction of macrostructural variables then (a) decreases the magnitude of all coefficients of the values reported in Table 7.1, Model 4, and (b) wipes out Norwegian-German differences.

[11]This point will be taken up in nation-specific models (see Section 7.4).

across nations), is insufficient—the particular society in which the workers live their work lives still turns out to be very important. West Germany, with transition rates very similar to the Norwegian transition rates, is an exception.

These results are interesting in themselves but leave many questions open. Can we conclude that career mobility *dynamics* differ across the nations? Or is the overall dissimilarity in the rate of job shifts the aggregate outcome of essentially similar nation-specific patterns? Does, for example, educational attainment increase the rate of job transitions to the same extent across nation states? Or are returns to education instead dependent on the specific organizational environment in which training has been pursued?

Previous results suggest the latter. Education did not lead to comparable rewards in different countries. Moreover, counterintuitive results reported in Section 7.2 of this chapter hint at international differences. The same is suggested by the findings for macroeconomic variables. Here, we found that macroeconomic indicators are of greater significance in Norway than in the United States.

Analyses that stratify the sample by population and subsequently investigate the impact of the independent variables for each single population can answer these questions. Thus, we next explore intragenerational career mobility patterns for each of the four populations separately. As in the presentation in Section 7.2, I concentrate on (a) the effects of microstructural variables, (b) the impact of introducing macroeconomic measures into the models, and (c) the stability of microstructural coefficients after macrostructural variables have been included.

(1) United States, White Population

The partial likelihood estimates of models pertaining to the population of White Americans are listed in Table 7.2.

Model 1 shows a strong negative coefficient for "time in the labor force." The longer men are in the labor force, the lower their chance of experiencing job transitions. The size of this coefficient is robust and does not alter with the inclusion of microstructural variables (see Model 2).

For White Americans, educational attainment has no significant effect on the rate of job transitions, quite in contrast to labor-force experience acquired prior to career start. Long commitments to jobs prior to career start reduce the transition rate among jobs in the career trajectory. Workers with long job spells can expect a rate in job transitions 16 percent lower than that of workers without long job spells.

The addition of macroeconomic conditions in Model 2 significantly improves the fit of the model:[12] Model 3 (the full model) is superior to Model 2.[13]

The significance of the individual macroeconomic indicators, however, is modest.

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[12]Correlations among macrostructural variables and between these variables and "time in the labor force" are not a problem. No coefficient is higher than .25 with the exception of "percentage of males in agriculture" and "time in the labor force" which is –.49.

[13]For the White American sample, a log likelihood test gives a chi-square of 2(6) = 12 with three additional degrees of freedom, which is significant at the .01 level.

Table 7.2
Partial Likelihood Estimates of Models for Transition Rates to Any Job
United States: White Population

Estimate for model	1	2	3
-Log likelihood	12,610	12,550	12,544
Chi-square	72	142	152
df	1	6	9
Labor-force experience	-.0032** (.0004)	-.0031** (.0004)	-.0017** (.0008)
Number of transition jobs		.0100 (.012)	.0139 (.012)
Duration of transition jobs		-.1526** (.062)	-.1412* (.072)
Years of schooling		.0201 (.013)	.0359* (.013)
College degree		.1376 (.099)	.1293 (.099)
Prestige (SAS)		-.2660** (.035)	-.2641** (.034)
Unemployment rate			-.0134 (.031)
Change in GNP			.0254** (.009)
Percentage in agriculture			.0293 (.018)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of job episodes: 2,184.
Percentage of censored observations: 15.4.

The coefficient for "unemployment rate" is negative but unsignificant; the indicators "change in GNP" and "percentage of males in agriculture" are positive, but only "GNP" reaches significance. In times of a positive change in the GNP, the rate of transitions increase. This result is in accordance with economic theory that predicts a creation of vacant positions in times of increasing GNP.

The last question to be addressed to the White American population is the degree to which macroeconomic conditions modify the return to microstructural variables. In general, they do not. However, some clear shifts can be identified (e.g., the coefficient of "time in the labor force" drops to 50 percent of its previous size). Although educational attainment has a significant impact on the transition rate once macroeconomic indicators are included, no single change reaches statistical significance.

In sum, there are three main findings about the career mobility dynamics of White American men born around 1930: (1) Labor-force experience acquired prior to career start is more decisive in predicting job shifts than is educational attainment. (2) The impact of each macroeconomic indicator, taken by itself, is modest. In particular, it is surprising that "unemployment" is of no significance for the career trajectories of White American workers. (3) Macroeconomic variables do not substantially modify the coefficients of the personal resource microstructural variables.

(2) United States, Black Population

Table 7.3, Model 1 yields a negative and significant coefficient for "time in the labor force," and this coefficient does not change with the introduction of microstructural variables (Model 2).

Table 7.3
Partial Likelihood Estimates of Models for Transition Rates to Any Job
United States: Black Population

Estimate for model	1	2	3
-Log likelihood	8,134	8,095	8,087
Chi-square	22	39	54
df	1	6	9
Labor-force experience	-.0020** (.0004)	-.0019** (.0004)	-.0006 (.001)
Number of transition jobs		.0610** (.022)	.0711** (.023)
Duration of transition jobs		-.1691* (.089)	-.1204 (.098)
Years of schooling		.0220* (.011)	.0381** (.016)
College degree		-.1572 (.161)	-.1621 (.161)
Prestige (SAS)		-.1387** (.055)	-.1339** (.056)
Unemployment rate			-.1130** (.040)
Change in GNP			.0297* (.015)
Percentage in agriculture			.0229 (.023)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of job episodes: 1,553.
Percentage of censored observations: 17.9.

In Model 2, both indicators for labor-market exposure prior to last exiting school are significant. Few long jobs decrease the rate of job transitions; many short-duration jobs increase the rate substantially. Moreover, the relevance of "early" labor-force experience is considerably stronger than the impact of educational attainment, which has only a modest effect on the timing of transitions between jobs.

Turning from Model 2 to Model 3, we find that macroeconomic variables increase the fit of the model substantially.[14] While "percentage of males in agriculture" does not significantly affect the rate of transitions, "change in GNP" has a significant positive effect. In contrast to the White American population, "unemployment" has a significant negative effect, indicating that the careers of Black Americans are affected by unfavorable labor-market conditions.

Macroeconomic variables do modify the impact of microstructural variables for Black Americans. The difference between the coefficients, however, in no case reaches the level of statistical significance. The direction of the shift in coefficients, once macroeconomic indicators are introduced, shows the same pattern as for White Americans: The impact of "labor-force experience" drops and is no longer significant, and educational attainment (years of educational and vocational training) gains predictive power.

[14]For the Black American sample, the chi-square statistics is $2(8) = 16$ with three additional degrees of freedom, significant at the .01 level.

Despite the fact that White and Black Americans belong to the same nation state and are subject to the same (aggregate) labor-market conditions, the two populations experience these economic conditions in quite different ways. White Americans (who are working) continue their work lives unaffected by macroeconomic calamities such as unemployment, while Black Americans (who are also at work) "feel" the impact of such forces on their work lives. And, as was the case for White Americans, macroeconomic variables independently add to the fit of the model, but do not much modify the effects of microstructural variables.

(3) Norway

The models pertaining to Norway are given in Table 7.4.

Comparing Model 1 and Model 2, we find again that the coefficient for "labor-force experience" preserves its magnitude and direction after introducing the microstructural variables. Model 2 reveals for the first time the merit of having two separate indicators for *educational attainment.* Comparing the impact of "years of schooling" and "gymnas degree" for the probability of job shifts, we find that "years of schooling" has a significantly negative impact, whereas "gymnas degree" has a positive effect: Norwegian men with gymnas degree can expect a rate of job transitions 21 percent higher than that expected for men without this degree. Thus, the full implication of vocational training becomes evident. Norwegians with only elementary schooling can expect more shifts than men who also have additional years of formal or vocational training—*unless* these latter men have earned a degree which qualifies them for

Table 7.4
Partial Likelihood Estimates of Models for Transition Rates to Any Job
Norway

Estimate for model	1	2	3
-Log likelihood	62,855	62,731	62,691
Chi-square	57	285	360
df	1	6	8
Labor-force experience	-.0011** (.0002)	-.0013** (.0002)	-.0026** (.0005)
Number of transition jobs		.0118* (.006)	.0055 (.007)
Duration of transition jobs		-.1469** (.033)	-.0423 (.033)
Years of schooling		-.0543** (.009)	-.0200* (.009)
Gymnas degree		.1883** (.056)	.2755** (.058)
Prestige (SAS)		-.1230** (.017)	-.1113** (.010)
Change in GNP			.0311** (.008)
Percentage in agriculture			.1231** (.010)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of job episodes: 8,682.
Percentage of censored observations: 12.3.

university entry. To be sure, the similarity between workers with low and high educational attainment refers to the simple number of job transitions. Whether this quantitative similarity will be reproduced when we study qualitative status gains, will be addressed in Chapter 8.

When measured by the indicator "number of jobs held prior to career start" labor-force experience acquired prior to career start increases the rate of job moves. The time spent in such jobs, however, has a negative coefficient. This result is surprising when we recall that labor-force exposure in transition had a negative impact on *status attainment* for Norwegians regardless of which particular measure was used, and regardless of whether one does focus on the first job or on the job held after ten years of labor-force participation. It is obvious that a higher rate of job mobility does not necessarily lead to status gains, a result which also will be explored further in the next chapter.

Before we examine Model 3, the full model, it will be helpful to review two previous findings. The first has to do with the historical situation in which the Norwegian birth cohort of 1931 grew up, the second is the finding about how career trajectories develop over the work life.

In Norway, young men who entered labor markets at the close of the Second World War did so at a time when unemployment was high (amounting to 12 percent in 1944 and 9 percent in 1947) and when more than one-third of all males were employed in the agricultural sector. In the course of their work lives, macroeconomic conditions changed considerably. Between 1945 (entry into the labor market) and 1970 (interview), employment in agriculture decreased by 12 percent, and unemployment became less and less of a problem. Furthermore, this decline was continuous, steady, and without fluctuations. The *empirical* finding I want to review is the coefficient for "time in the labor force." Model 1 shows that with each year in the labor force, the rate of job shifts declines significantly. Job shifts do not happen at a constant rate over the work life, and more job spells occur early rather than late in the career.

Let us now link these two observations. The coincidence between the historical change in macroeconomic conditions and the timing of job shifts is indicated by a substantial correlation between the variables "time in the labor force" on the one hand, and "unemployment" on the other.[15] The general effect of this coincidence is that the impact of "unemployment" on the rate of job transitions will be biased. It follows that this indicator cannot be used in proportional hazard models which specify the rate of transition among *all* jobs and which pertain to the *birth cohort 1930.*[16]

Let us look again at Table 7.4. We see that Model 3, containing all microstructural variables and the macroeconomic variables "change in GNP" and "percentage of males

[15]The correlation between "time in the labor force" and "unemployment" amounts to –.45 when calculated over all job spells and is thus considerably higher than the correlation coefficient obtained on the basis of the pooled sample (.28) or the correlation for the American sample, which is –.04. The correlation between "time in the labor force" and "percentage in agriculture" amounts to –.21.

[16]The indicator "unemployment" can be used, however, for the 1940 cohort because after 1955 (entry in the labor force of 1940 cohort) unemployment did not show a steady decline but instead fluctuated over the years.

in agriculture," has a significantly better fit than does Model 2 (which does not include the macrovariables).[17] Furthermore, both macroeconomic variables are significant and positive. The rate of job transitions increases in times of a positive change in the GNP and the rate is higher when the employment stock in agriculture is high. Both results are consistent with expectations. A positive change in GNP suggests that open positions are being created into which workers can move, and high employment figures in agriculture mean that there are likely to be open positions outside agriculture available to workers who cannot (or choose not to) find employment in the agricultural sector.

Do macroeconomic conditions modify the "return" to microstructural variables? For Norwegians, they do. With the introduction of macrostructural variables, the coefficient for years of education decreases significantly ($t = 2.7$), as does that for labor-force exposure prior to last exiting school ($t = 2.3$). This suggests that labor-force participation prior to career start and employment in agriculture[18] are related to each other. This result was forecast in Chapter 6 where I show that "labor-force experience in the transition stage" reflects an activity that is primarily pursued by young men with some connection to agriculture or fishing. Finally, the coefficient for "labor-force experience" doubles with the inclusion of macroeconomic control variables (but this difference does not reach statistical significance). This result suggests that Norwegians experienced many "erratic" job spells due to frequent job changes (such as "summer jobs" in fishing and farming and "winter jobs" in temporary industrial employment) over the whole course of their work lives.

In sum, educational attainment is particularly important for career mobility in Norway. The strong impact of formal education shows that stratified educational structures bind career trajectories of individuals. The negative return to "years of schooling and vocational training" indicates the holding power of standardized vocational training systems. It is further noteworthy to point to the strong impact of "employment in agriculture" which clearly reflects the degree to which the stage of economic development shapes the unfolding of occupational lives of members of this society.

