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978-0-521-02763-2 - The Decline of Transit: Urban Transportation in German and U.S. Cities, 1900-1970

Glenn Yago

Excerpt

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1

Introduction

After World War II, most urban analysts greeted highway transportation as a solution to urban congestion. Increasingly, mass transit was considered marginal to urban travel, limited to older, densely populated cities. Accordingly, policy decisions limited subsidization to transit in favor of the construction of highways.

Mass transit's decline was consistent with theories about urban change: Urbanization, housing, and industrial location patterns resulted from successive changes in the technology of transportation. Electrical traction first expanded transit's role but simultaneously dispersed urban residents, who came to prefer the automobile; changing consumer tastes reinforced this pattern. The most obvious factors associated with transit's decline—population, economic, and consumption changes—became central to theories accounting for it.

The prolonged energy crisis, beginning in 1973, shattered most accounts about the role of transit, which was suddenly promoted as central to energy-efficient and rational land use. If transit was now possible and desirable in new, automobile-oriented, low-density cities—whether Los Angeles, Frankfurt, or Tokyo—why had it declined in the first place? Why had researchers from fields as diverse as geography, sociology, economics, political science, and urban planning argued for decades that the population, income, and spatial characteristics of cities impossibly constrained mass transit services, thereby promoting motorization by federal, state, and local planners?

Heretofore, changes in urban spatial structure, consumer preferences, transportation policy, and business were ex-

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Excerpt

[More information](#)*Decline of transit*

plained in terms of technological developments that organized human activity and structured social life in our cities. Population and the supply of urban land grew as cities participated increasingly in the interregional economics made possible by technological advances in transportation (Berry and Garrison, 1958; Berry 1958; Berry and Horton, 1970).¹ These successive changes, in which new innovations overcame old spatial boundaries, characterized urban growth—the pedestrian, streetcar, or automobile city, the suburb, exurb, or agglomeration. The resulting size and density characteristics of cities thus predisposed them to “optimal” transportation solutions through both individual choice and the policies that reinforced them.²

Further elaboration of this theory in geographical, sociological, and historical studies came when economists focused upon how firms and urban residents choose to minimize their costs. Assuming rational choice, their econometric models postulated a trade-off between land and travel costs (for industry and individual alike) as changes in transportation technology increased access to cheaper land.³ Historical decisions and institutional changes affecting urban services were considered irrelevant; current market costs of travel or land could explain urban changes “without reference to the heritage of the past” (Muth, 1969:47).

But what if cities were more than empty maps willed by railroads, highways, suburban developments, and office buildings whose location was determined by the last generation of technology and, in turn, structured the next group of market choices? How might the shared or conflicting interests of individuals and groups, and the results of their actions and policies, shape technology and, perhaps, limit it? Could the demographer’s analysis of urban population characteristics or the cartographer’s view of economic activities shaped by geography account for all the processes causing transit to decline?

The present research connects unexplored changes in the politics and the economy of the transportation industry and government policy, both at the national and local levels, to previously observed technological developments, urban growth, and consumer behavior. Which economic and social

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Excerpt

[More information](#)

Introduction

factors create transportation policy, the decision-making environment of consumers, and the spatial expansion of cities that diminish public transit? Why does the balance between public and private transportation vary within urban systems and between nations? How do state and economic policies operate to produce so many different outcomes?

In earlier research, the emphasis on technology, urban space, and/or consumer behavior resulted from studies within single nations. Such studies were unable to isolate variations in social, economic, and political structure highlighted by comparative analysis. The purpose of comparative analysis is to “manipulate groups of cases to control sources of variation in order to make causal inferences” (Skocpol and Sommers, 1980:182).⁴ This process is accomplished at various levels of analysis (both statistically and through comparative case studies) addressed to specific issues: the shared pattern of transit decline, the different rates of decline between societies, and the decline within them.

