The City Dividends

City Dividends makes the case for developing policies and enacting strategies that will help cities and the metropolitan areas they anchor capture real economic gains by improving performance in three key areas. The gains are based on increasing college attainment by one percentage point (the Talent Dividend), reducing vehicle miles traveled by one mile per person per day (the Green Dividend) and reducing poverty by one percentage point (the Opportunity Dividend). We estimate the cumulative economic benefits from realizing these three City Dividends for the nation's 51 largest metropolitan areas are equal to $166 billion annually.

The gains that are computed here are not associated with some unattainable ideal, but are the kind of results that are already being realized by many cities today. Our framework is that of a "what if" analysis. "What if my city could reach higher levels of performance in each of these three areas? What would be the consequences in terms of personal income gains, savings on transportation costs, and reductions in poverty-related public expenditures?"

Our objective in this work is to estimate the economic and fiscal stakes involved in each of these key aspects of urban revitalization. We believe this will help urban leaders make the case for public policies that will help raise incomes, encourage citizens to drive less and increase opportunities for bringing people out of poverty. We expect that *City Dividends* can be customized and applied to the situations of individual metropolitan areas and used as a tool in policy planning.

The Talent Dividend

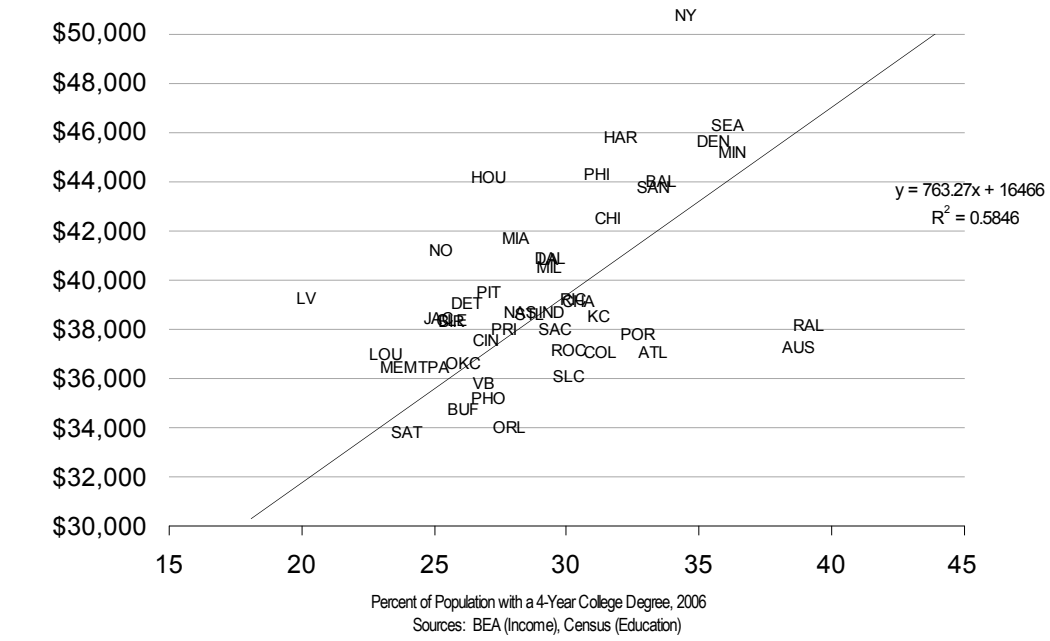
The education and skills of a city's population are critical to determining its success in the global, knowledge-driven economy. The Talent Dividend measures the gains cities can expect from improving their talent base.

The hypothesis: Improving the educational attainment of a city's population will increase the income of its residents.

The relationship: Income and educational attainment are strongly correlated. We measure talent using educational attainment data, and we measure income using per capita income. Both are useful summary measures for the overall level of skill or income for the population of a particular geographic area. For educational attainment, we use the fraction of the adult population with a four-year degree. For income we use per capita income, which is the total income of a region divided by its population.

As we think about educational attainment, we recognize that the attainment of a four-year degree is just a single point along an educational continuum. But the relative fraction of a region's population that has completed a four-year degree is a good proxy for the overall educational attainment of the population. (Places with a high four-year attainment rate generally tend to have a smaller fraction of residents with less than a high school diploma and a larger fraction of residents with some post-graduate education.) The use of this measure reflects gains across the education continuum, rather than simply moving a few more residents across any particular threshold of attainment.

Figure 1: Education Explains Most Differences in Metro Income



Supporting studies: Human capital is a key determinant of urban prosperity. Per capita incomes are strongly correlated with levels of educational attainment. Figure 1 (above) shows the correlation between the fraction of the adult population with a four-year degree or higher level of education and the per capita income of the 50 largest U.S. metropolitan areas in 2006. Cities with better-educated populations have significantly higher per capita incomes. In fact, 58 percent of a city's success, as measured by per capita income, can be explained by the percentage of the adult population with a college degree.

We use levels of education to measure the amount of human capital, recognizing that years of education are only an imprecise measure and that the choice of any particular threshold (in this case, completion of a four-year degree) is arbitrary. Human capital is much richer and more varied than can be captured in these simple measures. Scholars working in this field have identified a broad set of cross-cutting skills, ranging from the basics (reading, writing and mathematics) to what have been termed the new basic skills: problem solving, teamwork and communication (Levy and Murnane 1996). Most researchers use data on educational attainment because it is more easily and accurately measured.