(3) West Germany

The partial likelihood estimates of models for transition rates for West Germany are given in Table 7.5.

Model 1 has a very high coefficient for "labor-force participation." As in the other populations, this coefficient remains strong even after we control for educational attainment and occupational prestige (Model 2).[19] Of the indicators for *educational*

[17] A log likelihood test yields a chi-square of $2(40) = 80$ with two additional degrees of freedom, significant at the .01 level.

[18] Introducing only the variable "change in GNP" does not alter the coefficient of "duration of transition jobs."

[19] In contrast to the models estimated for the United States and Norway, Model 2 for West Germany only contains the indicators for educational attainment, labor-force participation, and occupational prestige. The indicators for labor-force experience acquired in the transition stage do not apply in the German case because such a transition stage was not identified there.

Table 7.5
Partial Likelihood Estimates of Models for Transition Rates to Any Job
West Germany

Estimate for model	1	2	3
-Log likelihood	5,584	5,577	5,558
Chi-square	75	90.1	105
df	1	4	7
Labor-force experience	-.0050** (.0006)	.0047** (.0006)	-.0011** (.0001)
Years of schooling		.0126 (.022)	-.0338 (.023)
Gymnasium		.4540** (.187)	.6795** (.196)
Prestige (SAS)		-.1803** (.054)	-.1419** (.054)
Change in GNP			.0074 (.017)
Percentage in agriculture			.0841** (.035)
Percentage of foreign workers			.0830** (.034)

** $p > .01$.
Standard deviations in parentheses.
Number of job episodes: 1,225.
Percentage of censored observations: 28.3.

attainment, only "gymnasium degree" is significant. Workers with Abitur have a probability of experiencing job transitions that is 57 percent higher than workers without such a degree. The measure for "years of formal and vocational training" is negative but nonsignificant. This result is not unexpected because in West Germany most young men enter vocational training, and the measure of "years of formal and vocational training" thus does not allow us to separate the expected rates of job shifts for those who leave elementary schooling with additional training from those who leave without additional training.

As in the case of Norway, the correlation between "unemployment" and "time in the labor force" is substantial[20] for the 1930 cohort and precludes the consideration of "unemployment" in these models. Hence, Model 3 has been estimated with only three macrostructural indicators: "change in GNP," "percentage of males in agriculture," and "percentage of foreign workers in the economy." The latter variable has been included as a proxy for (good) labor-market conditions: Foreign workers were actively recruited in the years of economic boom, and a high percentage of foreign workers in the economy reflects a response to this condition.[21] As was the case in the other populations, Model 3 is superior to Model 2.[22] The indicator for "change in GNP" is

[20]The correlation coefficient between "unemployment" and "time in the labor force" is -.61 when calculated on the basis of all job spells.

[21]This argument applies only to this specific period in German history. Conditions changed after 1978, when foreign workers were suddenly seen as being harmful to the employment of native German workers.

[22]A log likelihood test indicates a chi-square of $2(19) = 38$ with three additional degrees of freedom, significant at the .01 level.

positive but insignificant; employment in agriculture has a positive significant effect on the rate of job transitions as does "percentage of foreign workers in the economy." Both results are expected and both indicate the creation of vacant positions. This result suggests that vacancy chains are set in motion from the bottom of the occupational hierarchy which eventually produce job movements for German workers.

The introduction of macroeconomic indicators modifies the effects of microstructural variables. The shift is strongest for "labor-force experience" ($t = 4.5$). Although still negative and significant, the reduced size of the coefficient suggests that "time in the labor force" has a considerably lower impact on the rate of job transitions than would have been suggested by findings that did not include macroeconomic variables. The relative advantage of workers with "gymnasium" degrees increases (but not significantly), suggesting that in times of favorable economic conditions, those with Abitur can expect even more job shifts. The rate of transition for degree holders is 97 percent higher than for workers without such a degree.

At this point, all population-specific models have been presented, and we can now turn to a *comparative* assessment of job mobility patterns across the four populations. This comparison will be based on the full models (i.e., Model 3 in Tables 7.2–7.5). The set of microstructural variables employed will be identical for all populations (with the exception of "early" labor-force experience in West Germany), but the set of macrostructural variables used must differ across the nations. This is because the objective now is to search for macroeconomic variables which serve well within the three nation states, rather than to formulate models that maximize the intranational similarity.

7.5 International Comparison of Job Mobility Dynamics

The international comparison of career mobility dynamics is guided by three questions. (1) Do macroeconomic conditions affect career trajectories to the same extent across the four populations? (2) Does the importance of single indicators for job mobility rates differ in their importance across nations? (3) Do the dynamics between macrostructural and microstructural determinants for career mobility patterns differ across nations?

(1) Do Macroeconomic Variables Matter to the Same Extent Across the Four Populations?

This question can be answered by comparing the fit of the models before and after macroeconomic variables are introduced. The appropriate statistical procedure is a log likelihood test comparing Models 2 and 3 for each population. The results are summarized in Table 7.6. Here, L_1 indicates the log likelihood for a hazard model with the added (macroeconomic) variables and L_0 for the model with those variables excluded. Chi^2 shows the resulting chi-square statistics, and p indicates the level of statistical significance.

Consideration of macroeconomic conditions is, by far, most important in Norway. The increase in the fit of the model incorporating the influence of macroeconomic

Table 7.6
Log Likelihood Test for Goodness of Fit in Models that Consider Microstructural and Macrostructural Variables and Models that Consider Only Microstructural Variables

	United States Whites	United States Blacks	Norway	West Germany
L_0	12,550	8,095	62,731	5,577
L_1	12,544	8,087	62,691	5,558
Chi^2	12	16	80	38
df	3	3	2	3
p	.01	.01	.001	.001

conditions is considerably stronger than in West Germany, which, in turn, is stronger than in the two American populations.

(2) Do Determinants for Job Mobility Rates Differ Across the Four Populations?

To address this question, a summary table (Table 7.7) is presented which condenses the results of Tables 7.2–7.5 and displays coefficients significant at the .001 level and above.[23] I will not provide an exhaustive discussion of these results but rather focus on international similarities or differences pertaining to each set of determinants.

Labor-Force Experience

The effect of labor-force participation on the rate of job shifts is not significantly different across the four populations. Unfortunately, this result is not very informative. We cannot conclude that "universal" career trajectory patterns exist because even virtually identical coefficients may reflect drastically different job mobility regimes. Small effects of "time in the labor force" on the rate of job moves, for example, indicate that job transitions are spread evenly over the work life. But this may have two causes: career trajectories can be "orderly" or "administered" as opposed to "unsteady" or "unregulated." Standard promotions from one level in the hierarchy to the next level are an example of "administered" career trajectories. Civil servants in West Germany, for example, can expect quite regular promotions.[24] Career trajectories can also be

[23]These models include the following macroeconomic variables: for both American samples "unemployment," "GNP," and "agriculture"; for Norway "GNP" and "agriculture"; and for West Germany "GNP," "percentage of foreign workers," and "agriculture." The full sets of coefficients and their standard deviation are given in the corresponding tables in Section 7.4.

[24]Teachers in German high schools, for example, follow the career trajectory "Studienassessor," "Studienrat," and "Oberstudienrat." The rate of transition is usually three to five years. This pattern is the common pattern for all civil servants in West Germany.

Table 7.7
Nation-Specific Partial Likelihood Estimates of Models for Transition Rates to Any Job, Cohort 1930

	Labor-force experience	Transition jobs		Education		Prestige	Macroconditions		
		No.	Duration	Level	Years	SAS	GNP	Unemployment	Agriculture
Whites	-.0017	n.s.	-.069	n.s.	.036	-.264	.025	n.s.	n.s.
Blacks	n.s.	.071	n.s.	n.s.	.038	-.134	.030	-.113	n.s.
Norway	-.0026	.045	-.142	.275	-.020	-.111	.031	-	.123
West Germany	-.0011	-	-	.679	n.s.	-.142	n.s.	-	.084

erratic. If a worker gets fired (or quits) every other year, the dependence of job transitions on time in the labor force is also low. Black Americans, for example, often lack seniority rights (which protect against dismissal) and are the first to get fired during tough economic times.[25] Both "administered" and "unregulated" career tracks therefore are likely to produce very similar coefficients.

The same can be said for those effects of labor-force experience that indicate many job shifts at the beginning of the career trajectories and constantly decreasing rates over time. But again, the cause for many shifts at the beginning of the career may differ. It can reflect hiring and firing activities of employers (and voluntary quitting of workers) or the inability to find stable employment right at the start of the work life. The first "cause" is more likely for Norwegians, the second for White Americans.

I conclude that nonsignificant differences in the coefficients of "labor-force experience" only indicate that the rate of job shifts over the work life is quantitatively similar across the populations. It does not, however, allow us to understand qualitative similarities.

Labor-Force Experience Acquired in the Transition Stage

"Early" labor-force experience, measured by the number of jobs held in the transition stage, increases the rate of job transitions in all three populations; this increase is significant for Black Americans and Norwegians. The coefficients differ significantly across the populations. Black Americans derive significantly more advantage from early labor-force exposure than White Americans ($t = 2.6$) and Norwegians ($t = 2.3$).

The second indicator for "early" labor-force participation (which signals whether jobs with a duration of more than one year were held), is negative for all three

[25]It is possible to address this question empirically. In the German case, time spent in the labor market should primarily reflect the timing until upward job shifts occur because "administered" career trajectories essentially imply lateral or upward job transitions. For Black Americans, job transitions should not show any clear directional pattern. Further empirical tests of these possibilities will be presented in the next chapter.

populations and significantly so in the White American and Norwegian sample. Black Americans are not significantly disadvantaged when their jobs prior to career start span a substantial time. The size of this coefficient is not significantly different across the three populations. Long jobs in the transition stage considerably reduce the rate of job moves and do so to the same degree in Norway and the United States.

"Labor-force experience prior to career entry," then, is an example of a variable with effects that are in the same direction for all populations. The *size* of this indicator, however, is substantially shaped by the national environment.

Educational and Vocational Attainment

The effects of "years of schooling" for White and Black Americans are not significantly different. In both samples, each additional year of schooling increases the rate of job transitions by about 4 percent. The coefficients for the same variable for Germans and Norwegians also do not differ significantly. In both European samples, each additional year of formal/vocational training results in a small disadvantage not significant of Germans compared to fellow cohort members without this additional education. Comparing the effects between the United States and the two European nations, however, does show a bigger and statistically significant difference ($t = 3.7$).

The second indicator for educational training, (i.e., whether a college or gymnas degree has been awarded) shows no effect on the rate for job shifts in the United States, but has strong effects in West Germany and Norway. In West Germany, workers with a gymnasium degree have a rate of job transitions which is 97 percent higher than that for workers without gymnas; in Norway, this relative advantage amounts to 31 percent.[26] This difference between Norway and West Germany is significant ($t = 1.98$).[27]

The conclusion is thus the same for both indicators of educational attainment. Educational attainment determines the shape of career trajectories in a way that is highly dependent on the national environment. Both direction and size of the effects of education vary according to the nation in which workers are employed. This finding furthermore explains the negative coefficient for years of schooling in models that use the full data set. The disaggregated coefficients now show that nation-specific patterns operate. The overall negative coefficient was thus clearly the outcome of two opposite effects.

Unemployment

"Unemployment" was introduced as a macroeconomic control variable only in models for White and Black Americans. Unemployment rate affects the career trajectories of Black (but not White) Americans. The effect is negative: The rate of job shifts for

[26]This result is in line with predictions derived from the analytical framework (see Chapter 5). The proportion of workers who attain a gymnas degree is higher in Norway than in West Germany. Norwegians have to compete more for a high status job, which decreases the allocative power of educational attainment on status attainment.

[27]The difference in return to "college/gymnas" degree is also significant between (either one of) the European samples and (either one of) the American samples.

Blacks decreases with rising unemployment figures. The difference between the two American samples is significant (t = 2.1).

This result provides evidence that effects of macrostructural variables can differ for two populations within a single nation. White Americans have the chance to change jobs at an unaltered rate in both "good" and in "bad" times and seem shielded against unfavorable labor-market conditions. Black Americans, however, can be seen as victims inasmuch as they have fewer possibilities for finding other jobs into which they can move in economically difficult times.

Gross National Product

Change in the GNP has consistently positive coefficients in all four populations.[28] Moreover, the coefficients are virtually identical.[29] This macroeconomic indicator thus represents one economic condition that affects workers independent of the national environment.

Employment in Agriculture

This measure, which controls for the stage in the transition from employment in the primary (agricultural) to secondary (manufacturing) and tertiary (services) sector, is relevant only in Norway and West Germany. In both nations the coefficient is positive, indicating that the greater the number of persons (still) employed in agriculture, the higher the rate of transitions between jobs.

