

JOSH WHITFORD

the NEW OLD economy

Networks, Institutions, and the Organizational Transformation of American Manufacturing

The New Old Economy: Networks, Institutions, and the Organizational Transformation of American Manufacturing

By Josh Whitford

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Description

American manufacturing is in obvious crisis: the sector lost three million jobs between 2000 and 2003 as the American trade deficit shot to record highs. Manufacturers have increasingly decentralized productive responsibilities to armies of supplier firms, both domestic and abroad. Many have speculated as to whether or not manufacturing is even feasible in the United States, given the difficulties. Josh Whitford's book shows that discussion of this shift, in the media and in the academic literature, hits on the right issues - globalization, de-industrialization, and the outsourcing of production in marketized and in network relationships - but in an overly polarized way that obscures as much as it enlightens. Drawing on the results of extensive interviews conducted with manufacturers in the American Upper Midwest, Whitford shows that the range of possibilities is more complex and contingent than is usually recognized. Highlighting heretofore unexamined elements of constraint, contradiction and innovation that characterize contemporary network production models, Whitford shakes received understanding in economic and organizational sociology, comparative political economy, and economic geography to reveal ways in which the American economic development apparatus can be adjusted to better meet the challenges of a highly decentralized production regime.

Reviews

"A new economy is being born from in the old rust-belt economy, and Josh Whitford is a terrific chronicler and analyst of this extraordinary transformation-one so important yet so difficult. Anyone interested in the idea of partnership and collaborative community in industry will find this immensely thought-provoking."

-Professor Paul Adler, Marshall School of Business, University of Southern California

"Josh Whitford here demonstrates the importance of focussed empirical research in challenging stereotypes. The picture presented here of US Metalworking firms is not that of the familiar stylized facts. That is because it is the result of real, on-the-ground research-but driven also by excellent theoretical analysis and reflection." -Professor Colin Crouch, Chair, Institute of Governance and Public Management, Warwick Business School

"At the very center of the transformations of contemporary economies is a profound restructuring of the relationships among firms. Josh Whitford's The New Old Economy provides a penetrating analysis of these transformations, showing how new strategies interact with old institutional arrangements to produce novel configurations. It should be read by anyone interested in understanding the dilemmas and dynamics of the American economy." -Erik Olin Wright, Vilas Distinguished Professor, Department of Sociology, University of Wisconsin-Madison

"If you want to understand the past and future of manufacturing in America, read this book. With detailed research and careful analysis, Josh Whitford gets beyond the politically supercharged debate over 'deindustrialization' and 'outsourcing' to show how the increasingly global and decentralized system of production actually works and what business and political leaders can do about it" -Richard Florida, Hirst Professor of Public Policy, George Mason University

"Based on rich fieldwork interviews in America's Midwest manufacturing heartland, Josh Whitford develops a novel account of the organizational consequences of outsourcing from large to small firms, which challenges core claims of leading sociological theories of economic coordination." -Jonathan Zeitlin, Professor of Sociology, Public Affairs, and History, and Director of the Center on World Affairs and the Global Economy, University of Wisconsin-Madison

Chapter-by-chapter summary of Josh Whitford's The New Old Economy

Introduction

The introduction is short, serving only to lay out the book's larger argument. It is available for download on the COI website.

Part I: The New Old Economy

Introduction to Part I

The introduction to part I uses aggregate statistics to make the *prima facie* case that the last quarter century has seen the emergence of a new old economy premised on the systematic decentralization of production from large vertically integrated firms to their smaller suppliers. Using patterns of job losses and shifts in the sector, the book shows that what is often seen only as deindustrialization is much better understood as a fundamental restructuring characterized by de-unionization, de-urbanization, and a relative movement of manufacturing employment to smaller firms. The introduction also frames and outlines the full structure of the book for the reader.