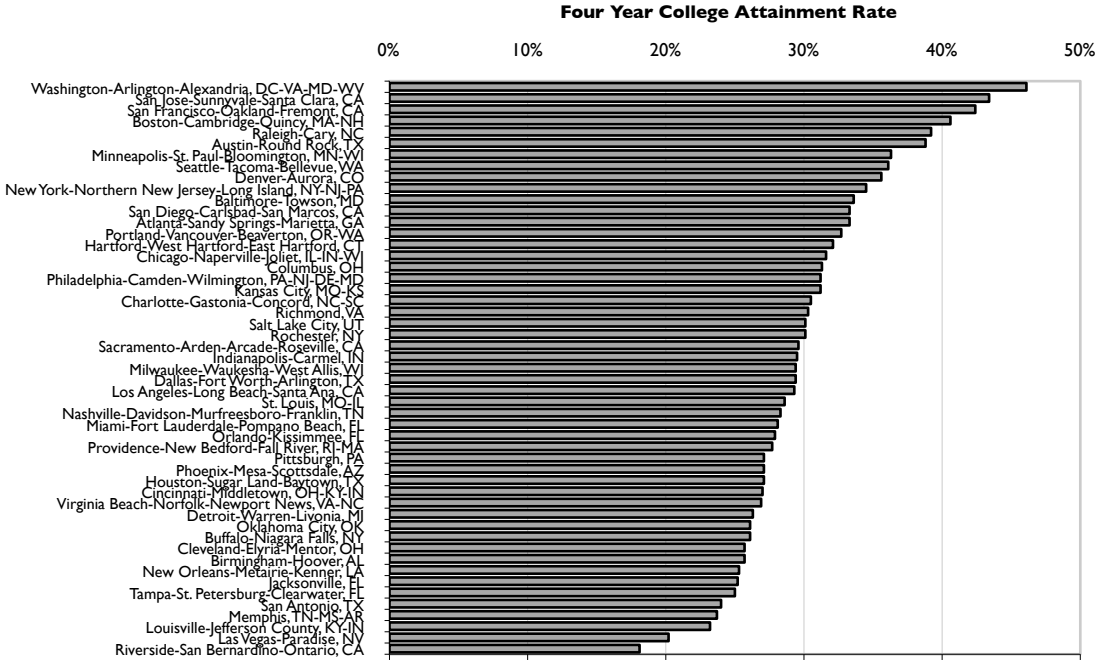
The level of human capital in a city is the product of many factors. It is influenced in part by the level of education infrastructure and investment in the metropolitan area. But because Americans are very mobile, the in-migration and out-migration of the population can also raise (or lower) a city's average educational level. In addition to formal schooling, workers acquire skills and experience on the job, and cities are important places for such skill acquisition. It appears that workers working in cities are more productive than similarly educated workers employed in other locations (Rauch 1993). Part of the improvement in worker productivity is due to the ability of workers to use dense city labor markets to easily move from job to job, exploring different possible careers, both building their skills and ultimately settling in a job that maximizes their productivity (Wheeler 2005).

Cities with higher levels of education not only have higher incomes but faster rates of income growth (Gottlieb and Fogarty 2003). In particular, the presence of a population with college degrees rather than just high school completion was strongly correlated with income growth. For cities, each two percent increase in the fraction of the population with a college degree was associated with a one percent increase in personal income growth in the 1990s (Weissbourd 2004). The combination of better education and higher productivity not only tends to lead to faster economic growth in better educated cities, it also appears that cities with higher levels of educational attainment are better able to deal with economic shocks (Glaeser 2003). And the higher levels of growth and productivity stemming from concentrations of urban talent don't simply benefit those with more education. Economists estimate that each ten percent increase in the fraction of a region's population with a four-year degree has the effect of increasing wages eight percent at every education level (Glaeser 2008).

One recent study found that the gains to skill in the United States are highly concentrated in metropolitan areas. Between 1981 and 1991, the rise in the skilled wage premium occurred only in metropolitan areas and resulted in a substantial difference in that premium between metro and non-metro areas (Chung, Clark et al. 2008). This implies that the opportunities for the nation to realize economic gains from its investments in education are heavily concentrated in the nation's urban areas.

The range of experience: Across the nation's 50 largest metropolitan areas, there is a wide range of variation in educational attainment. The four-year college attainment rate of the best educated metropolitan area (Washington, D.C., 46.1 percent) is more than double that of the least well-educated metropolitan area (Las Vegas, 20.2 percent). Among these metropolitan areas, the median level of college attainment is 29.4 percent, while the top 10 percent of metropolitan areas achieves a 38.8 percent level of four-year attainment.

Figure 2: Metro Variations in Educational Attainment



Estimated gains: To calculate the Talent Dividend, we estimate how much a metropolitan area could reasonably expect to gain in income if it increased its overall level of educational attainment by one percentage point. Our statistical analysis shows that there is a strong positive relationship between metropolitan educational attainment and per capita personal income. The cross-sectional data for the largest metropolitan areas suggest that in 2006, each additional percentage point improvement in aggregate adult four-year college attainment was associated with a $763 increase in annual regional per capita income.

Adding up: Across metropolitan areas, improving education levels could be one of the most powerful forces for improving income and economic well-being. Collectively, the 51 largest metropolitan areas have about 33 million adults with four-year degrees or higher levels of education. Increasing the four-year college attainment rate in each of the 51 largest metropolitan areas by one percentage point, from its current median of 29.4 percent to 30.4 percent would be associated with an increase in aggregate personal income of $124 billion per year for the nation.

This improvement in income would be the result of increased productivity—better-educated workers are more productive, and having access to a better- educated workforce makes businesses more productive. Improvements in educational attainment are a major contributor to economic growth. Economists estimate that increases in human capital have accounted for as much as 25 percent of increased output per capita since the 1950s (Hall 2000).