This result affirms the quality of this measure. In the United States, where the transformation of the economy from agriculture to services occurred earlier in time, and where employment in agriculture decreased at a much lower rate in the years under study, an impact of employment in agriculture on the rate of job transitions would have been surprising, if not discomforting. And, although the coefficient is not significantly higher in Norway than in West Germany (t = 1.1), the slightly higher coefficient for Norway provides additional evidence that the measure does capture macroeconomic conditions.

The question whether effects of single determinants of career mobility dynamics vary across populations can now be answered: They do.

(3) Do Indicators for Macroeconomic Conditions Modify the Effects of Microstructural Variables Differently Across Nations?

Which macroeconomic conditions modify the "return" to microstructural variables? As the earlier discussions have shown, effects of labor-force experience are modified by economic conditions only in West Germany. The effects of "labor-force exposure prior

[28]The coefficients in Table 7.7 are based on the full model of every population. In West Germany, the macrovariable "percentage of foreign workers in the work force" is therefore included. This macromeasure suppresses the impact of the GNP indicator. Without controlling for "foreign workers," the coefficient of the GNP amounted to .019, which is very close indeed to the coefficients found in the other three populations.

[29]The differences among the coefficients are insignificant in all cases.

to career start" are modified only in Norway. The effects of occupational prestige remain stable in all nations once macroeconomic variables are considered. The effects of educational attainment on the rate of job shifts are mediated by macroeconomic conditions in all four populations. The general picture emerges that in "good" times those who initially had relatively more opportunities for job transitions increase their relative advantage still more.

The question whether the dynamics between microstructural and macrostructural variables differ across nations is thus answered. Macroeconomic variables alter the impact of microstructural variables only in the Norwegian and German sample. The direction of this shift was the same in both nations. All other shifts in the effects of microeconomic variables are too small to be interpreted in a substantive way.

7.6 Conclusion

The results of this chapter are summarized according to predictors of career mobility and international differences in career mobility dynamics.

In regard to *predictors of career mobility dynamics,* three findings are noteworthy. First, all microstructural indicators of job mobility rates are relevant predictors: Educational attainment, labor-force experience, and activities in the transition stage determine the transition between jobs. Second, economic variables are important in shaping career mobility patterns. They significantly increase the fit of the proportional hazard models and must be taken into account in future analyses. Third, macrostructural and microstructural variables are related to each other such that macrovariables modify effects of microstructural determinants to a rather limited extent, and only in West Germany and Norway. In most cases, however, macrovariables and microvariables show additive effects.

In regard to *international differences in career mobility dynamics,* we learn first that international differences in career mobility dynamics are much more pronounced when only microvariables are specified. Once macroeconomic variables are included, the extent of international deviations in the rate of job transitions is diminished. Second, economic conditions are of varying importance across the four populations. They are of more relevance for the unfolding of career trajectories in the European than in the American populations. Norway was, at the time under study, still in a transition stage with large numbers of workers leaving the agriculture sector. In West Germany, a period effect—namely, economic conditions in the immediate post-World War II years—may explain why economic indicators impinge on career trajectories more visibly here than in the United States. The importance of macroeconomic variables in Norway and West Germany can also be seen in the interaction between microvariables and macrovariables in these two samples only. Third, the relative impact of microstructural and macrostructural variables on career trajectories substantially differs across populations. The results suggest that a pooling of national data sets is not warranted unless nation-specific interaction terms (multiplicative effects) are specified.

Chapter 8
Gain: The Dynamics of Status Attainment Over the Work Life

8.1 Introduction

So far, we have examined factors that influence *all* job transitions—regardless whether there is an upward or downward change in status. We learned that the rate of job transitions declines over the work life and that certain groups of workers have a lower probability of experiencing job transitions than do others—specifically workers with apprenticeships, those who do not enroll in the labor market prior to last exiting school, and those with jobs at the top rather than the bottom of the occupational hierarchy. We further learned that national labor-market conditions affect the career trajectories of individuals in that they speed up, or slow down, the rate of job transitions—either in interaction with individual resources or independently of them. Finally, we established that nation-specific mobility mechanisms do operate. All other things being equal, Germans and Norwegians can expect fewer job transitions than Black Americans and White Americans.

But what is the meaning of many job transitions? Are many job changes a "good" or a "bad" thing? Do they indicate that something "better" will be attained over the course of the work life? Or do they rather point to "erratic" career trajectories, to job transitions that imply gain or loss in occupational status but do not follow any particular direction? And are the dynamics between macrostructural and microstructural variables different for job trajectories as compared to "status-gain" trajectories? Are international differences and similarities more pronounced in analyses of career trajectories or in "status-gain" trajectories?

This chapter investigates opportunities men have for *upward* occupational mobility to gain in occupational status. With this focus, we can link the findings of this study with previous research and theoretical models—especially the vacancy competition model. Note that in the vacancy competition model, "measurement of opportunities" is the measurement of the chance for job shifts that result in gains in earnings and status. It is the *opportunity* that is assessed, not the actual gains realized or the level of status or income a person actually achieves.[1]

Following the logic of the vacancy competition approach, the focus of this chapter is on the determinants of career trajectories that manifest themselves in status gains. The question is addressed by analyzing the rate of job transitions that imply distinctive

[1]Sørensen and Blossfeld (1987:5). See also Sørensen et al. (1987).

Table 8.1
Distribution and Characteristics of Upward Job Shifts in the Time Between Entry Into the Labor Force and Age 40

Number of upward spells per person	United States Whites	United States Blacks	Norway	West Germany
1	99 (29.5%)	82 (30.0%)	267 (25.0%)	194 (55.9%)
2	122 (36.3%)	112 (41.0%)	391 (36.6%)	111 (32.0%)
3	83 (24.7%)	60 (22.0%)	268 (25.1%)	33 (9.5%)
4	30 (8.9%)	18 (6.6%)	109 (10.2%)	7 (2.0%)
5 and more	2 (.6%)	1 (.4%)	32 (3.1%)	2 (.6%)
Mean	2.15	2.06	2.31	1.59
Total number of upward spells	722	563	2,461	553
Ratio of total number of job spells to number of upward job spells	2.41	2.03	2.83	1.45

status gains from first origin to last destination job. The method and models of this chapter are the same as in the previous chapter. However, two distinctions are crucial. The unit of analysis used is no longer all reported job transitions but only job transitions that result in gains in occupational status. And the dependent variable, the time between job shifts, is no longer calculated as the time spent in the previous job, but rather as the time spent in the state of no distinctive gains in occupational status.[2]

Let us begin with some descriptive statistics on the number of upward job spells and the relation between upward job spells and the overall number of job spells in the occupational histories of men in the time between entry into the labor market and age 40 (Table 8.1). The purpose of this table is to provide a rough characterization of cross-national differences, without accounting for any "explanatory" variables such as educational background or economic situation. Concerning the average number of upward job transitions, cross-national differences are considerably reduced once we focus on upward rather than all job shifts. Differences nevertheless do exist: In absolute numbers, Germans experience considerably fewer job transitions that lead to gains in occupational prestige than do members of other populations. In fact, 56 percent of all Germans report only one upward transition,[3] whereas the majority of Americans and Norwegians experience two upward job transitions. More than two upward job shifts during the work history are experienced by 38 percent of Norwegians, 34 percent of White Americans, 29 percent of Black Americans, and 12 percent of Germans.

[2]Please refer to Section 4.5 for details.

[3]These percentages refer to the relative gains in the hierarchy of occupations. (The SAS scores, however, are based on Treiman scores which label occupations and hence cannot capture transitions between all jobs.

If we turn from absolute numbers to relative numbers and relate the number of upward transitions to the overall number of transitions, a very different picture emerges. For White Americans, 59 percent (and for Black Americans, 51 percent) of all job transitions do not lead to higher occupational prestige but instead conserve the status quo or result in a loss of prestige. This number increases to 65 percent for Norwegians: On average, only every third job transition leads to a distinctive status gain. German workers enjoy the opposite pattern: Only 30 percent of all job transitions do not lead to a gain in occupational prestige. In other words, Americans have one upward move for every lateral/downward move; Norwegians have one upward move for two downward/lateral moves, and Germans have one lateral/downward move for three upward moves.[4]

This result is expected and in accordance with the predictions derived from the typology of stratified and standardized educational and vocational training systems. Standardized systems inhibit downward occupational mobility because qualifications are not firm-specific and relatively easily transferred to other employers. Unstandardized systems, however, risk downward mobility in the case of forced job transitions, since qualifications and seniority capital tend to be firm-specific. Hence, American and (to some extent) Norwegian workers are expected to experience a higher proportion of downward transitions.

The organization of results parallels to Chapter 7. First, in Section 8.2, the data of all four populations are pooled and the relative impact of microstructural and macrostructural variables on the rate of upward occupational mobility is discussed. Second (8.3), it is tested whether nation-specific transition patterns operate. Next (8.4), models are estimated separately for each population in order to establish the process of gain in occupational status within each population. Finally (8.5), the results are discussed across the populations. In each section, reference will be made to differences and similarities in the process of overall occupational mobility and the process of upward occupational mobility.

8.2 Effects of Microstructural and Macrostructural Determinants on Upward Occupational Mobility

In the analysis of upward occupational mobility I consider the same set of microstructural and macrostructural variables that we have seen in previous analyses. I start with the pooled data file and present results for three models (see Table 8.2). In Model 1, the impact of "labor-market participation" on the rate of upward job shifts is estimated. In Model 2, the indicators for educational attainment, labor-force experience prior to last leaving education, and the prestige level of the job are added. Model 3 presents the full

[4]The German ratio is close to that reported by König and Müller (1986): on the basis of a supplement of the microcensus 1971, they find 2.9 upward moves for every downward move in West Germany. The lower ratio they found for France further supports the argument that standardized vocational systems more likely produce upward moves than unstandardized systems. (See König and Müller, 1986:33.)

model, which includes indicators for macroeconomic conditions (GNP and percentage of male labor force in agriculture). Comparisons of these models allow us to test whether macroeconomic variables improve the fit of the model and whether the effects of microstructural variables change once macrostructural variables are added. I further compare the coefficients obtained for upward mobility patterns to those obtained when estimating transition rates into all jobs (Table 7.1).

Model 1: Labor-Force Experience

Model 1 shows the coefficient for labor-market participation. The log of the rate decreases by .0105 for each month of labor-force experience. The size of this coefficient is considerably larger than the corresponding coefficient in the model pertaining to all job transitions (which amounted to –.0014). This result indicates that upward job shifts in particular occur more frequently in relatively early rather than later stages of the work life.

Model 2: Resource and Reward Variables

Model 2 introduces the "resource" indicators for educational attainment and labor-force experience prior to last leaving full-time education and the "reward" indicator occupational prestige.

The significant effect of labor-force experience does persist once the resource variables and origin status are introduced. This result runs counter to the vacancy competition model. In that model, experience is an indicator of the discrepancy between resources and attainment because it indicates how far a person is in the career trajectory. If measures of these two quantities are included in the model, experience itself should have no effect.[5]

Educational attainment, measured both in terms of "years of schooling" and attainment of "college/gymnas degree" has positive and significant effects on the rate of upward job shifts. The coefficient for college/gymnas degree is .9201 which means that people with college/gymnas degree have a probability of experiencing upward job shifts 62 percent higher than people without such a degree. This effect is considerably stronger than that we found in the earlier model which considered all job transitions. The same is true for "years of schooling." This variable is not only stronger here than in the model pertaining to all job transitions, but it also changed direction from –.053 to +.072.

Labor-force experience prior to last leaving education, in contrast, does not matter for the process of upward occupational attainment. The coefficients for both indicators are small and nonsignificant. This result is counter to the conclusions drawn in the analyses for general job mobility.[6]

The coefficient of *"occupational prestige"* is negative and highly significant, indicating that as occupational rewards increase, the room for further improvement diminishes. This phenomenon is usually called the "ceiling effect."

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[5]See Sørensen (1987:27) and Sørensen (1984) for more details.

[6]An explanation of this difference will be delayed until possible nation-specific effects are investigated.

Table 8.2
Partial Likelihood Estimates of Models for Transition Rates to Jobs Which Lead to a Gain in Occupational Prestige
All Populations, Cohort 1930

Estimates for model	1	2	3	4
-Log likelihood	32,348	17,194	17,099	17,078
Chi-square	483	1,041	1,237	1,263
df	1	6	8	11
Labor-force experience	-.0105**	-.0052**	-.0041**	.0045**
	(.0005)	(.0006)	(.0006)	(.0009)
Number of transition jobs		.0148	.0231	.0071
		(.0119)	(.0121)	(.0137)
Duration of transition jobs		-.0232	-.1785**	-.1783**
		(.0632)	(.0638)	(.0699)
Years of schooling		.0717**	-.1449**	.1518**
		(.0122)	(.0137)	(.0151)
College/gymnasium		.9201**	.6887**	.6441**
		(.0854)	(.0879)	(.0898)
Prestige (SAS)		-1.2136**	-1.2441**	-1.2378**
		(.0457)	(.0464)	(.0468)
Change in GNP			.1237**	.0910**
			(.0149)	(.0167)
Percentage of males in agriculture			.0381**	.0339*
			(.0031)	(.0167)
United States: Whites				.1826
				(.2566)
United States: Blacks				-.0831
				(.2658)
West Germany				-.4077
				(.2114)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of episodes: 4,298.
Percentage of censored observations: 47.07.
Note: Data basis is the pooled data file. German data have been truncated at 1970.

