

### **Chapter 3 - Deindustrializing the US: The War Against American Workers<sup>1</sup>**

America's state capitalist managers are mobilized to fight a war on two fronts. The first war is fought for hegemony over new populations as in Vietnam, Iraq, and Afghanistan. The second war is fought against Americans who work for a living, where the main instrument is the process of closing down American factories and allied workplaces. This second war is fought by economic measures of every sort. Compare the wages of American workers with those of states like China, whose governments are committed to prevent the creation of free trade unions. The wage differential between American and Chinese based production is now approximately 49 to 1. This differential also obtains for clerical, sales, administrative and other white-collar workers of all grades. The rush to enrich has seized American managers who are now schooled to ignore the consequence of lost livelihood in whole communities, and lost production capacity of whole industries. The rules for the war against American employees—white or blue collar—do not admit of any statement of limits.

Until the middle of the 20<sup>th</sup> century, the managers and engineers of U.S. industry were probably the world's best organizers of industrial work—that was the root of their firm's profits and the basis for their claim to large personal incomes. By the close of the 20<sup>th</sup> century the corps of U.S. managers had been modified by a major infusion of financial ideology. Money was increasingly to be "made" by market manipulation. Production was treated as old fashioned, a function that could be left to the underclasses of the Third World. This idea gained acceptance despite the fact that history contains no recent record of a nation being continuously supplied with goods from the "outside" and producing none in return. But America's economists are not asked to explain such matters. Therefore, the great wave of U.S. management decisions to move production out of the U.S. has been virtually unchallenged.

The decision power and personal wealth accorded to managers was one side of a historic social contract. In return for these privileges management was expected, by working people and community, to organize work. That social contract was threatened by the Great Depression and was reconstituted as a legitimation for management only when a new contingent of state managers was introduced to share in decision power over the industrial economy. Thereafter, management's economists, informed by the theories of John Maynard Keynes, hoped that a new "public sector" military economy could help to restore industrial employment and stabilize the functioning of management's decision processes, extending to the "private sector" as well.

But the focused pursuit of profits and power by both private and state managers, acting in combination, also resulted in a major unanticipated effect. A process of technological and economic depletion of the means of production themselves was set in motion through the 20<sup>th</sup> century, causing major contraction of opportunities for productive livelihood.<sup>2</sup>

I approached this problem in my study, *Profits Without Production*, from which I draw some helpful framing comments for understanding the ongoing process of deindustrialization. Sad to say, this war on American workers proceeds unabated. Since the mid-1960s the production competence of U.S. manufacturing has been deteriorating. By 2001, 61 percent

of the new cars sold in the U.S. were being supplied from abroad, and 63 percent of the new metal-cutting machine tools, 65 percent of computers and peripherals, and 87 percent of audio and video equipment were no longer produced by American workers in American factories. Now, a visit to almost any hi-fi or electronics store in an American city will confirm that only a minor part of the sophisticated products offered for sale are made in the United States.

Power tools, handheld and table mounted, for example, are an important class of equipment due to their key functions in the construction trades, as well as in home workshops. A 2003 visit to the tool section at a Home Depot store in New York City showed that 77 percent of all electric power tools were imported, most frequently from China, Taiwan and Mexico. (The American made power tools were professional, “contractor grade” tools, which were significantly more expensive than those targeting the home user market.) The domestic production of these and many other capital and consumer goods has been replaced, increasingly, by products from Western Europe, Japan and most recently China and other parts of Asia.

Machine Tools (Metal Cutting)	63%
Machine Tools (Metal Forming)	88%
Automobiles	61%
Iron and Steel	23%
Farm Machinery and Equipment	27%
Construction Machinery	38%
Mining Machinery and Equipment	30%
Oil and Gas Field Machinery and Equipment	28%
Textile Machinery	71%
Semiconductor Factory Machinery	32%
Office Machines	62%
Computers and Peripherals	65%
Broadcasting and Wireless Equipment	33%
Audio and Video Equipment	87%
Semiconductors and Related Devices	54%
Electromedical Apparatus	32%
Apparel	57%
Leather Goods	78%

This collapse in production competence occurred just as the moneymaking successes of U.S. managers reached new highs.

By 1983 I was moved to write about this in my book titled *Profits Without Production*, (Alfred A. Knopf), which essentially anticipated the late 20<sup>th</sup> century gyrations of the Enrons, and the wholesale deceptions and frauds perpetrated by the financial institutions on the hapless millions who turned over their savings to the custody of “mutual funds”. An excellent portrait of this management style is afforded by the autobiography by Jack Welch, *Jack, Straight From the Gut*, (Warner Business Books, 2001.) A careful critical assessment of

both the firm and General Electric's former chief was produced by Thomas F. O'Boyle, *At Any Cost, Jack Welch, General Electric and the Pursuit of Profit*, (Alfred A. Knopf, 1998). In *Profits Without Production I* detailed the change which had taken place:

Even the most confirmed critics of capitalism had accepted the assessment of the productivity of industrial capitalism made by Karl Marx and Friedrich Engels in the *Communist Manifesto* (1848):

The bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together. Subjection of nature's forces to man, machinery, application of chemistry to industry and agriculture, steam-navigation, railways, electric telegraphs, clearing of whole continents for cultivation, canalization of rivers, whole populations conjured out of the ground—what earlier century had even a presentiment that such productive forces slumbered in the lap of social labour?

Most economists had once agreed that businessmen act as organizers of production, and differed sharply with the Marxists on the subject of distribution, seeing profit not as exploitation but as just return for services rendered.\*

During the latter half of the twentieth century, the pattern of industrial capitalism shifted. Soon after World War II the marketing executive emerged as the bright star of the American managerial firmament. "Madison Avenue" took center stage. The ideal type, as portrayed in management journals, had become the financier-strategist, the shrewd, nimble operator who combined disparate firms into conglomerates that maximized the short-term profit-taking opportunities afforded by tax laws, securities transfers, the milking of production assets and other financial legerdemain. This is a world of moneymaking, one that can prosper financially even as production is neglected or transferred to distant lands. In this world, the optimum condition is profit without any production.<sup>4</sup> [Note that these forms of moneymaking later reached a frenzy during the 1990's internet bubble.]

The historic crises of American capitalism—those revealing the functional incapacities of the system—were typically crises of decision-making, of the interior mechanism of the *business* process, while the production plant was fully competent to serve the market. The new and unprecedented development in American capitalism is the collapse of production competence in the manufacturing process itself.<sup>5</sup>

## DEINDUSTRIALIZATION GOES UNNOTICED

If, as I pointed out in my earlier study, this collapse of production has been underway for decades, how is it that this disastrous process has gone largely unchallenged? Again, it is worth reminding ourselves of the cover stories which

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\* An exemplary diagnosis of the businessmen of that era is in Thorstein Veblen, *The Theory of Business Enterprise* (Viking Press, 1946).

have masked full understanding of the realities of deindustrialization. Chief among them is the post-war myth of a post-industrial society. In fact deterioration in the production competence of U.S. industries had been well under way since 1960 and was reported in some detail by 1965.<sup>6</sup> But these early warnings of industrial inefficiency were received with skepticism by a population and government that was still aglow with the euphoria of World War II, that still believed the United States could enjoy both guns and butter, that had just been marshaled for the conquest of space and the first landing of man on the moon.

In 1960, the air was full of Kennedy's election campaign waged against a missile gap. Then came the Bay of Pigs debacle, defense against nuclear attack by means of "fallout shelters", the Berlin Wall crisis, the Cuban Missile crisis, the trauma of Kennedy's assassination, and the election of Lyndon Johnson—the pro-peace candidate who operated a small war on poverty and a large war in Vietnam.

All this while the universities were awash in money, as the government, with cheers from the populace, demanded more science, more technology, more trained professionals to guarantee U.S. leadership in the space race and the arms race too. In the midst of such excitements, almost no one paid much attention to the closing of factories in a widening sweep of Northeastern and Midwestern cities.

The American intelligentsia were seized with dreams of a post-industrial society—so why not hand over mundane production to the Japanese and Chinese while the United States concentrated on high technology?<sup>7</sup> Against such a background of ideological reassurance, (or was it nationalist arrogance?) few were prepared to consider the full significance of many ongoing events. So the World Trade Center in New York City had a steel framework that was made in Japan—well, after all, the U.S. construction industry has long been backward. So the Alaska pipeline was made in Japan—well, the Japanese steel industry profited from its technical renewal, having been destroyed by U.S. bombardments during World War II. So the shoe factories of New England are closing and their machinery and tools are sold abroad—well, in the post-industrial society, Americans should be concerned with high technology and not with demeaning work like shoemaking that can well be done in less developed countries.

So the closing of enterprises in the United States during the decades leading to 2000 disrupted the lives of millions—well, let the labor market handle the problem of placing those people back into the U.S. economy.<sup>8</sup>

There have been important barriers to seeing, and therefore believing, that the United States has been losing its productive vitality. The decline is felt by working people, technicians, and their immediate communities, who have lost their livelihoods and often been forced into a gypsy-like existence in the quest for jobs. The effect on young people, as candidates for entry-level industrial jobs, is particularly hurtful.<sup>†</sup> The rest of the town feels at second hand the effects of lost industrial jobs—by the appearance of a *Lumpenproletariat*, that

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\* One effect of the deindustrialization process has been to create unemployment. Higher unemployment however has been significantly concentrated among black workers, largely due to racism entrenched in U.S. society. This shunting of unemployment to black workers has also resulted in some degree of sheltering white workers from unemployment, and thereby obscured the understanding of deindustrialization in mainstream America.

is, a permanently unemployed, or underemployed welfare-dependent population, and by the decline of municipal facilities and services of every sort.

Still an important part of American society has been substantially shielded from these effects. This is the suburban middle class, which is concentrated in occupations that are not related to manufacture. For these people deterioration in the United States' producing capability is hardly visible. Well-made durable goods are available from local dealers, and in middle-class suburbia public amenities are often first-rate. Americans are simply unaware or have been unwilling to confront a new, culturally astonishing fact: the United States is well on the way to becoming a third-rate industrial country.<sup>9</sup>

Now in the 21<sup>st</sup> Century the idea of "going offshore" is widely appreciated in management circles. Taking advantage of low-wage labor and virtual government guarantees of no unionization, (as in China and Mexico) has been a highly attractive lure to many managements. A repeated pattern has involved moving production operations abroad, (with either American managers or with production by foreign contractors) while retaining U.S.-based top management and marketing operations. Lou Dobbs, a CNN network newscaster has tracked the firms engaged in "Exporting America". As of June 25<sup>th</sup>, 2004 his list includes 807 such American firms that are either "sending American jobs overseas, or choosing to employ cheap overseas labor, instead of American workers".<sup>10</sup>

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### 807 U.S. FIRMS "OUTSOURCE" AMERICAN JOBS

AalFs Manufacturing  
Aavid Thermal Technologies  
ABC-NACO  
Accenture  
Access Electronics  
Accuride Corporation  
Accuride International  
Adaptec  
ADC  
Adobe Air  
Adobe Systems  
Advanced Energy Industries  
Aei Acquisitions  
Aetna  
Affiliated Computer Services  
AFS Technologies  
A.G. Edwards  
Agere Systems  
Agilent Technologies  
AIG  
Alamo Rent A Car  
Albany International Corp.  
Albertson's  
Alcoa  
Alcoa Fujikura  
Allen Systems Group  
Alliance Semiconductor  
Allstate

Alpha Thought Global  
Altria Group  
Amazon.com  
AMD  
Americ Disc  
American Dawn  
American Express  
American Greetings  
American Household  
American Management Systems  
American Standard  
American Tool  
American Uniform Company  
AMETEK  
AMI DODUCO  
Amloid Corporation  
Amphenol Corporation  
Analog Devices  
Anchor Glass Container  
ANDA Networks  
Anderson Electrical Products  
Andrew Corporation  
Anheuser-Busch  
Angelica Corporation  
Ansell Health Care  
Ansell Protective Products  
Anvil Knitwear  
AOL  
A.O. Smith  
Apple  
Applied Materials  
Arkansas General Industries  
Ark-Les Corporation  
Arlee Home Fashions  
Art Leather Manufacturing  
Artex International  
ArvinMeritor  
Asco Power Technologies  
Ashland  
AstenJohnson  
Asyst Technologies  
Atchison Products, Inc.  
A.T. Cross Company  
AT&T  
AT&T Wireless  
A.T. Kearney  
Augusta Sportswear  
Authentic Fitness Corporation

Automatic Data Processing  
Avanade  
Avanex  
Avaya  
Avery Dennison  
Azima Healthcare Services  
Axiohm Transaction Solutions  
Bank of America  
Bank of New York  
Bank One  
Bard Access Systems  
Barnes Group  
Barth & Dreyfuss of California  
Bassett Furniture  
Bassler Electric Company  
BBi Enterprises L.P.  
Beacon Blankets  
BearingPoint  
Bear Stearns  
BEA Systems  
Bechtel  
Becton Dickinson  
BellSouth  
Bentley Systems  
Berdon LLP  
Berne Apparel  
Bernhardt Furniture  
Besler Electric Company  
Best Buy  
Bestt Liebco Corporation  
Beverly Enterprises  
Birdair, Inc.  
BISSELL  
Black & Decker  
Blauer Manufacturing  
Blue Cast Denim  
Bobs Candies  
Borden Chemical  
Bourns  
Bose Corporation  
Bowater  
BMC Software  
Boeing  
Braden Manufacturing  
Briggs Industries  
Brady Corporation  
Bristol-Myers Squibb  
Bristol Tank & Welding Co.

