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Federal Reserve Bank of New York Economic Policy Review

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The Metropolitan Economy in the National and World Arenas

Proceedings of a Conference Held at the Federal Reserve Bank of New York in November 1996

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Introduction to This Issue

Charles Steindel

This special issue of the *Economic Policy Review* presents the proceedings of "The Metropolitan Economy in the National and World Arenas," a conference held at the Federal Reserve Bank of New York on November 13-14, 1996. The conference was prompted by concerns about the economy of metropolitan New York: most notably, concerns about employment levels that are still well below their previous peaks and local government budgets that remain under strain despite more than five years of national economic expansion. Participants included Federal Reserve and academic economists, local policymakers, and business and community leaders.

The conference was divided into three sessions: the first was devoted to assessing the overall performance of the region's economy, the second to a discussion of trends in major local industry groups, and the third to local government policy options. The sessions were moderated by James Hughes of Rutgers University, New York City Deputy Mayor Fran Reiter, and Robert Kiley of the New York City Partnership.

The papers in the opening session—the first by Jonathan McCarthy and Charles Steindel, the second by Kenneth Kuttner and Argia Sbordone—found that there is no easy explanation for the sharp contraction in the regional economy in 1989-92. The slump was considerably larger than can be accounted for by the weakness in the national economy at that time, even when nationwide weakness in the financial and manufacturing sectors is con-

sidered. The authors of both papers assigned most of the major movements in the local economy (in 1989 and at other times) to unspecified "local shocks."

While much about the region's economic fortunes remains unclear, McCarthy and Steindel pointed out that income measures in the region have been considerably stronger than employment and that the relatively slow pace of national employment growth in the 1990s created an environment in which rapid employment growth in the area would have been possible only under unusually favorable circumstances. The discussion at this session noted that further investigation of the local factors at work in the area is desirable, possibly through examination of more detailed industry data. The hazards of forecasting the region's economy when such a large part of its history remains unexplained were also noted.

In the second session, the paper by Matthew Drennan examined the performance of three major regional industry sectors: goods production and distribution, producer services, and consumer services. Drennan found that, measured by income generation, the performance of these regional sectors in the 1990s has kept pace with that of their national counterparts. Income growth in these regional industry groups can be readily explained by national and international factors. In other words, Drennan suggested that a crucial part of the region's economy shows little or no recent deterioration and the region's economy overall appears well integrated with the national and world

economies. Nonetheless, regional employment, aggregated across the three sectors, has fallen significantly in the 1990s.

Next, James Orr's paper looked at job losses and gains in regional industries in the context of the "restructuring" movement. He found that, although the net job loss in the area has been large, the layoff wave appears to be ebbing and the service sector continues to grow.

In the latter part of the second session, a panel discussed specific developments in several major regional industries. Lawrence Radecki noted the potential for job losses if local banks shrink branch networks. However, the other panelists—Mitchell Moss on manufacturing, Richard Cantor on securities, and Thierry Noyelle on business services—found that the New York region retains a strong national and international position in many areas, although significant challenges are apparent. In the general discussion, telecommunications was mentioned as a sector whose New York area firms were in a position comparable to that of the sectors examined by the panelists. Concerns were expressed that little was said about growth opportunities for lower skilled and lower income workers in the area, although warnings were raised about the limited effectiveness of government intervention. A number of participants emphasized the long-run importance of improving education.

In the third session, the paper by Dick Netzer assessed the region's future and identified policies that might improve the local outlook. He was cautiously optimistic about the general outlook. In evaluating specific policies, however, he was skeptical about the benefit of spending substantial sums to improve personal transportation in the area—as opposed to improving goods-transport systems. Although he agreed that substantial cuts in the local tax burden could increase growth in the area, he doubted whether local governments could afford such widespread cuts. Instead, he argued, it would be more beneficial for authorities to look for ways to reduce the cost of doing business in the area, possibly by reducing taxes levied on intermediate goods and services purchased by business. Although the participants agreed with much of Netzer's analysis, some reiterated the need to develop policies that could generate job growth in the poorer, urban parts of the region.

Overall, the basic thrust of the papers presented at the conference was that the region, viewed in the aggregate, retains considerable resiliency, with fairly strong income growth and some recent recovery in employment. Major sectors of the region's economy have been holding their own against national and international competition. It is clear, however, that the region's continued ability to generate income and retain jobs in high-skill, high-wage sectors has not been reflected in job growth at the lower end of the spectrum. Much of the discussion noted that while it may be desirable to pursue policies that help reduce the general cost of doing business in the area, attention should also be paid to improving job opportunities for lower income workers.

Opening Remarks

William J. McDonough, President
Federal Reserve Bank of New York

Today's conference has three objectives:

1. To give a sense of the overall economic performance of the New York metropolitan area vis-à-vis the nation as a whole.
2. To discuss the strengths and weaknesses of industries in the region.
3. To discuss options that local policymakers might choose to foster greater economic growth.

We need to have a clearer idea about how to achieve a strong and sustainable local economy. By one key, highly visible measure—employment—the New York City area has yet to recover fully from the last recession. The local job count is still more than one-half million below its 1989 peak. The boom of the 1980s is a distant memory. The slump since 1989, unlike that of the 1970s, cannot be dismissed as something that mainly afflicts New York City proper; the suburban areas have also not fared well. I am not—definitely not—in the business of predicting cyclical turning points and the end of the national economic expansion. The current expansion will, nonetheless, end at some point. Given the metropolitan area's lagging performance so far in this long expansion, what problems does that augur in some future downturn? One understands why the Regional Plan Association titled the summary of its Third Regional Plan "A Region at Risk."

Before I go into the program, I would like to say a few words about why we are concentrating on the economy of the city and its environs, since the Second Federal Reserve District includes upstate New York in its borders along with the lion's share of the tri-state metropolitan area. The metro area, though, contains a large part of the District's populace, jobs, and income. I hope my good friends and colleagues upstate will forgive us for focusing just on the local area in this conference. Upstate New York dances to a somewhat different economic beat than the Big Apple, but it is clear that prosperity in this area will help to relieve problems elsewhere—even if only through the crude mechanism that more jobs and income around the city will help New York State government finances.

To gain an understanding of the problems—and opportunities—the metropolitan area faces, I asked Rick Mishkin and his colleagues to organize this conference. I am personally inclined to be optimistic about the region's future. This comes in part from my experiences as a banker in the Midwest during the massive slump in that region's industrial and agricultural sectors some ten to fifteen years ago, and then seeing the region's transformation in the years since. This episode taught me that regions can and do recover from prolonged slumps, perhaps when least expected. I would like to believe that New York and the Northeast will have the type of rebound that Chicago and the Midwest have seen over the last decade.

Today's conference will be organized around the three themes I mentioned at the outset. In the first session, the two papers—all four authors of which, I am proud to say, are current or recent employees of the Federal Reserve System—will gauge the recent performance of the region.

They also will examine whether the relative weakness here in recent years reflects softness in the national economy or problems of our own.

The papers in the second session, by Matt Drennan and Jim Orr, deal with issues on an industry level. Have regional industries been holding their own with national and world competition? What is the local state of the corporate restructuring process? Experts on key local industries from our Bank staff and elsewhere will add their insights.

In the final session, I hope we will all begin to look ahead and discuss feasible, practical policies that can improve our region's performance. Dick Netzer of New York University, a distinguished expert on the region and on government policy, will set the stage for our dialogue.

The sessions will be moderated by three individuals who have key roles in the economy of the region from three different perspectives: academia, government, and business. They are James Hughes, Dean of the Edward J. Bloustein School of Planning and Public Policy, Rutgers University;

Fran Reiter, Deputy Mayor of the City of New York; and Robert Kiley, President and Chief Executive Officer of the New York City Partnership and Chamber of Commerce, Inc.

The timing of the conference seems particularly appropriate. With the partisan political season over, it is a good time to talk about issues in dispassionate, objective fashion. Moreover, the data for the region for the last year or so suggest that some modest but real forward momentum is beginning to emerge—most especially, and welcome, in the private sector. We also had the pleasure last month of our first World Series win in ten years (in my position, I do not draw fine distinctions between the Mets and the Yankees). As a native of Chicago, I am perhaps more sensitive than most of you to what a privilege it is to win a World Series. Finally, last month, we all heard news of the awarding of the Nobel Prize in economics to a distinguished local scholar, Professor William Vickrey of Columbia, followed within days by his passing. Professor Vickrey's work long inspired those who dealt with finding solutions to many of the problems our region faces.

National and Regional Factors in the New York Metropolitan Economy

Jonathan McCarthy and Charles Steindel*

T his paper explores the connections between broad economic indicators in the New York metropolitan region and their national counterparts. It compares the performance of the region in recent years with that of the nation and assesses the importance of national and local developments for the area's economy.

A cursory examination of the regional economic indicators provides two contrasting views of the metropolitan economy's performance in recent years. On the one hand, employment growth over the last seven years has been very poor, both in absolute terms and relative to the nation, suggesting a region in decline. On the other hand, the region's income growth has been considerably better than its employment growth, suggesting that its goods and services remain in healthy demand.

As befits a preliminary investigation of these con-

tradictory data, our analysis yields some equally paradoxical results. For example, some of our evidence suggests that national and regional variables are more closely connected than they have been in thirty years. Notwithstanding this, our analysis also indicates that regional factors were the initial catalysts for the New York metropolitan area's recession in the 1990s, although national developments—in particular the slow growth in employment following the 1990-91 recession—were important factors behind the persistence of the local slump.

We begin our investigation by examining the data on the metropolitan area's employment and income and documenting their contrasting performances. We then present our statistical analysis of the interactions between the region and the nation. We conclude by placing our seemingly disparate findings into context.

A LOOK AT THE DATA

We examine three sets of summary data on the health of the regional and national economies: nonfarm payroll employment, personal income, and wages and salaries.

*Jonathan McCarthy is an economist and Charles Steindel a vice president in the Research and Market Analysis Group of the Federal Reserve Bank of New York.

EMPLOYMENT

Our regional payroll employment data, which cover 1958-96, reflect the sum of employment in ten metropolitan statistical areas (MSAs): in New York—New York City, Nassau-Suffolk, and Duchess County; in New Jersey—Jersey City, Bergen-Passaic, Newark, Middlesex-Somerset-Hunterdon, Monmouth-Ocean, and Trenton; and in Connecticut—New Haven-Bridgeport-Stamford-Danbury-Waterbury.[1]

These data clearly show that the New York metropolitan region's employment has tended to grow more slowly than the nation's over the last thirty-five years (Chart 1). However, in two periods—1970-77 and 1989-96—the relative decline in the region has been most perceptible. In both periods, the number of jobs fell while employment in the nation grew. The region's employment performance since 1989 has been even worse than in 1970-77, when a severe local recession contributed to New York City's near-bankruptcy in 1975. Following the 1970-77 period, the region regained its 1969 employment peak by 1979; in the current period, however, regional job growth would have to accelerate from its recent pace of a bit less than 1 percent per year for employment to pass its 1989 peak before the year 2000.

Although the region's absolute employment per-

formance looks worse in the recent episode, differences in the national economic situation should be taken into account before concluding that the region's recent relative performance has also been worse. Even though there were two national recessions—one of which was severe—during the 1970s, as opposed to the one mild recession since 1989, national employment growth was more vigorous in the 1970s than in the 1990s.[2]

To clarify how the national experience affects the interpretation of regional developments, we examine the employment declines in the region in the 1970s and 1990s from two different perspectives (Table 1). During the 1970-75 decline, the region lost 6.5 percent of its jobs. By this measure, the 1990s look worse than the 1970s: from the cyclical peak in 1989 to the trough in 1992, the region lost nearly 9 percent of its jobs. Job growth nationwide, however, was considerably stronger in 1970-75 than in 1989-92. If we evaluate the region's job performance relative to that of the nation, the 1970s look worse than the 1990s: in 1970-75, the region's share of the nation's jobs dropped by 1.6 percentage points. In 1989-92, the decline in the region's share was only about half as great—0.9 percentage point. Thus, employment growth in the region *relative* to the nation has been better in the 1990s than in the 1970s.

Chart 1

U.S. and Regional Employment
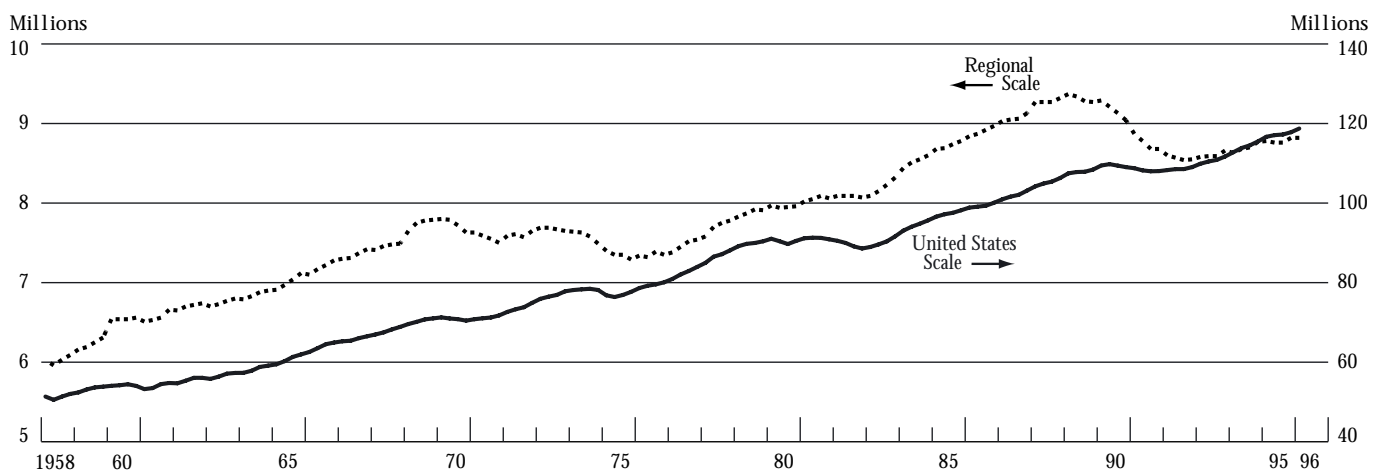
Sources: U.S. Department of Labor, Bureau of Labor Statistics; authors' calculations.

Table 1
EMPLOYMENT DECLINES IN THE NEW YORK REGION

	1970:1-1975:4	1989:1-1992:3
Peak level of employment (millions)	7.8	9.4
Trough level of employment (millions)	7.3	8.5
Change (percent)	-6.5	-8.9
Share of national employment at peak (percent)	10.9	8.7
Share of national employment at trough (percent)	9.4	7.9
Change (percentage points)	-1.6	-0.9

Sources: U.S. Department of Labor, Bureau of Labor Statistics; authors' calculations.

Note: The region's employment was 8.8 million in the first quarter of 1996, or 7.4 percent of the nation's employment.

PERSONAL INCOME AND WAGES AND SALARIES

On the whole, the data for personal income and wages and salaries paint a better picture of the region's performance than employment does (Charts 2 and 3).[3] Although the metropolitan area's share of the nation's personal income has fallen during the 1990s, the decline has been much less than the decline for employment, as a comparison of Tables 1 and 2 shows. This pattern is in sharp contrast to the 1970s, when the region's decline in income share was

in line with that for employment.

The recent movements of the regional share of national wages and salaries, however, have more closely paralleled the movements of the region's employment share (compare Table 1 and Table 3). Nevertheless, the region's share of the nation's wages and salaries is still as high as it was in the early 1980s, even though the employment share has fallen (Chart 3).

The relatively strong showing of income compared with employment suggests that concerns about the region's economic health may be overstated. Income in the region is heavily influenced by spending outside the region on regionally produced goods and services. If income is holding up fairly well, business in the region may be more robust than the employment data suggest (although business clearly has not been robust enough to erase the 1989-92 job losses).

STATISTICAL ANALYSIS

We now attempt to determine analytically how closely movements in the New York metropolitan region's employment and income indicators are associated with national movements. We also investigate how much of the recent weakness in the regional indicators—particularly employment—can be traced to movements in their national counterparts.

Chart 2

Regional Share of the Nation's Personal Income
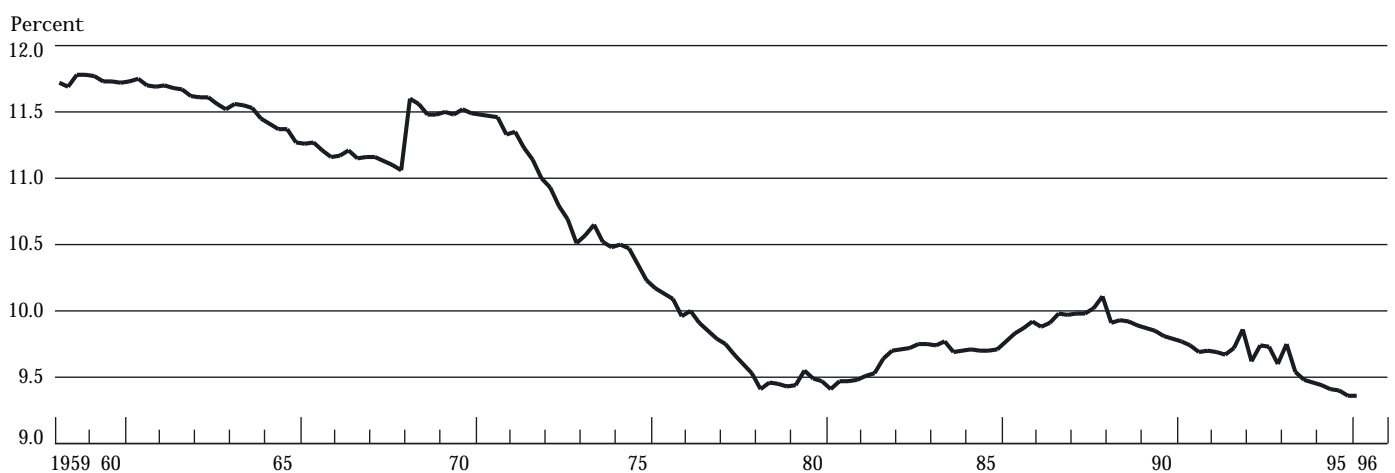
Sources: U.S. Department of Commerce, Bureau of Economic Analysis; authors' calculations.

Chart 3

Regional Share of the Nation's Employment and Wages and Salaries

Percent
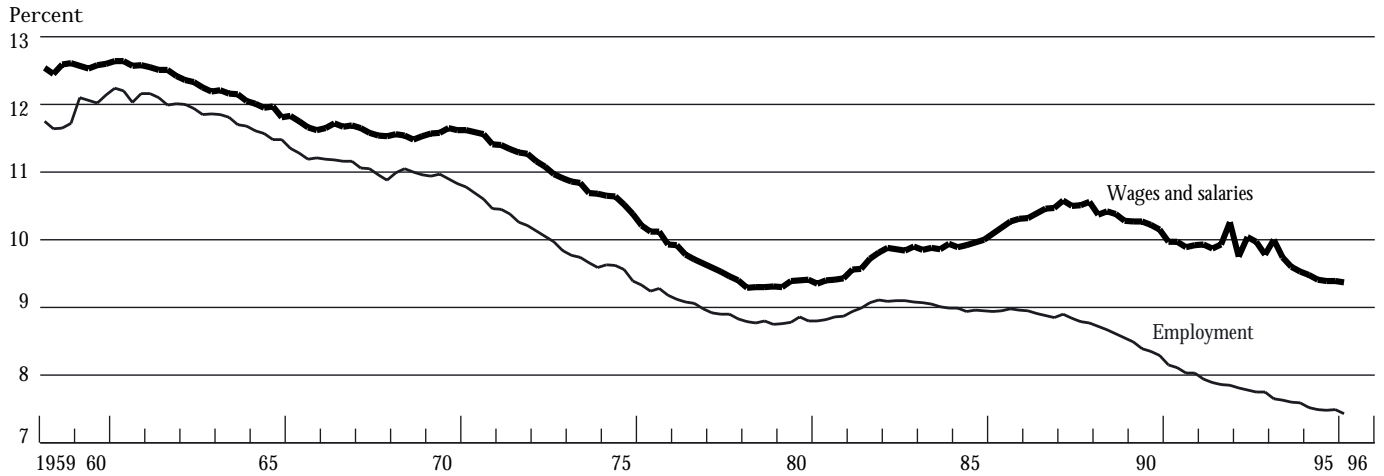
Sources: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Bureau of Economic Analysis; authors' calculations.

Table 2

PERSONAL INCOME DURING EMPLOYMENT DECLINES
IN THE NEW YORK REGION

	1970:1-1975:4	1989:1-1992:3
Share of national income at employment peak (percent)	11.5	9.9
Share of national income at employment trough (percent)	10.2	9.7
Change (percentage points)	-1.3	-0.2

Sources: U.S. Department of Commerce, Bureau of Economic Analysis; authors' calculations.

Table 3

WAGES AND SALARIES DURING EMPLOYMENT DECLINES
IN THE NEW YORK REGION

	1970:1-1975:4	1989:1-1992:3
Share of national wages and salaries at employment peak (percent)	11.6	10.4
Share of national wages and salaries at employment trough (percent)	10.4	9.9
Change (percentage points)	-1.2	-0.5

Sources: U.S. Department of Commerce, Bureau of Economic Analysis; authors' calculations.

PREVIOUS RESEARCH

Traditionally, issues like these have been addressed using regional econometric models, such as those of Glickman (1976) or Drennan (1995, 1997). In these models, a region's performance is determined by its internal structure and by national trends. The models are very valuable because they can test hypotheses concerning, for example, the evolution of a regional economy's structure. However, they contain many assumptions (for instance, about the key aspects of the region's structure) that could easily affect the analysis. Partly in the interest of transparency, we will therefore use less structural methods in our analysis.

Our methods have their source in the literature studying the interaction of national and sectoral (regional and industry) variables. An early example is Lilien (1982), who finds evidence that the distribution of employment across industry sectors changes sharply over the course of business cycles. Others have studied the interaction of national, industry, and regional data. For example, Clark (forthcoming) finds that unexplained movements in the regional data not related to movements in the national or industry data—region-specific shocks—account for about

40 percent of the fluctuations in regional industry employment, while comparably measured national shocks account for another 40 percent and industry sectoral-specific shocks account for the remaining 20 percent.

Another prominent study in this vein, Blanchard and Katz (1992), contains two principal findings: For most states—New York being a major exception—national employment fluctuations play a major role in explaining a state's employment fluctuations (for most states, when national employment falls 1 percent, state employment falls about 1 percent). In addition, when a state's employment falls relative to that of the nation, over and above what the long-term trend suggests, the jobs are permanently lost.[4]

In contrast to the Blanchard and Katz study, other analyses do not find that New York is out of the ordinary. One prominent example is the study by Carlino and Defina (1996), which finds that the Mideast region, which includes New York, is one of the "core" regions that respond to a monetary policy shock in a way close to the average U.S. response.

The Blanchard–Katz finding that bad times in states persist seems to hold locally. The New York State Department of Economic Development (1994) contends that growth rates in New York State take a very long time (up to ten years) to recover from an adverse shock, implying substantial effects on the *level* of the state's employment from a onetime loss of jobs.

It is tempting to argue that the region's recent prolonged period of weak economic performance reflects both the documented persistence of local slumps and a "payback" for the fairly strong performance of the region in the 1980s. In the standard view, income levels across the nation should converge, with slower growth over the long haul in higher income regions. A departure from this pattern would lead to a reaction—the payback. Thus, the strong per capita income growth in New York and New Jersey in the 1980s (Sherwood-Call 1996) could be expected to trigger a period of unusually slow growth in the 1990s as convergence reasserted itself.

There are, however, several reasons to question whether this interpretation explains recent developments in the region. First, Barro and Sala-i-Martin (1991) find that the income convergence process in the United States is very slow and does not necessarily stand out in the data over decade-long periods. The employment swings in the 1980s and 1990s in the New York area are much too striking to be explained by such phenomena. In addition, because convergence arguments usually focus on income, the substantially stronger performance of income compared with employment in the New York region during the 1990s cannot be easily explained by convergence phenomena. Furthermore, Ciccone and Hall (1996), using data on states and counties from the late 1980s, find that employment density is positively related to labor productivity (and thus, by inference, to income), implying that agglomeration effects outweigh congestion effects that contribute to convergence. This finding suggests that income in high-density regions such as New York may remain relatively high indefinitely, undercutting the rationale for the payback interpretation.

In the literature on specific episodes (as opposed to that on longer term movements) in regional economies, the methodology of Coulson and Rushen (1995) is of note. They estimate a vector autoregression (VAR) model of the Boston metropolitan area to quantify national and local influences on the "Massachusetts Miracle" and the subsequent downturn. They find that the strongest factor in Boston's economic upswing was "high-technology" shocks. In contrast, they find that the national and regional shocks were the major contributors to the subsequent downturn. The authors' methodology is interesting because it allows conclusions to be drawn about specific episodes without all the assumptions that go into a large econometric model.

Our statistical analysis combines the Coulson and Rushen and Blanchard and Katz approaches. Like Coulson and Rushen, we use VARs to decompose the effect of national and regional factors in individual episodes. Like Blanchard and Katz, we examine the longer term relationships between the region and the nation, but while Blanchard and Katz focus on how these relationships may differ across states, we are interested in how these relationships may have changed over time.

EMPLOYMENT

We now examine how the sensitivity of the New York metropolitan region's employment to national employment has changed over the years.[5] We do this by estimating rolling regressions over ten-year periods of regional employment growth on the current value plus three lags of employment growth for the rest of the nation.[6]

The estimates of the elasticity of regional employment to national employment derived from these regressions have clearly changed over time (Chart 4).[7] For ten-year samples beginning in the 1960s, a 1 percent increase in national employment was associated with a 1 percent increase in regional employment. That relationship weakened for samples beginning in the 1970s and early 1980s, when the elasticity fell to less than 0.5. For samples that begin after 1982, however, the national-regional employment relationship strengthened to levels one might associate with the cyclically sensitive Midwest, with the elasticity rising to more than 1.0.[8]

The estimated stronger relationship between the region and the nation may seem surprising given the weakness in regional employment since 1989. However, as noted above, national employment growth has been slower over the last decade than in previous years (Chart 1), and the region's relative performance has not suffered as much as it did in the 1970s. This finding suggests that the relationship between regional and national employment could have strengthened.

Nevertheless, the recent weakness in the region's employment relative to the nation's suggests that regional as well as national factors have been contributing to the region's slump. To explore the contributions of these factors, we turn to a two-variable VAR model of employment growth in the region and in the rest of the nation. The VAR is estimated with four quarterly lags over the period from the first quarter of 1961 to the first quarter of 1996.

To use the VAR model, we must decide how to decompose the regression errors from each equation into national and regional shocks. Although the choice is arbitrary, one natural way is to assume that regional shocks do not immediately affect employment in the rest of the nation; that is, the residual from the employment equation

for the rest of the nation is identified as the national shock. The regional shock is then identified as that portion of the residual from the regional employment equation that is not correlated with the national shock.[9]

Our assessment of the usual VAR statistics and the time series of these shocks confirms that both regional and national factors could have contributed to the regional slump in the 1990s. The variance decomposition of regional employment growth indicates a bit more than 60 percent of the variance of the regional employment growth forecast error at virtually all horizons is accounted for by the regional shock, leaving a sizable fraction to be explained by the national shock.[10] Furthermore, the VAR identifies a series of negative regional and national shocks during the 1990s associated with the regional and national recessions.[11] The regional shocks from 1989 to 1991 were especially severe, totaling about 3.3 percent, more than seven times the standard deviation of the regional shock.

To examine specifically the effects of these shocks on regional employment in the 1990s, we undertake a historical decomposition of regional employment growth from first-quarter 1989 to first-quarter 1996. In this exercise, the estimated model forecasts regional employment growth for this period using information through the end

Chart 4

Elasticity of Regional Employment to National Employment
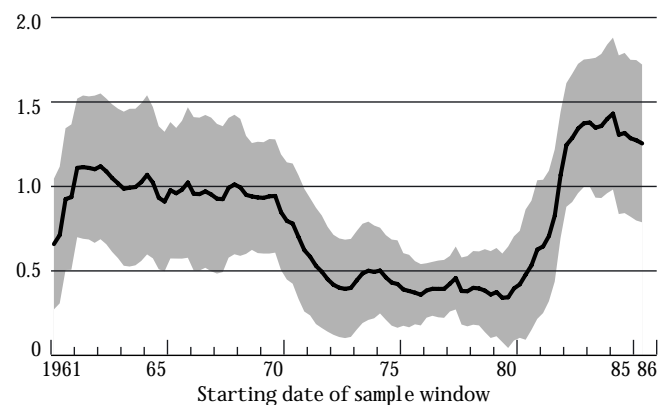
Source: Authors' calculations.

Notes: The elasticity is estimated from ten-year rolling regressions. The line represents the point estimates of the elasticity. The shaded area represents a two-standard-error confidence band.

of 1988. The model's forecast error is then decomposed into contributions from the national and regional shocks as identified by the VAR.

We find that regional shocks had a major role in initiating the regional slump, while national shocks played a large role in its persistence (Chart 5). Regional shocks were important in causing the region to decline before the 1990-91 national recession and were a major contributor to the depth of the decline (Chart 5, bottom panel). National shocks contributed to the depth of the decline in 1990-91 and also were largely responsible for the persistence of the regional slump in 1991-93 (Chart 5, middle panel).[12]

The evidence from Chart 5 is translated into effects on the employment level in Chart 6, which displays four paths of regional employment from the fourth quarter of 1988 to the first quarter of 1996. The lowest path is the actual track of regional employment. The top path is the baseline VAR forecast, which indicates that in the absence of the shocks, regional employment would have trended up almost 1 percent per year. By first-quarter 1996, the gap between the baseline and actual employment amounts to almost 1.2 million jobs.

The two paths between the actual and forecast paths illustrate the effect of each shock separately: one is the path of employment assuming that only the regional shocks occurred, and the other is the path assuming that only the national shocks occurred. The difference between each of these paths and the baseline path is each shock's contribution to the gap between the baseline and actual employment. Thus, the bulk of the gap during 1989-92 was due to the negative regional shocks. However, after the middle of 1990, the national shock became a major contributor to the gap. In fact, the effects of the national shocks were sufficiently large and persistent so that even if no regional shocks had occurred, regional employment would have increased only slightly after mid-1990.[13]

The VAR results suggest that locally generated shocks were the initial catalyst for the area's employment problems in recent years, but the national economy has also been a major factor behind the persistence of the local problems. This conclusion rests, however, on the specification of the VAR and the identification scheme. In particu-

Chart 5

Historical Decomposition of Regional Employment
First-Quarter 1989 to First-Quarter 1996
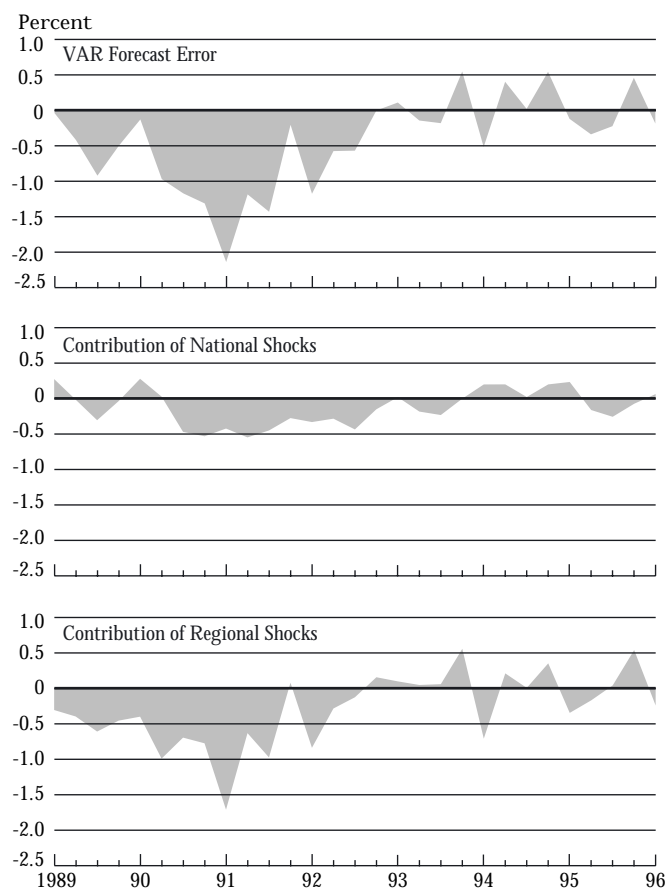
Source: Authors' calculations.

Chart 6

Alternative Simulated Employment Paths
Fourth-Quarter 1988 to First-Quarter 1996
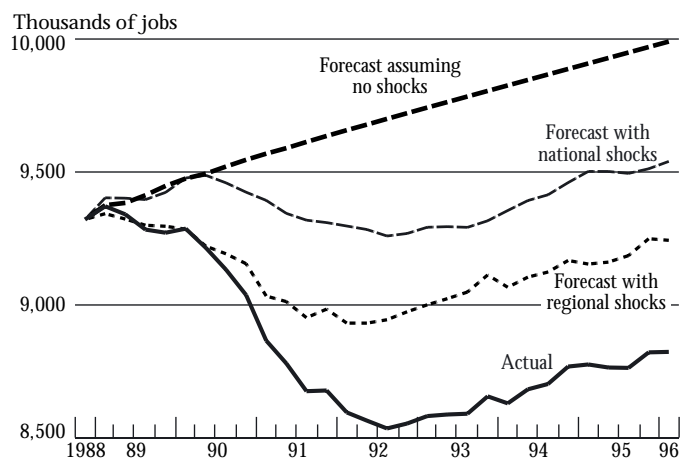
Source: Authors' calculations.

lar, other variables not included in the VAR could be important factors affecting regional employment. For example, the recent upheavals in the financial sector, a key industry in the New York metropolitan region, could have helped weaken employment performance.[14]

Overall, our evidence suggests that the relationship between fluctuations of national and regional employment has strengthened recently. Large regional shocks were the primary factor contributing to the severity of the local recession in the early 1990s. However, slow national employment growth after the 1990-91 recession has been a major factor behind the persistence of the regional slump. With regional shocks subsiding and the link between the nation and the region growing stronger, we should expect less erosion of the region's relative employment. The downside is that, given the weaker secular pace of national employment growth (likely both for demographic reasons and for the topping-off of labor force participation rates in many groups) and continued restructuring in the finance sector, absolute employment growth in the region is likely to be sluggish, barring any surprises.

PERSONAL INCOME

As we noted earlier, the region's personal income relative to the nation's has not declined to the same extent as employment has. This finding suggests that fluctuations and shocks to national and regional personal income may play different roles in explaining the fluctuations in regional income than they do in explaining employment.

Even though the raw data point to a stronger national effect, the rolling regressions of regional real personal income growth on national real personal income growth produce results similar to those for the employment regressions. As with the employment regressions, the contemporaneous value and three lags of personal income growth in the rest of the nation were included in the personal income regressions, which were estimated over ten-year periods.[15] Although the elasticity is about 1.0 for samples beginning in the early 1960s, it gradually declines for succeeding samples in the 1960s (Chart 7). For most of the samples beginning in the 1970s, the elasticity is around 0.5, a value similar to that observed in the employ-

ment regressions. Then, for samples that begin in the 1980s, the elasticity quickly increases to 1.0 again. Overall, it appears that the relationship between income in the region and income in the nation has strengthened—the same pattern we observed earlier for employment.

However, the rolling regressions do not explicitly indicate why income has performed relatively better than employment in recent years. To investigate this further, we turn to a two-variable VAR consisting of regional and national personal income. The VAR was estimated in growth rates with four quarterly lags.[16] The residuals from the VAR equations were again decomposed into shocks assuming an ordering placing the national variable first.

In the income model, as in the employment model, the standard VAR statistics confirm the potential for national and regional shocks to explain regional fluctuations.[17] The personal income VAR identifies the region as suffering from a series of negative income shocks during 1989-91, which accumulated to almost 5.5 percent (more than eight times the standard deviation of the regional shock).[18]

The historical decomposition of the regional income growth during 1989-96 indicates a role for national shocks in explaining regional income fluctuations that differs from their role in explaining employment fluc-

Chart 7

Elasticity of Regional Income to National Income
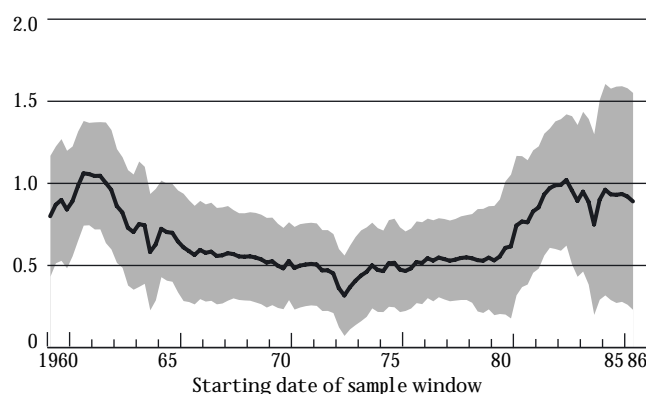
Source: Authors' calculations.

Notes: The elasticity is estimated from ten-year rolling regressions. The line represents the point estimates of the elasticity. The shaded area represents a two-standard-error confidence band.

tuations. Although the national shock was a large contributor to the depth of the local recession in 1990-91 (Chart 8, middle panel), it does not display the persistent negative effects on income that were observed for employment. As was the case for employment, the regional shock was the initial catalyst for the local recession and a factor in its depth (Chart 8, bottom panel).[19]

Our results suggest that the link between the nation's personal income and the region's has strengthened in recent years. Notwithstanding this, the New York metropolitan region was buffeted by regional shocks that were a drag to income during the early 1990s. However, national personal income did not exert the persistent negative effect on regional income during 1990-93 that national employment exerted on regional employment, a finding that may partly explain why regional income has performed better than employment during the 1990s.

WAGES AND SALARIES

We now examine that portion of income most closely associated with employment—wages and salaries—to see whether income has fared better than employment in the region because of strength in non-employment-based income (such as dividends or interest) or because of developments in the region's wages.[20]

As before, we begin with single-equation rolling regressions relating regional to national wage growth. We see that the pattern of elasticities of the region to the nation is much like the pattern for employment (Chart 9).[21] The elasticities fall to around 0.5 for samples beginning in the mid-to-late 1970s, then rise to a high of about 1.5 for samples that begin in 1983 or later. These latter values are what one might expect to find in highly cyclical regions, again suggesting a stronger link between the region and the nation in recent years.

The regressions suggest that the sensitivity of the region's wages and salaries to the nation's has been similar to that for employment. However, the raw data indicate that wages in the region have done somewhat better than employment. We again turn to a two-variable VAR consisting of regional and national wage growth to investigate these apparently contrary results.[22]

The shocks to national and regional wages identified by this VAR display patterns somewhat different from those identified by the employment and income VARs. Although the VAR identifies negative regional shocks during 1989-92, they are not as persistent as the negative shocks identified in the employment and income VARs. Instead, this period is dominated by two large shocks in the first quarter of 1989 and the first quarter of 1991, which more than account for the accumulated -4.3 percent shock (about five times the standard deviation of the shocks) during 1989-91.[23] There were also negative national shocks in this period, but similar-sized shocks occurred in the 1970s that were more persistent.

