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SECOND DISTRICT HIGHLIGHTS



Taking the Pulse of the New York City Economy

Jason Bram and James Orr

Although New York City's payroll employment is rising briskly, it still falls short of its 2001 peak, raising concerns that the local economy is not generating enough jobs. However, a look at a broader set of economic indicators—alternative job measures, wage and salary earnings, and a composite index of economic activity—suggests that the economy is significantly healthier than the payroll count indicates. Indeed, a measure of employment among New York City residents shows a strong upward trend extending over the past thirty years.

In the first few years of this decade, New York City's economy was hit by a series of adverse shocks: the collapse of the city's fledgling dot-com sector, a severe bear market on Wall Street, a national recession, and the September 11 attack on the World Trade Center. Presented with such a scenario in the late 1990s, an economist would no doubt have offered a grim assessment of the city's outlook. Surprisingly, however, these developments have proved to be less damaging to New York's economy than might have been predicted. Nevertheless, there continues to be concern about the current state of the local economy—in particular, concern that several years into the recovery, payroll employment in the city has not yet reached its January 2001 cyclical peak.¹ In the eyes of some commentators, the failure of this widely followed indicator to regain its earlier high level signals a fundamental problem with the local economy's ability to create new jobs.² Deepening the concern are longer-term trends in payroll employment: New York City's job count has never returned to the peak levels of 1969, even at the height of the 1990s boom.

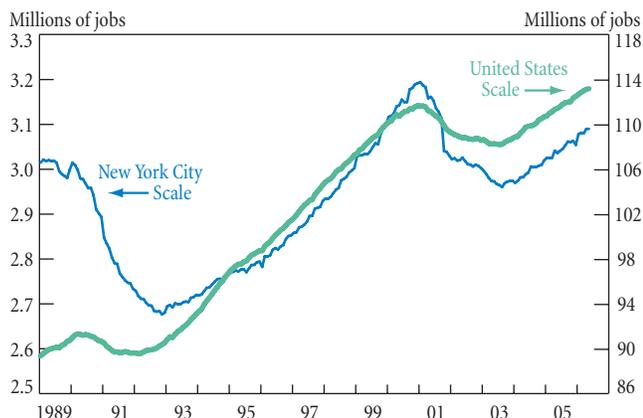
In this issue of *Second District Highlights*, we assess the overall health of the city's economy and address the con-

cerns about the strength of the city's recovery. We begin by examining payroll employment trends in the city's private sector. Our analysis attributes much of the shortfall in the payroll figures to the extraordinary run-up in the city's employment in the late 1990s and to the relatively slow recovery of employment nationally rather than to any fundamental weakness unique to the local economy. In the second part of our study, we look beyond the payroll employment measure to examine a variety of economic indicators—wage and salary earnings, a composite index of city economic activity, and alternative employment measures—that together provide a fuller picture of New York City's economy. These indicators suggest that the local economy is a good deal stronger and more resilient than the payroll employment measure alone would imply.

Recent Trends in Payroll Employment in New York City

In early 2001, after four straight years of near-record job growth, New York City began to lose jobs. By the time of the September 11 attack, private sector employment had fallen roughly 2½ percent from its January 2001 peak. Immediately after the attack, it fell nearly another 2½ percent, and by August 2003—the cyclical trough—it

Chart 1
Private Sector Employment: New York City and the Nation



Sources: U.S. Department of Labor, Bureau of Labor Statistics; Moody's Economy.com.

Note: All data are seasonally adjusted.

was down a further 2.7 percent. The cumulative decline in employment over this period—in excess of 7 percent—represents a net loss of more than 225,000 private sector jobs. It was not until two full years after the attack that employment began to recover (Chart 1).

As of May 2006, nearly three years into the jobs recovery, the city's economy and labor market are looking considerably stronger, but private sector employment remains roughly 100,000 below its peak in early 2001. Although the rate of job creation has picked up in the past year, even at the current pace it would take another year and a half to close this employment shortfall and return employment to its 2001 peak.³