Brocade  
Brooks Automation  
Brown Wooten Mills Inc.  
Buck Forkardt, Inc.  
Bumble Bee  
Burle Industries  
Burlington House Home Fashions  
Burlington Northern and Santa Fe Railway  
C&D Technologies  
Cadence Design Systems  
Camfil Farr  
Candle Corporation  
Cains Pickles  
Capital One  
Capital Mercury Apparel  
Cardinal Brands  
Carrier  
Carter's  
Caterpillar  
C-COR.net  
Cellpoint Systems  
Cendant  
Centis, Inc.  
Cerner Corporation  
Charles Schwab  
ChevronTexaco  
The Cherry Corporation  
CIBER  
Ciena  
Cigna  
Circuit City  
Cirrus Logic  
Cisco Systems  
Citigroup  
Clear Pine Mouldings  
Clorox  
CNA  
Coastcast Corp.  
Coca-Cola  
Cognizant Technology Solutions  
Collins & Aikman  
Collis, Inc.  
Columbia House  
Columbus McKinnon  
Comcast Holdings  
Comdial Corporation  
Computer Associates  
Computer Horizons

Computer Sciences Corporation  
CompuServe  
Concise Fabricators  
Conectl Corporation  
Conseco  
Consolidated Metro  
Consolidated Ventura  
Continental Airlines  
Convergys  
Cooper Crouse-Hinds  
Cooper Tire & Rubber  
Cooper Tools  
Cooper Wiring Devices  
Copperweld  
Cordis Corporation  
Corning  
Corning Cable Systems  
Corning Frequency Control  
Countrywide Financial  
COVAD Communications  
Covansys  
Creo Americas  
Cross Creek Apparel  
Crouzet Corporation  
Crown Holdings  
CSX  
Cummins  
Cutler-Hammer  
Cypress Semiconductor  
Dana Corporation  
Daniel Woodhead  
Davis Wire Corp.  
Daws Manufacturing  
Dayton Superior  
DeCrane Aircraft  
Delco Remy  
Dell Computer  
DeLong Sportswear  
Delphi  
Delta Air Lines  
Delta Apparel  
Direct TV  
Discover  
DJ Orthopedics  
Document Sciences Corporation  
Dometic Corp.  
Donaldson Company  
Douglas Furniture of California

Dow Chemical  
Dresser  
Dun & Bradstreet  
DuPont  
Earthlink  
Eastman Kodak  
Eaton Corporation  
Edco, Inc.  
Editorial America  
Edscha  
eFunds  
Ehlert Tool Company  
Elbeco Inc.  
Electro Technology  
Electroglas  
Electronic Data Systems  
Electronics for Imaging  
Eli Lilly  
Elmer's Products  
E-Loan  
EMC  
Emerson Electric  
Emerson Power Transmission  
Englo Products  
Engel Machinery  
En Pointe Technologies  
Equifax  
Ernst & Young  
Essilor of America  
Ethan Allen  
Evenflo  
Evergreen Wholesale Florist  
Evolving Systems  
Evy of California  
Expedia  
Extrasport  
ExxonMobil  
Fairfield Manufacturing  
Fair Isaac  
Fansteel Inc.  
Farley's & Sathers Candy Co.  
Fasco Industries  
Fawn Industries  
FCI USA  
Fedders Corporation  
Federal Mogul  
Federated Department Stores  
Fellowes

Fender Musical Instruments  
Fidelity Investments  
Financial Technologies International  
Findlay Industries  
First American Title Insurance  
First Data  
First Index  
Fisher Hamilton  
Flowserve  
Fluor  
FMC Corporation  
Fontaine International  
Ford Motor  
Foster Wheeler  
Franklin Mint  
Franklin Templeton  
Freeborders  
Frito Lay  
Fruit of the Loom  
Garan Manufacturing  
Gateway  
GE Capital  
GE Medical Systems  
Gemtron Corporation  
General Binding Corporation  
General Cable Corp.  
General Electric  
General Motors  
Generation 2 Worldwide  
Genesco  
Georgia-Pacific  
Gerber Childrenswear  
Global Power Equipment Grp.  
GlobespanVirata  
Goldman Sachs  
Gold Toe Brands  
Goodrich  
Goodyear Tire & Rubber  
Google  
Graphic Controls  
Greenpoint Mortgage  
Greenwood Mills  
Grote Industries  
Grove U.S. LLC  
Guardian Life Insurance  
Guilford Mills  
Gulfstream Aerospace Corp.  
Haggar

Halliburton  
Hamilton Beach/Procter-Silex  
The Hartford Financial Services Group  
Harper-Wyman Company  
Hasbro Manufacturing Services  
Hawk Corporation  
Hawker Power Systems, Inc.  
Haworth  
Headstrong  
HealthAxis  
Hedstrom  
Hein-Werner Corp.  
Helen of Troy  
Helsapenn Inc.  
Hershey  
Hewitt Associates  
Hewlett-Packard  
Hoffman Enclosures, Inc.  
Hoffman/New Yorker  
The Holmes Group  
Home Depot  
Honeywell  
HSN  
Hubbell Inc.  
Humana  
Hunter Sadler  
Hutchinson Sealing Systems, Inc  
HyperTech Solutions  
IBM  
iGate Corporation  
Illinois Tool Works  
IMI Cornelius  
Imperial Home Decor Group  
Indiana Knitwear Corp.  
IndyMac Bancorp  
Infogain  
Ingersoll-Rand  
Innodata Isogen  
Innova Solutions  
Insilco Technologies  
Intel  
InterMetro Industries  
International Paper  
Interroll Corporation  
Intesys Technologies  
Intuit  
Invacare  
Iris Graphics, Inc.

Isola Laminate Systems  
Iteris Holdings, Inc.  
ITT Educational Services  
ITT Industries  
Jabil Circuit  
Jacobs Engineering  
Jacuzzi  
Jakel, Inc.  
JanSport  
Jantzen Inc.  
JDS Uniphase  
Jockey International  
John Crane  
John Deere  
Johns Manville  
Johnson Controls  
Johnson & Johnson  
JPMorgan Chase  
J.R. Simplot  
Juniper Networks  
Justin Brands  
K2 Inc.  
KANA Software  
Kaiser Permanente  
Kanbay  
Kayby Mills of North Carolina  
Keane  
Kellogg  
Kellwood  
KEMET  
KEMET Electronics  
Kendall Healthcare  
Kenexa  
Kentucky Apparel  
Kerr-McGee Chemical  
KeyCorp  
Key Industries  
Key Safety Systems  
Key Tronic Corp.  
Kimberly-Clark  
KLA-Tencor  
Kojo Worldwide Corporation  
Knight Textile Corp.  
Kraft Foods  
Kulicke and Soffa Industries  
Kwikset  
Lake Village Industries  
Lancer Partnership

Lander Company  
LaCrosse Footwear  
Lamb Technicon  
Lands' End  
Lau Industries  
Lawson Software  
Layne Christensen  
Leach International  
Lear Corporation  
Leech Tool & Die Works  
Lehman Brothers  
Leoni Wiring Systems  
Levi Strauss  
Leviton Manufacturing Co.  
Lexmark International  
Lexstar Technologies  
Liebert Corporation  
Lifescan  
Lillian Vernon  
Linksys  
Linq Industrial Fabrics, Inc.  
Lionbridge Technologies  
Lionel  
Littelfuse  
LiveBridge  
LNP Engineering Plastics  
Lockheed Martin  
Longaberger  
Louisiana-Pacific Corporation  
Louisville Ladder Group LLC  
Lowe's  
Lucent  
Lund International  
Lyll Alabama  
Madill Corporation  
Magma Design Automation  
Magnequench  
Magnetek  
Maidenform  
Mallinckrodt, Inc.  
The Manitowoc Company  
Manugistics  
Marathon Oil  
Marine Accessories Corp.  
Maritz  
Mars  
Marshall Fields  
Mattel

Master Lock  
Materials Processing, Inc.  
Maxi Switch  
Maxim Integrated Products  
Maxxim Medical  
Maytag  
McDATA Corporation  
McKinsey & Company  
MeadWestvaco  
Mediacopy  
Medtronic  
Mellon Bank  
Mentor Graphics Corp.  
Meridian Automotive Systems  
Merit Abrasive Products  
Merrill Corporation  
Merrill Lynch  
Metasolv  
MetLife  
Micro Motion, Inc.  
Microsoft  
Midcom Inc.  
Midwest Electric Products  
Milacron  
Modern Plastics Technics  
Modine Manufacturing  
Moen  
Money's Foods Us Inc.  
Monona Wire Corp.  
Monsanto  
Morgan Stanley  
Motion Control Industries  
Motor Coach Industries International  
Motorola  
Mrs. Allison's Cookie Co.  
MTD Southwest  
Mulox  
Munro & Company  
Nabco  
Nabisco  
NACCO Industries  
National City Corporation  
National Electric Carbon Products  
National Life  
National Semiconductor  
NCR Corporation  
neoIT  
NETGEAR

Network Associates  
Newell Rubbermaid  
Newell Window Furnishings  
New World Pasta  
New York Life Insurance  
Nice Ball Bearings  
Nike  
Nordstrom  
Northrop Grumman  
Northwest Airlines  
Nu Gro Technologies  
Nu-kote International  
NutraMax Products  
O'Bryan Brothers Inc.  
Ocwen Financial  
Office Depot  
Ogden Manufacturing  
Oglevee, Ltd  
Ohio Art  
Ohmite Manufacturing Co.  
Old Forge Lamp & Shade  
Omniglow Corporation  
ON Semiconductor  
Orbitz  
Oracle  
OshKosh B'Gosh  
Otis Elevator  
Outsource Partners International  
Owens-Brigam Medical Co.  
Owens Corning  
Oxford Automotive  
Oxford Industries  
Pacific Precision Metals  
Pak-Mor Manufacturing  
palmOne  
Parallax Power Components  
Paramount Apparel  
Parker-Hannifin  
Parsons E&C  
Paxar Corporation  
Pearson Digital Learning  
Peavey Electronics Corporation  
PeopleSoft  
PepsiCo  
Pericom Semiconductor  
PerkinElmer  
PerkinElmer Life Sciences, Inc.  
Perot Systems

Pfaltzgraff  
Pfizer  
Phillips-Van Heusen  
Photonics  
Pinnacle Frames  
Pinnacle West Capital Corporation  
Pitney Bowes  
Plaid Clothing Company  
Planar Systems  
Plexus  
Pliant Corporation  
PL Industries  
Polaroid  
Polymer Sealing Solutions  
Portal Software  
Portex, Inc.  
Portola Packaging  
Port Townsend Paper Corp.  
Power One  
Pratt & Whitney  
Price Pfister  
priceline.com  
Pridecraft Enterprises  
Prime Tanning  
Primus Telecom  
Procter & Gamble  
Progress Lighting  
ProQuest  
Providian Financial  
Prudential Insurance  
Quaker Oats  
Quadion Corporation  
Quantegy  
Quark  
Qwest Communications  
Radio Flyer  
Radio Shack  
Rainbow Technologies  
Rawlings Sporting Goods  
Rayovac  
Raytheon Aircraft  
RBX Industries  
RCG Information Technology  
Red Kap  
Regal Rugs  
Regal-Beloit Corporation  
Regence Group  
Respiratory Support Products

R.G. Barry Corp.  
Rich Products  
River Holding Corp.  
Robert Mitchell Co., Inc.  
Rockwell Automations  
Rockwell Collins  
Rogers  
Rohm & Haas  
Ropak Northwest  
RR Donnelley & Sons  
Rugged Sportswear  
Russell Corporation  
S1 Corporation  
S & B Engineers and Constructors  
Sabre  
Safeway  
SAIC  
Sallie Mae  
Samsonite  
Samuel-Whittar, Inc.  
Sanford  
Sanmina-SCI  
Sapient  
Sara Lee  
Saturn Electronics & Engineering  
SBC Communications  
Schumacher Electric  
Scientific Atlanta  
Seal Glove Manufacturing  
Seco Manufacturing Co.  
SEI Investments  
Sequa Corporation  
Seton Company  
Sheldahl Inc.  
Shipping Systems, Inc.  
Shugart Corp.  
Siebel Systems  
Sierra Atlantic  
Sights Denim Systems, Inc.  
Signal Transformer  
Signet Armorlite, Inc.  
Sikorsky  
Silicon Graphics  
Simula Automotive Safety  
SITEL  
Skyworks Solutions  
SMC Networks  
SML Labels

SNC Manufacturing Company  
SoftBrands  
Sola Optical USA  
Solectron  
Sonoco Products Co.  
Southwire Company  
Sovereign Bancorp  
Spectrum Control  
Spicer Driveshaft Manufacturing  
Springs Industries  
Springs Window Fashions  
Sprint  
Sprint PCS  
SPX Corporation  
Square D  
Standard Textile Co.  
Stanley Furniture  
Stanley Works  
Stant Manufacturing  
Starkist Seafood  
State Farm Insurance  
State Street  
Steelcase  
StorageTek  
Store Kraft Manufacturing  
StrategicPoint Investment Advisors  
Strattec Security Corp.  
STS Apparel Corporation  
Summitville Tiles  
Sun Microsystems  
Sunrise Medical  
SuntronE  
SunTrust Banks  
Superior Uniform Group  
Supra Telecom  
Sure Fit  
SurePrep  
The Sutherland Group  
Sweetheart Cup Co.  
Swift Denim  
Sykes Enterprises  
Symbol Technologies  
Synopsis  
Synygy  
Takata Restraint Systems  
Target  
Teccor Electronics  
Techalloy Company, Inc.