Chart 8

Historical Decomposition of Regional Income
First-Quarter 1989 to First-Quarter 1996
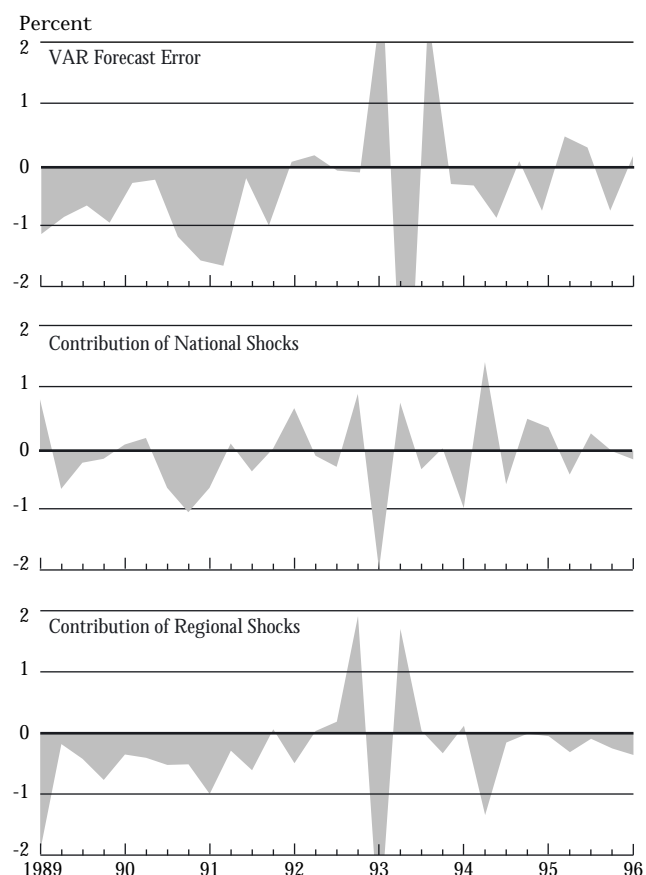
Source: Authors' calculations.

Note: The effects of the frontloading of bonuses during the fourth quarter of 1992 through the second quarter of 1993 are truncated at +/- 2 percent to present the contributions of other periods more clearly.

A historical decomposition indicates that the roles of the national and regional wage shocks during the 1990s differ from their roles during this period in either the employment or the income VARs (Chart 10). National shocks were a major factor in the weakness of wages through 1991 (Chart 10, middle panel). Regional shocks were a very small catalyst at the beginning of the slump and contributed some to the depth of the regional recession in early 1991. They were a more significant factor in the weakness of wages during 1994-95 (Chart 10, bottom panel).[24]

In sum, our results here indicate that the relationship between national and regional wages and salaries has strengthened in recent years. Moreover, weakness in national wages played a prominent role in the decline of wages in the New York metropolitan region during the early 1990s. Regional wage shocks, possibly from the restructuring of the financial sector, have helped to hold down wage growth in the last two years. On the whole, negative regional shocks to wages were a bit more evident in the 1990s than were negative shocks to overall personal income. Thus, favorable developments in nonwage income

Elasticity of Regional Wages and Salaries
to National Wages and Salaries
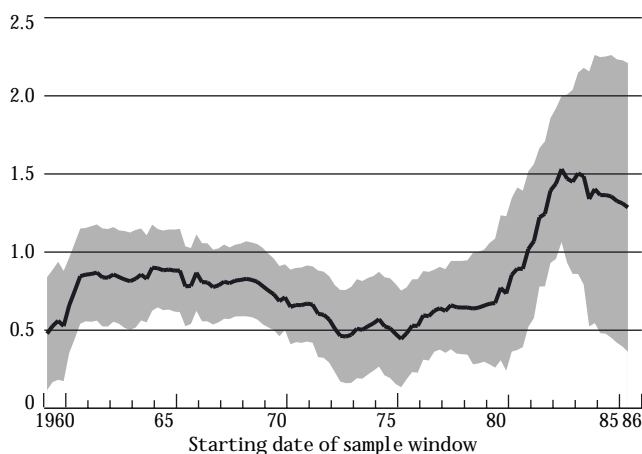
Source: Authors' calculations.

Notes: The elasticity is estimated from ten-year rolling regressions. The line represents the point estimates of the elasticity. The shaded area represents a two-standard-error confidence band.

Historical Decomposition of Regional Wages
and Salaries
First-Quarter 1989 to First-Quarter 1996

Source: Authors' calculations.

Note: The effects of the frontloading of bonuses during the fourth quarter of 1992 through the second quarter of 1993 are truncated at +/- 4 percent to present the contributions of other periods more clearly.

may have played a slightly larger role than favorable developments in wages in explaining the relatively good showing of overall regional income. However, it is worth noting that local data on nonwage income are probably less reliable than data on employment and wages.

CONCLUSION

Although this paper presents a preliminary examination of the data, we have come to a number of important conclusions: All three economic indicators examined—employment, personal income, and wages and salaries—suggest that the New York metropolitan region is more tightly

linked to the national economy than it was during the 1970s.[25] In addition, even though we find this relationship to be closer, regional shocks were the catalysts for the local recession of the 1990s and major contributors to its severity. National developments—possibly involving slower long-term aggregate growth—were significant factors in prolonging the local recession in the 1990s. This last conclusion implies that although absolute regional employment growth may remain sluggish in the future, we should expect less of a decline in the region's employment relative to the nation's.

We also found that employment in the region during the 1990s suffered more relative to the nation than did personal income and wages and salaries. To the extent that income in the region reflects output, this finding suggests that the goods and services produced by the metropolitan region remain desirable outside it and that the region remains competitive in what it produces.

This examination also raises some important questions. For example, What is the ultimate source of the regional shocks discussed? To what extent are these shocks the consequence of the industry composition of the region, or of the demographics of the region? Are there "true" regional shocks? Future studies may shed light on these questions.

1. Data are not available for Bergen-Passaic, Monmouth-Ocean, Middlesex-Somerset-Hunterdon (New Jersey), and New Haven-Bridgeport-Stamford-Danbury-Waterbury (Connecticut) before 1975. We develop estimates for this earlier period by substituting Paterson (New Jersey) and Stamford (Connecticut) for these MSAs and extrapolating the 1975-95 relationship between the smaller sample and the universe back through 1958. The employment growth trend in the smaller group of MSAs was 0.2 percent per quarter slower than in the larger group over 1975-95. Accordingly, employment growth in the larger group for 1958-75 was estimated by adding 0.2 percent to the growth of the smaller group. Also, the pre-1975 data for the Newark MSA was adjusted down for a definitional change that occurred in 1975.

2. The 1970s and 1990s also differed in the patterns of sectoral and intraregional employment changes. Roughly speaking, regional employment stagnation in the 1970s was due to employment losses in the manufacturing sector and in New York City proper, which offset gains in other sectors and other parts of the region. The stagnation in the 1990s was much more evident across sectors and throughout the area (although the manufacturing sector and New York City have again been especially weak).

3. Beginning in 1975, the personal income and wage and salary data for the metropolitan area reflect the sum of the data for the New York City, Nassau-Suffolk, Jersey City, Bergen-Passaic, Newark, Middlesex-Somerset-Hunterdon, Monmouth-Ocean, and New Haven-Bridgeport-Stamford-Danbury-Waterbury MSAs. Before 1975, the regional totals are derived from growth in the sum of the corresponding series from New York State and New Jersey (there is a break in the state personal income data in first-quarter 1969, which is evident in Chart 2). The income series show a pronounced spike in fourth-quarter 1992 and a dip in first-quarter 1993, which result from the frontloading of bonuses from early 1993 to late 1992 to avoid a rumored tax increase. Much of this frontloading occurred in the financial sector, so it affected this region more noticeably.

4. The loss of jobs is relative to the state's growth trend; as long as the state has a positive trend, the previous peak level of employment will eventually be surpassed. There is a subtle distinction between changing the level of employment in a state and changing its underlying growth trend. Over a sufficiently long horizon, a permanent change in the level of employment in the state does not involve a change in its growth trend. Blanchard and Katz find that the loss of jobs does not raise the state's unemployment rate over the longer term; they contend that the primary mechanism bringing the unemployment rate back down is the outmigration of displaced workers.

5. In all the regression analyses, the "national" variables refer to the United States excluding the New York metropolitan area.

6. The regressions presented here do not include any variables to account for a possible break resulting from the construction of the regional employment data. The inclusion of dummy variables to account for possible breaks does not change the substantive results.

7. Since the variables in the equations are measured in growth rates, the elasticity is simply the sum of the coefficients on current and lagged national employment growth.

8. In response to a comment from a discussant at the conference, we have examined the stability of the model over the 1961-96 sample period. Simple Chow tests indicate that many ten-year subsamples that begin in the 1970s display differences from the rest of the sample, although the robustness of these tests to choosing the breakpoints is questionable. In contrast, more robust tests, such as Hansen's (1992), display little evidence of unstable elasticity.

Even though it is not clear from these tests that the elasticity is unstable, we still find these rolling regressions useful in summarizing the data. The relative insensitivity of regional to national employment in the 1970s suggests that developments in the New York area's economy—for example, the shrinkage of the regional manufacturing sector and the rapid growth of the financial and business services sectors—probably had less to do with developments in the national economy than at other times. The greater sensitivity in recent years suggests that national developments probably have been a larger factor in regional economic fluctuations. We explore this theme further in other parts of our analysis.

9. To be thorough, we conducted an analysis using a VAR in which regional employment growth was ordered first, a step that assumes national employment growth has no contemporaneous effect on the region. As one might suspect, the effect of the national shock on the region is much more limited. However, this ordering assigns an implausibly large role to this region in the fluctuations in the rest of the nation: the impulse response of national employment indicates that employment growth in the rest of the nation increases by more than 0.2 percent for two quarters after a regional shock, and more than 30 percent of the forecast variance in the rest of the nation is explained by the New York shock.

10. Another VAR statistic, the impulse response function, also points to the significant potential of both shocks to explain regional fluctuations. The accumulated effects of a unit regional shock and a unit national shock (each of which is about 0.4 percent) on the regional employment level are about 1.4 percent and 1.0 percent, respectively. Charts depicting the impulse responses appear in McCarthy and Steindel (1996).

11. See McCarthy and Steindel (1996) for a depiction of the time series of the shocks. See Brauer (1993) for a discussion of the slow-growth economy of the early 1990s.

12. To examine whether instability in the VAR model may have affected our results, we reestimated the model using two subsamples of our data. The first used data over 1975-96 and the second excluded data from the 1970s. In both cases, the historical decompositions differed little from those displayed in Chart 5.

13. Of course, these are simply point estimates with possibly large standard error bands. They are intended only to give the flavor of the counterfactual simulations.

   We also undertook a historical decomposition of the first quarter of 1970 through the first quarter of 1977, the other prominent regional employment slump. To a large extent, the roles of the regional and national shocks are the opposite of their roles in 1989-96. The national recessions in 1970 and 1973-75 are the major factors behind the depth of the region's employment declines during those periods, but the national shocks contribute little to the persistence of the regional recession. However, the frequent negative regional shocks contributed to the persistence of the regional slump. In fact, if only the regional shocks had occurred during 1970-77, employment in the first quarter of 1977 still would have been below the first-quarter 1970 peak, and nearly the same as the actual level.

14. McCarthy and Steindel (1996) and Kuttner and Sbordone (1997) examine the effects of industry shocks on metropolitan employment in the 1990s.

15. Regional and national personal income are deflated by the New York metropolitan consumer price index and the national consumer price index, respectively. These regressions also include four dummy variables. To account for the differing construction of the data for this period (as reported in endnote 3), the first dummy equals 1 over 1959-74 and zero otherwise. The second dummy equals 1 for the first quarter of 1969 and zero otherwise, to account for a break in the reported state data used in the extrapolation. The third and fourth dummies equal 1 in the fourth quarter of 1992 and the first quarter of 1993, respectively, and zero otherwise, to account for the frontloading of bonuses in late 1992. By excluding these dummy variables, we found little effect on the substantive results of the regression, although in this case the elasticities at the end of the sample do rise well above 1.0.

16. The estimation period is from the first quarter of 1961 to the first quarter of 1996. The dummies for the fourth quarter of 1992 and the first quarter of 1993 were excluded so that we could examine the extent to which the VAR identified the frontloading of bonuses in this period as a

national rather than a regional shock. The substantive results were similar when these dummies were included.

17. According to the variance decomposition, almost 50 percent of the regional income forecast variance at all horizons up to five years is explained by the national shock. (Sherwood-Call [1988] finds that for VARs estimated over 1970-86, slightly more than half the variance of two-year forecasts of New York and New Jersey personal income is explained by national income shocks.) In addition, the impulse responses of regional personal income to national and regional shocks are quite similar (McCarthy and Steindel 1996). However, the standard deviation of the national shock—which is the size of the unit shock— is about 0.84 percent, whereas the standard deviation of the regional shock is about 0.64 percent.

18. The VAR also identifies the late 1992 bonus frontloading as a large positive shock followed by an even larger negative shock for the nation and the region (McCarthy and Steindel 1996).

19. In contrast, McCarthy and Steindel (1996) find that the contributions of national and regional factors to income fluctuations during the regional slump in the 1970s were similar to those for employment. National shocks primarily contributed to the depth of the local recession, especially during 1974-75. The frequent negative regional shocks during this period were the principal reason for the persistent local slump, much as they were for employment. This division between the contributions of the two shocks may be a reason for the weaker relationship between national and regional income during this period.

20. Note that the region has an unusually high amount of proprietors' income, which in industries such as law and finance is affected by many of the same factors that affect wages and salaries. A comparison of the household employment data for the region shown in Hughes and Seneca (1996) with our payroll series shows a difference of about 2 million workers for recent years; the bulk of this difference most likely reflects self-employment.

21. Growth rates for regional and national wages are restated in real terms using the same price series that were used in the personal income analysis. These regressions include the same four dummy variables as the personal income regressions did. Excluding the dummy variables from the regressions had little effect on the results except for samples that began in the 1980s. For these samples, the elasticities rose to about 2.0, rather than 1.5.

22. The specification of the VAR is the same as it was for personal income except no dummy variables are included in the system. The estimation period is again the first quarter of 1961 through the first quarter of 1996.

23. By coincidence, the standard deviations of the shocks are each about 0.85 percent. As was the case for the employment and income VARs, the variance decomposition and impulse responses of regional wages confirm the potential for each shock to explain the pattern of regional wages.

24. In contrast, the decomposition of the 1970s in the wage VAR is similar to that in the employment and income VARs. The regional shocks were the major contributor to the persistence of the slump, while the national shocks augmented the slump's depth during the national recessions (McCarthy and Steindel 1996).

25. Superficially, our results seem to differ from those of Kuttner and Sbordone (1997), who emphasize the continued—or even growing—role of regional factors in local employment. However, these authors are looking at the fraction of the *variance* in the region's employment growth that can be explained by regional factors. In contrast, we are decomposing the *amount* of growth into regional and national components. An increased national component in the amount of growth in a period can be consistent with a reduced national contribution to the variance in growth.

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Sources of New York Employment Fluctuations

*Kenneth N. Kuttner and Argia M. Sbordone**

N ew York's economy depends heavily on developments elsewhere in the United States, usually contracting when the rest of the nation is in a recession and expanding when the nation is growing rapidly. It is far from a lockstep relationship, however. In some episodes, such as the 1970s, the region fared considerably worse than the United States. In other periods, such as the early 1980s, it performed better than the nation.

This paper investigates employment fluctuations in the New York metropolitan area with the goal of understanding the similarities and differences between the region and the rest of the nation. The investigation has two parts. The first part describes cyclical movements and long-run shifts in regional employment and compares them with employment fluctuations in the nation as a

whole. The second part quantifies the relative importance of aggregate, industry-specific, and region-specific factors in explaining the region's fluctuations.

The investigation focuses on two key industries: manufacturing, and the finance, insurance, and real estate (FIRE) sector. Much of the persistent job loss in the region has been in these two industries—first, with the exodus of manufacturing jobs in the 1970s, and more recently, with the restructuring of financial services in the late 1980s.[1] One potentially important implication of the evolution of employment shares is a change in the region's response to aggregate factors. As New York's employment base shifts from highly cyclical manufacturing jobs to relatively acyclical financial services, one would expect changes in the relationship between the region and the nation like those documented by McCarthy and Steindel (1996).

To assess the importance of these factors, we use a statistical model that can, by virtue of its factor structure, attribute New York employment fluctuations to readily interpretable aggregate, industry-specific, and regional fac-

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tors. Our approach also relates the region's response to aggregate and industry shocks to its industry mix, allowing us to characterize changes in the behavior of regional employment resulting from changes in its employment base.

Our results reveal some significant changes in the region's relationship to the rest of the nation. While New York employment shares a strong cyclical component with U.S. employment, the region has experienced major shifts in its trend growth rate: the largest are associated with negative shocks in the mid-1970s and the late 1980s. Some of these can be traced to specific industries, such as the FIRE-related weakness in the late 1980s. Others, such as the stagnation in the mid-1970s, seem to be due primarily to region-specific factors. At the same time, the region's declining reliance on cyclical industries has made the region's fortunes less closely tied to those of the nation.

TRENDS AND CYCLES IN THE NEW YORK ECONOMY

The quarterly growth (at quarterly rates) of national and regional employment and their decomposition into trend and cyclical components appear in Chart 1. The regional payroll employment figures used here and elsewhere in the paper are taken from the data set compiled by McCarthy and Steindel (1996). As in their paper, the New York metropolitan area refers to the New York City, Nassau-Suffolk, Duchess County, Jersey City, Bergen-Passaic, Newark, Middlesex-Somerset-Hunterdon, Monmouth-Ocean, Trenton, and New Haven-Bridgeport-Stamford-Danbury-Waterbury metropolitan statistical areas. Further details on the data set construction appear in their paper. U.S. employment data by industry are taken from the payroll employment survey. All data are seasonally adjusted.

These decompositions utilize a classification of economic fluctuations dating back to Burns and Mitchell (1946): fluctuations lasting between six and thirty-two quarters are defined as "cyclical," while those lasting more than thirty-two quarters are defined as "trend" components. Very short-run fluctuations lasting less than six quarters (the "irregular" component) are ignored. The decompositions are obtained using the frequency-domain

filters discussed in Baxter and King (1995).[2] Although the data cover the period from first-quarter 1958 to third-quarter 1995, three years' data are lost at each endpoint.[3]

Employment and its trend-cycle decomposition appear in Chart 1.[4] The top panel plots employment growth in the nation and in the New York metropolitan area. The cyclical component plotted in the bottom panel illustrates the strong comovement of New York and national employment growth at business-cycle frequencies. The two series exhibit similar timing and amplitude, although the region's fluctuations have a larger variance pre-1969 and a lower variance in the 1980s. There is much more of a discrepancy in the long-run movements, plotted in the middle panel. Regional employment experienced two major long-run declines, one in the 1970s and the other in the mid-to-late 1980s, that are significantly stronger than those occurring in the national economy. This is consistent with the variation in the estimated elasticities of regional to national employment documented in McCarthy and Steindel (1996)—particularly its weakening in samples beginning in early 1970 and its strengthening in the 1980s. Table 1 also shows that the correlation of the cyclical components is about twice as high as that of the trend components.

Another way to compare the behavior of the national and the regional employment growth is to look at their ratio. Chart 2 isolates, with the same decomposition by frequency, cyclical versus long-run movements in that ratio. The plot points document the strength of the region's secular decline in spite of the two cyclical peaks in the late 1960s and early 1980s.

The trend-cycle decompositions suggest that

Table 1
CORRELATIONS BETWEEN NEW YORK AND U.S. EMPLOYMENT GROWTH

Unfiltered Data	Cyclical Component	Trend Component
0.55	0.86	0.42

Sources: Bureau of Labor Statistics; McCarthy and Steindel (1996); authors' calculations.

Notes: Results are based on quarterly data from first-quarter 1958 through third-quarter 1995. The cyclical component corresponds to periodicities between six and thirty-two quarters, the trend component to periodicities greater than thirty-two quarters.

Chart 1

Regional and National Employment Growth
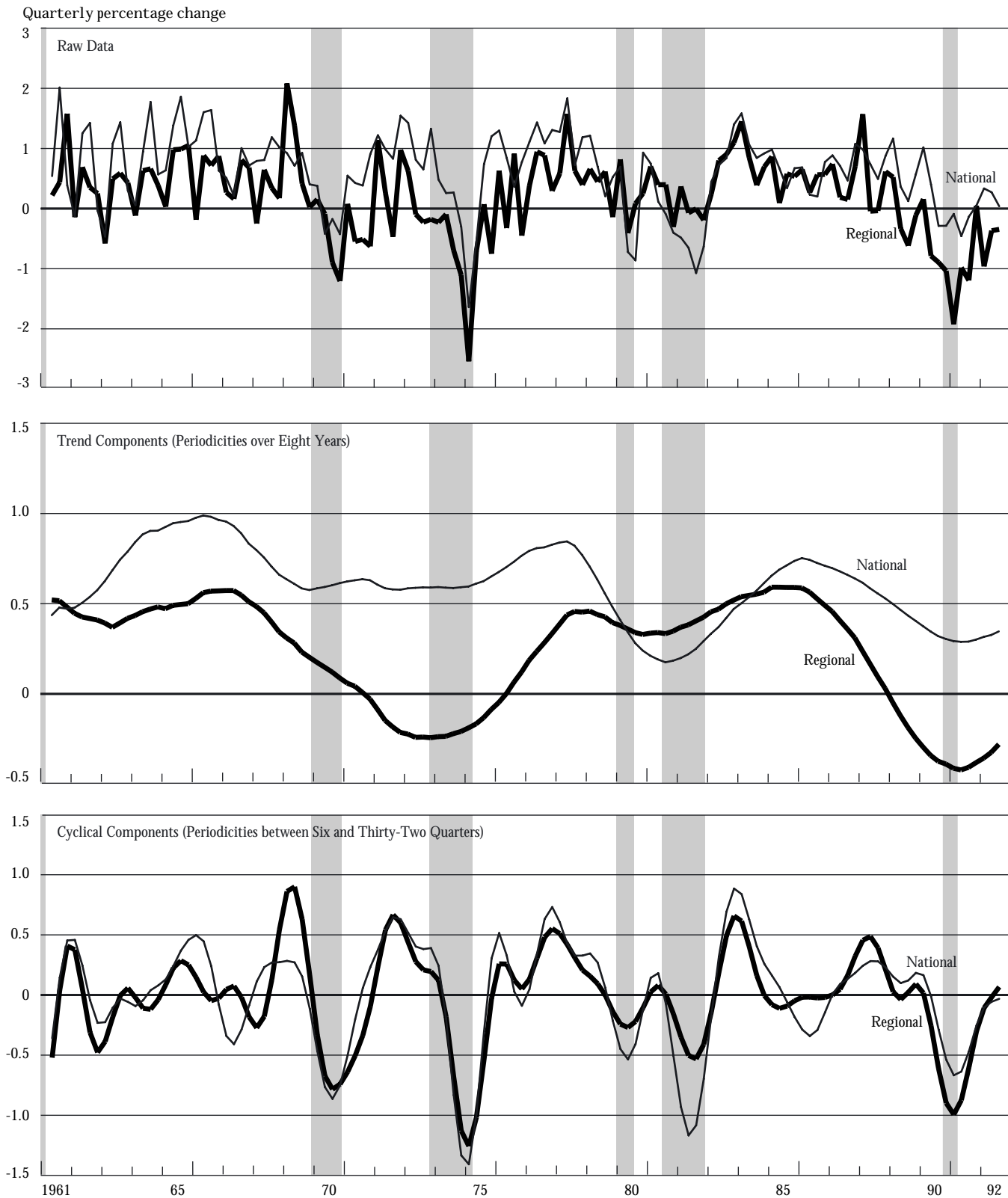
Quarterly percentage change

Raw Data

National

Regional

Trend Components (Periodicities over Eight Years)

National

Regional

Cyclical Components (Periodicities between Six and Thirty-Two Quarters)

National

Regional

1961   65   70   75   80   85   90   92

Sources: Bureau of Labor Statistics; McCarthy and Steindel (1996); authors' calculations.

Note: Shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

Chart 2

Ratio of Regional to National Employment
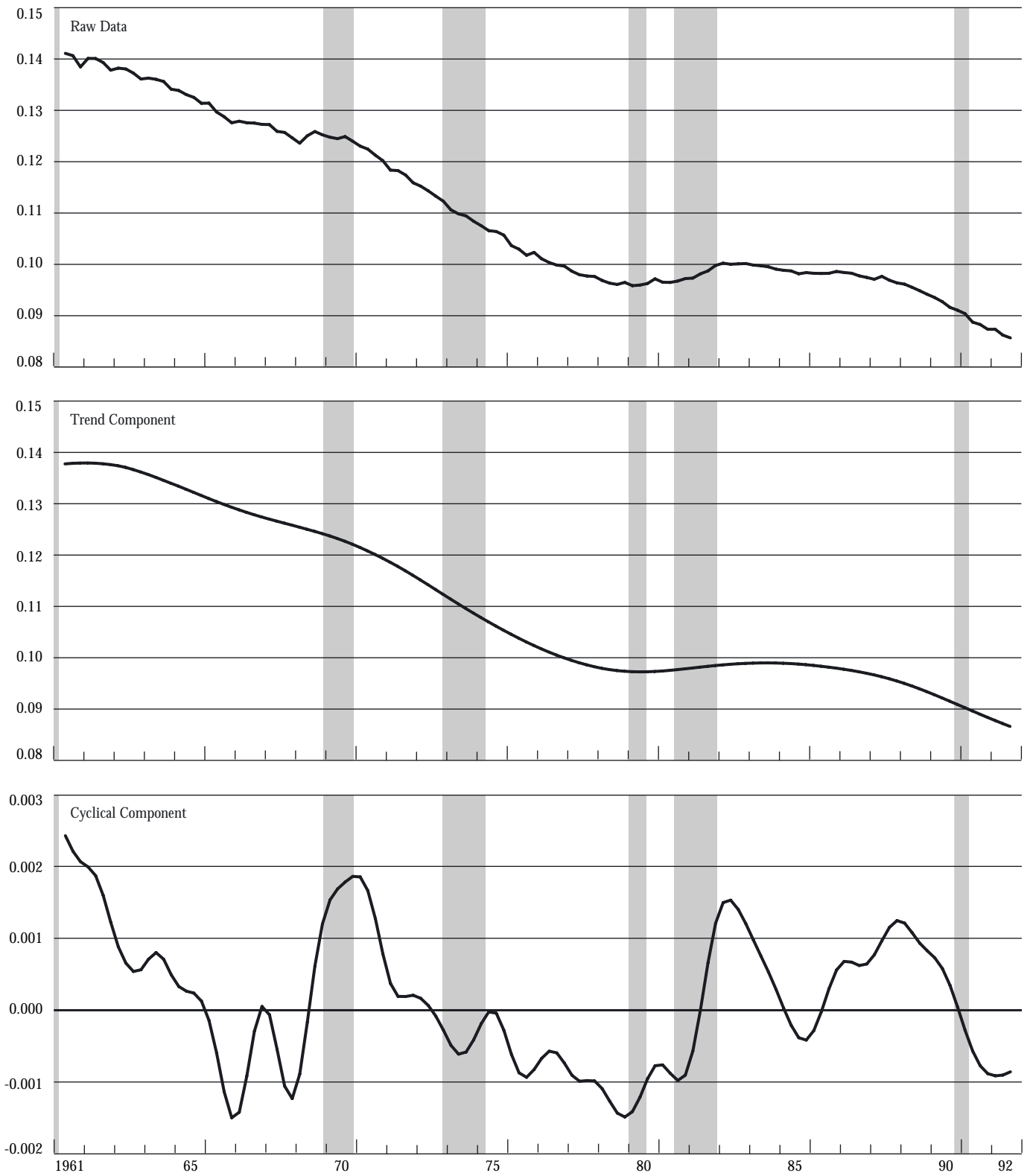
Sources: Bureau of Labor Statistics; McCarthy and Steindel (1996); authors' calculations.

Note: Shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

research on discrepancies between New York and U.S. economic performance needs to account for *persistent* shifts in the region's employment and to address the possible role of industrial composition in those shifts. The following questions are particularly relevant: Has sectoral employment become more concentrated in industries exhibiting a persistent response to aggregate shocks? Or are the industries overrepresented in the region themselves subject to persistent fluctuations? Moreover, are there any common features in the slowdowns of the 1967-75 and the 1985-90 periods?

As noted above, manufacturing and FIRE have played an especially large role in persistent shifts in regional employment. Manufacturing's share of regional employment declined from roughly 24 to 19 percent between 1969 and 1975 (Chart 3). Over the same period, FIRE grew from 9 to 10 percent.[5] Manufacturing also declined nationally, but at a slower pace, and FIRE grew at a faster pace nationally than in the region. The result is that New York's share of both manufacturing and FIRE employment declined (Chart 4).

How did employment by industry behave over this period? Employment growth in the FIRE, manufacturing, and "other" (total employment less manufacturing and FIRE) sectors is plotted in Chart 5. The employment growth rate is strongly procyclical in all industries, with the highest cyclical variability in manufacturing. However,
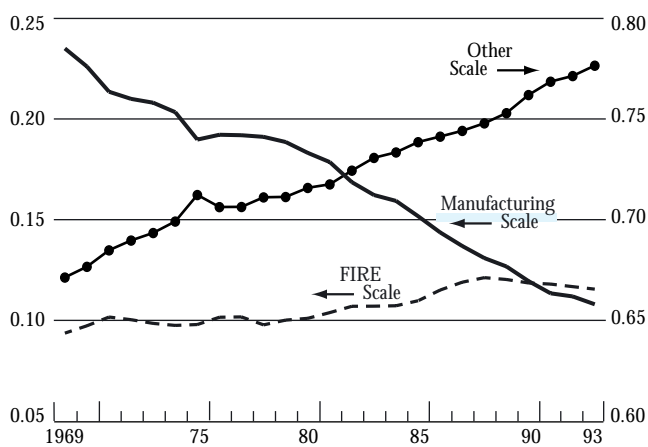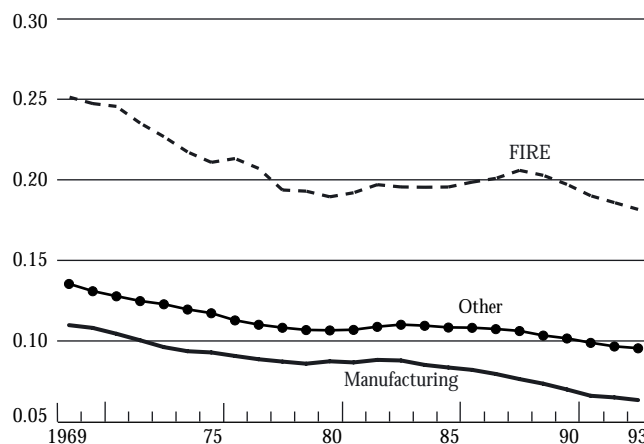
in manufacturing, low-frequency components contribute substantially to the variability of employment, particularly in the 1967-70 and 1979-81 periods. A long-run shift is apparent in the FIRE industry post-1985.

This analysis suggests that industry-specific shocks, of a structural character and more persistent nature, may be at the core of the two major downturns in the New York region in the 1970s and mid-to-late 1980s.[6] We turn therefore to a more structured analysis of the employment patterns in the New York metropolitan area with the objective of disentangling the role of industry factors among aggregate and region-specific factors.

ASSESSING AGGREGATE, INDUSTRY, AND REGIONAL FACTORS

The goal of this section is to describe the sources of fluctuations in New York employment. We consider three distinct sources: aggregate, industry, and regional shocks. Aggregate shocks would include factors that affect the macroeconomy—monetary policy, for example, or anything else responsible for business cycles.[7] Industry shocks are disturbances associated with specific industries: in this analysis, shocks to the manufacturing and FIRE sectors. Finally, regional shocks represent factors not associated with a specific industry or with overall employment in the United States.

Chart 5

Industry Employment Growth
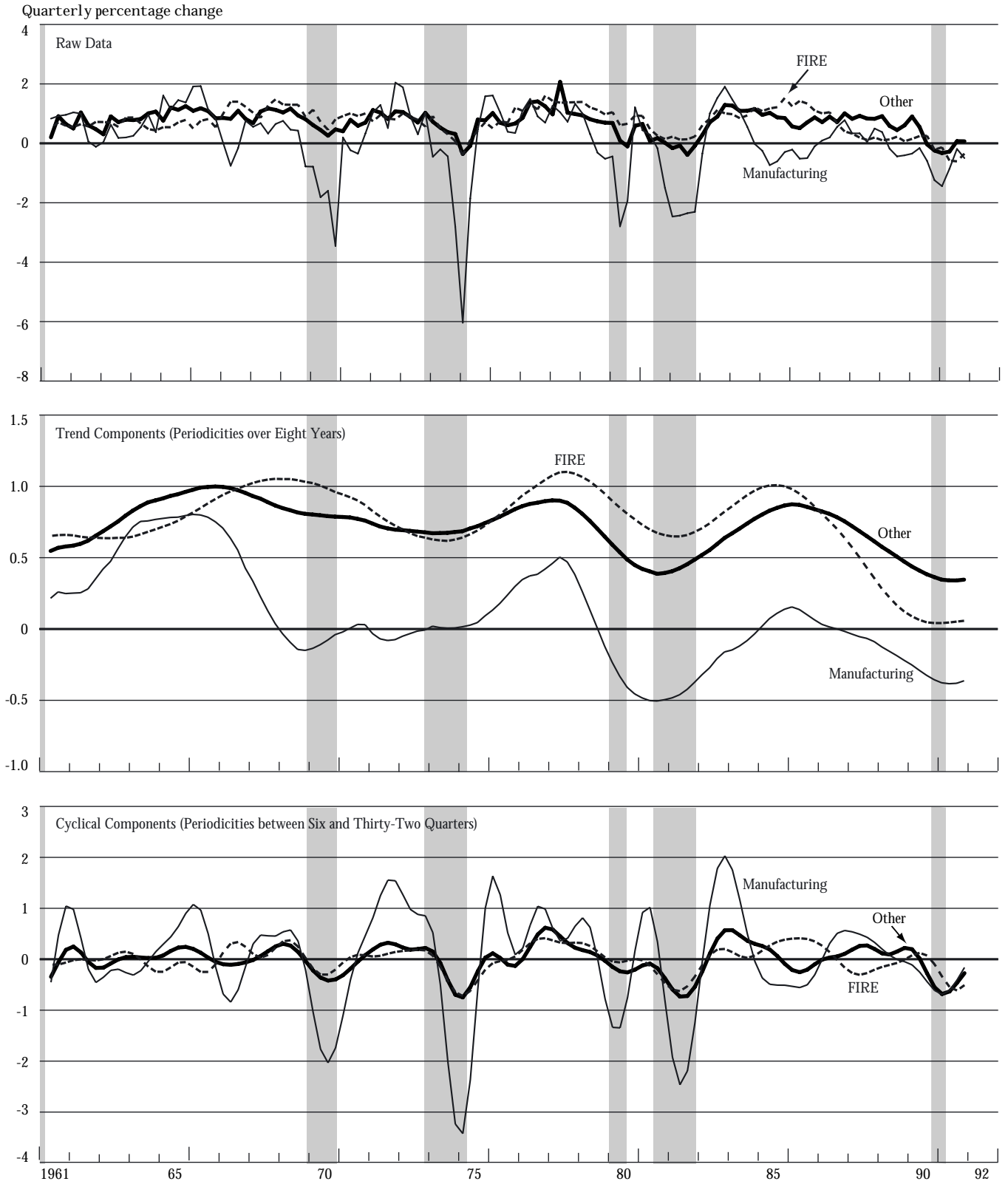
Quarterly percentage change

Raw Data

FIRE

Other

Manufacturing

Trend Components (Periodicities over Eight Years)

FIRE

Other

Manufacturing

Cyclical Components (Periodicities between Six and Thirty-Two Quarters)

Manufacturing

Other

FIRE

Sources: Bureau of Labor Statistics; authors' calculations.

Note: Shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

To separate the common aggregate component from industry- and region-specific factors, we use a version of a dynamic factor model. Factor models lend themselves well to regional analysis, where they have been used in a variety of applications. One of the earliest was that of Engle and Watson (1981) in their analysis of regional wage fluctuations. Our framework closely resembles the models of Norrbin and Schlagenhauf (1988), Altonji and Ham (1990), and Clark (forthcoming). Some similarities and differences between our approach and theirs are highlighted below.

This approach models industry and regional fluctuations as a function of a set of latent variables. The observed covariance between employment growth in different industries is attributed to an unobserved *common factor*, which we associate with the aggregate source of fluctuations. Differences in sensitivities to the aggregate shock are captured through distinct *loadings* on the common factor. The idiosyncratic factors—in this case, the industry- and region-specific shocks—are assumed to have no contemporaneous effect outside the industry or sector in which they originated.

An important difference between the factor approach and the vector autoregressions (VARs) used by McCarthy and Steindel (1996) and others (such as Blanchard and Katz [1992]) is that the factor approach avoids the recursive error structure characteristic of most VARs. In that framework, the error in the equation describing overall U.S. employment is typically interpreted as the "aggregate" shock, even though it may also be affected by industry and regional shocks. Factor models can allow for a more natural separation between aggregate, industry, and regional shocks although, like VARs, they impose restrictions on the contemporaneous feedback between regions and industries.[8]

THE MODEL

The model in its most general form involves employment in each of k different industries and n different regions.[9] Let $y_{i,r,t}$ represent log employment in industry i, region r, at time t. Employment growth for industry i in region r is assumed to obey

(1) $\qquad \Delta y_{i,r,t} = \mu_{i,r} + \gamma^c_{i,r}c_t + \gamma^z_{i,r}z_{i,t} + \gamma^g_{i,r}g_{r,t},$

where c_t, $z_{i,t}$, and $g_{r,t}$ are unobserved aggregate, industry, and regional factors, respectively. The z and g terms are assumed to be uncorrelated with one another, so that any comovement between employment across sectors and regions is the result of the common aggregate factor. The γ coefficients represent the sensitivity of employment to each factor (the factor loadings). The constant term $\mu_{i,r}$ allows for trends in employment shares.

Unfortunately, the lack of consistent quarterly time series on employment by industry in the New York metropolitan area means that unlike Norrbin and Schlagenhauf (1988), we cannot work directly with the disaggregated model in equation 1. Instead, we use time series employment data by industry in the nation as a whole and total employment in the New York region. This leads to an aggregated version of the model similar to the one developed by Clark (forthcoming).