Model 3: Macrostructural Variables and Microstructural Variables

Introducting the indicators "change in GNP" and "percentage of males employed in agriculture," improves the fit of the model significantly. The coefficient for labor-force experience decreases from Model 2 to Model 3 but remains significant. The indicators of "resource" variables (i.e., educational attainment and labor-force experience in the

transition stage) shift but not to a statistically significant extent.[7] The coefficients of both "GNP" and "agriculture" are positive and significant.

8.3 Nation Effects on the Rate of Upward Occupational Mobility

Before estimating the probability of experiencing upward occupational mobility separately for each population, it is tested whether population-specific effects operate. As before, such a test can be performed by introducing three dummy variables representing the White American, Black American, and West German populations in the model for the pooled data (see Table 8.2, Model 4). This analysis answers two questions: (1) whether the overall fit of the model significantly improves once population dependence is controlled, and (2) whether the unique population coefficients indicate that the rate of upward mobility is significantly different between Norway (the reference population) and the three other populations.

The overall fit of Model 4 is significantly better than Model 3. This means that, for predicting the rate of upward job transitions, not only individual attributes and economic conditions, but also the specific national environments are relevant considerations. The coefficients show that White Americans have a slightly higher, and West Germans a slightly lower probability of experiencing upward mobility than do Norwegians. Neither coefficient, however, is significant.[8]

Let us compare this finding to international differences in the probability of experiencing all kinds of job transitions—upward, downward or lateral. Here, Americans (both populations) have a significantly higher probability of experiencing any kind of job shift than do Norwegians, and the probability for Germans and Norwegians does not differ significantly once macrostructural and microstructural variables are taken into consideration. In sum, quantity does not say much about quality: Major cross-national differences in the rates of job transitions are wiped out when we focus only on upward occupational mobility.

This conclusion does not suggest that each single microstructural or macrostructural variable is of equal relevance for the rate of upward job transitions in all four populations. It still is true that years of schooling is more important in the United States, whereas the degree of educational attainment matters more in the two European nations. Moreover, an early association with the labor market does "pay back" differently for Black compared to White Americans as does the national unemployment rate.

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[7]The most considerable change in the size of the coefficients can be observed for the indicator "duration of transition jobs." Whereas in Model 2 this indicator remained insignificant, it became insignificant in Model 3 with a coefficient of −.18. The change in size itself, however, does not reach the level of statistical significance ($t = 1.65$).

[8]Without inclusion of macrovariables, however, the probability of Black and White Americans to experience upward shifts is significantly higher than for Germans and Norwegians.

8.4 Gain in Occupational Prestige Over the Work Life in the United States, Norway, and West Germany

This section discusses upward occupational mobility dynamics for each of the four populations *separately.* Focus of the analyses is no longer the question whether the rates of upward occupational mobility converge internationally but analogous to the presentation in Section 7.1 I concentrate on (a) the interplay between macrostructural and microstructural variables, and (b) the comparison between transition rates into any job (regardless of status change) and those into jobs that indicate upward occupational mobility.

(1) United States

The proportional hazard models for upward occupational mobility are shown in Table 8.3 (White Americans) and Table 8.4 (Black Americans). Model 1 again shows that the rate of experiencing upward occupational mobility declines considerably with time spent in the labor market. Both indicators for "labor-force exposure before last leaving education" are insignificant. Clearly, the advantages held by workers with early

Table 8.3
Partial Likelihood Estimates of Models for Transition Rates to Jobs Which Indicate a Gain in Occupational Status
United States: White Population

Estimate for model	1	2	3
-Log likelihood	2,306	2,173	2,117
Chi-square	64	225	451
df	1	6	9
Labor-force experience	-.0123** (.0016)	-.0068** (.0016)	-.0058** (.0022)
Number of transition jobs		-.0263 (.027)	-.0498 (.028)
Duration of transition jobs		.0401 (.165)	.2151 (.181)
Years of schooling		.1547** (.030)	.1969** (.035)
College degree		.4275 (.217)	.1863 (.227)
Prestige (SAS)		-1.5067** (.118)	-1.3345** (.117)
Unemployment rate			-.9535** (.099)
Change in GNP			.1068** (.029)
Percentage in agriculture			-.0599* (.039)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of job episodes: 721.
Percentage of censored observations: 46.6.

Table 8.4
Partial Likelihood Estimates of Models for Transition Rates to Jobs Which Indicate a Gain in Occupational Status
United States: Black Population

Estimate for model	1	2	3
-Log likelihood	1,657	1,593	1,514
Chi-square	36	134	385
df	1	6	9
Labor-force experience	-.0095** (.0016)	-.0050** (.0017)	-.0049** (.002)
Number of transition jobs		.0103 (.052)	-.0165 (.056)
Duration of transition jobs		-.0458 (.191)	-.2626 (.219)
Years of schooling		.1496** (.011)	.1698** (.033)
College degree		.5541 (.284)	.2900 (.290)
Prestige (SAS)		-1.5547** (.175)	-1.3941** (.172)
Unemployment rate			-1.3360** (.125)
Change in GNP			.2205** (.033)
Percentage in agriculture			-.0822* (.040)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of job episodes: 563.
Percentage of censored observations: 48.5.

labor-market exposure (such as stronger networks and more information of how labor markets operate) do not improve the rate of transition into better jobs.[9]

Many years of schooling and, to a lesser extent, a college degree, are helpful for moving into better jobs. A high occupational prestige in the origin job, however, considerably constrains the rate of upward job transitions.

The introduction of macroeconomic variables (Model 3) improves the fit of the models. In both populations, favorable labor-market conditions (measured by GNP) spur the attainment of "better" jobs, whereas a high unemployment rate has the opposite effect. The percentage of males employed in agriculture has a negative effect on the rate of upward occupational shifts, although this coefficient is significant only for the Black American sample. Macroeconomic variables also add information, but do not influence the return to personal resources. In no case do the coefficients of microeconomic variables change to a significant extent when macroeconomic variables are added: The return to "resource" variables is the same whether the national economy is in good or in bad shape.

[9]Because "labor-force experience prior to last leaving full-time education" is associated with an upgrading of educational resources, one possible explanation is that the indicators for educational attainment pick up these effects.

The indicator for "occupational prestige" deserves special attention. By focusing here on upward job transitions and using the Social Attainment Scale to measure (relative) occupational standing, we meet the conditions required to apply Vacancy Competition Theory in interpreting the coefficient of "occupational prestige."

According to the Vacancy Competition Theory (Sørensen, 1977), the measurement of opportunities is the measurement of the chance for stability or gain in social standing. Sørensen proposed a specification of the process in which opportunities and personal characteristics interact to produce socioeconomic outcomes. This specification is written as a linear differential equation as follows:

$dyi(t)/dt = Zi + byi(t)\ b < 0$

whereby Zi is a measure of the characteristics of an individual (ability, efforts, skills) that are required for that person to take advantage of opportunities for socioeconomic mobility. The quantity yi(t) is the person's attainment at time t (i.e., attainment in jobn). The quantity b is a parameter and is assumed to be negative. It is this parameter that assesses the opportunities for growth in attainment presented by a social system. The parameter measures the degree to which the origin level of attainment contrains further growth. The smaller b is, the more opportunities there are for further attainment.[10]

This specification of the model identifies structural factors that affect the opportunity structure in society, namely, the shape of the inequality distribution and the rate with which new vacancies are created. Because our measures for socioeconomic conditions, and in particular unemployment rate, also capture the generation of vacancies, we can expect that (1) the parameter to SAS changes once macroeconomic indicators are introduced; and (2) significant interaction terms between SAS and unemployment rate are found.

Results are as follows: First, the comparisons of Models 2 and 3 in Tables 8.3 and 8.4 show that for the White American sample the SAS coefficient decreases from -1.51 to -1.33 (t = 1.0); when macroeconomic variables are introduced for the Black American sample, the decrease is from -1.55 to -1.39 (t = .63). Although the direction of this change is correct, the drop of both coefficients is not significant. Second, the coefficients of the interaction effects between unemployment and SAS are small and positive. They amount to .0745 (.205) for the White American sample and to .1128 (.2812) for the Black American sample (not shown here). For both populations the interaction terms point in the right direction, but they are nonsignificant.

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[10]Sørensen notes that the interpretation of b can be justified by deriving the basic differential equation from a consideration of how careers are generated by vacancy chains in a social structure having a particular distribution of positions according to the level of attainment they provide. The distribution assumed is the exponential distribution governed by a single parameter beta<0. This parameter determines the degree of inequality such that the smaller the absolute magnitude of beta, the higher the pyramid and the more positions that exist above a given level. Vacancies are created in the system at a rate of h by people leaving the system or new positions being created. They set in motion vacancy chains that produce growth in socioeconomic attainment. It can be shown that the parameter b for the simple model for growth in attainment will equal beta/h, determined by the shape of the distribution of positions and the rate at which new openings are generated by the system. A change towards less inequality among positions (towards a flatter pyramid and a greater beta) will result in fewer opportunities for socioeconomic growth, and a rapid growth in the number of vacancies created either by retirement or new positions (increasing h) will increase opportunities.

On the basis of the American sample of men born around 1930, I conclude that the indicators unemployment and SAS do not measure the same construct. Because this might be due to improper direct indicators of the opportunity structure, further analyses on the basis of other cohorts and other populations are needed to establish conclusive results. If these macroeconomic indicators prove adequate for measuring the opportunity structure, I suggest reconsidering the interpretation of the SAS coefficient.

Let us now compare the impact of the set of microstructural and macrostructural variables on the rate of transitions into any job with those for the rate of transitions in jobs that mark a gain in occupational status. In both American populations, time spent in the labor market and educational attainment are of much greater relevance for upward occupational mobility than for job mobility in general. In both populations, labor-force experience before last leaving education does foster mobility into any kind of job, but not mobility into jobs with a higher occupational standing. And, in both populations, the relevance of macroeconomic conditions is stronger for finding "better" jobs than for finding any other job. For the White American population, for example, the national unemployment figures are not decisive for a move into any kind of job. They are highly relevant, however, for the moving into better jobs.[11]

(2) Norway

The models for Norway are presented in Table 8.5. Models 1 and 2 show the following results: a strong decline in the rate of transition into better jobs over the time spent in the labor force; a strong decline in the hazard rate for workers with long jobs prior to last exiting school; and large competitive advantages for workers with many years of schooling—particularly workers with gymnas degree.

Model 3 reveals strong positive effects on the likelihood of moving upwards in times of a positive change in the GNP as well as in times of high employment in the agricultural sector. Macrostructural and microstructural variables are both important. The return to microstructural variables does not alter with changing labor-market conditions (no indicator changes to a statistically significant degree).[12]

Let us now compare the models estimated on the basis of all jobs with those estimated for upward job transitions. As in the two American populations, the dependence on time spent in the labor market is considerably stronger for upward job transitions than for all job transitions. Moves into "better" jobs occur early in the occupational history; moreover, the longer people are in the labor force, the less likely are shifts in general and upward job shifts in particular.

Both indicators for "labor-force experience before last exiting school" are significant only for predicting the rate of upward job moves. Connections and information established in an early stage of the work history are not helpful in general,[13] but they do

[11]See also the increasing size of the coefficient for the indicator "GNP" in both samples.

[12]The change of the coefficient to "number of jobs prior to last exiting school" is remarkable; prior to the inclusion of macroeconomic variables, this effect is insignificant (.0066), but then becomes significant (.0372). Nevertheless, the t-value of 1.4 is nonsignificant.

[13]When economic conditions are controlled.

Table 8.5
Partial Likelihood Estimates of Models for Transition Rates to Jobs Which Indicate a Gain in Occupational Status
Norway

Estimate for model	1	2	3
-Log likelihood	9,985	9,708	9,694
Chi-square	280	690	766
df	1	6	8
Labor-force experience	-.0112** (.0007)	-.0064** (.0007)	-.0025* (.0013)
Number of transition jobs		.0066 (.015)	.0372* (.017)
Duration of transition jobs		-.2857** (.077)	-.1336** (.056)
Years of schooling		.1313** (.020)	.1779** (.023)
Gymnas degree		.6561** (.114)	.7350** (.118)
Prestige (SAS)		-1.1100** (.056)	-1.0689** (.056)
Change in GNP			.0851** (.023)
Percentage in agriculture			.0793** (.023)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of job episodes: 2,461.
Percentage of censored observations: 43.4.

considerably improve the chances of moving into better jobs. Staying in such jobs for an extended period of time is not harmful for job moves in general, but clearly impedes moving into better jobs.