Technotrim  
Tecumseh  
Tee Jays Manufacturing  
Telcordia  
Telect  
Teleflex  
TeleTech  
Telex Communications  
Tellabs  
Tenneco Automotive  
Teradyne  
Texas Instruments  
Textron  
Thermal Industries  
Therm-O-Disc, Inc.  
Thomas & Betts  
Thomasville Furniture  
Thomas Saginaw Ball Screw Co.  
Three G's Manufacturing Co.  
Thrivent Financial for Lutherans  
Time Warner  
Tingley Rubber Corp.  
The Timken Company  
Tomlinson Industries  
The Toro Company  
Torque-Traction Mfg. Tech.  
Tower Automotive  
Toys "R" Us  
Trailmobile Trailer  
Trans-Apparel Group  
TransPro, Inc.  
Trans Union  
Travelocity  
Trek Bicycle Corporation  
Trend Technologies  
TriMas Corp.  
Trinity Industries  
Triquint Semiconductor  
TriVision Partners  
Tropical Sportswear  
TRW Automotive  
Tumbleweed Communications  
Tupperware  
Tyco Electronics  
Tyco International  
UCAR Carbon Company  
Underwriters Laboratories  
UniFirst Corporation

Union Pacific Railroad  
Unison Industries  
Unisys  
United Airlines  
UnitedHealth Group Inc.  
United Online  
United Plastics Group  
United States Ceramic Tile  
United Technologies  
Universal Lighting Technologies  
USAA  
Valence Technology  
Valeo Climate Control  
VA Software  
Velvac  
Veritas  
Verizon  
Vertiflex Products  
VF Corporation  
Viasystems  
Vishay  
Visteon  
VITAL Sourcing  
Wabash Alloys, L.L.C.  
Wabash Technologies  
Wachovia Bank  
Walgreens  
Walls Industries  
Warnaco  
Washington Group International  
Washington Mutual  
WebEx  
Weiser Lock  
WellChoice  
Wellman Thermal Systems  
Werner Co.  
West Corporation  
West Point Stevens  
Weavexx  
Weyerhaeuser  
Whirlpool  
White Rodgers  
Williamson-Dickie Manufacturing Company  
Winpak Films  
Wolverine World Wide  
Woodstock Wire Works  
Woodstuff Manufacturing  
WorldCom

World Kitchen  
Wyeth  
Wyman-Gordon Forgings  
Xerox  
Xpectra Incorporated  
XpitaX  
Yahoo!  
Yarway Corporation  
York International  
Zenith  
ZettaWorks

(Source: CNN, *Lou Dobbs Tonight* “Exporting America” as of 6/25/04)

Why have hundreds of American firms abandoned U.S. production – in whole or in part - in favor of relocating to China, Mexico or other similar locations? Largely responsible is the U.S. industrial managers’ reluctance to invest in *production method* Research and Development (R+D) for developing substantial increases in productivity and cost-reduction. Though such R&D is necessary for maintaining a firm’s long-term competitiveness, it is also expensive and carries an inherent risk of uncertain results. U.S. managers—who personally benefit from short-term increases in profits—have preferred instead to achieve cost-reductions and profit increases by the sure-fire method of hiring drastically cheaper labor—typically in foreign countries. This results in both a loss of American jobs, and a possible loss of expertise to other nations’ firms who are still willing to invest in production method R&D.

It is unlikely that the processes can be reversed by any quick fix. Thus, asking the schools of business administration to give more attention to production can’t change the priorities of the present faculties, or the intellectual assumptions and cultural biases that guide those institutions. The low esteem in which production work is held by the managerial teaching centers of the United States, private and public, cannot be altered by admonitions that they mend their ways.

### **OUTSOURCING VS. WORKPLACE DEMOCRACY**

The widespread transfer of manufacturing from the United States is having an additional, and virtually undiscussed, consequence. It not only drastically undercuts workers’ ability –at home and abroad—to control their lives and seek fair and safe working conditions; outsourcing also has disastrous consequences for productivity and R+D. The factory has historically been a chief site for the formation of trade-unions. In forming unions, workers strive to define their relationships to one another, as well as their relationships with management. Through this process, workers gain more control over their working lives, including the details of their work performance. Effectively, workers thereby gain increasing voice in the operation of their factories. Making profitable use of new production methods—especially those using capital-intensive computerized manufacturing equipment—requires a production labor force that is flexible, well educated and capable of exercising a range of independent decision-making. Thus developing and improving methods of a modern factory reinforces the workers own attempts to gain control over their working lives.

The outsourcing phenomenon undercuts this development in two ways. First, the classic choice of location for the offshore factory is China—where the government actively suppresses the formation of independent unions. Similar conditions can be found in many other nations around the world. Secondly, access to dramatically lower-wage labor removes

pressures on management to develop and implement higher-productivity equipment and techniques. Thereby, outsourcing relieves managements of responsibility for R&D costs that are required for developing and applying new technologies for raising the productivity of labor as well as capital.\*

### **PATTERNS OF DEINDUSTRIALIZATION**

The opening of the 21<sup>st</sup> century has included accelerated deindustrialization of U.S. industry. We can now see a pattern of symptoms that accompany the removal of production work from the U.S. locale:

- v Industrial research and development for innovative products and *production processes* is avoided;
- v Top management of leading firms become increasingly finance- and short-term-profit-oriented;
- v Investment in new equipment is deferred, and the age of manufacturing facilities increases;
- v Product variety within firms is enlarged and opportunities for standardization of components are avoided;
- v Maintenance of production equipment is deferred and product reliability declines;
- v Quality is controlled by defining acceptable percentages of defective products;
- v Work and workers are accorded low status, and therefore the organization of work is of secondary importance;
- v Technical initiatives by workers is resisted as diminishing the power and effectiveness of management; profits are maintained by seeking investment opportunities outside the original product sphere of the firm;
- v Production facilities are abandoned after systematic withholding of maintenance and equipment replacement;
- v Management seeks improvement in overall efficiency by intensifying administrative controls and supervision;
- v Wage rates are described as the prime cause of noncompetitiveness;
- v Opportunities for improving productivity of capital and labor through stabilization of operations are characteristically ignored, being mainly unknown to industry managers, while management attempts to pass along cost increases to customers.<sup>11</sup>

As I also noted in *Profits Without Production*: “When all else fails—and profits as well as management’s position are in peril—management turns to government for subsidy and rescue. Meanwhile, management seeks its self-justification in pronouncements about post-industrial society, “sunset” industries and the like.”<sup>12</sup> Managers of leading firms then seek

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\* The subject of developments in workplace democracy has been dealt with at length in *After Capitalism* Parts IV&V, (Chapters 9,10,11,12). These sections include details on these processes in various unions, industries and firms. It is important to understand that these processes also apply to a host of white-collar occupations and industries as well. ]

renewed viability for themselves by redefining their main function to marketing, leaving production to others. This process has been decades in the making.

### **ALTERNATIVE MANAGEMENT STYLES: MAZDA AND CHRYSLER CONFRONT AUTO INDUSTRY CRISIS**

The consequences of major differences in managerial styles can be far-reaching. Given current anxieties about the spiraling costs of oil, and America's addiction to gas guzzling SUVs, it is worth revisiting the strikingly different responses of Japanese and American auto manufacturers to an early oil crisis. Here is an illustration from the problems of the automobile industry. Japanese and American auto firms both experienced the "oil shock" of 1973. It's instructive to contrast the response in the number-three firm of each industry: Chrysler in the United States and Mazda in Japan. The Mazda management had invested heavily in the Wankel engine, an innovative mechanical design which also had high fuel consumption. Therefore, Mazda sales dropped sharply after 1973, changing hundred-million-dollar profits into equal losses, while the firm also faced indebtedness of about a billion dollars.

The Mazda management started a vigorous campaign to redesign product and production methods toward more fuel-efficient engines and the drastic mechanization of work (especially through installation of robots). The program was supported by financing from banks, with no help coming from government. At the same time, the management gave notice that the jobs of its workers were protected: attrition and early retirement would be the only methods used to reduce employment. During the period of major changeover and lowest production rate, management arranged for 5,000 of its workers to be deployed to Mazda dealers, working there as salesmen and maintenance men. There were pay cuts among managers at Mazda—the largest, 20 percent, among the senior managers—and elimination of bonuses for four years. Middle managers had their salaries and other income frozen. There were no reductions of pay or bonuses for factory workers.

By 1981, Mazda's indebtedness had been cut almost in half and the firm was profitable once again. Its labor productivity was almost doubled. More recently Mazda reported that its net profits had doubled in the first half of 2003, due to strong sales in Europe and Asia.<sup>13</sup>

At Chrysler, the response to OPEC oil pricing did not really start seriously until 1979, when the company was on the verge of bankruptcy. Chrysler turned to the U.S. government to guarantee its future financing, and management discharged 28 percent of its workers and 7 percent of white-collar employees. About two weeks before Chrysler management applied for federal loan guarantees, the top managers announced pay cuts for their levels of 2 to 10 percent. Now in 2004, Chrysler is no longer an American firm, having been bought by the German firm Daimler.

At Mazda the management extended to the work force an implicit understanding that they, production workers, have a major stake in the enterprise and that it is the obligation of management to make sure that that stake is protected. By contrast, the Chrysler management treated its production worker force as "commodities," tossing the ones not needed for management's plans onto "the market." The Chrysler pattern contains the idea that management has a far greater stake in the firm than the production workers, and that the presence of management employees is of greater importance for the competence of the enterprise. Mazda policy was oriented toward conserving the work force as a prime productive asset. The effects of these contrasting policies are obvious enough. At Mazda, management was virtually assured of full support from the work force, including

cooperation in the introduction and utilization of new technology. In the Chrysler case, that was hardly to be expected against the long background of management-union confrontationism.<sup>14</sup> It remains to be seen if American car manufacturers can learn from their past mistakes.

### THE ROLE OF U.S. WAGES

Americans witnessing the spectacle of industrial decline have typically responded with a barrage of “explanations.” The claim that “our high wages make us noncompetitive” is often issued first.<sup>15</sup> But history teaches us a different lesson. For two centuries, workshops, then manufacturing industries in the United States prospered while paying the highest wages in the world. This was notably so during the late nineteenth and twentieth centuries, when there was no question about the ease of transporting industrial goods, even across oceans. Product design and productivity in manufacturing in the United States were fully adequate to offset the lower wage costs enjoyed by manufacturers in all the other industrialized countries. Therefore one must ask why U.S. design and production competence faltered even as American managements no longer had to overcome a wage cost handicap.<sup>16</sup>

But U.S. industrial firms also have costs besides wages to production workers. Upper level managers in U.S. firms have arranged compensation for themselves and their closer associates that are unique in world capitalism. Here are summary data for 2000, on chief executive pay as a multiple of “employee average” in the U.S. and seven other economies.

Chief Executive Pay As A Multiple Of Employee Average <sup>17</sup>	
United States	531
Brazil	57
Mexico	45
Britain	25
Canada	21
France	16
Germany	11
Japan	10

Gretchen Morgenson has taken on the challenge of “Explaining (or Not) Why the Boss is Paid So Much”. She describes a proposal made by Daniel J. Steininger – chairman of the Catholic Funds – to limit executive pay at seven corporations to a maximum of 100 times the pay of the average worker.

The Steininger Seven are Cendant, Compuware, Delta Airlines, the El Paso Corporation, International Paper, Sun Microsystems and Viacom. All were picked because their chiefs’ pay had rocketed versus that of their average workers.

The gap between chiefs’ pay and that of lower-level workers has yawned in recent years. J.P. Morgan, the financier, is credited with suggesting that executives earn no more than 20 times the pay of low-level workers...

