

Lots of Bull: Regional Impacts of the 1990s Stock Market Boom

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Abstract: Stock markets in the United States experienced a surge of growth throughout the 1990s as an expanding national economy, deregulation, and demographic change produced the longest bull run in history. This paper explores the reasons for this boom. Next, it charts rising employment in securities and commodities firms, emphasizing the dominant role played by New York. Third, it analyzes the local economic impacts of the bull market using regionalized input-output models of the New York, Los Angeles, and Chicago metropolitan areas to estimate regional output, employment, and personal income effects. In the three combined regions over the years 1991-1999, the bull market generated more than \$4.1 billion in output, two-thirds of which was in the securities industry; 136,000 work-years of employment, primarily in producer services; and \$8.2 billion in personal income. Geographically, these effects were heavily concentrated in the New York region.

I. INTRODUCTION

The history of finance has been characterized by a long series of booms and busts, including most obviously the stock market crash of 1929, the surge during the 1980s, the calamitous decline of October 19, 1987, and the steady rise throughout the 1990s. The late twentieth century has seen an unprecedented, and unanticipated, combination of factors that has propelled stock markets to new heights in the longest bull run in history. Since the 1980s, stock markets throughout the U.S. have undergone a sustained increase in trading volumes and prices. Despite occasional setbacks, such as the October 19, 1987, crash, in which the Dow Jones declined by 22 percent (Cox, Preston, and Warf 1991), the total value and volume of stock transactions throughout the U.S. have risen dramatically. On the New York Stock Exchange, for example, the Dow Jones Industrial Average surpassed 10,000, a level unthinkable just a few years ago.

A growing literature on the geography of finance has documented the rapidity of growth in this sector around the world, its highly uneven distribution geographically, the linkages between global flows of capital and world cities, and its global dimensions (Hepworth 1991; Leyshon 1992; Leyshon and Thrift 1992; O'Brien 1992; Clark 1993; Corbridge, Martin, and Thrift 1994; Thrift and Leyshon 1994; Cohen 1998; Martin 1999). This body of work has been instrumental in demonstrating the ways in which geographic landscapes are constructed, and annihilated, through flows of money and in which the political power of the financial community affects policy at the national and local levels. However, most

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studies have focused on the international level—explorations of the domestic geography of employment in finance have been relatively few in number.

This paper explores the reasons for and consequences of the 1990s boom. It begins with a review of the fundamental causes, including the rapid rates of economic growth, demographic shifts, deregulation, and technological change. Second, it describes the nature of the boom in detail, including increases in stocks and employment in securities and commodities firms, emphasizing the key role played by the New York metropolis. Third, it offers a methodology for analyzing the regional economic impacts of this phenomenon using input-output analysis, applying this technique to the markets in New York, Los Angeles, and Chicago to estimate regional output, employment, and personal income effects. Fourth, it presents the results of the analysis.

II. EXPLAINING THE BIG BULL RUN

Several reasons explain the recent surge in stock prices and trading volumes. These factors represent a contingent conjunction of circumstances that reflect the prominence of finance capital within contemporary capitalism, a relationship in which flows of money rarely directly reflect economic landscapes and local labor markets.

First, the U.S. economy has recently undergone a sustained period of rapid GNP and productivity growth. Following the recession of 1990-1991, a booming economy, low interest rates, and a global glut in raw materials (particularly cheap petroleum) combined to fuel a highly profitable boom. In the wake of the deindustrialization and restructuring of the 1980s, U.S. manufacturing, bolstered by the microelectronics revolution, regained its competitive strength internationally and fueled the demand for investment capital. National productivity growth averaged more than 3 percent annually in the 1990s. Meanwhile, a wave of corporate downsizing and layoffs constrained the growth in labor income. (Note that there is some dispute as to whether current measures of productivity reflect real productivity gains accurately. Some observers point out the discrepancies between rising returns to capital and constant returns to labor as evidence that marginal productivity gains have been exaggerated by official statistics or that the link between the marginal cost and productivity of labor has been annulled). These factors raised corporate earnings and profitability, if not wages, to record levels. Combined with tight Federal Reserve monetary policy, the elimination of the federal government budget deficit, and low inflation rates (indeed, a downward shifting of the Phillips curve), the stage was set for a prolonged increase in stock trades and prices.