Although automobile transportation is ubiquitous, as are urban processes of metropolitanization, suburbanization, and industrial decentralization, the patterns of mass transit decline are by no means uniform. Comparative analysis identifies those factors in transit decline common to industrial societies, yet also isolates unique features within each society that account for differences in the rates of decline. By contrasting cases, analytically focused generalizations about sources of variation between urban societies and the political and economic factors favorable or unfavorable to motorization and transit decline can be made. Finally, local case studies within those societies illustrate the mechanisms of these macrosocial processes.

The study that follows compares urban transportation history in Germany and the United States since 1900, combining cross-national comparisons, cross-sectional analyses within countries at different points in time, and local case studies to present quantitative and qualitative historical evidence of how corporate power and state policy control urban development. As the most dynamic and powerful economies of their respective hemispheres in the twentieth century, Germany and the

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Excerpt

[More information](#)

Decline of transit

United States are uniquely suited for comparative analysis of transit change.⁵ Although the processes of capital accumulation and economic growth in these industrial societies are putatively similar, the composition of growth industries, the timing of economic concentration, and the process of state formation differed substantially. In both countries, transportation investment, first in railways and later in automobiles, was crucial to expanding industrial investment and output. Wildly changing forms of state intervention in the economy also occurred in both countries after the turn of the century. The similarities and differences of the two societies, and their political and economic institutions, allow the construction of a multilevel research design to explore the decline in transit in both societies and the differing dimensions and rates of urban transportation change.

Structural conditions affecting transportation decline

Chapter 2 introduces and compares subtle changes in urban structure and corporate power that may precede changes in urban transportation systems. In that chapter, the shared pattern of transit decline is elaborated by measuring the location and composition (diversity or specificity) of economic production in a city, changing city functions (administrative, commercial/financial, and manufacturing), and regional and national differences in the growth of corporate power. Data for the largest German and U.S. cities in 1900 and 1970 are presented. Structural factors in these two sets of cities are discussed, and the following changes are compared: (1) ecological factors—physical characteristics of the city, and population size and density; (2) the position of the city in the national urban system; (3) the economic structure of the city as indicated by its pattern of industrial employment; and (4) the structure and role of corporations, as indicated by the number of corporate headquarters, their industrial composition, and their influence on transportation planning.

Descriptive data on transit decline and panel data analysis of German and U.S. cities address the following questions:

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Excerpt

[More information](#)

Introduction

How did the different rates of capitalist development in Germany and the United States, reflected in their urban systems (indicated by differing rates of economic concentration, the composition of growth industries, and metropolitanization), result in transportation change? Did the scope and timing of corporate presence affect local transit decline? Was the diversity or specificity of corporate interests a factor? How do these complex relationships reveal why transportation-producing or consuming industries become dominant influences in transportation policy?

National transportation policy

Although Chapter 2 presents quantitative evidence on the structural conditions of transit decline, it cannot explicate the mechanisms involved. Historical evidence is necessary to link the analysis of macrosocial structural forces at both national and local levels with the mechanisms of corporate strategy and state planning policies.

Chapters 3 and 4 look at changes in economic growth, corporate structure and strategy, political institutions, and policy organizations at the national level that constrain transportation choice. Marxian and neo-Weberian theorists have argued in recent years that economic concentration and political centralization are the primary processes governing social and technological change. This claim will be examined by contrasting the timing and nature of economic concentration and political centralization, which condition the development and structure of transportation interests in Germany and the United States.

In the United States, the companies that produced transportation equipment and services favoring automobile use dominated transportation policy earlier than in Germany. Until the Great Depression, corporate strategy was sufficient to undermine public transportation. However, during the economic crises in the Depression and the post-World War II period, greater state intervention occurred to accommodate automobile expansion. German economic concentration occurred earlier in industries that consumed, rather than produced, trans-

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Excerpt

[More information](#)*Decline of transit*

portation services (coal, steel, mining, and other heavy industries), allowing diverse transportation interests (particularly railroads) to survive longer. The emergence of the German automobile coalition (including the growing oil and rubber industries), however, led to the promotion of state policies encouraging motorization. How did this change in industrial interests alter the pace and direction of transportation changes?