In a letter asking the S.E.C. to exclude the proposal, Cendant said it would “impose a constraint” on the salary of its chief executive, Henry R.

Silverman, cutting it to \$2.7 million a year from the \$3.3 million promised annually until 2012. And Mr. Silverman would lose his annual bonus of \$100,000 for each penny a share that Cendant earns.

Of course, Mr. Silverman could cut his pay to zero and not face the poorhouse. Brian Foley, a compensation expert in White Plains, said that from 1998 to 2002, Mr. Silverman received \$36.6 million in salary and bonus and reaped \$223 million from exercising options. He had unexercised options worth \$46 million, and his life is insured for \$100 million, at a cost to shareholders of \$6.5 million. And Cendant will pay Mr. Silverman \$83,000 a month after retirement.

For him to earn all that, his performance must surely be clear and measurable. But Cendant's letter to the S.E.C. calls the fund's proposal too subjective: "How will the company distinguish between those achievements stemming from the C.E.O.'s contribution versus those that are a result of favorable economic conditions or other factors?" That is precisely what critics of executive pay have wondered for years.<sup>18</sup>

In the face of these outrageously high American executive salaries, other explanations are offered for U.S. deindustrialization. I have dealt with these kinds of distracting arguments before; in each case, like the myth of the post-industrial society or that of uncompetitive American workers they act as cover stories.

Could the United States be suffering the consequences of having spurred the industrial reconstruction of Japan and Germany after World War II? The fact is that from 1948 to 1971 Japan received \$21.8 *million* in official economic assistance from the United States, while U.S. private investment in Japan was negligible. Under the Marshall Plan, West Germany received \$1.6 *billion* of economic assistance from the United States.

But didn't Germany and Japan get the benefit of building and operating new industrial facilities just because the U.S. had destroyed the older ones during World War II? On average, manufacturing equipment (except for certain units like power plants, railroad roadbeds) have been depreciated in the United States, Germany and Japan in cycles of about ten years. This points to the importance of the decision processes of industrial management that operated over this period, rather than to the unique event of new facilities construction some time after World War II.

Another explanation offered is that the United States just doesn't have "comparative advantage" in the "sunset industries". The economists' idea of comparative advantage has solid meaning when referring, for example, to the natural head start that the United States has in the growing of wheat, corn and cotton, or that Quebec has in the production of electricity from water power. But comparative advantage loses clear meaning when one considers the wide array of products produced in Germany and Japan with great success. What is particularly *German* about the machine tools or electric trolleys ("light rail vehicles") that enjoy a world market? Has anyone discovered an inherently *Japanese* quality in precision 35 mm cameras, hi-fi electronics or electron microscopes?<sup>19</sup>

National culture, geography and history, per se, do not account for either their industrial excellence or the U.S. industrial decline. The collapse of industry in the U.S. has been the result of managements' choice to "cash in their chips" rather than value and reinvest in the domestic production system.

By 2003, the list of U.S. industries that are undergoing deindustrialization has gotten quite long. U.S. firms in these industries have withheld investments for replenishing or improving their domestic production facilities. In the short-term, this strategy reduces operating expenses, (associated with new equipment, maintenance etc.) thereby increasing profits. As I have been arguing, the long-term cost however is much steeper – *destruction of the capacity to produce*.

The capacity to produce leans heavily on availability of *means of production*, which play an essential role. Everyone can recognize in the list of the following table both components that are widely used in machinery (ball and roller bearings, carburetors, pistons, rings, valves, transformers) as well as major classes of machinery, (machine tools, farm machinery, construction machinery). These listings appear here because they represent deindustrialization writ large.

The accompanying display on "U.S. Deindustrialization in Production of Machinery" shows the marked decline in number of production workers in U.S. manufacturing facilities producing capital goods—the baseline machines that are a crucial part of the means of production.

### U.S. DEINDUSTRIALIZATION IN PRODUCTION OF MACHINERY

Number of Production Workers (1000s)

Industry	1977	2001	Percent Change,
Machine tools (metal cutting)	37.2	11.6	-69 %
Rolling mill machinery	5.4	1.8	-67
Mining machinery	20.3	7.1	-65
Textile machinery	18.3	6.6	-64
Calculators and accounting equipment	10.4	3.9*	-63
Construction machinery	111.2	43.7	-61
Electronic computers (1987 & 2001)	54.7	21.3	-61
Farm machinery and equipment	96.2	41.1	-57
Oil and gas field machinery	39.8	17.1	-57
Machine tools (forming)	16.1	7.2	-55
Turbines and turbine generator sets	24.8	11.8	-52
Carburetors, pistons, rings, valves	26.0	13.9	-47
Power-driven hand tools	20.0	11.0	-45
Air and gas compressors	19.1	11.1	-42
Motors and generators	74.1	45.9	-38
Speed changers, drives and gears	17.6	11.0	-38
Internal combustion engines	65.3	41.2*	-37

Ball and roller bearings	41.3	26.3	-36
Transformers, except electronic	32.8	22.4*	-32

\* 1996 Data [Note: A drop in production was typically paralleled by a drop in the number of factories in the given industry, and by an increase in imports]. Source: U.S. Department of Commerce, Census of Manufactures, 1977; Annual Survey of Manufactures, 2001.

Depletion in U.S. industries has occurred in several different ways: profits are made from U.S. sales while production is done abroad by foreign firms buying into American companies; American firms maintain a production base in the United States, but put fresh capital abroad; an industry's profitability is maintained for a few firms that service a government market—as in shipbuilding—while the whole level of activity of the industry declines; managements' failure to invest in new technology causes a general decline in the industry, (such as fishery industries & railroads). The common effect stemming from all the depleted industries is fewer production jobs in the United States.

### **ON THE ROLE OF CHINA: "HIJACKING JOBS" FROM THE U.S.**

In March 2004 the AFL-CIO presented a formal Petition to the government of the United States asking for major relief from the effects of industrialization in China on jobs of American workers. In a carefully drawn brief, supported by several independent studies of industrialization in China, the AFL-CIO charged that American workers are suffering grave injury owing to the repressive anti-union policies of the Chinese government, which also support ambitions for unlimited profit-making by American and other firms. I have excerpted portions of the Petition and these appear in Appendix C. The data summarized there offer both a dramatic portrayal of Chinese worker exploitation, as well as drastic and strikingly rapid job loss for American workers. Those job losses extend over the whole range of manufacturing industry and are bound to have major effect in reducing, even wiping out, whole groupings of U.S. worker skills. The wipeout of skilled worker occupations has the further effect of requiring unprecedented effort to retrain Americans should there be a further interest in serious reindustrialization of the United States.

More than 2 million factory jobs have been relocated from the U.S. in recent years and there doesn't seem to be a halt in that outflow, (see the Section 301 in appendix). China is being marked as a particular villain in this development not only owing to the Chinese wages which are dramatically lower than American wages in comparable occupations, but also the possible role of the Chinese government as it declines to revalue its currency so that the exchange value of the Chinese Yuan is raised thereby making Chinese prices that much more competitive versus counterpart goods prices in the U.S.

*Business Week* has noted that "fully 65 percent of the growth in Chinese exports over the last decade ... has been generated by subsidiaries or joint ventures of global multinationals." The rising U.S.-Chinese trade deficit, said Stephen Roach, is "an unmistakable outgrowth of the U.S. penchant for outsourcing and China's rapidly emerging role as a global outsourcing platform of choice." Accordingly, Roach marks the investment export initiatives of U.S. industrial firms and financial institutions as being primarily responsible for the continued movement of U.S. manufacturing, in this case particularly to China.

Indeed, notes *Business Week*, "companies based in North America, Europe, Japan, and other Asian nations invested \$53 billion in Chinese facilities in 2002, making it the world's largest recipient of foreign direct investment."<sup>20</sup>

## **THE MOVES ARE FOR MORE PROFIT – NOT SURVIVAL**

Closing down U.S. factories in order to relocate manufacturing operations to China often requires major personal readjustments for the managers who are directly involved. Such considerations can be most important when the relocation move is made by owner-managers. The scene is different for the management cadres of large multi-division international firms whose managers go through careers that normally include the prospect of many work relocations. In either circumstance, however, major industrial relocation moves are typically made to obtain greater profitability – rather than assuring continued profitability as against near-certain loss. Accordingly, there has been the repeated prospect of more profits by making the move to Mexico or China. However, in the case of the television set industry “labor accounts for about 15 percent of the cost of making televisions”.<sup>21</sup> Accordingly, the transfer of U.S.-based production to Mexico or China is not a transfer from production worker wages of 15 percent of cost, down to worker wages approaching zero, but rather a downward wage shift that opens up prospects for greater profit. Consider that average compensation costs to hire American workers have now been running at about \$22 an hour in 2003. The alternative in Mexico or China is rather less than that, but not zero.

One of the features of newspaper coverage of Mexican and Chinese industrialization is the very limited systematic reporting on wages paid to production workers in those countries. Nevertheless, a move from the U.S. to a country with underemployed and underpaid people may make for possible higher profits.

The fact is however, that since the Second World War, until the close of the twentieth century, there has been a dramatic shift in the importance of production worker wages compared with salaries of administrative employees – all classes. In 1947, for every dollar in production wages paid in U.S. manufacturing, salaried employee payments amounted to 31 cents. As we have seen, by 1996, for every dollar of payment in production wages, the payments to salaried, (administrative) employees amounted to another dollar. Typically neglected in accounts about moving U.S. production offshore is reference to the scale of administrative salaries in the corporate management of U.S. industrial firms, which now equal or exceed the total outlays for production worker wages.

There is, of course a second and perhaps more important effect from the process of deindustrialization of the U.S. Closing production facilities in the United States while expanding offshore production, as in Mexico or China often means unloading workforces that have made significant advances along the disalienation, (unionization) route in favor of employing workers who are beginners in that process.

## **COLLAPSE OF WHOLE INDUSTRIES THE BIG THREE LEAVE DETROIT**

The U.S. auto manufacturers provide another case in point. Once the jewel in the crown of American industry, they too are participating in the ravages of deindustrialization.

For a decade after World War II, the automobile industry in the United States not only paid the highest wages in the world to its industrial workers but also produced the lowest-priced cars in the world, measured in price per pound of vehicle. Detroit pay scales were two to three times those of autoworkers in Western Europe. But the average productivity of labor in the U.S. auto industry, thanks to greater mechanization and more refined organization of work, was about three times that of Western Europe. As a

result, the Detroit product was so attractively priced that it not only dominated the U.S. market but was also exported to markets around the world.<sup>22</sup>

By 2001, forty-six years later, the situation had been transformed and imports supplied 61 percent of the U.S. auto market.<sup>23</sup> This process of failure is all the more significant because the U.S. auto industry is more than an industrial colossus. Detroit made mass production an American and then a worldwide force. Many people were reluctant to accept that these castoff industrial workers should redeploy themselves into new-look “services” or high-tech occupations. After all, if the United States no longer excelled at rolling cars off the assembly line, what was left? “The air has been full of recriminations about who is at fault. The top managers of the Big Three have singled out the high wages of U.S. autoworkers as the prime cause of their lack of competitiveness in the marketplace”<sup>24</sup> This focus was demonstrated in the 2003 contracts with the UAW, which established a two-tier wage system for workers in auto parts factories.

New-hires at two big parts supplier companies, Visteon and Delphi, will now be paid “competitive wage and benefit levels” approximately \$10 lower than those companies’ current wage of over \$25 an hour. The new low tier would be permanent, with no “grow-in” to former levels. The exact wage is unknown.

Delphi (30,000 workers) was spun off from GM in 1999 and Visteon (22,000) from Ford in 2000. At that time, the union maintained the wage parity that had always existed between Big Three assembly, powertrain, and stamping workers and those who made parts.

This year, the UAW reversed course and took explicit action to lower wages for 52,000 of its members who have not yet been hired. Current Visteon and Delphi workers will be allowed to escape their two-tier factories by transferring to Ford and GM plants, as openings occur. When bargainers settle on the two-tier wage, it will not be submitted to members for ratification.<sup>25</sup>

Despite the setback to American autoworkers’ wages, the fact remains that the German and Japanese success in gaining a greater share of the U.S. auto market has not been due to cheaper labor. In 2001 the average hourly compensation cost, (money plus non-monetary benefits) for U.S. autoworkers was \$28.93. This was surpassed in Germany where workers received \$30.60, and nearly matched in Japan at \$25.00.<sup>26</sup> Despite these similar compensation costs, in 2001, Germany shipped cars worth \$15 billion to the US. Japan had even greater success with \$31 billion. Together these two countries are responsible for 43 percent of all car imports in the U.S. market.<sup>27</sup>

The Big Three American Auto companies, (now Big Two since Daimler Chrysler is German) have responded by becoming less American. Whole lines of their cars are manufactured abroad and imported. Ironically, *Japanese* auto firms, Toyota and Honda, have opened plants in the U.S. while GM, Ford and Chrysler have been closing them.