Chapter one: A new production paradigm for a new old economy

Chapter one draws on numerous studies describing changes in work organization internal to firms and especially the notion of "high-performance work organization" to show that these are part and parcel of a larger reorganization of manufacturing that, in its ideal form, is fundamentally premised on cooperation between the large firms – the outsourcers – and the suppliers to which they have outsourced that work. Across this literature, in both its academic and popular variant, there is agreement that the reorganization brings with it the possibility of a normatively attractive new production paradigm premised functional flexibility, but that this paradigm has a double edge: spreading production to supplier firms can be about the search for new methods of collaboration and innovation, but it can also simply reflect the use of market power to slash labor costs. There are as a result big and important fights over the degree to which the paradigm has been achieved and to which it is likely to be achieved in the American context.

Chapter two: Networks, noise and institutional change

The second chapter is the main theoretical chapter, placing the book's argument in theoretical literatures in sociology and political economy. The chapter engages particularly with three very prominent sociological and political economic approaches: (1) social networks and embeddedness; (2) comparative institutional analysis and the "Varieties of Capitalism"; (3) neopragmatist "learning by monitoring." It shows that these three literatures agree on three fundamental points. First, there is consensus that some form of collaborative network production is both normatively desirable and hard to achieve, at least in industries in which long-term competitiveness depends upon innovation (including small incremental innovations of the sort common in durable manufacturing). Second, all three argue that collaborative firm networks are nevertheless possible, citing mechanisms – patterns of social ties, formal and informal institutions, and/or learning routines – that circumvent the problems of incentive alignment and knowledge sharing that more economistic literatures cite as bedeviling inter-firm relationships. And third, the coordination mechanisms they identify have self-reinforcing dynamics that force

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relationships between firms into stable and dichotomous equilibrium configurations, with a world of hostile arms-length contracting on one side and the collaborative sharing of information between weakly bounded firms on the other. Intermediate cases are generally left untheorized: the social embeddedness and Varieties of Capitalism approaches effectively treat incongruous elements as noise that can be disregarded in the interests of an elegant and sharply profiled account; for Sabel's Neo-Pragmatism, in-between cases are not necessarily anomalous, but are nonetheless just temporary, a transitional stage on the road to a self-sustaining collaborative equilibrium (given sufficient market competition).

The book accepts the first two points of agreement as useful and important contributions to the understanding of economic coordination. But the third is empirically (and thus theoretically) problematic: interviews suggest instead that the *modal* case of the relationship between large American manufacturing firms and their suppliers is both contradictory and systematically intermediate between the arms-length and collaborative poles.

Importantly, the book does not simply reject the existing literature as wrong-headed, nor does it suggest that it is enough simply to show the existence of incongruous elements. Rather, with the argument initially laid out in chapter two and then empirically demonstrated in subsequent chapters, the book offers a friendly correction. By documenting that there are *systematic* factors pushing inter-firm relationships away from the polar types, it draws on elements of each of the engaged approaches to show two things: (1) even good faith efforts by firms to construct a more collaborative new production paradigm have been very uneven, and (2) there are nevertheless enough partial successes to suggest ways in which well-designed economic development policies could help things along. The first of these is demonstrated in Part II of the book, the second in Part III.

Part II: Networks and organizational transformation of American Manufacturing

Part II aims to show just what the new old economy – with its ballyhooed trend towards greater collaboration in manufacturing – looks like in the day-to-day constitution of relationships between firms. Extensively using quoted material from interviews, these three chapters establish empirically: (1) that the quantitative devolution of productive responsibilities does amount to a qualitative change, and thus to a new old economy; and (2) that relationships between networked firms in this new old economy do *in fact* lie systematically and stably between the arms-length and collaborative poles.

Introduction to part II

The introduction to part II outlines the arguments to be made in Chapters 3-5. It shows why any passable conceptualization of the shift in relationships between firms must leave space for multiple dimensions of strategic decisionmaking and variation, as well as for inconsistencies in the behavior of firms that are not unitary actors. The introduction also describes the source of the empirical material: 102 interviews conducted at 56 manufacturing firms in the American Upper Midwest, with a focus on the (often small) firms that fabricate and/or assemble molded, forged, formed, and machined goods made of metal and plastic and on their customers in key durable manufacturing industries such as automobiles and other transportation equipment, industrial, farm, and construction machinery, electrical appliances and machine tools.

