

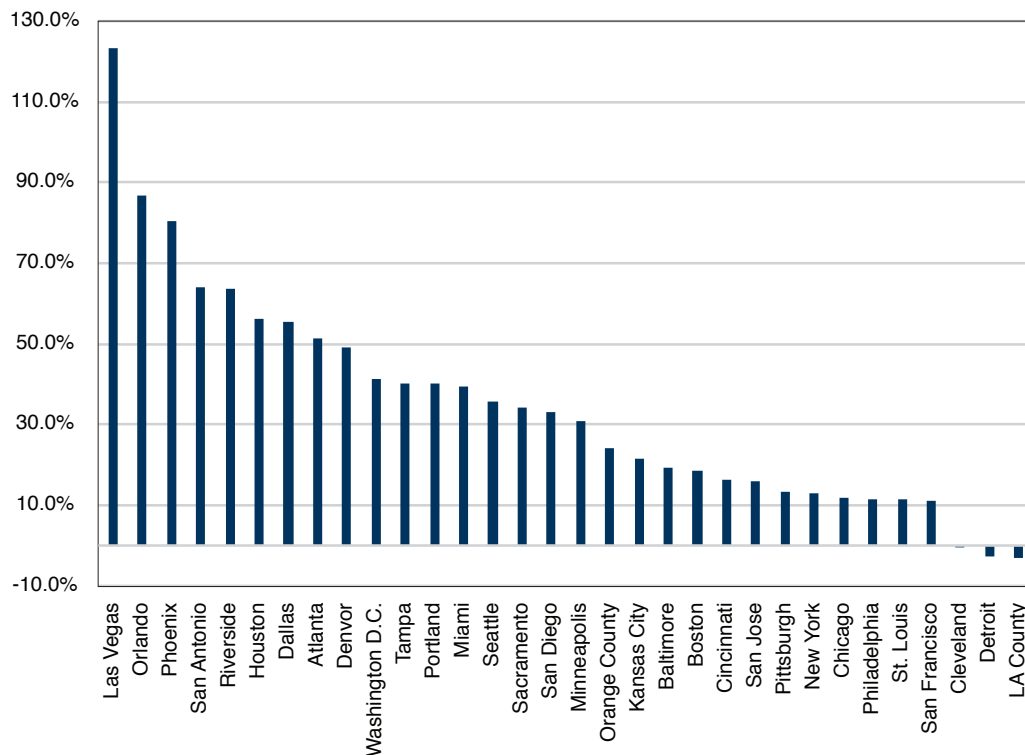
Problems and Solutions for Los Angeles' Economy: Human Capital, Public Education and Migration

William Yu
Economist, UCLA Anderson Forecast
March 2014

The most alarming economic problem facing Los Angeles is its anemic job growth, especially when compared to the nation's and other major cities'. Figure 1 shows the nonfarm payroll job growth from December 1990 to December 2013 for the 32 largest metropolitan areas in the U.S. Los Angeles comes in last. Among these metros, only three

cities have negative job growth: Cleveland (-0.2%), Detroit (-2.8%), and Los Angeles (-3.1%). To put it in perspective, L.A. has gone 23 years without positive job growth. Figure 2 depicts the dynamic pattern of job growth during this period for selected cities. During most of it, L.A.'s growth is again at the bottom.

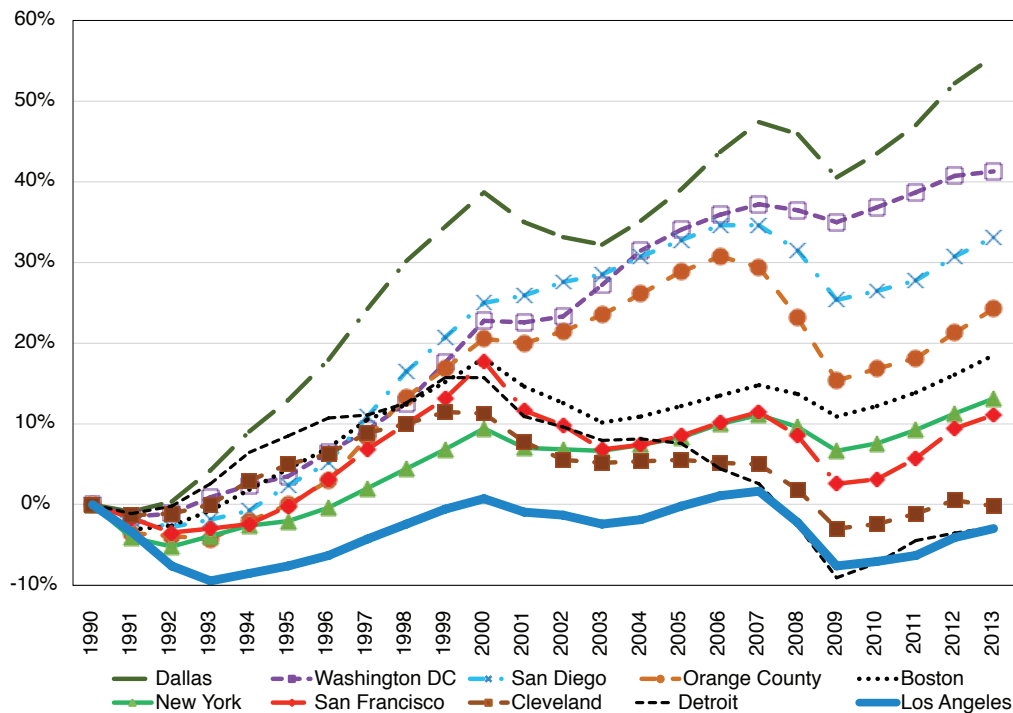
Figure 1 Nonfarm Payroll Employment Growth Rate From December 1990 to December 2013 for 32 Largest Metropolitan Areas



Source: Bureau of Labor Statistics

PROBLEMS AND SOLUTIONS FOR LOS ANGELES' ECONOMY

Figure 2 Nonfarm Payroll Employment Percentage Change From December 1990 to December 2013 for 10 Selected Metros



Source: Bureau of Labor Statistics

Why is L.A. falling behind? We believe that there are three major reasons.

