

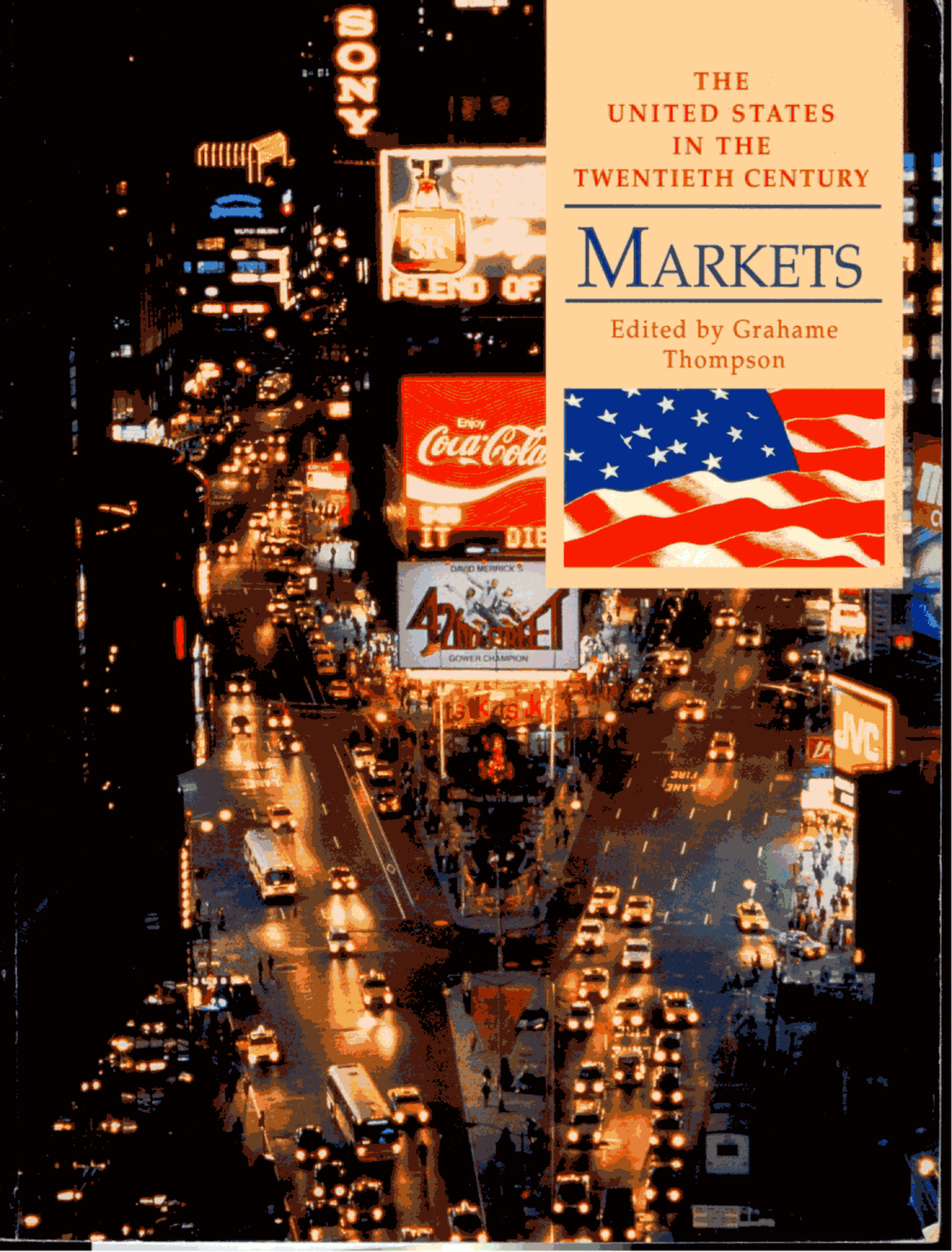
THE  
UNITED STATES  
IN THE  
TWENTIETH CENTURY

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# MARKETS

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Edited by Grahame  
Thompson



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## A NATION OF REGIONS: THE ECONOMIC GEOGRAPHY OF AMERICA

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Richard Florida ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★ ★★

### 1 INTRODUCTION

Picture America. What do you see? The hustle and bustle of New York with Wall Street, the theatre district and bohemian neighbourhoods. New England, the birthplace of the nation with its great universities of Harvard, Massachusetts Institute of Technology (MIT) and Yale. The sprawling, grey *factory complexes of the Industrial Midwest*. *The high-technology industry* and natural beauty of California. The old South with its tobacco and cotton plantations, or the new Sunbelt of modern skyscrapers and sprawling cities like Atlanta. The rugged terrain and snow-capped mountains of the Pacific Northwest.

America is a nation of regions. Thinking of America often causes one to think in terms of regions. Everything in America is regional — politics, culture and especially economics.

Writers and scholars who have attempted to describe the American experience have often looked to regions as a source of America's uniqueness. Writing one hundred years ago, the eminent American historian Frederick Jackson Turner, proposed that the source of America's distinct social, cultural and economic nature — its difference from Europe — lay in the urge and ability of Americans to constantly open up new territory at 'the frontier'. For Turner, the American experience — 'like a huge page in the history of society' — could be read as a sequence of the opening up of new regions on the frontier. 'The role of frontier regions in the American experience,' he wrote:

...begins with the Indian and the hunter; it goes on to tell of the disintegration of savagery by the entrance of the trader, the pathfinder of civilization; we read the annals of the pastoral stage in ranch life; the exploitation of the soil by the raising of unrotated crops of corn and wheat in sparsely settled farming communities; the intensive culture of the denser farm settlement; and finally the manufacturing organization with the city and factory systems.

(Turner, 1920)

Writing in the 1930s, Robert E. Park, whose influential studies of the development of the city pioneered much of modern sociology and urban studies, described America's social and economic evolution in terms of the development of increasingly complex urban and regional systems, defining regions as 'organic units':

My conception of a region is one in which vegetation, animal and human life have acquired a character due to permanent association; to the fact that struggle for existence has brought about some of equilibrium among the competing and co-operating organisms.

(Park quoted in Odum and Moore, 1938)

As we move through the 1990s towards the twenty-first century, those who wish to understand the American experience have once again discovered the importance of regions. The past decade has seen an outpouring of popular and academic writing on the role of regions in contemporary social and economic life. Regions are once again seen as crucial organizing units of American society. Indeed, as the rise of the multinational corporation and the globalization of economic activity threaten to 'annihilate geography' and even endanger the viability of the nation-state, regions are seen as ever more important units of economic, political and social activities. America's foremost economic geographer, Richard Walker of the University of California at Berkeley, defines the role of regions in contemporary society as crucial sources of co-ordination and integration of complex forms of human and economic activities, writing that:

Regions are systems of cities and towns in rural matrix, networks down whose channels flow deep and swift currents of goods, labor, information and money. Major transportation and communication arteries cement these linkages, but so do filaments of personal knowledge, institutional ties and cultural practices.

(Sayer and Walker, 1992, p.143)

In a recently published essay, Kenichi Ohmae, the Chairman of McKinsey and Company in Japan, points out that: 'The United States has never been a single nation'. It is a collection of regions or what he calls 'region states', such as: 'northern and southern California, the "power corridor" along the East Coast between Boston and Washington, the Northeast, the Midwest, the Sunbelt and so on'. Ohmae goes on to suggest this new form of economic and social organization — the 'region state' — is coming to replace the nation-state as the centrepiece of economic and social life.