Deriving the relationship between disaggregated industry-region employment and total employment by industry and region simply involves aggregating across industries and regions. Letting $y_{i,t}$ and $y_{r,t}$ represent the logarithms of industry and regional employment at time t, employment growth (the difference in logs) in each region and industry (approximately) equals the weighted average of the underlying region-industry-specific growth rates:

$$\Delta y_{r,t} \approx \sum_i a_{i,r,t}\Delta y_{i,r,t} \text{ and}$$

$$\Delta y_{i,t} \approx \sum_r b_{i,r,t}\Delta y_{i,r,t} \ .$$

The weights $a_{i,r,t}$ and $b_{i,r,t}$ are the relevant employment shares: $a_{i,r,t}$ represents industry i's share of employment in region r, $Y_{i,r,t}/\Sigma^k_{i=1}Y_{i,r,t}$, and $b_{i,r,t}$ represents region r's share of employment in industry i, $Y_{i,r,t}/\Sigma^n_{r=1}Y_{i,r,t}$. The shares are interpolated from the annual data compiled by Hughes and Seneca (1996), shown earlier in Charts 3 and 4.

These relationships allow us to write the model in terms of total employment by industry and region. Multiplying equation 1 by the relevant employment shares and summing across regions yields

$$\Delta y_{i,t} = \sum_r b_{i,r,t}\mu_{i,r,t} + c_t\sum_r b_{i,r,t}\gamma^c_{i,r}$$

$$+ z_{i,t}\sum_r b_{i,r,t}\gamma^z_{i,r} + \sum_r b_{i,r,t}\gamma^g_{i,r}g_{r,t} \ ,$$

and similarly aggregating across industries yields

$$\Delta y_{r, t} = \sum_i a_{i, r, t} \mu_{i, r} + c_t \sum_i a_{i, r, t} \gamma^c_{i, r}$$

$$+ \sum_i a_{i, r, t} \gamma^z_{i, r} z_{i, t} + g_{r, t} \sum_i a_{i, r, t} \gamma^g_{i, r} .$$

In the absence of any restrictions, this would yield an underidentified model—one with more parameters than could be estimated using only industry and regional employment data. To reduce the number of parameters, we make the following three natural (but restrictive) assumptions:

Assumption 1. *The response of industry i employment to the aggregate factor is the same in each region:* $\gamma^c_{i, r} = \gamma^c_{i, s} = \gamma^c_i$ *for different regions, r and s.*

Assumption 2. *The response of industry i employment to sectoral shocks is the same in each region:* $\gamma^z_{i, r} = \gamma^z_{i, s} = \gamma^z_i$ *for different regions, r and s. Normalize* $\gamma^z_i = 1$.

Assumption 3. *The response of region r employment to region-specific shocks is the same across industries:* $\gamma^g_{i, r} = \gamma^g_{j, r} = \gamma^g_r$ *for different industries, i and j. Normalize* $\gamma^g_r = 1$.

The cost of these assumptions is to rule out any heterogeneity across regions for a given industry or across industries for a given region. For example, assumptions 1 and 2 say that the response of manufacturing employment to aggregate and manufacturing-specific shocks will be the same in New York as it is in the rest of the nation. Similarly, assumption 3 says that a shock to the region will affect all industries in proportion to their share of New York employment. One important implication of assumption 1 is that regions differ in their response to aggregate factors because of differences in their industry mix. This feature will be used to assess changes in the linkage between New York and the rest of the nation.

One innocuous assumption is required merely for the sake of convenience. We assume that the mean growth rate of employment in industry i and region r is the sum of an industry-specific growth rate, μ_i, and a region-specific term, μ_r, representing the region's growth rate relative to that of the nation, so that $\Sigma^n_{r = 1} b_{i, r, t} \mu_r = 0$. These assumptions—plus the fact that $\Sigma^n_{r = 1} b_{i, r, t} = \Sigma^k_{i = 1} a_{i, r, t} = 1$—

let us simplify the sectoral and regional employment equations:

(2) $$\Delta y_{i, t} = \mu_i + \gamma^c_i c_t + z_{i, t} + \sum_r b_{i, r, t} g_{r, t}$$

$$\Delta y_{r, t} = \sum_i a_{i, r, t} \mu_i + \mu_r + c_t \sum_i a_{i, r, t} \gamma^c_i$$

$$+ \sum_i a_{i, r, t} z_{i, t} + g_{r, t} .$$

This last equation illustrates the three ways in which changes in industry mix may affect regional employment. First, the aggregate sensitivity of employment fluctuations is a weighted average of industry factor loadings, $\Sigma_i a_{i, r, t} \gamma^c_{i, r}$. Any time variation in the region's industry mix will therefore change the aggregate sensitivity of regional employment. Second, the industry-specific shocks, z_i, affect the region directly to the extent that the industry is a source of employment in the region. Finally, the trend in regional employment includes the weighted average of the growth rates of the industries represented in the region, $\Sigma_i a_{i, r, t} \mu_i$. Therefore, as the sectoral composition of the region's employment changes, so too will the trend in its employment.

As noted above, our analysis will focus on three industries (manufacturing, FIRE, and "other") and two regions (New York and the "rest of the United States"). Because the sum of employment across regions equals the sum of employment across industries, one of these five equations is redundant. Consequently, we drop the equation for the "rest of the United States" employment.[10] In addition, rather than attempt to identify two distinct regional shocks, we drop the shock corresponding to the "rest of the United States" and interpret the New York shock, $g_{N, t}$, as a factor affecting the region's employment growth *relative* to that of the nation as a whole. Finally, the factor loading for "other" employment is normalized to 1.0. This leaves the system:

(3) $$\Delta y_{1, t} = \mu_1 + \gamma^c_1 c_t + z_{1, t} + b_{1, N, t} g_{N, t}$$

(4) $$\Delta y_{2, t} = \mu_2 + \gamma^c_2 c_t + z_{2, t} + b_{2, N, t} g_{N, t}$$

(5) $$\Delta y_{3, t} = \mu_3 + c_t + z_{3, t} + b_{3, N, t} g_{N, t}$$

(6)
$$\Delta y_{N, t} = \sum_i a_{i, N, t} \mu_i + \mu_N + c_t \sum_i a_{i, N, t} \gamma^c_i$$
$$+ \sum_i a_{i, N, t} z_{i, t} + g_{N, t} \ ,$$

where the 1, 2, and 3 subscripts represent manufacturing, FIRE, and "other" industries, respectively, and the N subscript denotes New York.

There are two possible ways to introduce dynamics into the model. One is to include lagged industry and regional employment growth (Δy_i and Δy_N) on the right-hand side of equations 3-6 to capture propagation and any feedback (occurring with a lag) between industries and regions. A second approach is to build dynamics into the unobserved factors themselves by modeling them as autoregressive processes.

The results reported in Table 2 use two specifications that incorporate these two approaches to differing degrees. In Model I, as in Norrbin and Schlagenhauf (1988), the common aggregate component is assumed to follow a second-order autoregressive process, $(1 - \rho_1 L - \rho_2 L^2) c_t = \varepsilon^c_t$. The second-order process

allows the c_t factor to exhibit cyclical behavior (depending on the estimates of ρ_1 and ρ_2). The $z_{i,t}$ and $g_{r,t}$ terms were allowed to follow first-order autoregressive processes with coefficients ϕi and ϕ_N. Only the FIRE and New York shocks exhibited statistically significant serial correlation, however, so ϕ_1 and ϕ_3 were subsequently set to zero. In this version, two lags of regional and industry employment growth are included as explanatory variables.

Following Clark (forthcoming), Model II relies entirely on lagged regional and industry employment growth for its dynamics; the aggregate, industry, and regional shocks are all assumed to be uncorrelated. Four lags of employment growth are included as explanatory variables.

The model is estimated via maximum likelihood, using the Kalman filter to evaluate the likelihood function. The availability of annual regional employment data by industry for the computation of employment shares limits our analysis to the 1969-93 sample. Details on using the Kalman filter in the estimation of unobserved components models appear in Harvey (1989).

Table 2
PARAMETER ESTIMATES

	Model I		Model II	
Parameter	Estimate	Standard Error	Estimate	Standard Error
Standard deviation of shocks				
Aggregate (ε^c)	0.63	0.33	0.78	0.16
Manufacturing (z_1)	2.70	0.51	2.48	0.29
FIRE (z_2)	0.83	0.11	0.81	0.07
Other (z_3)	0.57	0.29	0.64	0.13
New York (g_N)	1.97	0.23	1.87	0.10
Factor loadings				
Manufacturing (γ^c_1)	2.60	1.25	3.01	0.86
FIRE (γ^c_2)	0.55	0.46	0.57	0.22
Other	1	—	1	—
Autoregressive coefficients				
Aggregate, lag 1 (ρ_1)	1.29	0.48	—	—
Aggregate, lag 2 (ρ_2)	-0.46	0.42	—	—
FIRE (ϕ_2)	0.56	0.22	—	—
New York (ϕ_N)	0.82	0.11	—	—

Source: Authors' calculations.

Notes: Results are based on the model in equation 3, estimated via maximum likelihood on quarterly data from first-quarter 1969 through fourth-quarter 1993. Estimated constants and coefficients on lagged employment growth are not reported.

Results

Model Estimates

Estimates of the model's key parameters for both specifications appear in Table 2. The estimated factor loadings confirm standard views on industries' relative sensitivities to aggregate shocks. With an estimated γ^c of 2.60 in the Model I specification, manufacturing exhibits a much larger sensitivity to the aggregate component than does "other" employment, whose factor loading was normalized to 1.0. By contrast, FIRE's coefficient is only 0.55, making it significantly less sensitive to the aggregate shock. The estimates for the alternative specification are highly similar.

Not only does manufacturing exhibit a greater sensitivity to aggregate fluctuations, but it is also characterized by larger idiosyncratic shocks. In Model I, the standard deviation of manufacturing shocks is 2.70 (in units of an annualized percentage growth rate), compared with 0.83 for FIRE and 0.57 for "other" employment. (Again, the results from Model II are very similar.) Another interesting feature of the New York shocks is their high degree of autocorrelation, reflected in the ϕ_N estimate of 0.82. This suggests that region-specific factors have highly persistent effects on the local economy, outlasting the effects of aggregate or industry shocks.

New York's sensitivity to the underlying aggregate factor is plotted in Chart 6, using the Model I specifi-

cation. This coefficient is a weighted average of the factor loadings of the region's industries, $\Sigma_i a_{i,\,N,\,t}\gamma_i^c$, and it varies over time with changes in the $a_{i,N,t}$ weights.[11] The fact that it is always greater than 1.0 simply means that the region's employment is more sensitive to aggregate fluctuations than it would be if all employment fell into the "other" category. The downward trend reflects the region's shift from cyclically sensitive manufacturing industries. This trend parallels a similar decline in the analogous coefficient for the United States, where manufacturing employment also fell steadily. However, because of its smaller manufacturing share, New York employment has always been less sensitive to aggregate fluctuations than has the nation's employment.

Sources of Employment Fluctuations

How do aggregate, industry, and regional shocks account for fluctuations in New York area employment? Although it is difficult to tell directly from the parameter estimates, those estimates can be used to decompose the variance of New York employment into the shares attributable to the various shocks. The decomposition for the four-quarter horizon appears in Table 3.[12]

Because the region's sensitivity to aggregate and industry shocks is allowed to vary over time, the table presents the decomposition corresponding to the industry mix

Chart 6

Sensitivity of New York and U.S. Employment to Aggregate Fluctuations
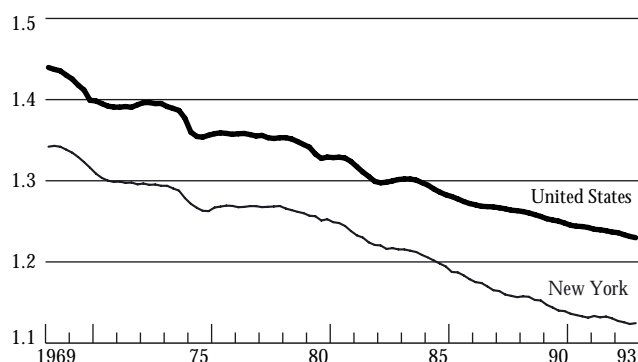
Source: Authors' calculations.

Table 3
Variance Decomposition of New York Employment Growth

		Industry			
Year	Aggregate	Manufacturing	FIRE	Other	New York
Model I					
1969	37	4	5	1	53
1993	36	2	6	2	54
Model II					
1969	36	7	8	4	45
1993	34	4	9	5	47

Shocks' Contribution to the Variance of New York Employment at Four-Quarter Horizon

Source: Authors' calculations.

Notes: Figures are in percentages. Results are based on the model in equation 3, estimated via maximum likelihood on quarterly data from first-quarter 1969 through fourth-quarter 1993. Estimated constants and coefficients on lagged employment growth are not reported.

prevailing at the beginning and at the end of the sample. Comparing the two years shows that developments in the nation have become marginally less important for the region's economy, with the variance share attributable to the aggregate shock declining slightly in both specifications. There has also been a slight increase in the relative importance of region-specific factors. On average, industry shocks have not played a particularly large role in New York's fluctuations; manufacturing's already small contribution declines from 1969 to 1993, while FIRE's rises slightly.[13]

How have these factors contributed to the region's fluctuations during specific episodes? To answer this question, Chart 7 plots the shocks' contributions over time, using the Model I specification. Each of the five panels shows the path of New York employment attributable to each shock in turn (that is, setting each of the other four shocks to zero). The black line in each panel is actual employment growth; the blue line represents that shock's contribution.

The variance decomposition's assessment of the five shocks' relative importance is confirmed here. As shown in panel A, aggregate shocks account for a large share of New York employment fluctuations—especially those associated with business cycles. Panel B confirms manufacturing's small contribution. Only in the 1974-75 recession does the industry make a visible impact on the region. The contribution of "other" shocks, shown in panel D, is also small.

While shocks to FIRE employment have not played a particularly large role on average, they have figured prominently during certain episodes. As shown in panel C, financial services' contribution to New York employment growth was distinctly positive in the late 1970s. By contrast, the sector represented a major drag on the region's growth from 1987 through 1990, exacerbating the effects of the aggregate downturn.

A significant share of New York employment fluctuations remains unexplained by aggregate and industry factors, however. This residual is attributed to the New York shocks, shown in panel E. It appears that New York was hit by persistent adverse shocks in the 1970s—shocks

evidently unrelated to any aggregate or industry-specific weakness. (In fact, except for the 1974-75 recession, the aggregate contribution was positive for most of the decade.) Adverse regional shocks also played some role in New York's lackluster performance in the early 1990s. Interestingly, the aggregate contraction during the 1981-82 recession was largely offset by positive regional factors. The result was that while total employment in the United States fell sharply in that episode, New York employment basically held steady.

CONCLUSION

This paper presented two complementary ways of describing the relationship between New York and national employment fluctuations and assessing the role of aggregate, industry, and regional factors.

We found that the region and the nation move together closely at cyclical frequencies. There appears to be some decrease in the magnitude of the region's response to aggregate fluctuations, consistent with the declining share of cyclically sensitive industries in the region.

At lower frequencies (longer horizons), New York follows the nation much less closely. During the mid-1970s, the region's persistent stagnation seems to be attributable to region-specific factors. In the late 1980s and early 1990s, much of New York's slow growth can be traced to weakness in the financial services industry. By contrast, Wall Street has been credited with leading the region's recovery over the past two years (for example, see Levy [1996]).[14]

The analysis presented here begs the question of exactly what those shocks represent. While employment data alone do not permit us to address this question, the analysis suggests three possibilities. One is that regional shocks capture the effects of factors that *literally* affect only the New York metropolitan area. Examples might include natural disasters or New York's 1975 fiscal crisis.

Another possibility is that the New York shocks are picking up the effects of regional heterogeneity within a given industry—heterogeneity that is ruled out by the aggregation assumptions used in the model. For example, cities with an older industrial base tended to suffer more

Chart 7

Contributions of Shocks to New York Employment Growth
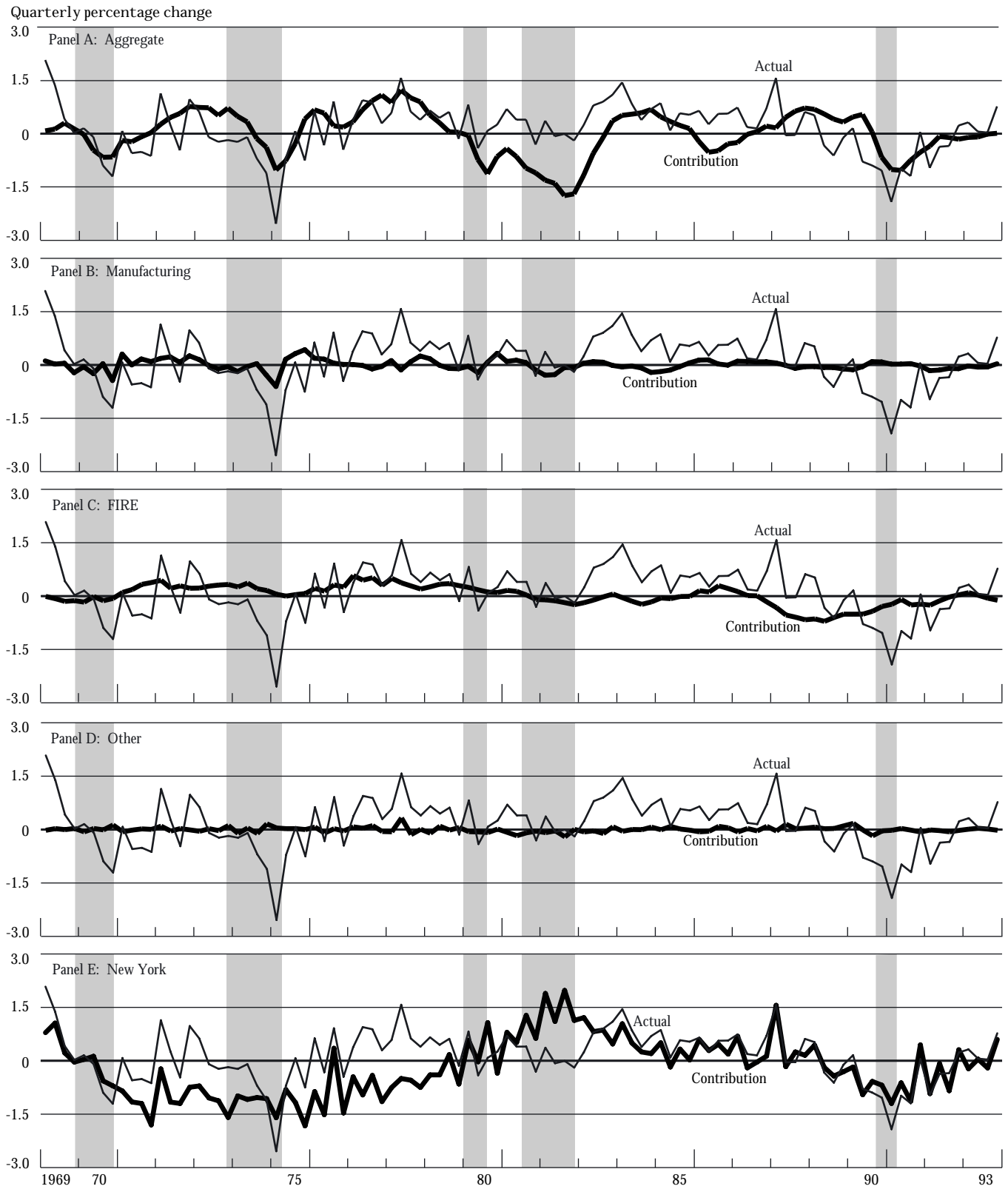
Quarterly percentage change

Panel A: Aggregate

Panel B: Manufacturing

Panel C: FIRE

Panel D: Other

Panel E: New York

Source: Authors' calculations.

Note: Shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

during manufacturing downturns, as the older, marginal plants were typically the first to close. The region-specific shock corresponding to Broadway's woes in the mid-1970s—a factor cited by Netzer (1997)—can be thought of as resulting from heterogeneity within the entertainment industry. (Presumably, Hollywood was not similarly affected.)

A third potential source of region-specific shocks is differences in the regional representation of industries lumped into the "other" category. For example, if wholesale trade employment made up a larger share of New York's employment than of other regions' employment, shocks to that industry would have a disproportionate effect on the metropolitan economy—but a relatively small effect on "other" employment for the nation as a whole. The very broad aggregation scheme used may therefore lead the model to attribute too much to region-specific shocks.

Although the analysis presented here could not identify the *causes* of New York employment fluctuations, the results can be used to characterize the nature of those fluctuations. To move from this characterization to an understanding of the fluctuations' causes will require going from a purely statistical to a microeconomic analysis.

ENDNOTES

1. This restructuring is documented and discussed in Orr (1997).

2. The trend component is generated by applying a low-pass filter, which eliminates frequencies higher than $\pi/16$, while the cyclical component is generated by a band-pass filter, which eliminates all frequencies between $\pi/6$ and $\pi/32$.

3. The frequency-domain filters are implemented in the time domain by using a two-sided moving-average filter. The ideal filter's moving-average weights are truncated at twelve leads and lags; hence the loss of three years of quarterly data. Baxter and King (1995) discuss the properties of the filters for different approximation lags.

4. Here, "national" is defined as U.S. *minus* New York employment.

5. Data are from Hughes and Seneca (1996).

6. This hypothesis does not necessarily contradict the McCarthy and Steindel (1996) findings that regional factors were behind the persistence of the slump in the 1970s, while national factors were to blame for the 1990s. In their bivariate vector autoregression, an industrial shock is identified as an aggregate shock if it hits the region and the rest of the U.S. economy at the same time, but it is identified as a regional shock if it affects the rest of the United States with a lag.

7. Since they are not constrained to have no long-run effects, the aggregate shocks may represent things other than purely cyclical phenomena.

8. Campbell and Kuttner (1996) discuss this issue in the context of industry-specific reallocation shocks.

9. In this application, $k = 3$ (manufacturing, FIRE, and "other") and $n = 2$ (New York and the rest of the United States).

10. Noting that the sum of employment across industries does not equal the sum across regions, Clark (forthcoming) retains the full set of equations.

11. This measure bears a resemblance to the elasticity of regional to national employment reported by McCarthy and Steindel (1996). The two measures are not directly comparable, however, because employment growth in the United States as a whole is not a "pure" measure of the aggregate shock.

12. Although the results for longer horizons are similar to those reported, region-specific shocks account for a greater share of New York employment fluctuations at shorter horizons.

13. Manufacturing's small contribution is only partly due to its modest share of area employment, however. With the aggregate shock accounting for 59 percent of the variance of manufacturing employment growth, a relatively small role is played by idiosyncratic manufacturing shocks.

14. Unfortunately, the data used in this study end in 1993, so it is not possible to assess the recent contribution of financial services.

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Commentary

*Henry J. Raimondo**

My comments are motivated by the research papers of Jonathan McCarthy and Charles Steindel, "National and Regional Factors in the New York Metropolitan Economy," and Kenneth N. Kuttner and Argia M. Sbordone, "Sources of New York Employment Fluctuations." These two papers are generally well conceived, methodologically sound, and thorough. The relationship between the performance of the national economy and that of the regional economy (in this case the New York metropolitian economy) is certainly not a new line of inquiry among regional economists, but it is an enduring and vital one.

More important, understanding the national-regional relationship has implications far beyond the concerns of regional economists. Households, business managers, and public managers do not generally operate in the macroeconomy, but they operate very much in the regional economy. Households depend on how national economic performance translates into regional employment, income, and spending. Business managers who develop corporate financial plans and public managers who craft revenue forecasts and balance public budgets need to predict with some reliability the regional fallout from national economic trends.

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The National-Regional Economic Relationship

Like almost every relationship, the national-regional economic relationship is a complex, ever-changing one. The national economy influences the activity of the regional economies in varied and uneven ways. For example, interest rate changes and international trade agreements such as the North American Free Trade Agreement (NAFTA) or the latest round of the General Agreement on Tariffs and Trade (GATT) affect the different economic regions of the United States in different ways. In turn, developments in the regional economies obviously begin at the subnational level and ripple through the macroeconomy, gaining or losing momentum, until they manifest themselves in the national economic performance. For example, corporate restructuring in the banking, the biomedical complex, and the telecommunications industries and the loss of manufacturing jobs can drain a region of its economic vitality. In time, the diminished regional economic activity shows itself in national employment, income, spending, and international trade statistics.

As demonstrated in these two papers, a review of the relevant literature reveals several conditions that shape the national-regional connection. At least two conditions are pertinent to the New York metropolitan area's case: *the industrial structure of the region* and *the contribution of international trade to the region.*

The industrial structure of the region refers to the industry mix within the region—for example, the division among manufacturing; services; wholesale and retail trade;

finance, insurance, and real estate (FIRE); transportation, communications, and public utilities; and construction—and the stage of the product cycle in which each one of these industrial sectors finds its principal firms. This circumstance is especially important for the New York metropolitian area's economy. The changes and the pace of change in the region's industrial mix put the region at the forefront of the industrial transformation from manufacturing to services.

The New York metropolitan economy is also distinguished by the significant role of international trade. As one of the nation's most globally involved regional economies, with more than $142.2 billion worth of merchandise trade (excluding gold) in 1995, the New York metropolitan economy surges and flags in part as a result of international economic developments. Disappointing growth in Western Europe, a sluggish recovery in Japan, and economic uncertainty in the Middle East may curb U.S. economic growth but will likely harm the New York metropolitan economy far more.

Like the crab in Barbara Kingsolver's *High Tide in Tucson,* which moves to the tides of the Caribbean even though it now lives in Tucson, Arizona, regional economies in the United States long ago established their own economic identity and pace of economic activity. Sometimes the nation and the region move in step, with the strengths (or weaknesses) of one amplifying the strengths (or weaknesses) of the other. And sometimes the nation and the region move out of step, with the strengths (or weaknesses) of one masking the weaknesses (or strengths) of the other. For example, the national recovery from 1992 to the present has provided little immediate help to the California economy, while the Seattle, Washington, and Las Vegas, Nevada, regional economies far outperformed the national economy. The popular economics and business media over the years have offered several attention-grabbing phrases to describe the dependent/independent nature of regional economies: sunbelt versus frostbelt economies, bicoastal economies, Joel Garreau's nine nations of North America, and the like.

Clearly, national-regional economic relationships are usually in flux, always evolving, and rarely stable. With this observation in mind, the McCarthy–Steindel and Kuttner–Sbordone papers capture the national-regional economic relationship at several moments in time. What do these papers tell us about this dynamic relationship?

The McCarthy–Steindel and Kuttner–Sbordone Papers

Jonathan McCarthy and Charles Steindel's paper, "National and Regional Factors in the New York Metropolitan Economy," develops econometric evidence that supports the description offered above. The paper can be summarized in four main points:

- The New York metropolitan region is generally dependent on the performance of the national economy.

- A look at employment trends offers a different picture of the region than a look at income trends. Recent employment growth is discouraging, while recent income growth is more encouraging. This divergence suggests that the type of jobs that the region is generating contributes to the income disparities in the region.

- The national-regional dependency relationship has changed from the 1970s to the 1990s. In the 1970s, the national economy was the catalyst for the regional recession, while the regional economy prolonged its duration. In the 1990s, there was a switch. The regional economy was the catalyst for the recession, while the national economy prolonged its duration.

- Last, the New York metropolitan economy is now *more dependent* on the national economy than it has been in some time.

Kenneth Kuttner and Argia Sbordone's paper, "Sources of New York Employment Fluctuations," contributes additional empirical evidence to the discussion. The authors make four points, two of which are similar to the McCarthy–Steindel results:

- *Again*, the New York metropolitan economy is dependent on developments in the U.S. economy.

- *Again*, there are exceptions to this dependent national-regional relationship. For example, in the mid-1970s, the New York metropolitan economy stagnated, while the U.S. economy prospered. Then in the early 1980s, the regional economy outperformed the national economy.

- Region-specific factors (neither national factors nor industry-specific factors) such as the regulatory and business environment, the cost structure of the region, and the quality of the work force broke the national-regional dependency relationship in the mid-1970s. Industry-specific factors in the FIRE sector broke the national-regional dependency relationship in the early 1980s.

- At this time in the "on again, off again" national-regional dependency relationship, the New York metropolitan region is *less closely tied* to the nation than it has been in some time.

This last point appears to place the two papers at odds with each other on the closeness of the national-regional economic relationship as the economy heads into the second half of the 1990s. Keep this observation in mind.

Another dimension of this analysis goes beyond the objective of these two papers, but it deserves (and has recently received) research attention. The relationship between the region's core economy and the national economy may (and likely does) differ from the relationship between the region's outer-ring economies and the national economy. In fact, that difference may be growing over time. For example, the New York City economy may have less in common with the national economy than do the economies of the region's outer rings in Northern New Jersey, Long Island, and the New York suburbs (that is, Westchester and Rockland). If that is so, then households, business planners, and public managers may be making very different resource decisions within the region, depending on their locational concerns. In addition, cooperation within the region to promote economic development plans with a regional perspective may be met with resistance in different parts of the region. For example, infrastructure investment to support the region's core economy may not be perceived as in the interests of the outer-ring economies if they are outperforming the core economy.

A BET ON THE FUTURE

The McCarthy–Steindel and Kuttner–Sbordone papers provide evidence that the relationship between the national

and regional economies has evolved and changed over the past twenty-five years. The papers appear split on the closeness of the national and regional economic connection at this point in time. Clearly, the industrial structure and the role of international trade, among other factors, make the stability of the relationship uncertain as the region moves into the late 1990s.

With the growing possibility of a national recession in late 1997 or early 1998 (or whenever a recession visits the national economy), what is the likely impact on the New York metropolitan economy? To make matters interesting, let us pose the issue as a bet. A close relationship between the nation and the region would predict a looming recession for the region as the U.S. economy falters. Certainly, the chronic decline in manufacturing, the continued restructuring of corporate headquarters, the volatility of the FIRE sector, and the unexplainable regional retail sales activity support a recession initiated at the national level and prolonged at the regional level. So, do you place your bet on national recession leading to regional recession?

Alternatively, a loose relationship between the nation and the region would predict a slight recession (or even no recession) for the region. Certainly, the industrial diversification within the region (for example, among others, hi tech, entertainment, and tourism), the upswing in the FIRE sector (the unpredictable FIRE sector falls on both sides of the analysis), and the globalization of the regional economy support a strong regional economy that is able to resist a national recession. So, do you place your bet on the regional economy sustaining itself in the face of a national recession?

Like all well-done, thorough research, the two papers provide much information but little guidance about which bet to take. That is probably asking too much. Not even racing forms for gamblers do that. Now back to the question at hand. Where do you place your bet? Relying on a loose relationship between the national and regional economies, I am wagering on the strength of the regional economy to resist any national recession in the near term. Are there any takers?

Commentary

Todd E. Clark*

Economists have long been interested in the performance of specific regional economies and the forces driving a particular economy. The McCarthy–Steindel and Kuttner–Sbordone studies of the New York metropolitan area follow in this tradition. McCarthy and Steindel focus on documenting the performance of New York relative to that of the nation and distinguishing the roles of national and regional factors in area employment, income, and wages. Kuttner and Sbordone pick up where McCarthy and Steindel leave off, examining the role of industry as well as national and regional factors in New York area employment.

More recently, economists have been interested in whether regional economic fluctuations are driven by region-specific forces that should be viewed as macroeconomic phenomena. Macroeconomists have generally taken the view that the performances of regional economies differ over the business cycle only to the extent that industry mixes vary across regions. Recent studies by Norrbin and Schlagenhauf (1988), Altonji and Ham (1990), and Clark (forthcoming) have challenged this view. Although Kuttner and Sbordone do not explicitly take up the issue, their analysis provides some evidence on the question.

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Kuttner and Sbordone measure the role that an area-specific factor plays in New York employment fluctuations, controlling for the effects of national and industry forces.

In conjunction, the McCarthy–Steindel and Kuttner–Sbordone studies provide interesting and thought-provoking evidence on the performance of the New York economy and the factors affecting New York, as well as on the importance of a perhaps "macroeconomic" New York–specific factor. McCarthy and Steindel show that although recent employment growth in New York has been poor relative to that of the nation, income growth has been considerably stronger. They also find that the strength of the linkage between New York and the nation has varied over time. Detailed analysis of the 1989-96 period indicates that region-specific factors initiated the slowing of the New York economy while national factors played an important role in perpetuating the slowdown.

Kuttner and Sbordone show that national, industry-specific, and region-specific factors have all been important sources of fluctuation in the New York area economy. The national and area economies tend to move together closely over the business cycle. However, the relationship between the national and area economies has been significantly affected by shifts in New York's industry mix. Although important, national and industry-specific factors account for only about half of the business cycle variation in New York employment growth; the remaining half is attributed to a New York–specific factor. Thus, contrary to the standard view of macroeconomists, there appears to be an

important New York–specific factor even after accounting for industry mix.

This note offers some comments on the McCarthy–Steindel and Kuttner–Sbordone analyses. Given that some of my own research is closely related to the Kuttner–Sbordone paper, I will exploit my comparative advantage and devote most of my attention to that study.

McCarthy–Steindel

The McCarthy–Steindel paper would be strengthened by providing more extensive treatment of two results reported in the paper. Specifically, I would suggest a more detailed analysis of the finding that when New York is compared with the nation, employment has been weaker than personal income and wages in recent years. Could the better performance in income and wages be the result of measurement problems in the income and wage data? Regional economists who know the construction of the data may find the payroll employment numbers to be more reliable than the personal income and wage numbers, with problems in measuring profits, rent, and the like making the income numbers less reliable than the wage numbers. Alternatively, could the better performance in income and wages be the result of shifts in New York's industry mix toward higher wage industries? This is admittedly a difficult question that could take up an entire additional paper. However, some other research probably exists (perhaps New York State Department of Economic Development [1994]) that could be cited in an extended discussion, and some simple and preliminary analysis could be added.

I would also suggest that the authors consider in more detail the finding that estimates of the elasticity of New York employment, income, and wages with respect to national employment, income, and wages vary widely over the sample period. Do formal tests reject the null of stability in the elasticity? Such tests could include the Hansen (1992) test or allowing for three distinct elasticities over 1960-90 and testing the equality of the three elasticities. Some of my analysis using data for the state of New York suggested that the elasticity is in fact generally stable while the intercept of the relationship between New York and the United States is unstable.[1] Is the behavior of the elasticities reported in the authors' Charts 4, 7, and 9 consistent with the vector autoregression (VAR) for New York and the United States being the "true" model? How much does any instability in the estimated elasticity affect the VAR results on the sources of fluctuations in New York? Specifically, does allowing for shifts in the VAR model significantly affect the conclusions on the sources of fluctuations?

Kuttner–Sbordone

This section begins with an overview of the factor model approach used in the second part of the Kuttner–Sbordone paper. It then suggests some extensions of the study and describes some apparent limitations of the analysis. Finally, the section discusses the general implications of the paper's findings.

Overview of the Factor Model Approach

The dynamic factor model used by Kuttner and Sbordone to sort out the relative importance of national, industry-specific, and region-specific factors fits in the general class of unobserved components models. Although seemingly complicated, the estimation of such models can be viewed as simply picking parameter values to make the covariance structure implied by the model "fit" the observed covariation in the data. The model implies that the variances and covariances of the observed data series are particular functions of a set of parameters. The parameters are then estimated to make the model-implied variances and covariances as close as possible to the actual variances and covariances among the observed data. After the model parameters are estimated, predictors of the underlying unobserved factors or components can be obtained by exploiting the model and the observed data. Assuming a normal distribution, the model implies that the unobserved factors and the observed data are jointly normally distributed.[2] That structure can be used to calculate predictors of the unobserved factors, conditional on the observed data.

A simple example can be used to illustrate the basic factor model methodology. Suppose two observed variables, $y_{1,t}$ and $y_{2,t}$, are functions of an unobserved common variable c_t and two unobserved idiosyncratic variables

$u_{1,t}$ and $u_{2,t}$:

$$y_{1,t} = c_t + u_{1,t}$$
$$y_{2,t} = B\,c_t + u_{2,t},$$

where the unobserved variables c_t, $u_{1,t}$, and $u_{2,t}$ are all uncorrelated, and $var(c_t) = 1$. This model implies that

$$var(y_1) = 1 + var(u_1)$$
$$var(y_2) = B^2 + var(u_2)$$
$$cov(y_1,y_2) = B.$$

The variances and covariances $var(y_1)$, $var(y_2)$, and $cov(y_1,y_2)$ are all observed. We can therefore estimate the model parameters B, $var(u_1)$, and $var(u_2)$ by picking the parameter values that solve the above equations. So, the estimated parameters would be

$$B = cov(y_1,y_2)$$
$$var(u_1) = var(y_1) - 1$$
$$var(u_2) = var(y_2) - cov(y_1,y_2)^2.$$

Given the model parameters, predictors of the unobserved factors c_t, $u_{1,t}$, and $u_{2,t}$ could be obtained by exploiting the observed data on $y_{1,t}$ and $y_{2,t}$. The predictor of c_t would be a simple weighted average of $y_{1,t}$ and $y_{2,t}$, with the weights depending on the model parameters.

SUGGESTIONS FOR FURTHER ANALYSIS

Some additional analysis would strengthen the Kuttner–Sbordone paper. First, standard error bands should be reported for the historical decompositions of the authors' Chart 7. It seems that such bands could be computed using a bootstrap procedure, taking random draws of the model coefficients from a normal distribution and using the maximum likelihood estimate of the variance-covariance matrix. Historical decompositions could be computed for each draw of the model parameters, and standard errors could be computed from the variation across decompositions. Second, it would be interesting to see variance decompositions of New York employment growth at a horizon of one quarter and at an infinite horizon (the unconditional variance). Those results would document the extent to which national, industry-specific, and region-specific factors propagate across industries and regions.

Third and finally, the results should be subjected to some robustness checks—in particular, to some alternative model structures. Of particular concern is the possi-

bility that Kuttner and Sbordone's finding of a small role for manufacturing in both national and New York fluctuations (documented in their footnote 11, Table 3, and Chart 7) may not be robust to alternative specifications of the model. The Kuttner–Sbordone paper combines a VAR structure with a factor model structure in which the national shock is allowed to be serially correlated. Consequently, the dynamic behavior of employment growth is captured by either the unobserved national factor or the VAR structure. In contrast, Clark (forthcoming) assumes the national factor to be serially uncorrelated. In that analysis of U.S. Census regions and one-digit Standard Industrial Classification industries, more than half of the variation in manufacturing is industry-specific, and industry-specific factors account for about 30 percent of the variation in regions at a four-quarter horizon. The contrast between the Kuttner–Sbordone and Clark results suggests that the Kuttner–Sbordone finding of a small role for the manufacturing-specific factor (and industry factors more generally) may be affected by the model structure. Therefore, I would be interested in seeing results for a model that allowed enough lags in the VAR structure to account for all serial correlation and that assumed the national factor to be serially uncorrelated. The restrictions on the national factor process could of course be tested.

POSSIBLE LIMITATIONS OF THE ANALYSIS

The factor model methodology used in the second part of the Kuttner–Sbordone paper appears to suffer from two limitations. First, the factor model estimates do not seem to capture adequately the important low-frequency movements in employment growth documented in the first part of the paper. The authors' Chart 1 shows that much of the slowdown in employment growth in the 1970s and 1990s can be attributed to the trend component. For the factor model to capture the trend component, the estimated "intercept" of the region equation, $\sum a_{i,N,t}\,\mu_i + \mu_N$, would need to track the trend reported in Chart 1. However, back-of-the-envelope calculations based on a reading of the industry shares from Chart 3 and the μ_i and μ_N estimates reported in Table 2 indicate that the intercept does not track the trend. Rather, it appears that the factor model

estimates inappropriately force much of the low-frequency variation in employment growth onto the New York–specific factor. The region factor, which the model assumes to be serially uncorrelated, was persistently negative over the 1970s and 1980s. Thus, it seems that the factor model does not accurately capture the significant long-term fluctuations in New York's employment growth. Given that the long-term fluctuations inappropriately affect the factor model estimates, I would like to see the model estimated with just the cyclical components charted at the bottom of Chart 1. I would expect New York–specific shocks to be less important in the cyclical components.