Chapter three: The decentralization of American Manufacturing

Chapter three characterizes the post-outsourcing American productive model, showing how the decentralization of production has created substantial new interdependencies between manufacturing firms. Despite efforts to create "modules" that separate design and manufacture (which would allow metalforming and engineering industries to operate along the lines of contract manufacturing in electronics), there remains in fact a "persistence of integrated design." The result is there are substantial potential gains to collaboration around innovation even with the small and medium sized component suppliers that now produce the parts their customers once made internally. Many of the potential innovations are extremely incremental in character, as suppliers use their greater knowledge of process details to devise ways to improve the manufacturability, cost and performance of products through a cumulation of small changes that require significant coordination and sharing of productive information.

Chapter four: Collaboration in practice: the cost reduction (incremental innovation) waltz

Chapter four analyzes the relational implications of the devolution of production and design responsibility, using the concept of the "joint cost reduction" to provide show concretely what inter-firm collaboration in the pursuit of incremental innovation means in daily practice. Numerous examples are provided to show how decentralization has created powerful incentives for firms to experiment with a sort of structured and dialogic "waltz" of coordination and collaboration in which OEMs and their suppliers search out ways to reduce costs without destroying supplier margins. However, although this waltz does generate clear benefits for both sides, it is fraught with enough risk to force firms to intermingle both collaborative and armslength transactions as they also hedge against three fundamental uncertainties. These are: (1) market and technological factors that are partially mitigated by the decentralization of production, but inevitable; (2) competence uncertainties, a residue of historically poor relationships; (3) organizational uncertainties, owing to the empirical difficulties firms have in maintaining fully coherent strategies.

The chapter then returns to a discussion of theoretical literatures that aim to explain the conditions under which firms are likely to successfully maintain collaborative relationships. These first two sources of uncertainty are already reasonably well understood: the mechanisms cited in existing theoretical literatures explain how large firms could guarantee reliable behavior in the face of technological and market uncertainty, thus permitting supplier firms to invest in training and capital goods in ways that reduce competence uncertainties. The third source of uncertainty is more problematic and is analyzed in detail in chapter five.

Chapter five: Uncertainty and contradiction in the new old economy

Chapter five shows that organizational uncertainty ensures that relationships between firms do in fact remain stably intermediate between the arms-length and collaborative poles. These problems do not simply reflect unequal market power, which is recognized as just an unpleasant business reality. Rather, bargaining is characterized by numerous contradictions, in a very literal sense: too often, one thing is said, but another done. Interviewees spoke of a minefield of ambiguous signaling rife with no-holds-barred tactics that are not perceived to be "just business." They spoke of relationships plagued by mix-ups that go far beyond just the immense complexities of communicating so many details across companies and departments to

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include the frequent and often quite creative short term exploitation of vulnerabilities opened up by the new relationships, often in ways that explicitly deviate from official firm strategies and that both sides agree should not occur. The response to these contradictions by suppliers is to hedge their collaboration, engaging in behaviors they recognize to be systemically sub-optimal even though these create a vicious cycle that leaves relationships far from the collaborative pole.

That such contradictions occur in firms has long been known in organizational sociology, where the post-Weberian synthesis showed hierarchy to be anything but a panacea for the sorts of misaligned incentives and underspecified goals known to wreck markets. However, the very point of new networked organizational models is to circumvent such problems. The question thus becomes one of showing not just that they occur, but why, how, and to what effect. The story parallels David Stark's (1996) point that in the coming of capitalism to Eastern Europe, the new organizations and institutions were built not on the ruins but with the ruins of communism. The salience of "organizational uncertainty" reflects that the new economy is built not on the old economy but is very much a *new old* economy: the new organizational forms are built with the pieces and practices and in the institutional context of the organizations that came before, not on them. There have been real and important changes in firm structure, but conflictual and centralized *intra*-firm relationships nevertheless do plague *inter*-firm relationships, owing especially to factional conflict both within and across departments and to the difficulty of aligning particular incentives within organizations to reward behaviors aimed at cementing longterm collaboration. However, because of the restructuring of organizational forms, such intraorganizational problems manifest differently, for different reasons and with very different effects today relative to how and why they occurred in the centralized organizations in which they were first identified. Deciphering these differences is essential to understanding if and how some of them might be resolved through the building of external institutional supports (the subject of Part III).