The nation-state has become an unnatural, even dysfunctional unit for organizing human activity and managing economic endeavour in a borderless world. It represents no genuine, shared community of economic interests; it defines no meaningful flows of economic activity. On the global economic map the lines that now matter are those defining what may be called 'region states'. Region states are natural economic zones. They may or may not fall within the geographic limits of a particular nation — whether they do is an acci-

dent of history. Sometimes these distinct economic units are formed by parts of states. At other times, they may be formed by economic patterns that overlap existing national boundaries, such as those between San Diego and Tijuana. In today's borderless world, these are natural economic zones and what matters is that each possesses, in one or another combination, the key ingredients for successful participation in the global economy.

(Ohmae, 1993, pp.78-9)

The following pages provide a historical overview of the role of regions in American society, focusing in particular on the regional bases of social and economic organization in twentieth century America.

### *SUMMARY*

America is and always has been as much a nation of regions as a single national entity. Regions can be defined in a number of different ways: as 'organic units'; as systems of networks; or as 'regional states' formed by natural economic zones. The regional basis of economic activity in America is increasing in importance.

## 2 REGIONALISM AND BIRTH OF THE NATION

America's regional identities were strongly shaped in the nation's first century. Born as an agricultural nation, the Industrial Revolution of the nineteenth century brought rapid change to the American economy, its politics and its culture. During the early nineteenth century, New England emerged as a centre for textile manufacturing. Many of the towns and communities surrounding Boston became centres of modern factory production. Lowell, Massachusetts emerged as an advanced centre for factory production. In these heady times, Lowell was seen as a technological utopia — a source of unparalleled economic growth. By the mid-nineteenth century, industrialism spread to New York, New Jersey and Pennsylvania as textile and other types of factory production took root throughout the North.

Of course, industrialism was not without its problems. Rapid industrialization created a huge demand for land and labour, forcing many households off the farm and into factories. Working conditions in many of these early factories were horrifying and use of child labour common. The once heralded utopia of Lowell's textile mills came to be seen in a reverse light — with reports of conditions in what came to be called Lowell's 'satanic mills'.

The rapid industrialization of the North led to serious political tensions, particularly with regard to the South which remained a centre of traditional 'plantation' agriculture. As is well known, these tensions are what ultimately shaped the Civil War. The Civil War was at the heart of American 'exceptionalism' — its difference from Europe. Turner's ideas about the importance

of the frontier and frontier regions continue to be a powerful force in American thinking and American life to this day.

### *SUMMARY*

The early regional division within America was based upon the nineteenth century industrialization of the North as compared to the traditional 'plantation' agriculture of the South. This division was important in determining the reasons for the Civil War.

## 3 THE INDUSTRIAL REVOLUTION AND THE MIDWEST MANUFACTURING HEARTLAND

The Civil War unleashed a potent wave of industrial growth and economic expansion. Arms makers perfected new techniques of standardization and mass production. The nascent iron and steel industry was given an enormous boost. Former frontier outposts, like Pittsburgh, Pennsylvania were transformed into sprawling industrial centres. The Midwest stood poised for industrial expansion.

The industrial growth of the Midwest — stretching from Pittsburgh to Buffalo New York, west through Ohio, Indiana, St. Louis, Missouri, Chicago, Illinois and into parts of Wisconsin and Minnesota was a new kind of industrialism. Earlier epochs of industrialization in the United States, in England, and on the European continent revolved around groups of craft workers and small-scale factory production. The new epoch of industrialization was premised upon a new system of large-scale factory production — which came to be called the 'American system of manufacture'. This new system combined two powerful economic rules — specialization of tasks and economies of scale and size. Frederick Taylor's ideas of 'scientific management' and 'time-and-motion study' brought increased specialization and greater efficiency to American manufacturing. Specialization broke down work tasks into their simplest and most basic elements. Now virtually any worker could perform these tasks. Specialization broke the power of skilled craft workers and their unions, and enabled American factories to 'import' large numbers of unskilled immigrant workers from Europe. Economies of size and scale were evident in the rise of giant factory complexes in Pittsburgh, Chicago and elsewhere employing tens of thousands of workers to produce steel and other industrial products.

At the turn of the century, a final element was added to this emergent industrial system — the moving assembly line. Pioneered by Henry Ford, for use in the automobile industry, the moving assembly line afforded management greater control over the pace of work. The automobile factories of Detroit became the international exemplars of this new age of mass production or 'Fordist' manufacturing. Now industrial capitalists and their

managements could effectively dictate the flow and pace of work. The combination of specialization, economies of scale and the moving assembly line produced tremendous efficiencies and the American industrial heartland eclipsed all other nations to emerge as the pre-eminent industrial region of the world. This new system of 'mass production', born and centred in the American Midwest, propelled the nation to economic greatness.

### *SUMMARY*

The Civil War was a major stimulant to the industrial expansion of the 'frontier' Midwest region. It was here that the 'American system of manufacturing' was born, involving large-scale factory production. Later Henry Ford added the moving assembly line to create the industrial heartland of twentieth century America based upon the Midwest's mass-production system.

## 4 REGIONS WITHIN REGIONS: MASS PRODUCTION AND THE RISE OF SUBURBIA

The rise of this new system of mass production — or 'Fordism' as it came to be called — had powerful implications on the organization of American society. America became a 'Fordist society' consuming the mass products — the cars, appliances, and electrical devices that came off the assembly lines.

Originally, American cities were 'walking cities' — tight, compact, with land uses, factory production, merchants, and residential living, all jumbled together. As industrialism progressed, wealth expanded, and transportation technology became more advanced, cities expanded. The rise of the electric street-car system allowed for the first wave of suburban expansion, or what the historian Sam Bass Warner (1962) has referred to as the rise of the 'street-car suburbs'. As the street-car systems stretched out to formerly rural areas surrounding New York City, Boston, Philadelphia, and other cities new areas for residential development were forged. This created new avenues for profit and wealth for financiers and developers and new areas for consumption for the emerging American middle class.

After the hiatus during the Great Depression, mass suburbanization occurred with a vengeance in the 1950s and 1960s. With a massive amount of virgin land available at the periphery of the city, suburbia represented yet another 'new frontier' to be settled. The mass acceptance of the automobile, new housing policies and programmes which made cheap mortgages widely available, and massive public investment in roads, highways and other 'infrastructure' propelled the suburban boom of the 1950s and 1960s as millions of families left the cities for the suburbs. Factories followed people to the suburbs where land was both cheap and plentiful. Suburbanization by its very nature produced an even more massive consumer demand for cars,

belt's 140 major military installations exceeded those of the rest of the US military posts combined. The Sunbelt also benefited from huge federal outlays for highways, road and bridge construction and other aspects of urban infrastructure.