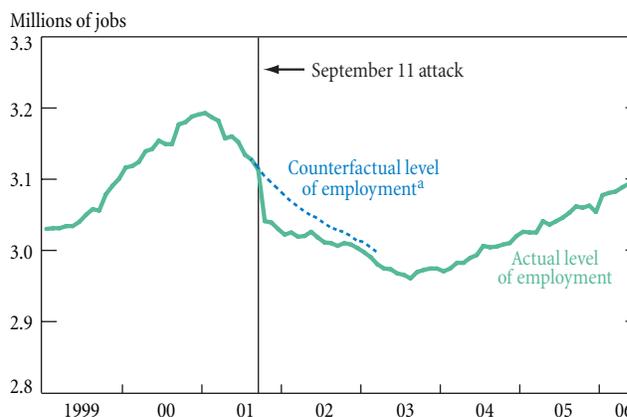
At first glance, the shortfall might seem to reflect some persistent adverse effects of the September 11 attack, which not only reduced the city's supply of available office space but also increased—at least in the short run—the perceived risk of doing business or living in New York City. However, there is little evidence that the attack has had a lasting negative effect on city employment.⁴ When we compare the city's actual monthly employment levels in the post-attack period with an econometric simulation of the path that employ-

¹The payroll employment series is based on the U.S. Bureau of Labor Statistics' Current Employment Statistics (CES) Survey. The survey, conducted monthly, counts nonagricultural wage and salary jobs in the private and public sectors; it excludes the self-employed. Unless otherwise noted (as in the section on alternative employment measures), the discussion of payroll employment in this article is limited to movements in private sector employment.

²See, for example, Steven Malanga, "Gotham Stalls Out," *New York Sun*, July 27, 2005; "Two Years On," *The Economist*, September 13, 2003; and Dina Temple, "Bloomberg Vows to Push Property Tax Cut," *New York Sun*, December 2003.

³Even at that point, private sector employment would still be 50,000 below its 1969 level.

Chart 2
New York City's Private Sector Employment: The Effect of the September 11 Attack



Sources: New York State Department of Labor; Moody's Economy.com; FRBNY staff estimates.

Note: All data are seasonally adjusted.

^aRepresents the estimated path that private sector employment would have taken if the September 11 attack had not occurred.

ment would have taken had the attack not occurred,⁵ we find that job levels dropped significantly below the simulated, or "counterfactual," path for many months but were roughly back on track by the end of 2002 (Chart 2). This finding suggests that the employment disruptions of the September 11 events had largely been resolved within a little more than a year of the attack. It also suggests that sluggishness in job creation occurring after 2002 has most likely been unrelated to the attack. (See the box for a discussion of the simulation exercise.)

To explore other reasons that the city's employment level has not returned to its 2001 peak, we consider three distinctive features of the payroll employment trends of the past ten years. First, we suggest that the current shortfall in jobs must be understood in the context of the expansion that preceded it. The late 1990s represented a period of extraordinary economic strength for the nation, and especially for New York City. Employment in the city, driven largely by the boom on Wall Street and in the dot-com sector, expanded at a 2.5 percent pace in 1998—the strongest rate of growth since

⁴While this paper focuses on the economic effects of the September 11 attack, we acknowledge that the most profound impact of the attack was the extensive loss of life.

⁵To calculate how employment would have evolved in the absence of an attack, we used the trend in city employment in the months leading up to September 11, U.S. employment data for the periods before and after the attack, and data on the historical relationship between local and national employment. We conducted a similar exercise in an earlier study (Bram, Orr, and Rapaport 2002). Although we used somewhat different assumptions and had more limited data in the earlier study, we obtained comparable results.

Estimating the Effect of September 11 on the Path of Employment

To estimate the employment effects of the September 11 attack, we use time-series regression techniques to simulate the path that employment would have taken if the attack had not occurred. The equation used to simulate private sector employment is as follows:

$$\hat{e}_t = \alpha + \sum_{i=1}^8 \beta_i \hat{e}_{t-i} + \sum_{j=0}^8 \gamma_j E_{t-j},$$

where \hat{e} is the estimated growth rate of New York City employment and E is the actual growth rate of U.S. employment outside New York City. Both employment variables are in log difference form, which is a measure of percentage change.

We first estimate the historical relationship between current city job growth and its own lagged—or past—values, as well as contemporaneous and lagged values of U.S. job growth outside New York City, by running a regression on actual data from January 1979 to August 2001. Next we use the estimated coefficients from that regression (α , β , and γ) to simulate sequentially the city's employment growth for each month subsequent to August 2001, using contemporaneous U.S. job growth outside New York City as well as eight lagged values of job growth for both the city and the rest of the nation. These simulated values of city employment growth are fed back into the equation in place of actual lagged values for periods after August 2001. Simulated employment levels are then derived from the series of simulated percentage changes. The simulation is done through the first half of 2003, a point in time when the actual and simulated levels had moved closely together for a number of months.