1) High Cost of Living in Terms of Housing and Commuting

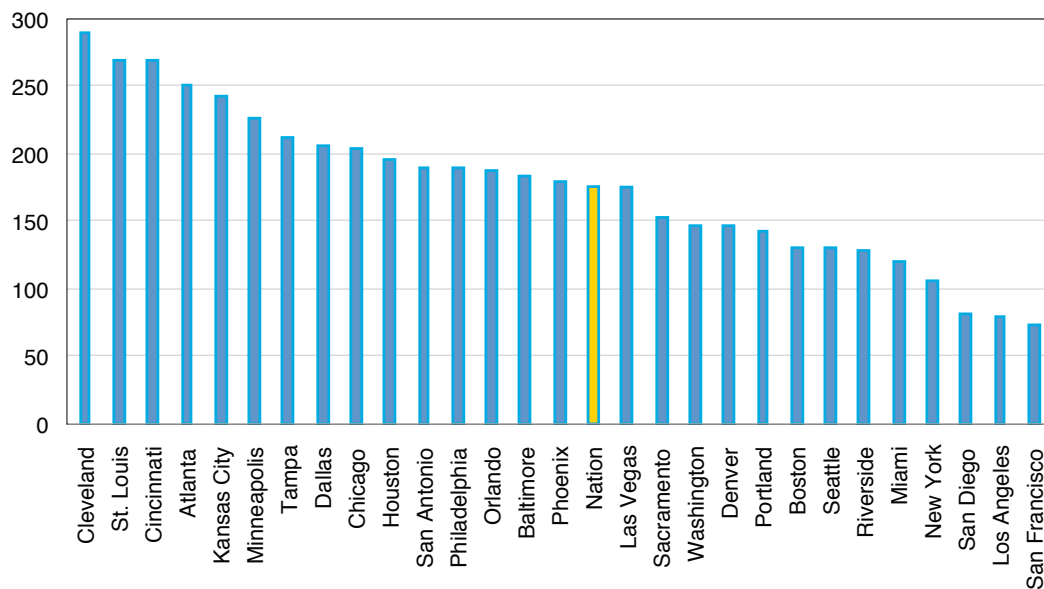
A median single-family house costs \$531,000 in L.A. this year while one costs only \$220,000 in Phoenix. Suppose an employee received similar nominal salary offers from similar companies; he is more likely to go to Phoenix because the purchasing power of the same salary will be higher in Phoenix than in L.A. For an employer, when she is considering expanding or establishing a business, it is less likely that she will choose L.A. because it will cost her more in rent and wage compared to other cities with lower costs of living but not necessary lower quality (amenities) of life.

Over the past 10 to 15 years, L.A. home price growth has been among the highest of major cities despite its bleak job growth. Why? There are reasons from demand side and

supply side. For demand side, due to its beautiful ocean and balmy weather, L.A. is a good place to live for one who can afford it. We suggest that high and rising housing prices driven by demand is a good thing for the city. On the supply side, limited residential building permit growth causing a lack of home supply, result in escalating home prices.¹ We suggest that high and rising housing prices driven by the lack of supply is detrimental to city's growth. Figure 3 presents the Housing Affordability Index of 2013, considering the average resident's income and housing cost in the city from National Association of Realtors (NAR). Housing is less affordable as you move toward the right of the graph and more affordable as you move left. L.A. is the second least affordable city in the U.S. to live in, trailing only San Francisco. Comparing Figures 1 and 3, we can see that high job growth cities like Orlando, Phoenix, San Antonio, Houston, Dallas, and Atlanta also have a more affordable housing index.

Based on its GPS data, TomTom Americas Traffic Index shows that Los Angeles is the most congested city in

Figure 3 Housing Affordability Index for the Nation and Major Cities, 2013



Source: National Association of Realtors

Note: A value of 100 means that a family with the median income has exactly enough income to qualify for a mortgage in the city on a median-priced home assuming a 20% down-payment. A value of 170 means that a median family has 170% of the income needed to qualify for a conventional mortgage for a median home. That is, the higher the value, the more affordable the home is. The less the value, the less affordable the home is.

the U.S. in 2013.² In fact, those of us who live here don't need statistics to tell us how bad the traffic is in L.A. Even worse, unlike New York, Washington D.C., Boston, and San Francisco, there is not an adequate interconnecting mass public transportation system for L.A. commuters who don't want to drive their own cars.

Congestion not only increases the cost of doing business in L.A. but also lowers the quality of life for residents. More subtly, it places an invisible ceiling on city growth in terms of population, jobs, building, and housing. Whenever L.A. has the chance to grow, we know it would likely make congestion even worse. Therefore, those who prefer their current low-density city lifestyle are more apt to fight any growth projects that arise. Cities with an effective public transportation system, on the other hand, have fewer congestion problems and therefore fewer reasons to fight growth. They can expand upward and outward, by increasing high rises and by sprawling into the suburbs. Where effective public transportation would allow for increased density without increased congestion, L.A.'s lack thereof means growth is undesirable.

2) Unfriendly Environment for Businesses

It should not be surprising that a business is less likely to start up, relocate, or expand its business in a city who is business unfriendly, especially when there are many other business friendly cities from which to choose in the U.S. According to the 2013 Thumbtack Small Business Friendliness Survey,³ L.A. County received a "D" for overall friendliness. The detailed categories are as follows: Ease of starting a business (D+), Ease of hiring (B), Regulation (D), Health & safety (D), Employment, labor, & hiring (D), Tax code (D+), Licensing (D), Environmental (D+), Zoning (D), and Training & networking programs (C).