In his best-selling book, *Power Shift*, Kirpatrick Sale brought the rise of the 'Sunbelt' to the attention of national and international audiences. According to Sale, the rise of the Sunbelt was tied to what he called 'six pillars': agribusiness, defence industry, federally-funded aerospace technology, oil, real estate development, and the leisure industry exemplified by Orlando, Florida's Disney World. In his words, the regional realities of America:

...began to change with the advent of World War II and its new technologies and priorities. Slowly there grew up a rival nexus, based in the Southern and Western parts of the country that stand in geographical — and to a large degree cultural, economic and political — opposition to the Northeast, specifically in the **Southern Rim**, the broad band of America that stretches from Southern California through the Southwest and Texas, into the Deep South and down to Florida. Here, a truly competitive power base took shape, built upon the unsurpassed population migrations that began to draw millions and millions of people from the older and colder sections of the Northeast to the younger and senior sections of the South and Southwest; upon an authentic economic revolution that created the new postwar industries of defense, aerospace, technology, electronics, agribusiness and oil and gas extraction, all of which were based primarily in the Southern Rim and which grew to rival and in some cases surpass the older industries of the Northeast; upon the enormous growth of the federal government and its unprecedented accumulation of wealth, the great part of which went to develop and sustain the new areas and new government-dependent industries, the new ports and inland transportation systems, the new military and aerospace bases, and the new water and irrigation systems; upon the political development of the Southern Rim and its growing influence in almost all national party organizations of whatever stripe, its decisive role in the selection of candidates of both major parties, its control over the major committees and much of the inner workings of Congress. Over the last thirty years, this rival nexus, moving on to the national stage and mounting a head-on challenge to the traditional Establishment, has quite simply shifted the balance of power in America away from the Northeast and toward the Southern Rim.

The most obvious unity to the Southern Rim is climatic. In the area below this line are to be found all of the tropical and semitropical regions of the United States: the Florida beaches, the Deep South savannas, the Louisiana lowlands, the Texas and Oklahoma plains, the Southwestern deserts, the palmy California coast. Here is the zone in which the average annual temperature is above 60 degrees, the average maximum temperature is 74 degrees; there are between

250 and 350 days of sunshine a year, and frost, if it is to come, does not descend before November. This is, in short, America's sunbelt. There is a broadly metaphorical but rather apt way of describing these rival powerbases, the one of the Northeast and the other of the Southern Rim, as the yankees and the cowboys.

(Sale, 1975, pp.5-13)

Writing in the late 1970s, two of America's academic experts on the Sunbelt, David Perry and Alfred Watkins wrote in the introduction of their book, *The Rise of the Sunbelt Cities*, that there was a great:

...level of surprise registered by both the national press and the academic world as the national economic order apparently shifted on its head with the 'rise of the Sunbelt'. That people and industries would leave New York, Chicago and Boston to live in the 'backwoods' of Georgia, with the 'cowboys' of Texas, or in the 'deserts' of Arizona was simply unthinkable. While these states were part of America they did not house our urban centres ... However, it appears as if much of this past tradition has been profoundly altered. Now, academics, the press and politicians supply us with a new description of urban America. They cite a regional 'power shift', inaugurate Houston as the 'new diamond studded buckle' of America's economic empire, and claim that New York and other Northeastern cities may no longer just be 'decaying' — they may be actually dying.

(Perry and Watkins, 1977, pp.8-9)

The past twenty years have clearly seen a shift in economic power to the South and West, and this shift in economic power has brought with it a corresponding shift in political power. The Sunbelt has become a powerful political centre — in large measure because it has gone to great lengths to organize itself as such. Twentieth century American politics is marked by a long tradition of conservative Southern Democrats like Sam Rayburn and Lyndon Johnson which comprised and to some extent continue to be a powerful voting block in both legislative branches — the House of Representatives and the Senate. This political block was able to funnel large amounts of federal money into the Sunbelt — such as the major NASA centres in Florida and Texas, and huge defence and aerospace installations including major naval and air force bases across the South and West. During the 1970s, the Sunbelt states and their congressional delegations organized one of the nations' first and still most important regional political organizations the Southern Growth Policies Board — to develop and implement political positions and public policy agendas that are important to the region. The last six elected American presidents — every elected President since 1964 — were from the South or West — two were former governors of California, Richard Nixon and Ronald Reagan; two were from Texas, Lyndon Johnson and George Bush, a transplanted north-easterner from Connecticut; and, two were governors of Sunbelt states; Jimmy Carter from Georgia and Bill Clinton from Arkansas. The only exception was Gerald Ford of



Michigan who took office when Richard Nixon and his vice-president Spiro Agnew both resigned under the spectre of Watergate. And, the most recent presidential election — the election of 1992 featured a three-way contest between southern politicians — Bill Clinton from Arkansas, Ross Perot from Texas, and George Bush. It is worth noting that the Democratic winning ticket featured two southerners, Bill Clinton of Arkansas and Al Gore, the former Senator from Tennessee.

The rise of the Sunbelt as a political force continues a long tradition of regional politics in American life. In her book, *Regions*, Ann Markusen writes:

In the United States, territorial politics have consistently displaced or pre-empted class politics as a national preoccupation. The Civil War pitted northerner against southerner. Populism attempted to organize southern and western farmers against eastern capital. In the recent postwar period, the Northeast clamoured against regional robbery in the guises of job loss, extortionary energy prices, biased federal aid flows toward the Sunbelt.

(Markusen, 1987, p.1)

Long seen as a backward region of farms, deserts, cowboys and 'rebels', there can be no doubt that the Sunbelt has become a growing power centre of both the American economy and polity.

### SUMMARY

Mobilization for the Second World War provided the initial impetus to modernize the 'backward' South. So began the rise of the Sunbelt — involving the growth of population, jobs, industry and commerce in the Southern states. These states benefited from huge Federal outlays on military and infrastructure projects. The notion of the Sunbelt gradually expanded, to encompass a broad sweep from Southern California, the Southwest and Texas, the Deep South and the 'new Southeast' of Florida, Georgia and the Carolinas, united above all by climate. With the relative increase in economic power of this 'Southern Rim' went a shift in the centre of gravity of American political power.

## 6 THE NEW HIGH-TECHNOLOGY REGIONS — SILICON VALLEY AND ROUTE 128

The 1970s and 1980s also saw the rise of high-technology regions in America. The two that have received the most attention are Silicon Valley — a sunny, former agricultural area which is just a little bit south of San Francisco, California — and the Route 128 area around Boston and Cambridge, Massachusetts. It is often said that these two regions, Silicon Valley and

Route 128, hold the key not only to the economic renewal of the United States, but could be used as 'models' for economic revitalization in Europe and even in the Third World nations as well. For most people, the main ingredient in the high-technology regions is a great university. It is frequently said that the impetus for Silicon Valley came from Stanford University in the 1950s and 1960s, especially its great engineering school, which was led at the time by a visionary dean, by the name of Frederick Terman. The Route 128 area is similarly seen by many to be an outgrowth of the two great universities of America's Cambridge — Harvard and especially MIT. The role of the universities in these two innovative regions is certainly important, but that is not the whole story. A number of other factors were and continue to be important as well.

