industry auto town in the American manufacturing belt , and, in 1937, the founding home of the United Auto Workers of America.

THE DIMENSIONS OF DEINDUSTRIALIZATION

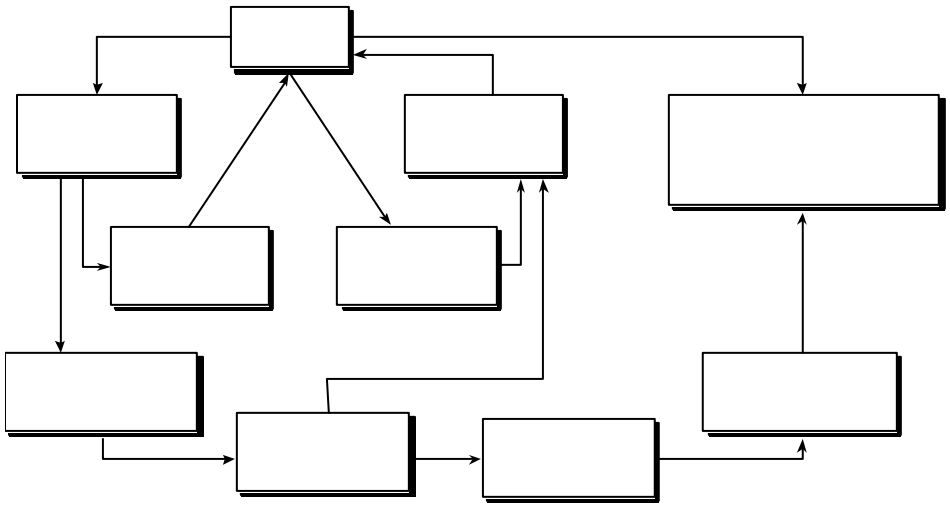
It is well known that the manufacturing sector among industrialized economies, in relation to the service sector, has been in *relative* decline throughout the 20th century, especially when measured in terms of direct employment (Table 3.14). The term 'deindustrialization,' only began to be widely used in the 1970s, however, notably in relation to the UK economy (Singh 1977) where the manufacturing sector was experiencing *absolute* decline. Indeed, according to Thirwell (1982), deindustrialization is best defined as absolute declines in manufacturing activity, particularly as measured by employment levels, in a nation (or region) over a long period of time. At the same time, it needs to be emphasized that there are no commonly accepted yardsticks for *precisely* defining deindustrialization in terms of minimum levels of (net) job loss, minimum time period or even with respect to the most appropriate geographic boundaries. In practice, deindustrialization is used rather loosely in reference to varying degrees of job loss, time periods and geographic scales. Moreover, employment change does not necessarily imply that investment and production changes in the same direction; job loss may be associated with modernization.

Given these caveats, the UK provides the defining case of national deindustrialization (Singh 1977; Bla7s I, ti chaneover,J20.74 00.25v-0v2bjT*(I009 The sam)8.4rees . 0 3ductr5 Tw(nees2D0.0009e

whole in 1994 are significantly greater than in 1966, although there has been little net change since 1980 (Table 3.3). A more precise (and narrow) definition of the manufacturing sector based on US government data, however, reveal significant job losses which have been especially severe in the Manufacturing Belt (Figure 3.9). The general consensus is that this region has experienced deindustrialization (Bluestone and Harrison 1982; Crandall 1993).

However defined, deindustrialization should be recognized as a process, specifically as a process of cumulative causation in reverse (Figure 16.1).

Figure 16.1
Myrdal's Process of Cumulative Causation in Reverse



Source: Adaptations based on Keeble's 1967, illustration of the cumulative

In this view, industrial decline gathers its own momentum as declines in sales and job losses in one industry translate into declining purchases from other industries who in turn cut back jobs and sales. As the process deepens the ability of firms to find capital for investment and innovation becomes more difficult. Yet, if modernization is not attempted equipment inevitably becomes increasingly obsolete and less efficient. At the same time, attempts at innovation can fail, potentially entrenching conservative attitudes and pre-occupation with cost cutting rather than market development. Indeed, a pre-occupation with cost cutting without reference to market roles tends to encourage firms to focus solely on paths of rationalization and closure.

Such a viscious, interrelated, cost-cutting spiral of declining market shares, jobs and investments are important themes in the depiction of deindustrialization in the UK and the US (Bluestone and Harrison 1982; Eatwell 1982). Yet, if these core regions, which were once thought to be the very definitions of self sustaining growth, could within a generation represent self sustaining decline, presumably yet another 'U-turn' is possible.