The second limitation of the Kuttner–Sbordone analysis is that region- and industry-specific factors are treated differently. According to the underlying disaggregate model, employment growth in industry i and region r is a function of a national factor, an industry-i-specific factor, and a region-r-specific factor. When aggregated across regions, the model implies that growth in U.S. industry i is a function of the national factor, the industry-i-specific factor, and a weighted average of the region-specific factors. When the regions are specified as New York and the rest of the United States, the weighted average of the region-specific factors is simply a weighted average of the New York–specific factor and the rest of the U.S.–specific factor. The rest of the U.S. factor represents a weighted average of the factors specific to disaggregate regions of the United States. However, the estimated model drops the rest of the U.S. factor from the industry equations. The authors have indicated that the rationale for dropping the rest of the U.S. factor is that the weighted sum of disaggregate region-specific factors should average zero.[3]

Although reasonable on the surface, this rationale becomes unsatisfactory after more careful consideration. Assuming that the weighted sum of disaggregate region-specific factors averages zero is unsatisfactory because the same type of restriction is not imposed on the industry-specific factors. Each region is affected by the weighted sum of industry-specific factors, which are not assumed to average zero. Clark's (forthcoming) results, which do not impose the region-factor restriction, suggest that the restriction may impact the results, but probably not dra-

matically. Clark finds that, on impact, region-specific factors account for an average of about 7 percent of the variation in industry employment growth. The asymmetry in the treatment of region and industry factors is more troubling because it highlights the limitations of economists' understanding of potentially region-specific fluctuations.

GENERAL IMPLICATIONS

The results of the Kuttner–Sbordone study indicate that, contrary to the standard view among macroeconomists, much of the variation in the New York economy appears to be region-specific even after accounting for industry mix. In conjunction with Clark's (forthcoming) results for U.S. Census regions, such evidence suggests that regional economies should be viewed as distinct macroeconomies. However, the existing evidence is only suggestive. As noted by McCarthy and Steindel, more research on a number of questions is needed. For example, what are the sources of region-specific fluctuations? Are the seemingly region-specific shocks found in studies using aggregate industries really the result of highly disaggregate industry shocks? How should the propagation of region-specific disturbances across regions be viewed? Was the 1990-91 recession, for instance, the result of a national disturbance that first affected the East and West Coasts or coast-specific disturbances that gradually spread across the rest of the country?

CONCLUSION

The McCarthy–Steindel and Kuttner–Sbordone studies provide very interesting evidence on the performance of the New York economy and the factors affecting New York, as well as on the importance of a perhaps "macroeconomic" New York–specific factor. The papers fit nicely together, with McCarthy and Steindel focusing on the relative performance of the area economy and the relative importance of national and region-specific factors, and Kuttner and Sbordone extending the analysis to consider the role of industry factors. In my comments, I have offered a few suggestions for making the results of the papers stronger, discussed some potential limitations of the Kuttner–Sbordone analysis, and discussed the macroeconomic implications of the Kuttner–Sbordone paper. According to these studies,

the New York economy seems to be importantly affected not only by national and industry forces but also by area-specific forces. Given that economists have a poor understanding of such region-specific factors, these papers suggest that there is much work to be done to understand fluctuations in the New York area economy and in other regional economies.

ENDNOTES

1. Specifically, applying Hansen (1992) tests to a 1960-93 regression of growth in New York State employment on a constant, the growth in U.S. employment, and three lags of growth in U.S. employment showed the constant coefficient to be unstable at 5 percent confidence, the coefficient on U.S. growth to be unstable at 10 percent confidence, and all other coefficients to be stable. The joint null of stability in all parameters cannot be rejected at 10 percent confidence. Similarly, when the elasticity is simply estimated by regressing New York employment growth on a constant and U.S. employment growth (a procedure that yields results similar to those obtained when lags of U.S. growth are included), allowing for shifts in the coefficients over 1970-80 and 1981-93 yields no significant shift in the slope but significant shifts in the intercept.

2. Normality is not required to generate predictors of the unobserved components. Under normality, the standard predictors (which can be generated using the Kalman filter) will be optimal. Under more general conditions, the standard predictors will be minimum mean-squared error *linear* predictors.

3. More technically, the weighted average of the idiosyncratic region-specific factors has an expectation of zero and a variance that converges to zero as the number of regions grows large.

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Summary of Floor Discussion

Jason Bram and Sydney Ludvigson

Most of the discussion following the first session revolved around identifying the forces behind the region's early 1990s slump as well as the forces likely to affect the region in the years ahead. Special emphasis was placed on the desirability of looking at more detailed industry sectors.

The discussion began with an examination of why the regional economy fared so poorly in the early 1990s. Charles Steindel noted that there is no "smoking gun" explanation; rather, a combination of forces contributed to the region's weakness. Thus, he argued, it is difficult to point to any single policy action that will improve the region's performance. Frederic Mishkin then noted that a finer industry breakdown might reveal that many of what are currently identified as region-specific shocks (the residual) are really industry-specific shocks. Kenneth Kuttner agreed that a finer industry breakdown might be helpful, citing the entertainment sector—New York's Broadway versus Los Angeles' film industry—as an example of potential contrasts within broad industry groups; however, he noted that it is difficult to obtain local employment time series data by detailed industry. Kuttner also cited the region's fiscal problems in the late 1970s as an example of a *true* region-specific factor (which he characterized as a man-made disaster). Todd Clark joined the discussion by noting that he finds disaggregated industry data to be helpful in performing shift-share analyses.

In addition, Rae Rosen identified the FIRE (finance, insurance, and real estate) sector, in which the metropolitan region dominates the nation, as an example of possible reverse causality: she questioned whether the region's FIRE industries *follow* or *drive* the national industry. Howard Chernick added that a sharp divergence exists between employment and income growth and suggested that job growth may have been undercounted.

The conference participants then turned to a discussion of the session's two papers. Frederic Mishkin pointed out that the two papers differed in terms of the reported sensitivity exhibited by the New York region to the national economy. Kuttner and Sbordone, he said, found that the sensitivity had decreased over time because of a changing industry mix, whereas McCarthy and Steindel found in their rolling regressions that sensitivity had increased. Mishkin also identified another difference between the papers: the more structural nature of the Kuttner–Sbordone model relative to that of McCarthy and Steindel.

Charles Steindel responded that the discrepancy over this result may be less than meets the eye because, although Kuttner and Sbordone found that New York follows the nation much less closely over longer horizons, they also found that the region and the nation move together quite closely at cyclical frequencies. Kenneth Kuttner noted how their estimation techniques differed from those of McCarthy and Steindel. In particular, he suggested that the estimated employment elasticities presented by McCarthy and Steindel may have been influenced by an errors-in-variables problem because the authors report the coefficient on observed employment growth. In contrast, Kuttner pointed to his and Sbordone's

use of frequency-domain filters to extract the unobservable aggregate, industry, and regional factors in the co-movement, a technique that prevents their regression coefficient from experiencing the errors-in-variables problem.

The discussion ended following a question posed by Barbara Walter: How can government, business, and community leaders apply this research? Henry Raimondo noted that public finance planners need accurate forecasts to implement reasonable fiscal policies, which are used to maintain balanced budgets as required by law. Christopher Jones emphasized the importance of distinguishing cycles from longer term trends, since policymakers often react to cyclical shocks as if they were trends (and vice versa). Stephen Reintano then questioned the linkage between the local and national economies, noting New York City's unique nature. He pointed out that the city bears a greater resemblance to Paris and London, in terms of transit issues, than to other U.S. cities. However, Raimondo commented that national business cycles clearly affect the region and thus affect local mass transit ridership, traffic, and other factors; therefore, accurate forecasts may help planners.

The Performance of Metropolitan Area Industries

Matthew P. Drennan*

The economy of the metropolitan region centered around New York City went into a sharp decline at the end of the 1980s. That decline was linked to the national recession, which began in 1989. The economic losses in the region were more severe than in most other metropolitan areas. (The reasons are documented in an earlier paper, Drennan [1996].) The recovery of the region's economy has been slower than in most other regions as well. In the 1989-92 decline, the region lost 624,000 jobs, and in the recovery since 1992, the region has gained only 291,000 jobs, or less than half of those lost. But the aggregate employment numbers tell only part of the story. A more interesting, and less pessimistic, story is revealed in the earnings by sector and industry. Indeed, the aggregate earnings of the region are higher now, in real terms, than they were in 1988. That reflects higher productivity and, possibly, a shift in indus-

try composition from less productive to more productive industries.

In this paper, I analyze the performance of the region's industries over the recent economic decline and recovery. In the next section, I present the taxonomy of industries employed here. That taxonomy, adopted from international trade theory, displaces economic base theory, which sorts industries into basic (export) and nonbasic (local). The region's economy is compared with the national economy in the context of the taxonomy developed. I then present a model of regional economic growth based on trade, specialization, and agglomeration economies. That model, which seeks to explain growth of real per capita income, has been estimated with annual data for the region. The cross-section version of that model was developed in another paper (Drennan and Lobo 1996). A second model develops the exogenous character of the traded goods and services sector for aggregate regional growth. I conclude the paper by describing recent employment trends in the two-digit Standard Industrial Classification (SIC) industries of the region.

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Traded Goods and Services Industries: Broad Trends

International Trade Theory and Economic Base Theory

International trade theory identifies two sectors in an economy: traded goods and services and nontraded goods and services. The first is subject to competition from other economies for both foreign markets and the local market. Changes in incomes, relative prices, demand, and exchange rates, both at home and abroad, affect the fortunes of the traded goods and services sector. The nontraded goods and services sector is not subject to competition from other economies and only produces for the local market. Wage levels in the nontraded goods and services sector, however, are determined by wages in the traded goods and services sector (Caves, Frankel, and Jones 1996).

Economic base theory applies to regions, states, or urban areas within a nation. Again, the economy is split into two sectors: basic and nonbasic. The basic sector is engaged in competition for markets beyond the home region and is affected by changes in incomes, relative prices, and demand in other markets as well as in the home market. The nonbasic sector is not subject to competition from other economies, and its growth or decline depends entirely on the fortunes of the basic sector through a Keynesian-type multiplier. The crudest form of the economic base model assumes that all goods production (manufacturing and mining, as well as agriculture in a region that is not just urban) is basic, while everything else is nonbasic. Although that assumption may have been roughly right when it was first promulgated (Haig 1928), it is now silly and wrong. Private higher education in Boston, financial services in New York, tourism in Las Vegas, and even retirement communities in Fort Lauderdale are major "basic" industries for those cities, drawing in large revenues from nonresidents.

A less crude form of the economic base model sorts industries into export and local based on location quotients. Any industry that has a higher share of regional output or employment than the national average share for that industry is classified as an export industry, while all other industries are classified as local. Although that refinement recognizes the export possibility for service industries, it does not recognize the very real export possibility of industries in goods or services that are not specialties of the region. Nor does it recognize the possibility of growth through import substitution or decline through increased imports. The only exogenous growth force is the collection of export industries, a critical flaw (Richardson 1969). And even worse, according to one source, "in a national context it [economic base theory] is simply mercantilism" (Leven 1985).

The international trade model approach is not encumbered with those shortcomings. The classification of industries into traded goods and services and nontraded goods and services is determined by whether or not the industry's output can be exported and imported. So all of manufacturing, mining, wholesale trade, and communications; some transportation; all finance, insurance, and real estate; and some services (health, education, law, and business services) are traded goods and services. Nontraded goods and services include construction, retail trade (with exceptions where tourism and business travelers are important), public utilities, local transportation, some services, and government (except in state capitals and Washington, D.C.).

Industry Categories

In this paper, traded goods and services are split into three functional categories based on a taxonomy developed by Stanback and Noyelle (1983). Goods production and distribution include all activities of producing, transporting, and distributing goods, that is, all manufacturing, mining, wholesale trade, and rail, water, and truck transport. Producer services include services that are in large part intermediate—in other words, they sell more of their output to other producers than to final demand. There are twelve two-digit SIC industries included in this category: depository institutions (banks), nondepository financial institutions, securities and commodity brokers, insurance companies, insurance agents, real estate, investment firms, business services, motion pictures, legal services, engineering and management firms, and miscellaneous services. Consumer services are private health and private education.

Nontraded goods and services are also split into

three parts. The largest segment is local private goods and services, which include construction, local transportation, public utilities, retail trade (except eating and drinking places), personal services, repair services, social services, museums, and membership organizations. All government is the second part of nontraded goods and services. The third and smallest part of nontraded goods and services is ancillary services, which are services to business travelers and tourists: eating and drinking places, hotels, and amusement services.

Two industries that are included in local private goods and services should be included in producer services, but are excluded because of disclosure problems in pub-

lished data sources. Communication (telephone, television, and radio broadcasting) and air transportation are often not disclosed separately in metropolitan earnings data because they are dominated by a few large firms. Although this paper is about the largest metropolitan area, comparisons require a consistent set of industries in each category.

THE REGION AND THE NATION COMPARED

By measures of aggregate economic size, the region has been shrinking relative to the nation (Table 1). In 1969, the region had almost 10 percent of the U.S. population, but twenty-five years later it had 7.6 percent. Its share of national earnings slipped from almost 12 percent to 10 percent, and its share of national employment dropped from 10.5 percent to 7.4 percent in that period. But measures of living standards and productivity tell a different story. Per capita personal income in the region was 129 percent of the national average in 1969, and it was up to 134 percent in 1994. In between, it first dropped in the decade of the 1970s, to 118 percent, then rose sharply to 144 percent at the end of the 1980s before falling in the current downturn to 134 percent. Earnings per employee were 113 percent of the national average in 1969. They were slightly lower in 1979, but then shot up to 136 percent in 1989, and edged down to 135 percent in 1994. So the region may be smaller, but it is definitely not poorer than it was twenty-five years ago.

In terms of the three traded goods and services sectors, the region's shares of the national totals have been dropping. Goods production and distribution dropped from more than 11 percent in 1969 to less than 8 percent in 1994. Producer services dropped from 21 percent to below 17 percent, and consumer services from 12 percent to 11 percent. Comparing the region's share of national earnings with the shares for each sector, it becomes clear that the region is less specialized than the nation in goods production and distribution, decidedly more specialized than the nation in producer services, and about the same as the nation in consumer services.

The composition of the region's economy by the three traded goods and services sectors and the three nontraded goods and services sectors over twenty-five years is

Table 1
THE REGION AND THE NATION, 1969-94

	1969	1979	1989	1994
Population				
CMSA (millions)	19.3	18.9	19.5	19.7
U.S. (millions)	201.3	224.6	246.8	260.3
CMSA/U.S.	9.6%	8.4%	7.9%	7.6%
Per capita personal income				
CMSA	$4,912	$10,680	$23,851	$29,021
U.S.	$3,813	$9,017	$16,610	$21,696
CMSA/U.S.	128.8%	118.4%	143.6%	133.8%
Earnings				
CMSA (billions)	$73	$149	$336	$409
U.S. (billions)	$619	$1,553	$2,983	$4,080
CMSA/U.S.	11.8%	9.6%	11.3%	10.0%
Employment				
CMSA (millions)	9.1	9.4	11.0	10.5
U.S. (millions)	87.0	109.0	133.0	141.0
CMSA/U.S.	10.5%	8.6%	8.3%	7.4%
Earnings/employment				
CMSA	$8,022	$15,851	$30,545	$38,952
U.S.	$7,115	$14,248	$22,429	$28,936
CMSA/U.S.	112.7%	111.3%	136.2%	134.6%
Goods production and distribution earnings				
CMSA (billions)	$27	$50	$84	$88
U.S. (billions)	$236	$572	$943	$1,130
CMSA/U.S.	11.4%	8.7%	8.9%	7.8%
Producer services earnings				
CMSA (billions)	$13	$31	$93	$125
U.S. (billions)	$62	$187	$535	$748
CMSA/U.S.	21.0%	16.6%	17.4%	16.7%
Consumer services earnings				
CMSA (billions)	$4	$11	$30	$45
U.S. (billions)	$33	$99	$275	$413
CMSA/U.S.	12.1%	11.1%	10.9%	10.9%

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Note: CMSA refers to the New York–New Jersey consolidated metropolitan statistical area.

shown in Table 2. The three traded goods and services sectors collectively exhibit remarkable stability in their share of total earnings, ranging from 61 to 62 percent of all earnings. If one believed in economic base theory, that would imply a long-run multiplier of 1.6 (1.00/0.61), which does not seem to be an implausible number. On the other hand, if one believed that goods production was the only source of export earnings, San Francisco would have a multiplier of 10 (1.00/0.10) and San Diego would have a multiplier of 2.5 (1.00/0.40) because of their very different shares of manufacturing earnings.

Although the collective share of traded goods and services in the region's economy has been stable, the shares by sector show a marked change in composition. In 1969, goods production and distribution was 37 percent of the region's earnings, and producer services was less than 18 percent. By 1994, goods production and distribution was down to 21 percent, while producer services was up to

almost 31 percent. Consumer services went from less than 6 percent to 11 percent in that twenty-five-year period. Even in the most recent period of economic decline, 1989-92, the producer services share rose from 28 percent to 31 percent, while the goods production and distribution share fell from 25 percent to 21 percent. The smallest of the three sectors, consumer services, rose from 6 percent of earnings in 1969 to 11 percent in 1994.

TRADE, SPECIALIZATION, AND AGGLOMERATION ECONOMIES: A MODEL OF ECONOMIC GROWTH

A MODEL OF PER CAPITA INCOME GROWTH IN THE REGION

In Drennan and Lobo (1996), a formal model of economic growth is presented in which, as in Glaeser et al. (1992) and Glaeser, Scheinkman, and Shleifer (1995), metropolitan areas are treated as separate and open economies sharing common pools of capital. The productivity of labor in metropolitan area i at time t is a function of both location-specific externalities and industry-specific productivity determinants. In this paper, that model is adapted for one metropolitan area, the New York–New Jersey consolidated metropolitan statistical area (CMSA). Consequently, the observations are years rather than metropolitan areas. Per capita income in the region, Y_t, is given by

(1) $Y_t = A_t f(GPD_t, PS_t, CS_t),$

where $f(\bullet)$ is a production function in which the arguments are earnings in each of the three traded goods and services sectors of the metropolitan area, that is, the industry-specific productivity determinants. Earnings are a better measure of labor inputs than employment because they reflect not only the quantity but also the quality of labor inputs. And unlike the standard Cobb-Douglas production function, it is not all labor in the place that determines the level of per capita income, but the labor in the traded goods and services sectors.

The location-specific productivity parameter, A_t, is intended to capture three factors. The first is agglomeration economies of localization or industry specialization

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Table 2
EARNINGS BY SECTOR, NEW YORK–NEW JERSEY CMSA, 1969-94

Sector	Billions of Dollars			
	1969	1979	1989	1994
Goods production and distribution	27.4	50.0	83.7	83.7
Producer services	12.9	30.7	93.0	125.2
Consumer services	4.2	11.1	30.0	45.4
TOTAL TRADED GOODS AND SERVICES	44.5	91.8	206.7	254.3
Local private goods and services	17.5	32.9	72.7	84.6
Government	9.2	20.0	45.4	56.1
Ancillary services	2.1	4.3	11.2	13.9
TOTAL NONTRADED GOODS AND SERVICES	28.8	57.2	129.3	154.6
TOTAL EARNINGS	73.3	149.0	336.0	408.9
	Percent Share			
Goods production and distribution	37.4	33.6	24.9	20.5
Producer services	17.6	20.6	27.7	30.6
Consumer services	5.7	7.4	8.9	11.1
TOTAL TRADED GOODS AND SERVICES	60.7	61.6	61.5	62.2
Local private goods and services	23.9	22.1	21.6	20.7
Government	12.6	13.4	13.5	13.7
Ancillary services	2.9	2.9	3.3	3.4
TOTAL NONTRADED GOODS AND SERVICES	39.3	38.4	38.5	37.8
TOTAL EARNINGS	100.0	100.0	100.0	100.0

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Note: CMSA=consolidated metropolitan statistical area.

(Isard 1954; Henderson 1974), measured by the percentage of total earnings accounted for by each of the three traded goods and services sectors. The second is urbanization, or external scale economies (Marshall 1890; Hoover 1937; Chinitz 1961), measured by total population. And the third is the enhancement or diminution of the above two factors by the intensity of labor utilization, measured by the employment-to-population ratio. The growth rate of the A term is then

$$(2) \qquad \frac{A_t}{A_0} = f\left(S_{j0}, N_0, \frac{EPOP_t}{EPOP_0}\right),$$

where S_{j0} denotes the initial share of aggregate earnings in the traded goods and services sector, N_0 denotes total population in the initial period, and $\frac{EPOP_t}{EPOP_0}$ denotes growth in the intensity of labor utilization, measured by the employment-to-population ratio.

In addition to the variables in the A term, the fully specified equation includes earnings in each of the three traded goods and services sectors plus initial per capita personal income to test for convergence or divergence of per capita income over time. The equation was estimated in logs of first differences for all variables except initial specialization in each of the three sectors, initial total population (the measure of urbanization economies of agglomeration), and initial per capita income.

The model has the functional form

$$(3) \qquad Y_t = A_t GPD_t^{\beta_1} PS_t^{\beta_2} CS_t^{\beta_3},$$

which is rewritten in terms of growth as

$$(4) \qquad \ln\left(\frac{Y_t}{Y_0}\right) = \ln\left(\frac{A_t}{A_0}\right) + \beta_1 \ln\left(\frac{GPD_t}{GPD_0}\right) + \beta_2 \ln\frac{PS_t}{PS_0} + \beta_3 \ln + \left(\frac{CS_t}{CS_0}\right).$$

Equation 4 specifies that the rate at which metropolitan per capita income grows is determined by the location-specific factors represented in the A term (localization or specialization economies, urbanization or size of place economies, and the intensity of labor utilization) and by growth in earnings of the three traded goods and services sectors.

Equation 4 has been estimated for the New York–New Jersey CMSA using annual data for the period 1969-93. All dollar amounts have been deflated by the GDP implicit price deflator, with 1987=100. The estimated equation is presented in Table 3.

The smallest of the three traded goods and services sectors, consumer services, has been dropped from the equation because neither its growth variable nor its initial share variable is significant. The adjusted R-squared is 0.95, which is quite good for an annual growth equation. The Durbin-Watson statistic of 2.48 is not good, even after adding a first-order autoregressive term, AR(1).

The coefficients on the two earnings growth variables, producer services (LDRSPS) and goods production and distribution (LDRSGPD), are positive, as expected, and highly significant. The coefficient on the goods production and distribution variable is more than four times larger than the coefficient on the producer services variable—.316, compared with .072. So a 1 percent increase in

Table 3
REAL PER CAPITA INCOME GROWTH
Period (Adjusted): 1971-93

Dependent variable: Log difference real per capita personal income (LDRSPCPI)

Variable	Coefficient and t-Statistic
Intercept	-4.436
	(5.5)
LDRSPS	.072
	(3.0)
LDRSGPD	0.316
	(6.9)
LRSGPDSH (-1)	0.125
	(4.7)
LRSPSSH (-1)	0.128
	(4.6)
LDSEPOP	0.221
	(2.9)
LRSPCPI (-1)	-0.031
	-(0.6)
LSPOP (-1)	0.399
	(5.9)
AR (1)	-0.461
	-(2.2)
n	23
R-squared	0.954
Durbin-Watson statistic	2.48
F	58.1

Source: Author's calculations.

goods production and distribution earnings adds much more to real per capita income growth than a 1 percent increase in producer services earnings. However, for the time period covered, goods production and distribution real earnings increased in only eleven of the twenty-five years, while producer services real earnings increased in eighteen of the twenty-five years, and the percent increases tended to be much larger.

The coefficients on the shares of earnings in goods production and distribution and producer services in the prior year (LRSGPDSH-1 and LRSPSSH-1) are also positive and highly significant, indicating that greater specialization (economies of localization) in those two traded goods and services sectors adds to real per capita income growth. Interestingly, the coefficients are almost identical, .125 and .128, respectively.

The measure of growth in the intensity of labor utilization, LDSEPOP, also has a positive and highly significant coefficient. Given that that variable rose from 47.2 percent in 1969 to 56.7 percent in 1989, then dropped to 52.7 percent by 1993, it has doubtless been important in the growth of real per capita income. The coefficient on the prior year's per capita personal income is almost zero and not close to statistical significance (t=-0.64). So, the prior year's level of per capita income has no effect on growth. The prior year's population, the measure of urbanization economies, has a large positive coefficient and is very significant (t=5.9).

These results strongly support the hypotheses embodied in the metropolitan per capita income growth model developed above. However, I had anticipated that growth in producer services earnings and specialization in producer services would have added more to per capita income growth than goods production and distribution growth and specialization. But the case is almost the opposite, with goods production and distribution earnings growth having a coefficient more than four times larger than the producer services earnings growth variable, and the two specialization variables having almost identical coefficients. But given that goods production and distribution earnings fell in more years than they rose, the inference is that, to offset any given percentage decline in goods

production and distribution earnings, producer services earnings must rise by a much larger percent.

A Model of Aggregate Income Determination in the Region

The original, large-scale model that I developed (Drennan 1985) of the region and New York City has 250 equations. About 150 of those equations are stochastic; the rest are identities. The model estimates output (gross regional product and gross city product) and employment in each of fifty-three two-digit SIC industries for both the city and region. It was most recently reestimated with annual data for the period 1958-93. That model is an economic base model in which the fifty-three industries are sorted into export industries and local industries based on location quotients.

For this paper, I have developed an aggregated trade model in which the three traded goods and services sectors of the region are linked to national and international variables as well as to a relative price-level variable. The nontraded goods and services sector is then linked to the sum of the traded goods and services sectors with a lag. The substantive purpose is to show the viability of a causal model for the region in which the model structure is based on trade theory rather than on economic base theory.

The model equations are
1. $GPD_t = f(X_t, I_t)$;
2. $PS_t = g(X_t, I_t)$;
3. $CS_t = h(X_t, I_t)$;
4. $TGS_t = GPD_t + PS_t + CS_t$;
5. $NTGS_t = k(TGS_{t-1}, L_t)$; and
6. $RE_t = TGS_t + NTGS_t$,

where GPD is aggregate real earnings in the goods production and distribution sector of the region in year t, PS and CS are the same for the other two traded goods and services sectors (producer services and consumer services), X is a vector of national variables, and I is a vector of international variables, not all of which appear in every equation. TGS is the sum of earnings in the three traded goods and services sectors. $NTGS$ is earnings in all the nontraded goods and services industries, and L is a vector of local variables. RE is total earnings in the region, that is, the

sum of traded goods and services earnings and nontraded goods and services earnings.

All the dollar variables are in real 1987 dollars. The estimation period is 1969-93. All but one of the stochastic equations have been estimated in log form in order to estimate elasticities. A number of different estimated equations are shown for each of the three traded goods and services sectors to show that they each march to a different drummer. Table 4 presents the estimated equations for the three traded goods and services sectors in which there are only national variables. They are the log of the U.S. unemployment rate (LNUN), the log of the ratio of the consumer price index (CPI) for the region to the national CPI (LNSCPIUS, a measure of regional prices relative to national prices), and the log of U.S. GDP (LNGDP).

The goods production and distribution equation has an adjusted R-squared of only 0.78. Both the unemployment rate (LNUN) and the relative price variable (LNSCPIUS-2) have negative coefficients, as expected, and both are highly significant. However, the U.S. GDP variable has the wrong sign, negative, and it is significant. The coefficient indicates that a 1 percent rise in GDP leads to a -0.2 percent drop in the region's goods production and distribution sector.

The producer services equation has an adjusted R-squared of 0.99. The unemployment variable has the wrong sign, and it is significant. The relative price variable, lagged two years, has the right sign, negative, but it is not even close to statistical significance. The U.S. GDP variable has a positive coefficient, and it is highly significant. The coefficient indicates that a 1 percent rise in U.S. GDP results in a very large 2.4 percent rise in the region's producer services earnings. Clearly, the producer services sector is quite distinct from the goods production and distribution sector.

The consumer services equation has an adjusted R-squared of 0.91. Both the unemployment rate and the relative price variables have the wrong signs—positive. The unemployment rate variable is not quite significant, while the relative price variable is significant. The U.S. GDP variable has a positive, highly significant coefficient. The elasticity estimate, +1.6, is not as high as the producer services elasticity estimate of +2.4.

The second set of equations (Table 5) introduces some international variables, namely the trade-weighted

Table 4
TRADED GOODS AND SERVICES, DOMESTIC EQUATIONS
Dependent Variables, Coefficients, and t-Statistics

Variable	LRSGPD	LRSPS	LRSCS
Intercept	20.1	-2.57	2.72
	(0.7)	-(0.5)	(1.1)
LNUN	-0.215	0.198	0.24
	-(8.5)	(2.4)	(1.8)
LNSCPIUS (-2)	-0.888	-1.022	3.133
	-(4.5)	-(1.0)	(2.4)
LNGDP	-0.187	2.42	1.63
	-(2.3)	(4.5)	(5.4)
AR (1)	-0.088	0.93	0.767
	-(0.3)	(3.8)	(3.3)
AR (2)	0.547	-0.108	-0.148
	(2.1)	-(0.4)	-(0.6)
n	23	23	23
R-squared	0.78	0.99	0.91
Durbin-Watson statistic	1.91	2.08	2.12
F	16.6	385	46

Source: Author's calculations.

Table 5
TRADED GOODS AND SERVICES, INTERNATIONAL EQUATIONS
Dependent Variables, Coefficients, and t-Statistics

Variable	LRSGPD	LRSPS (1)	LRSPS (2)	LRSCS
Intercept	20.4	3.14	15.65	2.38
	(34.7)	(0.96)	(16.4)	(0.6)
LNUN	-0.195			0.164
	-(7.9)			(1.2)
LNSCPIUS (-2)	-1.08			2.59
	-(4.7)			(1.6)
LNEUR	-0.196	1.96		1.81
	-(3.1)	(5.1)		(4.3)
LEXCHRT	-0.065	-0.186	-0.297	0.089
	-(1.5)	-(1.4)	-(1.7)	-(0.4)
LRSVEXP			0.376	
			(8.1)	
AR(1)	-0.157	1.33	0.803	0.694
	-(0.4)	(5.9)	(3.4)	(2.6)
AR(2)	0.466	-0.508	-0.153	-0.047
	(1.8)	-(2.6)	-(0.7)	-(0.2)
n	23	23	23	23
R-squared	0.77	0.98	0.97	0.91
Durbin-Watson statistic	1.9	2.09	2.02	2.04
F	13.2	308	161	36.8

Source: Author's calculations.

exchange rate (LEXCHRT), the real GDP of the European members of the Organization for Economic Cooperation and Development (LNEUR), and the producer services exports of the United States (LRSVEXP). The goods production and distribution sector equation is no better than the domestic version, with an adjusted R-squared of 0.77. The unemployment rate and relative price variables are negative, as expected, and highly significant. The European GDP variable is negative and significant, as was the U.S. GDP variable, and the coefficients are almost identical (-0.20 compared with -0.19). The exchange rate variable is negative, as expected, but close to zero (-0.065) and insignificant.

Two equations are shown for the producer services sector. The first includes two independent variables: the exchange rate and the European GDP. The adjusted R-squared is 0.98, almost the same as in the domestic producer services equation. The coefficient on the exchange rate variable is negative, as expected, but not significant (t=-1.4). However, it is three times larger than the exchange rate coefficient in the goods production and distribution equation, suggesting that the producer services sector is more sensitive to the exchange rate than the region's goods production and distribution sector. The coefficient on the European GDP variable is positive, as expected, and very significant. The coefficient indicates an elasticity of the region's producer services earnings to European GDP of +1.96, which is lower but similar in magnitude to its elasticity with respect to U.S. GDP of +2.4, as noted above.

In the second producer services sector equation, the European GDP variable is replaced by U.S. producer services exports. The adjusted R-squared is somewhat lower (0.97). The exchange rate variable continues to be negative and insignificant, but it is larger, -0.30, and less insignificant (t=-1.7). The U.S. producer services export variable is positive and highly significant. The coefficient of +0.38 indicates that a 1 percent rise in producer services exports from the United States raises the region's producer services earnings by almost 0.4 percent. Given that U.S. exports of producer services were $61 billion in 1995 and that the region's producer services earnings were $125 billion in 1994 (Table 1), the latest figures available, then a

1 percent rise in those exports would be $610 million. Such a hypothetical increase would induce a 0.38 percent rise in the region's producer services earnings, or a rise of $475 million.

The consumer services equation with two international variables is no better than the domestic consumer services equation noted above. The only significant variable is the measure of aggregate demand, in this case the European GDP. In the domestic case, it is the U.S. GDP.

The last stochastic equation of this model, equation 5, relates the nontraded goods and services sector earnings to the traded goods and services sector earnings lagged one year and to the unemployment rate (Table 6). The first version of equation 5 is estimated in log form to estimate the elasticity. The adjusted R-squared is 0.96. The coefficient on the lagged value of the log of traded goods and services earnings, LRSTGS(-1), is +0.62 and it is highly significant (t=4.8). That indicates that a 1 percent rise in traded goods and services earnings adds +0.62 percent to nontraded goods and services earnings the following year. The unemployment rate (LNUN) coefficient is negative, as expected, but it is not significant (t=-1.2).

The second version of equation 5 is estimated in

Table 6
NONTRADED GOODS AND SERVICES EQUATIONS

Log Equation		Linear Equation	
Dependent Variable: LRSNTGS		Dependent Variable: RSNTGS	
	Coefficient and t-statistic		Coefficient and t-statistic
Intercept	6.83 (2.8)	Intercept	47,498,240 (3.3)
LRSTGS (-1)	0.619 (4.8)	RSTGS (-1)	0.369 (4.4)
LNUN	-0.051 -(1.2)	UN	-633,747 -(1.1)
AR (1)	1.37 (6.8)	AR (1)	1.41 (7.0)
AR (2)	-0.607 -(3.1)	AR (2)	-0.604 -(3.0)
n	22	n	22
R-squared	0.96	R-squared	0.96
Durbin-Watson statistic	2.06	Durbin-Watson statistic	2.00
F	137	F	141

Source: Author's calculations.

linear form to estimate the multiplier, k, where $k*($*traded goods and services earnings, lagged*$)$ = *total earnings*. The multiplier k should not be estimated directly by regressing total earnings on traded goods and services earnings because the left-hand variable includes the right-hand variable, and so the estimate would be biased. To avoid bias, I regress nontraded goods and services on traded goods and services. It can be shown that the resulting coefficient on the traded goods and services variable, b, is $b=k$-1, and so $k=b+1$ (Drennan 1985).

The linear equation also has an R-squared of 0.96. The unemployment rate is again negative, but not significant (t=-1.1). The lagged traded goods and services variable has a coefficient of +0.37, and it is significant (t=4.4). Thus, the estimated multiplier k is 1.37, a more plausible multiplier than the popular magic number "2," which has been bandied about for years.

The estimated elasticity of +0.62 and the estimated multiplier of 1.37 are consistent with each other. Using 1994 earnings data (Table 2), I find that a 1 percent rise in traded goods and services is $2.54 billion. The elasticity of +0.62 percent indicates that nontraded goods and services would rise $0.96 billion. The sum of the two gives an estimated rise in total earnings of $3.50 billion. If we multiply the 1 percent rise in traded goods and services of $2.54 billion by the estimated k of 1.37, the result is a rise in total earnings of $3.48 billion—virtually the same as the rise using the elasticity estimate.

EMPLOYMENT TRENDS BY INDUSTRY

The appendix presents in table form employment for each of the two-digit SIC industries grouped by the functional sectors described above for each year from 1989 through 1996. The last year is estimated based on monthly data. Although I would prefer to show earnings data, having argued above that they are more revealing and optimistic, the latest earnings data are only available through 1994. Table 7 summarizes the employment data in the appendix by functional sector. The peak year 1989 is shown, along with the trough year 1992 and my estimates for 1996. The

Table 7
EMPLOYMENT CHANGES IN THE REGION, 1989-96
Thousands of Jobs

Sector	1989	1992	1996	1989-92	1992-96
Goods production and distribution	1,915	1,636	1,572	-279	-64
Producer services	1,794	1,625	1,723	-169	98
Finance and real estate	861	792	798	-69	6
Nonfinancial services	933	832	925	-101	93
Consumer services	773	843	931	70	88
TOTAL TRADED GOODS AND SERVICES	4,482	4,104	4,251	-378	147
Local private goods and services	2,131	1,951	2,090	-180	139
Government	1,364	1,334	1,286	-30	-48
Ancillary services	476	441	493	-35	52
TOTAL NONTRADED GOODS AND SERVICES	3,970	3,725	3,869	-245	144
TOTAL EMPLOYMENT	8,453	7,829	8,120	-624	291

Sources: Appendix; author's estimates for 1996.

traded goods and services sectors lost 378,000 jobs from 1989 to 1992. The largest decline was in goods production and distribution: a loss of 279,000 jobs, a 15 percent drop in three years. Producer services lost 169,000 jobs, while consumer services gained 70,000 jobs. In the recovery period, goods production and distribution employment dropped another 64,000 jobs, and consumer services continued to gain, adding 88,000 jobs. The partial recovery in producer services, up 98,000 jobs, reflects a divergence in the two parts of that sector. The finance and real estate part has had a very slight gain of 6,000 jobs since 1992, following a loss of 69,000 jobs from 1989 to 1992. But the nonfinancial part of producer services (business services, legal services, motion pictures, and other services) has recovered almost all of the 101,000 jobs lost.

Despite the enormous decline in employment from 1989 to 1992, followed by a large rise from 1992 to 1996, the share of employment in nontraded goods and services remains between 47 and 48 percent of all employment. That roughly accords with Henderson's findings for the United States and Brazil—50 to 60 percent of any urban labor force "must be engaged in production of goods and services which are inherently nontradable across cities" (Henderson 1988, p. 8).