Recall that, during the 1950s, U.S. auto worker wages of two to three times those of Western European workers proved no barrier to the U.S. industry’s holding its domestic market, as well as sizable markets abroad. Detroit offset the wage differential with high

productivity of labor and capital. Why is the U.S. auto industry unable today to compensate, as it once did so effectively, for differences in labor and other costs?

Once again, the answers have been well known for decades:

The place to begin is with the quality of the means of production themselves, and then the methods of production organization.

Machine tools are the basic production equipment of the auto industries. By 1978, 76 percent of the machine tools used in the U.S. auto industry were ten years old or older. Its production equipment was older than the average for all U.S. manufacturing (69 percent ten years old and older).<sup>28</sup>

The managers of the Big Three failed to modernize and upgrade their basic production equipment. Many production divisions were treated as “cash cows,” being milked of their assets.<sup>29</sup>

But the development of major differences in the organization of production between the U.S. and the Japanese auto industries probably had the major effect on productivity. The core of the matter is this: major Japanese auto firms have learned the connection between stabilization of production rates and increased productivity of labor and capital, as well as the wide range of cost savings that are made possible when a production system is operated in a sustained, stable pattern.<sup>30</sup>

Similar considerations bear on the efficiency even of entire industries. Thus, when an industry is operated in a highly unstable fashion, it suffers penalties in lowered productivity of both labor and capital. In the case of U.S. subway car manufacturers, which I will discuss more fully in chapter 5, the lack of a stable market, (owing to chaotic and unpredictable government financing) encouraged U.S. firms to abandon the industry. This contrasts with the cases of France and Japan, where governments supported local subway car manufacturers, it being understood that these firms would also gain customers in other countries.

### **STABILIZING OUTPUT FOR PRODUCTIVITY GAIN**

Whatever is being manufactured in a production facility, stabilizing operations is also of crucial importance. As stability is achieved, the rates of output of individual machines become more consistent so one is able to predict future rates of production with a narrower margin of error.

Two ideas are crucial here: stable operation of a single machine – or an entire factory – means working at rates within predictable and acceptable limits. Average output of machines, even single worker operations, improve as there is less variation in output rate. When a power plant is operated in a stable manner, more electricity is produced for each ton of fuel that is consumed. The rolls in steel rolling mills last longer when they are used at more even, less varying speeds.<sup>31</sup>

Secondly the stabilization of output rates of individual machines in a factory helps raise the productivity of the system as a whole. When output is stabilized in an entire factory, there are fewer breakdowns, and the average life of machines, for instance metal-cutting tools, is increased, resulting in a higher degree of utilization of the production machines (the

actual production time increases as a proportion of the available time). At the same time, stabilization lowers scrap rates and improves the quality of product.

Under these conditions it becomes possible to operate an entire factory with a substantially reduced inventory of work in process, since “buffers” are not required between operations as insurance against breakdowns. For similar reasons inventories of raw materials and purchased components can also be reduced. Those reductions, in turn, make possible a larger output in proportion to the working capital invested in the plant. Also, owing to the higher productivity of individual machines, and lessened requirement for factory floor space for in-process storage, a smaller fixed investment in machines and factory buildings becomes feasible. All told, the stabilization of output in a factory as a whole makes possible substantial improvement in the productivity of capital and thereby – automatically – in the output per worker hour.

More is involved here than a simple statistical harmony between men, machines and materials. Stabilization of output in an entire production system requires a method of organizing work that invites and encourages sustained cooperation among workers, technicians, engineers and administrators. Such cooperation is the vital element that permits a production system to respond to the requirements of stable operation. The top-imposed control system favored by American managements has yet to match the results in stabilization that are gained thru cooperation.

An early description and diagnosis of a stabilized system of work organization in an auto factory appeared in my 1958 book, *Decisionmaking and Productivity*.<sup>32</sup> There the operation of the automobile- and tractor-producing factories of the Standard Motor Company in Coventry, England were described and analyzed. The main effects of a stable production system were all there: reduced variation in output rates; unusually high productivity of capital and labor; strikingly low inventories of work in process per vehicle produced, close attention to preventive maintenance and markedly efficient performance of emergency maintenance to prevent downtime; a sharp increase in average output per worker and output per unit of capital investment that corresponded with the stabilization of output rate in the factory as a whole; very high product quality.\*

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\* The system of work organization that operated in the factories of the Standard Motor Company involved a management-union agreement on a “gang system” whereby worker groups took responsibility for the detailed allocation of work tasks. Production bonuses were paid to the gang’s members on the basis of the output of the group as a whole. In the tractor factory, the entire factory formed one gang, with output measured by quality-accepted tractors at the end of the line. Every worker, technician, engineer and administrator in the factory knew the production targets for the day and the week and could therefore gauge every individual work performance in accordance with the requirement of the factory’s goals. There are, of course, alternative possible ways of inducing cooperation for the detailed performance of production work.

In the Standard Motor Company the production-oriented management defined itself, saying “we try to give a service to the factory.” With respect to the familiar process of expansion of managerial control and costs, the top management at Standard said: “We just don’t want to have people who do empire building. We make it a point of going after a person who attempts to enlarge his staff.”<sup>33</sup> As might be expected, the Standard Motor Company operated with substantially lower administrative costs than did other automobile firms of Great Britain, which included Ford and General Motors.<sup>34 35</sup>

Creating a stable environment for production is crucial for the well being of any industry. Deindustrialization and outsourcing strike at the heart of this.

### **THE MACHINE TOOL INDUSTRY: DECAY AT THE ROOT**

We can gain a key insight into the state of American production capacity by looking at the nuts and bolts industry that make the very means of production. Machine tools are the sophisticated machines used to precisely shape metal. As such they are crucial to making the machines that are in turn used to make all of the high tech gizmos we have come to depend on. Without machine tools, modern industry as we know it cannot exist. I examined this basic question in my study, *Our Depleted Society*:

Machine tool production is the industry most basic to a society utilizing metal and machines. Machine tools include all those machines that remove metal in the form of chips (cutting machines), or that shape metal by pressing it between dies (forming machines). The products of this industry, the lathes, milling machines, drills, and the like, are used to manufacture all other machines including those specialized toward particular products: plastics, textiles, farm machines, computers, printers.<sup>36</sup>

The last data on age of machine tools in U.S. factories comes from 1996. We find that 1.4 million, or 60 percent of all machine tools in the U.S. are upwards of 11 years old. The stock of forming machines is especially aged, with 71 percent being 11 + years old.<sup>37</sup>

The growing age of machine tools in use in American factories demonstrates that the basic manufacturing equipment for American industry is not being replaced. This has two negative consequences: productivity improvements offered by new equipment are forgone; and secondly, the continual decay in machine tool stock puts the U.S. at a progressively greater disadvantage vis-à-vis other industrial and industrializing countries that have invested in new machinery. Why has U.S. industry delayed in making this investment? The firms using the existing machine tools have insisted that the savings from the introduction of new machines must pay off the initial cost of the machine within a period of perhaps four to five years, or even sooner.

This means that it is not enough for new machines to have a higher output per hour of use, that is, greater productivity. It means that it is also necessary for the new machine’s price and cost of operation to be low enough to register in the form of payback of the initial cost within 4 or 5

years. But the prices of new US-made machine tools during the last decades of the 20<sup>th</sup> century were too high to be attractive to machine-tool users on a large scale. The result is that the demand for new machine tools has been so low that the metal-working machinery stock of the United States industry has aged, leaving the U.S. with a progressively less efficient set of basic production machines available to them.<sup>38</sup>

Traditionally, U.S. machine tool factories did not use mass production techniques, (despite their product being the very basis of mass production). Furthermore, U.S. machine tool firms diversified the line of products they produce, partially to differentiate their own products from the competition. As a result U.S. machine tool firms wound up producing small quantities of many different models. This raised the cost of manufacturing and became the basis for a high selling price. Industry-wide standardization as a method to cut manufacturing costs was ignored by management because it would allow customers to use replacement parts or accessories from competing firms. (Indeed, to my knowledge, there has been no extensive study of the cost saving that might be obtained in the machine-tool industry if standardization were to be widely practiced.)

Until 1978, the U.S. machine-tool industry was a premier producer for the industrial markets of the world. By 2002, the industry shipped only \$1.9 billion of machine tools, *exporting* \$0.8 billion, while the U.S. *imported* \$2.3 billion.<sup>39</sup> The Pentagon and NASA – which purchased an increasing proportion of machine tools sold in the U.S. – were not interested in sponsoring research for developing production methods intended to advance manufacturing productivity of the machine tool industry. Since industry and non-military branches of government both neglected to support university research on improving production capability, relevant departments in U.S. engineering schools focused on satisfying the needs of the military and space agencies. The engineering schools, lacking financial support from the non-defense agencies or industry, conformed to the defense / space agencies' interests and treated production capability as a less important function. In Japan, however, different priorities ruled. The government encouraged work on modularization and standardization in order to create low-cost products that had a wide-range of commercial applications. Furthermore Japanese firms were the first to apply numerical and computer control automation technology, (which had first been developed in the U.S.) to small and medium size machine tools that were affordable for small and medium size companies. Clearly the Japanese machine tool industry had achieved a comparative advantage.

### **PROFITS FROM DECAY? – THE CASE OF SINGER**

If we want to see the consequences of decades of deindustrialization we can take the case of Singer sewing machines.

The story of the U.S. sewing-machine industry offers a good example of how moneymaking and basic economic deterioration can go hand in hand. The 113-acre Singer Company factory in Elizabethport, New Jersey, was the last place in the United States where household sewing machines were manufactured. In 1947, the factory employed around 10,000 people. By 1964 it was down to 3,000 workers. The factory closed in the late 1960's. What happened to the once major United States sewing-machine industry as a producer of these equipments?

The essential weakness of Singer's operation in Elizabethport was this: In order to produce sewing machines that were competitive with the output of Japanese workers, who were at that time paid one sixth of United States wages, it was essential that productivity in the U.S. plants exceed the productivity of operations in Japan by a factor of about five. But Singer's management failed to install the modern high-productivity equipment required to make the needed gains in productivity. The production workers in Elizabethport were stuck with operating a stock of largely aged equipment. In 1963, 40 percent of Singer's foundry equipment was at least twenty years old, contrasted with a national average of 5 percent. Furthermore, 80 percent of the Singer factory's metal-cutting machine tools were over twenty years old, contrasted with a national average of 37 percent.

Singer also resisted the use of standardized components for its sewing machines to a truly remarkable degree. They not only manufactured their own screws, but also the very tools for making screws to their own special dimensions. Manufacturing specialized screws may have once seemed like a shrewd way to generate a captive spare-parts business, but by the middle of the 20<sup>th</sup> century manufacturing parts in relatively small quantities was undoubtedly more expensive than using readily available mass-produced parts. Equally important in preventing productivity gains, Singer failed to redesign their product in order to simplify its manufacture. Singer used 91 colors for their machines and kept over 80,000 different parts in inventory. They stocked about 100 kinds of flat, metallic washers with less than 1" outside diameter. The Singer Company, (as well as its former U.S. competitors) did not bother to do the job of standardization that was so competently mastered by the Japanese sewing-machine industry.

The story of American firms who neglected industrial research, investment in modern machinery, standardization and simplification of design has been repeated many times and was certainly important in the ongoing disappearance of U.S. manufacturing industries such as: machine tools, commercial electronics, household appliances, televisions, clothing, internal combustion engines, turbines and generators, office equipment, and machinery of all kinds.<sup>40</sup>

Nevertheless, even without mechanization and systematic production organization, Singer developed a strong financial position. The Singer Company and its reputable sewing machines had been household words in the United States and other countries for over a century.<sup>41</sup>

By 2003 Singer had manufacturing facilities in China and several in Brazil. Management and marketing offices and facilities exist in 17 countries. The management controls 17,500 employees, (mainly in retailing its products) and is confident of its ability to "offer competitive, state-of-the-art computer[ized] machines and full-featured mechanical machines by working closely with third-party manufacturers who supply the Company with product. The Company plans to establish a new sewing machine research and development center in Shanghai in 2003."<sup>42</sup>

The formula for Singer's financial success adds up to this: expansion of production and sales abroad; expansion of ownership in the United States; expansion of sales in the United

States, based upon overseas production with low-wage labor; contraction of sewing-machine production within the United States, owing to failure to offset U.S. costs by improved productivity. By the conventional tests of financial success the Singer record is entirely commendable. By the test of participation in a viable American production system, the Singer record is calamitous.

If this sort of pattern were the performance of a few firms, a rarity, a set of exotic contrasts, then there would be little point in pursuing this analysis. But the combination of financial success and decaying productive capability has become a far-ranging pattern that threatens the viability of the American industrial production system at its base.