Recessions

Deindustrialization is a long term process in which there are permanent reductions in jobs and industrial capacity. In practice, job losses and divestments have typically occurred during particular economic downturns or recessions. Recessions, however, do not automatically imply deindustrialization. Indeed, during the 1950s and 1960s, recessions were typically associated with temporary job reductions and temporary increases in rates of unemployment. During this period, in the UK and much of Europe, full employment typically meant unemployment rates of 2-3% while recessionary unemployment rates of 5-6% were regarded as severe, and politically unacceptable. In North America at this time, corresponding rates were modestly higher but the general pattern was similar.

During the 1970s, however, recessions became increasingly severe and the recession which began in the late 1970s and early 1980s was marked by downturns in jobs, profits and capacity not seen among western capitalist economies, most notably the UK, France, Italy and the US, since the 1930s (Townsend 1983: 29). Bearing in mind that the particular timing of recessions has varied among countries and among regions within countries (Norcliffe 1990; Green, Owen and Winnett 1994), it was this recession that confirmed that western economies were in the throes of fundamental change. Unemployment rates well above 10% occurred widely and many regions, including in the American Manufacturing Belt, the industrial heartland of the UK and the Ruhr (Table 16.1), recorded rates well in excess of this level. By 1982, for

example, unemployment in Flint, Michigan, was over 27%. Moreover, many of these job losses were permanent and did not 'bounce back' on the next up-swing.

Table 16.1

Unemployment Rates in the Recessionary Crisis Circa Early 1980s: Selected Localities in Germany, the US and the UK

Germany				
	1980	1982	1984	1987
Duisberg - Oberhausen, NRW	6.2	10.2	15.6	15.9
Dortmund - Unna, NRW	6.0	11.4	15.4	15.6
Germany	3.8	7.5	9.1	8.3
United States				
	1978	1980	1982	1984
Detroit, MI	8.3	18.5	20.3	12.2
Flint, MI	8.8	18.2	27.1	13.4
Lansing, MI	6.5	9.2	14.2	8.7
United States				
United Kingdom				
	1978	1980	1982	1984
Coventry, West Mid	6.3	8.2	13.9	
Sheffield, S. Yorks	4.3 - 5.5	7.9 - 12.9	13.3 - 14.6	13.6 - 15.1
United Kingdom	5.6 - 6.6	8.4 - 12.4	12.3 - 13.3	12.4 - 13.4

Sources: Kommission Montanregion 1989: 172; Clark 1986: 130; Healey and Clark 1984: 306; and South Yorkshire Statistics, (1979, 1982 and 1984).
Notes: NRW refers to North Phine Westphalia, MI to Michigan, West Mid to West Midlands and S. Yorks to South Yorkshire. The unemployment data for Sheffield and the UK are ranges for highest//lowest monthly rates. In 1982 and 1984 the range is for 82/3 and 83/4

In 1987, communities in the Ruhr were still experiencing unemployment levels in excess of 15%. It should be noted that in all these regions, job losses typically involved high income union jobs and white collar jobs, including those of management.

Thus, recessions which in the 1950s and 1960s meant temporary change, have heralded permanent changes in the 1980s and 1990s. As part of this shift, there has been a dramatic shift

in what is considered socially and politically acceptable levels of unemployment. In countries such as the UK, US and Canada, for example, unemployment rates of 8-10% are now widely considered 'normal.' Indeed, 'recovery' from recessions has frequently not reduced unemployment rates significantly and the idea of 'jobless growth' has gained currency. If the unemployment rate has become a less sensitive indicator of the business cycle than it used to be, however, the consequences of unemployment for individuals are an ongoing and increasing problem.

Unemployment: the social consequences

Unemployment is the immediate, most significant problem created by recession and when combined with deindustrialization becomes particularly serious. In the UK's axial belt, the American manufacturing belt and the German Ruhr soaring unemployment meant alternative sources of employment were not locally available, at least of the same income. Moreover, as unemployment spread nationally, migration became even less of an effective response for individuals even if in a position to move. Even in Germany, with its record of employment creation based around comprehensive and well articulated training schemes, there has been no easy solution to rapidly rising unemployment. Since Germany's unemployment rate rose to over 9% by 1984, for laid-off workers in the Ruhr, declining local employment opportunities was not particularly ameliorated in the rest of the country where there was also an increasing number of people looking for work. In fact, unemployment in the Ruhr (and Germany) remained high during the latter part of the 1980s. In March of 1988, for example, the labour exchange region of Dortmund recorded unemployment rates of 18.5% while the other major labour exchanges in the Ruhr were all higher than 16% at this time (Aring et a1 1989: 65). By March 1989 rates of

laid off by the closure of a steel works in She

question of 'betraying class' was simply irrelevant (Hudson and Sadler 1986). A more comprehensive study in the Ruhr found unemployment to be concentrated among the unskilled although by no means limited to those 'without qualifications.' In addition, significant shares of the unemployed were out of work for at least one year and were at least 45 years of age (Table 16.3). Notwithstanding statistical characteristics, unemployed in old industrial districts has bitten deeply, affecting skilled and unskilled, young and old, those with families of their own and those without while the loss off jobs by older workers have not presented younger workers with opportunities.