America's high-technology regions are first and foremost regions of entrepreneurs. The entrepreneurs who provide much of the impetus for high-technology regions are a new breed of entrepreneurs and industrialists. They are entrepreneurs who have made their mark by introducing, marketing and selling advanced high-technology products to the world. In America, this new breed of high-technology entrepreneur and the companies they have founded has reached the exalted status of 'celebrity'. Perhaps the most famous of these new entrepreneur celebrities is Steven Jobs, the founder of Apple Computer. But there is also Bill Gates the founder of Microsoft, T.J. Rogers of Cypress Semiconductors and countless others. These high-technology entrepreneurs are not just inventors. They are true visionaries who have the foresight and the courage to be able to see new markets and develop new products for markets which do not yet exist. They are able to see that people will want to use a computer or word processing package, or that there will be a demand for a new kind of bio-genetic drug. And, they are able to devise a product people are attracted to and will want to buy. This new breed of entrepreneur is a team builder. They are able to put together the right mix of people to actually create, introduce and sell new technology. They are terrific motivators, who are able to motivate people to commit nearly all of their time to taking these new ideas from the idea stage and making them into an actual product. It is not uncommon for their employees to work 60, 70, 80 or more hours per week. A famous tee-shirt worn by Apple employees reads '80 hours a week and loving it'. And, this new breed of entrepreneur is able to generate the financing required to build these new businesses and develop new products. This financing comes from another major group of people who have created America's high-technology regions — the venture capitalists.

Venture capitalists who invest in high-technology are a particularly American creation. Venture capitalists are sophisticated high stakes gamblers — who gamble in high-technology business. These are people who devote their lives to identifying and investing in completely unproven and very high-risk technologies. America's leading venture capital funds include VenRock, Kleiner Perkins, the Mayfield Fund, Sequoia, Institutional Venture Partners, TA associates and many, many more. There are now between 600–800 venture capital firms in America — most of them located in these high-

technology regions, though a considerable number are located in the financial centres of New York and Chicago as well — which control about \$35 billion dollars in investment capital. Venture capitalists invest between \$1.5 and \$4 billion dollars a year in between 1,000 and 2,500 high-technology companies. Venture capitalists are the people which identify promising technologies and invest the capital required to get them off the ground. But they invest much more than their money. Venture capitalists are sometimes referred to as hands-on investors, who are involved alongside the entrepreneur in actually building a high-technology business. They are a unique breed — part capitalist and part entrepreneur. In fact, many of America's leading venture capitalists made their fortunes by being entrepreneurs. Venture capitalists assist entrepreneurs and high-technology companies, help develop their business plans, hire other top managers and researchers, even locate office space and factories, or set up joint ventures with larger companies. They are an important part of the supporting network of contacts and connections upon which entrepreneurial companies in America's premier high-technology regions depend.

America's leading high-technology regions have tremendous concentrations of leading high-technology companies and many of their suppliers. They are clearly the nation's dominant centres of high technology, home to thousands of high-technology companies and tens of thousands of their suppliers.

A tremendous supporting infrastructure of supplier companies, equipment companies, marketing firms, law firms, accountants, business consultants, employment agencies, and commercial real estate developers is another key element of America's high-technology regions. These regions have brought together a myriad of necessary support services which are required to support and nurture new entrepreneurial businesses. This includes lawyers who are experts in putting together business plans and other documents which new companies require; consultants who specialize in knowing high-technology market trends in the United States and world wide; real estate developers who can put together office space and factory sites for new companies; marketing gurus, like Regis McKenna, who can develop the image and advertising campaigns to sell new products like personal computers, notebook computers or the next wave in electronic products — the electronic personal organizer; and the list goes on and on.

America's high-technology regions are just that — regional concentrations of the resources, talent and institutions required to support, nurture and encourage high-technology industry. A good way to think of this support structure is as an integrated innovation system. This innovation system is made up of cutting-edge high-technology companies, a ready pool of talented engineers, managers and R&D scientists, an abundant supply of venture capital, and a concentration of business service firms like law firms, accountants and consultants. These formal and informal networks for information exchange and technology transfer make it easier to develop new innovations and turn them into products. Silicon Valley entrepreneurs and venture capitalists use the term 'virtual corporation' to describe the way the Silicon Valley technology network extends the boundary of the individual

firm. The social structure of innovation is a major source of new ideas, market openings, and information on competitors' strategies and can even be the starting point for new companies. The power of high-technology innovation complexes like Silicon Valley and Route 128 can be seen in the 'pull' or magnetic effect they can exert on entrepreneurs and technology companies located in other parts of the country, even the rest of the world. One of the leading electronic design companies in the United States, for example, was founded in North Carolina. The company founders loved it there — it was their home. But, over time, the venture capitalists who invested in the company insisted that they move to Silicon Valley to take advantage of the innovation system that was already in place. They needed to hire more people to manage the business and market the product — and those people were mostly in Silicon Valley. They needed a good law firm to handle their growing legal business and contracts — and most of that capability was in Silicon Valley. So while the founders temporarily resisted, they eventually relented and moved to Silicon Valley, where incidentally they have been more successful than their wildest dreams.

Despite the tremendous success and innovation that have taken place in America's high-technology regions, these areas are not without their problems. And, these problems — which were once quite small and hard to even notice — are growing worse and worse as we move through the 1990s and toward the twenty-first century. The first problem is one that stems in part from the 'competitive edge' which motivates many entrepreneurs and high-technology companies. According to a growing number of high-technology executives and venture capitalists, America's high-technology regions are becoming 'hyper-competitive'. For example, entrepreneurs and venture capitalists may quickly switch their attention from one company to the next if a company is not making a sufficient amount of money. All the effort that went into creating the first company will have been wasted, and many people will lose their jobs and livelihood. In this hyper-competitive climate, employees learn to take care of themselves and not be particularly loyal to their company. Seeking 'big bucks' and dismayed by the absence of corporate loyalty, engineers and scientists are encouraged to switch jobs often. High-technology companies in Silicon Valley and Route 128 face employee turnover rates which are truly astounding — 25 to 35 per cent or even 50 per cent per year. This is rational because when employees switch companies they often get stock options in addition to their salary. So, if the company hits it big they can get very rich. It is said that the day Apple's stock was issued on the stock market — more than one hundred Apple employees became millionaires. Employees who switch jobs are able to keep taking shots at hitting it big. In the words of one Silicon Valley executive: 'In Silicon Valley, if somebody wants to change jobs, all they have to do is turn into a different parking lot off a different freeway exit'.

This hyper-competitive climate is also reflected in a growing wave of law suits between and among companies for stealing each others' employees and the ideas those employees bring with them. Some experts have gone so far as to refer to the problems of high-technology regions as stemming from

what they call 'chronic entrepreneurship' — too much entrepreneurship which leads to good companies and good ideas being abandoned in the quest for higher and higher profits. Others call it 'start-up mania'. Whatever it is called the results are the same — abandoned companies, disrupted research, wasted effort and burned-out workers. Venture capitalists can contribute to this problem by raiding established companies for good people to staff the new start-up companies. Venture capitalists have fallen victim to a herd mentality and funded similar or nearly identical companies which compete each other to death. An executive from one of Silicon Valley's leading companies compared the hyper-competitive environment of high-technology regions to the hyper-competitive nature of the theatre industry.

Most [high-technology] companies are like so many Broadway plays. The venture capitalist is like the producer. An itinerant group of 'actors' get cast in the needed roles. The 'play' opens — has a 'run' (short or long) — then it closes. Time to put a new play together. Downstream of our 'play', a number of service organizations make their living supporting the successes then moving their efforts to the next 'play' after each completes its 'run'.