## **DIVERSITY OF DEINDUSTRIALIZATION**

Basic manufacturers like Singer are not the only casualties of deindustrialization. Workers and engineers at high tech companies like the Boeing Corporation have also paid the price. This lead Boeing engineers to unionize and stand up for their basic rights as workers.

The engineers at the Boeing Corporation in Seattle have been responsible for the main design and production work for Boeing Aircraft and Space Vehicles. They are concerned that the apparent Boeing top management policy has caused their U.S. employment to drop by about 50 percent during the first few years of the new century. Evidently, Boeing management has desired to abandon much of its metalworking production. Instead it has instituted a series of outsourcing contracts negotiated with assorted subcontracting firms in Japan, China, Russia & Poland. All told, the domestic content of successive Boeing aircraft has been declining sharply. Among the engineer unionists at Boeing, the judgment is that Boeing top management is moved by an anti-union imperative that influences where work is to be done.

As of June 2002 Boeing management reported that “currently some 5,300, or about 3 percent of the 174,000 employees of Boeing and its subsidiaries, are based outside the United States.”<sup>43</sup> In Moscow, Boeing has organized a design center that accounts for 500-600 jobs. In their search for further outsourcing of engineering design work Boeing has established a research and technology center in Spain, which began with fewer than 100 employees, but with prospects for further expansion. Boeing’s pattern of “going global” is informed by the current business model that favors free movement of capital that will maximize short term financial gain for the firm and with no sense of obligation to the larger United States community. While Boeing strategy may be very well suited to the desires of its shareholders, it should be contrasted with the business strategy of the Airbus Company, which has become a major competitor to Boeing.

The business and technical strategy of Airbus combines the usual business interest together with a social interest. The latter stipulates that a corporation has an obligation to invest domestically – in the case of Airbus this means investing and subcontracting for their production work among the principal countries of Western Europe. It means more than that, because, once committed to the importance of investing domestically, the Airbus managers and engineers have an automatic interest in contributing to the competence of the assorted suppliers who serve Airbus throughout Western Europe. Boeing managers and engineers are under no such obligation. The competence and technical / economic well being of American workers and engineers are not part of their sphere of normal concern, only the near term profitability of the company and the value of its stock.

A focus on short-term investor interest as a prime decision criterion therefore tends to run counter to public interest. So while Boeing strategy with ever more outsourcing from the

U.S. may be great for shareholders, it does not contribute to the continuity and competence of employment among Boeing's blue and white-collar workers.

Nearly 12 years ago, as the Soviet Union collapsed, Boeing started recruiting out-of-work Russian aerospace engineers to collaborate on space and commercial-airplane projects. At first, their numbers were small. But the Russians did good work for as little as \$5,400 a year. Boeing began to view its Russian staff as the vanguard of a new push into the European market, and in 1998 it opened its Moscow Design Center, which a year ago boasted nearly 700 engineers. From the day the center opened, engineers at Boeing's Seattle hub had voiced concerns. Last year, [2002] those fears boiled over.

Boeing's 22,000 engineers in Seattle, represented by the Society of Professional Engineering Employees in Aerospace (SPEEA), threatened to walk out in December, when their contract expired, if the Russian venture wasn't cut back. Partly as a result, Boeing reduced its corps of Moscow engineers to about 350, though the company [management] won't be precise. "The underlying fear is that we're giving away our technology and our competitive advantage, and we're losing jobs," says Dave Landress, a test engineer and union rep. The union has good reason for concern: Struggling to reduce costs to cope with the sharp falloff in orders from the ailing airline industry, Boeing has laid off 5,000 engineers since 2001.

And Boeing still plans to shift jobs to Russia in the future, company insiders say.

The strategy is to integrate the cheaper Russian engineers into the design process for everything Boeing makes. The Russian staff--spread over seven cities--already works on everything from redesigning jet-wing parts to designing components for the International Space Station. Boeing's [management's] other goal is to develop a 24-hour global workforce, made possible by a satellite link from Russia to Boeing's Seattle offices.<sup>44</sup>

Workers at many other U.S. companies have faced the same struggles as the Boeing engineers. Not all of them have been as vocal or as visible in their efforts to protest profit driven "globalizing" managers. Let us look at some other key examples.

Levi Strauss – the famous blue jean manufacturer – ended U.S. production on Sept. 25<sup>th</sup> 2003, by closing the last of its U.S. plants. Levi's closed a total of 7 plants in 2002-3, putting 5,600 U.S. workers out of jobs. This was on top of 24 previous factory closings that put 13,000 employees out of work from 1997 – 2002. Some aspects of the Levi's story deserve particular attention. The Levi's employees who were laid off in 2002-3 were given a substantial severance package including pay, medical coverage and an enhanced pension plan. This is cited only to show that the corporation has a large amount of cash at their disposal.\* They have opted to using their funds for paying severances, relocating

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\* When I asked Levi Strauss what they spent on Research & Development [for technology and productivity improvement] they responded by hanging up the phone!

manufacturing abroad and focusing on marketing rather than manufacturing as the strategic activity of the management.<sup>45</sup>

The Carrier Corporation, the largest manufacturer of air conditioning equipment in the world, is planning to close its two manufacturing plants in East Syracuse- which provided employment for generations of Syracuse residents—laying off 1,200 workers. Carrier, “an emblematic employer ... said it would not build its air conditioners in New York State any more simply because the company can make more money by building them elsewhere”.<sup>46</sup> The manufacturing of refrigeration units is to be relocated to Singapore, in part to be closer to the Asian-dominated shipping container industry to whom Carrier is a supplier.<sup>47</sup> This is an example of how the loss of one manufacturing industry can cause supplier industries to follow.

In a survey story on deindustrialization in Rockford, Il (*New York Times*, January 4<sup>th</sup>, 2004) we learn about “The Joyless Recovery”. This dispatch found that 11,000 jobs had been terminated in that city between 2000 and 2003. This included 1,000 jobs in a factory producing for Motorola. That firm shut down the plant in Rockford and invested \$1.9 billion in China.

The staple Rockford firm, called Rockford Power Train has “stopped producing most of its components at home and started buying almost all of them abroad – from South Korea, Poland, Germany, and most of all China”. In parallel, “the number of employees in Rockford has dropped from 800 in 1988 to 250 and the work is limited, largely to assembly, quality control and management”.

In parallel with these strategic moves of deindustrialization, a new and rapidly expanding enterprise is depicted in Rockford Il. “Machinery from closed factories is scrapped, and the metal is sent to Chinese steel mills.”

On November 23, 2003 Julia Bauer reported in *The Grand Rapids Press* that the Electrolux Corporation was planning to shut down its refrigerator factory in Michigan and move the plant to Mexico.

Greenville’s massive Electrolux refrigerator plant isn’t losing money. It just isn’t raking it in fast enough. The CEO of the huge Swedish appliance maker explained that squeeze in a telephone conference with stock market analysts in Stockholm last month.

... On the same day, Carl Hoag and 2,700 other Electrolux employees arrived at work to hear the company’s stunning announcement it may shut the 100-year-old Greenville factory in 2005 and move production to Mexico...

It could save Electrolux \$81 million a year. But shutting the plant would be crippling to employees and the town where the plant is the largest employer and taxpayer. The specter haunts workers who fear losing jobs that pay \$13 to \$15 an hour, health insurance, paid vacations and pensions.

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\* A reader with a reasonably long memory may recall that this is precisely the pattern that once prevailed before World War II as dismantling of many U.S. industrial facilities and transportation units, (like bridges, elevated roadways) proceeded with the scrap metal sold off to Japan’s steel mills which were rapidly expanding at that time.

“You see some of them go right to their knees bawling. They don’t know what they’re going to do. It just tears your insides out. It’s too devastating,” said Hoag, president of Local 371...

“About 200,000 jobs have gone from the border area in Mexico over to China,” Straberg [CEO of Electrolux] said in the conference call. “When I met President Fox here in Stockholm . . . he was very concerned about that, and was very supportive of any investment that companies like us would make in these areas.” ...

...Last week, the Greenville City Council ponied up \$12,500 for a plant-construction feasibility study. The Michigan Economic Development Corp. is paying the other half of the \$25,000 bill to hire a consultant for the study that includes cost estimates...

Hoag [the union president] said he is frustrated with the way state officials have figured the plant’s costs, at roughly \$55,000 per employee. “They take the gas bill, the light bill, the trucking bill, and the wages for the plant manager, the engineers, and the line workers, and pool them all together, then they divide by how many workers there are,” Hoag said. The average Greenville worker makes about \$13 an hour, he said. With insurance and other benefits, the total jumps to more than \$25 an hour. That’s 10 times the hourly wages and benefits in Mexico, a cold fact that scares Greenville workers...

[According to Evans, Electrolux spokesman,] “all other major competitors have established significant manufacturing bases for refrigerators in Mexico.” Those include General Electric, Whirlpool, Maytag, Samsung, LG (formerly GoldStar) and Haier. Last week, Michigan-based Whirlpool said it was expanding its Mexican refrigerator plant to shift production of side-by-side units from Fort Smith, Ark. ...

To date, Electrolux has eliminated 4,330 workers, shaving its work force to 78,000 worldwide. \* 48

From examining a careful biography of Jack Welch’s stewardship of General Electric we learn that “GE has either closed or sold 98 plants in the United States during the Welch era, 43 percent of the 228 it operated in 1980”.<sup>49</sup> More recently we learn from *Business Week*<sup>50</sup> that General Electric currently has 10,000 employees in China, will have 20,000 workers in India by 2004, and is investing in a \$64 million technology and R&D center in Shanghai, which will employ an additional 1,200 by 2005. The type of work which is being moved by GE to the India and China facilities include finance, information technology support, and R&D for medical, lighting and aircraft.

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\* A transcript of Straberg’s conversation with analysts is available online at [electrolux.com/node571.asp](http://electrolux.com/node571.asp) then select the Oct. 21 “Questions and answers from the report for the first nine months of 2003.”

## THE DEINDUSTRIALIZATION OF N. CAROLINA \*

Deindustrialization not only affects whole companies, it has transformed the lives of workers in whole states. To give a closer picture of how the loss of manufacturing jobs is occurring in everyday America, here is the state of North Carolina as an example. In the late 1800's manufacturing in North Carolina was focused largely on cigarette manufacturing. At the turn of the 20<sup>th</sup> century, cotton and furniture manufacturing became more important but it was only in the 1950's that the value of manufactured goods surpassed agricultural production. Indeed, by the 1990's, compared with all other states, North Carolina had the greatest percentage of its workers in manufacturing jobs.<sup>51</sup> More recently, however, North Carolina has been subject to the same factors that are killing U.S. manufacturing nationwide.

Manufacturing employment in North Carolina dropped from 834,300 in January 1990 to about 599,400 by September 2003—a loss of 28 percent in less than 13 years.<sup>52</sup> By February, 2001 there were “fewer than half the 400,000 textile and apparel jobs that dominated North Carolina employment in 1980.” Several decisions affecting investment in North Carolina had a crucial effect on the subsequent development.

The unionized heavy industry of the Upper Midwest never took root in North Carolina. Instead, the state became the South's most industrialized through thousands of low-wage, low-skill jobs like those in textile mills. ... in 1990, a group of business leaders told United Airlines not to build a maintenance plant that would have added 5,000 high-paying jobs to the state, because its union shop would not be welcome. The airline instead built in Indianapolis.<sup>53</sup>

From 1990 to 2002, there were 933 reported factory closings in North Carolina, putting 142,891 people out of work.<sup>54</sup> The ten largest closings are given here.

Date	Company	City	Product	Jobs Lost	Reason for Closing
6/1/1996	Black & Decker Corp.	Tarboro	Power Hand tools	900	Cut Costs
6/1/2002	Abbott Laboratories	Laurinburg	Anesthesia / Med. Kits	900	Consolidation
5/1/1998	Stevcoknit Fabric Company	Wallace	Fabric	846	Restructuring

\* Why North Carolina? North Carolina is perhaps the only state that has been keeping track of factory closings. While state data is commonly available on employment, the database created and published by the Employment Security Commission of North Carolina, that records details of individual factory closings in their state is truly unique. Their database is compiled from surveys of newspaper accounts of plant closings statewide, and from reports submitted directly to the Employment Security Commission. The fact that this database is such an exception, and that no similar database exists at the national level, means that gauging the extent and pace of deindustrialization, (factory closings) is severely hampered.

8/1/1995	Brown & Williamson Tobacco Corporation	Reidsville	Cigarettes	840	Corporate Restructuring
1/1/1999	Windmere Durable Holdings	Asheboro	Small kitchen appliances	840	Consolidation
7/1/1996	Perdue Farms Inc.	Siler City	Poultry	800	Restructuring
6/1/1997	Dayco Products	Waynesville	Ind. Hose/Belts	770	Competition
12/1/1996	Fieldcrest Cannon, Inc.	Eden	Blankets	750	Division Sold
2/1/2002	Ansell Golden Needles	Wilkesboro	Industrial knitted gloves	750	Relocating to Mexico
12/1/2000	Swift Denim	Erwin	Denim	740	Cost reductions

There was also a definite clustering of factory closings from 1990 to 2002. That is what appears in the following ranking of factory closings with *Textile & Knit Goods* and *Apparel* leading the pack, followed by solid representation from *Furniture*, *Electronics*, *Motor Vehicle (Parts and Assembly)* and *Food Products*.