Table 16.3

Ruhr Region: Selected Characteristics of Unemployed, 1986

Labour Exchange Region	Without Qualifications %	Length of Unemployment (%): 1-2 years	> 2 years	Age of Unemployed (%): 45-54	55-64
Duisberg	64.5	20.3	22.7	16.0	21.8
Oberhausen	57.6	20.4	17.8	18.0	18.1
Essen	63.5	19.3	24.4	20.6	14.1
Bochum	67.3	19.7	23.6	16.6	16.4
Gelsenkirchen	60.7	18.8	22.9	19.0	16.7
Recklinghausen	56.4	18.8	21.6	17.3	14.6
Dortmund	61.4	18.6	25.6	17.4	18.8
North Rhine Westphalen	61.6	18.0	18.9	18.1	13.6

Source: Kommission Montanregionen 1989: 174. See also Aring, Butzin, Danielzyk and Helbrecht 1989: 45.

Unemployment of these magnitudes imposes considerable problems for individuals, families and communities. Individual workers who are permanently laid-off often suffer shock, profound uncertainty as to what to do and a profound loss of personal esteem and dignity. In a

regions the jobs lost have been primarily high paid jobs involving males while to the extent jobs have been created they have been targeted towards lower paying occupations involving females. In deindustrialized regions this trend also imposes difficult social problems as within families traditional gender roles are often reversed and family income declines. More generally, women are more likely to be employed, but at low wages. For single parent families, which usually, if not always, involves mothers as the main or only parent, working for low wages brings its own stresses to child care. These social consequences of deindustrialization give urgency to the challenge of rejuvenation.

Local examples of deindustrialization

Just as industrialization is a geographically uneven process so is deindustrialization. Within countries deindustrialization is a spatially selective process in particular time periods (see chapter 3, especially figures 3.8-3.10). Similarly, deindustrialization affects some industries more than others at particular times. In the case of (West) Germany, from the mid-1970s to the mid-1980s one of the hardest hit regions was North Rhine Wesphalia where the average decline in manufacturing jobs was almost 14%. Within this region, the biggest losses occurred in the Ruhrgebeit (the industrial region of the Ruhr) where there were also substantial local variations in the rate of manufacturing decline, including a 34% job loss in the Gelsenkirchen labour market region and over 26% in the Duisberg-Oberhausen labour market region. In terms of industrial composition, job losses in the Ruhr were led by the iron and steel and coal industries, and sometimes both (Table 16.4).

Throughout Europe and the US many iron, steel and coal industries that were established in the 19th century in peripheral regions have been in decline for a considerable period of time (Martin 1988). In recent decades, iron and steel and coal making regions and communities within industrial heartlands have also experienced massive disruption (Hudson and Sadler 1983; 1986; 1989; Webber 1986). Deindustrialization, however, has not been confined to the iron, steel and coal industries.

which assemble complex products such as ships, autos, motor bikes, trucks, and various consumer electronics have particularly widespread implications for specialist component and processing manufacturers as well as for basic material suppliers, such as iron and steel firms. Thus deindustrialization is a process which fragments industrial districts directly and indirectly. Two examples are provided by Coventry and Sheffield, located in the northern spokes of the UK's axial belt (Figure 3. 4).

Table 16.5

Job loss in the transportation equipment industry:
Michigan auto cities, 1978 and 1982

that Benjamin Huntsman, a clockmaker from nearby Doncaster, pioneered his crucible steel making process in the 1740s thus establishing Sheffield as a founding spoke of the northern part of the axial belt. Sheffield's growth in the 19th century, was rapid and specialized, fueled largely by investments in iron and steel and tool making and to some extent by cutlery; by 1900 it housed a population of almost half a million people. Coventry's growth as a city of over 300,000 people occurred principally in the 20th century. During the fordist techno-economic paradigm, both cities enjoyed considerable prosperity and neither was included within the framework of UK's traditional regional policies of the 1950s and 1960s. In fact, Coventry's growth, as part of the West Midlands, was formally restricted. Between the late 1970s and mid-1980s, however, the decline of these two cities was extraordinarily fast.

Declines in manufacturing employment in Sheffield began in the late 1960s or early 1970s and increased rapidly after 1978. Indeed, by 1984 every other Sheffield job that existed in 1978 was lost (Table 16.6).