Second, widespread technological change followed the microelectronics revolution. In the securities industry, this change allowed for vast increases in the volume of stock trades: trading volume on the New York exchange grew from 12 million shares per day in the 1970s to more than 800 million per day in the 1990s (rising occasionally to more than 1.2 billion per day). As the industry has become

increasingly capital intensive, obstacles that hindered stock trades in the 1970s have been obliterated and productivity levels have surged. Additionally, the emergence of a global telecommunications network linked national capital markets through the computerized trading of stocks and electronic transfers of funds, thus linking large metropolitan regions in an almost seamless web of finance capital (Warf 1995). The volatility of stock trading rose as hair-trigger computer trading programs allowed fortunes to be made (and lost) by staying microseconds ahead of (or behind) other markets, a trend likely to be accelerated by the rapid growth in on-line trading. Such changes facilitated an influx of foreign capital into U.S. equities markets, which were attractive given the strength of the dollar and the relative stability of the American financial system (Hepworth 1991). Globalization through electronic funds transfer systems also helped to institutionalize volatility in the industry; provide the industry with new leverage in escaping tax provisions, political upheaval, and arbitrage interest rates; and take advantage of favorable currency exchange rates.

Third, the financial industry witnessed widespread deregulation, including the removal of numerous federal and state government restrictions in savings, commercial, and investment banks. In 1980, Congress passed the Depository Institutions Deregulation and Monetary Control Act, and in 1982, the Garn-St. Germain Act, which permitted thrifts to compete directly with commercial banks and eliminated geographic limitations on savings and loan lending (Mayer 1990; Sherrill 1990). For investment bankers, key issues included the abolition of fixed commissions on stock market transactions and the approval of foreign memberships on stock exchanges. Simultaneously, new sources of investment capital, particularly mutual funds and pension funds, for which controls had been abolished, were introduced (Clark 1993). Deregulation unleashed an enormous wave of investor-driven demand for investments (most of which found its way into commercial real estate and the stock market), particularly in the form of large investors who buy and sell enormous quantities of stocks, thus enhancing volatility and marginalizing small traders.

Fourth, demographic changes (i.e., the economic behavior of the enormous baby boom generation) accentuated these trends. As they are entering their prime earning and savings years, baby boomers continue to pour resources (primarily via mutual and pension funds) into the stock market as well, viewing it as the best long-term investment. The growth of Internet banking also encouraged numerous small investors to play the market. Accordingly, the proportion of American households that own stock directly has risen to almost 50 percent, and millions more own stock indirectly.

Of course, there is always the chance that this boom is a speculative bubble, one due for a "market correction" followed by a prolonged period of decline. Indeed, long-term increases in price/earnings ratios worry brokers. Yet volatility has become institutionalized within the market, with wild swings in shares and prices the norm. Barring some rapid and unforeseen calamity, the end of the boom

has yet to appear on the foreseeable horizon. The consequences for regions and the nation, however, are highly uneven.

III. MEASURING THE BOOM

The prolonged bull market saw the volume of securities and commodities transactions rise steadily, despite the significant increases in productivity levels that generated vastly higher levels of total output than job numbers alone would indicate. The vast majority (76 billion in 1999, or 74 percent) of all stock sales in the U.S. are traded on the New York Stock Exchange (NYSE) (Table 1), which dominates national (and, indeed, international) patterns. The extreme degree of geographic concentration in New York City (particularly Manhattan) reflects that city's long-standing comparative advantage in finance and producer services, particularly the agglomeration economies and access to ancillary services it offers (Mollenkopf and Castells 1991; Sassen 1991; Markusen and Gwiasda 1994). Between mid-1991 and the end of 1999, the total volume of shares traded per day on the NYSE rose from 171 million to 743 million, a 434 percent rise. The total value of stocks traded rose 833 percent, from \$6 billion to more than \$50 billion. Following the NYSE, the next three largest exchanges—the American (also located in New York, recently merged with Nasdaq), Chicago, and Pacific (in Los Angeles)—together accounted for an additional 104 million shares in 1999, and grew relatively modestly in comparison to New York. The four exchanges (in three cities) considered here in total account for 848 million out of 1 billion shares (85 percent) traded in the U.S.