To understand transit decline, we must examine the strategies of companies and coalitions involved in transportation production, the history and orientation of national transportation policy, and the conflicts within government and industry over specific transportation proposals. How did industrial coalitions around transportation issues emerge from the different methods of capital accumulation in Germany and the United States? How did these coalitions impinge upon state policy, blocking alternative transportation technologies? What are the organizations, political institutions, and historical conditions that turn corporate interests into state policy? What characteristics of government (e.g., political fragmentation and centralization of political authority) facilitate or hinder the emergence of transportation policies?

Local transportation politics

The urban structures and historical processes elaborated in the earlier chapters are illustrated in Chapters 5 and 6, where case studies of Frankfurt and Chicago are presented. These cities were selected because as major growth centers, they have served comparable functions in their respective national systems. This comparison demonstrates the macrosocial processes operating at the cross-sectional and national levels. This examination of two cities with similar production structures and national standing links the national processes of corporate strategy and state policy to local transportation politics.

Local histories reveal how changes in transportation systems are related to changes in local political organization and economic structure. Public participation in transportation deci-

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Excerpt

[More information](#)

Introduction

sions, the bureaucratization of transportation planning, and the insulation of local corporate interests from public opposition are all examined. The class composition of cities and their neighborhoods changes, thereby shifting spatially linked political interests and the constituencies mobilized in transportation conflicts. As urban government becomes increasingly centralized, local control decreases. This local decline in an environment of growing corporate power concentrated in specific industries nationwide affects transportation policy.

To illustrate this process, conflicts by transit workers and consumers over strikes, routes, rates, public control, and highway construction; changes in urban transportation planning and local government organization; and the link between urban planning and transit decline are all presented in these chapters. Class-linked organizations, interests, and decisions contributing to local transportation politics are identified.

The case studies address the following questions: How did changes in the urban economy affect transportation development? What was the interplay between economic changes in the city and corporate involvement in transportation planning? Did the organization of local government facilitate corporate intervention? If so, which organizational forms permitted penetration of special interests? What business associations, civic groups, or policy organizations provided the forum for corporate interests to develop and popularize their position? How did communities with less voice in local government organize around transportation issues? Which factors blocked the transportation alternatives formulated by conflicting or competing class interests?

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Excerpt

[More information](#)

2

Twentieth-century mass transit in German and U.S. cities

Why did mass transit decline? Which processes, common to German and U.S. history, account for the shared pattern of decline in public transportation? The automobile is the easiest and most misleading answer and moreover underscores the primacy of technical explanations of social change. As we shall see, increased car ownership did not always mean decreased use of transit. At times, the two modes coexisted peacefully; at other times not. What accounts for the variation between nations and cities in the rate of transit decline?

In this chapter, we consider data on U.S. and German cities and their transit systems before and after the rise of the automobile. The aim of this quantitative analysis is not to provide a definitive theory of what determined mass transit and its decline (such time-series data are not available) but to explore systematically and to approximate the structural factors of cities affecting transit's role.

This chapter presents a correlational and multiple-regression analysis of the largest U.S. and German cities in 1900 and 1970 to explore and identify urban structural processes of transit decline. The statistically minded reader should examine Appendix 1 for details about the data and procedures used. First, however, we should consider the extent of transit decline in Germany and the United States over this time period. These nationally aggregated figures describe the broad contours of urban transportation change. Next, the focus shifts to city-level data examining intercity variations of that process. The analysis concentrates on four sets of characteristics and their relationship to transit ridership and its decline: the level