Table 16.6

Sheffield: Manufacturing Employment Change 1978-84

Industry	1978	1984	Job Loss	%
Metal mfg	59,200	22,300	36,900	-62
Mechanical Engineering	13,200	7,700	5,500	-42
Engineers Small Tools	10,000	5,100	4,900	-49
Food and drink	9,000	6,500	2,500	-28
Hand Tools, Implements	6,800	4,300	2,500	-37
Non-metallic Minerals	6,100	4,100	2,000	-33
Other Mfg	17,200	13,000	4,200	-24
MFG Total	121,500	63,000	59,100	-48

Source: Watts 1991a: 43

Moreover, the decline was strongest in the three dominant, most export oriented industries, notably metal manufacturing, mechanical engineering and engineers small tools. Within this

contractions. Thus, out of a net loss of 53, 000 manufacturing jobs, 46, 000 jobs were lost as plants contracted in size while a further 13, 000 jobs were lost in complete closures.

Table 16.9

Components of Employment change in Manufacturing,
Coventry Metropolitan District 1974-82

Job Gain Components		Job Loss Components	
Births	1,040		
Branch plants	818	Closures	13,506
Transfer openings	3,689	Transfer closures	2,891
In situ expansion	3,720	In situ decline	45,778
	+9,267	situ eh-664.6( )-2750(Transfer cl2T*0.sC01 ,s62,175.0005 Tw13835( )1	

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concerned about the vitality of manufacturing for two main reasons. First, manufacturing exports and imports can make massive contributions to balance of payments surpluses or deficits. Second, the manufacturing sector remains a primary source of technological progress and productivity increases which provide major contributions to economic growth. In the US, for example, between 1929 and 1968 productivity increases in the manufacturing sector were twice those in the service sector.

In the context of the balance of payments, the service sector has been a major positive influence for some time in both the US and the UK. Whether or the role of the service sector can be expanded in this regard to compensate for increasing deindustrialization is debatable. As Singh

(1975) notes in the case of the UK a substantial part of the country's invisible surplus stems from returns to capital outflows, including DFI, from the UK in previous time periods. The same point can be made regarding the US. Yet, the capital outflows in the first place reflect industrial strength

and the existence of large corporations with the resources and expertise necessary for international

expansion. The problem is that deindustrialization is by definition an erosion of industrial strength

and it is the more industrially powerful economies of Japan and Germany that are spawning an increasing share of capital outflows which ultimately become the basis for invisible earnings. With

respect to tourism, another important item of invisible trade (and services), Singh suggests it will be hard for the UK to increase its present role as an exporter as influxes of foreign tourists to Britain are offset by outflows of British tourists. Singh believes the balance between the inflows and outflows is not likely to change much. London does export financial services but whether or not the export of such services, or even maintained as deindustrialization proceeds, is debatable. For Singh (1975) deindustrialization constitutes a significant economic problem for the UK.

Moreover, the points he made in the mid-1970s are still relevant in the mid-1990s and are not inappropriate to the situation facing the US. For policy makers, however, the problem of deindustrialization is a complex one

The complexity of deindustrialization

Various theories of deindustrialization have been put forward. These theories differ in ideological perspective, the national and regional context in which they are developed, the extent to which they are formally presented and empirically supported, and in the explanatory emphasis placed on international trade, government bureaucracies, labour unions, investment, management, historical and cultural factors, economic philosophy and the organization of innovation. A summary 'listing' of the better known theories in terms of their primary explanatory perspective underlines the contested and complex nature of the deindustrialization process.

Trade perspectives - First, there are theories related to international trade (Singh 1975). Essentially these theories argue that deindustrialization occurs in a region as a result of foreign firms overpowering local firms in domestic and international markets. Trade-related explanations of deindustrialization can be classified into two types. The first approach emphasizes that it is imports from low wage developing countries that are undermining industry in high wage economies. A second, contrary version of the trade argument emphasizes that deindustrialization of some high wage economies are caused by imports from some other high wage economies who provide products that consumers prefer for non-price as well as price related reasons. These non-price characteristics relate to quality, servicing, reliability, delivery and marketing. A particularly important, contemporary interpretation of this second version, primarily associated with the US, is that massive Japanese exports are undermining US industries (and those elsewhere) especially as these exports far exceed Japanese imports. In fact,

Japanese trade policies have been accused for some time of 'export targeting,' in which the industries of other countries are supposedly systematically undermined while high levels of visible and invisible trade barriers are maintained around Japan's domestic markets.

Until relatively recently at least, actual trade performance suggests that imports from poor countries have not been a widespread source of deindustrialization in established industrial regions. While imports from the NICs, and developing countries in general, are definitely becoming more important, during the 1970s and the critical recession of the early 1980s these

arguments have been made in UK and German contexts (Fröbel, Heinrichs and Kreye 1980; Massey 1984; Taylor and Thrift 1985). In the US, Bluestone and Harrison (1982) further suggest that profits are too often used to fund corporate growth by acquisition rather than internally. They were particularly critical of conglomerate growth based on facilitating the movement of capital between industries on the basis of short term financial thinking.