EMPLOYMENT BY INDUSTRY, NEW YORK–NEW JERSEY CMSA, 1989-96
Thousands of Jobs

Industries and Economic Groups	SIC	1989	1990	1991	1992	1993	1994	1995	1996
Mining	10-14	2.7	2.6	2.4	2.2	2.0	1.9	1.9	1.8
Lumber and wood products	24	8.0	7.4	6.7	5.3	5.1	5.0	4.9	4.8
Furniture and fixtures	25	19.8	18.6	15.4	13.2	13.7	13.4	13.2	13.0
Stone, clay, and glass products	32	13.8	12.9	10.6	9.9	9.6	9.4	9.2	9.1
Primary metal industries	33	24.1	22.8	21.6	20.3	19.8	19.4	19.1	18.8
Fabricated metal products	34	77.2	72.3	66.0	62.6	60.8	59.2	58.0	57.3
Industrial machinery	35	82.4	77.2	72.0	68.4	64.3	62.6	61.3	60.6
Electronic and electrical equipment	36	121.6	113.7	105.9	100.1	100.9	98.6	95.2	95.5
Transportation equipment	37	43.7	40.9	37.0	34.9	26.8	26.1	25.7	25.3
Instruments and related equipment	38	62.0	58.1	54.0	51.3	48.1	47.0	46.2	45.5
Miscellaneous manufacturing	39	54.7	51.3	47.3	45.9	46.1	45.0	44.2	43.6
Food and kindred products	20	65.4	62.8	59.6	56.6	53.5	52.2	51.3	50.5
Textile mill products	22	32.8	28.8	25.6	24.2	24.6	24.0	23.6	23.2
Apparel and related products	23	159.9	148.9	135.6	130.3	126.5	123.1	120.0	119.3
Paper and allied products	26	47.9	44.7	41.0	40.1	40.2	39.3	38.6	38.1
Printing and publishing	27	170.7	160.6	149.1	139.9	132.8	130.0	127.8	125.9
Chemicals and allied products	28	133.7	125.1	122.5	114.3	112.3	110.0	107.0	106.5
Other nondurable products	21, 29	11.4	10.0	8.7	8.0	7.5	4.3	4.2	4.2
Rubber and plastics products	30	39.4	36.8	32.9	31.2	31.8	31.3	30.8	30.3
Leather and leather products	31	15.7	14.7	11.7	10.9	11.1	11.0	10.8	10.7
Railroad transportation	40	11.2	10.8	10.4	10.4	9.8	9.4	9.4	9.2
Trucking and warehousing	42	86.4	90.6	88.1	83.4	86.0	88.0	89.0	87.9
Water and other transportation	44, 46	31.7	29.2	27.7	27.8	26.0	24.1	24.1	23.2
Wholesale trade	50, 51	598.9	583.8	560.1	545.0	538.0	545.3	554.0	567.8
TOTAL GOODS PRODUCTION AND DISTRIBUTION		1,915.1	1,824.6	1,711.9	1,636.2	1,597.3	1,579.6	1,569.6	1,572.2
Depository institutions	60	297.9	294.1	278.5	260.3	256.3	254.0	248.5	252.0
Nondepository institutions	61	21.9	22.8	21.4	21.4	21.8	22.1	22.0	21.7
Security brokers and services	62	161.9	154.1	143.0	144.4	149.0	160.0	158.0	158.0
Insurance carriers	63	158.8	160.7	157.2	153.5	152.0	151.5	148.5	150.4
Insurance agents and services	64	63.1	61.4	61.2	59.0	60.7	61.3	61.1	61.5
Real estate and miscellaneous financial	65, 67	157.8	156.8	151.8	153.7	152.4	153.4	152.8	154.0
Business services	73	515.9	499.7	450.9	434.0	452.1	463.0	475.1	490.0
Motion pictures	78	36.2	37.8	37.6	32.5	32.1	40.0	44.0	43.4
Legal services	81	110.7	113.5	107.5	104.8	105.0	105.0	107.8	109.0
Other services	84, 87	270.1	282.0	265.1	261.1	267.6	269.0	278.0	283.0
TOTAL PRODUCER SERVICES		1,794.3	1,782.9	1,674.2	1,624.7	1,649.0	1,679.3	1,695.8	1,723.0
Health services	80	579.3	603.7	628.4	651.1	686.2	702.0	725.0	743.0
Educational services	82	193.5	202.0	197.3	191.9	195.4	200.0	206.0	213.0
TOTAL CONSUMER SERVICES		772.8	805.7	825.7	843.0	881.6	902.0	931.0	956.0
TOTAL TRADED GOODS AND SERVICES		4,482.2	4,413.2	4,211.8	4,103.9	4,127.9	4,160.9	4,196.4	4,251.2

Sources: U.S. Department of Labor, Bureau of Labor Statistics; New York State Department of Labor; author's estimates for 1996.

Note: CMSA=consolidated metropolitan statistical area.

EMPLOYMENT BY INDUSTRY, NEW YORK-NEW JERSEY CMSA, 1989-96
Thousands of Jobs

Industries and Economic Groups	SIC	1989	1990	1991	1992	1993	1994	1995	1996
Construction	15-17	345.9	320.3	270.8	239.1	242.4	254.0	258.3	267.0
Local passenger transit	41	47.6	48.5	48.2	49.4	50.2	48.6	49.0	49.2
Electric, gas, and sanitary services	49	71.8	72.2	71.4	70.5	70.2	73.6	74.0	75.2
Air transportation	45	67.8	68.6	62.5	55.6	57.4	58.0	58.5	59.0
Transportation services	47	46.8	49.7	46.1	45.3	48.2	49.4	49.6	50.1
Communication	48	145.6	152.2	150.3	144.7	146.1	149.8	152.8	151.1
Retail trade, except eating	52-57	861.0	846.4	796.3	772.9	774.7	786.9	807.7	821.7
Personal services	72	87.2	86.8	82.9	81.8	83.5	84.5	86.7	88.0
Auto and miscellaneous repair services	75, 76	93.6	92.7	91.8	88.1	86.7	87.0	89.3	91.5
Social services	83	230.8	244.0	251.2	266.1	278.0	288.0	296.6	303.0
Nonprofit membership organizations	86	109.0	110.8	106.6	106.1	108.3	110.5	114.0	116.2
Residual		23.7	24.7	18.3	31.3	12.1	21.2	22.0	18.0
TOTAL LOCAL PRIVATE GOODS AND SERVICES		2,130.8	2,116.9	1,996.4	1,950.9	1,957.8	2,011.5	2,058.5	2,090.0
Federal government	91-97	154.5	151.5	150.5	150.1	149.0	148.5	148.2	147.2
State and local government	91-97	1,209.0	1,226.0	1,200.3	1,183.6	1,180.3	1,173.3	1,150.2	1,139.0
TOTAL GOVERNMENT		1,363.5	1,377.5	1,350.8	1,333.7	1,329.3	1,321.8	1,298.4	1,286.2
Eating and drinking places	58	335.6	332.8	308.6	303.4	306.7	314.5	323.0	328.7
Hotels and other lodging places	70	60.4	60.4	56.4	58.7	61.0	63.0	66.0	68.0
Amusement services	79	80.1	83.6	77.2	78.4	81.0	83.0	89.2	95.8
TOTAL ANCILLARY SERVICES		476.1	476.8	442.2	440.5	448.7	460.5	478.2	492.5
TOTAL NONTRADED GOODS AND SERVICES		3,970.4	3,971.2	3,789.4	3,725.1	3,735.8	3,793.8	3,835.1	3,868.7
TOTAL EMPLOYMENT		8,452.6	8,384.4	8,001.2	7,829.0	7,863.7	7,954.7	8,031.5	8,119.9

Note: CMSA=consolidated metropolitan statistical area.

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Industrial Restructuring in the New York Metropolitan Area

James Orr*

I ndustrial restructuring is the ongoing process of reallocating workers among jobs in the economy as industries expand and contract. The New York metropolitan area economy underwent a significant amount of restructuring during the first half of the 1990s as a variety of factors—including new products, increased competition from other areas, and deregulation and fiscal problems—caused area firms and entire segments of industries to make permanent adjustments to employment levels. Downsizings, the sharp reductions in staffing by firms, were a prominent feature of the process. The area's steep 1989-92 downturn prompted many of these downsizings, but their persistence well into the recovery period contributed to a weakening job picture for several major sectors in the first half of the 1990s, particularly for manufacturing, finance, insurance, communications, chemicals, and the public sector.

Industrial restructuring is not new to the metropolitan area; jobs in manufacturing have been giving way to employment in the service sector since the late 1960s, and back-office functions have been on the move to other regions for more than a decade. In addition, bouts of restructuring naturally accompany periods of economic instability. The fact that employment downsizings have, however, continued well past the start of the area's economic recovery in 1992 raises questions about the fundamental soundness of the metropolitan economy. Moreover, the downsizings have been more pervasive in the 1990s than in the past, affecting a wide range of metropolitan area industries and increasing the risk of job loss for a significant fraction of the area's work force.

This paper analyzes the industrial restructuring process in the New York metropolitan area in the first half of the 1990s.[1] It shows that the restructuring was accompanied by a decline in the labor force, particularly in New York, where the decline persisted through the first half of the 1990s. The analysis also shows that a significant part of

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the area's restructuring in this period represents a continuation of the long-term trend away from manufacturing toward a service-oriented economy. This shift, while broadly in line with nationwide trends, has been somewhat more intense in the metropolitan area. Downsizings in government employment, especially in New York City, have also been a key feature of the area's restructuring process. Together, job losses in government and manufacturing have lowered job growth in the area over the past three years by an average of 0.5 percentage point annually. As a result of these industrial restructuring patterns, the service sector has become significantly more important in shaping the area's economic performance.

THE CAUSES AND SCOPE OF RESTRUCTURING IN THE NEW YORK METROPOLITAN AREA

Like the nation, the New York metropolitan area has been undergoing gradual but steady restructuring of its industries for several decades. The relatively high cost of doing business in the New York metropolitan area, changes in technology, population growth trends, and industrial location patterns are driving these long-term trends in regional employment. A variety of economic "shocks" emanating from local, industry, and national sources have also significantly influenced the industrial landscape and caused layoffs in the metropolitan area.[2]

To assess the extent of restructuring in the New York metropolitan area in the first half of the 1990s, we examine two measures: the number of permanent job losses of metropolitan area workers and mass layoff announcements in the region. Determining the scale of job losses is the first step in identifying and estimating the impact of industrial restructuring on the work force.

ESTIMATES OF PERMANENTLY DISPLACED WORKERS

Our first measure of restructuring, the number of permanently displaced workers, comprises those workers of at least twenty years of age who have been displaced from a job held for three years or more because of plant closings, job eliminations, or lack of work. Biannual estimates of permanently displaced workers have been produced by the U.S. Department of Labor for the years 1979-93 for New

York and New Jersey.[3] In the most recent period, 1991-93, permanent displacements in New York and New Jersey together totaled 506,000, representing an average annual flow of slightly more than 165,000 (Table 1). This yearly average exceeds that of all earlier periods for which data are available. The rise in displacements during 1991-93 is not surprising because the period coincides with a deep regional recession that did not bottom out until late 1992.[4] During these years, the displacement rate, or displaced workers as a share of total employment, averaged 1.5 percent annually. Although relatively high, this percentage is not completely out of step with the area's long-term restructuring patterns. Indeed, in the 1979-87 period, including the relatively high-growth years of the 1980s, displacements in New York and New Jersey still averaged between 80,000 and 100,000 annually, or about 0.7 percent of the work force. Thus, while the number of workers who have experienced permanent job loss has clearly risen in the 1990s, job displacements have been a natural part of the area's economy for many years.

More disturbing than the rise in the number of displacements is the rise in the area's share of nationwide displacements—from 8.4 percent in the 1979-83 period to 11.3 percent in the 1991-93 period. This rise occurred at the same time that the two states together experienced a decline in their share of nationwide employment. The con-

Table 1
ESTIMATES OF DISPLACED WORKERS IN NEW YORK STATE AND NEW JERSEY, 1979-93

	New York and New Jersey		As a Percent of U.S. Job Losses and Employment	
Period	Thousands	Percent of Employment[a]	Job Losses	Employment
1979-83	428	0.8	8.4	11.7
1983-87	322	0.6	6.9	11.5
1987-91	598	1.1	10.7	11.0
1991-93	506	1.5	11.3	10.3

Source: U.S. Department of Labor.

Note: A displaced worker is defined as an individual of at least twenty years of age who was permanently displaced from a job held for three years or more because of a plant relocation or closure, lack of work, or the elimination of his or her position.

[a] Displaced workers as a percentage of average annual employment in the two states during the period, unadjusted for tenure.

centration of national restructuring in nonmanufacturing industries, which have a strong presence in the area, may help explain the increased share of nationwide displacements (see Podgursky [1992]). Today, workers displaced from manufacturing industries account for less than 25 percent of all displaced workers compared with more than 35 percent a decade ago (Farber 1993). In the New York metropolitan area, nonmanufacturing jobs make up roughly 88 percent of total employment.

The 1990s also saw a sharp increase in the displacement of white-collar workers. In the most recent U.S. recession, white-collar workers accounted for about a third of the rise in unemployment nationwide. This rise corresponds to higher displacement rates found in service industries nationwide (Farber 1993; Gardner 1995), and it appears to be contributing to the rise in displacement rates in the metropolitan area's service sector. In particular, professional services, a key industry for the region, increased its share of overall displacements, and the FIRE and service sectors reached all-time-high displacement rates. The impact of these national trends was compounded by the rising displacement of workers in the area's government sector, particularly in local government. Significantly, the declining importance of manufacturing displacements in recent years and the relatively heavy concentration of nonmanufacturing sectors in the area have placed a large fraction of the area's work force—roughly 20 percent—at some risk of displacement.

MASS LAYOFF ANNOUNCEMENTS

Our second measure of restructuring is the annual number of reported layoffs in the New York metropolitan area. We use data for 1993-96 identifying individual firms announcing layoffs, the number of workers affected, and the location of the firms' headquarters.[5] Although mass layoffs are similar in concept to the Labor Department's definition of permanently displaced workers, we consult both measures to balance out their limitations. For example, the number of workers actually laid off could differ from the announced total. Moreover, because the exact location of layoffs is not available, a firm identified in the report could be increasing employment in other establishments or operations, so that

the firm's overall employment level might not decline. One strength of the layoff data is that they provide details about the industries undergoing major employment reductions and briefly describe the reported cause of the layoffs.

Roughly 292,000 workers in firms headquartered in the New York metropolitan area reportedly lost their jobs between 1993 and 1995 (Table 2). This amounts to an annual loss of about 100,000 jobs, or 1.5 to 2 percent of metropolitan area employment—close to the share of permanently displaced workers in New York and New Jersey reported by the U.S. Department of Labor for the 1991-93 period. Although layoff announcements occurred in a number of industries, they were clearly concentrated in manufacturing (including consumer goods, pharmaceuticals, and computers), communications, and finance. Significantly, layoff announcements in 1996 showed a sharp drop in the number of reported employment downsizings. In fact, with the exception of AT&T's announced downsizing in January 1996, annual layoffs were only about half the level announced in the 1993-95 period.

One reason firms are reducing staff is the high cost of doing business in the metropolitan area. Other forces, however, are also contributing to the wave of employment restructuring. In the pharmaceuticals industry, for example,

Table 2

REPORTED LAYOFFS IN THE NEW YORK METROPOLITAN AREA'S PRIVATE SECTOR, 1993-96

Industry	1993-95 (Thousands)	1996 (Thousands)
Computers/electronics	65.3	1.0
Consumer goods	28.9	4.5
Chemicals/pharmaceuticals	27.2	0.7
Aerospace/defense	3.8	0.1
FIRE	58.3	1.9
Banking	46.5	1.4
Insurance	18.8	0.5
Communications	46.7	40.2
Utilities	3.9	1.4
Health services	13.7	0.7
Retail	9.0	3.1
Media	2.3	1.3
Other	31.1	7.9
ALL INDUSTRIES	292.3	64.7

Source: Challenger, Gray, and Christmas.

Note: Data refer to announcements of layoffs in the private sector between January 1993 and July 1996. Industry definitions were created by the source. FIRE=finance, insurance, and real estate.

mergers in the face of exploding research and development costs and the introduction of managed health care have been significant factors in downsizings. Nationwide, health care employment is down roughly 20 percent, with more than 37,000 jobs lost between mid-1993 and mid-1994. In the area's defense and aerospace industries, reduced federal procurement is a major cause of shrinking employment. Nationwide defense-related employment declined by a third between 1985 and 1995. The consumer products industry has downsized in the region because of general cost-cutting pressures, and the computer industry, particularly IBM, has downsized as part of its efforts to reorient its business. Restructuring, mergers, and cost-cutting pressures are also cited as important motives for employment downsizing outside of manufacturing.

THE EFFECTS OF RESTRUCTURING ON THE LOCAL LABOR MARKET

Studies consistently find that workers whose job losses are linked to restructuring face significant adjustment costs in the form of both spells of unemployment and losses in earnings (see Farber [1993] and Jacobson, LaLonde, and Sullivan [1995]). Estimates of adjustment costs experienced by New York metropolitan workers are not available; however, some evidence suggests that finding a new job in the area may be somewhat tougher than in other parts of the country. Nationwide, 67.9 percent of workers displaced between 1991 and 1993 had found new jobs by February 1994 (Gardner 1995), compared with 62.0 percent of displaced workers in New Jersey and 55.5 percent of displaced workers in New York, according to estimates by the U.S. Department of Labor. Moreover, in every period since 1979, New York's reemployment rate has been at least 5 percentage points below the national average, and its share of displaced workers out of the labor force has exceeded the national average. In New Jersey, the reemployment rate has been below that of the nation since 1987, and the state's share of displaced workers out of the labor force greatly exceeded the national average in the 1991-93 period.

An increase in the number of displaced workers can lead to several long-term adjustments in the labor market. For example, rising displacements could raise the unemployment rate, and the weakened job market could lower labor force participation. In addition, the potential of, or fear of, displacement could make workers who have not been displaced less likely to leave their jobs voluntarily. Moreover, firms involved in cost-cutting efforts may increase their use of part-time or temporary help, shifting jobs away from full-time employees. Fortunately, our review of four trends shows that only one labor market adjustment—a decline in the size of the labor force—appears to have left a lasting mark on the metropolitan area.

UNEMPLOYMENT RATES

After falling below the national average for much of the 1980s, unemployment rates in New York and New Jersey have remained roughly 1 percent above the national average since the downturn of the early 1990s (Chart 1, top panel). While this rise in the area's relative unemployment rate suggests a deteriorating labor market, it is not unprecedented: the unemployment rate in the area throughout

Chart 1

The Impact of Regional Restructuring: Unemployment Rates and Temporary Workers
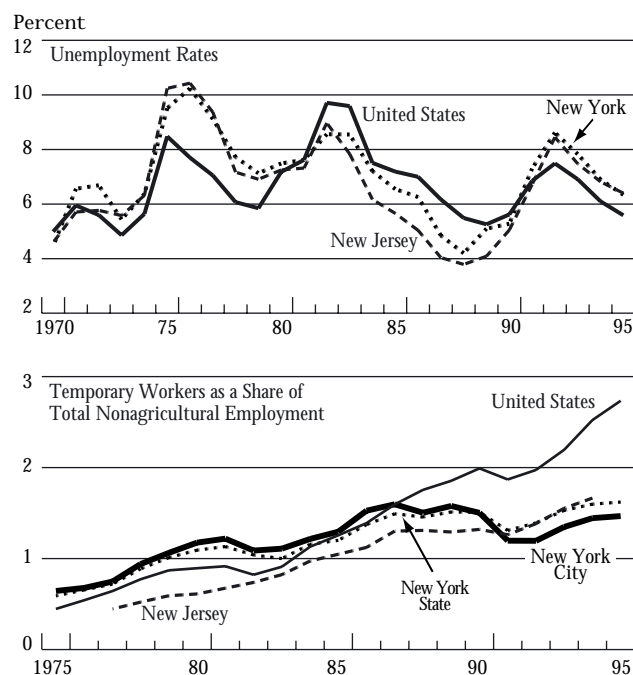
Source: U.S. Department of Labor.

Note: Temporary workers are defined as employees hired from personnel supply service agencies.

the 1970s was also consistently above the national average. Furthermore, the two states' peak unemployment rates in the current downturn, about 8 percent, are below previous peak unemployment rates, and both states' unemployment rates dropped by almost 2 percent between 1992 and 1995. State unemployment rates have roughly returned to their pre-1980s' pattern in the past several years.[6]

An examination of local unemployment rates within the metropolitan area also shows little impact from downsizings. The structure of rates has hardly changed over the last decade: unemployment rates remain relatively high in Jersey City, Newark, and New York City, while they have stayed relatively low in Long Island and in Middlesex, Somerset, and Hunterdon counties.

TEMPORARY WORKERS

Another labor market adjustment that may occur as a result of downsizing is a rise in the use of temporary workers. One motive for downsizing is to cut the costs of permanent workers, including wages and benefits, and to maintain a more flexible work force. The increasing use of temporary workers does not seem to be a phenomenon unique to the metropolitan area. The share of temporary workers in total employment in New York State, New York City, and New Jersey has grown from roughly 0.5 percent in 1975 to about 1.5 percent today (Chart 1, bottom panel). This growth is far less dramatic, however, than the nationwide expansion in temporary workers over the same period—from 0.5 percent to more than 2.5 percent of the work force.

COMPOSITION OF UNEMPLOYMENT

The U.S. Department of Labor categorizes unemployed workers according to their reason for unemployment. Job losers, defined as workers who have involuntarily left their jobs, climbed sharply as a share of unemployed workers in New York State and New Jersey during the 1989-92 downturn (Chart 2).[7] This rise implies that workers in the two states were increasingly unemployed as a result of layoffs from their jobs. A simultaneous decline in the share of workers who voluntarily left their jobs, or job leavers, suggests that employed workers were increasingly wary of

Job Losers as a Percentage of Unemployed Persons, New York and New Jersey
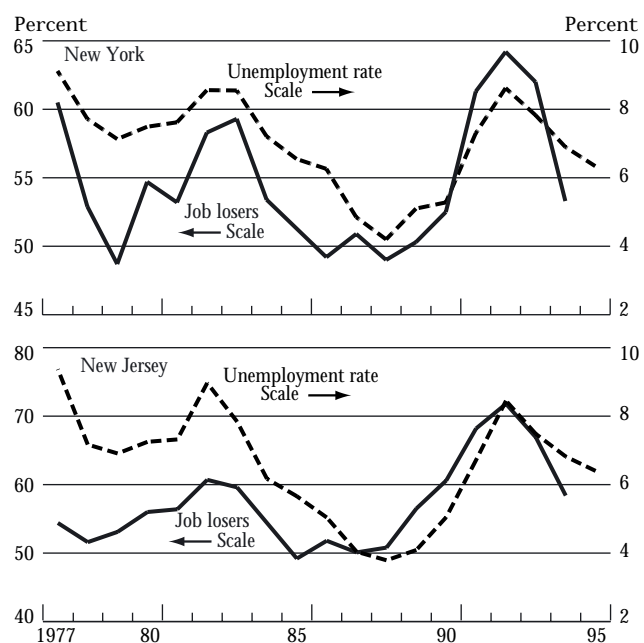
Source: U.S. Department of Labor.

leaving their jobs to seek reemployment. Since the recovery in the region began, however, the number of job leavers as a share of total unemployment (not shown in chart) has risen. The implication is that job insecurity linked to downsizings or the threat of downsizings is no longer a primary factor discouraging workers from leaving their jobs.
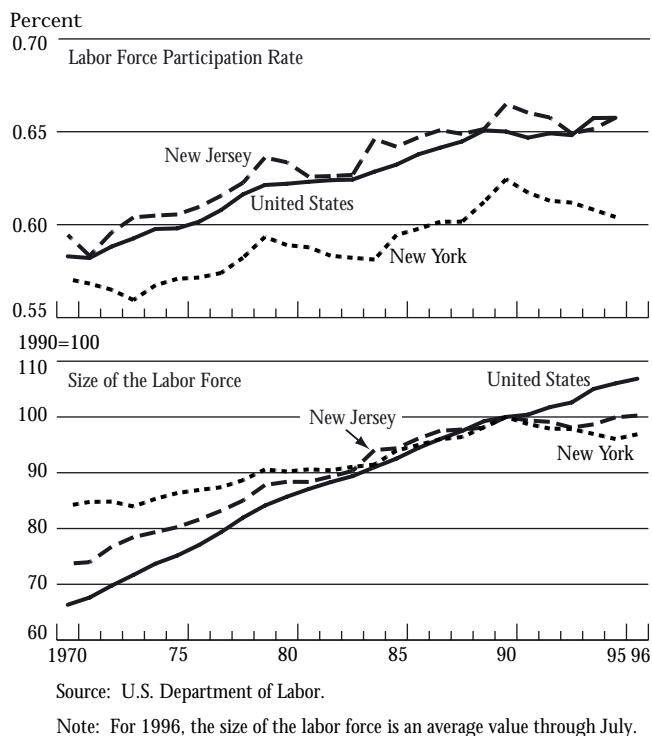
LABOR FORCE PARTICIPATION

A decline in the area's labor force appears to be the biggest and most persistent effect of worker displacement and slow growth in the region. Data for New York show that the labor force participation rate, after peaking in 1989, declined relatively sharply through 1995; in New Jersey, the participation rate declined through 1993 and then began a mild turnaround (Chart 3, top panel). The decline in participation was much stronger and more persistent in New York: the participation rate in 1995 roughly equaled the rate in 1986 and was only slightly above the rate in 1979.

The pattern of changes in the size of the area's labor force is similar to that of participation rates. In New York, the size of the labor force steadily declined from

Chart 3

The Impact of Regional Restructuring:
Labor Force Measures

Percent
0.70

Labor Force Participation Rate

0.65

New Jersey

United States

0.60

New York

0.55

1990=100
110

Size of the Labor Force   United States

100   New Jersey

90   New York

80

70

60
1970   75   80   85   90   95 96

Source: U.S. Department of Labor.

Note: For 1996, the size of the labor force is an average value through July.

1990 to 1995. In New Jersey it declined through 1993, followed by a modest upturn (Chart 3, bottom panel). While declining participation has characterized periods of weakness in the past in both states, the decline in the size of the labor force is unique to the 1990s. It appears that the generally weak economic conditions and job displacements that began with the downturn in the area in 1989 led many workers to either drop out of the labor force or leave the area altogether.[8] Available data for 1996 suggest, however, that the steady decline in the size of New York's labor force has leveled off.

RESTRUCTURING OF METROPOLITAN AREA
INDUSTRIES: MANUFACTURING AND SERVICES

We next investigate the net change in level and share of employment by industry. Not every layoff is part of a fundamental restructuring of activity in the area. Moreover, permanent job losses in one segment of an industry can be offset by gains in other segments. Thus, the net change in
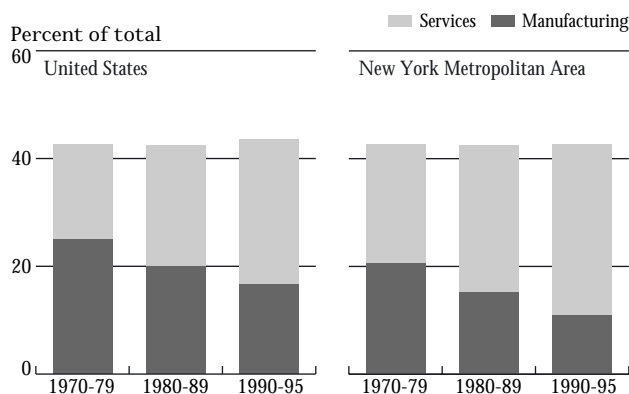
levels and share of area employment by industry provides a more in-depth look at restructuring. This measure has one drawback: it does not capture the churning of jobs at firms within an industry, a significant factor in a relatively high-turnover industry such as retail trade. The measure does, however, focus on performance by industry in a more detailed way than the other measures we have considered.

Since the early 1970s, the metropolitan area has experienced a steady erosion of employment in manufacturing and a corresponding rise in service industry employment (Chart 4). Today, these two sectors together account for about 43 percent of metropolitan area employment, a share that has remained relatively constant since the 1970s. Manufacturing, however, now comprises about 12 percent of that share—compared with more than 20 percent in the 1970s—while the service sector accounts for a little more than 30 percent—compared with about 20 percent in the 1960s. During the past decade, job losses in manufacturing have amounted to more than 500,000 jobs, or more than half of all net job declines in the area.[9]

The transition to service-oriented jobs is occurring nationwide. The shift within the region, however, has been somewhat more severe both in terms of the decline in manufacturing and the rise in services. In New York City, the manufacturing sector has shrunk to less than 10 percent of total employment, while service jobs have risen to more

Chart 4

A Shift from Manufacturing to Services

Percent of total   Services ■ Manufacturing
60
United States   New York Metropolitan Area

40

20

0
1970-79 1980-89 1990-95   1970-79 1980-89 1990-95

Source: U.S. Department of Labor.

Note: Data for metropolitan area services are only available from 1975 to the present.

than 35 percent of total employment. (See Appendix A for a comparison of manufacturing and services employment.) Restructuring in the city now largely involves job shifting among nonmanufacturing industries.[10]

A comparison of jobs gained in services with jobs lost in manufacturing industries underscores the nature of the job opportunities created and eliminated over the past decade (Table 3). In the terminology of regional economics, both sectors have large "export-oriented" segments, meaning that many of the jobs and much of the income in the sector result from activity to meet demand outside of the metropolitan area market. For example, significant segments of the legal, engineering and management, educational, and business service industries are export-oriented. Moreover, roughly a third of the workers in health service industries—including workers in hospitals, doctors' offices, and health insurance providers—cater to a market beyond the metropolitan area (Lowenstein 1995). Of course, many segments of the health sector and the social service sector also meet demands within the metropolitan area.

In the New York metropolitan area, manufacturing losses have been largely concentrated in durable goods industries, including craft and production worker occupations. Job gains in services have spanned a variety of largely white-collar occupations, particularly in the managerial and administrative fields. Significantly, the majority of new service jobs are not as low paying as many people believe; with the exception of social service industries, the new jobs

pay within 10 to 15 percent of the region's average.[11]

RESTRUCTURING BEYOND SERVICES AND MANUFACTURING

More than half the labor force of the New York metropolitan area works outside of the manufacturing and service sectors, a share that has remained relatively constant for several decades. These workers are engaged in construction, trade, transportation and public utilities, FIRE, communications, and government. Although these industries have not typically been affected by restructuring, they underwent a number of large downsizings in the 1990s. The appearance of severe layoffs in these sectors has heightened concern in the metropolitan area about the breadth of restructuring and the effects on the local economy.

Despite the spread of restructuring, the share of employment accounted for by any single industry within nonmanufacturing and nonservice industries did not change significantly over the past decade (Table 4). Sizable job losses, however, did weaken area employment. Cumulative job losses during the 1989-92 downturn in the area's FIRE, transportation, communications, public utilities, and government sectors reached almost 150,000, about two-thirds of the job losses recorded in manufacturing (Chart 5). More troublesome, the job losses appear to be permanent—only the trade and the transportation, communications, and public utilities sectors have participated

Table 3
THE CHANGING COMPOSITION OF REGIONAL EMPLOYMENT IN SELECT INDUSTRIES, 1985-95

Manufacturing Industry	Job Losses (Thousands)	Service Industry	Job Gains (Thousands)
Chemicals	25.7	Health services	303.0
Fabricated metals	35.9	Social services	138.1
Industrial machinery	79.7	Business services	71.0
Electrical machinery	119.2	Educational services	47.5
Transportation equipment	29.1	Legal services	26.0
		Engineering and management	17.0

Source: U.S. Department of Labor.

Note: The table reports combined data for New York and New Jersey.

Table 4
EMPLOYMENT IN THE NEW YORK METROPOLITAN AREA: NONMANUFACTURING AND NONSERVICE INDUSTRIES
Percent of Total Employment

Industry	New York Metropolitan Area			United States		
	1985	1989	1995	1985	1989	1995
Construction	4.1	4.0	3.1	5.5	5.4	5.9
Trade	22.2	21.8	21.1	25.1	25.1	24.8
FIRE	10.9	11.5	11.1	6.4	6.5	6.1
Transportation, communications, and public utilities	6.7	6.3	6.6	5.7	5.5	5.5
Government	15.9	16.1	16.2	17.8	17.4	17.3
TOTAL	59.8	59.7	58.1	60.5	59.9	58.6

Source: U.S. Department of Labor.

Note: FIRE=finance, insurance, and real estate.

in the recovery of employment since 1992. Moreover, government job losses continued well into the recovery. Employment stagnation in the FIRE sector is also cause for concern; these export-oriented industries generate a significant amount of income for the region.

In New York City, only the brokerage component of the FIRE sector showed significant resilience in terms of job recovery. Employment in the city's banking and insurance industries declined relative to nationwide employment in these industries, and some of the activity in the brokerage sector shifted to New Jersey. Together, job losses in three sectors—FIRE; transportation, communications, and public utilities; and government—exceeded job losses in manufacturing. The public sector experienced major losses, on the order of 40,000 jobs, when the city government was downsized in response to structural budget problems. Government job losses persisted after the recovery began, while employment levels in the other sectors essentially stagnated. (See Appendix B for a comparison of job gains and losses in New York and New Jersey.)

A review of national job trends suggests that downsizings in several of these sectors paralleled nationwide trends. Each industry's location quotient, or the ratio of its share of employment in the New York metropolitan

Industry	1985	1989	1995
Trade	.88	.86	.85
FIRE	1.66	1.75	1.81
Transportation, communications, and public utilities	1.17	1.15	1.17
Government	.88	.92	.92
Manufacturing	.79	.74	.67
Services	1.16	1.14	1.14

Source: U.S. Department of Labor

Notes: Location quotient is defined as the ratio of an industry's share of employment in the region to its share of employment in the nation. FIRE=finance, insurance, and real estate.

area to its share of employment in the nation, reveals similar declines in these industries at the national level. Declining quotients, which suggest that the industry's local job performance is falling behind its national performance, are observed only in manufacturing and trade (Table 5). For other nonmanufacturing and nonservice industries, the quotients are either stable or rising modestly.

THE OVERALL IMPACT OF RESTRUCTURING ON JOB GROWTH

Job growth in virtually all sectors of the metropolitan economy declined during the downturn of the early 1990s, and only the services and trade sectors have made any significant contribution to job growth since the 1992 recovery (Chart 6). The failure of most sectors in the area to bounce back from the downturn suggests that the downsizings accompanying the restructuring of the metropolitan economy have contributed to sluggish job growth. The biggest negative effect on the metropolitan area's overall job growth came from job losses in the manufacturing and government sectors. Together, the two sectors have lowered job growth by an average of 0.5 percentage point annually in each of the last three years. The drag on growth from the downsizings in the government sector began in 1991, with the largest negative contribution occurring in 1995, when declines took more than 0.3 percentage point off growth.

The performance of two other key metropolitan area sectors—transportation, communications, and public utilities and FIRE—has been mixed. The modest recovery
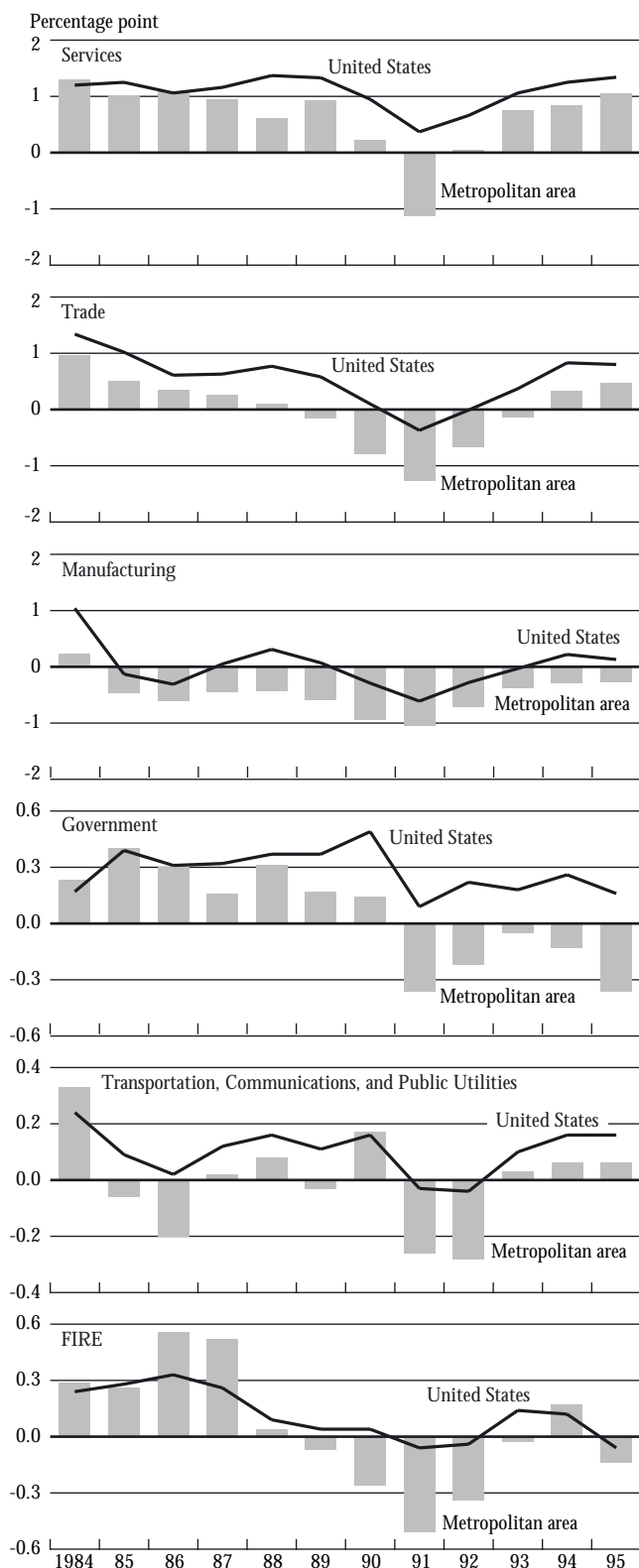
Chart 5

Net Employment Change in the New York Metropolitan Area, 1989-95
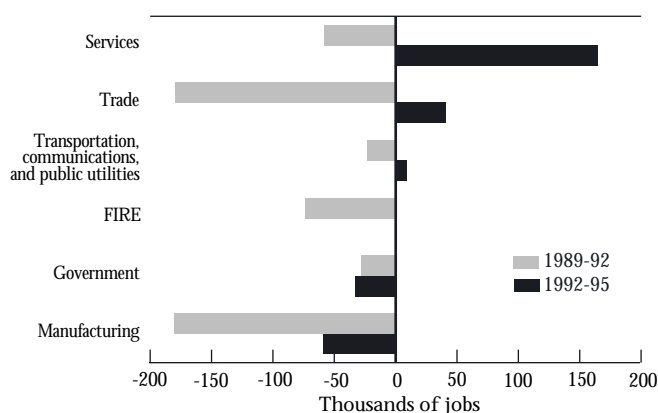
Source: U.S. Department of Labor.

Note: FIRE=finance, insurance, and real estate.

Chart 6

Contribution to Job Growth, Select Industries

Percentage point

Services
United States
Metropolitan area

Trade
United States
Metropolitan area

Manufacturing
United States
Metropolitan area

Government
United States
Metropolitan area

Transportation, Communications, and Public Utilities
United States
Metropolitan area

FIRE
United States
Metropolitan area

1984 85 86 87 88 89 90 91 92 93 94 95

Source: U.S. Department of Labor.

Note: FIRE=finance, insurance, and real estate.

in the transportation and public utilities sector from the relatively deep employment declines of 1991-92 resulted in a small positive impact on area job growth; job losses in the FIRE sector during 1990-92 had a significant negative impact on overall area growth; job declines shaved almost 0.6 percentage point off area growth in 1991, and 0.3 percentage point in 1992. Since 1992, the FIRE sector's contribution to job growth has fluctuated in a narrow range of plus or minus 0.2 percentage point.