TABLE 1
Sales of Stocks on Major Exchanges (millions of shares)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
New York	171.2	228.5	297.9	320.1	388.7	452.8	549.2	639.0	742.9
American	12.3	16.2	22.3	36.3	48.6	72.4	95.2	148.8	181.5
Chicago	12.8	16.9	22.2	29.2	38.4	46.9	61.7	97.9	160.5
Pacific	8.1	10.7	14.1	18.5	20.1	28.7	37.8	51.8	73.9
4 Above	204.4	272.3	356.4	404.1	495.9	600.8	743.9	937.5	848.1
Total U.S.	261.2	361.3	480.8	616.8	796.6	1,096.5	1,349.8	1,688.3	1,848.9
4 as % of Total	78.3	88.5	87.0	89.3	87.7	87.0	85.5	85.3	84.7

Source: *NYSE Fact Book*.

While security and commodity brokerages (SIC 62) employment rose nationally from 425,900 in 1991 to 577,700 in 1999, it did not witness the same sharp increases as have stock volumes and prices, a reflection of rising productivity trends in the industry (Table 2). In the New York PMSA, employment in this sector rose from 143,600 in 1991 to 153,900 in 1999, a 7.2 percent increase; in Chicago, it rose from 30,900 to 37,800; and in Los Angeles it grew modestly from 14,200 to 15,200. However, the three metropolitan regions' share of national employment in this sector declined steadily over time, from 44.3 percent in 1991 to 35.8 percent in 1999. The remainder was dispersed among small exchanges (e.g., Cincinnati, Miami) or among widespread isolated locations throughout the U.S. Given the

highly uneven geographical distribution of the industry, spatially varying rates in productivity, and the ways in which growth patterns differed among cities, there is little reason to expect that the 1990s boom had similar impacts among different regions. The next step in this analysis offers a methodology for investigating these consequences analytically.

TABLE 2
Security and Commodity Brokers Employment (thousands)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
New York	143.6	132.7	130.5	133.7	142.5	148.4	145.4	151.7	153.9
Chicago	30.9	30.7	31.9	32.6	34.2	36.0	35.6	36.7	37.8
Los Angeles	14.2	14.4	13.2	14.1	14.9	14.9	13.9	14.6	15.2
3 Cities' Total	188.7	177.8	175.6	182.7	191.6	199.3	194.9	203.0	206.9
U.S. Total	425.9	416.1	424.5	450.4	496.7	520.5	534.1	569.5	577.7
3 Cities as % of U.S.	44.3	42.7	41.3	40.5	38.5	38.2	36.4	35.6	35.8

Source: NYSE Fact Book.

IV. METHODOLOGY: ESTIMATING THE IMPACTS

The analytical approach centered on a 38-sector input-output (I-O) model for three regional economies, the New York City, Chicago, and Los Angeles Metropolitan Statistical Areas, based on the 1992 Bureau of Economic Analysis' RIMS II model. For the securities sector, the regional employee-output ratios and wage value-added coefficients were updated to reflect the conditions in 1999. The total effects of new hirings between June 1991 and December 1999 were analyzed as increases in final demand for services of the securities industry. The period of analysis begins with the end of the 1990-1991 recession and continues until the most recent wage and salary data were available. The increase in final demand during this period was calculated using the I-O relationships between output per employee (x/e), changes in employment (Δe , using work-years), and changes in final demand (Δf). The I-O relation among these three variables is

$$(1) \quad \Delta f_{ic} = (1/m_{ic})(x_{ic}/e_{ic})\Delta e_{ic},$$

where i denotes the securities industry, c indicates the region (New York City, Chicago, or Los Angeles), m_{ic} is the I-O multiplier for the securities industry in city c , and Δf_{ic} is the computed change in final demand for the securities industry in city c consistent with the increase in employment in the time period of analysis. In standard I-O fashion, the model assumes linear production functions, no economies of scale, and infinite elasticities of substitution.