In regard to educational attainment, the coefficient of "years of schooling" is of special interest. In models pertaining to all job transitions, a negative impact for years of schooling was found; yet the same variable exerts a positive influence on the rate of upward shifts. As argued before, the indicator "years of schooling" labels workers who have vocational training. It was said that apprenticeships lower the chance of job shifts due to a considerable holding power in occupations for which the workers have been trained. Vocational training, however, is helpful for gaining access to *better* jobs, a finding which is in line with expected outcomes. The indicator "gymnas degree" is more important for predicting gains in occupational status rather than job moves in general. This result again establishes the meritocratic nature of stratified educational systems.

Macroeconomic conditions are less influential in shaping the rate of upward occupational mobility than in determining the rate of job transitions in general. In Norway, the transition from agriculture to services and manufacturing is accomplished by many job shifts. These job shifts, however, lead to hardly any improvement in occupational status. "Agriculture," while an important variable in explaining job transitions in general, plays almost no role in explaining upward occupational mobility.

(3) West Germany

Table 8.6 presents the three models for West Germany. The most interesting result of Models 1 and 2 is the coefficient of labor-force experience. Highly significant in

Table 8.6
Partial Likelihood Estimates of Models for Transition Rates to Jobs Which Indicate a Gain in Occupational Status
West Germany

Estimate for model	1	2	3
-Log likelihood	1,221	1,163	1,126
Chi-square	11	102	236
df	1	4	7
Labor-force experience	-.0065** (.0020)	-.0017** (.0019)	-.0031** (.0031)
Years of schooling		.1009** (.042)	.1175** (.045)
Gymnasium		1.2236** (.343)	1.1271** (.366)
Prestige (SAS)		-1.3165** (.054)	-1.3198** (.153)
Change in GNP			.3730** (.041)
Percentage in agriculture			-.3605** (.089)
Percentage of foreign workers			-.2842* (.141)

* $p > .05$.
** $p > .01$.
Standard deviations in parentheses.
Number of job episodes: 553.
Percentage of censored observations: 62.7.

Model 1, the size of this coefficient decreases considerably and becomes nonsignificant when controls for educational attainment and the prestige level of the job are introduced. This result is consistent with the vacancy competition model and the research of Sørensen and Blossfeld (1987).

The coefficients for "years of schooling" and "gymnasium degree" are both positive and significant, and the coefficient of occupational prestige is negative as expected.

Macroeconomic conditions shape the rate of upward occupational mobility to a considerable extent. This conclusion can be drawn both on the basis of (a) a significant increase in the fit of the model after macroeconomic indicators are introduced, and (b) the coefficients of the separate indicators "change in GNP," percentage of males in agriculture, and percentage of foreign workers in the German economy. In times of a positive change in the GNP, and in times in which many foreign workers are employed in West Germany, each (German) worker has a higher probability of improving his occupational prestige. A high employment stock in agriculture, however, has a negative impact on the rate of upward job transitions.

The coefficients of microvariables do not change with the introduction of macroeconomic indicators.[14] Hence, macroeconomic variables add to the predictive power of the model, but do not influence the impact of microstructural variables.

Finally, let us examine briefly the differences between upward occupational mobil-

[14]Furthermore, the interaction terms between macroeconomic indicators and the SAS score remain insignificant.

ity and job mobility in general. These differences are quite pronounced and cover virtually all variables. In the German sample, the rate of transition into better jobs does not decline over the years of labor-force participation, but does decline for job changes in general. Workers with apprenticeships have a lower probability of changing jobs in general, but a higher probability of moving into "better" jobs than workers without vocational training. Having a gymnasium degree increases the rate of upward occupational mobility to a stronger extent than it affects the rate of moving into any kind of job. Macroeconomic variables are also more important for determining upward occupational mobility than for determining occupational mobility in general.

In sum, what do we learn from these four population-specific models? First, we learn that the conclusion drawn on the basis of the pooled data is not an appropriate representation of mechanisms operating within each single population. Although the overall probability of experiencing upward occupational mobility is not significantly different across the four populations (the "nation-controls" in the pooled data remained unsignificant), considerable nation-specific deviations are found when each population is analyzed separately. Second, we learn that mechanisms that lead to status attainment, and mechanisms that lead to job transitions in general, differ in all four populations. Third, the interplay between macrostructural variables and microstructural variables takes the form of additive effects rather than multiplicative effects. And finally, the SAS metric and the indicators of macroeconomic conditions do not measure the same things: Each independently increases the fit of the models.

8.5 International Comparison of Upward Occupational Mobility

The international comparison of (upward) occupational career dynamics addresses two questions: (1) Do macroeconomic variables affect upward career trajectories to the same extent across the four populations? (2) Does the potency of single determinants for upward occupational mobility differ across the four populations?

(1) Do Macroeconomic Variables Matter to the Same Extent Across the Four Populations?

We again compare the fit of the models before and after macroeconomic variables are introduced. The log likelihood test statistics which compare Model 2 and Model 3 for each population are summarized in Table 8.7.[15] The results show that macroeconomic conditions shape upward career trajectories more for American than for German workers. For Norwegian men, the condition of the national economy is least important for predicting the rate of upward occupational mobility. This result in particular is interesting, because it again documents that national labor markets operate differently. In general, the occupational "fate" of American workers is more contingent on

[15] In Table 8.7, L_1 indicates the log likelihood for a hazard with the added (macroeconomic) variables, and L_0 indicates the log likelihood for a hazard with those variables excluded. Chi^2 shows the resulting chi-square statistics, and p indicates the level of statistical significance.

Table 8.7
Log Likelihood Test for Goodness of Fit Between Models that Consider Macroeconomic Conditions and Models that Do Not

	United States Whites	United States Blacks	Norway	West Germany
L_0	2,173	1,593	9,708	1,163
L_1	2,117	1,514	9,694	1,126
Chi^2	112	158	28	74
df	3	3	2	3
p	.001	.001	.001	.001

labor-market forces, whereas German workers make their careers within institutionalized regulations. In Norway, the situation seems to be similar to West Germany; the high dependence of the rate of transitions into any kind of job on economic determinants (see previous chapter) seems clearly an outcome of the transitional stage of the Norwegian economy in the years under study.[16]

(2) Do Determinants for Job Mobility Rates Differ Across the Four Populations?

Table 8.8 condenses the results of Tables 8.3–8.6 and displays coefficients significant at the .005 level and above. Comparing the impact of time spent in the labor market on the probability of moving upward, no significant differences are found across populations. The conclusion of no international differences must, however, be qualified. Time spent in the labor market does not significantly reduce the likelihood of Germans experiencing upward shifts, whereas the likelihood of upward moves does significantly decline over time for Norwegians and Americans. These results point to a different *timing* in transitions that leads to status gain across the populations, a difference that was also implied in the earlier analysis of the impact of stratified and standardized educational systems.[17]

Also, as expected for unstratified systems (United States), the degree of educational attainment does not much matter for status attainment, and years of schooling is the key variable. But both years of schooling and educational degree are important in systems that are stratified. Thus, the relevant explanatory dimension does appear to be

[16]This conclusion can be supported by analyzing the Norwegian birth cohort of 1940. For this cohort, I find a considerably lower coefficient for "percentage of males in agriculture," because the main transformation from an agricultural to a service society have been completed by the time the work lives of these workers unfold.

[17]See Chapter 6, where I argumented that job transitions are more equally spread over the course of the work life for German and Norwegian workers than for American workers and found empirical support for that position.

Table 8.8
Nation-Specific Partial Likelihood Estimates of Models Estimating the Rate of Upward Occupational Mobility, Cohort 1930

	Labor-force experience	Transition jobs		Education		Prestige	Macrocondition		
		No.	Duration	Level	Years	SAS	GNP	Unem-ployment	Agri-culture
Whites	-.0058	n.s.	n.s.	n.s.	.196	-1.334	.107	-.953	n.s.
Blacks	-.0049	n.s.	n.s.	n.s.	.170	-1.394	.202	-1.336	-.082
Norway	-.0025	.037	-.134	.735	.178	-1.068	.085	-	.079
West Germany	-.0031	-	-	1.127	.117	-1.319	.373	-	-.181

standardization and stratification of educational systems rather than nation or population.

Labor-force experience prior to last exiting school has a different effect in Norway than in the United States. In the United States, neither number nor duration of jobs held prior to labor-market entry are important in understanding the likelihood of upward occupational mobility, whereas in Norway, both resource variables promote gains in occupational status.

Norwegian men have the most favorable opportunities for status attainment (the coefficient of occupational prestige of -1.07 is the smallest of the four populations studied), whereas German and American men have very similar opportunity structures. This result is consistent with prior research on *inter*generational mobility processes which compared Norway and West Germany using the same data files. In that research, it was found that German men of the birth cohort 1930 have fewer opportunities to exceed the occupational prestige of their fathers than do Norwegian men of the same birth cohort (Sørensen et al., 1987).

Macroeconomic conditions, finally, weigh more heavily in the occupational fate of Black Americans than White Americans. The coefficient of each single indicator is considerably stronger in the Black sample: Unemployment decreases the chance of moving upward, a positive change in GNP increases the rate substantially, and high employment in the agricultural sector is a further impediment.

8.6 Conclusion

We can now finally answer the questions raised at the end of Chapter 7. First, we find that German career trajectories, compared to those in Norway and the United States, are in general more orderly: they (a) have relatively few job shifts, (b) have proportionately more upward job shifts, and (c) have upward job transitions that are more equally spread over the whole career trajectory until age 40.[18] Second, national context is less

[18]The coefficient to labor-force participation is not significant in West Germany.

important in estimating the probability of upward occupational transitions than it is for job transitions in general (i.e., including upward, lateral, and downward transitions). Indeed, nation dummy variables are not significant in the estimated models. Third, the importance of separate indicators varies considerably across the four populations. Macroeconomic conditions shape upward career trajectories more distinctly in the United States (especially the Black American population) than in Norway or West Germany. And finally, the framework developed in Chapter 3 for comparing educational systems, and the specific hypotheses derived from that framework, also turn out to inform analyses of upward occupational mobility dynamics. Educational attainment is more important for upward mobility in stratified systems than in unstratified systems, and in standardized systems more job transitions (in absolute numbers) are observed than are found in unstandardized systems.

Ultimately, I wish to show that the empirical design of this study leads to a rather conservative test of differences found in the importance of single indicators predicting the rate of job transitions in general and the rate of job transitions into jobs with higher occupational prestige. Comparing *upward* occupational mobility processes only to *downward* occupational mobility processes would certainly enlarge differences in the coefficients to single predictors, but would not have been helpful in addressing the convergence theory.

Chapter 9
Conclusion

The thesis of invariant rates of social fluidity was the main topic of this comparative study of career mobility in the United States, Norway, and West Germany. As stated in the introduction, the Featherman, Jones, and Hauser hypothesis predicts that observed rates of mobility will vary dramatically between countries while social fluidity remains relatively invariant. This hypothesis implies that international differences in observed mobility rates must be attributed to variations in occupational distributions.

Empirical analyses performed on the basis of three highly comparable, retrospective data sets showed that: (1) observed rates of mobility between all jobs (i.e., transitions that imply upward, downward, and lateral social mobility) indeed vary dramatically between the three nation states under study, and (2) social fluidity (i.e., the transition rate between jobs once economic variables are controlled) also varies significantly cross-nationally.

These results question the Featherman-Jones-Hauser hypothesis of invariant rates in social fluidity. The present findings suggest that upward occupational mobility patterns are similar across nations only if "similarity" is defined as the rate of job transitions into higher prestige positions. Yet even this does not imply that individual determinants of job mobility are equally important across nations. On the contrary, the findings demonstrate that the impact of educational attainment varies as a function of institutional structures—specifically the degree of standardization and stratification of school systems and the nature of institutionalized transitions from school to work. Further, the impact of economic conditions on mobility patterns varies across nations and even across populations within single nations. Differences in the importance of specific determinants for job mobility rates are in general particularly pronounced in job mobility patterns; a focus solely on upward occupational mobility does reveal more similar processes across the populations.

Finally, let me identify five possible directions in which the present research can be expanded.

First is to search for further cross-national differences in *institutional and political structures.* The role of union policies needs to be spelled out, as does the role of government intervention in directing and stabilizing national economies and the role of social (welfare) policies. Classifications need to be developed which allow derivation and test of hypotheses about the link between such institutional and political factors and career mobility processes.

Second is to *enlarge the scope of the time period* covered. Available data sets allow the study of the career trajectories of men born around 1940, and the German life

history data even contains information about the birth cohort 1949/51. This extension would be helpful in determining the degree to which the indices suggested here for measuring economic conditions do indeed adequately assess the opportunity structure (defined as the provision of vacant positions into which workers can move). Particularly for West Germany and Norway, this issue could not be studied appropriately here due to the specific economic development in the post-World War II years, and an analysis also would allow investigation of questions that arose in this research about the operationalization of the opportunity structure previously proposed by Sørensen (1974).