Part III: Institutions

Introduction to part III

Part III establishes the "third claim" referred to in the introduction. It shows that understanding the systematic contradictions described in Part II allows first for a disaggregation of the multiple factors determining the relative collaborativeness of the mix of relationships between manufacturing firms, and then for the identification of hooks and points of leverage that can be used to construct institutions to push inter-firm relationships in socially advantageous directions. Notably, this is not taken to the naïve conclusion that just because such institutions would benefit stakeholders and could be constructed in theory, that they will be constructed in fact. Rather, the analysis follows Granovetter's (1992: 7) historically rooted caution that "economic institutions do not emerge automatically in response to economic needs" but must be actively constructed, thus putting the onus on the theorist to show through thick description what tools are in fact available and who could use them.

The argument in Part III particularly contrasts the policy implications of the influential "Varieties of Capitalism" literature (Hall and Soskice 2001). In this particular characterization of the American "Liberal Market Economy," the U.S. is thought advantaged in radical innovation industries (i.e. biotech) favored by a path dependent deregulatory bias in the American institutions. The opposite, however, is predicted for incremental innovation industries (i.e. durable manufacturing) favored by recourse to non-market modes of coordination. These

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industries require institutional supports that can circulate reputations for reliability or sharp practice quickly and widely. But the building of such associational institutions, the argument goes, is not "incentive compatible" in the U.S. due to the relative dearth of strong and established business networks and associations.

Chapter six: It couldn't happen here? Public policy, regional institutions and inter-firm collaboration in the U.S.

Chapter six provides the evidence for the claims outlined in the introduction to part III. It begins with an overview of the state-level industrial policy environment and examples to show that there is space for local experimentation. The bulk of the chapter then discusses in detail the Wisconsin Manufacturers' Development Consortium (WMDC), a consortium of six large manufacturing firms that formed in 1998 to work jointly with the state's manufacturing modernization service. The chapter documents the formation and operation of this nascent policy experiment to show that there is space in the American federal structure for the experimentalist construction of sustaining institutions for inter-firm collaboration, especially if government need not stimulate inter-firm collaboration ex novo, but can instead direct and improving an existing – if limited – collaborative relational structure (in part by organizing supportive factions within firms). Thus, though careful not to overplay the importance of this consortium, the chapter provides empirical evidence that it is possible to leverage the systematic intermediacy of the inter-firm relationship identified in Part II to strengthen existing partial collaboration between manufacturing firms through the construction of associational coordinating institutions even in the prototypical American Liberal Market Economy. The limitations, in short, are at least as political as they are historical-institutional.

Chapter seven: Conclusion: Toward the relational reconstruction of regional political economy

Chapter seven concludes the book, briefly recapitulating the argument and the book's contribution to the sociological and relational reconstruction of regional political economy. This contribution is threefold.

First, there is the straightforward but important empirical correction to dominant characterizations of the American productive model, which fail to adequately theorize the contradictory nature of relationships between manufacturing firms in American manufacturing.

Second, because the deviations from the polar arms-length and collaborative types are systematic and can be causally specified, my arguments are not the facile claim that "the world is more complicated than others think." Rather, they form instead the backbone for a relational reconstruction of regional political economy that does not reject, but rather builds on, each of the three approaches engaged. Neo-pragmatism, exemplified in Sabel's work, emphasizes the lessons to be learned from anomalous experimentation; the comparative political economy of Hall and Soskice explain how deliberative institutions help sustain vertical inter-firm collaboration; and Granovetter's understanding of the social embeddedness of action shows the need to causally explain the emergence of even functional economic institutions.