(Intel Corp. quoted in Florida and Kenney, 1990, p.26)

Another weakness of America's high-technology regions is that they are centres of innovation but not manufacturing. They focus all their energy on inventing new things and introducing new products, but increasingly fail to produce them. That is increasingly left to Japan or other countries in Asia. Akio Morita, Sony's co-founder and chief executive calls this the 'hollowing out' of American high-technology industry:

American companies have either shifted output to low-wage countries or come to buy parts and assembled products from countries like Japan that can make quality parts at low prices. The result is a hollowing-out of American industry. The US is abandoning its status as an industrial power.

(Morita quoted in Geras, 1987, p.75)

A top executive of a leading American semiconductor company adds:

The US is rapidly becoming a non-manufacturing nation. We sell our innovations and get a one shot infusion of capital not a continuous product stream. Manufacturing is the ability to make a lot of things, it is the engine which drives progress. If we lose this base, we don't have the economic engine to fuel innovation.

(quoted in Florida and Kenney, 1990, p.134)

The end result can be tragic — rather than building up a core of companies that can manufacture products and remain competitive over the long haul, America's high-technology regions end up with one-shot 'breakthrough' companies — which create the new breakthrough product but fail to follow-through on it by turning it into a continuous stream of mass produced products that can sell on world markets. And, most of these companies are not only cut-off from one another, they are cut-off from the large manufacturing

companies which could help them turn their ideas into commercial products. So, Silicon Valley, Route 128 and other high-technology regions remain centres of breakthrough innovation, but find themselves less and less able to follow-through on the innovations they make, and thus to generate the long-run economic growth, good jobs, and rising standard of living that American society needs. All of this has been exacerbated by the very serious recession of the early 1990s which has effected California and New England much worse than the rest of the American economy. In fact, the recession has been a decidedly 'bi-coastal recession'.

As the twenty-first century approaches, many Americans are beginning to question whether the high-technology regions, of which so much was expected just ten years ago, can really create the wealth, economic growth, and good jobs upon which the society's long run future will be premised. And while there can be no doubt that these regions will remain important as centres of innovation and new technology for both America and the world, it is becoming apparent that they no longer provide the economic muscle that will be required to keep the American economy competitive into the next century.

### *SUMMARY*

With the advent of 'high-technology' in the 1970s and 1980s new regional configurations developed in California (Silicon Valley) and in Massachusetts (Route 128). Driven by venture capital and individual entrepreneurs, they specialized in computer and electronic technologies. A wide and deep supportive infrastructure also emerged to service the leading companies and their suppliers. Despite their many positive contributions to the American economy, these regions and districts are characterized by 'start-up mania', a 'hyper-competitive' economic climate and 'chronic entrepreneurship'. The companies operating in these regions tend to be one-off innovators rather than continual manufacturers, unable to follow up an original breakthrough product with successive generations of new product developments. These inherent weaknesses could undermine the viability of the regions in the future.

## 7 THE BI-COASTAL ECONOMY

By the early 1980s, the regional realities of America began to shift once again. Growth during the Reagan years was concentrated mainly on the coasts. As the traditional centres of American industry declined, investment capital that previously would have supported the expansion of industrial plant and equipment poured into risky and in some cases highly speculative activities in the stock market, real estate development and venture capital financed high technology. The venture capital market grew rapidly, and the

high-technology regions of Silicon Valley and Route 128 experienced a prolonged boom. The real estate frenzy and dynamic stock market of the period fuelled significant growth in major financial centres in New York, Chicago and San Francisco. This, in turn, sparked feverish real estate speculation in these cities, a rapid rebuilding and gentrification of inner city residential neighbourhoods, and significant speculation in new hotels, office complexes, inner city malls, and trendy festival markets such as New York City's South Street Seaport. At the same time that the Reagan administration preached fiscal conservatism and budget cutting, it set off one of the largest peacetime expansions in government spending in American history, through a rapid escalation in defence spending for high-tech equipment and weaponry. This conferred disproportionate benefits to the Coasts, and by the mid-1980s states like California and Massachusetts, which specialize in high-tech defence industries, were receiving in excess of \$1,200 per person in federal defence spending, while the industrial Midwest, which was already feeling the effects of plant closures and downsizing, received an average of less than \$450 per person in federal defence spending.

As a result, the regional realities of American economic life began to shift from a North-South to an East-West axis. In the summer of 1986, The Joint Economic Committee of the US Congress announced the emergence of yet another new era in American regionalism with the publication of a major study entitled *The Bi-Coastal Economy*. The report provided a wealth of evidence and data drawn from government and academic sources concluding that America had become a bi-coastal economy of thriving coasts and a lagging middle. According to the study, the bi-coastal economy was comprised of sixteen fast growth states — California, Arizona and Alaska in the west, plus thirteen East Coast states including New York, New Jersey, and Delaware, Massachusetts, Connecticut, Vermont, New Hampshire, and Maine in New England; and the Sunbelt states of Florida, Georgia, Virginia, Maryland and North Carolina. The report further noted that this group of 16 bi-coastal states:

...accounted for nearly 70 per cent of real growth in wages and proprietorship income. Of the \$234 billion dollars real growth in wage and proprietorship income that occurred nationally between the first quarter of 1981 and the end of 1985, less than \$73 billion dollars went to the remaining 34 states which account for 58 per cent of the nation's population. On a per capita basis, real growth was one-third as much in the heartland grouping as it was in the 16 coastal states. A more familiar measure of economic health is annual growth rates. The average growth rate for real GNP in the post-war era prior to Reagan was 3.4 per cent. The state-by-state numbers for growth in real GNP which occurred during the Reagan administration (1981–1986) would not have seemed slower to someone living either in California or on the East Coast. In fact, average annual growth in real wage and proprietorship income for the 16 states in the coastal grouping was 4 per cent, or considerably above average for the post-war period. The coast states (as of 1986 were), in fact, enjoying

economic growth at about the level that the United States as a whole enjoyed during the 1960s. For the remainder of the country, however, the annual growth rate was only 1.4 per cent during this five-year period. During the post-war period, however, only once, from 1954 to 1958 did national growth average 1.4 per cent for a five year period and at no time was it below that level. Some of the regional disparity reflected by income figures was also reflected in employment data. Between the first quarter of 1981 and the end of 1985, slightly more than eight million new jobs were created in the United States. Fifty-eight per cent of those jobs were added in the 16-state coastal group, which computes to about 90 per cent more job growth per capita than in the remainder of the country.

(US Congress Joint Economic Committee, 1986)

Based on this, the report concluded that the available evidence from both statistical and anecdotal sources clearly indicates that 'the State of California and the East Coast of the United States have done quite well during the last five years (1981-1986), while progress has been limited in most other parts of the country'.

### *SUMMARY*

As the 1980s progressed the main polarity of regional America began to 'shadow' the two predominant high-technology districts of California and Massachusetts with a more general shift from the North-South axis to an East-West one, centred along the entire Pacific and Atlantic coasts. This bi-coastal economy experienced significantly higher than average growth rates between 1981 and 1986.