The area's performance did diverge from that of the nation in the manufacturing and government sectors: Manufacturing nationwide recovered from the downturn of the early 1990s and contributed about 0.2 percentage point to growth in both 1994 and 1995. The government sector made consistently positive contributions of about 0.3 percentage point annually to the national recovery. Neither sector, however, has made a positive contribution to growth in the metropolitan area since 1991.

Although several sectors in the metropolitan area have recovered only sluggishly, an examination of nationwide growth rates suggests that the area's experiences are close to the norm. The trade and service sectors in the metropolitan area, like their national counterparts, contributed positively to job growth in 1994 and 1995. Despite the relative weakness of the FIRE sector in the New York metropolitan area for most of the 1990s, its contribution to area growth during the recovery has largely paralleled its contribution to national growth. The job losses that ballooned during the 1989-92 downturn, and thus affected the region much more than the nation, have largely eased, and the sector's recent performance in the metropolitan area is now moving in line with its performance in the nation as a whole. A look at the transportation, communications, and public utilities sector presents a similar picture: the 1991-92 gap between the area's growth contribution and the nation's has narrowed.

CONCLUSION

The rise in the number of permanently displaced workers in the metropolitan area during the 1990s reflects both the sharp downturn in economic activity and some pickup in the pace of industrial restructuring. Permanent displace-

ments as a share of the work force roughly doubled from their rates of the 1980s, reaching an annual rate of about 1.5 percent. Although the long-term decline in manufacturing jobs remains at the center of the area's restructuring, downsizings and employment stagnation have also hit a number of the area's nonmanufacturing sectors, including FIRE, government, and transportation, communications, and public utilities. These local job trends, however, do not necessarily reflect a fundamental weakness in the regional economy because several of the trends also occurred nationwide. Even within the manufacturing sector, nationwide trends in health care provision and defense procurement have greatly affected the region.

Roughly 20 percent of the area's work force is employed in industries experiencing a rising risk of displacement. The downsizings have hindered the area's recovery from the 1989-92 downturn and have contributed to a relatively sharp decline in the area's labor force. Furthermore, research has shown that a significant recovery of labor force and employment growth from major job losses in an area can take several years. Nevertheless, despite the adverse consequences of industrial restructuring, policies that would slow or prevent the restructuring of area industries would likely fail to achieve their objectives. Industrial restructuring is essential to any dynamic market economy, and the restructured industries are more likely to prosper by building on an area's strengths. Policies that help smooth the transition to the new structure of jobs for both displaced workers and new entrants to the work force could be an effective complement to general growth policies. Training, in particular, is likely to improve the adaptability of the area's work force to structural change.

Policies that seek to limit the process of industrial restructuring in the area might also be ineffective at this point—some evidence suggests that restructuring of area industries is slowing. Government job losses have slowed and few major downsizings have been announced to date in 1996. The erosion of manufacturing will continue, but slow growth rather than downsizings is likely to characterize employment trends in the FIRE sector. Moreover, the region may benefit from one goal of restructuring—to improve the efficiency and profitability of local industries.

Manufacturing and Services Employment
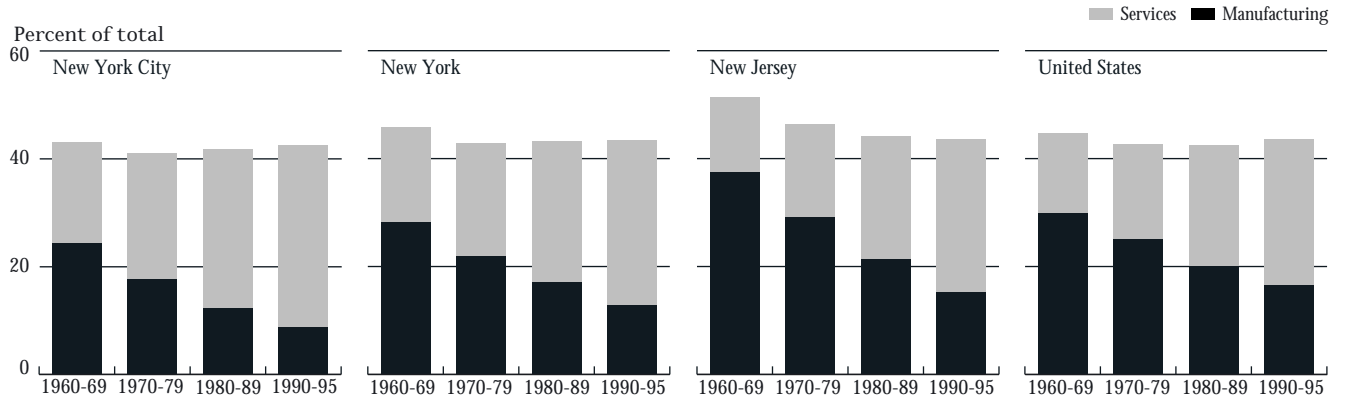
Source: U.S. Department of Labor.

Chart B1

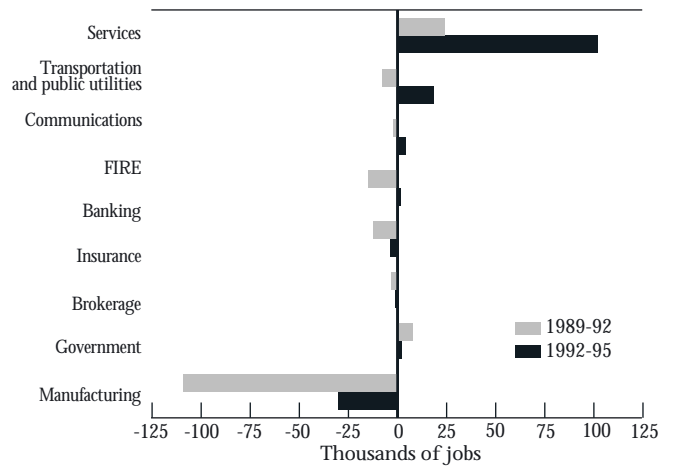Net Employment Change in New York City, 1989-95
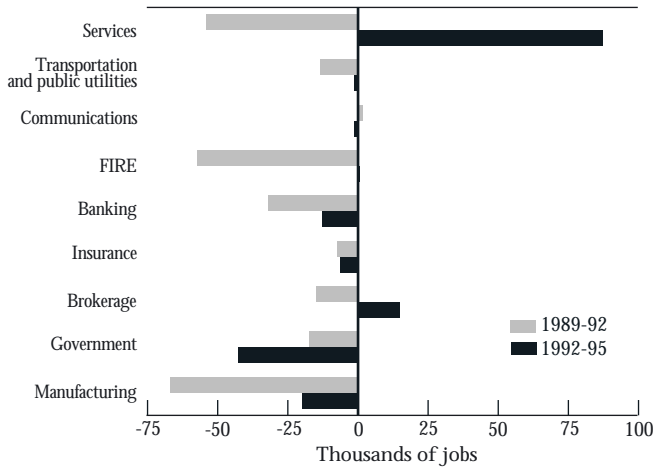
Source: U.S. Department of Labor.

Notes: FIRE=finance, insurance, and real estate. Banking encompasses depository and nondepository institutions.
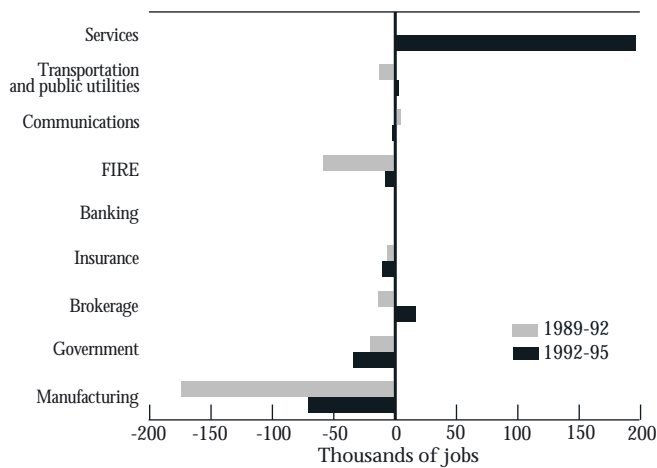
Chart B3

Net Employment Change in New Jersey, 1989-95

Source: U.S. Department of Labor.

Notes: FIRE=finance, insurance, and real estate. Banking is limited to depository institutions.

Chart B2

Net Employment Change in New York State, 1989-95

Source: U.S. Department of Labor.

Notes: FIRE=finance, insurance, and real estate. Banking encompasses depository and nondepository institutions.

ENDNOTES

1. The availability of data determines the definition of the New York metropolitan area used in the different sections of this paper. In general, the New York metropolitan area is defined as New York City; Long Island; the counties north of New York City, including Westchester, Rockland, Dutchess and Putnam; and the northern New Jersey counties of Bergen, Passaic, Hudson, Essex, Somerset, Hunterdon, Middlesex, Monmouth, and Ocean. Where necessary, the analysis uses data covering all of New York State and New Jersey.

2. Unexpected employment developments, or "shocks," were found to be local in nature in the first half of the 1990s. National forces have played an important role in employment changes for the past several years. See McCarthy and Steindel (1997) and Kuttner and Sbordone (1997).

3. Data for displaced workers are not reported at the metropolitan-area level. The survey asks respondents to report job displacements over the past two years. The data are reported for five-year periods before 1991 and for the three-year period 1991-93.

4. Evidence that manufacturing firms tend to use recessions to conduct major downsizings is found in Davis, Haltiwanger, and Schuh (1996).

5. The layoff announcement data were tabulated by the firm Challenger, Gray, and Christmas, which tracks employment developments nationwide. To arrive at the metropolitan area layoff estimates, we used information on the location of the headquarters of firms conducting layoffs. Our definition of the metropolitan area here includes New York City, Long Island, the counties north of New York City, and all the counties in the northern half of New Jersey.

6. This finding is consistent with other evidence that state and local unemployment rates have a tendency to move toward a relatively stable structure over time.

7. The job loser category comes closest to the conventional notion of a displaced worker, although the category makes no distinction regarding the age or job tenure of the worker.

8. This pattern of labor market adjustment in the metropolitan area is captured by the model developed in Blanchard and Katz (1992).

9. Although recent job losses in manufacturing have been heavy, they are not without precedent; more than 600,000 jobs in the area were lost in the sharp economic decline of 1969-75.

10. The intraregional variation of job changes in the New York metropolitan area is discussed in Hughes and Seneca (1996).

11. We base the estimation of service wages on tabulations from the U.S. Bureau of the Census' Current Population Survey, March 1995.

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Potential Employment Effects of the Restructuring of Retail Banking

Lawrence J. Radecki*

The largest U.S. commercial banks are currently in the process of restructuring their retail operations. A stagnant deposit base and intense competition in the marketplace for financial services have made the overhead costs of an extensive branch network increasingly onerous. At the same time, advances in electronic communications technology are making low-cost remote delivery of banking services more of a reality. In response, banks are taking several important steps to restructure their branch systems. This presentation will focus on two of these steps: the substitution of supermarket (also called in-store) branches for traditional offices and the expansion of telephone banking through twenty-four-hour phone centers.[1]

SUPERMARKET BRANCHES

The supermarket branch represents a new, compact design for an office that is used to serve a bank's household and small business customers. It is a full-service site occupying 400 to 600 square feet of leased space, usually located within a giant supermarket of 50,000 or more square feet. For the convenience of bank customers, the in-store branch is open seven days a week and most evenings, like the supermarket.

The installation cost of a supermarket branch is only a fraction of that for a traditional stand-alone branch.

Moreover, despite a supermarket branch's longer hours, it is only half as costly to operate as a traditional office. Much of the savings in operating expenses is the product of lower staffing because in-store branches typically use six full-time-equivalent employees, compared with twelve at a conventional branch.

According to industry analysts, there will soon be 4,000 supermarket branches out of a total of 50,000 U.S. commercial bank branch offices. Nationally, several large banks have announced plans to open hundreds more during the next two to three years. In the Second District, a number of banks have likewise opened in-store branches and others have announced plans to open more. The cost savings and other advantages of using supermarket branches are just as compelling in the Northeast as elsewhere. In much of the Northeast, however, a shift to the new branch design is taking place more slowly than in other parts of the country. This is explained in part by the Northeast's smaller proportion of the super-size stores that banks desire for their supermarket branches. However, as the chains add more superstores in new or existing locations, we expect banks in the region to adopt in-store locations to the same extent as banks in other regions.

By reducing the total number of branches in their networks and substituting supermarket branches for traditional branches, banks hope to reduce substantially the noninterest expenses of providing retail services. Consider the major restructuring move announced by Wells Fargo, one of the largest U.S. banks. The bank has indicated that

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in California it will be remaking its branch system from about 1,000 traditional branches to roughly 250 traditional branches and 250 supermarket branches (*American Banker* 1996).

Any reconfiguration of a branch network along these dimensions could have a significant effect on employment in the retail division. Assuming that a bank typically staffs each traditional branch with twelve full-time-equivalent employees and each supermarket branch with six, branch employment could fall by half as a result of a comparable restructuring.

PHONE CENTERS

Besides adopting a new design for their branches, banks are expanding their use of phone centers, which are consolidated contact points through which retail customers can access the bank. To make service requests, customers contact the bank by using an 800 number, regardless of which branch they typically visit. (In fact, several banks no longer make the telephone numbers of their branches available to customers; calls must go to the phone center.) Calls first reach an automated response system, but a customer can have a call routed to a service representative. Most large banks keep the phone centers open twenty-four hours a day; others keep them open well beyond conventional branch hours. In addition to being a service department for existing customers, phone centers are now being used to take loan applications and to open new accounts.[2] Banks are also encouraging customers to deal entirely by phone and by mail to open a checking account or to establish a home equity line of credit.

Phone centers replicate many of the services obtained at branches. The deployment of phone centers allows banks to both reduce the number of branches in their office networks and use more of the reduced-staff supermarket branches.

Phone center usage is growing rapidly among the largest retail banks. Fleet Financial Group's call volume has risen from 6 million calls in 1991 to 30 million in 1995, excluding customers gained through mergers, and 57 million including them (Fleet Financial Group 1996). As a result of increasing call volumes, phone center staff repre-

sent a rising proportion of total employment in a bank's retail operations. For example, KeyCorp, which operates 1,300 branches in fourteen northern states, currently runs three phone centers, which received 39 million calls in 1995. KeyCorp employs a staff of 609 full-time equivalents at its phone centers. Assuming again that staffing at traditional branches is typically twelve full-time-equivalent employees, the three phone centers together have a labor force equivalent to fifty-one branches.[3]

In addition, First Union Corporation, also a super-regional bank, was operating, as of year-end 1995, 1,959 branches along the East Coast in twelve states and the District of Columbia. To serve its 11 million customers, it employs a staff of 44,536 and currently operates five phone centers. Again using the earlier assumption, its phone centers have a staff of 1,300 full-time-equivalent employees, comparable to the combined employment of 110 branches (First Union Corporation 1996; Boehm 1996).

IMPACT ON BANK EMPLOYMENT

Both the permanent reduction of traditional branch offices and the substitution of scaled-down supermarket branches can be expected to directly reduce employment in a bank's geographical service area. To some extent, the reduction of branch staff will be offset by staff increases at phone centers. However, the efficiency gains achieved by having customers use the manned and automated segments of the phone center instead of branch offices for service requests imply a net reduction in the staff used in retail operations. Moreover, the development of highly functional, always available telephone services makes the use of automated teller machines (ATMs) and home banking packages more attractive in the eyes of the customer.

A second effect of transferring work performed at the branches to the phone centers is to concentrate a bank's employment geographically. Rather than have its employees located at its branches and spread over its service area, a bank will concentrate its employees at a single phone center in the case of a regional bank and at two or more sites in the case of a large regional or super-regional bank.[4]

Employment across the country and in New York State may be adversely affected by the restructuring of

banks' retail operations. If all 166 New York State commercial banks reduced their branch offices by half and used a combination of traditional and in-store branches in equal proportions, employment in retail operations could fall by half. Furthermore, super-regional banks appear to deploy about half of their total staff on the retail side. As a rough estimate, as much as one-tenth of total commercial bank employment of 208,000 (as of year-end 1995) could be reduced as a consequence (Federal Deposit Insurance Corporation 1995).

Moreover, the economy of the New York City metropolitan area would seem to be more affected than New York State as a whole. Positions created at phone centers partially offset positions eliminated at branch offices. However, phone centers are less likely to be located in the New York metropolitan area than in lower cost areas with a sufficiently large labor pool to staff a twenty-four-hour center of 200 or more employees adequately.[5] In addition, the increased use of shared electronic networks for ATMs and home banking through a personal computer and a modem would also tend to shift employment out of branch offices to centralized locations that can be outside a bank's service area.

ENDNOTES

1. Orlow, Radecki, and Wenninger (1996) discuss in detail the movement to electronic delivery channels for retail banking services and how it is integrated strategically with the introduction of supermarket branches and phone centers.

2. Phone centers are being used in two other ways. First, phone center representatives are making outbound sales calls as well as taking incoming calls. Second, phone centers serve internally as help desks for branch personnel.

3. As of year-end 1995, KeyCorp's total employment was 29,563. Employment at the phone center now represents 2 percent of total employment (KeyCorp 1996; Baruah 1996).

4. The redesign of the branch network is necessitating changes in the ways that banks serve their small business customers. In lending, less of the work is done in the branch office. It is being transferred to regional, statewide, or bankwide lending and servicing offices, which are increasingly using scoring methods to reach credit decisions. Small business customers are also being given telephone support to reduce the frequency of branch visits.

5. The present locations of large banks' phone centers seem to be partly a legacy of mergers and acquisitions.

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Business Services and the Economic Performance of the New York Metropolitan Region

Thierry Noyelle*

As correctly noted by Matthew Drennan in his paper for this conference, the nature of the transformation that has occurred in the New York metropolitan region since 1989 is rather mixed. Although the region has regained only half of the 625,000 jobs it lost during the 1989-92 period, aggregate earnings for the region, in real terms, are higher today than they were in 1989. This discrepancy does indicate steady gains in overall productivity for the metropolitan region as a result of both a continuing change in industry mix (from lower-productivity to higher-productivity industries) and productivity gains within individual industries (resulting from a relative shift from lower skilled to higher skilled work). In addition, data on personal income per capita show a steady long-term gain for the region. This finding reflects the fact that, in addition to achieving steadily growing earnings, the metropolitan area has done rather well in capturing its share of all transfer payments, dividends, interest, and rents that together represent nearly 40 percent of all U.S. income.[1] In short, although the job count may be down, the metropolitan region has certainly not gotten any poorer as a result.

As is also suggested by Drennan (in his Table 2), the sectoral shift that has been under way since the 1960s is a relative shift away from goods production (and ancillary transportation and distribution services) for the export sector toward the production of export-oriented producer services (financial, accounting, legal, engineering, and so forth) and export-oriented medical and educational services. Furthermore, it is this shift that has been largely responsible for the earnings gains noted earlier, in part because most of these service industries pay high salaries and have been shedding relatively low-skilled jobs in favor of higher skilled ones through either relocation or technology.

In the medium term, the critical strategic issue for the metropolitan region is whether these export-oriented services will continue to provide the basis for future growth of the region—if not job growth, at least earnings growth—or whether their vitality might come under threat.

BUSINESS SERVICES IN THE WORLD ECONOMY

I have been asked to comment on the possible future role of business services in the metropolitan economy and will try to do that in light of some work I completed recently for the Organization for Economic Cooperation and Development (OECD).[2]

In 1995, the United States had a surplus of roughly $70 billion for trade in services (compared with a $175 billion deficit for trade in goods). Total service exports were almost $200 billion, of which producer ser-

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vices—as defined in the Drennan paper—represented nearly $35 billion.[3] How big is New York's share of U.S. service exports? To the best of my knowledge, no one knows for sure, but a 20 to 25 percent share of all U.S. service exports is probably a reasonable estimate. In terms of producer services alone, New York's share is likely to be even higher.

Of course, this is only part of the picture. As we know, export of services—including business services—often occurs through offices established in export markets. Hence, transactions initiated in a foreign office may lead to complementary transactions initiated in the home office, with neither ever being counted in the service trade balance.

The question for the future is, What is the likely resilience of New York's producer service firms in the face of competition, not only from firms located elsewhere in the United States but also from firms located abroad?

New York Business Service Firms

In my OECD study, I was asked to look at both the relative strength of the business service industries in various OECD countries and the possible influence of the regulatory environment of both home and host countries on the financial performance of firms. In general, the analysis confirmed the powerful presence of U.S. firms in fields ranging from accounting and legal services to engineering and architectural services—fields in which New York firms are often also at the top of the U.S. rankings.

In the study, I was able to put together firm-level data files for both the accounting and legal industries for the United States and a number of the largest European countries (the United Kingdom, Germany, France, Italy, and the Netherlands) and examine in more detail the nature of the comparative advantage of U.S. firms. By just about any measure (income per partner, income per professional staff, or income per total staff), U.S. firms tend to be more productive than those based anywhere else in Europe. Although the productivity of U.S. firms' European offices may be somewhat lower than that of the same firms' U.S. offices, it is still typically higher than the productivity of the offices of European competitors. The data show that U.S. firms derive some of that advantage from a more

favorable mix of skilled labor (a higher ratio of nonpartner staff to partners than in European firms). In addition, the data strongly suggest that U.S. firms are typically better at shifting their business mix away from lower margin services (such as audit) toward higher margin services (such as consulting), building up a competitive advantage in the form of unique expertise that they use to strengthen their position in foreign markets. This, the study suggests, is partly a reflection of both a more mature and a more competitive U.S. market.

Another source of competitive advantage for U.S. firms is the size of their networks of foreign offices compared with those of their foreign competitors. Typically, U.S. firms have much larger networks. Although the size of networks alone may be a source of diseconomies of scale—because the administrative costs of managing a multiple-office structure are higher than those of managing a single-office structure, everything else being held constant—the size of networks is also a source of significant economies of scope. With a presence in a larger number of countries, U.S. firms can offer clients types of multinational business transactions that others cannot.

In general, the OECD study suggested that the U.S. regulatory environment—typically more mature (that is, more developed) and more competitive—was a significant factor in keeping U.S. firms at the cutting edge of their industry. Of course, the study did not suggest that all was quiet on the competition front. Insofar as I was able to separate out some of my data for New York firms, the study did suggest a significant link between a number of business services and financial sector transactions, showing that some of the subsectors (such as legal services) remain significantly affected by what happens on Wall Street. However, as several papers presented at this conference suggest, employment retrenchment in the financial sector in New York does not necessarily reflect a decline in New York's role as a place where financial transactions are engineered. Whether New York's role as the world's dominant financial center is likely to be challenged by the creation of the Euro remains to be seen. An equally convincing case for a strong or a weak Euro can be made at this particular point in time. In the long run, the strength of the Euro may be

partly a function of the strength of the European economies, which at the moment are in a bit of the doldrums.

Another interesting point that was revealed by my study is the increasing competitive pressure of accounting firms on law firms. Although the United States has tended to keep a strong separation between law and accounting, that is not the case elsewhere. Hence, in Western Europe, Eastern Europe, and Asia, the Big 6 accounting firms are already often the largest law firms and are able to provide their lawyers with a formidable comparative advantage (in the form of lawyers posted in many different locations) not available to traditional law partnerships whose networks of foreign offices are typically far smaller. In short, significant changes in the New York legal industries are quite possible in the not-so-distant future.

In sum, I would be willing to predict that producer services will continue to contribute positively to employment and, even more so, to earnings growth in the New York metropolitan region in the years ahead—assuming there is no cyclical downturn looming on the horizon.

ENDNOTES

1. This fact is confirmed by unpublished results of work in progress by Thomas Stanback and Thierry Noyelle related to the authors' updating of their *Economic Transformation of American Cities* (1983).

2. See Noyelle (1995).

3. All figures are from the U.S. Department of Commerce, as cited in Coalition of Service Industries (1996).

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The Securities Industry and the New York–New Jersey Region

*Richard Cantor**

The securities industry in the New York–New Jersey region is currently enjoying strong growth in employment and salaries. The industry is particularly important to the region because it is concentrated locally and pays high wages. Although vulnerable to stock and bond market fluctuations, the industry has positive long-term prospects. The benefits from future growth, however, will likely flow predominantly to highly skilled workers as rapid technological change continues to widen existing income differentials.

RECENT DEVELOPMENTS IN THE REGION

Employment and salaries in the region's securities industry have recovered since coming off their previous peaks in the late 1980s. Chart 1 presents data on employment (top panel) and real salaries (bottom panel) in the securities industry for both New York State and New Jersey. Securities industry employment peaked at more than 180,000 jobs in 1987, then dropped to 155,000 at its trough in 1991. Since then, employment growth has increased steadily and may reach 190,000 jobs by year-end 1996.

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Annual salaries have recovered even more strongly: after rising above $18 billion (1995 dollars) in 1988, they dropped to $16 billion in 1989-91, then surged above $22 billion in

Chart 1

Securities Industry Employment and Salaries in the New York–New Jersey Region
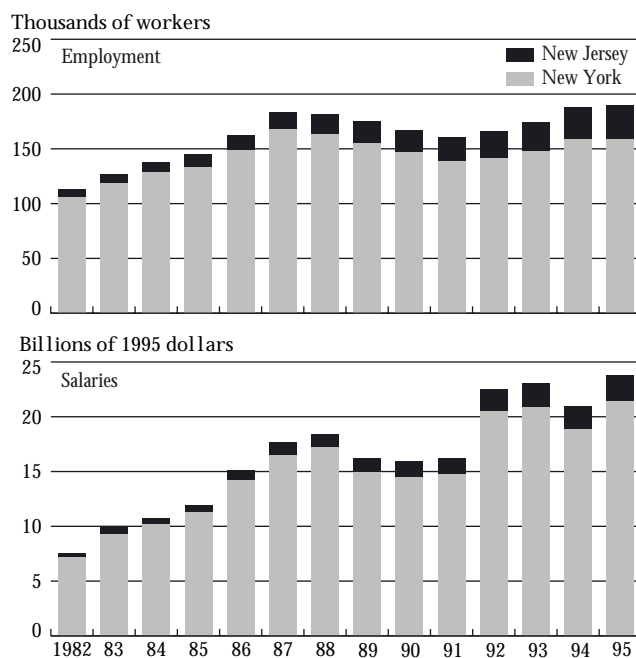
Sources: New York State Bureau of Labor Statistics; New Jersey Bureau of Labor Statistics.

1992. Between 1993 and 1995, salaries averaged more than $21 billion and are expected to be strong again in 1996.

THE INDUSTRY'S IMPORTANCE IN THE REGION

The economic impact of the securities industry is greater than suggested by its job numbers alone. First, the industry is heavily concentrated within the region. While it provides about 2.5 percent of all private sector jobs in New York State, about 90 percent of these jobs are in New York City, where the industry accounts for 5.3 percent of all private sector jobs. In New Jersey, the securities industry provides only 0.9 percent of private sector jobs, but the state's share of securities industry employment is growing. The industry provides a very significant share of the region's private salaries, 7.5 percent in New York State and 1.9 percent in New Jersey. In addition, the industry's impact extends into other sectors of the economy through the demand for ancillary services. For the past several years, emplo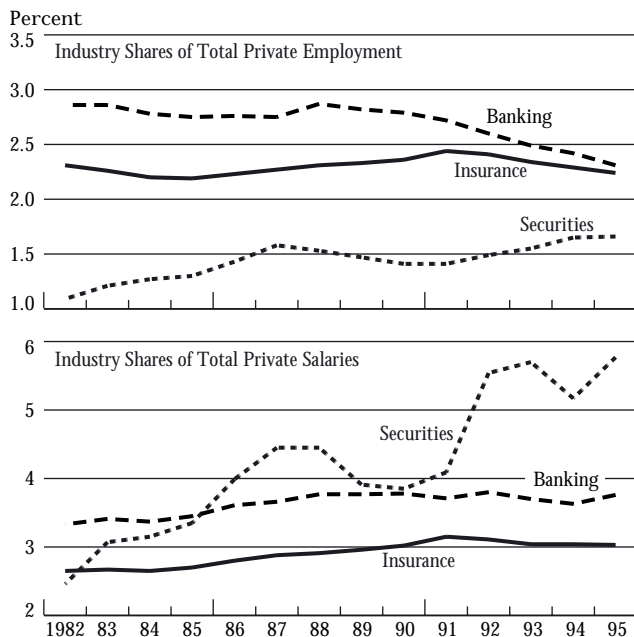yment and salaries have been moving out of New York into New Jersey, reflecting the gradual shift of back-office jobs from the higher cost to the lower cost state.

The recent performance of the region's securities industry contrasts sharply with the performance of the financial sector as a whole (Chart 2). Over the past fifteen years, the shares of regional employment held by the banking and insurance industries have been shrinking, while the share of the securities industry has been rising. An even greater difference, however, is evident in the shares of private salaries held by the three industries. The banking and insurance shares have been relatively flat, while the securities share has been rising sharply.

Chart 3 provides another perspective on the importance of the securities industry to the region's broader economy. The chart depicts the annual growth in total private compensation and salaries for all workers in New York State and for employees of the securities industry subset of the larger group. The two series appear to be contemporaneously correlated, suggesting that increases in salaries in the securities industry cause increases in income statewide.

TRENDS IN THE SECURITIES INDUSTRY

Over the past fifteen years, the national securities industry has, on average, grown faster than other industries (Chart 4), and this trend is likely to continue. Because of advances in

Chart 2

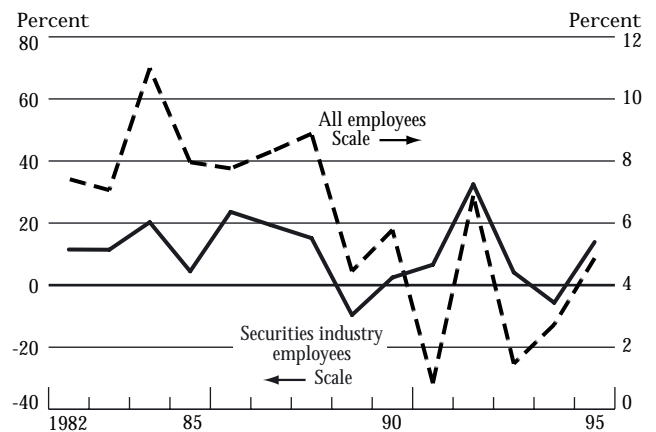**Relative Importance of the Banking, Insurance, and Securities Industries in the New York–New Jersey Region**

Sources: New York State Bureau of Labor Statistics; New Jersey Bureau of Labor Statistics.

Chart 3

Real Growth in New York State Labor Compensation
Annual Percentage Increase

Sources: Securities Industry Association; New York State Bureau of Labor Statistics; New Jersey Bureau of Labor Statistics.

information technology, however, the rewards from such growth are likely to be spread unevenly across the region. On the one hand, such advances clearly enhance the productivity of highly skilled workers, who are heavily concentrated in New York City. On the other hand, they reduce the need to house retail brokers and back-office operations nearby. As a result, the region's share of the nation's employment in the securities industry is likely to continue falling, while its share of salaries will probably keep rising (Chart 5). These developments represent an extreme example of a national phenomenon: technological change is reducing the demand for low-skilled workers while increasing the demand for high-skilled workers, resulting in a further widening of income differentials.

There is some hope that employment in the securities industry may be less volatile than in the past. Over the last twenty years, the industry has diversified its revenue sources away from stock sales commissions toward underwriting, trading, and mergers-and-acquisitions advising. Although we have seen little reduction in employment volatility to date, recent hiring patterns may help to lower employment volatility in the future. In contrast to the excessive hiring spree of the mid-1980s, hiring during the recent bull market has been conducted at a more moderate pace and consequently need not be sharply reversed when the bear market comes.
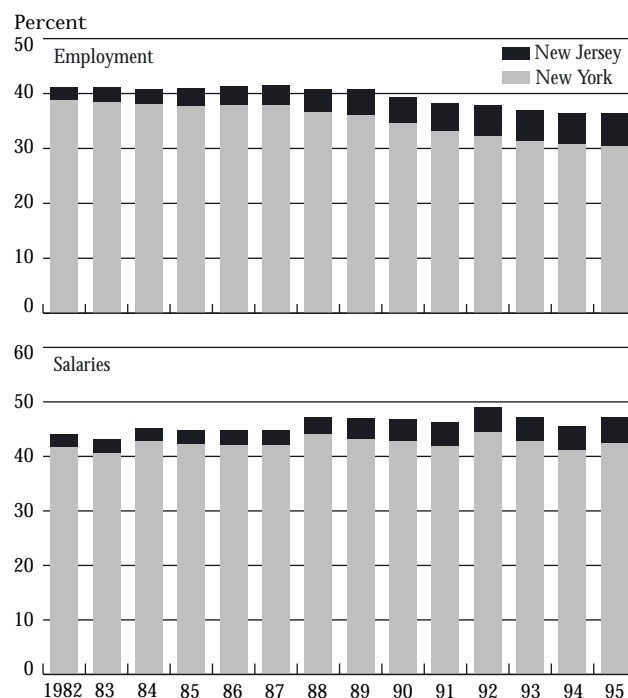
Chart 4

Securities Industry Share of National Private Employment and Salaries

Sources: New York State Bureau of Labor Statistics; New Jersey Bureau of Labor Statistics.

Chart 5

The New York–New Jersey Region's Share of the National Securities Industry

Sources: New York State Bureau of Labor Statistics; New Jersey Bureau of Labor Statistics.

The overall outlook for the region's securities industry appears rather healthy. Apart from the usual market vulnerabilities, few major problems will threaten the industry over the next few years. Most of the brokerage firms have already completed their planned back-office relocations, and the major exchanges appear committed to staying in the city. Future competitive challenges from foreign financial centers are likely to be delayed by local concerns, in particular by the upcoming monetary union in Europe and the financial system difficulties in Japan. Nevertheless, like the downside risks, the upside risks are limited: it is hard to imagine much further improvement in the health of the region's securities industry. Current market conditions are probably as good as they are going to get, and foreign firms preoccupied with matters at home are unlikely to expand their New York presence soon.

Technological Trends Affecting the Manufacturing Sector of New York City

Mitchell L. Moss*

For almost half a century, manufacturing has been declining in New York City. In 1950, there were about 1 million manufacturing jobs in New York City; in June 1994, there were 286,000 manufacturing jobs in the city. During the past two decades, from 1974 to 1994, manufacturing jobs in the city declined by more than 50 percent.

The loss of manufacturing jobs has created a widespread sense that manufacturing in New York City has no future, that the decline is unstoppable and "largely inevitable and foreordained" (Fitch 1993, p. 107). Even the optimistic report of the Commission on the Year 2000, *New York Ascendant*, predicted "an ongoing decline in manufacturing," though it recognized that high-value manufacturing could compete in New York City and that "the city should make every effort to support the manufacturing that can be successful here" (Commission on the Year 2000 1987, pp. 30-1).

Despite the substantial losses in manufacturing over the past two decades, manufacturing is still a vital—though diminished—part of New York City's economy. Within the context of a massive decline in manufacturing jobs, there has been a remarkable change in the structure and character of manufacturing activities in New York City that warrants serious attention by researchers and policymakers.

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The manufacturing sector—because it is dispersed throughout neighborhoods in all five boroughs and predominantly consists of small businesses—is not well situated to act as a strong presence in the city's most prominent civic and business organizations. As a result, leaders of the city's business community often inadvertently overlook the needs of manufacturing firms in their lobbying and advocacy activities.

The factors that have contributed to the outmigration of manufacturing firms from New York City are frequently cited, such as high taxes, inadequate rail infrastructure, union work rules, excessive regulation, unskilled labor, and crime. But remarkably little attention is given to the forces that have allowed manufacturing firms to remain, expand, and even start up in New York City. Recent technological and market trends have helped trigger the growth of small-scale manufacturing firms in New York City.

Three forces are crucial to the future of manufacturing in New York City:

First, technological change has undermined traditional economies of scale and is favoring small firms that adopt innovations and invest in advanced computer and telecommunications systems.

In the post–World War II environment, the advent of the mass assembly factory—which required large amounts of horizontal space—forced many firms to leave the loft factories of the Bronx, Brooklyn, and Manhattan for suburban sites in New Jersey, on Long Island, and in

other states. While many plants still produce large batches of standardized products, there has been a "shift of the production system in the direction of a complex of smaller, specialized plants focusing on small batch outputs and able to move rapidly in and out of particular market niches" (Scott and Storper 1990, p. 10). Productivity is no longer associated with the size of the production run.

Furthermore, computer-based systems used for the design, control, and tracking of production processes have often reduced the amount of physical space required for manufacturing operations, making it possible to locate manufacturing within the confines of urban factories and warehouse buildings.

The advantage of specialization is apparent to a Brooklyn-based manufacturer of specialty glass who said, "We are small and very versatile. We're able to turn a job around in two-and-a-half to three weeks. We're quicker basically because we handle smaller, more specialized jobs than most of our competitors." In the food industry, a firm that produces specialty hors d'oeuvres and desserts has acquired space once used for meat cutting, storage, and refrigeration in Manhattan's Fourteenth-Street meat market district. In both cases, specialty manufacturing firms that serve niche markets are occupying space that initially had been built for warehouse and production activities. The new productivity of small manufacturing firms and the availability of cheap industrial space have allowed specialty manufacturing to take hold in New York City.

Second, the need to respond to rapid changes in consumer preferences and the renewed emphasis on customer service have made geographic proximity an asset.

As fashions change more rapidly—in both men's and women's apparel—manufacturers who can respond quickly to fashion trends and deliver goods on short deadlines can have a competitive advantage. New York City has two distinct advantages for quick manufacturing: it provides designers with a constant flow of ideas and information about fashion trends that can be integrated into their products, and it provides retailers and manufacturers with access to manufacturers who can deliver goods without encountering lags stemming from uncertain transportation.

Designer ties are made by several firms in New York City because of the need to produce a new line of ties quickly to serve four different fashion seasons. While the use of electronic data interchange systems allows manufacturing firms outside New York City to be in close contact with New York–based designers and retailers, the easy access to local manufacturers allows designers to adapt their product lines quickly to changes in fashion and market preferences.

Third, the movement of service-based firms into manufacturing is increasing as New York City service sector firms— with an understanding of market trends and technical capability— expand their markets by moving into manufacturing activities.

Services have always been a source of manufacturing activity. In addition, the distinction between services and goods is increasingly blurred as firms give more attention to design and development than to production. While most economists have traditionally argued that manufacturing creates the need for services, others have pointed out that the "manufacturing economy and the service economy are intimately interdependent" (Scott and Paul 1989, p. 64).

In recent years, several New York City–based service firms have moved into manufacturing activities as they have acquired greater knowledge of consumer preferences or invested in new manufacturing equipment to expand their market, or as a way to ensure a high level of quality for the services that remain their core business.

In the food-processing sector, a firm that once was a distributor of spices gradually shifted its activities so that it now prepares and packages specialty foods in addition to distributing its products. A local retail chain of photo supply and processing stores recognized the advances in new imaging technology, acquired an industrial loft building, and equipped it with advanced imaging and computer equipment for the production of compact discs and other graphics.