The third research direction proposed would be to *enlarge the scope of cross-national comparisons.* Comparable retrospective life history data exist in Japan, the Netherlands, and France. The inclusion of these data sets would be extremely helpful in testing the typology of educational systems developed in this work as well as allowing investigation of the effect of organizational and political differences that are uniquely presented in these nations.

The fourth direction that could be taken would be to include *women* in the research. It was not my intention to exclude women from this study, but was instead a constraint imposed by the American and Norwegian data sets. The discussion of career mobility processes in industrialized societies certainly needs to reflect the change brought about by the increasing proportions of women in the labor force. Topics such as the impact of economic conditions on female labor-force participation and on women's job mobility chances are particularly interesting and can readily be studied with the concepts and methods used in this study. In a first effort, existing German data could be used. In the long run, however, cross-national comparisons of the pattern of women's mobility are needed to readdress long-standing research traditions and findings—such as the convergence and industrialization theses—which were developed by men, for men.

A final possible direction for expanding this work would be to conduct more *detailed comparative analyses* (a) by distinguishing mobility between and within socioeconomic classes (as in the study by Mayer and Carroll, 1986), (b) by distinguishing mobility processes within and between internal and external labor markets (as in the study by Mayer and Blossfeld, 1987), or (c) by distinguishing inter- and intrafirm mobility patterns. In particular, the last approach would make it possible to link previous studies conducted on the organizational level (such as Maurice and Sellier's distinction between organizational labor markets and qualificational labor markets) to studies such as Sengenberger and Köhler's (1983) analyses on management reactions to economic downswings. Furthermore, such analyses would allow qualification of differences in interfirm and intrafirm mobility patterns along the dimensions of standardized and stratified educational systems.

References

Alestalo, M., & Kuhnle, S. (1984). The Scandinavian route: Economic, social, and political developments in Denmark, Finland, Norway, and Sweden. In *Research Group for Comparative Sociology.* University of Helsinki.

Alex, L., Heuser, H., & Reinhardt, H. (1973). *Das Berufsbildungsgesetz in der Praxis.* Bonn: Bundesministerium für Bildung und Wissenschaft.

Allison, P. D. (1984). *Event history analysis: Regression for longitudinal event data.* Beverly Hills, CA: Sage.

Andorka, R. (1983). Age, cohort and historical factors influencing inter- and intragenerational social mobility of men and women in Hungary. *Research on Social Stratification and Mobility, 2,* 197–248.

Andress, H. J. (1982). Tätigkeitswechsel und Berufserfahrung: Analyse zeitbezogener Daten mit Hilfe von Sterbetafeln an Hand eines Beispiels aus der Mobilitätsforschung. *Zeitschrift für Soziologie, 4,* 380–400.

Archer, M. S. (1979). *Social origin of educational systems.* London and Beverly Hills, CA: Sage.

Ballerstedt, E., & Glatzer, W. (1977). *Soziologischer Almanach.* Frankfurt and New York: Campus.

Baron, J. M., & Bielby, W. T. (1980). Bringing the firms back in. Stratification and the economic segmentation of work. *American Sociological Review, 45,* 737–765.

Baron, J. M., & Bielby, W. T. (1984). The organization of work in a segmented society. *American Sociological Review, 49,* 345ff.

Baron, J. N., Dobbin, F. R., & Jennings, P. D. (1986). War and peace; the evolution of modern personnel administration in U.S. industry. *American Journal of Sociology, 92,* 350–383.

Becker, G. (1964). *Human capital.* New York: National Bureau of Economic Research.

Bell, D. (1973). *The coming of post-industrial society.* New York: Basic Books.

Bell, H. M. (1940). *Matching youth and jobs.* Washington, DC: American Council on Education.

Ben-David, J. (1947). *American higher education. Direction old and new.* New York: McGraw-Hill.

Bendix, R. (1956). *Work and authority in industry.* New York: Wiley.

Berg, I. (1981). *Sociological perspectives on labor markets.* New York: Academic Press.

Berger, I., & Offe, C. (1984). *Die Entwicklungsdynamik des Dienstleistungssektors.* Arbeitsgesellschaft: Frankfurt and New York.

Berger, S., & Piore, M. J. (1980). *Dualism and discontinuity in industrial societies.* Cambridge: Cambridge University Press.

Bernhard, H. R., Killworth, P., Kronenfeld, D., & Sailer, L. (1984). The problem of informant accuracy. *Annual Review of Anthropology, 13,* 495–517

Blau, P. M., & Duncan, O. D. (1967). *The American occupational structure.* New York: Wiley.

Blossfeld, H.-P. (1986a). Career opportunities in the Federal Republic of Germany. A dynamic approach to study life course, cohort, and period effects. *European Sociological Review, 2,* 208–225.

Blossfeld, H.-P. (1986b). Berufseintritt und Berufsverlauf. Eine Kohortenanalyse über die Bedeutung des ersten Berufs in der Erwerbsbiographie. Berlin: Max Planck Institute for Human Development and Education.

Blossfeld, H.-P. (1987). Entry into the labor market and occupational career in the Federal Republic: A comparison with American studies. In W. Teckenberg (Ed.), *Comparative studies of social structure: Recent research on France, the United States, and the Federal Republic of Germany.* Armonk, NY: M. E. Sharpe.

Blossfeld, H.-P., Hamerle, A., & Mayer, K. U. (1986). *Ereignisanalyse. Statistische Theorie und ihre Anwendung in den Wirtschafts- und Sozialwissenschaften.* Frankfurt and New York: Campus.

Blossfeld, H.-P., & Mayer, K. U. (1987). *Arbeitsmarktsegmentation in der Bundesrepublik Deutschland. Eine empirische Überprüfung von Segmentationstheorien aus der Perspektive des Lebenslaufs* (working paper No. 247). Frankfurt and Mannheim: SFB 3.

Blum, Z. D. (1972). White and black careers during the first decade of labor force. *Experience, Social Science Research, 1,* 271–292.
Blum, Z. D., Karweit, N., & Sørensen, A. B. (1969). *A method for the collection and analysis of retrospective life histories.* Baltimore, MD: Johns Hopkins University.
Bottomore, T. (1982). *The political role of the working class in Western Europe. Social class and the division of labour.* Cambridge: Cambridge University Press.
Boudon, R. (1973). *Education, opportunity, and social inequality: Changing prospects in Western societies.* New York: Wiley.
Bowels, S., & Gintis, S. (1976). *Schooling in capitalist America: Educational reform and the contradictions of economic life.* New York: Basic Books.
Boyesen, E. (1946). Norway's educational system. In G. B. Lampe (Ed.), *Norway.* Oslo: Grondahl & Sons.
Bradburn, N. M., Rips, L. J., & Shevell, S.K. (1987). Answering autobiographical questions: The impact of memory and inference on surveys. *Science, 236,* 157–161.
Braverman, H. (1974). *Labor and monopoly capitalism.* New York: Monthly Review Press.
Breen, R. (1985). A framework for comparative analyses of social mobility. *Sociology, 19,* 93–107.
Breiger, R. (1981). The social class structure of occupational mobility. *American Journal of Sociology, 87,* 578–611.
Brückner, E., & Mayer, K. U. (1988). *Lebensverläufe und gesellschaftlicher Wandel. Methodendokumentation zur Haupterhebung der Geburtskohorten 1929–31, 1939–41, 1949–51* (Materialien aus der Bildungsforschung No. 33). Berlin: Max Planck Institute for Human Development and Education.

Carchedi, G. (1977). *On the economic identification of classes.* London: Routledge & Kegan Paul.
Carlsson, G. (1958). *Social mobility and class structure.* Lund: Gleerup.
Carlsson, G., & Karlsson, K. (1970). Age, cohorts and the generation of generations. *American Sociological Review, 35,* 710–718.
Carroll, G. R., & Mayer, K. U. (1984). Organizational effects in the wage attainment process. *Social Science Journal, 21,* 5–22.
Carroll, G. R., & Mayer, K. U. (1986). Job-shift patterns in the Federal Republic of Germany: The effects of social class, industrial sector and organizational size. *American Sociological Review, 51,* 323–341.
Clark, B. R. (1960). *The open door college.* New York: McGraw-Hill.
Clark, H. F., & Sloan, H. S. (1966). Classroom and main street. *Teachers College Press, 73,* 1001–1014.
Coleman, J. S. (1984). The transition from school to work. *Research on Social Stratification and Mobility, 3,* 27–60.
Coleman, J. S., Blum, Z. D., Sørensen, A. B., & Rossi, P. H. (1972). White and black careers during the first decade of labor force experience. Part I: Occupational status. *Social Science Research 1, 1,* 243–304.
Coleman, R., & Rainwater, L. (1978). *Social standing in America.* New York: Basic Books.
Collins, R. (1971). Functional and conflict theories of educational stratification. *American Sociological Review, 36,* 1002–1019.
Conze, W., & Lepsius, R. M. (1983). *Sozialgeschichte der Bundesrepublik Deutschland. Beiträge zum Kontinuitätsproblem.* Göttingen: Klett-Cotta.
Coser, L. A. (1975). Presidential address: Two methods in search of a substance. *American Sociological Review, 40,* 691–700.
Cox, D. R. (1972). Regression models and life tables. *Journal of the Royal Statistical Society, Serial No. B, 34,* 187–202.
Cox, D. R. (1975). Partial likelihood. *Biometrika, 62, 2,* 269–267.
Cremlin, L. A. (1962). The revolution in American secondary education, 1838–1918. *Teachers College Report, Vol. LVI, No. 6.*

Dahrendorf, R. (1971). *Gesellschaft und Demokratie in Deutschland.* Munich: dtv.
Davies, I. (1975). The management of knowledge: Critique of the use of typologies in educational sociology. *Sociology, 4,* 1–22.
Doeringer, P. B., & Piore, M. (1971). *Internal labor markets and manpower analysis.* Lexington, MA: Heath Lexington Books.
Drucker, S. P. (1950). *The new society: The anatomy of the industrial order.* New York: Harper & Row.
Duncan, B. (1964). Dropouts and the unemployed. *Journal of Political Economy, 73,* 121–134.
Duncan, O. D. (1979). How destination depends on origin in the occupational mobility table. *American Journal of Sociology, 84,* 793–804.

Ehrenberg, R. G., & Smith, R. S. (1982). *Modern labor economies: Theory and public policy.* Glenview, IL: Scott, Foresman and Co.
Elder, G. H., Jr. (1974). *Children of the great depression.* Chicago: Midway Reprint.