## 8 FROM DE-INDUSTRIALIZATION TO REINDUSTRIALIZATION IN THE RUSTBELT

In stark contrast to America's high-technology regions with their glimmering industrial parks, entrepreneurs and venture capitalists and to the gleaming Sunbelt cities of Atlanta and Dallas stands the contrasting picture of the massive grey, steel-coloured industrial complexes of America's industrial heartland. Just a decade ago, most experts predicted the decline and de-industrialization of the American manufacturing belt. In fact, it came to be known as the Rustbelt. It was said that manufacturing plants and people would move south and west from the Rustbelt to the Sunbelt in search of lower costs and so-called 'better business climates' and away from unions and organized labour. Some of this was obviously true. During the 1960s, 1970s and early 1980s, large numbers of steel mills closed, as steel producers consolidated their operations or diversified into the energy sector or other businesses. The traditional steel making region around Pittsburgh was virtu-



ally abandoned — today a rusted mass of old buildings is all that remains; in one area a new amusement park rises from a decayed old steel site. During this period, plant closings, business failures, and mass lay-offs hit the industrial Midwest harder than anywhere else during the late 1970s and early 1980s, pushing unemployment rates as high as 25 per cent. In scarcely more than a decade, the once-proud flagships of America's post-war industrial fleet were dismantled. And, people followed jobs to the new centres of opportunity, causing some cities like Pittsburgh, Buffalo, Cleveland and Detroit to lose hundreds of thousands of people.

By the early 1980s, a rather gloomy picture emerged. Nearly all the experts argued that the industrial Midwest — the once proud centre of American industry — would face long-run, secular, and chronic disinvestment and de-industrialization brought on by a shift of traditional industries to low-wage locations, the development of new high-technology complexes in California and New England, and a broader shift to a post-industrial service economy. The consensus view among business leaders, policy makers, and academics was that the Midwest would never again be a centre for competitive manufacturing — its costs were too high and its labour climate too conflictual. With heightened foreign competition and the emergence of the 'bi-coastal economy,' the industrial heartland seemed poised for continued decline. The manufacturing heartland, it was argued, would be left behind in a broad and fundamental shift to a post-industrial economy of high-technology, finance, and services.

But in what is perhaps the most remarkable regional turnaround in American history, the past ten years have seen the industrial Midwest — the so-called Rustbelt — stage a remarkable economic turnaround — one that while it is just beginning has the potential to match the economic miracles of post-war Germany and Japan. The industrial Midwest has not only started to grow again and attract new industries and factories, it has helped to bolster the American economy as a whole and to dampen the adverse effects of the early 1990s recession. Consider the following trends. The industrial Midwest region, stretching from western Pennsylvania and western New York through Ohio, Indiana, Illinois, Michigan, Wisconsin and Minnesota, remains the industrial centre of America, and currently accounts for 40 per cent of all manufacturing, 60 per cent of the nation's steel, 55 per cent of its automobiles, and 50 per cent of its machine tools. The region increased its share of durable goods manufacturing over this period. The Midwest produced more automobiles and steel in 1992 than a decade before, even with a significant number of plant closures by the Big Three. The reason for this is a tremendous wave of Japanese and other foreign investment in state of the art automotive and steel factories.

Although the manufacturing heartland is still feeling some effects of de-industrialization — too many manufacturers remain locked in the old mindset of cost-cutting, downsizing, short-term management, disinvestment, and management-by-stress — regional economic revitalization is underway. Manufacturing employment has stabilized, capital expenditures are rising. The Midwest has become a new industrial frontier — a world-leader in the

export of high value-added manufactured goods. This new industrial frontier is in the throes of a complex transformation and restructuring catalyzed by an emerging core of world-class companies from America, Europe and Japan — Xerox, Motorola, Corning, Steelcase, Honda, Sony, Matsushita, and Bosch to name just a few. This new industrial frontier has attracted a transplant automotive complex of more than 400 assembly, automotive parts, steel, and rubber and tyre manufacturers. Furthermore, the new industrial heartland is recreating its historic strength in consumer electronics with the location of state-of-the-art plants by Sony outside of Pittsburgh, Matsushita in Ohio, Toshiba in western New York, and acquisitions of US plants by major European producers, Thomson, Philips, and Siemens. The intersection of these two trends has produced pockets of growth alongside continued decline — a phenomenon of 'reindustrialization within de-industrialization'.

In contrast to predictions of de-industrialization, the Great Lakes has retained its status as the nation's premier manufacturing economy. During the height of de-industrialization, from 1977 to 1987, the Midwest's share of the nation's manufactured output declined from 44 to 36 per cent. Over the same period, manufacturing's share of the Great Lakes' economy fell from 29 to 23 per cent. But, since then such trends have abated. In 1989, the Midwest produced more than \$345 billion in manufacturing output, 36 per cent of the national total. Overall, the Midwest produced \$1.6 trillion in total output, roughly one-third of the national total. And, manufacturing continues to comprise a greater share of the Midwest economy (21.5 per cent) than for the nation as a whole (18.5 per cent). In fact, the Midwest produced 70 per cent more manufactured output in 1989 than it did in 1977.

The reindustrialization of the manufacturing heartland is vividly demonstrated by the impressive turnaround in the growth of its manufacturing output. In fact, from 1987 to 1988 the Midwest posed a remarkable 7.8 per cent growth rate in manufacturing output — surpassing the national rate of 7.4 per cent and eclipsing the manufacturing powerhouses of Japan (6.3 per cent) and Germany (5.2 per cent) as well. During de-industrialization, the Midwest suffered devastating losses in manufacturing employment. But, since then, employment losses related to manufacturing have subsided. From 1982 to 1986, the Midwest lost just 2 per cent of its manufacturing employment, and from 1986 to 1990, that loss was only 1 per cent. In 1990, the industrial Midwest, which is home to 30 per cent of the nation's population, accounted for 36 per cent of the nation's manufacturing employment.

The Midwest continues to provide high-wage manufacturing jobs. This stands in sharp contrast to the predictions of both the de-industrialization and post-industrial perspectives. And, while some sceptics might attribute the Midwest's reindustrialization to a shift from high-wage to low-wage, non-union manufacturing, the data clearly indicates that this is not the case. In 1990, the Midwest's average annual manufacturing wage was \$30,671 roughly 6 per cent higher than the national average. As of 1988, more than half (57.1 per cent) of all national union membership in manufacturing remained concentrated in the Great Lakes region.

Midwestern industry has made enormous strides in productivity, registering productivity gains which, in some cases, surpassed those of the major industrialized countries of the world. From 1980 to 1988, manufacturing productivity in the Great Lakes increased by 36 per cent, which was less than Japan (52 per cent), but better than both Germany (15 per cent) and the USA as a whole (32 per cent). More significantly, between 1986 and 1988 productivity in the Midwest or heartland region increased by roughly 15 per cent — 6 per cent faster than Japan (9 per cent), and considerably better than the USA (-1 per cent) and Germany (-2 per cent).

### *SUMMARY*

During the 1970s and 1980s it was the Midwest that seemed to suffer while other regions flourished. The term 'de-industrialization' signalled the dismantling of the industrial heartland in the face of domestic disinvestment and foreign competition. The Rustbelt was said to face long run secular decline and with it the future of American large-scale manufacturing. But in fact the Midwest now seems poised on the threshold of a new renaissance. It remains the American manufacturing heartland, bolstered by the inward foreign direct investment of world class companies. These are leading in a thorough going restructuring of the entire region's economy.