In view of the importance of manufacturing to entry-level workers and to outer-borough economic activity, manufacturing should be treated as an important element of the economic development policies of New York City. Moreover, the influx of immigrants into New York City over the past twenty-five years has strengthened the city's manufacturing work force. Immigrants have brought

skills in design and production as well as entrepreneurial energy that have helped revitalize small-scale manufacturing activities through the city. There is a future for manufacturing high-value goods in New York, but that future is quite different from the city's industrial past. Skilled immigrants, the use of advanced technologies in production processes, and the capability of responding rapidly to global markets are valuable assets that can and should reinforce the manufacturing sector in New York City.

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Summary of Floor Discussion

Carol Rapaport and Joseph S. Tracy

Two discussions were held during the second session. The first one, which followed the two longer papers, addressed general questions on the nature of economic growth and more technical questions on the papers' specific points. Then, after the four industry presentations, the second discussion took up the reasons for optimism about the region's future along with some less sanguine views.

The first discussion began with Fran Reiter questioning whether the region should take comfort in following national trends, given that the region's demographics, immigration patterns, and natural resources differ from those of the nation. James Orr responded that by recognizing that downsizing was common across regions, we do not negate the need to develop appropriate local policies. Christopher Jones added that focusing on regional growth policies instead of sector policies was appropriate. He then pointed out that although the papers addressed the relationships between the region and the nation, the debate had ignored the relationships between the core center city and the outer ring of the region. Matthew Drennan answered that center cities specialize in producer services, while Mitchell Moss demonstrated that the various parts of the outer ring (Nassau and Suffolk Counties and northern New Jersey) have differing relationships with the core by referring to commuter patterns of the Metropolitan Transportation Authority and Long Island Rail Road.

The technical part of the first discussion began with a question by Howard Chernick on the treatment of tourism in the Drennan paper. Drennan and Chernick discussed the difficulty of quantifying the "New York experience," while Mitchell Moss added that the Drennan modeling does not allow for spillover into tourism. Next, James Gardner, commenting on James Orr's paper, drew a distinction between restructuring announcements made from the New York headquarters of a global company and announcements that actually affect the New York labor market.

After the shorter papers were presented, the second discussion turned to concerns about three impediments to economic growth in the region. First, the prospects for future job growth are unclear and are made weaker by regulatory and tax policies. Second, there is a growing disparity of economic opportunity within the city: although the well-educated continue to be successful, less prosperous individuals may follow jobs to other regions while those on welfare are likely to remain. Finally, overseas trade restrictions may impede growth for some industries.

Mitchell Moss began by taking an optimistic view of job prospects and emphasizing the national and international export opportunities provided by the electronic media, including the internet, MTV, financial services, and television talk shows. Matthew Drennan took a similar view, arguing that the "surplus labor" released by restructurings would work to the metropolitan region's long-run advantage. In support of this argument, he noted that employment for New York City (less city government) has

increased in 1995 and 1996. Christopher Jones added that downsized workers are starting their own small firms. Todd Clark suggested that market forces would resolve questions over which industries are winners and losers. He pointed out that the economy survived the transition from agriculture to manufacturing over 100 years ago. Pari Sabety followed by speaking on the importance of innovation for creating new systems of production.

Taking a less sanguine view than earlier speakers, Christopher Jones was concerned about various regulatory issues, including the adverse effects of the unincorporated business tax. However, Fran Reiter emphasized that both this tax and the commercial rent tax had been reduced. She went on to mention the revitalization of lower Manhattan as an example of the benefits of government and private sector cooperation.

As the discussion neared its close, Fran Reiter reit-erated her concern for individuals on the lower end of the economic spectrum, and indicated that the government cannot be the employer of last resort. According to Reiter, the NBC employee who does not become Brandon Tartikoff, but rather remains in the mail room for thirty years, is also important to the health of the economy. Rae Rosen then pointed out that comparative advantage suggests that lower Manhattan should be a good place to establish customer phone centers. Rosen explained that the failure of phone centers to locate here suggests that there are regulatory barriers to creating jobs at the lower end of the pay scale. There was widespread agreement among audience members that education remains the key to solving problems of inequality. Finally, Pari Sabety saw the need to focus on global competition. He felt that performance comparisons should be made between New York and Tokyo, Singapore, and export-oriented cities.

The Outlook for the Metropolitan Area

Dick Netzer*

Much of the discourse about regional and local economic development strategies in the United States over the past twenty-five years has looked like a search for general rules. Very few such rules have emerged, in part because—like all policy debates—there have been large inputs of ideology and self-interest, as well as professional inquiry, but in part because the appropriate strategies really are time- and place-specific. The strategies that are right depend on, first, the diagnosis of the economic problems and potential of that region or city at that time and, second, an assessment of just what it is that intervention can achieve in the circumstances of time and place. The authors of the other papers presented at this conference deal systematically and exhaustively with the fundamentals of the New York region's economic conditions and pros-

pects, but it is essential that this paper start with an exposition of the economic setting for the discussion of policy intervention that comprises the bulk of the paper.

THE NEW YORK ECONOMY IN THE LONG TERM: THE PAST

Twenty years ago, most observers projected continual decline in the New York economy, and almost any economic development strategy seemed pointless.[1] Indeed, in the mid-1970s—beginning *before* the fiscal crisis of 1975—the city and state governments of New York were making virtually no capital expenditures remotely related to economic development. Instead, capital budgets were devoted to subsidized housing, public office buildings, and current operating expenditures like "transit fare stabilization." The scattered tax incentive measures (in the midst of frequent tax increases) involved extremely deep subsidies, sometimes providing for recovery of more than 100 percent of the private investment from reductions in taxes that would have been payable in the absence of the new invest-

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ment, in addition to exemption from much of the taxes that should have been triggered by the investment.

The first major commercial building project after the slump—Donald Trump's conversion of the old Commodore Vanderbilt Hotel into the Grand Hyatt—involved incentives that virtually eliminated any risk for Trump and his partners. In contrast, less than ten years ago, projections were so optimistic that many critics of the city government saw no need for public subsidies or tax preferences to foster economic growth.[2] The critics often urged not only the elimination of subsidies but also increases in business property taxes. Although at the extremes of despair and optimism no economic development strategies may make sense, between those extremes the long-term economic prognosis does make considerable difference in prescribing economic development strategies.

It helps, in thinking about the economic future of the region, to briefly review the past. New York's economic history since the completion of the Erie Canal in 1825 has been one of almost continuous rise and fall of particular industries and sectors, with the sectors that were the wellsprings of the economy in one generation fading and being displaced by new sectors (see Hoover and Vernon [1959] for the classic statement of this idea). Through the 1940s, the result of the displacement process was net growth in the aggregates (employment being the only one that really was measured in those years): the increases in economic activity in the rising sectors, together with the multipliers in local consumer-serving activities, exceeded the declines in the shrinking sectors. In the 1950s, for the first time ever in a period of national economic prosperity there was almost no net growth in employment in New York City, as fairly strong growth in office activities was balanced by the onset of substantial losses in a wide range of manufacturing and other goods-handling activities. There was, however, considerable growth in the rest of the New York region.

The Vernon study of the economic future of the New York region, published in 1959 and 1960, projected more of the same through 1985, but with net growth in New York City from very strong office activities and a large consumer-sector multiplier and considerable growth in the rest of the region.[3] During the 1960s, that is exactly what happened: the decline in goods handling within the city continued apace; the securities industry grew rapidly, as did most producer services; both residential and office construction were strong; and public expenditure for capital projects, current operations, and transfer payments increased very rapidly indeed.[4] New York City, unlike nearly all other large central cities in the Frostbelt, had significant employment gains during the 1960s. The rest of the region did very well indeed, although manufacturing employment did not increase at the rate the Vernon study had forecast.

The 1969-77 slump is surprisingly poorly documented, perhaps because its dramatic qualities were overshadowed by the city government fiscal crisis of 1975. The trigger was a national recession combined with the end of a bull securities market. Employment in the securities industry contracted substantially, and was flat for most other financial services. New York's decline continued after the national economy turned around in 1970, in part because the long boom in office building construction had ended. In some ways, the early years of the slump were like the 1980s slump in the "oil-patch" Sun Belt cities: a sharp contraction in the main local specialization and the inevitable cyclical end of a construction boom as the vacancy rates rose. However, in New York City, the long decline in goods-handling activities continued, preventing any early recovery in total employment. Moreover, unlike the 1980s, there was no real lift from the tourism and entertainment industries (Broadway had its worst seasons in history in the mid-1970s).

The rest of the region began to recover after 1971, but—along with the city—was set back by a new and much more severe national recession in 1974. The suburban economies were also depressed by the lower level of personal income associated with Manhattan central business district jobs held by commuters living in the suburban counties.

As is well known (from the history of the fiscal crisis), state and local government expenditure continued to increase rapidly in the first half of the 1970s. That was mainly in the form of increased transfer and interest payments and higher levels of compensation (New York City

General Fund spending increased by close to one-third in real terms between fiscal years 1969 and 1976) but only small increases in employment. Indeed, the central city seemed to have run out of job-growth sectors, and few observers saw much prospect for trend reversals, *ever*. To some extent, the fiscal profligacy of the period between late 1971 and early 1975 can be attributed to this doomsday view: if the city, as a place, was doomed to continuous decline, why should the city government not do whatever it could to cushion the decline in the short run? (The answer, of course, is that the short run *had* to be very short—lenders could and did realize that the prospects for repayment of the short-term debt were becoming dim— and that the fiscal profligacy itself encouraged private-sector flight.)

After 1977, there was a reversal, and recovery, which started slowly but accelerated, until 1989. In essence, although goods-handling employment continued to decline in the central city, virtually all of the other 1969-77 trends were reversed. Within the city, the engines of growth were the financial services industries, other high-end producer services, the media industries, tourism (especially the increase in high-spending overseas visitors), health services, and a new construction boom. The rest of the region also did well from these same sources, but in addition there was the effect of the marked increase in defense spending that began in 1979; the New York region turns out to have been more dependent on defense procurement than most observers had noticed.

State and local government public expenditure trends were also reversed in the initial years of recovery, and there were numerous cuts in tax rates. The New York City General Fund expenditure actually declined in real terms (by about 30 percent) between fiscal years 1976 and 1983, but climbed steeply once again after fiscal 1983. A similar but less pronounced pattern occurred in New York and New Jersey state government expenditures.

THE NEW YORK ECONOMY IN
THE LONG TERM: THE FUTURE

The decline in the region's economy that began in 1989 has some uncomfortable similarities with the slump that began twenty years earlier. Once again, employment in the securities industry was cut back sharply, and the office building construction boom petered out. Once again, there have been no obvious major sources of expansion to counter the gloom. And once again, there have been serious budgetary problems, this time involving the New York State government even more than the New York City government, addressed (in the case of the state government) by methods that remind people of 1971-75.

Even the differences between the first half of the 1970s and the first half of the 1990s with respect to the region's economy are disquieting, for the most part. The sharp declines in defense-related employment (especially in Long Island and Connecticut), weakness in other manufacturing industries in the region outside the older centers, contraction in employment in commercial banking and (prospectively) in health services, and the effects on the region of corporate downsizing were not phenomena of the earlier period, but are very much present today. The only current economic conditions that are comfortably different from the earlier period are related to (1) globalization—the relatively greater importance of international financial and business services in the region's economy and the growth of tourism; (2) some shrinkage in the cost differentials between the region and its main competitors (in part, too, associated with globalization, because more of the competitors are very high-cost cities in Asia and Europe rather than low-cost cities in North America); and (3) the absence of spectacular financial mismanagement by the New York City government to frighten business away.

Were the pessimists of the mid-1970s right in believing that the long-term prospects were, and are, dismal, with the 1977-89 period an aberration? Probably not; it seems to me as likely today that the New York economy can do well over the long term, as it did to Vernon in 1960.[5] As in 1960, the region has a favorable "mix" of industries, that is, substantial concentration in sectors likely to grow worldwide. Over the long term, the worldwide demand for high-end financial and other business services will continue to be very strong. No doubt, the region will lose "shares" of the rapidly growing sectors to other places, as the places where economies of agglomeration can

be achieved multiply. However, while more and more of today's high-end services will be better accommodated in smaller places, new specialized types will develop and—as in the recent past—will seek very central locations, such as New York, London, and Tokyo.

A generation ago, Vernon predicted that by improving transportation technology, both decentralization and centralization of headquarters and other business and financial services would be facilitated. A few contemporary scholars, notably Moss (1987), have been pointing out that changes in communications technology are having the same effect. It would be ridiculous in the extreme to postulate no improvements in communications technology from here on, or to postulate that whatever further improvements there are will work only to decentralize: both propositions are at odds with experience.

The advanced services show up in a good many places in the Standard Industrial Classification, not only in classes 60-63, 73, and 89. Much of New York's economy has been transformed, under the names of traditional industry groups, somewhat in the way that so much in eastern Michigan was transformed by the mid-1950s into branches of the auto industry while continuing to bear names of quite different industries. However, unlike Michigan's auto industry, New York's advanced services industry is not really a single industry; it is highly diverse and not dependent on swings in demand that are almost completely convergent in timing. Moreover, the product mix changes rapidly.

Often in the past, and today again, some of the pessimism for the long term arises because it seems inconceivable that there can be much further growth in the demand for those services now being produced (in the city or even in the country or world): If productivity increases, then employment—say, in banking—must decline. It is impossible to predict exactly what services (or goods) any sector will be producing fifteen or twenty years hence; history shows that it is absurd to assume that growth in a sector will cease because of a surfeit of those services in today's product mix. It is our imagination, rather than the economy, that has long-run problems.[6]

In addition, most of the more traditional sectors will do marginally better than in the past, in part simply because they are so much smaller and now include cohorts of firms that have adjusted to cost and other adverse competitive factors in the New York location. To some extent, they will be bolstered by the continuing high level of overseas immigration, as has been the case since the late 1970s. Moreover, it is difficult to believe that personal incomes will continue to rise substantially without spilling over into New York City retail trade and consumer services.

In a 1996 article in *City Journal*, Professor Edward L. Glaeser of Harvard tells a nonprofessional audience "Why Economists Still Like Cities." In a superb survey of the evidence, he goes through the traditional arguments in favor of the persistence and growth of large urban concentrations, arguments relating essentially to the higher productivity associated with the economies of agglomeration and coordination, arguments that date far back in the history of economic thought. However, in recent years numerous economists have added new conceptual wrinkles to the arguments and amassed substantial empirical evidence in support of them.[7] The arguments suggest that large city (read, urban area) size is not a disability, despite the spread of economies of agglomeration to smaller cities over time. Glaeser reaffirms the Vernon point that telecommunications cannot replace face-to-face communication, the essence of the New York region's difference from smaller cities and from a good many modestly sized "new-model" cities that have become big cities in the United States in recent decades, such as Phoenix and Charlotte. In such cities, economic activities cluster not to be near one another but because each of them separately finds that city to be advantageous in its climate, low labor costs, accessibility, and amenities: the physical traffic among the office buildings during the course of the working day is startlingly sparse.[8]

In short, the long-term competitive outlook for the New York City economy is not so bleak as to make any economic development strategy quixotic. Moreover, the optimism expressed above is guarded: the projections are for very modest rates of real growth, in employment terms less than 20 percent over twenty-odd years. Such growth rates will not eliminate all economic distress, nor make it

easy for city and state governments to finance generous levels of public services—the two reasons that traditionally make state and city governments intervene to foster growth. Because much central city economic distress is associated with low labor force participation rates even in the face of low rates of unemployment, it may be that even the most effective of economic development strategies will be unable to massively reduce poverty and solve what has been described as the "two cities" problem: a large core of poor people outside the mainstream economy and unaffected by positive economic developments, in the midst of prosperous city economies.

The experience of the 1980s has in fact been interpreted in this way by some economists and most popular writers on the subject. However, most large, old cities had only a few years with low unemployment rates in the 1980s, after years of much higher rates. It seems foolish to forecast that sustained high demand for labor will not affect labor force participation rates over time, thus partly dissolving the two cities problem. Indeed, the optimistic long-run projections generated by widely used econometric models in the late 1980s were made to converge only by pushing labor force participation up sharply in the out years.[9]

WHAT INTERVENTION CAN ACHIEVE: THE NEW YORK CONTEXT

The discourse on regional and local economic development, like the discourses on national "industrial policy" and on international trade policy, is dominated by the debate between interventionists and skeptics. To the interventionists, market imperfections legitimize—indeed, demand—active economic development policies, and the growing sophistication of public entrepreneurs makes it likely that they can avoid the egregious mistakes often made in regional economic development in an earlier, more naive era.[10] The skeptics, in contrast, have no confidence in the ability of state and local officials to pick winners rather than losers; to avoid giving away, in tax preferences or more direct subsidies, far more than is necessary to elicit the favorable location decisions; or to build location-affecting elements into general policies concerning education, infra-

structure, and the like.

Among professional economists, the most powerful case for the interventionist position is made by Bartik (1991). Bartik carefully summarizes the evidence from dozens of econometric studies of the effects on state or local economic growth of major policy instruments—notably, differences among the states in taxes and expenditures, as well as the effects of specific economic development programs such as "enterprise zones" and the effects of differences that are only loosely related to public policy, wage rates, and the extent of unionization.[11] He concludes that the effects on growth rates are indeed fairly strong. Much of the study is devoted to an examination of the consequences of local economic growth, which he finds to be strongly positive on both distributive and efficiency grounds, concluding with "two cheers" for interventionist state and local policies.

There are at least two general considerations relevant to the issue of whether interventionist policies are likely to be successful and efficient. The first concerns the size of the place in question. It seems plausible that the larger the place, the better the case of the skeptics. In a small place, highly targeted economic development policy decisions may be made so infrequently that the likelihood of gross error can be reduced substantially. That is, the governmental decision makers should not be overwhelmed by the sheer necessity of negotiating a large number of deals simultaneously, without much scrutiny by anyone else, which seems to have been a real problem in the past at city and state levels in New York. Also, it is easier to make visible changes in the "climate" for location decisions in a small place than in a region like this one, where a multibillion-dollar investment program may not persuade anyone but the technicians that transportation facilities, for example, have in fact been improved. Moreover, the information costs of reaching all or most potential entrepreneurs can be extremely high in a large place. There are frequent reports in this area that most proprietors of small enterprises, actual or potential, are quite unaware of most incentive programs.

So, on this score, skepticism seems a reasonable starting point for considering economic development strat-

egies for the New York region: the burden of proof should be on the advocates of interventionist measures.

However, the case for interventionist policies also depends upon whether or not existing public policies are essentially neutral with respect to economic development. If existing public policies are generally hostile to economic development, then an interventionist posture may be necessary merely to offset the damage that governments are doing.

The fact is that, in the New York metropolitan region, policies are *not* neutral: there is a long tradition of public sector hostility—quite deliberate at times in the past, unintended more recently—to policies that are neutral with respect to economic development. There are regulatory regimes that are, or have been, hostile to new and expanding firms and that raise the prices of producer goods and services. A stark example is the sharp differential between residential and business utility rates under regulation. Over the years, the differentials have been greater in New York State than in most other states, compounding the fact that all rates, residential as well as business, have been very high relative to those in any other state. This discrimination also applies to utility-type services provided by state and local governments, such as excessive "tipping fees" for the use of public landfills by private carters serving business customers, and highway-user taxes and charges on commercial vehicles that are in no way cost-based but are far higher than those on noncommercial vehicles.[12]

The private sector must support an exceedingly expensive public sector, costly for reasons that are not entirely clear. That is, the costs are high even taking into account the high unit costs of density, the conventional wisdom about diseconomies of scale in the production of local public services, the popularity (at least in the past) of explicitly redistributive policies, and what can best be called mindless populism.[13]

The costly public sector is financed by a revenue structure that combines explicit redistributive goals (graduated city and state personal income taxes, among others) and substantial reliance on revenue instruments that are sold as not affecting ordinary households, such as very high

taxes on telephone service, high transaction taxes on real estate transfers (in New York), and imposition of the sales tax on a wide range of intermediate business purchases and high corporate income taxes (in all three states). In reality, of course, such instruments are likely to have zero, or even perverse, distributive results, as well as negative effects on economic development.

The extreme example may be the way the property tax works in New York City (and Nassau County). A combination of state law and local choice (mostly by local law but to some extent in the form of administrative practice) has produced effective tax rates that average above 4 percent for new commercial buildings that are not favored with targeted economic development incentives, about 3 percent for utility properties, and about 2 percent for older commercial properties and for rental apartment buildings, but considerably below 1 percent for homeowner properties, most high-end co-op and condominium apartments, and vacant land.[14] The adverse economic effects of the high rates (anything above 1 percent is high by national standards) are obvious. In addition, the existence of the low-rate classes does not do much for economic development, because the substantial decline in those rates during the 1980s seems to have been capitalized into housing and land prices almost instantaneously. The system is also highly objectionable on distributional grounds: in addition to the much better treatment of owner-occupants than renters, within the residential classes effective tax rates decline systematically with the value of the housing unit.

Given the hostile public policy environment in much of the region, economic development strategies that essentially undo this hostility, perhaps doing no more than restoring a neutral posture, seem a good idea. It is not obvious whether the instruments of these strategies should be highly selective or work across the board—assuming that the state and city governments cannot simply reverse the hostile policies (and there is good reason not to, where the damage has already been done and reversal will result mainly in windfall gains). Across-the-board instruments inevitably will have an element of inefficiency, benefiting firms and households that are nowhere near the margin, in

present-value terms, from the standpoint of location decision making. However, selectivity requires both a high order of insight by officials and considerable bargaining skill.

On the spending side—that is, improving the quality of inputs (for example, infrastructure, labor, current public services) and subsidies to reduce input costs—selectivity seems very inappropriate in New York City, if not in general. Direct input subsidies, notably to lower the cost of capital, have not had an impressive record anywhere, and virtually all such uses in New York City have been failures—subsidies to marginal enterprises that soon collapse. Programs to improve labor quality by offering training that is highly specific to individual firms or industries, on which considerable sums of federal money were spent in the 1970s, have fared no better. In addition, in New York's high-density environment it is difficult to design highly selective improvements in infrastructure or current public services: either most of the benefits spill over to nontargeted users (indeed, sometimes to users whose presence the city has no reason to encourage) or the specific improvement is so confined in scope that there is no perceptible effect on the quality of the service in question.

PUBLIC EXPENDITURE AND ECONOMIC GROWTH

General improvement in publicly provided services that are of importance to firms appears to be a superior strategy. The costs of general improvements in educational output or in transport system reliability are of course very high. However, there is no real sense in which the benefits of such improvements can be said to have been wasted entirely, even if the impact on economic development is not readily observable in the short run. It is important in designing this strategy, however, to differentiate between improvements that are producer-oriented and those that are consumer-oriented.

A striking illustration of the difference in the New York area is the inattention in transportation policy to goods movement, relative to the attention given to highway facilities that are closed to trucks, including some roads whose main function is to serve as journey-to-work

routes that parallel rail commuter services, such as the Northern and Southern State Parkways on Long Island and the north-south parkways in Westchester. The importance of this point is heightened when it is recognized that the proportion of goods movement by rail is lower in the New York region than in any other large urban area in North America. There are obvious policy changes that could dramatically lower road transport costs for goods and business services by reversing the priorities in the allocation of road space away from auto commuting.[15]

There is a considerable empirical literature on the effects of state and local public expenditure for various broadly defined functions on measures of aggregate economic growth. In some of the most important studies, Federal Reserve economists have researched the effects of the stock of infrastructure (which, as measured, reflects the historical spending record) on growth. It is fair to say that the skeptics seem to have had the best of the argument so far with respect to infrastructure, but that may be mainly because the aggregate measures of infrastructure spending or stock for states as units of observation are unsatisfactory in various ways. Ideally, the independent variable should be a measure of the overall quality (as perceived by users) of the *services* provided by each major component of infrastructure, not the level of spending over a period of years or the depreciated replacement costs of the present stock of capital in the form of infrastructure.[16] The expenditure-based data probably vary among states in ways that are quite different from the ideal measure.

Bartik (1991) reviews the findings of nearly thirty studies of the effects of difference in "public services" on business location, in addition to the infrastructure stock studies. Public services sometimes are measured by physical quantities (such as mileage of highways per square mile of area) but mostly by expenditures per capita or as a percentage of personal income. In six of the studies, expenditure for schools had a positive and significant effect on the dependent variable; in three studies, police and fire expenditures had such an effect; in three studies, highway expenditure or physical stock had that effect; and there were positive and significant coefficients for health in two studies and for higher education in one. Fourteen studies drew

blanks, that is, positive coefficients that were not statistically significant or negative coefficients. These findings hardly make a strong case for spending more money on broad categories of public services as a route to economic growth in a state or urban region.

It should be obvious why more spending for public services that are in fact logically connected with economic growth—infrastructure and human capital—seems to have so much less impact in advanced countries than in developing countries, where the impact can be huge. Take transportation, for example. In a mountainous developing country, the road between the capital and a town twenty miles away may be so bad that there is no motorized transport between the two places, and the town is effectively isolated from the national economy. Rebuilding the road to permit the use of buses and trucks reduces trip time from all day to one hour each way, converting the town into a component of the capital's market area. However, in an advanced country, the road network permits motorized travel from every point to every other point within the country and travel on rather good roads every place in urban regions. An immense investment program, such as $100 billion over five years, is likely to yield an infinitesimal improvement in aggregate accessibility measured, say, by the percentage reduction in mean travel time per trip for all types of trips weighted by the value of different types of trips: mean trip time may decline from 25 minutes to 24.98 minutes. This does not mean that the investment program is unwise, only that we should not determine its wisdom largely on the basis of its contribution to aggregate economic growth, which is likely to be below the threshold for measurement.

As the comment above about the hostile treatment of trucks and other business-service vehicles in highway policy in the New York area suggests, this is not to say that well-considered public expenditures cannot have positive economic development effects. Much of the criticism of the conditions at and access to Kennedy Airport over the years has been based quite explicitly on concerns for the negative effects on the region's economy. There is non-anecdotal evidence about the effects of quality of services: two recent articles (Button et al. 1995; Wassmer 1994) report empiri-

cal findings that suggest that public spending can have significant effects when the spending produces real differences in the quality of transportation and other publicly provided services.[17]

Tax Policy and Economic Development

On the tax policy side, the choice between general and selective economic development measures is less clear cut, at least in New York. Hindsight reveals some fairly large errors in tax policies in New York that were implemented largely for economic development reasons over the past fifteen years, whether those policies were across the board or selective. There has been no discernible effect of the general investment and employment incentive provisions in the corporate income taxes, according to repeated studies covering a considerable span of years by the New York State Legislative Tax Study Commission. The very large as-of-right property tax reductions in New York City designed to produce more yuppie housing (the condominium and co-op conversion aspects of the so-called J-51 program) in the late 1970s and early 1980s—as an economic development measure, not to subsidize housing as such—appear to have given away far more than was necessary to elicit the investment: generally, the resulting rates of return were very high indeed.[18]

The highly selective, often very large, reductions in property taxes negotiated with corporate developers of specific large office buildings throughout the 1980s and 1990s have also been highly inefficient in numerous cases, either because after the fact it became clear that the tax preference was far in excess of the taxpayer's reservation price or because the firm subsequently reneged on the employment guarantees that were part of the negotiation—sometimes not increasing employment as promised and, in at least one well-publicized case, simply moving away from the city a few years after the deal was signed and the building put up.

Nonetheless, some of the negotiated deals seem in retrospect to have been exactly right, for the time and circumstances, giving away in taxes almost exactly what was required to elicit the investment decision at that time. The

more dire the circumstances, the more likely this was the case. Thus, the deals that now look most justified are those made for central business district projects in the dismal late 1970s, when the recovery was just beginning, and those made for projects outside the central business district, in locations that had been decidedly unattractive to office developers.

However, on balance, well-designed changes in tax policy seem less error prone than selective tax preferences. On this issue, we have the results of a generation of studies of tax levels and economic growth to use as a basis for choice among policies. Bartik (1991) reviewed 123 separate studies of the effects of tax levels on business activity. The studies were published between 1980 and 1991 and for the most part relied on data from the 1970s and early 1980s. Almost 100 of the studies were inter-area (state or metropolitan area) in focus; the rest focused on changes and differences within states or within metropolitan areas. They differed widely with respect to the dependent variable—the measure of economic activity or growth—but fifty of the studies were confined to manufacturing variables of one kind or another.[19] The tax variables also differed greatly: most employed some aggregative measure such as state and local taxes on a per capita basis or as a share of personal income or gross state product, while the others used effective tax rates for one or a number of taxes.[20]

Ninety of the 123 studies reported at least one statistically significant negative tax effect. The reported long-run elasticities of business activity with respect to taxes clustered in the -0.2 to -0.4 range for the inter-area studies, with the studies that employed controls for public spending levels and/or "fixed effects" generally having the higher figures. As would be expected, the intra-area studies tended to find much higher elasticities, usually -1.5 or higher.

What do these results tell us? They provide overwhelming evidence that taxes do matter in location, something that was disputed by most economists and many politicians twenty years ago.[21] They also show that taxes matter a lot: if state and local taxes in a state amount to 12 percent of gross state product (GSP), close to the New

York level, and the elasticity is -0.4, a $1 billion reduction in the overall level of taxes in that state should increase GSP over time by $3.3 billion. However, the results also indicate that the tax cuts will not pay for themselves in budgetary terms unless (1) the higher rate of economic growth improbably reduces the level of public expenditure (the opposite could be the case) and/or (2) the tax reduction interacts with other events to produce a cumulative growth process that is not entirely attributable to the tax policy changes as such.

Some of the studies reported by Bartik suggest the possibility of stronger effects in this region. Some of the intra-area studies with high elasticities were not studies of a single metropolitan area or region, but of whole states (including large ones) or of one large city compared with the rest of the country. This geography has some relevance to the New York region's competitive position within the northeastern United States. Also, most of the studies in which the independent variable was the effective rate of one or more taxes paid by business firms tended to have higher elasticities. Because such taxes are very high in this region (relative to the rest of the United States, not necessarily relative to major competing cities in other countries), it is conceivable that policies focused on reducing those taxes would be self-financing over time.

PROMISING TAX STRATEGIES
FOR THE REGION

Economists like to write as if state and local governments face absolute budget constraints and therefore cannot stand tax cuts that are not fully self-financing. This is of course true in the long run, but not necessarily in the short run. However, given the fiscal history of state and local governments in this region over the past quarter century, even short-run budget deficits are not really tolerable—and probably would have damaging effects on the location of economic activity since the deficits would guarantee that tax rates would have to rise and/or expenditure levels would have to be cut quite soon. So, although we may be persuaded that what the region needs is to reduce its overall tax receipts as a percentage of GSP to the national average level and that in this region the long-run elasticity of

GSP with respect to taxes may be a very high -0.6, it is impossible to imagine how one could manage the needed reduction, about 20 percent of total revenue from *all* taxes, state and local, for the three states combined.[22]

This quandary suggests that the targets for tax reduction in the region should be those tax instruments that affect business costs fairly directly and entail very high rates but are not the most important revenue producers, rather than broad-based rate cuts in the major taxes—not a very populist political strategy. One example is reform of the state and local taxation of utility-supplied energy and telephone services to business customers, taxation that is extraordinarily high in New York State but somewhat above the national average in the other two states as well.[23] Another example would be the removal of most intermediate business purchases from the scope of the sales tax. The region's states do have some rivals in other parts of the country in the assiduous effort to convert the sales tax from a consumption tax to one mostly on business inputs, but many of those rivals are states with lower sales tax rates. We combine high sales tax rates and broad coverage of business inputs (but not particularly broad coverage of consumer goods and services).

There are some seemingly plausible targets that have been singled out by tax study commissions and tax reform programs in New York City time and again: notably, the city's tax on unincorporated business income and its tax on commercial rents. Although these taxes are conspicuous because they are unique to New York City, they are not especially damaging tax instruments, despite their bad reputation.

The unincorporated business tax (UBT) is one on the net income from business or professional activities conducted within the city, imposed at a rate of 4 percent and applying only to proprietors and partnerships once their incomes exceed $30,000. Residents pay this tax in addition to the ordinary resident personal income tax. Why does New York City have such a tax when no other place does? When New York City thirty years ago requested and received authority from the state legislature to impose, for the first time, income taxes on individuals and businesses, the legislature insisted that the city income taxes mirror

the state income taxes, which then included a tax on unincorporated business. In the late 1970s, the state UBT was abandoned. However, the city budget never seemed to have enough leeway to permit the city to give up a tax that yields about $400 million annually.

So, why did New York State, alone among the states, ever have a UBT? The answer lies in the unusual structure of the New York City economy. In most states, the corporate income tax embraces a very large share of the state's economy, except for agriculture (which no legislators like to tax, anyway). To be sure, there are many unincorporated businesses, but they tend to be very small in other states. However, some of the most important industries traditionally have operated here in the noncorporate form of partnerships, even when the enterprises were very large. Securities firms all were unincorporated for decades and even now many big ones remain partnerships. This is true in other aspects of finance as well. Almost as important is the organization of large law, accounting, and other professional firms as partnerships. So, in New York State, to tax only the income of corporations was to ignore the income of some of the most important and most profitable sectors of the economy.

This consideration is even more important for the city than it is on a statewide basis. Another argument for continuing the city UBT even after the state repealed its UBT has been the awareness that many of the high-income principals in financial and professional firms live outside the city. If there were no UBT, the city's tax system would not reach that income. The city personal income tax is on residents only. The city's nonresident earnings tax has an extremely low rate. In addition, by definition, if an enterprise is not incorporated, it is not subject to the corporate tax.

The criticism of the UBT is that it comes into play only when small enterprises start to become successful. According to some observers, the city may be a good place for new small businesses to get started, but as soon as they start to make it, the city government slaps them with the UBT and other taxes, inviting them to depart to lower tax, greener pastures.

Who does pay this tax? Not the newly maturing incubator industries, as the critics would have it. Accord-

ing to the New York City Department of Finance, large partnership enterprises in finance, law, and other services to business accounted for 72 percent of the payments in 1993. Another 14 percent was paid by doctors and other health care providers. The quintessential small businesses that politicians tend to worry about—in retail trade, manufacturing, and personal services—accounted for 14 percent of the tax receipts and about 7,000 of the 30,000 UBT payers. The Department of Finance is able to identify the residences of the taxpayers who account for about two-thirds of the tax revenue: just under half this amount was paid by commuters, 27,000 partners in taxpaying partnerships, and 9,000 individual proprietors.

Thus, the tax does seem to hit the targets it was designed to hit: businesses mainly in finance that provide services to other businesses, play an important part in the New York City economy, and would otherwise escape, to a considerable extent, the city's taxes based on net income. It would seem a strange strategy of economic development to substantially reduce income taxes on large firms in industries for which the city and region still have strong locational advantages.

The tax on commercial rents, which is paid directly by the renters themselves, began decades ago as a minor, low-rate tax. The rate was greatly increased in the 1960s and 1970s, converting the tax to an important revenue producer. After the fiscal crisis, exemption levels were increased, rates were reduced for commercial premises outside the Manhattan central business district, and finally the tax was eliminated for the city outside the central business district, as an economic development measure. Here, too, the critics of the tax view it as an oppressive burden on small businesses that are struggling to survive or expand in the city.

That view confuses legal liability for the tax with its economic incidence. At any given moment, the supply of rentable commercial space is to a considerable extent fixed and can change only over a period of years, while the demand schedule for the space is entirely independent of the actions of property owners and tax collectors. Under such circumstances, it is impossible to imagine a scenario in which an increase in the tax will raise the gross space

occupancy costs to tenants or a decrease will lower those costs, except in the very short run. When new leases are negotiated, renters surely will consider the commercial rent tax liability change in making their offers to building owners, who will be entirely aware of the tax change. For example, when the market for midtown Manhattan office space is strong, as at present, repeal of the commercial rent tax would result in higher rents at renewal than would have been the case were the tax still in effect; in lower Manhattan, with a weak market, rents at renewal would not be reduced as much as otherwise would be necessary to clear the market. The net effect of repeal would be to increase the capital value of the property, with little or no effect on economic activity.[24]

There are some parallels between the commercial rent tax and the high property taxes on commercial real property (relative to residential property) that are the general rule in New York City, Nassau County, and other places in the region. If the commercial property tax were highly uniform among individual properties within a city or other taxing jurisdiction, that is, highly correlated with some market measure of value—as the commercial rent tax is with market rentals—it is not evident that a uniform reduction in the tax would have much of an economic development impact. At least one simulation study has shown that a large across-the-board reduction in commercial property taxes in New York City would have only a negligible positive effect on total employment in the city.[25]

However, the commercial property tax is rarely uniform among individual properties. Usually, in the absence of property tax abatement programs or deals, the effective rate of property taxes on new commercial buildings is considerably higher than the rate on most older buildings that are not functionally obsolete or in unfavored locations. That is, the decision to raze an older, smaller building and replace it with a newer, larger one may trigger a very large tax increase, entirely disproportionate to the difference in market values. In part, this is because the assessor then revalues the site from a level far below its market value to a level more closely approaching that value, an action that is considered improper professional

conduct (the market value of the site has not changed) but is common nonetheless. In any event, the higher the level of tax, the more likely it is to be a deterrent to new investment. At the extreme, this can produce a situation in which no new commercial construction is feasible without tax abatements.[26]

The elimination of discriminatorily high taxation on new buildings in general would have positive incentive effects, and could sensibly substitute for negotiated abatement deals, given the spotty record of the latter. However, there is another, and much more powerful, way to increase the incentives for new construction: It is high time that serious consideration be given to land-value taxation, as a substitute for all or part of the property tax on structures (and perhaps for some other taxes as well). Economists are well aware of the theoretical virtues of land-value taxation. Unlike every other tax, actual and conceivable (other than a head tax), the tax is entirely neutral with respect to economic decision making.[27] Differentials in tax rates will not affect the location of economic activity, unlike all other taxes, nor affect the choice among conceivable uses of specific sites. The burden of the tax is borne by the owner of the site at the time the tax is imposed or increased: it cannot be shifted to any other economic actor. That makes the incidence of the tax as progressive as any conceivable tax because the elasticity of the value of urban land ownership with respect to income is positive and very high.

In reality, taxes on land values are significantly lower than those on the value of structures in nearly every place in this country, and markedly so in nearly all the most urbanized parts of this region (as well as in some of the less densely developed sections, such as eastern Suffolk County). This is visible in the very low assessments of vacant land, in the assessments of land that is sold for reuse, and in the low assessments of residential parcels in prime neighborhoods. Why land is so favored, and has been for so long, is something of a mystery, not fully explained by the undoubted power of large landowners in state and local politics or the thorough misunderstanding of the likely consequences of land-value taxation for most owners of modest houses. One part of the explanation may be the lack of good empirical evidence on the results of

heavier taxes on land value than on structures, in places and at times that are relevant to American urban regions today. Century-old experiences in western Canada, Australia, and New Zealand are not very persuasive.

There has been a good recent study of an experience that is relevant to the New York region today (Oates and Schwab 1995). Since the 1920s, the city of Pittsburgh has imposed higher tax rates on land value than on buildings (a number of smaller Pennsylvania cities have done so for shorter periods). Until 1980, the tax differential in Pittsburgh was quite small, but it was increased very sharply in 1980. Pittsburgh experienced a very impressive central city construction boom during the 1980s, one of the highest rates seen in American cities. Oates and Schwab studied the relationship between the tax change and the level of commercial construction using a long list of large American cities for comparison, and concluded that the property tax changes were probably responsible for a considerable fraction of the new investment. Economists would have predicted this, but now the prediction has been substantiated.