The simulated path of employment is sensitive to a number of assumptions, which are briefly outlined below. A more thorough discussion of the logic and implications of these various assumptions can be found in Bram, Orr, and Rapaport (2002). In that earlier study, we varied the mix of assumptions to generate two scenarios—the first premised on a high impact from the attack and the second on a low impact.

- *Number of lags used:* For this study, we use an eight-lag autoregressive model. A model using significantly fewer lags would fail to capture longer-term dynamics and would tend to show employment snapping back to a positive trend fairly quickly.
- *Start date of the simulation:* Our simulation does not use actual data for September 2001. Although most of the attack's effect on employment began in October 2001, the September 2001 data may have been influenced by the attack. Because September's job decline in both the city and the nation was steeper than the prior trend, our decision to exclude the extra month of actual data mitigates the downward trajectory of simulated employment and thus increases the estimated impact of the attack.
- *Exclusion of New York City from the U.S. data:* In this study, we exclude New York City from the U.S. data. Our rationale is that any positive employment effects—say, those stemming from the relocation of jobs to New Jersey—would be more than offset by negative employment effects in travel-related industries across the nation. As it turns out, however, we find that the city represents such a small share of U.S. jobs that our decision does not materially affect the simulation outcome.

records began in 1950—and grew even more rapidly in both 1999 and 2000. The city's unemployment rate, which had approached 10 percent in early 1997, had fallen to 5.5 percent by late 2000; over the same period, the nation's unemployment rate fell by just slightly more than 1 percentage point. Thus, in 2001, when New York City was beset by a series of negative shocks, its labor market was extraordinarily tight—tighter, perhaps, than in almost all earlier periods. Given the prevailing conditions, the payroll employment downturn that began in 2001 can be interpreted in part as a reversion to trend—that is, a return to more “normal” job levels.

Second, the slow initial pace of the city's employment recovery was consistent with that experienced by the nation. In the United States, as in New York City, employment did not hit bottom until mid-2003, or more than one and a half years after the 2001 national recession technically ended. The

delay led many observers to describe the country's emergence from the recession as a “jobless recovery” (see Groshen and Potter [2003]). Indeed, while economic growth in most national or local recoveries is largely manifested in job gains, the recovery from the 2001 recession was driven almost entirely by productivity growth, with brisk job increases occurring only after the beginning of 2004. In this respect, New York City's weak employment trends of 2002 and 2003 appear to have been part of a broader national phenomenon.⁶

⁶Economists examining the slow growth of employment after the most recent national and New York State recessions have argued that structural change—permanent shifts in the industry distribution of workers in the economy—played an unusually large role in hampering the recovery of jobs in 2002 and 2003 (see Groshen, Potter, and Sela [2004]). Since New York City employment has closely tracked statewide employment, it is reasonable to assume that this finding applies to New York City as well.

Third, the magnitude of the current shortfall in payroll jobs might actually be smaller than one would expect on the basis of New York City's "potential" rate of growth—the long-run average rate of growth that the city can maintain given existing trends in population and industry growth. Historically, job growth in New York City has averaged roughly 1 to 2 percentage points below national job growth—a differential that largely reflects the geographic constraints on New York's population growth and the fact that the city is already a mature economy. Despite this difference in potential growth rates, the rate of payroll job growth in the city has for the past two years matched or exceeded the nation's, averaging 1.7 percent. Had the city's payroll employment expanded instead at a slower rate in keeping with its long-term average, the shortfall in jobs would have been still greater.

Overall, our look at the payroll employment trends in New York City suggests that the job counts of recent years are less worrisome than they might appear. While employment has not returned to its 2001 peak level, this shortfall seems understandable in light of earlier employment patterns and does not appear to signal fundamental problems with the city's economy. In the next section, we look beyond the payroll employment numbers to other measures of economic performance to obtain a broader perspective on the current health of the city's economy.

Alternative Indicators of Local Economic Health

Regional economists typically rely heavily on payroll employment both as an indicator of short-term fluctuations in a local economy and as a benchmark for changes over a longer period of time. Macroeconomists also look to this indicator for guidance in assessing the strength of the national economy. However, relying on a single indicator can give a misleading impression of economic conditions. In particular, at the national level, the difference between employment growth and economic (GDP) growth has been noticeably greater in the 1990s and 2000s than in the 1970s or 1980s, reflecting an increase in the underlying rate of productivity growth. Much of this productivity growth has been attributed to marked advances in information technology. Because several of New York City's key industries, such as finance and professional services, are largely information based, it is very likely that the local economy has shared in the nationwide productivity boom. If this is indeed the case, then payroll employment growth would provide a downwardly biased proxy for economic growth, particularly in the past two cycles.