In contrast, cities with great job growth in Figure 1 are more likely to have received high grades for business friendliness, such as Las Vegas (B), San Antonio (A+), Houston (A+), Dallas (A), Atlanta (A-), Denver (A-), Washington D.C. (B), Portland (B-), Seattle (B-), and Minneapolis (B+).

To test our argument that housing affordability and business friendliness could influence city's growth of jobs, we conduct a simple regression⁴ in which there are 50 met-

$$\text{Job Growth} = -.02 + .007 \times \text{Business Friendliness Ranking} + .001 \times \text{Housing Affordability}$$

(tstat)

(3.1)

Adjusted R Squared:0.30

(3.5)

Observations:50

ros. To explain the nonfarm payroll growth from January 1990 to January 2014, we use two variables: (1) NAR’s 2011 Housing Affordability Index,⁵ and (2) the city ranking of 2013 Thumbtack Small Business Survey. Note that among these cities, L.A. ranks 47th.

With the positive and statistically significant coefficients of business friendliness ranking and housing affordability, we suggest that city job growth does respond positively to afriendly business environment⁶ and more affordable housing.

3) Low Level of Human Capital

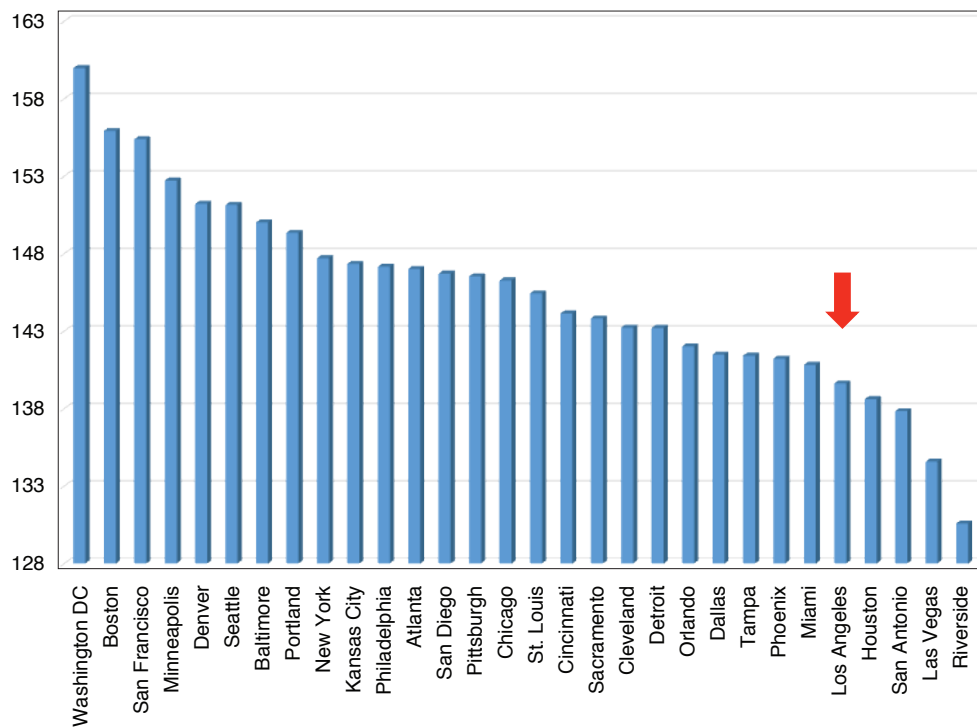
We believe that the strongest contributing factor to L.A.’s lag is it’s low level of human capital.⁷ In the globalized world of the 21st Century, the U.S. has a remarkable comparative advantage in the technological and innovative sectors, both of which require a highly educated workforce, while China and other developing countries have a comparative advantage in the manufacturing sectors, which require a low-skilled and low-educated workforce. Robots, microchips and automation have also replaced a tremendous number of middle-skill jobs. The across-ocean division of labor, paired with technological advancements, creates winners and losers in the U.S. The winners are the more educated workforce who live in high human capital cities, and the losers are the less educated workforce who live in low human capital cities.

Figure 4 shows the First 5 LA/UCLA City Human Capital Index (CHCI) in 2012. L.A. metro, with a CHCI of 140, ranked 26th among the 30 largest metros in 2012. L.A. County, with a CHCI of 137, ranked 21st among the 30 largest counties. It is not a coincidence that cities with high human capital, e.g. Washington D.C., Boston, Minneapolis, Denver, and Seattle have also had high job growth over the past two decades as seen in Figure 1. Some other coastal California cities such as San Francisco and San Diego also have a very high cost of housing (see Figure 3) and an unfriendly business environment like L.A. For instance, according to the Thumbtack Survey, San Francisco received a “C” and San Diego received an “F”. Why do they still have higher job growth than L.A.? We suggest the reason is that both San Francisco and San Diego have high human capital, which mitigates the other two negative factors for job growth.

Figure 5 shows a significant correlation between CHCI and the employment to population ratio across 3143 counties in the U.S. in 2010. That said, poorly educated workers suffer more unemployment spells and are more likely to drop out of the labor force. Figure 6 demonstrates an evident correlation between CHCI and median household income across 3143 counties in the U.S. In other words, highly educated workers are more productive and earn a higher wage.

It’s worth noting that L.A. County is the largest county in the nation with a population of 10 million. The huge

Figure 4 2012 City Human Capital Index for the 30 Largest Cities in the U.S.