<b>North Carolina Factory Closings, Selected Industries (1990 – 2002)</b>	
Textile & Knit Goods	234
Apparel	178
Furniture	75
Electronics & Electrical Equipment	30
Food Products	17
Motor Vehicle Industry (parts assembly)	17
Industrial Equipment & Machinery	12
Plastics	10
Medical Equipment & Pharmaceuticals	8
Wire Products	7
Paper Products	6
Air Conditioning Equipment	5

As in other states, multiple factory closings in particular industries have a particularly destructive effect on workers in that region. Workers with similar skills and work experience are left to compete for jobs at the remaining factories. When the laid-off workers are forced to take up work in a new industry, the experience they accumulated in their previous line of work may be wasted.

Beyond the loss of employment: once a set of the factories for a particular industry type has been shut down, it becomes difficult to restart production. Specialized people and equipment are dispersed. Training of new workers for that field stops, and suppliers to that industry may also have a difficult time staying afloat. In this barren environment, setting up a factory may require bringing in expertise from abroad. Furthermore, a new factory will be competing against foreign firms who are in motion, and are working in an environment where necessary inputs are available. *For these reasons it is likely that most of the U.S. manufacturing sectors that were shut down will never be revived except as part of a national reindustrialization effort.*

### U.S. FIRMS MOVE WHITE COLLAR WORK ABROAD

By now people have noticed that the loss of jobs to foreign locations is not limited to the manufacturing and blue-collar workers.

	2005	2015
LIFE SCIENCES	3,700	37,000
LEGAL	14,000	75,000
ART, DESIGN	6,000	30,000
MANAGEMENT	37,000	288,000
BUSINESS OPERATIONS	61,000	348,000
COMPUTER	109,000	473,000
ARCHITECTURE	32,000	184,000
SALES	29,000	227,000
OFFICE SUPPORT	295,000	1,700,000
TOTAL	588,000	3,300,000

The kinds of jobs that are being lost in the U.S. to foreign countries are changing. Increasingly, jobs in professional fields like aeronautical engineering, software design, stock analysis and research & design are being shifted abroad. Major Wall Street firms like J.P. Morgan, Morgan Stanley, Goldman Sachs, Lehman Brothers and Citigroup have begun establishing departments in India to handle various tasks such as research, data cleansing, creation of presentations and banking & mutual fund operations.<sup>57</sup> Intel, an important maker of computer processors, has 1,000 software engineers in China and India and will increase jobs in India to 3,000 by 2005. Boeing has cut 5,000 U.S. engineers since 2001 and plans to hire at its design center in Moscow that now employs about 700 engineers. Oracle is increasing its Indian software design, customer support and accounting staff to 4,000. IBM plans to lay off 4,730 of its well-paid technical staff, “some of whom may be required to train the foreign workers who will replace them”.<sup>58</sup>

New companies have sprung up that specialize in contracting out customer service calls, paperwork processing and other office work to locations in the Third World and the numbers of jobs they represent is increasing. These firms have been garnering major new clients. Accenture will have 5,000 people in the Philippines by 2004. Consecos has 1,700 in India and plans for 3 more centers. Delta Air Lines has 6,000 reservation and service workers in India and the Philippines. HSBC has 4,000 employees in China & India. The pattern is repeated endless. And workers pay the price

### **COMPELLED TO TRAIN YOUR REPLACEMENT**

High tech workers are no longer immune to these corrosive trends. Indeed, in some cases, they are literally forced to train their replacements.

Scott Kirwin clung to his job at a large investment bank through several rounds of layoffs last year. Friends marveled at the computer programmer's ability to dodge pink slips during the worst technology downturn in a decade.

Kirwin is among what appears to be a growing number of American technology workers training their foreign replacements - a humiliating assignment many say they assume unwittingly or reluctantly, simply to stay on the job longer or secure a meager severance package.

... The L-1 [visa] allows companies to transfer workers from overseas offices to the United States for up to seven years - ostensibly to familiarize them with corporate culture or to import workers with "specialized knowledge."

Tech bellwethers including IBM, Hewlett-Packard, Cisco Systems, Oracle and Microsoft use L-1 workers but won't disclose how many they import. Many bring in workers through consulting firms, usually Indian companies such as Tata Consultancy Services, Infosys Technologies and Wipro Technologies.

Dallas-based Texas Instruments also imports L-1 electrical engineers. With U.S. colleges graduating fewer U.S.-born engineers and the population of foreign-born science graduates mushrooming, TI has to look overseas for talent, spokesman Dan Larson said.<sup>59</sup>

Here's what typically happens: U.S. workers getting pink slips are told they can get another paycheck or beefed-up severance if they're willing to teach workers from India, China and other countries how to do their jobs. The foreign workers typically arrive for a few weeks or months of training. When they leave, they take U.S. jobs with them. The U.S. employees who trained them are then laid off. Employers say they need workers to train replacements to ensure a seamless transition, but the practice is coming under fire.<sup>60</sup>

During 2003, economic development in India has attracted special attention as that country's economy has been made a target by major Wall Street firms, including J.P. Morgan, Lehman Brothers, and Morgan Stanley, joined a chase for more highly skilled Indian labor. One American senior financial analyst reports that "a junior ... research analyst from an Ivy League school costs \$150,000 a year" ... "while an Indian equivalent from a top business school would cost \$35,000 a year."<sup>61</sup> A J.P. Morgan spokeswoman indicated that "hiring inexpensive junior level researchers in India will free J.P. Morgan's highly paid senior analysts to spend more time with the companies they cover and with investors."

Salary Comparisons, United States & India		
	United States	India
Software Programmer	\$66,100	\$10,000
Mechanical Engineer	\$55,600	\$5,900
IT Manager	\$55,000	\$8,500
Accountant	\$41,000	\$5,000
Financial Operations	\$37,625	\$5,500
Source: Paras Group, 2002; International Labour Organization		

Accordingly, J.P. Morgan plans to hire a few dozen researchers in Bombay by the close of 2003. Morgan Stanley “which already has investment banking and mutual fund operations in India will employ a similar number of researchers this year, also in Bombay. Both teams will consist of junior level analysts collecting data, analyzing balance sheets and working on basic financial models.” “Merrill Lynch has an investment banking, brokerage and asset management joint venture in India as well as a technology development center to build proprietary software for its global operations.”<sup>62</sup> Goldman Sachs expects to have an Indian unit with 250 employees. Also, very large firms like Citigroup “are expanding the Indian side of their corporate and investment banking activities.” All told outsourcing of business-process jobs by American companies is predicted to grow to 3.3 million jobs and \$136 billion in wages by 2015, up from \$4 billion in wages in 2000.<sup>63</sup> It is expected that most of the work will go to China, India, the Philippines and Russia.

Specialists in these financial operations “see the trend accelerating. Mr. Gentle of Deloitte Consulting has forecast that “financial services companies will move a million jobs, mainly back-office and technology related work to India by 2008.”

We are further advised that “at top Indian business schools like the Indian Institute of Management, the prospect of a job with top Wall Street firms has students excited.” The *New York Times* reports that the average entry-level salary for graduates of a top Indian business school was \$13,226 for jobs in India.<sup>64</sup>

What is the U.S. government’s role in all this?

The federal government of the United States has been actively playing a part in all these processes of outsourcing work from the United States. A principal federal government operation is contained in the Overseas Private Investment Corporation, (OPIC), a federal agency that provides loans and investment insurance to U.S. companies doing business around the world. A critical assessment of OPIC operations was released by the Cato institute, a conservative, libertarian think tank in Washington D.C. According to the Cato report, “nearly all of the agency’s assistance goes to large corporations, such as Citibank, Enron, Caterpillar Corporation and, Bechtel...”<sup>65</sup>

What is government doing? Branches of state and local governments have begun to use offshoring as well. For instance the Indiana Department of *Workforce Development*, (which most would assume is for developing a workforce actually located in Indiana) gave a \$15.2

million contract to the U.S. affiliate of Bombay based, Tata Consultancy Services to maintain and update its computer programs, utilizing their expertise in *offshore development* in India to arrange for their employees in Bombay to perform the work. (The contract was later cancelled by Indiana Governor Joe Kernan following public protest.)<sup>66</sup>

### THE TRUE SCALE OF U.S. UNEMPLOYMENT

Nevertheless, the true human cost of these harsh patterns of deindustrialization, in numbers of unemployed workers, has been significantly undercounted.

At the close of 2003 the official count of jobless in the U.S. was 5.9 percent. Yet a *Los Angeles Times* analysis explains how the actual number of unemployed was really 9.7 percent.

The nation's official jobless rate is 5.9%, a relatively benign level by historical standards. But economists say that figure paints only a partial — and artificially rosy — picture of the labor market.

To begin with, there are the 8.7 million unemployed, defined as those without a job who are actively looking for work. But lurking behind that group are 4.9 million part-time workers ... who say they would rather be working full time — the highest number in a decade.

There are also the 1.5 million people who want a job but didn't look for one in the last month. Nearly a third of this group ... were too depressed about the prospect of finding anything. Officially termed "discouraged," their number has surged 20% in a year. Add these three groups together and the jobless total for the U.S. hits 9.7%, up from 9.4% a year ago.

A new way that people seem to be joining this category is by getting themselves declared disabled. ... eligible for government payments while removing them from the unemployment rolls... From 1983 to 2000 ... the number of non-elderly adults receiving government disability payments doubled from 3.8 million to 7.7 million.

Another way in which people forgo an appearance on the unemployment rolls is if they decide to go into business for themselves. There are 9.6 million people who say they are self-employed full time, a number that rose 118,000 last month. Without the recent increase in self-employed, the jobless number would look much worse.<sup>67</sup>

Economists at the Washington D.C. Economic Policy Institute have calculated the balance, by state, of jobs gained (as from exports) and the jobs lost (as from imports that displaced U.S. workers).<sup>68</sup> From 1993, the start of NAFTA, through 2002, the U.S. trade deficit with Canada and Mexico accounted for "displacement of production that supported 879,280 U.S. jobs." *There was net job loss in every state*, and 26 states each had more than 10,000 job losses. The top 5 job losing states are shown here.

California	115,723
New York	56,793
Michigan	51,466
Texas	50,270
Ohio	46,593

These numbers mark the formation of concentrated job losses, wipeout of whole manufacturing industries and creation of ghost towns.

### **WAGES AND HEAVY MACHINERY**

Ironically, the Chinese government has been following a very different course of action. While the cost of labor has been regarded as a central issue in labor-intensive manufacturing operations, the picture is rather different in the production and utilization of important classes of heavy machinery. On January 1, 2003 the *New York Times* reported, "China has awarded a potentially lucrative contract to lengthen the world's first commercial magnetic-levitation rail system to cities surrounding Shanghai". All this after the prime ministers of Germany and China took a test ride on the new high-speed train, which is propelled by magnets. *The Times* reported that "The train reached its designated maximum speed of 266 miles per hour over the nineteen miles between Shanghai financial district and its main international airport..." The German firms that designed and produced the new Maglev train were Siemens and ThyssenKrupp. New Maglev trains covering 180 miles and costing more than \$5 billion are being negotiated.

The critical point here is: China, a country with one of the *lowest* wage standards in the world for industrial production work, is buying new railroad equipment from German firms which pay the *highest* production worker wage in the world. The full meaning of this astonishing situation has not registered in United States industrial circles where the production worker's wage is treated as the primary determinant for locating industrial work. Typically, the importance of quality in heavy machinery like railroad equipment, and major capital goods is often overlooked. Furthermore rail equipment must withstand heavy usage and reliability and safety is indispensable.

Heavy industrial machinery also includes the important class of earthmoving mining and construction machines. These equipments are typically large, costly and quality is worth even premium prices to the purchaser. This is so because unscheduled downtime and breakdowns in such equipment spells schedule failure in production or transportation. The cost of lost work time and potential penalties for late completion on large capital investment projects far outweighs any savings to be had from purchasing less reliable machinery.

The role of American exports to China is of particular relevance to the realm of heavy earth moving, construction equipment. The *New York Times* reports on Dec. 2<sup>nd</sup>, 2003 that China has emerged as the world's largest market for heavy-duty construction equipment, and companies from around the world have rushed exports there to meet its needs.

And further: "China is also trying to build an interstate highway system more extensive than America's in just fifteen years, while practically every large Chinese city is building or has just completed a big new airport."

All this creates a demand for equipment and Chinese construction companies have been buying big vehicles at a rate dwarfing sales in all of North America or Europe. This major market for heavy earthmoving and related construction equipment has bearing on another side of U.S. trade with China, namely the role of capital goods produced in the United States and capable of finding a ready market in China.