Third, the reconstruction in the book acknowledges the difficulties of, but shows the need for and possibilities of, building institutions that can aid the construction of a high-wage, high-productivity, high-collaboration manufacturing economy even in ostensibly unpropitious contexts like the American upper Midwest.

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American manufacturing has seen a restructuring so fundamental in the last quarter century that its magnitude is almost hard to overstate. The biggest headlines, however, have been reserved for two developments that emphasize decline. We hear much about globalization and the outsourcing of production, which have permitted the near wholesale transfer of labor-intensive manufacturing to lower-wage areas in the developing world; and the American economy has been 'deindustrializing' at a rapid clip, losing roughly 3 million manufacturing jobs in the first four years of the twenty-first century alone. All told, by the end of 2004, the sector had lost 44 percent of the 22 million manufacturing jobs it had at its 1979 postwar peak, falling from 23 percent of the labor force to just 13 percent.¹

Does this mean that a book about changes in the organization of American manufacturing is, as the cliché goes, a mere chronicling of the rearrangement of chairs on the decks of the Titanic? It is, after all, not hard to find assorted pundits, academics, and politicians to soothingly and correctly remind us that globalization and deindustrialization per se are nothing to worry about, and are on balance probably for the best for nearly all involved. The shifting of laborintensive production abroad lowers prices domestically and can drive development in areas of the world where it is sorely needed. Deindustrialization, as Rowthorn and Ramaswamy (1997: 2, 1) write for the International Monetary Fund (IMF), has occurred across all the world's advanced economies and is largely independent of North-South trade: 'in the 23 most advanced economies, employment in manufacturing declined from 28 percent of the workforce in 1970 to about 18 percent in 1994.² This widespread decline in manufacturing employment, they note further, 'is not a negative phenomenon, but a natural consequence of further growth in advanced economies'. Demand for manufactured goods in the developed world has been stable over the last quarter century, which means that the rapid productivity growth in manufacturing relative to most service sectors comes accompanied, all else equal, by a necessary relative decrease in its employment share.

Yet I have written this book about the implications of what I show to be a very substantial restructuring of American manufacturing, premised on the transfer of many productive responsibilities from large manufacturers to their smaller suppliers. And I do believe that what I say shows that what has happened, is happening, and will happen in American manufacturing is important for academics and policymakers alike. I readily accept that deindustrialization, globalization, and outsourcing are necessary correlates of growth in advanced economies, but I also show that there is nothing 'natural' about them. They are political and highly differentiated processes that play out in strikingly different ways within the United States and across the developed world, with

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varied distributional consequences, in response to choices made by firms, states, and workers embedded into particular institutional and historical contexts.

The research for, and writing of, this book took place with the American manufacturing sector as a whole in deep crisis: record numbers of manufacturing jobs were lost; stories about factory closures attributed to global competition, especially from China, had migrated from the back of the business section to the front page; and the American trade deficit was soaring to new records almost monthly, imperiling the economic well-being of future generations and making clear that the travails of American manufacturing are a matter of more than parochial concern. Moreover, in the (large) parish of the American Upper Midwest, where manufacturing weighs heavily on state economies and where my empirical research has been located, job losses between 2000 and 2003 were especially punishing, occurring much faster than mere productivity growth or cyclical demand effects would predict. It has been a time (hardly the first) when the particular patterns of globalization, outsourcing, and deindustrialization have been quite obviously painful for workers and the communities in which they live—more so than necessary—and a time when there is ample reason to worry even for those who do not ascribe to the errant belief that jobs in manufacturing are somehow intrinsically (rather than contingently) better than those in services.3