The change in output in each industry of the three regional economies generated by the increase the final demand for securities services was computed using the I-O equation

$$(2) \quad \Delta x_c = M_c^{-1} \Delta f_{ic},$$

where Δx_c is a column vector of output changes in each of the industries in the I-O model of the c th city, i.e., New York, Chicago or Los Angeles, and M_c^{-1} is the

Leontief inverse matrix for city c (see Miller and Blair 1985). Column vector Δf_{ic} indicates the volume of final demand for securities services in city c , in which all elements other than that representing the securities industry is zero.

Total change in employment by industry was estimated by multiplying each vector representing estimated change in output by a series of associated employment/output ratios derived from the RIMS II model. The total number of work-years generated in every industry of each metropolitan area was computed by premultiplying the changes in industry output by a diagonal matrix of output-to-employment coefficients for every industry in each metropolitan area derived from RIMS II, N_c , to form the product, $N_c \Delta x_c$. Such an approach assumes that the productivity of new workers in finance equals that of experienced, established brokers, which may not be true in reality.

Changes in employment by industry in each PMSA were decomposed into occupational groups using a rectangular block-diagonal matrix of coefficients, K , which represents the distribution of jobs in each industry among eight occupational groups. Algebraically, the changes in employment by occupation in region c can be calculated as

$$(3) \quad \Delta o_c = K_c N_c \Delta x_c,$$

where Δo_c is a column vector of the change in employment by occupation for each industry in city c . Each block on the main diagonal of K_c is a column vector of coefficients that allocates employment changes in each industry among occupations in region c .

Last, changes in each industry's total wage and salary income and employment induced by the growth of the major stock exchanges were computed using the changes in output calculated using Equation 2. Data regarding the 1996 distribution of wage and salary income per unit of output by industry in each PMSA were obtained from the Bureau of Economic Analysis' REIS system. Regional variations in output, jobs, and occupations thus reflect the magnitude of growth in the local securities and commodities brokerage industry, the relative capital or labor intensity among industries, and local occupational structures.

V. EMPIRICAL RESULTS

The results of this exercise indicate that the nine-year period of growth in securities and commodities employment in New York, Chicago, and Los Angeles generated approximately \$4.2 billion in total output (Table 3). The vast bulk (83 percent) of this increase occurred through the growth of the NYSE, which generated \$3.3 billion in new output. In comparison, the Chicago exchange generated an increase of only \$708 million, and the Pacific Exchange in Los Angeles generated a comparatively small \$116 million increase. The impacts among sectors in the regional economies varied markedly. Among the industries listed in Table 3, the Finance, Insurance, and Real Estate (FIRE) sector witnessed the vast majority of the increased output, including the direct effects, accounting for \$2.4 billion in

New York, \$504 million in Chicago, and \$83 million in Los Angeles. FIRE alone accounted for roughly 71 percent of the total impacts when measured by output. Other industries that saw significant increases in output included personal and repair services, communications, publishing, and business services, all of which have extensive forward or backward linkages to FIRE. In contrast, most manufacturing sectors, transportation, and certain services (e.g., health, education, and government) were only marginally affected.

TABLE 3

Estimated Output Increases from 1991-1999 Stock Market Boom (\$ thousands)