To address this and other drawbacks of relying solely on the payroll measure, we look at two alternative indicators of economic performance that offer a broader picture of the

state of the city's economy. First, we analyze trends in total and average earnings—an indicator that is a good gauge of output. Second, we examine trends in the New York City index of coincident economic indicators, a composite measure of economic activity that is released monthly by the Federal Reserve Bank of New York.

Income as a Proxy for Economic Activity

While it is extremely difficult to measure local output in a way that is methodologically consistent with the national accounts, various measures of income are available for New York City, and we use these as proxies for economic activity. While income and output do not necessarily move together on a quarter-to-quarter basis, they typically expand at a similar pace over longer periods.

The existing measures of local area income differ in the components of income included, the population—workers or residents—whose income is counted, and the frequency with which the findings are made available. In this analysis, we focus on estimates of wage and salary earnings, which are available quarterly at the county level and thus for New York City as a whole.⁷ This measure captures earnings generated by workers in the city but does not count income earned by the self-employed, including business proprietors.⁸ The measure also excludes components of income not directly tied to city production, such as dividends and capital gains.

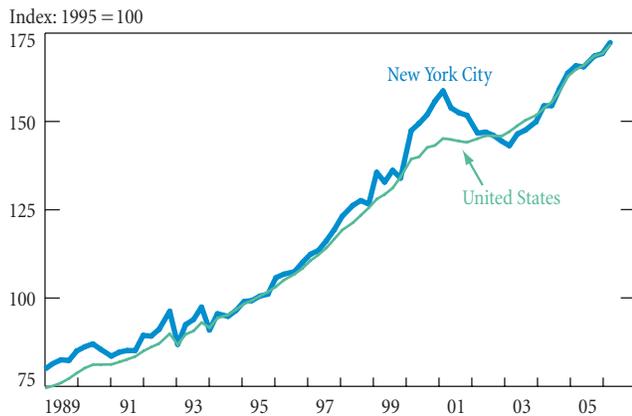
Like payroll employment, wage and salary earnings declined sharply from early 2001 to early 2003. While payroll job losses were considerably milder in 2001-03 than in the 1989-92 downturn, earnings—led by a steep drop in financial sector income—fell much more precipitously in the recent period than in the earlier downturn (Chart 3).⁹ In the

⁷We use quarterly estimates of wage and salary earnings from Moody's Economy.com; these estimates are based on annual wage and salary data from the Bureau of Economic Analysis. For the most recent quarters, which are not yet covered by annual data, estimates are based primarily on insured wage and salary earnings from the Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) program.

⁸We use wage and salary earnings in this analysis because they are available on a more timely basis than the Bureau of Economic Analysis' broader income measure (which includes the self-employed). Income accruing to the self-employed grew at roughly the same pace as wage and salary earnings between 1995 and 2004 (the latest year available).

⁹The more recent decline in earnings followed a surge in earnings in 1999 and 2000. Indeed, what is most remarkable is not how low income was in 2003 but how high it was in 2000. Such dramatic fluctuations in earnings are understandable given the dominance of New York City's financial industry, which directly accounts for nearly 30 percent of the city's total wage and salary earnings (see Bram and Orr [1999]). Because variable pay (in the form of bonuses) makes up a large share of financial sector earnings, wage and salary swings tend to be much more pronounced at the local than at the national level.

Chart 3
Total Wage and Salary Earnings: New York City and the Nation



Sources: U.S. Department of Commerce, Bureau of Economic Analysis; Moody's Economy.com; FRBNY staff calculations.

Notes: All data are seasonally adjusted. Earnings are nominal.

past three years, however, wage and salary earnings have rebounded briskly, consistent with a healthy recovery.

Moreover, over the full cycle (from the mid-1990s to the present) earnings have grown at about the same pace in the city and the nation, even as New York's job growth has lagged. This parity has existed for some time: local income growth has tracked national growth, on average, since the early 1980s. And because employment has grown more slowly in New York City than in the nation over the cycle, average earnings per worker have actually risen slightly relative to the national average (Chart 4).