While the capital mobility hypothesis is compelling, questions can be raised as to the extent to which it can account for deindustrialization, particularly in the early 1980s. In a detailed study of plant closures in the UK, for example, Townsend (1983: 41) found some examples of "the transfer of production to Third World countries...but, by and large the evidence is lacking on this point." Indeed, in aggregate terms, direct foreign investment (DFI) has remained concentrated within the industrialized countries (Table 11.2 and 11.3). DFI also generates benefits for donor economies (Figure 15.3). Foreign investment tendencies in foreign countries also needs to be related to the levels and motivation of domestic investments.

The relationship of investment with deindustrialization is itself controversial. On the one hand, investment in technological change which modernizes existing plants is frequently associated with job loss (Massey and Meegan 1982). A well known model of industry evolution also features the tendency of investment to be job replacing over time as firms shift their emphasis from developing products to increasing the efficiency of processes (Abernathy and Utterbach 1975; Chapman 1992). Yet, as this model notes investment in new technology can be job enhancing while technology itself has to be manufactured although not necessarily in the same region it is adopted. Moreover, in the absence of investment and technology change, that is the failure to modernize, the viability of industry will almost certainly deteriorate. Indeed, specifically in the British case, Eatwell (1982) has emphasized industry's widespread failure to invest and adopt new technology as a primary reason for deindustrialization. As an alternative to a commitment in long term modernization, Eatwell emphasizes the importance attached to "degenerate productivity growth" which is the more intensive use of old equipment which at best provides a short term solution to the long run problem of re-investment. In this view, it is the

lack of investment and technical change, rather than too much technology, that has more important consequences for deindustrialization.

Neo-conservattive perspectives - Neo-conservative or 'right wing' views are rooted in the belief that the economy works best when individuals are free to choose and to pursue their self interest in the context of market forces which are regulated by competition. Competition, within and between consumers and firms, is the great regulator which ensures fair prices, wages and profits and an efficient allocation of resources. In this view, restrictions on competition limit the pursuit of efficiency and may unfairly subsidize the inefficient.

Neoconservatives have essentially interpreted deindustrialization in the US and the UK as a result of restrictions on the 'rights' of individuals, as firms, workers and consumers, to choose and therefore to effectively compete. It should be noted that the emphasis in this view is on individual freedoms and competition rather than cooperation and collective rights. In the context of industrial decline, neoconservatives have been particularly concerned with restrictions on competition that result from 1) the growth of the public sector; 2) the strength of trade unions; and 3) high income taxes. In the context of the UK, for example, Eltis and Bacon (1976) argue that

government bureaucracies divert resources from sectors regulated by competition to one where non-market considerations predominate. In their view, the growth of public sector 'crowds out' private sector initiative by absorbing labour resources, making them expensive, introducing excessive 'red tape' and by diverting capital from growing to declining industries for political reasons. Since governments can tax they have considerable discretion afford to fund bureaucracies and monopolies without facing the discipline of the market place. In the conservative view, however, high taxes are a double disincentive to the effective operation of the economy; they reduce returns on investments by firms and dissuade individuals from looking for work by providing welfare. Moreover, in the conservative view, unions similarly constrain the

(*idem:* 73). For some observers, neoconservative solutions have become part of the problem (Eatwell 1982). In the case of the UK, for example, monetary policy which allowed 'markets' to maintain an overvalued pound in the 1980s was particularly devastating to export competitiveness in manufacturing.

Management perspectives - Apart from the conservative view which believes management to be unfairly shackled, most theories of deindustrialization at least implicitly raise questions about managerial choices and attitudes. Other studies, notably by Williamson *et al* (1983; 1989) in a UK context, have brought these questions to the forefront. Williamson *et al* (1983; 1989) centre their argument on the concept of "enterprise calculation" which in a broad sense refers to "the exercise of managerial discretion within external and institutional constraints (1989: 81). In other words, enterprise calculation refers to how firms develop long range planning or strategies (Ansoff 1965). Williams *et al* (1989) focus particularly on the financial, production and market calculations or plans of major corporations in several important UK industries during the 1970s and 1980s, including the auto industry, and have concluded that these calculations led to failure because of their internal inconsistency. In the case of Austin Rover, for example, Williams *et al* (1987; 1989) suggest that massive corporate miscalculations over market size and share within the UK, while simultaneously withdrawing from export markets, undermined a potentially effective restructuring of production and labour relations and aggravated financial problems.

It also might be noted that labour relations systems are agreements between management and labour and in the collective bargains developed in the UK and the US management, as well as labour, preferred an adversarial system which left management in full control over long range planning and the timing, scale and location of investment. Moreover, as noted previously, union demands for job demarcation reinforced management's established commitment to scientific management or Taylorism (Marshall and Taylor 1992).