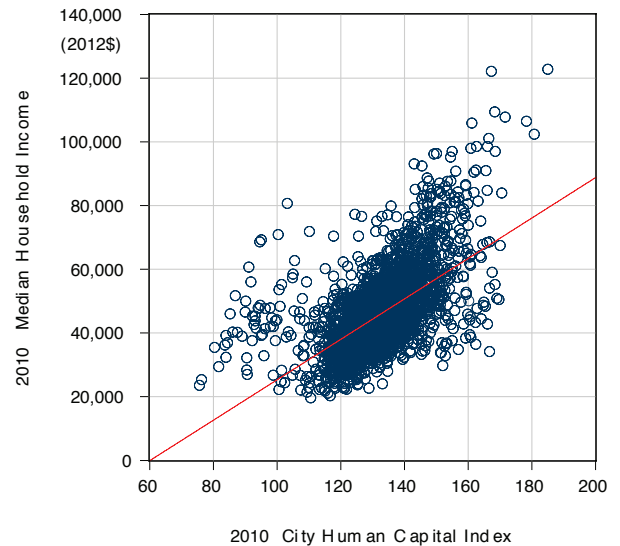
Source: Author's calculation based on the 1-year American Community Survey, 2012.

Figure 5 The Correlation between City Human Capital Index and the Employment to Population Ratio Across 3143 Counties in the U.S.



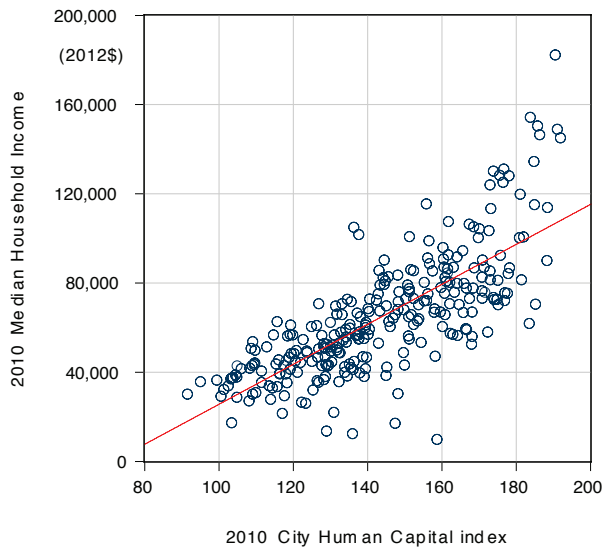
Source: 5-year American Community Survey, 2008-2012. The med-year is 2010.

Figure 6 The Correlation between City Human Capital Index and Median Household Income Across 3143 Counties in the U.S.



Source: 5-year American Community Survey, 2008-2012. The med-year is 2010.

Figure 7 The Correlation between City Human Capital Index and Median Household Income Across 285 Zip Codes in L.A. County



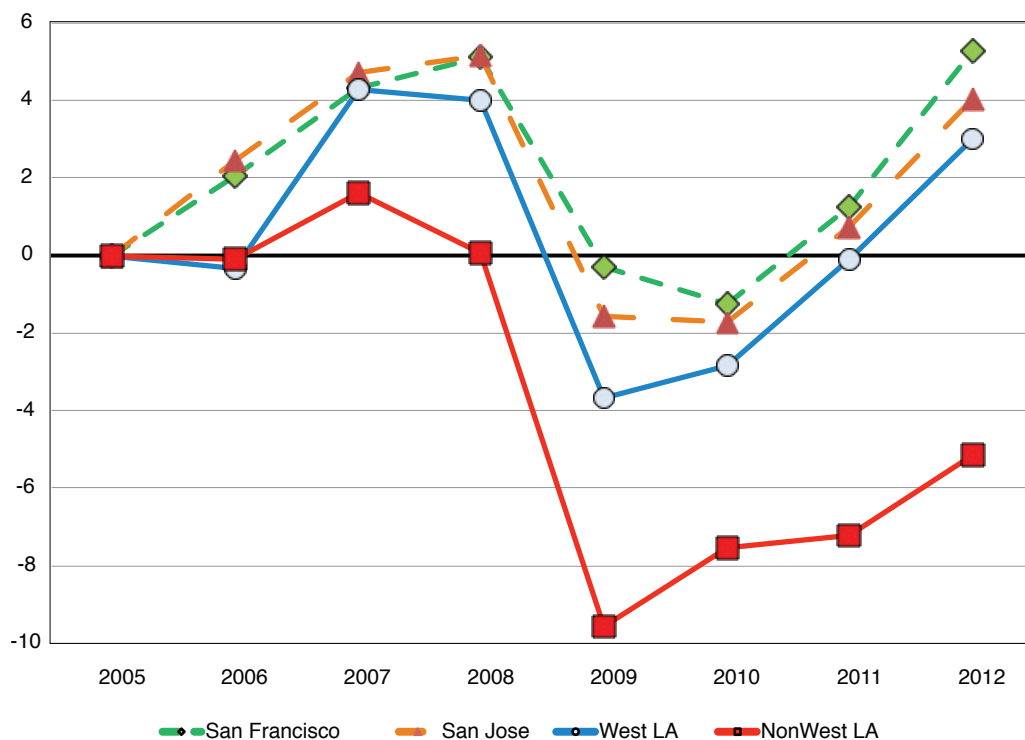
Source: 5-year American Community Survey, 2008-2012. The med-year is 2010.

disparity of human capital within the county also projects the difference in household income within L.A. Figure 7 clearly portrays a positive relationship between CHCI and the median household income by zip codes in L.A. County. In terms of job creation, we also see the dichotomy. We divide L.A. County into West L.A. and the rest of L.A., where West L.A. includes areas such as Silicon Beach. West L.A. has a population of 932,000 and a CHCI of 174. Figure 8 displays a tale of two cities in terms of job growth. From 2005 to 2012, West L.A. had a payroll job growth of 3% while the rest of L.A. took a 5.1% hit in job loss. West L.A., with its high human capital, has seen job growth and higher incomes like other cities with high human capital (San Jose, San Francisco, Seattle, etc.).

Solutions for Los Angeles Economic Problems

If we can agree on the main causes of L.A.'s lagging problems, the next step is to seek solutions. In this report, our main focus will be on how to improve the low level of human capital in L.A.

Figure 8 The Nonfarm Payroll Employment Percentage Change since 2005 for West L.A. and Nonwest L.A.