The careful reader will note that my list of plausible tax strategies does not include what has been the most popular tax policy strategy for economic development in New York for the past thirteen years and more recently in other states: repeated reductions in the rates of the state personal income tax. This has been an extremely costly strategy, and the only evidence of its effectiveness lies in the strident assertions of its proponents. Of the 123 studies examined by Bartik, in only a single instance were differences in personal income tax rates significant (and negative): a study of Philadelphia's extremely high local income tax by Robert Inman.[28]

The assertions of the proponents of personal income tax reduction as a serious economic development strategy are implausible. First, the proponents claim that people with high incomes from capital will avoid living in a high-tax state, thus adversely affecting consumption spending and, allegedly, making the decision not to locate enterprises they control in that state. The classic example used is the location of plants and corporate offices during the 1970s and 1980s in Fairfield County rather than in

Westchester County, two counties that are quite similar in numerous respects. Even if true, this has to be an isolated effect, and one that will be less important over time. Second, it is asserted that high personal income taxes will require firms in that state to pay higher wages, to the extent that the firms compete nationally (or internationally) for labor or certain types of labor, and to offset the indirect effects of high state taxes on wages and prices in consumer-serving industries in the state.

We academics operate in national labor markets and are well aware that tax differentials affect the compensation that must be offered; the question is the size of the effect, not its reality, for the economy as a whole. If high local taxes and living costs for key staff people were the major determinant of location, there would be few American firms opening offices in Tokyo, Zurich, Frankfurt, and Paris, where living costs (including local taxes) for American expatriate staff are enormously higher than they are in New York. Simple calculations suggest that in most cases the higher levels of compensation for key staff people required in the high personal income tax states must be a very small fraction of total costs.

ECONOMIC DEVELOPMENT PROGRAMS AND "NEW WAVE" POLICY INSTRUMENTS

Earlier, I alluded to the general failure of explicit, highly selective economic development programs that worked on reducing input costs by providing cheap credit or by subsidizing worker training. Aside from tax incentive measures, which informally date back to the colonial era, the use of the borrowing powers of state and local government to subsidize credit to private enterprises in the interests of economic development is the oldest of state and local government economic development measures. Before the Civil War, the states lent money on a large scale to canal and railroad companies and to organizers of banks, usually with unhappy financial results. By the late nineteenth century, most state constitutions were amended to prohibit such lending.

In 1936, however, the Mississippi constitution was amended to authorize the issuance of general obligation bonds by local governments to finance construction of manufacturing plants. Within a few years, a number of states imitated Mississippi, but they used revenue bonds as the financing mechanism. By the end of the 1960s, nearly all the states were doing this, often not because of any great enthusiasm for the approach, but because their competitors were using it. The subsidy, of course, was from federal funds: the exemption of interest on state and local bonds from federal income taxation, especially valuable in an era of very high marginal income tax rates.

It soon became obvious that this form of interjurisdictional competition was a zero-sum game from a national standpoint, and possibly even from a state standpoint, once all states were doing the same thing. Federal tax legislation from 1969 onward has progressively limited the size, volume, and purposes of state and local borrowing for economic development that qualify for income tax exemption. The change has reduced the charms of the approach but has not eliminated some instances of major state and local bond issues, sometimes taxable under federal law, that are said to be economic development measures. The most notable are the bond issues to build new facilities for major-league commercial sports; benefit-cost analyses by economists almost always show these to be bad ideas, even from the local standpoint.

In the 1980s, a number of studies evaluated a broad range of credit and other state and local economic development incentives.[29] Benefit-cost ratios seldom reached 1.0, and even when the ratios passed that threshold, it was not by much. In other fields—such as infrastructure investment decisions—benefit-cost ratios of 2.0 are considered quite marginal. Systematic econometric analysis of these incentives is very difficult because the policy variables differ so much from place to place. Moreover, many of these incentive programs are very small, yielding effects that are likely to be below the measurement threshold.

In the 1970s, a new concept in economic development programming emerged: the enterprise zone. (The name of the idea changes over time; the cynic will say that this alone suggests that the proponents have little confidence in the efficacy of the programs, hoping that a new name will mask the disappointing results of the previous generation of programs.) The essence of the notion is the

identification of a relatively small geographic area as a target zone for economic development and the availability of a wide range of incentives to encourage firms to expand (or newly locate) their activities within the zone. Sometimes the target zone is one in which there was significant economic activity in the past but where that activity has declined substantially. Sometimes the target zone is simply one in which poor people live. The development of research parks is a form of very upscale enterprise zone.

In concept, the enterprise zone is a more promising approach than conventional economic development programs simply because of the spatial concentration, that is, the likelihood that the program size will be larger relative to the target economy and the possibility that economies of agglomeration can be developed (although the target zone can be quite large in big cities, such as the new Harlem–South Bronx "empowerment zone" in New York City). Few successes, however, have been reported. Bartik lists nine studies of enterprise zones and research parks published between 1984 and 1991: three reported mildly positive and significant effects, four reported no statistically significant effects, and two reported that things turned out worse in the enterprise zones than in control areas.

Although some politicians remain captivated by the enterprise zone concept, more sophisticated interventionists write in glowing terms of "new wave" economic development policies pursued by rising "entrepreneurial state" governments, described by Bartik as "an eclectic group of policies that became popular in many states during the late 1970s and early 1980s. These policies encourage various forms of innovation, such as applied research, industrial modernization, entrepreneurship, and business expansion into export markets. They also have in common a willingness to involve government much more with business decisions. Rather than just providing cash, they would have government provide services to businesses to help them determine their best market or technology" (Bartik 1991, p. 5).

Any number of rude comments can be made about the concept, such as the evident misunderstanding of the role of the Ministry of International Trade and Industry in Japan or the fact that they seem to have slept through the collapse of socialism all over the world. A more polite response is that we have yet to see any American state that has had great recent economic success that can be attributed to these new wave programs. Even the advocates admit that they have no real evidence for their propositions.

CONCLUSION

Surely, it would be best if public policies in the New York region were simply neutral at the outset. As Assar Lindbeck, long-time chairman of the selection committee for the Nobel Prize in Economic Science, wrote concerning national economic development policies in Sweden: "It is not by planting trees or subsidizing tree planting in a desert created by politicians that the government can promote...industry, but by refraining from measures that create a desert environment."[30] However, it is not possible to recreate a verdant environment without hostile policies in the New York region, so some intervention is necessary, if only to create oases in the desert.

Still, one can dream about what that verdant environment might look like. It would be a place with drastic reductions in the costs of both construction and everyday existence for both the public and private sectors, reductions that would clearly require a long list of changes, institutional and behavioral, on the supply side. However, it is not all that clear what a full list of the required changes would include. The occasional efforts that are made by both journalists and policy analysts to explain fully the differences in costs in a specific situation seldom are successful.[31]

Nonetheless, if enough people in the region were convinced that our economic future depended on a comprehensive menu of cost-reducing changes, only some of which are matters of public policy and practice, the desert could be pushed back significantly. This could occur, for example, by tort law reform, by drastic deregulation of many aspects of economic life (not just the politically easy ones such as utility deregulation),[32] by real enforcement of laws requiring civil behavior in traffic (to reduce transportation costs, by matching the levels of enforcement everywhere outside the Northeast) and in other situations (such as the enforcement that is lowering the costs of commercial

trash removal in New York City right now), and by comprehensive use of part-time employees for jobs that should not require eight-hour shifts, notably transit operators and school bus drivers.

An encouraging sign that economically destructive habits can change even in this region lies in the recent instances in which public and private decision makers seem to have concluded that the region has something to learn from what is done elsewhere in North America, after at least 150 years dominated by contrary views. We are beginning to see retail stores, for "convenience goods" as well as "shopping goods," that are efficiently sized (long after the rest of the country), and to hear that transit officials in the region are consulting with transit operators elsewhere about the design of subway cars. Such developments have to be good.

ENDNOTES

1. See Netzer (1974) for a discussion that reflects the tenor of those times. The state of the New York economy and how that affected public policy over the past thirty years are reviewed in Netzer (1990).

2. See Sleeper (1989) for a volume of essays first published in *Dissent* in 1987. Six of the first eight essays attack city economic development policies as unneeded, and worse.

3. The study was conducted by the Harvard University Graduate School of Public Administration for the Regional Plan Association, under the direction of Raymond Vernon, between 1956 and 1959. The results of the study appear in nine substantive books and one technical monograph. The capstone is Vernon's 1960 book.

4. See Netzer (1969) for a contemporary account of the validity of the Vernon forecasts. Netzer (1985) also examines the Vernon forecasts at the end of the forecast period. The projections of the national economy in the Vernon study did not foresee the reduced role of manufacturing over the period, but adjusting for that failure—which was common to all long-range forecasts in the 1950s and 1960s—the Vernon projections for the New York region were surprisingly on target.

5. Specific projections consistent with the views expressed here were developed by the Regional Plan Association (RPA) in 1988 and 1989 for the Metropolitan Transportation Authority. The more recent RPA projections, which are the basis of the "Third Regional Plan" (see Yaro and Hiss 1996), are much more pessimistic and internally inconsistent in numerous respects; the economic projections seem designed mainly to sound a cry of alarm in support of policies that RPA espouses independently of their consequences for the region's economy, such as the enormous investment of public funds in rail transit.

6. A simple example, for a relatively short period, makes the point: the motor vehicle manufacturing industry between 1980 and 1992. Had the actual 46 percent increase in hourly productivity and the actual 3 percent increase in employment been correctly forecast, the forecaster might have guessed that output would increase from 8.0 million cars and trucks in 1980 to 12.0 million in 1992. The actual increase in units produced was much more modest, 9.7 million. Obviously, each unit embodied substantially more product in 1992 than it did in 1980. However, it is improbable that the 1980 forecaster would have so specified the results.

7. The work Glaeser refers to includes the following papers: Rotember and Saloner (1990), Topel and Ward (1992), Becker and Murphy (1992), Rauch (1993), Glaeser (1994), Glaeser and Maré (1994), Ades and Glaeser (1995), and Glaeser (1995).

8. Moreover, there are apt to be widely separated clusters of office buildings, as in Atlanta, rather than tight clusters in central business districts.

9. The WEFA (Wharton Economic Forecasting Associates) model results that the RPA relied upon in work done for the Metropolitan Transportation Authority in 1986 and 1987 had female labor force participation rates virtually equal to male rates among New York City residents by 2005, a projection that was not credible. Such a result requires either that very few women with children remain outside the labor force during the child-rearing age, or that the unequal distribution of child-rearing duties by gender be offset by women retiring at later ages than men (which is the opposite of the current situation in this and every other advanced economy).

10. Perhaps the best case made for this side of the debate appears in Eisinger (1988).

11. Bartik also reviews the results of the small number of studies dealing with two aspects of regulation: environmental regulation and banking regulation.

12. The best analysis of this question is found in Small, Winston, and Evans (1989). To simplify, there are two types of costs entailed in the provision of the road system: road surface wear costs and congestion costs. The former differ among vehicles with the cube of the weight on each axle, above a threshold that includes passenger cars, virtually all light trucks, and some heavier trucks that have multiple axles; below the threshold, road wear costs are zero. Congestion costs differ among vehicles almost entirely on the basis of time of day and direction of travel; size has almost nothing to do with these costs. So, charging light trucks registration fees and tolls that are a multiple of the charges imposed on passenger cars is nothing but price discrimination, as is charging multiple-axle rigs with relatively modest axle loadings far more than smaller heavy vehicles with few axles, such as ready-mix-concrete trucks and dump trucks.

13. An excellent example is the immunity of the New York City Fire Department to retrenchment in times of budgetary difficulty throughout the past twenty-five years, despite clear evidence that appropriate spatial deployment of firefighters (that is, closing many firehouses and opening a few new ones in better locations) would permit both reduced response time and drastic staff reductions. The proposed closing of *any* firehouse immediately produces a local uproar, which elected officials will not face down.

14. These are my own estimates, as of fiscal 1994, based on data from various official documents, especially the New York City Comptroller

Note 14 continued

(1994) and the New York City Department of Finance (1995). The target ratio of assessed to market value for property classes other than homeowner properties is 45 percent, which would yield effective tax rates of 4 to 5 percent for those classes. However, that ratio is seldom achieved for existing properties because of restrictions in state law and administrative lags in reassessment.

15. For a package of such policies, see Netzer (1992). Converting tolls into cost-based congestion charges is one of those policies (see endnote 10).

16. Depreciated replacement cost is the concept used by the Bureau of Economic Analysis in its application of the "perpetual inventory" method to value tangible, reproducible fixed capital.

17. Kenneth Button, a transportation economist, and his colleagues, reporting the results of a large-scale study of location in the Strathclyde region of Scotland, conclude that differences in local transport quality within the region constitute an important independent variable. Wassmer, in an empirical study of location in eastern Michigan cities, finds that most local incentives have no "additive effect" but some spending variables do, depending on city-specific characteristics.

18. Eventually, the program was confined to the outer boroughs and the nonaffluent part of Manhattan, thus becoming an ordinary middle-class housing subsidy, not an economic development measure. For an analysis that demonstrates how wasteful the program had been, see White (1983). This analysis was one of the few entirely unambiguous ex post facto empirical studies of tax incentive programs, because the author had actual before and after sales prices to compare.

19. Presumably, the reason was partly that the data on manufacturing for small areas are abundant and rich in industry detail and partly that within a detailed industrial category, there is a good deal of homogeneity across places.

20. Most of the intra-area studies used the property tax rate as the tax variable. The studies by James and Leslie Papke, however, used the effective tax rate for all state and local taxes combined, simulated by industry from their AFTAX model. This tax measure is far and away the best conceivable.

21. The economists' position was absurd: The appropriate statement at the time was that we had been unable to find convincing empirical evidence of the strength of the tax effects, not that the effects were absent. A 1961 article by Harvey E. Brazer, well known to most public finance economists, put the argument properly, reviving an analysis first presented to a royal commission by Alfred Marshall a century ago.

However, it took the improvement of data for small areas, the development of adequate econometric techniques, and (most important) the training of generations of well-equipped inquisitive economists to produce the empirical verifications. The process is a testimonial to the validity of the old-fashioned idea of scientific progress.

22. In the early 1990s (the latest period for which the necessary data exist), state and local taxes in New York State as a percentage of GSP were about 35 percent above the national average, those in New Jersey were about 10 percent above the average, and those in Connecticut were just below the national average.

23. Among the distortions caused by current tax practices is the choice between fuel oil and natural gas as a source of energy, the former bearing much lower taxes because it is not supplied by entities defined as utilities. Fuel oil is not a significant source of energy for space heating anywhere in the United States outside the Northeast.

24. In an office building construction boom, repeal of the commercial rent tax very likely would heighten the boom by encouraging more speculative building. However, more empty office space (when the boom ends) is not a valid objective of economic development policy.

25. See New York University (1980). The study simulated the results of classifying all taxable property into one of two classes—housing and business—and equalizing effective property tax rates between the two classes, an approach that produced a uniform 20-odd-percent reduction in taxes on all business properties. The study did not deal with the consequences of more within-class uniformity. Because the overall effective tax rate was unchanged in the simulation, the conclusion in this study does not conflict with the view held by most public finance economists on the results of reductions in overall rates in a single city on the migration of capital among cities and regions (see Heilbrun [1983]).

26. In the city of Boston from the 1930s until 1960, there were no new office buildings or hotels constructed, because such buildings would have confronted an effective property tax rate of 10 percent, at least three times as high as the comparable rate for new office buildings in *any* other U.S. city at the time. Construction of new commercial buildings began only after passage of a state law that provided for a tax of 10 percent of gross rents, not value, for new buildings in designated urban renewal zones— such as all of Back Bay and the South End.

27. There is one exception extensively discussed in the literature. Unless the tax base is properly defined, the tax is likely to affect the timing of development of sites and therefore have some distorting effects on economic decisions.

28. There was another study in which personal income tax rates were significant, but the coefficient was positive, a thoroughly implausible finding.

29. These studies are discussed in Netzer (1991).

30. Quoted in the *Economist*, March 3, 1990, p. 17.

31. For example, when one tries to explain why retail gasoline prices are so high relative to prices in other places on both the East and West Coasts, even in parts of the New York region where land values are low, it is discovered that obvious variables such as state and local taxes and wage rates leave large unexplained differences. Even the addition of more subtle factors such as wage rates and restrictions on the size of underground fuel tanks and tank delivery trucks do not clear up the mystery.

32. A few places in the country, notably the state of Arizona, have completely deregulated taxi service. What would taxi fares be without restriction of entry, so that the cost of amortizing the medallion was zero?

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Summary of Floor Discussion

Barbara Walter and Richard Peach

The third session's discussion focused on the policies that state and local governments in the metropolitan region could pursue to improve the region's outlook for the future. The participants also commented on some issues raised in the conference's previous sessions.

Glenn Hubbard opened the discussion by reacting to Dick Netzer's paper with the observation that, as a general matter, the recommendation to state and local government officials when considering tax policies is to "do no harm." Hubbard also characterized Netzer's paper as one that explored the relative efficiencies or effects of the various forms of tax. He noted that it was obvious from economic theory that taxes on intermediate inputs—such as those on utilities—should be closely examined as candidates for reduction.

Howard Chernick also reacted to Dick Netzer's paper, by querying him on the relative effects of different taxes on the economy, including shifts from firms to individuals, in Netzer's search for the most efficient tax cuts. Chernick wondered whether there were tax cuts that could be made without reducing the expected revenues from that tax. Netzer responded that in most cases the lowering of the tax would not be recouped by an increase in that particular tax revenue stream, except perhaps in the very long run. However, Netzer acknowledged that, as a practical matter, he was focusing on tax cuts that would involve relatively small net losses or tax cuts that were likely to be revenue-neutral.

Next, a conference participant commented on a statement in the Netzer paper that state and city effective tax rates are 20 percent above the national average measured as a percentage of regional product. The participant noted that, at the same time, the state does export federal tax dollars to the rest of the country in significant quantities each year. The participant wondered whether government officials, and the business community in the region, are giving enough attention to how national tax dollars are being allocated.

The discussion then turned to several issues raised in the earlier sessions at the conference. Glenn Hubbard noted the difficulty of distinguishing the contribution of national economic changes from that of regional economic movements. He felt that it was important to continue these efforts to untangle the past for three reasons: to understand more about the process of change, to be able to assure policymakers that the world does not end when dramatic change occurs, and to sort out regional shocks as a way of shedding light on mistakes in public policy that might have unnecessarily reduced economic growth. For example, on the issue of growing wage inequality, Hubbard felt that this was a national issue, rather than one that might be considered regional in nature. He added that he found it difficult to extrapolate from the findings to determine whether the New York region should be compared with a Cleveland, Ohio, or a London or Singapore. Robert Kiley cast his vote for a comparison with international cities, on

the grounds that the strengths of the city lie more in competing in the global marketplace.

Kiley then spoke about the importance of bridging the communication gap between economists, who seek to understand and explain the effects of policy on the performance of the economy, and policymakers, who are looking for practical recommendations for actions that can be taken to improve economic growth in the short and medium terms.

William McDonough observed that part of Kiley's point is that policymakers wish to identify actions that will have relatively large impacts in a relatively short time period. Unfortunately, noted McDonough, more rapid economic growth is more likely to be the culmination, over many years, of numerous smaller actions, none of which may be particularly dramatic or politically popular. Nonetheless, he added, it is important to find ways to present valuable economic information in ways that noneconomists can understand. It is also important to formulate from that information specific policy recommendations that a region might follow to improve, even if only at the margin, its prospects for economic growth. In conclusion, McDonough remarked that members of the Federal Reserve Bank of New York looked forward to working with the other conference participants in this effort.

T*he Federal Reserve Bank of New York's Research and Market Analysis Group produces various publications and discussion papers of interest to policymakers, academics, business and banking professionals, and the general public. Listed below are articles appearing in earlier issues of the* Economic Policy Review *and in* Current Issues in Economics and Finance, *a newsletter-style publication. Also listed are issues of our technical paper series,* Staff Reports *and* Research Papers*. These publications and papers are available from the Federal Reserve Bank of New York's Public Information Department, 33 Liberty Street, New York, N.Y. 10045-0001.*

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OTHER PUBLICATIONS

PREVIOUS ISSUES OF THE ECONOMIC POLICY REVIEW

Volume 2, Number 1. April 1996.

PRICE RISK INTERMEDIATION IN THE OVER-THE-COUNTER DERIVATIVES MARKETS: INTERPRETATION OF A GLOBAL SURVEY, *by John Kambhu, Frank Keane, and Catherine Benadon.*
In April 1995, central banks in twenty-six countries conducted a global survey of the financial derivatives markets' size and structure. The authors' analysis of the survey results suggests that at the time of the survey, dealers in the aggregate assumed only small exposures to price risks in meeting end-user demands. In addition, despite the derivatives markets' large size, potential price shocks there would still be appreciably smaller in scale than price shocks in the cash markets. Thus, the derivatives markets' overall effect may be to modify and redistribute exposures to price risks in the financial system, rather than to leverage those exposures.

RISK MANAGEMENT BY STRUCTURED DERIVATIVE PRODUCT COMPANIES,
by Eli M. Remolona, William Bassett, and In Sun Geoum.
In the early 1990s, some U.S. securities firms and foreign banks began creating subsidiary vehicles—known as structured derivative product companies (DPCs)—whose special risk management approaches enabled them to obtain triple-A credit ratings with the least amount of capital. At first, market observers expected credit-sensitive customers to turn increasingly to these DPCs. However, the authors find that structured DPCs—despite their superior ratings—have failed to live up to their initial promise and have yet to gain a competitive edge as intermediaries in the derivatives markets.

PREVIOUS ISSUES OF THE ECONOMIC POLICY REVIEW (*Continued*)

Volume 2, Number 1. April 1996. (Continued)

EVALUATION OF VALUE-AT-RISK MODELS USING HISTORICAL DATA, *by Darryll Hendricks.*
Recent studies have underscored the need for market participants to develop reliable methods of measuring risk. One increasingly popular technique is the use of "value-at-risk" models, which convey market risk estimates for an entire portfolio in one number. The author explores how well these models actually perform by applying value-at-risk approaches to randomly chosen portfolios. He finds that the approaches examined generally capture the risk they set out to assess and tend to produce risk estimates that are similar in average size. No approach, however, appears to be superior by every measure.

Volume 2, Number 2. October 1996.

BANKS WITH SOMETHING TO LOSE: THE DISCIPLINARY ROLE OF FRANCHISE VALUE,
by Rebecca S. Demsetz, Marc R. Saidenberg, and Philip E. Strahan.
As protectors of the safety and soundness of the banking system, banking supervisors are responsible for keeping banks' risk taking in check. The authors explain that franchise value—the present value of the stream of profits that a firm is expected to earn as a going concern—makes the supervisor's job easier by reducing banks' incentives to take risks. The authors explore the relationship between franchise value and risk taking from 1986 to 1994 using both balance-sheet data and stock returns. They find that banks with high franchise value hold more capital and take on less portfolio risk than those with low franchise value.

WHAT DO CHAIN STORE SALES TELL US ABOUT CONSUMER SPENDING? *by Ethan S. Harris and Clara Vega.*
Released at both weekly and monthly intervals, chain store indexes provide a timely measure of the sales performance of large retail companies. The authors investigate whether the indexes can also play a role in tracking and forecasting consumer spending as a whole. They begin by exploring the extent to which developments in chain store sales are representative of retail sales trends overall. The authors then conduct formal statistical tests of the relationship between chain store data and official measures of total retail sales and personal consumption expenditure. They find that monthly chain store indexes, if given the appropriate weights in forecast models, significantly improve the accuracy of predictions for several measures of consumer spending.

DETERMINANTS AND IMPACT OF SOVEREIGN CREDIT RATINGS, *by Richard Cantor and Frank Packer.*
The authors conduct the first systematic analysis of the determinants and impact of the sovereign credit ratings assigned by the two leading U.S. agencies, Moody's Investors Service and Standard and Poor's. Of the large number of criteria used by the two agencies, six factors appear to play an important role in determining a country's credit rating: per capita income, GDP growth, inflation, external debt, level of economic development, and default history. In addition, the authors find that sovereign ratings influence market yields independently of any correlation with publicly available information.

CURRENT ISSUES IN ECONOMICS AND FINANCE

COPING WITH THE RISING YEN: JAPAN'S RECENT EXPORT EXPERIENCE,
by Thomas Klitgaard. January 1996.
Despite an appreciating yen, Japanese firms have managed to maintain strong export sales growth during the first half of the 1990s. Their strategies? Cutting the yen price of exports and shifting production to higher-value merchandise.

DYNAMICS OF THE SECOND DISTRICT ECONOMY, *by Jason Bram.* February 1996.
Consumers and analysts remain wary about the economic prospects of the Second District. But is caution here simply becoming habit? True, there are some weak spots, but strong performance in the southern tier is pointing to a brighter economic future for the district.

SMALL BUSINESS LENDING AND BANK CONSOLIDATION: IS THERE CAUSE FOR CONCERN?
by Philip E. Strahan and James Weston. March 1996.
Small banks are a major source of credit for small businesses. As banking consolidation continues, will a resulting decline in the presence of small banks adversely affect the availability of that credit?

CORE CPI: EXCLUDING FOOD, ENERGY ... *AND* USED CARS?
by Richard W. Peach and Karen Alvarez. April 1996.
Although used cars represent only a small portion of the consumer price index, their extreme volatility has had a major impact on the measured inflation rate. To explain this relationship, the authors describe how used cars are treated in the CPI and explore what might cause the wide swings in used car prices.

1996 JOB OUTLOOK: THE NEW YORK–NEW JERSEY REGION, *by James Orr and Rae D. Rosen.* April 1996.
The New York–New Jersey region's hard-earned recovery in employment is being overshadowed by ongoing job losses in certain sectors and the prospect of moderating growth in the United States as a whole. Fortunately, several positive trends are bolstering the region's employment picture. Strength in the services sector, a falloff in restructuring, and gains in income point to continuing—though modest—regional job growth in 1996.

UNDERSTANDING AGGREGATE DEFAULT RATES OF HIGH YIELD BONDS,
by Jean Helwege and Paul Kleiman. May 1996.
What explains the wide swings in the default rate of high yield bonds in recent years? Differences in credit quality from year to year account for much of the observed variation in default rates, but economic conditions and the "age" of bonds have also played a role.

CURRENT ISSUES IN ECONOMICS AND FINANCE (*Continued*)

THE YIELD CURVE AS A PREDICTOR OF U.S. RECESSIONS, *by Arturo Estrella and Frederic S. Mishkin.* June 1996.
The yield curve—specifically, the spread between interest rates on the ten-year Treasury note and the three-month Treasury bill—is a valuable forecasting tool. It significantly outperforms other financial and macro-economic indicators in predicting recessions two to six quarters ahead.

CONSOLIDATION AND COMPETITION IN SECOND DISTRICT BANKING MARKETS,
by Jith Jayaratne and Christine Hall. July 1996.
The consolidation rate in the Federal Reserve's Second District banking markets generally outpaced the national average between 1989 and 1994. Nevertheless, these banking markets remain relatively unconcentrated, with midsized banks increasing their market share at the expense of large banks in three of the five markets examined.

SECURITIZING PROPERTY CATASTROPHE RISK, *by Sara Borden and Asani Sarkar.* August 1996.
The trading of property catastrophe risk using standard financial instruments such as options and bonds enables insurance companies to hedge their exposure by transferring risk to investors, who take positions on the occurrence and cost of catastrophes. Although these property catastrophe risk instruments are relatively new products, they have already established an important link between the insurance industry and the U.S. capital market.

REPO RATE PATTERNS FOR NEW TREASURY NOTES, *by Frank Keane.* September 1996.
Despite the enormous popularity of the market for repurchase agreements, the behavior of interest rates on "repo" transactions is not well understood. An analysis of new data for 1992-95 reveals that repo rates on recently issued Treasury notes rise and fall in a regular pattern as the Treasury auction cycle progresses.

HAS THE STOCK MARKET GROWN MORE VOLATILE? *by David Laster and Kevin Cole.* October 1996.
The record number of fifty-point daily moves in the Dow Jones Industrial Average in 1996—forty-five in the first three quarters alone—has attracted considerable media attention. An analysis traces this phenomenon to two basic causes: the record level of the Dow and the return of stock price volatility to post–World War II norms following several years of low volatility.

CURRENT ISSUES IN ECONOMICS AND FINANCE (*Continued*)

NEW YORK STATE'S MERCHANDISE EXPORT GAP, *by Howard Howe and Mark Leary.* November 1996.
New York's merchandise export performance has trailed the nation's for several years. The cause of this gap is not easy to identify: the state maintains a relatively healthy mix of customer markets, remains well represented in industries with strong foreign demand, and continues to enjoy declining labor costs. A broader look at New York's competitiveness, however, reveals that high nonlabor costs may be hurting the state's manufacturing sector and thus its volume of exports.

BANK BRANCHES IN SUPERMARKETS,
by Lawrence J. Radecki, John Wenninger, and Daniel K. Orlow. December 1996.
The largest U.S. commercial banks are restructuring their retail operations to reduce the cost disadvantage resulting from a stagnant deposit base and stiffer competition. As part of this effort, some banks are opening "supermarket," or "in-store," branches: a new type of banking office within a large retail outlet. An alternative to the traditional bank office, the supermarket branch enables banks to improve the efficiency of the branch network and offer greater convenience to customers.

1997 JOB OUTLOOK: THE NEW YORK–NEW JERSEY REGION, *by James Orr and Rae D. Rosen*. January 1997.
Major industrial and governmental restructurings have dominated employment reports in the New York–New Jersey region, leading to widespread pessimism about the region's job prospects. Nevertheless, for the past several years, the two states have managed to achieve modest job gains. In 1997, employment growth in New York and New Jersey should accelerate slightly as the pace of restructurings slows.

THE EFFECTS OF PRICE LIMITS ON TRADING VOLUME: A STUDY OF THE COTTON FUTURES MARKET,
by Joan Evans and James M. Mahoney. January 1997.
Will trading volume shift from a market with price limits to a closely related market without them? An examination of the U.S. cotton market reveals that trading volume does in fact move from a class of security that is subject to trading limits (cotton futures) to another that is not (options on cotton futures). The results add to the debate on trading limits by calling into question the limits' overall effectiveness.

STAFF REPORTS

THE EFFECTS OF INFLATION ON WAGE ADJUSTMENTS IN FIRM-LEVEL DATA: GREASE OR SAND?
by Erica L. Groshen and Mark E. Schweitzer. January 1996.

The authors study the effects of inflation on wage changes made by firms in a unique thirty-seven-year panel of occupations and employers drawn from the Federal Reserve Bank of Cleveland Community Salary Survey. The authors' analysis identifies two relative prices embedded in wage changes and then draws inferences about the costs and benefits of inflation from the adjustments in these relative prices.

ERROR CORRECTION MECHANISMS AND SHORT-RUN EXPECTATIONS*,*
by Angelos A. Antzoulatos. February 1996.

Reflecting the nature of economic decisions, the error correction mechanism (ECM) in the error correction representation of a system of co-integrated variables may arise from forward-looking behavior. In such a case, the estimated ECM coefficients may misleadingly appear to be insignificant or to have the opposite-than-expected sign if the variables in the error correction representation do not adequately capture short-run expectations. The author explores the nature of this problem with a theoretical model for consumption and demonstrates how severe the problem can be with U.S. data.

CAPITAL ACCOUNT LIBERALIZATION AS A SIGNAL, *by Leonardo Bartolini and Allan Drazen.* March 1996.

The authors present a model in which a government's current capital-controls policy signals future policies. Controls on capital outflows evolve in response to news on technology, contingent on government attitudes toward taxation of capital. When there is uncertainty over government types, a policy of liberal capital outflows sends a positive signal that may trigger a capital inflow. This prediction is consistent with the experience of several countries that have recently liberalized their capital accounts.

MULTIPLE RATINGS AND CREDIT STANDARDS: DIFFERENCES OF OPINION IN THE CREDIT RATING INDUSTRY,
by Richard Cantor and Frank Packer. April 1996.

Rating-dependent financial regulators assume that the same letter ratings from different agencies imply the same levels of default risk. Most "third" agencies, however, assign significantly higher ratings on average than Moody's and Standard and Poor's. The authors show that, contrary to the claims of some rating industry professionals, sample selection bias can account for at most half of the observed average difference in ratings. They also investigate the economic rationale for using multiple rating agencies.

STAFF REPORTS (*Continued*)

RATIONAL SPECULATORS AND EXCHANGE RATE VOLATILITY, *by C.L. Osler and John A. Carlson.* May 1996.
The authors examine whether rational, fully informed speculators increase exchange rate volatility under floating exchange rates. Friedman's claim that such speculators must smooth exchange rates is challenged, based on the exclusion of interest rate differentials from his interpretation of speculator behavior. The analysis shows that speculation is destabilizing if the dominant shocks are changes in interest rates or if speculative activity itself is high.

INVESTMENT, PASS-THROUGH, AND EXCHANGE RATES: A CROSS-COUNTRY COMPARISON,
by Jose Campa and Linda S. Goldberg. June 1996.
Although large changes in real exchange rates have occurred during the past decades, the real implications of these movements remain an empirical question. Using detailed data from the United States, Canada, the United Kingdom, and Japan, the authors examine the implications of exchange rates for time series of sectoral investment. Both theoretically and empirically, they show that investment responsiveness to exchange rates varies over time, positively in relation to sectoral reliance on export share and negatively with respect to imported inputs into production. Important differences exist in investment endogeneity across high and low markup sectors, with investment in low markup sectors significantly more responsive to exchange rates.

TECHNOLOGY, FACTOR SUPPLIES, AND INTERNATIONAL SPECIALIZATION: ESTIMATING THE
NEOCLASSICAL MODEL, *by James Harrigan.* October 1996.
The standard neoclassical model of trade theory predicts that international specialization will be jointly determined by cross-country differences in relative factor endowments and relative technology levels. The author uses economic theory to specify an empirical model of specialization consistent with the neoclassical explanation. According to the empirical model, a sector's share of GDP depends on both relative factor supplies and relative technology differences, and the estimated parameters of the model have a close and clear connection to theoretical parameters. The model is estimated for manufacturing sectors using a twenty-year, ten-country panel of data on the industrialized countries. Both relative technology levels and factor supplies are found to be important determinants of specialization.

STAFF REPORTS (*Continued*)

HOUSING DEMAND AND COMMUNITY CHOICE: AN EMPIRICAL ANALYSIS,
by Carol Rapaport. November 1996.

Housing demand reflects the household's simultaneous choice of neighborhood, whether to own or rent the dwelling, and the quantity of housing services demanded. Existing literature emphasizes the final two factors but overlooks the choice of community. The author develops an econometric model that incorporates all three components, and then estimates this model using a sample of Tampa, Florida, households. Incorporating community choice increases the price elasticity of demand and reduces the differential between white and comparable nonwhite households. The results are robust to the inclusion of permanent income and taxes.

IS THERE ENDOGENOUS LONG-RUN GROWTH? EVIDENCE FROM THE UNITED STATES
AND THE UNITED KINGDOM, *by Kei-Mu Yi and Narayana R. Kocherlakota.* December 1996.

The key feature of endogenous growth models is that they imply that permanent changes in government policy can have permanent effects on growth rates. The authors develop and implement an empirical framework to test this implication. In the authors' estimation, they use time series data spanning 100 years for the United States and 160 years for the United Kingdom. Their findings show that it is possible to have endogenous growth even when U.S. and U.K. GDP growth rates appear to be stable over time. The authors conclude that at the aggregate level the production function appears to exhibit constant returns to scale in reproducible inputs.

WHEN LIBERAL POLICIES REFLECT EXTERNAL SHOCKS, WHAT DO WE LEARN?
by Leonardo Bartolini and Allan Drazen. December 1996.

The authors present a model where policies of free capital mobility can signal governments' future policies, but the informativeness of the signal depends on the path of world interest rates. Capital flows to "emerging markets" reflect investors' perception of these markets' political risk. With low world interest rates, emerging markets experience a capital inflow and engage in a widespread policy of free capital mobility; with higher rates, only sufficiently committed countries allow free capital mobility, whereas others impose controls to trap capital onshore, thus signaling future policies affecting capital mobility. These predictions are consistent with the recent experience of capital flows and policies affecting capital mobility in developing countries.

STAFF REPORTS (*Continued*)

A THREE-FACTOR ECONOMETRIC MODEL OF THE U.S. TERM STRUCTURE,
by Frank F. Gong and Eli M. Remolona. January 1997.
The authors estimate a three-factor model to fit both the time-series dynamics and cross-sectional shapes of the U.S. term structure. In the model, three unobserved factors drive a discrete-time stochastic discount process, with one factor reverting to a fixed mean and a second factor reverting to a third factor. To exploit the conditional density of yields, the authors estimate the model with a Kalman filter, a procedure that also allows them to use data for six maturities without making special assumptions about measurement errors. The estimated model reproduces the basic shapes of the average term structure, including the hump in the yield curve and the flat slope of the volatility curve. A likelihood ratio test favors the model over a nested two-factor model. Another likelihood ratio test, however, rejects the no-arbitrage restrictions the model imposes on the estimates. An analysis of the measurement errors suggests that the three factors still fail to capture enough of the comovement and persistence of yields.

TECHNOLOGICAL DIFFUSION THROUGH TRADE AND IMITATION, *by Michelle P. Connolly*. February 1997.
An endogenous growth model is developed demonstrating both static and dynamic gains from trade for developing nations due to the beneficial effects of trade on imitation and technological diffusion. The concept of learning-to-learn in both imitative and innovative processes is incorporated into a quality-ladder model with North-South trade. Domestic technological progress occurs via innovation or imitation, while growth is driven by technological advances in the quality of domestically available inputs, regardless of country of origin. In the absence of trade, Southern imitation of Northern technology leads to asymptotic conditional convergence between the two countries, demonstrating the positive effect of imitation on Southern growth. Free trade generally results in a positive feedback effect between Southern imitation and Northern innovation, yielding a higher common steady-state growth rate. Immediate conditional convergence occurs. Thus, trade in this model confers dynamic as well as static benefits on the less developed South, even when specializing in imitative processes.

RATIONAL BIAS IN MACROECONOMIC FORECASTS, *by David Laster*, *Paul Bennett*, and *In Sun Geoum*. March 1997.
The authors develop a model of macroeconomic forecasting in which the wages firms pay their forecasters are a function of their accuracy as well as the publicity they generate for their employers by being correct. In the resulting Nash equilibrium, forecasters with identical models, information, and incentives nevertheless produce a variety of predictions in order to maximize their expected wages. In the case of heterogeneous incentives, the forecasters whose wages are most closely tied to publicity, as opposed to accuracy, produce the forecasts that deviate most from the consensus. The authors find empirical support for their model using a twenty-year panel of real GNP/GDP forecast data from the survey *Blue Chip Economic Indicators*. Although the consensus outperforms virtually every forecaster, many forecasters choose to deviate from it substantially and regularly. Moreover, the extent of this deviation varies by industry in a manner consistent with the authors' model.

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