Index of Coincident Economic Indicators for New York City

A second and particularly useful measure of the health of the local economy is the monthly index of coincident economic indicators (CEI) for New York City, developed by economists at the Federal Reserve Bank of New York in 1999.¹⁰ The underlying idea of this index is that economic activity should reflect co-movements across several variables. Thus,

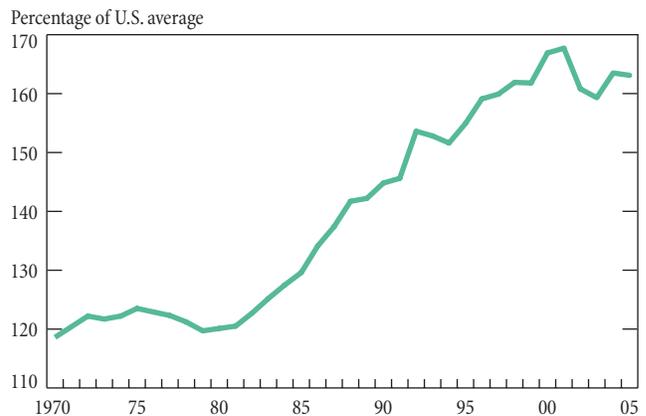
¹⁰The construction of indexes for New York State, New York City, and New Jersey is described in Orr, Rich, and Rosen (1999).

¹¹Although the data on real earnings, unlike the data for the index's other three components, are not available at a monthly frequency, the methods used to construct the index can generate monthly earnings observations.

¹²See the index estimated for Massachusetts in Clayton-Matthews and Stock (1998/1999) and for Pennsylvania, New Jersey, and Delaware in Crone (2000). Separate indexes have been estimated for all fifty states by Crone (2003).

¹³The CEI for New York City has been shown to improve forecasts of city sales and withheld personal income taxes. See Rich, Bram, Haughwout, Orr, Rosen, and Sela (2005).

Chart 4
The New York City Premium: Average Earnings per City Worker as a Percentage of the U.S. Average



Sources: For earnings, U.S. Department of Commerce, Bureau of Economic Analysis; for total employment, U.S. Department of Labor, Bureau of Labor Statistics.

Note: The ratio is based on nominal earnings of wage and salary workers in New York City and the nation.

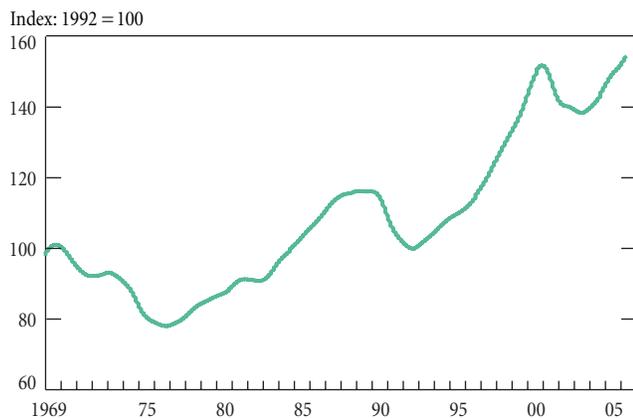
the CEI is a composite measure that combines information from four individual series: payroll employment; real, or inflation-adjusted, earnings; the unemployment rate; and average weekly hours worked in manufacturing.¹¹ Similar indexes have been estimated at the state level.¹²

The CEI is used to track activity in the New York City economy and to date and characterize the city's business cycles.¹³ Like payroll employment, the index peaked in 2001 and declined fairly sharply through 2003 (Chart 5). It then climbed gradually, reflecting the relatively drawn-out recovery of activity over the past three years. What is most significant, however, is that unlike payroll employment, which remains well below its 2001 peak, the CEI for New York City in January 2006 eclipsed its previous cyclical peak. Thus, the state of the city's economy as captured by this index supports the notion that a broader assessment of economic conditions reveals a relatively healthy expansion.

Other Perspectives on the City's Job Growth

While income measures and the CEI index suggest that the local economy has grown at a robust pace in recent years, we would still have cause for concern if the labor market were not operating at full potential. Job growth indicates that economic opportunities are expanding for the city population as a whole. A rise in average income, by contrast, may capture the economic gains of only a select few. Indeed, the gap between the city's payroll job growth and income growth is often thought to reflect the rapid rise in compensation in the securities industry, with the increased earnings largely

Chart 5
Index of Coincident Economic Indicators for New York City



Source: Federal Reserve Bank of New York.

Note: For more information on this index, see Federal Reserve Bank of New York, <http://www.newyorkfed.org/research/regional_economy/coinincident_summary.html>.