	New York	Chicago	Los Angeles	Total
Primary Sectors	9,038.079	1,910.865	313.664	11,262.6
Mining and Petroleum	32,198.559	6,807.852	1,117.544	40,124.0
Construction	23,879.612	5,048.835	828.82	29,757.3
Foods & Tobacco	14,166.019	2,995.113	491.724	17,652.9
Textiles	6,826.669	1,443.333	236.988	8,507.0
Wood and Paper	39,876.796	8,431.227	1,384.112	49,692.1
Publishing	82,632.945	17,471.178	2,867.984	102,972.1
Chemicals	44,097.346	9,323.556	1,530.504	54,951.4
Rubber and Plastics	10,588.213	2,238.648	367.488	13,194.3
Leather and Footwear	824.561	174.381	28.536	1,027.5
Stone and Glass	2,647.929	559.884	91.872	3,299.7
Fabricated Metals	30,196.086	6,384.387	1,048.06	37,628.5
Electronic Equipment	18,445.894	3,899.985	640.204	22,986.1
Transport Equipment	7,636.992	1,614.717	265.06	9,516.8
Scientific Equipment	6,192.739	1,309.245	214.948	7,716.9
Misc. Manufacturing	7,006.678	1,481.406	243.136	8,731.2
Land Transport	17,031.586	3,600.951	591.136	21,223.7
Water Transport	1,416.907	299.589	49.184	1,765.7
Air Transport	34,902.31	7,379.391	1,211.388	43,493.1
Transport Services	3,857.255	815.517	133.864	4,806.6
Communications	106,424.078	22,501.365	3,693.672	132,619.1
Utilities	35,318.376	7,467.414	1,225.772	44,011.6
Wholesale/Retail Trade	32,605.811	6,893.988	1,131.696	40,631.5
FIRE	2,385,449.888	504,358.14	82,793.26	2,972,601.3
Hotels	27,404.986	5,794.311	951.2	34,150.5
Personal & Repair Services	207,008.203	43,767.966	7,184.692	257,960.9
Business Services	72,366.104	15,300.462	2,511.632	90,178.2
Entertainment	5,439.594	1,150.071	188.848	6,778.5
Health Services	142.606	30.192	4.988	177.8
Legal Services	20,397.291	4,312.572	707.832	25,417.7
Education	732.014	154.734	25.404	912.2
Nonprofit	3,581.309	757.242	124.352	4,462.9
Federal Government	49,841.136	10,538.007	1,729.908	62,109.1
State & Local Government	6,221.78	1,315.461	215.992	7,753.2
TOTAL	3,348,014.7	707,874.2	116,201.6	4,172,090.5

Source: Calculated by authors.

These increases in output generated a variety of jobs (Table 4). Using national output/employment ratios, the increases in regional output attributable to the boom included roughly 136,500 additional work-years, 87 percent of which occurred in New York. In Chicago and Los Angeles, job gains amounted to 15,100 and 2,500 work-years, respectively. As with output, the largest beneficiary among industrial sectors was FIRE, gaining 47,700 work-years in New York, 10,100 in Chicago, and 1,700 in Los Angeles. However, FIRE's share of total employment

gains was much smaller than its share of total additions to output, a reflection of the industry's increasingly high rates of labor productivity. Other sectors that enjoyed significant increases included construction (13,400 years), personal and repair services (11,300), and, to a much lesser extent, the nonprofit sector and wholesale/retail trade.

TABLE 4
Employment Impacts of 1991-1999 Stock Market Boom (total work-years)

	New York	Chicago	Los Angeles	Total
Primary Sectors	368	26	3	397
Mining and Petroleum	2,149	49	8	2,206
Construction	13,238	123	21	13,382
Foods & Tobacco	180	24	3	208
Textiles	1,338	36	6	1,379
Wood and Paper	2,116	111	19	2,246
Publishing	940	374	61	1,376
Chemicals	968	18	3	990
Rubber and Plastics	2,033	44	9	2,087
Leather and Footwear	185	6	1	192
Stone and Glass	738	16	2	756
Fabricated Metals	2,240	29	5	2,273
Electronic Equipment	4,259	75	12	4,346
Transport Equipment	290	18	3	312
Scientific Equipment	4,180	26	3	4,209
Misc. Manufacturing	251	33	6	290
Land Transport	2,324	87	14	2,425
Water Transport	94	3	1	98
Air Transport	455	114	20	589
Transport Services	118	26	3	147
Communications	1,907	376	63	2,346
Utilities	4,075	40	7	4,122
Wholesale/Retail Trade	5,365	181	30	5,576
FIRE	47,691	10,104	1,677	59,472
Hotels	555	349	58	961
Personal & Repair Services	9,306	1,721	287	11,313
Business Services	1,290	424	58	1,772
Entertainment	191	31	5	227
Health Services	2,436	3	1	2,440
Legal Services	197	93	16	306
Education	78	9	1	88
Nonprofit	5,288	51	8	5,348
Federal Government	832	498	84	1,414
State & Local Government	1,212	31	5	1,248
TOTAL	118,888	15,148	2,504	136,540

Source: Calculated by authors.