Source: California Employment Development Department

With regard to the problem of the high cost of living for housing, we suggest that the most straightforward way is to encourage high-density, multi-unit residential housing and to streamline the time, process, and regulations of housing projects. This policy is not only pro-growth but also pro-environment. For the problem of the high cost of living in terms of commuting, L.A. needs to encourage all kinds of alternatives that depend less on the current system of a single person driving his or her car for every commute.

Regarding the problem of the current unfriendly environment for businesses, local governmental leaders should take the lead, as suggested in “A Time For Truth,” the L.A. 2020 Commission Report, in becoming more business friendly, more efficient, more innovative, and more welcoming to entrepreneurs.

Human Capital and Public Education

How can we enhance L.A.’s relatively low level of human capital? There are two direct solutions. First, encourage highly educated people to move to L.A. from other cities or abroad. Second, improve L.A.’s public schools in order to build high human capital into the next generation. The second solution will also help achieve the first solution because good school districts will attract more educated people who mostly care about their children’s education.

In the U.S., it is well known that public schools in low-income neighborhoods have not been doing an adequate job in terms of student academic performance. The problem is particularly serious in the City of Los Angeles. Why? How can we explain the stunning discrepancies in public school performance within and across cities?

We know public schools in high-income areas tend to do much better than those in low-income areas. The first obvious reason is that in the high-income neighborhood, residents are more educated and therefore expect their children to be educated as well. With good parenting and more resources, teaching is easier and more rewarding because students tend to be more motivated. Positive outcomes attract more educated parents to move to this high human capital area. Virtual cycles continue.

On the other hand, in low-income neighborhoods, residents are more likely to be poor, unemployed, and less-educated. Therefore, their children’s education might not be their first priority. With inattentive parenting and fewer resources, teaching is harder and more frustrating because

students tend to be less motivated. Negative environments scare more educated parents away from this low human capital area. Vicious cycles perpetuate.

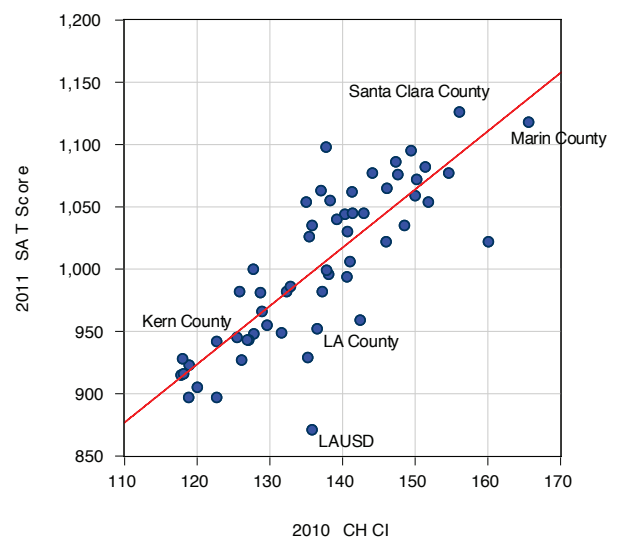
The question is: beyond the human capital of local adult residents, are there any other factors that could explain a student’s learning outcomes? Is it possible to turn vicious cycles into virtual cycles? Is LAUSD (Los Angeles Unified School District), the nation’s second largest school system, performing worse than other school districts in California?

Note that the First 5 LA/UCLA City Human Capital Index (CHCI) is calculated mainly based on the quantity of education attained by adult residents adjusted by its productivity.⁸ We assign residents without a high school diploma a CHCI of 80, residents with a high school diploma a CHCI of 120, bachelor’s degrees are assigned a CHCI of 190, and master’s degrees or higher a CHCI of 230. The goal of the quality adjusted CHCI is to be an easy barometer for the level of human capital of a city across the nation and over time. How can CHCI, mainly based on adult residents’ human capital, explain the outcome of public education?

CHCI and SAT in California

Figure 9 depicts a clear correlation between CHCI and the average SAT score of public high school students in 57 counties and L.A. Unified School District (LAUSD) in

Figure 9 The Correlation between CHCI and SAT in California Counties



Source: California Department of Education and Anderson Forecast

California.⁹ By and large, a county with high adult human capital will see higher SAT scores (for reading and math scores combined; full score: 1600) from the county's youth. In other words, the CHCI is a fair predictor of public education's outcome. However, the devil is in the detail. Some counties, e.g. Santa Clara County (SAT: 1126), is above its predicted red line (around 1080) given its CHCI of 156. In contrast, LAUSD (SAT: 871) falls below its predicted level given her CHCI.

The City of Los Angeles has a CHCI of 135.8, which is slightly lower than L.A. County's 136.5. Given this level of human capital, LAUSD's predicted SAT is supposed to be around 990. However, its actual SAT score is only 871. In other words, LAUSD is underperforming in terms of educating the next generation. To give you another example, let's take a look at Kern County, just north of L.A. County. Its CHCI is 122.7, well below City of Los Angeles's 135.8. However, its SAT score is 942, which is just about what it is supposed to be and is much higher than LAUSD's 871.