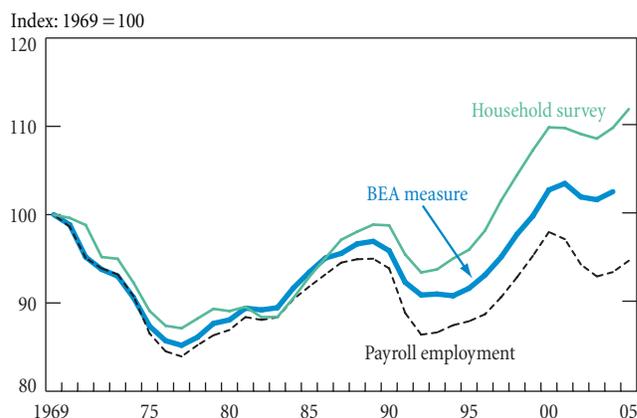
accruing to a small number of high-income workers. The existence of such a gap underscores the importance of paying attention to employment measures.

To get a clearer sense of the pace of job growth in the current expansion, we compare movements in the payroll employment series with movements in two alternative measures of employment¹⁴—the total employment series from the Bureau of Economic Analysis' Regional Economic Accounts (referred to as the BEA measure in this article) and the employed persons series from the Bureau of Labor Statistics' Local Area Unemployment Statistics program (known as the household survey). These alternative measures focus on different sample populations than the payroll employment series and may therefore capture trends that the payroll series overlooks.

The payroll employment series counts the jobs of those workers who receive salaries and are covered by unemployment insurance. This population represents the vast majority of workers but excludes business proprietors and other self-employed workers. The BEA measure of employment, by contrast, offers a total job count that includes the self-employed. Because the BEA data are reported only annually and with a two-year lag, they are rarely used in the analysis of current conditions. However, a look at movements in the series suggests that the BEA measure may, over the long term, provide a corrective to the picture of job growth presented by the payroll series (Chart 6). The BEA measure

¹⁴For purposes of comparison, payroll employment in this section encompasses jobs in both the private and public sectors.

Chart 6
Annual New York City Employment: Alternative Measures



Sources: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Labor, Bureau of Labor Statistics; FRBNY staff estimates.

charts a path for overall employment that is higher than that outlined by the payroll measure and closer to its previous cyclical peak. The divergence of these two paths suggests that the group of workers excluded from the payroll employment series have been expanding rapidly and that their omission from the payroll series may cause a downward bias in reported job growth.

The household survey exhibits a more positive growth trend over the past thirty years than either the payroll employment series or the BEA measure (Chart 6). Once again, the difference likely reflects the divergent populations targeted by the three series. The household survey counts the number of city residents who are employed, while the payroll and BEA measures count the number of jobs in New York City. The household series began to pull away from the other two measures in the early 1990s and in 2005 stood more than 10 percent above its 1969 level. Moreover, based on annual average employment levels, the household series does not show a shortfall in employment—the 2005 level exceeds its 2001 cyclical peak.

Ongoing trends in commuting patterns may explain why the household survey presents a more favorable picture of job growth than either the payroll or the BEA measure. In recent years, the proportion of metro area workers who commute from the suburbs into the city has declined (although it remains sizable) and the number who reverse commute from New York City has grown.¹⁵ This decreasing net inflow of commuters implies that the number of jobs located in

¹⁵See Bram and McKay (2005).

New York City has expanded less rapidly than the number of New Yorkers with jobs. In many ways, the more rapid growth of employment among residents of the city more accurately portrays the well-being of, and opportunities available to, New Yorkers.

Conclusion

While payroll employment is the most timely and reliable monthly measure of short-term movements in the local economy, interpreting the health of a local or national economy with a single indicator may be unwise. Moreover, payroll employment makes a particularly poor proxy for economic trends over longer periods because it fails to capture growth in productivity and the steadily increasing share of self-employed workers. In general, broader measures of economic activity provide better gauges of economic performance. In this study, we chose to look at the health of the city's economy using an expanded set of indicators—income measures, residence-based employment measures, and a composite index of economic activity.

Significantly, each of our alternative measures suggests that the city's current recovery is much healthier than the payroll employment measure alone would imply. In addition, over a longer horizon, these same measures provide persuasive evidence that concerns about the continuing failure of payroll employment to climb back to its 1969 high may be unwarranted. Measured in terms of income, New York City's economy has grown at close to the same pace as the national economy since the early 1980s. With average income per worker rising faster locally than nationally, it appears that productivity may be advancing at a faster rate in the city than in the nation. Moreover, both the BEA and household measures of employment have in fact trended upward over the past thirty years and, in clear contrast to the payroll series, now surpass their 1969 levels.

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