Ely, R. T. (1972). American colleges and German universities. In N. Portman (Ed.), *Early reform in American higher education.* Chicago: Nelson-Hall.
Enzensberger, H. M. (1987). *Ach Europa.* Frankfurt: Suhrkamp.
Erikson, R. (1983). Changes in social mobility in industrial nations: The case of Sweden. *Research on Social Stratification and Mobility, 2,* 165–195.
Erikson, R., Goldthorpe, J. H., & Portocarero, L. (1982). Social fluidity in industrial nations: England, France and Sweden. *British Journal of Sociology, 33,* 1–34.
Erikson, R., Goldthorpe, J. H., & Portocarero, L. (1983). Intergenerational class mobility and the convergence thesis: England, France and Sweden. *British Journal of Sociology, 34,* 303–343.
Erikson, R., & Goldthorpe, J. H. (1985a). *Commonality and variation in social fluidity in industrial nations; some preliminary results* (CASMIN Project, working paper No. 4.1). Mannheim: University of Mannheim.
Erikson, R., & Goldthorpe, J. H. (1985b). Are American rates of social mobility exceptionally high? New evidence on an old issue. *European Sociological Review, 1,* 1–22.
Erikson, R., & Goldthorpe, J. H. (1986). *National variation in social fluidity.* Rome: Paper presented at the meeting Research on Comparative Social Stratification.
Esping-Andersen, G. (1987). *Post-industrial employment trajectories: Germany, Sweden, the United States.* Unpublished manuscript.
Featherman. D. L. (1976). Coser's ..."In search of substance." *The American Sociologist, 11,* 21–27.
Featherman, D. L. (1981). Social stratification and mobility. Two decades of cumulative social science. *American Journal of Behavioral Sciences, 24,* 364–385.
Featherman. D. L., Jones, L., & Hauser, R. M. (1975). Assumptions of social mobility research in the US: The case of occupational status. *Social Science Research, 4,* 329–360.
Featherman, D. L., Jones, L., & Hauser, R. M. (1978). *Opportunity and change.* New York: Academic Press.
Featherman, D. L., Mayer, K. U., & Selbee K. L. (1987). *Social class and the structuring of the life course in Norway and West Germany.* Paper presented at the conference on Comparative Perspectives on Age Structuring in Modern Societies, October 19–20, 1987, University Park, PA.
Featherman, D. L., & Sørensen, A. (1983). Societal transformation in Norway and change in the life course transition into adulthood. *Acta Sociologica, 26,* 105–126.
Felmlee, D. K. (1982). Women's job mobility processes within and between employers. *American Sociological Review, 47,* 142–150.
Fetscher, I. (1983). *Neukonservative und Neue Rechte. Ein Angriff gegen Sozialstaat und liberale Demokratie in den Vereinigten Staaten, Westeuropa und der Bundesrepublik.* Munich: C. H. Beck.
Flora, P. (1985). *Indikatoren der Modernisierung: Ein historisches Datenhandbuch.* Opladen: Westdeutscher Verlag.
Flora, P. (1987). *Westeuropa im Wandel.* Frankfurt and New York: Campus.
Folketellingen i Norge (1930). Vol. 8. Oslo: Central Bureau of Statistics.
Fourastié, J. (1954). *Die große Hoffnung des zwanzigsten Jahrhunderts.* Köln-Deutz: Bund.
Fuchs, V. (1988). *The service economy.* New York: Basic Books.
Gagliani, G. (1981). How many working classes? *American Journal of Sociology, 87,* 259–285.
Galbraith, J. K. (1971). *The new industrial state.* Boston, MA: Houghton Mifflin.
Geiger, T. (1932). *Die Soziale Schichtung des deutschen Volkes.* Stuttgart: Enke.
Gershuny, J. (1981). *Die Ökonomie der nachindustriellen Gesellschaft.* Frankfurt: Campus.
Giddens, A. (1973). *The class structure of advanced societies.* New York: Harper & Row.
Gintis, H. (1971). Education and the characteristics of worker productivity. *American Economic Review, 61,* 266–279.
Glass, D. V. (1954). *Social mobility in Britain.* London: Routledge & Kegan Paul.
Glenn, N. D. (1977). *Cohort analysis.* Beverly Hills, CA: Sage.
Goffman, E. (1961). *Asylums.* New York: Doubleday.
Goldthorpe, J. H. (1983). *Social mobility and class formation; on the renewal of a tradition in sociological theory* (CASMIN Project). Mannheim: University of Mannheim.
Goldthorpe, J. H. (1984). The end of convergence: Corporatist and dualist tendencies in modern Western societies. In J. H. Goldthorpe (Ed.), *Order and conflict in contemporary capitalism.* Cambridge: Cambridge University Press.
Goldthorpe, J. H., Llewellyn, C., & Payne, C. (1980). *Social mobility and class structure in modern Britain.* Oxford: Clarendon.
Grusky, D. B., & Hauser, R. M. (1984). Comparative social mobility revisited: Models of convergence and divergence in 16 countries. *American Sociological Review, 49,* 19–38.
Haller, M. (1982). *Klassenbildung und soziale Schichtung in Österreich.* Frankfurt and New York: Campus.

Haller, M. (1989). *Klassenstrukturen und Mobilität in fortgeschrittenen Gesellschaften. Eine vergleichende Analyse der Bundesrepublik Deutschland, Österreichs, Frankreichs und der Vereinigten Staaten von Amerika.* Frankfurt and New York: Campus.

Haller, M., & Hodge, R. W. (1981). Class and status as dimensions of career mobility. Some insights from the Austrian case. *Zeitschrift für Soziologie, 10,* 133–150.

Haller, M., König, W., Krause, P., & Kurz, K. (1985). Patterns of career mobility and structural positions in advanced capitalist societies: A comparison of men and women in Austria, France, and the United States. *American Sociological Review, 50,* 579–603.

Hamermesh, D. S., & Rees, A. (1979). *The economics of work and pay.* New York: Harper & Row.

Hamilton, R. F., & Wright, J. (1975). Coming of age—A comparison of the United States and the Federal Republic of Germany. *Zeitschrift für Soziologie, 4,* 335–349.

Harbison, F., & Myers, C. (1964). *Education, manpower, and economic growth.* New York: McGraw-Hill.

Hauser, R. M., Dickinson, P. J., Travis, H. D., & Koffe, J. M. (1975). Temporal change in occupational mobility: Evidence for men in the United States. *American Sociological Review, 40,* 279–297.

Hazelrigg, L. E., & Garnier, M. A. (1976). Occupational mobility in industrial societies: A comparative analysis of differential access to occupational ranks in seventeen countries. *American Sociological Review, 41,* 498–511.

Himmelweit, H., & Swift, B. (1969). A model for the understanding of school as a socializing agent. In P. Mussen (Ed.), *Trends and issues in developmental psychology.* New York: Holt.

Historisk Statistikk (1978). NOS 12.291. Oslo: Central Bureau of Statistics.

Hofbauer, H., & König, P. (1973). Berufswechsel bei männlichen Erwerbspersonen in der BRD. *IBA-Mitteilungen, 1,* 37ff.

Hogan, D. P. (1981). *Transitions and social change.* New York: Academic Press.

Hope, K. (1984). Comparative mobility: Can the structural model cope? *Comparative Social Research, 7,* 427–441.

Hopper, E. (1968). A typology for the classification of educational systems. *Sociology, 1,* 29–45.

Hout, M. (1983). Occupational mobility of black men. *American Sociological Review, 49,* 1379–1409.

Hout, M., & Jackson, J. A. (1986). Dimensions of occupational mobility in the Republic of Ireland. *European Sociological Review, 2,* 114–121.

Hüfner, K., Meyer, J. W., & Naumann, J. (1987). Comparative education policy research: A world society perspective. In *Comparative policy research* (pp. 188–243). Aldershot: Gower.

Inas (1978). Datadokumentasjon for yrkeshistorieundersokelsen. Notat no. 16. In Institute of Applied Social Research, Oslo.

Inkeles, A., & Rossi, P. H. (1955/56). National comparison of occupational prestige. *American Journal of Sociology, (LXI),* 329–339.

Jabine, T. B. (1984). *Cognitive aspects of survey methodology: Building bridges between disciplines.* Washington, DC: National Academy.

Kalbfleisch, J. D., & Prentice, R. L. (1980). *The statistical analysis of failure time data.* New York: Wiley.

Kalleberg, A. L. (1988). Comparative perspectives on work structures and inequality. *American Review of Sociology, 14,* 203–225.

Kalleberg, A. L., & Althauser, R. T. (1981). Firms, occupations, and the structure of labor markets. A conceptual analysis. In I. Berg (Ed.), *Sociological perspectives on labor markets.* New York: Academic Press.

Kalleberg, A. L., & Sørensen, A. B. (1979). The sociology of labor markets. *Annual Review of Sociology, 5,* 351–379.

Kappelhoff, P., & Teckenberg, W. (1986). In W. Teckenberg (Ed.), *Comparative studies of social structure. Recent German research on France, the United States, and the Federal Republic.* Armonk, NY: M. E. Sharpe.

Karabel, J. (1972). Community college and social stratification. *Harvard Educational Review, 42,* 521–562.

Kerbo, H. R. (1983). *Social stratification and inequality.* New York: McGraw-Hill.

Kerr, A. (1960). *Schools of Europe.* London: Bowes & Bowes.

Kerr, C. (1983). *The future of industrial societies.* Cambridge, MA: Harvard University Press.

Kerr, C., Dunlop, J. T., Harbison, F. H., & Myers, C. A. (1960). *Industrialism and industrial man.* Cambridge, MA: Harvard University Press.

Kirp, D. L. (1982). *Just schools: The idea of racial equality in American education.* Berkeley: University of California Press.

Kleber, W. (1983). Die sektorale und sozialrechtliche Umschichtung der Erwerbsstruktur in Deutschland, 1882–1970. In M. Haller & W. Müller (Eds.), *Beschäftigungssystem im gesellschaftlichen Wandel.* Frankfurt and New York: Campus, 24–76.

Knepel, H., & Hujer, R. (1987). *Mobilitätsprozesse auf dem Arbeitsmarkt.* Frankfurt and New York: Campus.
Kommission für wirtschaftlichen und sozialen Wandel (1977). *Wirtschaftlicher und sozialer Wandel in der Bundesrepublik Deutschland.* Göttingen: Otto Schwarz & Co.
König, W., & Müller, W. (1986). Educational systems and labour markets as determinants of worklife mobility in France and West Germany: A comparison of men's career mobility, 1965–1970. *European Sociological Review, 2,* 73–96.
Kraus, F. (1981). The historical development of income inequality in Western Europe and the United States. In P. Flora & A. J. Heidenheimer (Eds.), *The development of welfare states in Europe and America.* New Brunswick, London: Transaction Books.
Kurz, K., & Müller, W. (1987). Class mobility in the industrial world. *Annual Review of Sociology, 13,* 417–442.
Kuznets, S. (1966). *Modern economic growth. Rate, structure, and spread.* New Haven, CT and London: Yale University Press.

Lazerson, E., & Grubb, W. N. (1960). *American education and vocationalism: A documentary history, 1870–1974.* New York: Teachers College Press.
Lebergott, S. (1957). *Annual estimates of unemployment in the United States, 1900–1950.* Princeton: NBER Special Committee Conference Series, No. 8.
Lecaillon, J., Paukert, F., Morrisson, Chr., & Germidis, D. (1984). *Income distribution and economic development.* Geneva: International Labor Office.
Lenski, G. (1973). *Macht und Privileg: Eine Theorie der sozialen Schichtung.* Frankfurt: Suhrkamp.
Lepsius, M. R. (1982). Nachkriegsgesellschaften im historischen Vergleich. In Kolloquien des Instituts für Zeitgeschichte. Munich and Vienna: Oldenbourg.
Lindbekk, T. (1974). Education in Norway. In N. Rogoff Ramsøy (Ed.), *The Norwegian society.* Oslo, Bergen, and Tromsø: Universitetsforlaget.
Lipset, S. M., & Bendix, R. (1959). *Social mobility and industrial society.* Berkeley: University of California Press.
Lipset, S. M., & Zetterberg, H. L. (1959). Social mobility in industrial societies. In S. M. Lipset & R. Bendix (Eds.), *Social mobility in industrial society.* Berkeley: University of California Press.
Lutz, B. (1976). Bildungssystem und Beschäftigungsstruktur in Deutschland und Frankreich. In H. G. Mendius et al., *Publikationsreihe des Instituts für Sozialwissenschaftliche Forschung, München* (pp. 83–151). Frankfurt: Aspekte.
Lynd, R. S., & Lynd, H. M. (1929). *Middletown: A study in modern American culture.* New York: Harcourt Brace Jovanovich.
Lynd, R. S., & Lynd, H. M. (1937). *Middletown in transition: A study in cultural conflicts.* New York: Harcourt Brace Jovanovich.

Maddison, A. (1964). *Economic growth in the West.* New York: Twentieth Century Foundation.
Mann, M. (1975). *Consciousness and action among the Western working class.* New York: Humanities.
Matras, J. (1980). Comparative social mobility. *Annual Review of Sociology, 6,* 401–431.
Maurice, M., & Sellier, F. (1979). A societal analysis of industrial relations: A comparison between France and West Germany. *British Journal of Industrial Relations, 17,* 322–336.
Maurice, M., Sellier, F., & Silvestre, J. J. (1982). Politique d'éducation et organisation industrielle en France et en Allemagne: Essai d'analyse sociétal. Paris: University of France Press.
Mayer, K. U. (1980a). Berufsstruktur und Mobilitätsprozeß. Probleme des internationalen Vergleichs objektiver Indikatoren zwischen England/Wales und der Bundesrepublik Deutschland. In H. J. Nowotny (Ed.), *Soziale Indikatoren im internationalen Vergleich* (pp. 97–134). Frankfurt and New York: Campus.
Mayer, K. U. (1980b). *Class formation and social reproduction—Current comparative research on social mobility* (working paper No. 4). Mannheim: VASMA.
Mayer, K. U., & Carroll, G. R. (1986). *Jobs and classes: Structural constraints on career mobility.* Paper presented at the meeting of the American Sociological Association, New York.
Mayer, K. U., Featherman, D. L., Selbee, L. K., & Colbjørnsen, T. (1989). Class mobility during the working life—A cross-national comparison between Germany and Norway. In M. L. Kohn (Ed.), *Cross-national research in sociology.* Newbury Park: Sage.
Mayer, K. U., & Müller, W. (1986). The state and the structure of the life course. In A. B. Sørensen, F. E. Weinert, & L. R. Sherrod (Eds.), *Human development and the life course: Multidisciplinary perspectives.* Hillsdale: Lawrence Erlbaum Associates.
McClendon, M. J. (1980). Occupational mobility and economic development: A cross-national analysis. *Sociological Focus, 13,* 331–342.