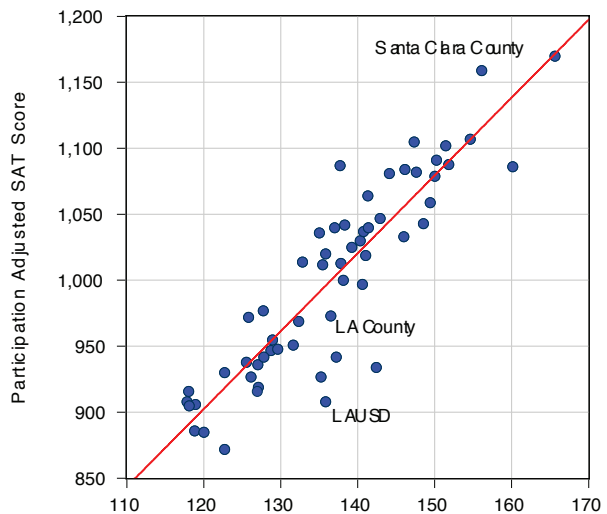
We do notice that SAT participation rate is associated with SAT scores as shown in the following regression result. That is, the counties with high SAT participation rates tends to have lower SAT scores. The reason could be that those counties with higher participation rates encourage their students to take the test for the prospect of going to college. Those students who were encouraged (not voluntary) might have lower performance.

$$\text{SAT Score} = 262 + 5.9 \times \text{CHCI} - 1.96 \times \text{Test Participation Rate}$$

(tstat) (9.9) (-2.3)
 Adjusted R Squared: 0.73 Observations: 58

Even when we adjust SAT scores per county based on student's participation, we still can see that LAUSD underperforms while Santa Clara County outperforms as shown in Figure 10.

Figure 10 The Correlation between CHCI and SAT in California Counties, Adjusted for County Size



Source: California Department of Education and Anderson Forecast

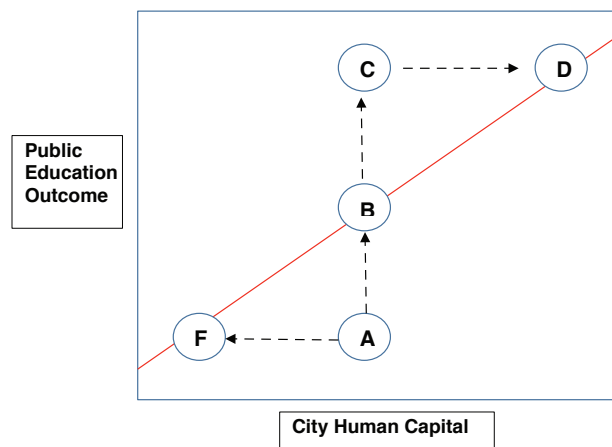
Is LAUSD really underperforming? We will investigate more in the following sections. What can we learn from Santa Clara County's public education? Figure 11 explains the roadmap of how the City of Los Angeles should improve its public education and human capital. The upward-sloping red solid line represents the predicted relationship between

a city's adult human capital (current generation) and their children's learning outcomes. It is not surprising to conjecture that high public school outcomes today will lead to high city human capital in the future. If LASUD is really

underperforming, then its position is currently located at underachieving Point A. The first step is to improve its public education outcome to Point B.

But even Point B is not good enough. As we show in Figure 4, L.A.'s human capital is falling behind other major cities. Therefore, the second step is to outperform its destined result of Point B and move to Point C. If Santa Clara County could do it, so can LAUSD. Over time, when the next generation matures and becomes the main workforce of L.A., it will naturally improve the city's human capital level to Point D: high human capital and positive school outcomes. If L.A. fails to improve, when these underachieving children grow up, L.A. human capital might decline even further to Point F.

Figure 11 The Dynamic Relationship of City Human Capital and Its Public Education Outcome in the Long Run

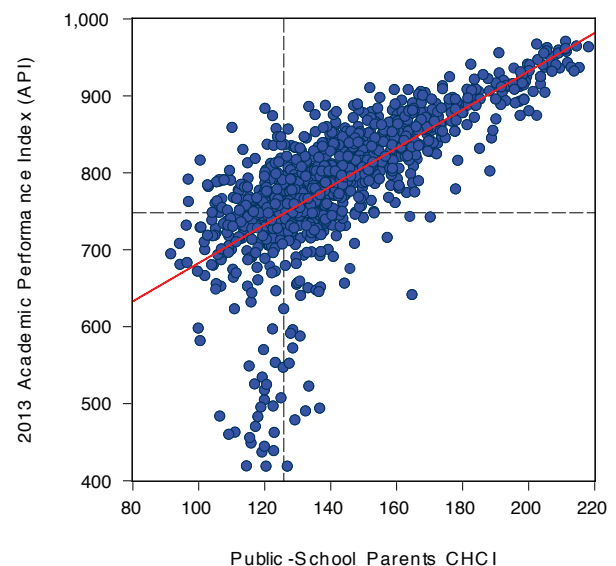


CHCI and Academic Performance Index (API) in California

The previous empirical evidence is using county level data with a small sample size of 58. Moreover, SAT is only for high school students and students are not required to take the test. For instance, only 45% of enrolled students take the SAT in L.A. County and 53% in LAUSD. So here we use another common measurement of K-12 students' academic performance—Academic Performance Index (API), which all Californian public school students are required to take. This allows us to take a look at a more detailed relationship between CHCI and student learning outcomes by examining 983 school districts and 9199 individual schools in California.

Here we calculate CHCI from a more direct source: the education attainment of students' parents. In California, schools and districts will ask students to report their parents' education information. We use the same method of calculating CHCI to develop this public-school parents' (PSP) CHCI for each school and district. In Figure 12, each dot represents a school district in California with its corresponding PSP CHCI and API. Again, we see a clear upward sloping line, which means the PSP CHCI predicts the student's learning outcome in that district. Note that LASUD's PSP CHCI is 125.8 and its API is 748. (See the intersection of the dashed lines in Figure 12.) That is to say, given its PSP CHCI, LAUSD's performance is just what is expected, no better no worse.

Figure 12 The Correlation between Public-School Parents' CHCI and Students' API among 983 School Districts in California



Source: California Department of Education and Anderson Forecast Explorer, 2010 inflation adjusted dollars, by Census block group

However, in Figure 12, we see some deviation of each district's performance from its predicted line according to CHCI. What other factors could explain these deviations? In addition to the CHCI, we consider the following factors based on our prior hypothesis: (1) The percentage of enrolled students who are socioeconomically disadvantaged or in poverty for each school. These students will get a free or reduced price for meals. (2) The school is in L.A.