The occupational distribution of the employment generated by the stock boom varied among the three metropolitan regions and differed from that of the U.S. labor force as a whole (Table 5). In New York, the relative distribution of jobs generated by the stock boom included fewer in managerial and professional occupations than the nation as a whole, but accounted for a significantly larger share of craft workers. The fact that the bulk of new jobs generated by the recent growth of the nation's largest stock market are not professional or managerial should not be surprising. Sassen (1991) notes that "there is a tendency to assume that advanced industries, such as finance, have mostly good, white-collar jobs when in

fact they also have a significant share of low-paying jobs, from cleaners to stock clerks" (p. 105). In contrast to New York, the distribution of new jobs in Chicago and Los Angeles somewhat approximated that of the country as a whole, with slightly higher numbers of managers but fewer professionals than the national average. Such variations reflect structural differences in local labor markets, labor intensity, regional occupational structure, and interindustry linkages, including interregional linkages as estimated through the deployment of location quotients.

TABLE 5

Occupational Distribution of Work-Years Generated by Stock Market Boom, 1991-1999

	New York	%	Chicago	%	Los Angeles	%	Total	%	% of U.S.
Managers	11,425	9.6	2,148	14.2	350	14.0	13,924	10.2	12.9
Professionals	11,305	9.5	1,352	8.9	223	8.9	12,880	9.4	16.9
Sales Reps Brokers	7,496	6.3	2,519	16.6	417	16.6	10,432	7.6	4.8
Clerical Workers	20,707	17.4	5,654	37.3	935	37.3	27,297	20.0	24.8
Unskilled Sales	20,589	17.3	2,057	13.6	340	13.6	22,986	16.8	18.1
Craft Workers	32,847	27.6	911	6.0	155	6.2	33,914	24.8	9.1
Operators/Laborers	14,519	12.2	506	3.3	84	3.3	15,108	11.1	13.4
TOTAL	118,888	100.0	15,148	100.0	2,504	100.0	136,540	100.0	100.0

Source: Calculated by authors.

Finally, the personal income effects of the stock boom were considerable. Combined, the growth of the four exchanges in the three regions generated roughly \$8.2 billion in wages and salaries (Table 6), the overwhelming majority of which (\$7.5 billion, or 91 percent) was to be found in New York. The discrepancy between New York and the other cities reflects not only the larger volume of output generated there, but the higher wages: on average, salaries and wages in New York were 17 percent higher than Chicago and 23 percent higher than Los Angeles. Salary differentials in FIRE were especially pronounced, with New York average wage and salary payments 127 percent above Chicago and 148 percent above Los Angeles (Bureau of Economic Analysis REIS model). As a result of their much smaller securities markets and lower average personal incomes, Chicago saw a relatively small increase of \$602 million, and Los Angeles a mere \$90 million. In all three cities, these effects were greatest in the FIRE sector (\$4.9 billion), which included the direct effects and paid the highest average income of all industries in the I-O model. Other industries that received significant income boosts included personal and repair services, communications, and the federal government, indicating that the stock boom raised government revenues as well as private sector incomes.

VI. CONCLUDING THOUGHTS

As the result of the renewed prosperity of the U.S. economy, technological advances, demographic changes, and deregulation, stock markets in the U.S. have witnessed the largest and longest bull run in their history. Although prices and volumes are highly volatile, with occasional downturns, they surged steadily in the 1990s. In the process, the boom has generated significant volumes of output in

the securities industry and, through networks of linkages, in related sectors as well. The impacts of this event are not inconsiderable. I-O calculations indicate that in the three largest markets in the U.S. combined, the bull market generated more than \$4.1 billion in output, two-thirds of which were in the securities industry. In employment terms, this translates into roughly 136,500 work-years of employment, although given the highly capital-intensive nature of the securities industry today the bulk of employment gains, unlike output, occurred in other sectors. Most employment changes, however, were in related producer services.