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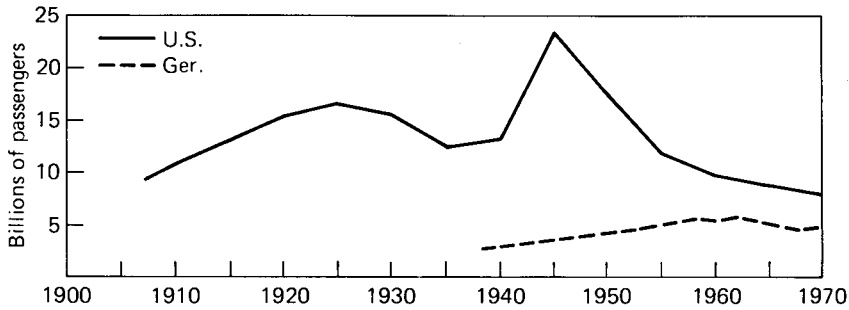
[More information](#)*Mass transit in German and U.S. cities*

Figure 2.1. Decline of total public transit ridership in the United States and Germany, 1900–70. (Sources: for United States: American Public Transit Association, *Transit Fact Book*, 1975–76; data for 1907–40 are from Wilfred Owen, *The Metropolitan Transportation Problem* rev. ed. 1965; for Germany: *Jahrbücher des Deutsches Reich*, 1920–71.)

of urbanization (i.e., ecological characteristics of the city), the location of the city in its national urban system, the industrial structure of the city, and the presence and composition of corporate power.

The results of this exploratory analysis suggest the complex interaction of ecological and politicoeconomic characteristics of urban structure that produce transit change. How strong is the relationship between any of these factors and public transit? How are the observed relationships changed when controlled for by historically antecedent factors? What can these statistical observations tell us about urban structure and its impact upon public transportation?

The extent of transit decline

Figures 2.1 and 2.2 show the changes in public transportation in Germany and the United States over the past decades. Since 1900, public transportation has declined in both countries. Although the data comparing transportation development and use in their respective cities since the turn of the century are incomplete, several observations can be made on

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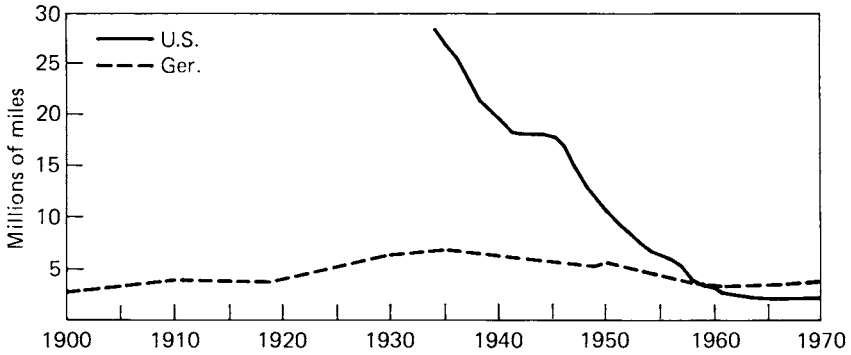
[More information](#)*Decline of transit*

Figure 2.2. Decline of rail transit in the United States and Germany, 1900-70. (Sources: for United States: *Historical Statistics of the United States*, U.S. Census Bureau, 1975; for Germany: *Statistisches Jahrbücher des Deutsches Reich*, 1920-71.)

the basis of national data. Transit ridership in the United States began to decline immediately before World War I and stagnated throughout the twenties. This decline was hastened by the rapidly rising transit failures of the thirties. The decline leveled off during World War II, but ridership fell sharply and consistently afterward.

The impact of the automobile in Germany is evident in the decline of rail transit that began during the thirties and continued after World War II. (Aggregated ridership data for all transit modes for the prewar period are unavailable.) Although overall ridership increased gradually during the reconstruction period (1945-59), all transit modes suffered a decline that persisted until 1970. This decline was hastened by the substitution of buses for rail lines, producing an overall reduction in ridership.¹

Since the 1930s, the use of the automobile has risen dramatically in both Germany and the United States.² Nevertheless, the relationship between public and private transportation has been neither constant nor continuous. However, both countries have seen fluctuations in the decline of mass transit, and there have been differences in the national experience. Germany's decline in mass transit came later and less suddenly than in the United States.