County (if so 1; if not 0). There are 78 districts (2163 public schools) in L.A. County. (3) Percentages of enrollments in elementary schools and high schools, (middle schools are the benchmark).

schools in L.A. County than other schools by 28 points! In other words, as a whole L.A. County is doing better than its expected level (red line in Figure 12). This result is consistent with that in Figure 10.

$$API = 463 + 2.04 \times CHCI - 0.34 \times Poverty + 28 \times LA\ County + 1.26 \times Elementary - 0.25 \times High$$

(tstat)

(13)

(-2.2)

(6.2)

(3.9)

(-1.2)

Adjusted R Squared:0.64

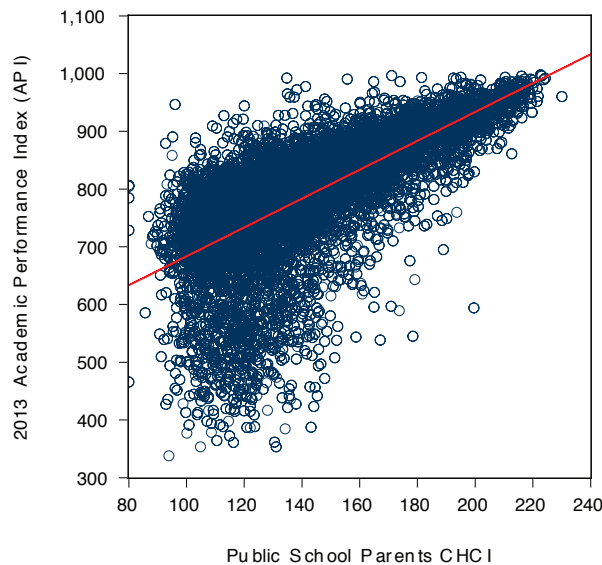
Observations:983

The regression results are presented above. All the factors are statistically significant, except for the high school percentage. Let's explain the results in plain English. First, other things being equal, if the school's PSP CHCI improves by 10, meaning that the parents' have one more schooling year of education on average, we predict the school's API will increase by 20 points. The CHCI is not only statistically but also economically significant.

Second, after controlling PSP CHCI, the influence of poverty from a student's family is less important than a parent's education level in both economical and statistical ways. Third, other things being equal, API is better in

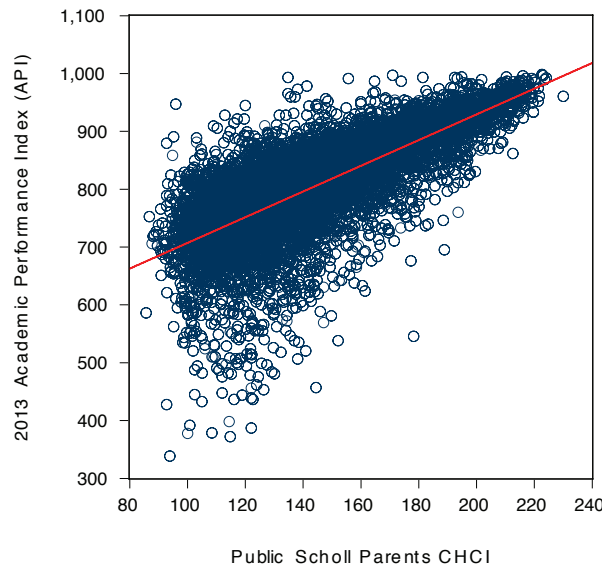
Next, let's take a look at the detailed relationship of API and PSP CHCI for individual schools as shown in Figure 13. Again, we can get an evident association between PSP CHCI and its API. Note that in addition to some normal deviations of dots from the regression line, there are a certain number of schools, located in the southwest corner of the figure, which are not explained well by CHCI. So here we add one more variable: alternative school dummy (if so 1, if not 0) to see if it can explain this. Alternative schools are serving those highly mobile and at-risk students based on California's Alternative Schools Accountability Model (ASAM). Figure 13a presents the same correlation excluding those alternative schools. As a result, we see fewer dots in the southwest corner.

Figure 13 The Correlation between Public-School Parents' CHCI and Students' API among 9199 Public Schools in California



Source: California Department of Education and Anderson Forecast

Figure 13a The Correlation between Public-School Parents' CHCI and Students' API among 8963 Public Non-alternative Schools in California



Source: California Department of Education and Anderson Forecast

$$API = 522 + 2.01 \times CHCI - .19 \times Poverty - 142 \times Alternative + 16 \times LA\ County + .18 \times Elementary - .57 \times High$$

(tstat) (23)
(-2.3)
(-29)
(7.9)
(11)
-(20)

Adjusted R Squared: 0.72
Observations: 9199

CHCI is still the most important factor that determines school's API. Not only is CHCI a direct indicator of parents' education level but it is also a good indicator of families' income and other socioeconomic factors as shown in Figures 5 to 7. Poverty is statistically significant but still not economically significant. Why? One of the reasons could be that the factor is not informative enough because the majority of students fall into the category for free or reduced fee meals (California: 59%, L.A. County: 67%, and LAUSD: 79%). It is not surprising to see those students performing worse than normal students at alternative schools (142 points lower). This factor could explain those dots in the southwest corner in Figure 13. Again, other things being equal, schools in L.A. County are performing better than its predicted level. If we add LAUSD as a factor in the regression, we find no evidence that LAUSD is either doing better or worse than it is expected to be after controlling relative variables.