TABLE 6
Personal Income Generated by Stock Boom, 1991-1999 (\$ thousands)

	New York	Chicago	Los Angeles	Total
Primary Sectors	14,426.2	779.9	99.2	15,305.4
Mining and Petroleum	84,255.8	1,679.4	245.0	86,180.2
Construction	579,822.2	5,125.5	705.7	585,653.5
Foods & Tobacco	6,989.2	649.4	86.3	7,724.8
Textiles	38,807.4	965.5	156.0	39,929.0
Wood and Paper	75,112.9	3,481.4	538.5	79,132.8
Publishing	32,108.4	11,706.1	1,872.0	45,686.4
Chemicals	41,271.1	766.3	133.3	42,170.7
Rubber and Plastics	83,974.7	1,608.5	305.8	85,889.0
Leather and Footwear	8,185.5	211.5	41.5	8,438.5
Stone and Glass	28,669.0	602.5	79.3	29,350.8
Fabricated Metals	115,767.1	1,315.0	190.0	117,272.2
Electronic Equipment	181,816.0	2,533.2	369.6	184,718.8
Transport Equipment	15,606.2	863.2	140.0	16,609.4
Scientific Equipment	221,901.7	1,129.7	136.4	223,167.8
Misc. Manufacturing	14,148.5	1,595.1	233.2	15,976.7
Land Transport	124,349.6	4,153.0	622.0	129,124.6
Water Transport	5,446.4	163.5	47.2	5,657.0
Air Transport	25,743.2	6,053.1	912.3	32,708.5
Transport Services	6,263.8	1,192.3	166.7	7,622.8
Communications	81,606.2	15,392.4	2,280.2	99,278.8
Utilities	217,185.8	1,866.1	333.4	219,385.3
Wholesale/Retail Trade	173,297.3	4,903.2	741.9	178,942.4
FIRE	4,420,911.2	411,246.2	62,565.5	4,894,723.0
Hotels	18,530.4	10,498.4	1,612.0	30,640.8
Personal & Repair Services	345,042.8	54,461.7	7,905.0	407,409.5
Business Services	78,718.1	22,939.5	2,726.0	104,383.5
Entertainment	10,605.8	1,353.2	189.1	12,148.1
Health Services	124,220.1	135.1	41.2	124,396.3
Legal Services	16,783.1	6,918.4	1,260.8	24,962.2
Education	3,852.2	395.0	47.8	4,295.1
Nonprofit	217,444.0	2,069.9	283.4	219,797.4
Federal Government	48,716.1	21,538.2	3,188.8	73,443.1
State & Local Government	55,285.4	1,314.1	167.7	56,767.3
TOTAL	7,516,863.3	601,605.6	90,422.8	8,208,891.7

Source: Calculated by authors.

Geographically, these impacts were highly uneven among the three metropolitan regions examined, which generate the vast majority of the nation's employment and stock trades. By far the largest beneficiary has been the New York area, which greatly exceeds any other in the nation. Indeed, in a city in which securities have displaced commercial banking in employment terms, the bull run

has had significant effects, directly or indirectly creating more than 118,000 work-years in the 1991-1999 period. However, in New York the stock boom appears, surprisingly, to have augmented the growth of semiskilled, blue collar occupations rather than skilled, white collar ones. Los Angeles saw minimal employment effects, while the Chicago exchange witnessed modest gains. Returns to labor and to firms in terms of wages and salaries and profits, respectively, closely mirrored the spatial distribution of total employment gains but were accentuated by the higher salaries in New York.

Clearly, the soaring stock markets of the 1990s have had nontrivial impacts on local economies. To the extent that the bull run continues in the future, these impacts will persist. However, given the mounting discrepancy between productivity levels and returns to labor, even in well-paid industries such as investment banking, soaring stock trades in the future will generate marginally smaller effects on output, employment, and incomes. For these same reasons, dramatic downturns are also less likely to have widespread effects. In this sense, financial markets appear to have become increasingly detached from much of the rest of the economy, as dramatic changes in stock prices translate into much more modest increases in output, employment, and incomes.

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