McConnell, T. R., & Heist, P. (1962). The diverse college students population. In N. Sanford (Ed.), *The American college.* New York: Wiley.
McRoberts, H., & Selbee, A. K. (1981). Trends in occupational mobility in Canada and the United States: A comparison. *American Sociological Review, 46,* 406–421.
Merritt, R. L., & Rokkan, S. (1966). *Comparing nations. The use of quantitative data in cross-national research.* New Haven, CT and London: Yale University Press.
Meulemann, H., & Wiese, W. (1984). Bildungsexpansion und Bildungschancen. *Zeitschrift für Sozialisationsforschung und Erziehungssoziologie, 11,* 287–305.
Meyer, J. W., Ramirez, F., Rubinson, R., & Boli-Bennett, J. (1977). The world educational revolution, 1950–1970. *Sociology and Education, 50,* 242–258.
Meyer, J. W., Tuma, N. B., & Zagórski, K. (1979). Education and occupational mobility: A comparison of Polish and American men. *American Journal of Sociology, 84,* 978–986.
Meyer, J. W., Tyack, D., Nagel, J., & Gordon, A. (1979). Public education as national building in America. *American Journal of Sociology, 85,* 591–613.
Milward, A. S. (1972). *The Fascist economy in Norway.* Oxford: Clarendon Press.
Moore, W. E. (1979). *World modernization: The limits of convergence.* New York: Elsevier.
Mooser, J. (1983). Abschied von der Proletarität. In W. Conze & M. R. Lepsius (Eds.), *Sozialgeschichte der Bundesrepublik Deutschland.* Stuttgart: Klett-Cotta.
Müller, W. (1977). Soziale Mobilität: Die Bundesrepublik im internationalen Vergleich. In M. Kaase (Ed.), *Politische Wissenschaft und politische Ordnung* (pp. 339–354). Opladen: Westdeutscher Verlag.
Müller, W., König, W., & Lüttinger, P. (1988). *Education and class mobility* (CASMIN Project, working paper No. 14). Mannheim: University of Mannheim.
Munch, P. A. (1956). A study of cultural change. Rural urban conflicts in Norway. Studia Norvegica. *Ethnologica & Folkloristica,* III (8–9), 1–104.
Offe, C. (1975). Berufsbildungsreform. Eine Fallstudie über Reformpolitik. Frankfurt: Suhrkamp.
Ornstein, M. D. (1976). *Entry into the American labor force.* New York: Academic Press.
Parkin, F. (1971). *Class inequality and political order.* London: Paladin.
Parkin, F. (1979). *Marxism and class theory: A bourgeois critique.* London: Tavistock Publications.
Petersen, T., & Spilerman, S. (1986). *Departures from internal labour markets.* Paper presented at the conference on the Application of Event History Analysis of Life Course Research, Max Planck Institute for Human Development and Education, Berlin (mimeo).
Plunkett, M. (1960). School and early work experience of youth. *Occupational Outlook Quarterly, 4,* 22–27.
Poulantzas, N. (1975). *Classes in contemporary capitalism.* London: New Left Books.
Preisendörfer, P. (1987). Organisationale Determinanten beruflicher Karrieremuster. Theorieansätze, methodische Zugangswege und empirische Befunde. *Soziale Welt,* 211–226.
Przeworski, A., & Teune, H. (1970). *The logic of comparative inquiry.* New York: Wiley.
Ravitch, D. (1983). *The troubled crusade: American education, 1945–1980.* New York: Basic Books.
Renner, K. (1954). *Wandlungen der Modernen Gesellschaft: zwei Abhandlungen über die Probleme der Nachkriegszeit.* Vienna: Wiener Volksbuchhandlung.
Ringer, F. K. (1966). *Education and society in modern Europe.* Bloomington: Indiana University Press.
Ringer, F. K. (1967). Cultural transmission in German higher education in the nineteenth century. *Journal of Contemporary History, 2,* 124–141.
Rogoff Ramsøy, N. (1973). *Life chances and life histories: Remakes on concept and method in the Norwegian occupational life history study.* Institute of Applied Social Research, Oslo (mimeo).
Rogoff Ramsøy, N. (1977a). Sosial Mobilitet i Norge. Oslo: Tiden.
Rogoff Ramsøy, N. (1977b). *Social mobility and change in the economy* (Memorandum No. 15). Oslo: Institute of Applied Social Research.
Rogoff Ramsøy, N. (1984). Codebook and documentation of the Norwegian life history study (M. Visher, transl.).
Rose, M. (1985). Universalism, culturalism, and the Aix group: Promise and problems of a societal approach to economic institutions. *European Sociological Review, 1,* 65–83.
Rosenbaum, J. E. (1984a). *Career mobility in a corporate hierarchy.* Orlando, FL: Academic Press.
Rosenbaum, J. E. (1984b). Organizational career mobility: Promotion chances in a corporation during periods of growth and contractions. *American Journal for Sociology, 85,* 21–48.
Rosenfeld, R. A. (1981). Academic men and women's career mobility. *Social Science Research, 10,* 337–363.
Rosenfeld, R. A. (1983). Sex segregation and sectors: An analysis of gender differences in returns from employer changes. *American Sociological Review, 48,* 637–655.
Rostow, W. (1960). *Stadien wirtschaftlichen Wachstums.* Göttingen: Vandenhoeck und Ruprecht.
Ryder, N. (1965). The cohort as a concept in the study of social change. *American Sociological Review, 30,* 843–861.

Sawyer, M. (1976). Income distribution in OECD countries. OECD economic outlook (Occasional Studies), 3–36.
Schuhmann, H., & Presser, S. (1984). *Questions and answers.* New York: Academic Press.
Schultz, T. P. (1969). Secular trends and cyclical behavior of the income distribution in the United States: 1944–1965. In L. Soltow (Ed.), *Studies in income and wealth, 33,* 75–100.
Schumpeter, J. (1943). *Capitalism, socialism and democracy.* London: Allan and Unwin.
Seierstad, S. (1974). The Norwegian economy. In N. Rogoff Ramsøy (Ed.), *The Norwegian society.* Oslo, Bergen, and Tromsø: Universitetsforlaget.
Sen, A. K. (1973). *On economic inequality.* Oxford: Clarendon.
Sengenberger, W. (1978). *Der gespaltene Arbeitsmarkt.* Frankfurt: Campus.
Sengenberger, W., & Köhler, Chr. (1983). Beschäftigungselastizität und Arbeitsmarktstruktur. Ein Vergleich interner Arbeitsmärkte in der deutschen und amerikanischen Automobilindustrie. In M. Haller & W. Müller (Eds.), *Beschäftigungssystem im gesellschaftlichen Wandel.* Frankfurt and New York: Campus.
Siegel, P. M. (1971). *Prestige in the American occupational structure.* Unpublished Ph.D. dissertation, University of Chicago.
Simkus, A. A. (1981a). Comparative stratification and social mobility. *International Journal of Comparative Sociology, 22,* 213–236.
Simkus, A. A. (1981b). Changes in occupational inheritance under socialism: Hungary 1930–1973. *Research on Social Stratification and Mobility, 1,* 171–204.
Simkus, A. A., & Andorka, R. (1982). Inequalities in educational attainment in Hungary, 1923–1973. *American Sociological Review, 47,* 740–751.
Singelman, J. (1978). *From agriculture to services.* Beverly Hills, CA: Sage.
Slomczynski, K. (1978). The role of education in the process of intragenerational mobility. In K. Slomczynski & T. Krauze (Eds.), *Class structure and social mobility in Poland.* Armonk, NY and London: M. E. Sharpe.
Sobel, M. E. (1983). Structural mobility, circulation, mobility, and the analysis of occupational mobility: A conceptual mismatch. *American Sociological Review, 48,* 721–727.
Sombart, W. (1906). *Warum gibt es in den Vereinigten Staaten keinen Sozialismus?* Tübingen: JCB Mohr.
Sørensen, A. B. (1977). The structure of inequality and process of attainment. *American Sociological Review, 42,* 965–978.
Sørensen, A. B. (1979). A model and a metric for the process of status attainment. *American Journal of Sociology, 85,* 361–384.
Sørensen, A. B. (1983a). Processes of allocation to open and closed positions in social structure. *Zeitschrift für Soziologie, 12,* 203–224.
Sørensen, A. B. (1983b). Sociological research on the labor market. Conceptual and methodological issues. *Work and Occupation, 10,* 261–287.
Sørensen, A. B. (1987a). Theory and methodology in stratification research. In U. Himmelstrand (Ed.), *Sociology: Aftermath of a crisis.* London: Sage.
Sørensen, A. B. (1987b). Theory and models of mobility. *Institut für Höhere Studien Journal, 3,* 83–98.
Sørensen, A. B., Allmendinger, J., & Sørensen, A. (1986). *Intergenerational mobility as a life course process.* Paper presented at the meeting of the American Sociological Association, New York.
Sørensen, A. B., & Blossfeld, H.-P. (1987). *Socioeconomic opportunities in Germany in the post-war period.* Unpublished manuscript.
Sørensen, A. B., & Kalleberg, A. L. (1981). An outline of a theory of the matching of persons to jobs. In I. Berg (Ed.), *Sociological perspectives on the labor market* (pp. 49–74). New York: Academic Press.
Sørensen, A. B., & Tuma, N. B. (1981). Labor market structures and job mobility. *Research on Social Stratification and Mobility, 1,* 67–94.
Sorge, A., & Spence, A. M. (1974). *Market signaling.* Cambridge, MA: Harvard University Press.
Sorokin, P. A. (1927). *Social mobility.* New York: Free Press.
Spenner, K. I., Luther, O. B., Call, D. W., & Vaugh R. A. (1982). *Career lines and careers.* Lexington, MA: Lexington Books.
Spilerman, S. (1977). Careers, labor market structure, and socio-economic achievement. *American Journal of Sociology, 83,* 531–593.
Stark, T. (1977). *The distribution of income in eight countries* (Royal Commission on Distribution of Income and Wealth, Background Paper No. 4). London: Her Majesty's Stationary Office.
Stewman, S., & Konda, S. L. (1983). Careers and organizational labor markets: Demographic models of organizational behavior. *American Journal of Sociology, 88,* 637–685.
Stigler, G. (1962). Information in the labor market. *Journal of Political Economy,* Supplement, 94–105.
Svalastoga, K. (1959). *Prestige, class, and mobility.* Copenhagen: Scandinavian University Press.

Thélot, C. (1982). *Tel père, tel fils. Position sociale et origine familiale.* Paris: Dunond.
Throw, M. (1970). Reflections on the transition from mass to universal higher education. *Daedalus, 99,* 1–42.
Thurow, L. C. (1975). *Generating inequality.* New York: Basic Books.
Thurow, L. C. (1978). Die Arbeitskräfteschlange und das Modell des Arbeitsplatzwettbewerbs. In W. Sengenberger (Ed.), *Der gespaltene Arbeitsmarkt.* Frankfurt and New York: Campus.
Tinbergen, J. (1975). *Income distribution. Analysis and policies.* Amsterdam: North-Holland.
Touraine, A. (1974). *Academic system in American society.* New York: McGraw-Hill.
Treiman, D. J. (1970). Industrialization and social stratification. In E. O. Laumann (Ed.), *Social stratification: Research and theory for the 1970s* (pp. 201–234). New York: Bobbs-Merrill.
Treiman, D. J. (1975). Problems of concept and measurement in the comparative study of occupational mobility. *Social Science Research, 4,* 183–230.
Treiman, D. J., & Terrell, K. (1975). The process of status attainment in the United States and Great Britain. *American Journal of Sociology, 81,* 563–583.
Tuma, N. B. (1976). Rewards, resources and rates of mobility: A non-stationary multivariate stochastic model. *American Sociological Review, 41,* 228–260.
Tuma, N. B., & Hannan, M. T. (1984). *Social dynamics. Models and methods.* Orlando, FL: Academic Press.
Tyack, D. B. (1974). *The one best system: A history of American urban education.* Cambridge, MA: Harvard University Press.
Tyree, A., Semyonov, M., & Hodge, R. W. (1979). Gaps and glissandos: Inequality, economic development, and social mobility in 24 countries. *American Sociological Review, 44,* 410–424.
Veysey, L. (1965). *The emergence of the American university.* Chicago: University of Chicago Press.
Visher, M. G. (1984). The workers of the state and the state of the state workers: A comparison of public and private employment in Norway. Madison: Ph.D. thesis, University of Wisconsin.
Weber, H. C. (1971). *System models of mobility in organizations.* Cambridge, MA: Harvard University Press.
Weber, M. (1968). *Economy and society.* New York: Bedminster Press.
Wegener, B. (1985). Gibt es Sozialprestige? *Zeitschrift für Soziologie, 3,* 209–235.
White, H. C. (1971). *System models of mobility in organizations.* Cambridge, MA: Harvard University Press.
Wilensky, H. L. (1960). Work, careers and social integration. *International Social Science Journal, 12,* 543–560.
Williamson, O. E. (1975). *Markets and hierarchies: Analysis and antitrust implications.* London: Free Press.
Wright, E. O. (1978). *Class, crisis and the state.* London: New Left Books.

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