A more general, historically based critique

urbanization. Rather, even as industrialization became such a dominating trend in the UK, the landed aristocracy maintained cultural hegemony and shaped the aspirations of the new industrial class to reflect their own 'bucolic' interests. Industry became a means to an end rather than an end in itself. Moreover, in the UK, public (that is, private) schools and the Oxbridge axis have provided a remarkably narrow funnel for the education of leaders in government, finance, industry and aristocracy and one which has not highly valued industry.

Institutional perspectives - There are explanations of deindustrialization which incorporate some of the arguments already mentioned within broader frameworks which stress the role of domestic institutions and domestic industrial cultures. There are at least two important expressions of this approach, one emphasizing national variations in industrial culture and economic philosophy (Dyson 1983; Eatwell 1982) and the other variations in national innovation systems (Freeman 1982).

In the first version, in which industrial culture is interpreted as distinct sets of beliefs, government-business relations and microeconomic practices, a distinction is made between economies, notably the US and the UK, in which economic liberalism prevails, from economies in which economic philosophies of statism and corporatism prevail, such as in Japan and Germany respectively (Dyson 1983). In the former economies, perhaps especially the UK, it is argued that liberalism has led to a pre-occupation with cost cutting, destructive forms of competition based on narrowly defined concepts of self interest and schisms in the financial and industrial sectors of the economy in which the priorities and preferences of the former are given precedence over the latter. Economic liberalism, in particular, is accused of encouraging a pre-occupation with 'short term' financial performance at the expense of longer run industrial viability. Governments are also criticized for their 'short termism.' Pollard (1982), for example, is particularly critical of British 'stop-go' policies in the 1950s and 1960s and particularly of the regular attempts by successive govemments to inhibit investment, justified on the short term basis of reducing inflation during business up-turns despite the evident need for much of British

industry to modernize. In contrast, in statist and corporatist industrial cultures, competitive relations are ameliorated by stronger tendencies towards cooperation, community relations and a willingness to adopt long term perspectives towards industrial change.

In a related institutional perspective, Freeman (1982) and others (Freeman and Perez 1987; Nelson 1988) argue that the nature of innovation systems not only vary between advanced capitalist countries and both developing and centrally planned economies but also within the former. Again a particular distinction is made between the innovation systems developed in Japan and Germany and the US and the UK. National innovation systems are defined in terms of the organization of all those processes underlying innovation, specifically research and development, marketing and production activities occurring in business and more generally to education, training, research and public sector social and industrial policies which provide the infrastructure underlying innovation. According to Freeman (1988), for example, while Japan has a highly coherent innovation system which closely links in a highly flexible, 'loopy' way manufacturing, R&D and marketing and gives priority to reverse engineering and incremental innovation as well as to more radical technical change (see Figure 2.9). In the US and UK, on the other hand, innovation systems were often organized in a highly structured, linear way and have often not been complemented by appropriate investments in manufacturing processes (Florida and Kenney 1990a and 1990b). For the past half century, the US and the UK have also given much greater attention to military technology than in either Japan or Germany. From this perspective, deindustrialization is at least partly explained with respect to differential abilities to innovate products and processes and to fully exploit their potentials, specifically with respect to manufacturing.

Traditionally, there has been substantial variations in national industrial cultures and innovation systems and the industrial supremacy of countries that expoused economic liberalism has been successfully challenged by rival industrial cultures. Yet, no industrial culture has proven immune to deindustrialization and the lines between rival industrial cultures are

becoming increasingly blurred (Katzenstein 1985). Such distinctions reflect part of the legacy of industrialization and add to the appreciation of the complexity of deindustrialization.

The various theories of deindustrialization not only provide different explanations but also different policy prescriptions. In the neo-conservative, for example, self interested competition and individualism are the foundations of wealth and progress. Thus, conservatives recommend reducing the power of unions, deregulation with respect to rules governing business, the privatization of the public sector, and lower taxes in order to increase individual economic freedoms as much as possible. Critics of management, on the other hand, may be more skeptical of giving managers more freedom! Those who argue that innovation is the key to industrial rejuvenation are more likely to recommend industrial policies which involve more rather than less goverment and stronger ties of cooperation among the main institutions of the economy (Britton and Gilmour 1978; Freeman 1982). In practice, choice of policy is perhaps as much ideological as it is a considered response to the testing of theories.

Consequently, particularly in the UK and the US, when deindustrialization started to savage local industrial structures, there were few or no economic development agencies and programmes in place, at national or local levels, to plan for economic diversification, and limited capacity for dealing with the social and psychological implications of large scale lay-offs or policies specifically dealing with plant closure.