## 9 REINVENTING A REGION

A cornerstone of American history has been the ability of regions to reinvent themselves — the transformation from the old agrarian South to the new Sunbelt of industry and commerce, the rise of New England as an early centre for textile mills and boot and shoe manufacturing, its post-war decline, and revitalization around high-technology and Route 128, the transformation of the California economy into a centre of defence, aerospace and high-technology innovation. Today, America is in the throes of another regional transformation centred around the resurgence of manufacturing industry and the revitalization of the so-called Rustbelt.

Driving this transformation of the industrial heartland is a growing beach-head of world-class companies. These companies have acted as a powerful orienting force in regional transformation. They play the role of 'hubs' for modernization of the region's small and medium-sized manufacturing base. And, they are investing in workplace restructuring, total quality management and supplier modernization at levels that dwarf current or projected government outlays in these areas. These companies have also pioneered new models for investing in education, training, and the broader infrastructure required to support a high-performance economy.

I/N Tek, a joint venture between Inland Steel and Nippon Steel just outside South Bend, Indiana, provides a powerful example of this process at work. The factory itself is a paean to modern industrial architecture. Spanning white, with gleaming concrete floors and coloured rails, the machines and production equipment themselves sparkle. Workers, positioned in high-tech, climate-controlled operations booths, monitor the entire production process on advanced computerized equipment. I/N Tek has transformed the process of cold rolling steel into a continuous process that takes less than an hour from start to finish. This is a tremendous advance over the old way of producing cold-rolled steel in separate steps or 'batches' that could take as long as twelve working days to complete. The key to this transformation was unleashing the collective intelligence of the workforce. The company mobilized factory workers, engineers, and R & D scientists to combine the various batch processes one at a time. Workers, engineers and computer specialists recently worked together to connect the entire cold rolling process to another process, called electro-galvanizing, which coats steel, for corrosion-resistant automobile body parts. I/N Tek provides a powerful illustration of the new model of manufacturing — in the most basic of industries — steel. And for all those who still believe that such advances can only be made in the absence of a union — I/N Tek is a 'steel workers plant' — in fact, most of the workers were transplanted from Inland Steel's sprawling Indiana Harbor steel mill.

In this new factory, knowledge and intelligence replace physical labour as the fundamental source of value and profit. The factory is becoming more like a laboratory — the place where new ideas and concepts are generated, tested and implemented. It is no longer merely a place of dirty floors and smoking machines, grease, muscle and sweat, but is increasingly an environment of brain-power and technological innovation. Success in the new age of manufacturing requires linking the R & D laboratory and the factory in a seamless web of activity to unleash the intelligence of all workers. This is not the 'passive' involvement of the labour-management committees and American quality circle movement of the 1970s and 1980s. This is a new kind of direct involvement in which workers' intelligence and ideas are mobilized on a day-to-day basis as a source of new innovations and improvements in the manufacturing process. Ever since the transition from feudalism to capitalism, the basic source of productivity, value and economic growth has been physical labour and physical skill. The key to success in this new age of industry lies in workers' knowledge of production and the ideas and innovations that flow from it.

There is a phrase for this new age of manufacturing — 'high-performance manufacturing'. High-performance manufacturing means the ability to deliver high quality, high value-added products, tailored to customer needs on a just-in-time basis and at a competitive price. High-performance firms compete on quality in global markets, organize work in self-managing work teams, and are strongly committed to continuous improvement and organizational learning. High-performance production complexes rely upon just-in-time supplier and customer interactions to enhance innovation and

produce the state-of-the-art products the world wants. At Honda's huge automotive assembly complex in central Ohio, engineers and managers are told that they must always listen to shop-floor workers who have the hands-on knowledge and the ideas required to improve the production process. In some cases, factory workers actually supervise engineers.

Powered by the shift to high-performance manufacturing, the industrial heartland is almost singlehandedly responsible for returning the United States to its status as the world's leading exporter. In 1991, the Midwest shipped over \$100 billion dollars' worth of manufactured goods to more than 80 countries, including \$9 billion to Japan and \$5.6 billion to Germany. The Midwest's rate of increase in manufactured exports is double the national average. This increasingly outward focus is also reflected in a large and growing volume of foreign direct manufacturing investment. More than half of all Japanese foreign direct investment in automobiles, steel and tyres and rubber is concentrated in the four Great Lakes states — Ohio, Indiana, Michigan and Illinois. A key competitive advantage of this new manufacturing heartland lies in its ability to attract a growing constellation of the world's best companies.

Bolstered by exports and foreign direct investment, the Midwest is recreating its industrial base in traditional sectors like steel and automotive assembly and developing new high-technology sectors as well. The region is home to the world's newest and most advanced steel finishing and automotive assembly technology. It is a centre of world-class office furniture production, as companies like Steelcase pave the way to the electronic office of the future. It houses a state-of-the-art image processing complex of Xerox, Eastman Kodak, and Bausch and Lomb. And, it is a budding centre of advanced television production anchored by Sony, Matsushita, major European television producers, and American suppliers of the flat glass used in picture tubes.

This combination of factors has fueled overall economic performance exceeding national averages. The Midwest has been spared in the largely bicoastal recession of the early 1990s. During the current downturn, twelve of the region's seventeen major industries outperformed their national counterparts. The unemployment rate for the Great Lakes states was below that of the nation in 1991. In the first quarter of 1992, over half the nation's housing starts occurred in the Great Lakes region. In addition, the region is less dependent upon Pentagon contracts than any other — with per capita defence outlays averaging less than half the national average. As a result, its manufacturers are more commercially focused and better positioned to weather defence cuts.

Battle Creek, Michigan as much as anywhere else, is emblematic of the kind of turnaround that is occurring in the new heartland economy. During the 1970s and early 1980s, Battle Creek experienced one of the worst bouts of deindustrialization of any Rustbelt city. Its historic manufacturing base of food and cereal producers, agricultural equipment factories and automotive parts producers underwent significant decline and the city was rocked by

plant closings. But, beginning in the late 1970s, Battle Creek developed a coordinated strategy to attract world-class, high-performance firms from around the world. The city began by turning a defunct army base, the old Fort Custer, into a new industrial park. It sent trade missions to Europe and Japan, and actually opened its own trade office in Japan. Battle Creek has now attracted more than a dozen Japanese automotive component parts manufacturers, including the giant Nippondenso and a number of its family of suppliers to the industrial park. Nippondenso is currently working with the local community college to restructure both its curriculum and administration along the lines of total quality, high-performance management. These firms have helped to bring economic stability and even growth to Battle Creek, providing a beach-head of high-performance firms which are a powerful example for local firms to follow.

Cleveland too is engaged in the transformation to the new economy. Under the leadership of Cleveland Tomorrow, an association of Cleveland's largest businesses and financial institutions, the city is repositioning itself for the new age of manufacturing. Cleveland Tomorrow has set up a variety of programmes and institutions devoted to transforming the manufacturing base, including programmes to assist manufacturing companies who seek to implement state-of-the-art technology and manufacturing-management techniques. Cleveland Tomorrow works closely with Cleveland universities to conduct focused research and to develop new strategies for regional manufacturing modernization and economic development. It is currently developing a regional strategy to help automotive component parts producers to tap the growing Japanese transplant market and move to high-performance manufacturing.