Nonetheless, I certainly recognize, as Rogers and Luria (2003: 1) write, that 'Absent a revolution in U.S. trade policy, high-wage/low-value-added American manufacturing will soon be dead,...driven to extinction by more efficient or less labor-friendly domestic production, or by low-cost alternatives abroad'. But, as Rogers and Luria also note, there is much more to the story. Grounding my arguments and analyses in over 100 interviews at more than 50 metalmanufacturing firms in the American Upper Midwest, I show that there is great diversity in American durable manufacturing. There are many firms even in the central and historic 'rust belt' that *are* somehow groping their way towards the formation of globally competitive, highly flexible, collaborative production networks, which allow them to jointly improve old products and processes and to develop new ones more rapidly than ever before; yet at the same time these efforts have been contradictory at best and are only weakly supported by the existing American institutional infrastructure. This 'more to the story', I thus argue, is that there is enough new in the old economy to ensure that the ostensibly rusted metal manufacturers need not be written off as an undifferentiated mass invariably destined for a slow boat to the low-wage world, its jobs to be replaced by an ever-expanding service sector. But the transition is a spotty one, with enough failures to give pause, to remind social scientists as well as policymakers, firms, and workers that efforts to retain the remaining core of good-paying manufacturing jobs must be based on a real understanding neither sugarcoated nor despairing—of what is possible in the high-wage world, of the feasible and the desirable in a world of global competition, short product cycles, and relatively unstable demand.

I build this case around three core arguments. The first follows directly from the observation that large American manufacturers—like large manufacturers across the developed world—have outsourced much of their productive capacity to smaller suppliers both in the United States and abroad. This devolution is not just quantitatively important. It represents a qualitative break with the recent past, the emergence of a new old economy in which most of what matters to manufacturing firms no longer happens under roofs they own or control. This has made the quality of relationships between firms much more important and their structure much more complex, even in the ostensibly mundane world of metal manufacturing. How (and where) these large firms choose and direct their armies of suppliers has tremendous consequences for the regional economies in which they are embedded, because firms selling in the more profitable markets where competition depends as much on innovation and quality as it does on price are more likely to use skilled and better-paid workers. Importantly, these decisions are affected by much more than trade policy, vagaries of currency markets, international regulatory arbitrage, and the like. They depend a great deal on the particularities of firms' embedding in particular historical and institutional contexts. This recognition has led many of those who sought to understand the economy by looking at what happens *inside* large companies to also devote substantial attention to how activities are coordinated and governed between companies.

My second core claim is that the existing social scientific literature has misdescribed the American transition to a new old economy. This is not to say, however, that it has gone unnoticed. A vibrant literature in sociology, political economy, and the business press argues that the demise of the centralized Fordist firm creates two fundamental and starkly bifurcated realities for firms and the regions in which they are embedded. The decentralization of production can entail the exploitation of market power, cost-shifting, union avoidance, and the chasing of lower wages; but it also creates the possibility of a normatively attractive new production paradigm, better for all stakeholders, premised on the creation of collaborative networks of firms that exploit multilevel relational networks to jointly compete in more profitable qualityconscious niche markets. Which path is taken, the usual argument goes, is deeply affected by path dependencies in regional, cultural, and institutional configurations—which does not bode well for the American Upper Midwest with its history of relatively atomized hierarchical and market governance. What I argue, by contrast, is that the reality is much more nuanced and that this nuance matters. Many large manufacturers in the region are opting to follow the prescriptive tenets of the collaborative new production paradigm even as their efforts are deeply constrained by the need to hedge fundamental uncertainties caused by a history of poor relationships and a lack of institutional support. The result is a relational structure that is neither the collaborative production network that theorists such as Powell (2001) call the very building block of the twenty-first century firm, nor is it an atomistic world of hostile arm's-length

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contracting. Rather, it is a complex mix of the two, suggesting that the possibilities are considerably less bifurcated than the existing literature would have them be.

My third claim goes to the institutional and policy implications of this misdescription, and bears particular topical relevance given the obvious difficulties faced by many American manufacturers. I make no pretense to know the silver bullet for all that ails American manufacturing, nor do I speak to all of the many policy arenas that affect its fortunes. Rather, I focus on what follows from my second argument: firms' microdecision processes can be significantly and positively affected by adjustments in economic development policy at the state and local levels (the responsible parties within the American federal structure). I acknowledge that the institutional legacy and the historic dominance of hierarchical and market governance in the American Upper Midwest do present genuine challenges to the region's ability to stably sustain a high-collaboration decentralized manufacturing model. However, recognizing the empirical untenability of conventional and overly bifurcated understandings of the relational options employed by American manufacturers illuminates key barriers to collaborative network production and the tools for their resolution. Exploring complexities in relationships between manufacturers and in the strategies they employ, I argue, shows how the existing American economic development apparatus can be modified to support manufacturers' very partial, problematic, but nonetheless promising efforts to engage in regionally tied but globally competitive collaborative production models—that is, in the sorts of production models that might help American deindustrialization to in fact become the slow, steady, and relatively painless process it is sometimes (wrongly) advertised to be.