Regions, cities and communities within the industrial core regions, in other words, were not politically or socially prepared for the economic crisis of deindustrialization that dramatically gathered steam in the late 1970s and early 1980s. Moreover, as deindustrialization became apparent, national governments, especially in the UK and US, adopted a brand of conservatism which disparaged government interference in the forms of subsidies, including regional policy. In any case, the increasingly 'national' nature of economic problems rendered regional policy less meaningful. In addition, the kinds of 'top down' regional policies introduced and administered by national governments in the 1960s were increasingly criticized from within the regional planning and development literature (Friedmann and Weaver 1979; Trist 1979; Sharpe 1991). From this perspective, top down regional policy was too remote, inflexible and non-democratic to respond to the myriad locale variations in problems, opportunities and values. Rather, local development required local initiative - 'bottom-up' planning in which local participation and locally generated ideas play crucial roles. For the industrial core regions experiencing deindustrialization for the first time in the 1970s, policies of rejuvenation have typically represented some form of locally inspired 'bottom-up' development.

Entrepreneurialism does not mean higher levels of government are absent from local development planning. Higher levels of government remain important sources of funds, coordination and policies that affect local development in a variety of ways. Much funding of local development projects still comes from national and regional governments but is often negotiated on an *ad hoc* basis involving a variety of departments and for projects which have been generated locally. Moreover, many policies can only be effectively introduced by national or regional governments to ensure uniformity and to reduce the risk of business avoiding

communities with such a policy (Watts 1991b). At the local level, Harvey (1989) has characterized trends in planning as a shift from "managerialism" to "entrepreneurialism" as cities and communities once solely concerned with service provision and tax collection ('managerialism') now actively promote economic development ('entrepreneurialism'). Cox and Mair (1988; 1991) interpret this trend as a revival of boosterism designed to re-establish capital's hegemony over communities which are reduced to competing with one another. In practice, it is difficult to so categorize the diversity of local development initiatives.

The diversity of local responses

In practice, local development is highly diverse in terms of process, involving a wide variety of organizations representing a wide variety of community interests, and highly diverse in terms of outcomes (Cooke 1989). Trist (1979), for example, documents several cases from the 1970s of locally inspired development from the UK, the US and Canada each of which is highly

Dortmund lost 42% of its productive employment and total employment in the city declined by 40,000, relative losses much greater than for Germany as a whole (Table 16.10).

Table 16.10

Employment development 1970 to 1985 in Dortmund, the Ruhrgebiet and the Federal Republic of Germany as a whole

	1970 absolute	%	1985 absolute	%	Variation 1970 to 1985 %
		DORTMUND			
Agriculture, forestry	2,270	0.8	820	0.3	-64.0
Producing sector	139,880	50.3	81,496	34.2	-41.0
Services	136,150	48.9	156,512	65.5	+14.6
Total	278,300	100.0	238,828	100.0	-14.2

Table 16.11

Actors at local and state levels involved in local development policies in Dortmund

Economic development programme/policy	Local government				Politicians and political committees			Public and semi-public institutions					Regional		State ministries			Others		
	LED																			

of these policies is to encourage innovation, for example, by providing support to new technology oriented firms, aiding existing firms to innovate, providing special help to Hoesch to modernize its iron and steel works, helping the establishment of public research facilities, the building of a technology centre (completed in 1985) and by creating a science and technology park. In addition, the recycling of derelict land provides space for development while enhancing environmental values, an important location factor for high tech industry. Similar observations made be made regarding policies to improve old public infrastructure originally built to meet the needs of the iron, steel and coal complex. In practice, a strong thrust of Dortmund's economies policies are to support small and medium sized enterprises. In addition, it is worth noting that in each of these 10 policies at least five, usually more, different organizations played 'lead' roles or were 'highly involved.'

It remains to be seen whether or not these initiatives will be successful. Hennings and Kunzmann's (1990: 221) interim assessment is positive with both with respect to impacts on the local industrial base and the local labour market. In the UK's axial belt and the American manufacturing belt other communities are having some success in adjusting ravaged economies (Clark and Healey 1985; Roberts *et al* 1990; Marshall 1990). At the same time, there has been criticism of local development and even if judged from their own objectives there have been failures. *Roger and Me,* for example, painted a rather dismal picture of the manifold attempts to promote development by Flint, attempts which included the promotion of: small firms (for example, a firm which manufactured lint rollers); tourism, including by the construction of an industrial museum (auto world) and a convention hotel; the retail sector; construction of a new prison; and visits by Ronald Reagan and an evangelist, among others, to provide personal advice on coming to grips with deindustrialization. Flint's efforts, however, seem to have largely failed; the most significant investments, for example, namely the museum and the convention hotel have both closed.

Attempts to rejuvenate deindustrialized regions are by no means limited to manufacturing. Deindustrialization has been of such a scale that cities such as Dortmund,

re-develop, such systems. In the axial belt, Ruhr and American manufacturing belt, recent studies suggest that such a possibility is realistic (Florida 1994; Grabher 1991; Healey and Dunham 1994).