Perhaps the single most important regional reality of America in the twentieth century has been the rise, decline and rise again of the American manufacturing heartland. More than the rise of the Sunbelt and the high-technology complexes of Silicon Valley and Route 128, and in sharp contrast to so many predictions of impending disaster and decline, America's Midwest manufacturing heartland remains the centre of wealth, productivity and value creation for the American economy. In fact, during the late 1980s and early 1990s, many of the Sunbelt states, such as Texas, lapsed into prolonged recession, caused in large measure by cheaper international oil prices and the collapse of the domestic oil economy, which in turn resulted in a ripple effect of real estate and banking collapses. And as we move toward the twenty-first century, the bi-coastal economy has been transformed into a 'bi-coastal economic crisis', as states like California, New York and Massachusetts continue to experience prolonged recession and teeter on the brink of budgetary crises. Today, it is the industrial heartland region that is escaping the iron grip of recession, and experiencing a modicum of economic growth. Once again, the economic position and fortunes of American regions have been reversed.

in the international economy and by their willingness to participate in global trade. Ohmae writes:

In the United States, for example, the Japanese have already established about 120 'transplant' auto factories throughout the Mississippi Valley. More are on the way. As their share of the US auto industry's production grows, people in that region who look to these plants for their livelihoods and for the tax revenues needed to support local communities will stop caring whether the plants belong to US or Japanese-based companies. All they will care about are the regional economic benefits of having them there. In effect, as members of the Mississippi Valley region state, they will have leveraged the contribution of the plants to help their region become an active participant in the global economy. Consider the fate of Silicon Valley, that great early engine of much of America's microelectronics industry. In the beginning it was an extremely open and entrepreneurial environment. Of late, however, it has become notably protectionist — creating industry associations, establishing a polished lobbying presence in Washington, and turning to 'competitiveness' studies as a way to get more federal funding for research and development. It has begun to discourage and even to bar foreign investment, let alone takeovers. The result is that Boise and Denver now prosper in electronics; Japan is developing a Silicon Island on Kyushu; Taiwan is trying to create a Silicon Island of its own; and Korea is nurturing a Silicon Peninsula. This is the worst of all possible worlds: no new money in California and a host of newly energized and well-funded competitors. Elsewhere in California, not far from Silicon Valley, the story is quite different. When Hollywood recognized that it faced a severe capital shortage, it did not throw up protectionist barriers against foreign money. Instead, it invited Rupert Murdoch into 20th Century Fox, C. Itoh and Toshiba into Time-Warner, Sony into Columbia, and Matsushita into MCA. The result: a \$10 billion dollar infusion of new capital and, equally important, \$10 billion less for Japan or anyone else to set up a new Hollywood of their own.

(Ohmae, 1993, pp.84-5)

Ohmae also foresees possible tensions between America's region states and its federal government, as regions become increasingly important players in the global economy. He continues:

For the Clinton administration, the irony is that Washington today finds itself in the same relation to those region states that lie entirely or partially within its borders as was London with its North American colonies centuries ago. Neither central power could genuinely understand the shape or magnitude of the new flows of information, people and economic activity in the regions nominally under its control. Nor could it understand how counterproductive it would be to try to attest to distort those flows in the service of nation-defined

interests. Now as then, only relaxed central control can allow the flexibility needed to maintain the links to regions gripped by an inexorable drive for prosperity.

(ibid., p.37)

The future of America, like its past, will be shaped by its regions. There can be little doubt that regions will be increasingly seen as key economic units in the global economy. Creating a new balance between regional and national authority will be a central issue in coming years in the United States and throughout the advanced industrial nations. It used to be that regions and nations gained competitive advantage based upon their natural endowments such as being close to waterways or having large stores of raw materials. Advances in transportation and communications technology are 'shrinking the world' providing the ability to move resources around as needed and giving all of us the ability to share the same experiences and communicate directly with one another.

So, why will regions remain important? There is another even more important economic function that regions play. Regions organize and provide the human capabilities — the knowledge and the skill — required for technological and economic progress. Regions provide the human infrastructure of people, knowledge and skill, the manufacturing infrastructure made up of the combined capabilities of firms, and the technological infrastructure required for economic development. Some regions specialize in high-technology, others in manufacturing, still others in finance and banking. Even though companies and people can use advanced telecommunications and computer systems to communicate, regions will retain their crucial economic role. It is their regional infrastructure of people, knowledge and skill which forms the core of their advantage. Regions provide the capabilities and the infrastructure required to compete in the global economy.

As we enter a twenty-first century age of accelerating technological innovation and sweeping globalization, one thing appears certain: regions will continue their role at the centre of American life — they may even turn out to be more important than before.

## REFERENCES

- Florida, R. and Kenney, M. (1990) *The Breakthrough Illusion: Corporate America's Failure to Move from Innovation to Mass Production*, New York, Basic Books.
- Geras, N. (1987) 'The hollow corporation', *Business Week*, 3 March.
- Jackson, K.T. (1985) *Crabgrass Frontier: The Suburbanization of the United States*, New York, Oxford University Press.
- Markusen, A. (1987) *The Economics and Politics of Territory*, Totowa NJ, Rowman and Littlefield.
- Odum, H. and Moore, H.E. (1938) *American Regionalism: A Cultural History of National Integration*, New York, Henry Holt.



Ohmae, K. (1993) 'The rise of the region state', *Foreign Affairs*, vol.72, no. 2, Spring pp.78–87.

Perry, D. and Watkins, A. J. (1977) *The Rise of the Sunbelt Cities*, Beverly Hills, Sage.

Sale, K. (1975) *Power Shift*, New York, Vintage Books.

Sayer, A. and Walker, R. (1992) *The New Social Economy: Reworking the Division of Labour*, Oxford, Blackwell Publishers.

Turner, F.J. (1920) *The Frontier of American History*, reprint, New York, Holt, Rinehart and Winston, 1962.

US Congress, Joint Economic Committee (1986) *The Bi-Coastal Economy: Regional Patterns of Economic Growth During the Reagan Administration*, Washington DC, Government Printing Office.

Warner Jr, S.B. (1962) *Streetcar Suburbs: The Process of the Growth in Boston, 1870–1900*, Cambridge, MA, Harvard University Press.

## FURTHER READING

Gelfand, Mark (1975) *A Nation of Cities: The Federal Government and Urban America, 1933–1965*, New York, Oxford University Press.

Jackson, Kenneth T. (1985) *Crabgrass Frontier: The Suburbanization of the United States*, New York, Oxford University Press.

Markusen, Ann (1987) *Regions: The Economics and Politics of Territory*, Totowa, N.J., Rowan and Littlefield.

Ohmae, Kenichi (1993) 'The rise of the region state' in *Foreign Affairs*, vol, 72, no.2. Spring pp. 78–87.

Perry, David and Watkins, Alfred J. (1977) *The Rise of the Sunbelt Cities*, Beverly Hills, Sage.

Storper, Michael and Walker, Richard (1989) *The Capitalist Imperative*, Oxford, Basil Blackwell.