The Chapter-by-Chapter Structure of the Argument

The book is divided into three parts. The introduction to Part I describes the changing patterns of American deindustrialization and argues that they are a consequence of radical changes in the organization of the American productive model. Chapter 1 then reviews the academic literature on what is in fact a worldwide transition from old to new old economy. It shows that there is consensus as to the general contours of a normatively desirable 'new production paradigm', but that there are disputes as to the degree to which it can be fully achieved in the American context. Chapter 2 examines some of the social theoretical implications of the increasing decentralization of production, and establishes a core theoretical claim of the book: prominent sociological theories of economic coordination too quickly dismiss systematic contradictions and hedging behavior by firms actively seeking to build collaborative network forms of organization. In so doing, these theories analytically obscure the need for, and possibilities of, policymaking to help build and sustain normatively desirable collaborative production models.

Part II (Chapters 3–5) relies heavily on a case study of metal manufacturing in the American Upper Midwest—that is, a case study of the quintessential highwage manufacturing industry in the quintessential manufacturing region: just 15 percent of national employment is in the great lakes states, but one in four durable manufacturing jobs is located there. Extensively using direct quotes and observations from 100+ interviews conducted between 2000 and 2002 with large global manufacturing firms and their more territorially bound suppliers, I describe the enormous changes in the organization of American manufacturing. In the wake of these changes, firms are not simply making the strategic decision of whether to collaborate or not, but are instead continuously reconstituting and revising relationships as they cautiously feel their way towards (or away from) the joint definition and resolution of problems. These relationships are stably and systematically intermediate between arm's-length and collaborative, and are characterized by ongoing contradictions that sit uneasily with the sociological literature on network production forms.

Part III (Chapters 6–7) examines the policy implications of the findings in Part II and concludes the book. I argue that absent recourse to extra-firm institutional supports, there are clear limitations to the spread of the collaborative interfirm production that a 'high-road' American manufacturing economy would require. But at the same time, partial collaboration and active efforts by large manufacturers and some of their suppliers to build long-term relationships is suggestive of the possibility of encouraging more. This contrasts prominent claims in comparative political economy that historically 'liberal market' economies—such as the United States—lack the business-coordinating capacity required to build such institutions. The argument relies heavily on the example of policy experiments in Wisconsin to show that it is in fact possible to mobilize latent business-coordinating capacity even in the ostensibly unfavorable context of Midwestern American manufacturing.

An Issue of Terminology: The 'Original Equipment Manufacturer'

Throughout this book, I generally refer to manufacturing firms with one of two terms—'original equipment manufacturer' (OEM) and 'supplier'—which I characterize as two fundamentally different roles taken by organizations in today's manufacturing (though in empirical fact, some companies may take on both roles). The latter term is straightforward: it refers to companies that sell what they make to other (usually larger) manufacturers, and that thus have their access to the final consumer market mediated by those other companies. The former term—OEM—is standard in manufacturing, and refers to the (usually) large companies that sell products for the most part to retailers, though sometimes directly to consumers. Examples (none of the following were interviewed for this project) might include Ford, Caterpillar, Honda, Craftsman, General Electric, and so on. I use the term OEM throughout the book to refer to the large firms with market power that purchase components from suppliers for two

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reasons: first, it is standard in manufacturing, and interviewees use it often; and second, using the more generic 'customer' risks confusion between consumers buying finished goods—who are not really discussed much in this book—and companies buying intermediate goods from other manufacturers, which are discussed.

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