In the case of the Ruhr, Grabher (1991) argues that the traditional vertically integrated iron, steel and coal complexes, "cathedrals in the desert," have been dismantled and are being

Yet, if the powerful advantages incorporated within industrial core regions on the scale of the American manufacturing belt can be reversed within a decade then the possibility that the relentless downward spiral of deindustrialization can be arrested should be recognized. Indeed, Florida (1994) has argued that just such a reversal is underway in the American manufacturing belt, particularly with respect to the core Midwest states of Ohio, Indiana, Illinois, Michigan, Wisconsin and Minnesota, and these states plus Pennsylvania and New York. He notes that within the wider processes of creative destruction, rejuvenation and new forms of production organization are not limited to 'new industrial spaces' but are possible in old industrial districts.

Florida notes that in 1990, the Industrial Midwest produced $250 billion worth of manufacturing goods, about one-quarter of the national total (Table 16.12); if New York and Pennsylvania are included manufactured output in 1990 amounted to $365 billion or 36% of the national total. Moreover, after the massive real decline in manufactured output between 1977 and 1982 of over -29%, between 1982 and 1987 real manufacturing output grew at almost 16% a year. Real growth in manufacturing value added was even faster (and output for all sectors in the economy greater in 1990 than in 1977). In addition, real investment in 1990 in the Midwest was similar to 1977 levels. On the other hand, in real dollar values, manufactured output in 1990 was still only 82% of 1977 levels and employment levels in the 1990s are substantially lower than in 1980 (Figure 2. 9). Growth rates in manufacturing between 1987 and 1990 were also considerably reduced and the early 1990s was another recessionary period.

The basis for Florida's (1994) optimistic scenario is that underlying the statistical record of improvement (even if this improvement slowed in the late 1980s and is not measured by jobs) there is a "deeper transformation of the organization of production" occurring in the Midwest. According to Florida, this transformation involves a shift away from Taylorist work principles towards 'high performance organizations' based on a higher skilled, more flexible workforce organized in teams and committed to high quality, innovative production (Figure 11. 4; Hayter forthcoming). In this view, DFI from Japan, as well as from ss and yidas wes0.0008 TjsisU9.785 0 TD0.0007 T

labour bargains based on team work, continuous training and a commitment to innovation and product quality. In addition, Florida notes that high performance organizations in the region have sought to develop suppliers which are similarly committed to high performance principles. In autos and electronics products in particular there are signs of flexibly specialized production systems. Florida further notes the increasing export commitment among firms in the Midwest, including small and medium sized firms.

Table 16.12

Trends in Key Economic Indicators for the Industrial Midwest, 1970 - 1990

					Change (%)		
	1977	1982	1987	1990	1977-1982	1982-1987	1987-1990
Output	754.6	648.3	780.0	819.0	-14.1	20.3	5.0
($ Billions)	*425.0*	*581.5*	*823.4*	*994.8*	36.8	41.6	20.8
Manufacturing Output	248.0	175.8	203.9	204.5	-29.1	15.9	0.3
($ Billions)	*139.7*	*157.7*	*215.3*	*248.4*	12.9	36.5	15.4
Manufacturing Value-Added	301.5	-26.00	274.1	281.0	-26.0	22.8	2.5

According to this analysis, rejuvenation in the Midwest depends on the acceptance of the high performance model. Even if it is a management goal, such acceptance is likely to take many years, particularly when the workforce is unionized, as the Powell River experience in British Columbia reveals (Chapter 12). Any shift towards high performance, or other models for that matter, is likely to be geographically uneven within the Midwest. A recent study of employment change between 1977 and 1987 in various categories of 'dynamic industries' in 12 metropolitan areas in the US revealed highly divergent patterns, including with respect to several metropolitan areas within the industrial belt (Pollard and Storper 1996). This study also could not find any consistent evidence linking growth patterns with agglomeration tendencies.

CONCLUSION

According to the theory of cumulative advantage, established industrial regions, historically best evidenced by the UK's axial belt, the German Ruhr and the American manufacturing belt, have enormous advantages over more peripheral and newer centres of industrialization. According to the theory of new industrial spaces more peripheral and newer centres of industry offer powerful attractions to new investment over the established regions. The historical record shows that the core industrial regions of the UK, Germany and US have often experienced the ups and downs of business cycles and the ferocity of full blown depression, such as that of the 1930s. Following the depression of the 1930s, however, the industrial base of the core industrial regions emerged in tact and began to grow, much stimulated by World War 2 and the subsequent long boom. In contrast, the crisis of deindustrialization that they have experienced since the 1970s during the IT techno-economic paradigm represents a fundamental turning point for these regions. Their industrial power has been challenged, part of their industrial base has been permanently removed