At the same time that Chinese manufacturing industries are growing at astonishing rates, important international companies like Caterpillar (U.S.), Daewoo (Korea), Komatsu and Hitachi (Japan), are all undertaking major investments of their own to build this class of equipment in China. "Caterpillar, by far the worlds largest maker of construction equipment is interested in buying stakes in 'four or five' Chinese equipment makers..."<sup>69</sup> These

comments bear directly on the quality of capital goods and tell us why there is this booming market in China for American, Japanese, Korean and other heavy earth moving equipment manufacturing firms.

Keith Bradscher reports from Shanghai to the *New York Times* that Chinese domestic companies producing this class of equipment have been selling them for as little as \$55,000 a piece, half the price of American and Japanese models. Nevertheless, the Chinese domestically produced equipments in this class hold just 10 percent of the domestic market, “because their models break down frequently and it can take up to three weeks to get replacement parts, according to an officer of the Off-Highway Research firm.”<sup>70</sup>

The crucial point here is that quality has major bearing on the usefulness of heavy transportation, construction, earthmoving, mining and related machines. Thus, frequent breakdowns of heavy earth-moving equipment spell breakdown of production schedules on large capital investment projects.

Owing to these considerations, says Bradscher, “all this will make it harder and slower but not impossible for Chinese companies to challenge the likes of Caterpillar in its home market someday.” But that day has not yet arrived, and a substantial period of industrial – technical development will be required before China will be able to export in this class of capital goods. This is the judgment of an official of the Association of Equipment Manufacturers, a U.S. trade group headquartered in Milwaukee.<sup>71</sup>

### **PROFITS WITHOUT ANY PRODUCTION AT ALL**

In the U.S., it has been business as usual. The end of the 20<sup>th</sup> and opening of the 21<sup>st</sup> centuries was not only the scene of computerization of an endless array of activities, but also a time when the populace was persuaded that it could, and should participate in the market for securities. Thus, a major part of American society made itself a participant in the boom and bust of all manner of corporate securities. Jonathan A. Knee—in a masterly review for the *New York Times* (Oct. 26<sup>th</sup> 2003) of two principal books on the Enron debacle—captured the essence of the speculative boom and bust ... enlargements of money values without any substantive base. Taken together the first and final paragraphs captured the essence of the development.

The technology and telecommunications boom made fools of all of us. From the corporate executives who promised results that in hindsight seem absurd to the ordinary day traders who convinced themselves that they were channeling the legendary investor Benjamin Graham, all were overcome with a complex mixture of credulity, jealousy, vanity and greed that made the boom possible. In between were the enablers -- the regulators, bankers, analysts, consultants, accountants, lawyers, credit agencies and journalists who could have done something to stop the madness, but did nothing until way too late. Even this group seems to have been in part genuinely swept away with the euphoria of the age; for instance, Goldman Sachs did not just take the Internet grocer Webvan public, it invested at least \$100 million of its own money at an astounding valuation. The difficulty in distinguishing the delusional from the dishonest is why prosecutors are having such a hard time bringing successful indictments in even the most obvious cases of fraud and why social historians will kill many trees trying to come to grips with what really

happened...<sup>72</sup>

He concluded his review with the following,

One of the defining characteristics of the mind-set of the recent boom was an irrational belief that stocks (as well as operating results and salaries and investment returns) could continue to go up indefinitely. This belief was often coupled with a conviction that we were personally responsible for this inexorable rise in value. Many of us arranged our business and personal affairs consistent with these delusional expectations and beliefs. When it all came crashing down, psychologists' offices were filled with patients sure that the crash reflected some personal failure.

For more than a decade, tens of millions of Americans lived with the confident understanding that money values represented real wealth. The collapse of the money values in the major U.S. securities markets obviously compelled the question: if this was real wealth, what happened to all of it? The participants, of course, were victims of a massive self-delusion. The enormous enlargement of paper money values in the securities markets was without any connection at all to the production of real things: homes to live in, clothes to wear, schools that confer education, food for daily living, medical care when required, and machine tools that are required for the production of everything else. None of these were multiplied by the enormous enlargement of securities values. And the collapse had the main effect of concentrating, more than before, the money markers that continued to be respected as legitimate claims on goods and services. By 2002, the *New York Times* showed that 100 top telecom industry executives collectively made upwards of \$6.2 billion dollars from sales of their firm's securities – a number without linkage to any presumed “value” contributed by these executives.<sup>73</sup> These sales represented part of a transfer of wealth from the majority of the population to the managerial elite. During the 1990's, only the top 20 percent of the population increased its share of the nation's income.<sup>74</sup>

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<sup>1</sup> Since 1986, I have been a fairly close observer of departure of industrial firms and facilities from the United States to foreign locations. While I can't say how many such events I took note of, I am fairly sure of one characteristic: in no single case did the proprietors of an industrial enterprise claim that they were making the move outside the United States, that is, “outsourcing” in order to save the profitability of their enterprise. In every instance that came to my attention the management indicated that the removal from the U.S. to a foreign location was to serve the goal of greater profitability. I underscore this consideration because during the last two years I have watched numerous processes of deindustrialization in the United States – and as reported in the trade and general press – and in no single instance was there a claim that the move was done in the service of retaining profitability. In every instance it was announced as serving the cause of greater profitability and capital accumulation.

<sup>2</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), p. xi.

<sup>3</sup> The domestic production data are contained in : U.S. Census Bureau, *Annual Survey of Manufactures, Value of Product Shipments: 2001*, Washington, D.C., 2003. The data on imports and exports is contained in: United States International Trade Commission (USITC), *Trade Dataweb, U.S. General Imports, U.S. Total Exports*. <http://dataweb.usitc.gov>

From these two sets of data, it is possible to calculate the percent of the U.S. market served by imports. Shipments data for *Apparel and Leather* from U.S. Census, Manufacturing, Mining and Construction Statistics, “NAICS Historic

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Timeseries”, Shipments Table: [www.census.gov/indicator/www/m3/hist/naicshist.htm](http://www.census.gov/indicator/www/m3/hist/naicshist.htm) . NAICS Codes for: Machine Tools (Cutting): 333512; Machine Tools (Forming): 333513; Automobiles: 336111; Iron & Steel: 331111; Farm Machinery: 333111; Construction Machinery: 333120; Mining Machinery: 333131; Oil & Gas Machinery: 333132; Textile Machinery: 333292; Semiconductor Machinery: 333295; Office Machinery: 333133; Computers & Peripherals: 334111, 334112, 334119; Broadcasting & Wireless: 334220; Audio & Video: 334310; Semiconductors: 334413; Electromedical Apparatus: 334510; Apparel: 315; Leather Goods: 316.

<sup>4</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), pp. xii – xiii.

<sup>5</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), p. xiv.

<sup>6</sup> Seymour Melman, *Our Depleted Society* (Holt, Rinehart & Winston, 1965).

<sup>7</sup> For a review of the development of the post-industrial line of argument see: Daniel Bell, *The Coming of Post-Industrial Society*, (Basic Books, 1973), pp. 36, 37, 461, 462.

<sup>8</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), pp. xvi – xvii.

<sup>9</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), pp. xvi- xviii.

<sup>10</sup> “Exporting America: The List”, *Lou Dobbs Tonight*, CNN.com

<sup>11</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), p. 202.

<sup>12</sup> *Ibid.*

<sup>13</sup> *International Herald Tribune*, “Mazda net doubles as sales surge in Europe”, Nov. 6, 2003.

<sup>14</sup> These contrasting data on the Mazda and Chrysler firms, together with comments by Japanese and American observers, were broadcast by CBS Evening News on April 30, 1981., cited in *Profits Without Production* p 204–5.

<sup>15</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), p. 205.

<sup>16</sup> *Ibid.*

<sup>17</sup> Gretchen Morgenson, “Explaining (or Not) Why the Boss Is Paid So Much”, *New York Times*, Jan. 25, 2004.

<sup>18</sup> *Ibid.*

<sup>19</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), pp. 204-5.

<sup>20</sup> “China Isn’t Hijacking Jobs: Blame multinationals and a savings-short U.S.”, *Business Week*, Oct. 6, 2003.

<sup>21</sup> *New York Times*, December 22, 2003 , ERIC A. TAUB “For a Few Dollars Less, TV Making Moves Abroad”.

<sup>22</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), p. 183.

<sup>23</sup> *Annual Survey of Manufactures, Value of Product Shipments, 2001*. & USITC, *Trade Dataweb*, NAICS code 336111.

<sup>24</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), p. 183.

<sup>25</sup> Jane Slaughter, “Auto Union Embraces Two-Tier Wages” *Labor Notes*, October 2003. [www.labornotes.org/archives/2003/10/b.html](http://www.labornotes.org/archives/2003/10/b.html)

<sup>26</sup> U.S. Bureau of Labor Statistics, *Hourly Compensation Costs For Production Workers In Manufacturing, 30 Countries Or Areas, 40 Manufacturing Industries, Selected Years, 1975-2001*. Aug. 2003, p. 118, <ftp://ftp.bls.gov/pub/special.requests/ForeignLabor/industry.txt>.

<sup>27</sup> USITC, *Trade Dataweb*. U.S. General Imports, NAIC Code 336111. <http://dataweb.usitc.gov>

<sup>28</sup> National Machine Tool Builders Association, *Economic Handbook of the Machine Tool Industry, 1980/81*, p. 250.

<sup>29</sup> Michael Boretsky, *U.S. Technology: Trends and Policy Issues*, U.S. Department of Commerce, Oct. 1973, Table 21.

<sup>30</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), p. 184.

<sup>31</sup> Sebastian B. Littauer, “Stability of Production Rates as a Determinant of Industrial Productivity Levels,” *Proceedings of the Business and Economics Statistics Section*, American Statistical Association, Sept. 10-13, 1954.

<sup>32</sup> Seymour Melman, *Decision-Making and Productivity* (John Wiley, 1958).

<sup>33</sup> Seymour Melman, *Decision-Making and Productivity* (John Wiley, 1958), p. 114.

<sup>34</sup> *Ibid.*, ch. 10. The management policies of Standard changed with mergers into Leyland and British Motors, and the sale of the tractor factory to Massey-Ferguson.

<sup>35</sup> Seymour Melman, *Profits Without Production* (Alfred A. Knopf, 1988), pp. 184-6.

<sup>36</sup> Seymour Melman, *Our Depleted Society* (Delta, 1965), p. 49.

<sup>37</sup> Association for Manufacturing Technology, *The Economic Handbook of the Machine Tool Industry, 2003-2004*, pp E3-E4. Unfortunately, the age of machine tools beyond 11 years has not been reported, making it impossible to know the percentage of tools that are truly *antiquated*, being 20 + years old.

<sup>38</sup> Seymour Melman, *Our Depleted Society* (Delta, 1965), pp. 50-51.

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- <sup>39</sup> Association for Manufacturing Technology, *The Economic Handbook of the Machine Tool Industry, 2003-2004*, pp. A-2. and Seymour Melman *After Capitalism* (Alfred A. Knopf, 2001), p. 54.
- Seymour Melman *After Capitalism* (Alfred A. Knopf, 2001), p. 62.
- <sup>41</sup> Seymour Melman, *Our Depleted Society* (Delta, 1965), pp. 56-8.
- <sup>42</sup> Singer N.V., *2002 Disclosure Statement And Report* (April, 2003), p. 29.
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[www.boeing.com/news/frontiers/archive/2002/june/cover.html](http://www.boeing.com/news/frontiers/archive/2002/june/cover.html)
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- <sup>51</sup> David Firestone, "A Chief Exporter, and Not at All Pleased About It", *New York Times*, Feb. 23, 2001.  
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- <sup>53</sup> *New York Times*, "A Chief Exporter, and Not at All Pleased About It".
- <sup>54</sup> Employment Security Commission of North Carolina, *Announced Business Closings and Permanent Layoffs*, <http://eslmi12.esc.state.nc.us/mls/>. Note: the data are not comprehensive and do not meet the Labor Market Information Division standards for accuracy. Staff in the Employment Security Commission neither analyze nor evaluate the accuracy of these reports.
- <sup>55</sup> *Ibid.* Note: This chart of factory closings is compiled from best available data and may *understate* incidents of factory closings.
- <sup>56</sup> Forester Research as cited in "Is Your Job Next?", *Business Week*, Feb. 3, 2003.
- <sup>57</sup> "As It Tries To Cut Costs, Wall Street Looks To India", *New York Times*, Oct. 8, 2003.
- <sup>58</sup> "Is Your Job Next?", *Business Week*, Feb. 3, 2003; "Bracing for the Blow", *New York Times*, Dec. 26, 2003.
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- <sup>73</sup> *New York Times*, "Bubble Beneficiaries" Aug. 25, 2002.

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<sup>74</sup> U.S. Census Bureau, *Money Income In The United States: 2000* (Washington, D.C., Sept. 2001). Cat#P60-213, Fig. 4, p. 11.