Revisit Human Capital in City of Los Angeles

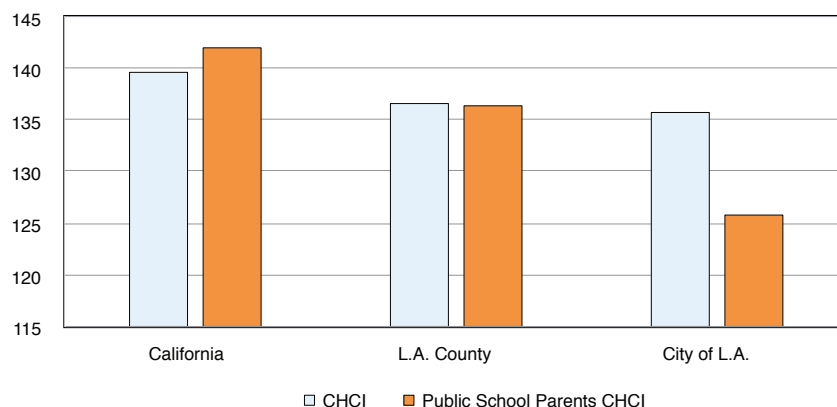
Here it seems we see contradictory evidence. In Figures 9 and 10, it suggests that LAUSD is underperforming by considering its level of city human capital. In Figures 12 and 13, it suggests that LAUSD is neither under- or over-achieving. What is going on? There may be two reasons for this disparity. First, the measurements of students' academic performances are different. The former is the voluntary SAT

score, designed by College Board; the latter is the mandatory APT score, designed and calculated by the California Department of Education. We are not sure which one is a better measurement.

Second, the former figures use CHCI based on the data from the American Community Survey for all adult residents from the U.S. Census. Note that we also examine the CHCI for the ages 46 to 64 (see following section). Their CHCIs are very similar. This CHCI is more like social or community human capital. On the other hand, the latter ones use parents' educational attainment data as reported by those students enrolling in public schools. This public school parents' CHCI is more like an individual or family CHCI than a community one.

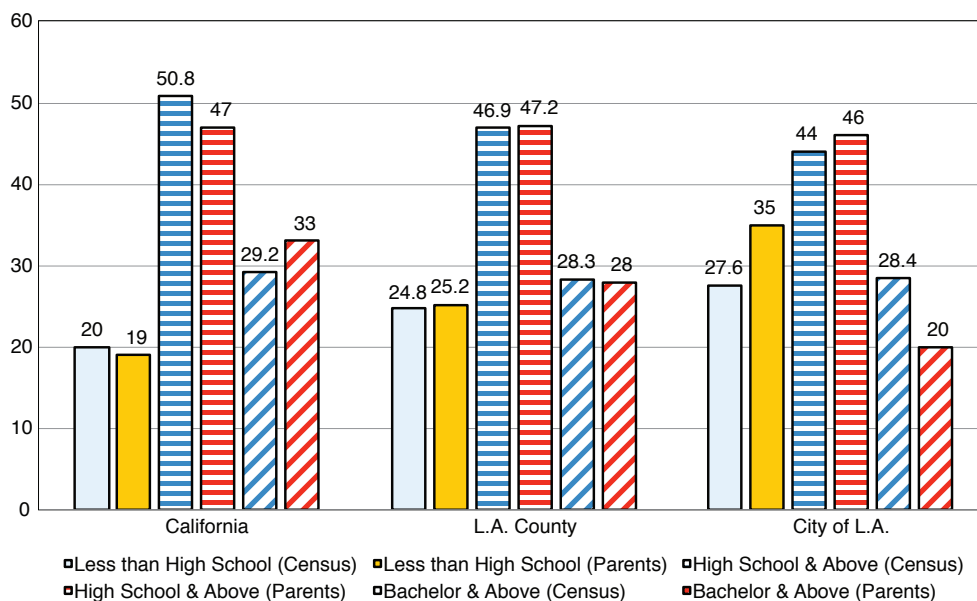
Let's compare CHCI based on Census data and PSP CHCI based on individual students' reports. For California, its CHCI is 139.7 and its PSP CHCI is 141.9. They are pretty similar. For L.A. County, its CHCI is 136.5 and its PSP CHCI is 136.4. They are also almost the same. For the City of Los Angeles (LAUSD), its CHCI is 135.8 but its PSP CHCI is only 125.8! The stunning discrepancy is shown in Figure 14. According to the Census, 27.6% of City of L.A. residents have less than a high school degree while according to public school data, 35% of LAUSD parents have less than a high school degree. The difference is illustrated in

Figure 14 The CHCI and Public School Parent CHCI for California, L.A. County, and City of L.A.



Source: 5-year American Community Survey, 2008-2012 and California Department of Education

Figure 15 The Components of CHCI and Public School Parents CHCI for California, L.A. County, and City of L.A.



Source: 5-year American Community Survey, 2008-2012 and California Department of Education

Figure 15. The Census shows 28.4% of City of L.A. residents have a bachelor's degree or higher while according to public school data, only 20% of LAUSD parents have that level of educational attainment.

Why is the PSP CHCI in LAUSD much lower than its CHCI in the City of L.A.? There are three possible reasons. (1) LAUSD covers a geographic area larger than the City of Los Angeles. Those additional areas in LAUSD are predominantly low-educated area, such as East Los Angeles, South Gate, Huntington Park, etc. (2) In the City of L.A., more educated residents send their children to study in private schools. According to the American Community Survey 2010, K-12 private school's enrollment is 13.3% of all K-12 students in the City of L.A., higher than 11.1% in L.A. County and 9.8% in California. (3) There are more undocumented immigrants who do not participate in Census survey in the city than county or state. We are not sure which reason is more important than others.

In summary, we suggest two things. First, based on its aggregate CHCI, LAUSD or the City of L.A. is underperforming. By and large, it implies that as a whole city, L.A. could do a better job. Second, based on its individual public-school parents CHCI, LAUSD does not underperform compared to other schools in California. The overall disappointing performances in LAUSD simply reflect its more difficult background of its student demographics. However, there is no room for complacency. Put it differently, L.A. is already in Point F of Figure 11! Compared to other cities in the nation and in the world, L.A. will not be competitive with such a low CHCI, by both social and individual standards. L.A. has to improve to Point B, C and D in Figure 11.

Note that there is no reason that improving public education should only start from kindergarten. On the contrary, it is evident that the focus on quality early childhood education will significantly increase the success of K-12 education.

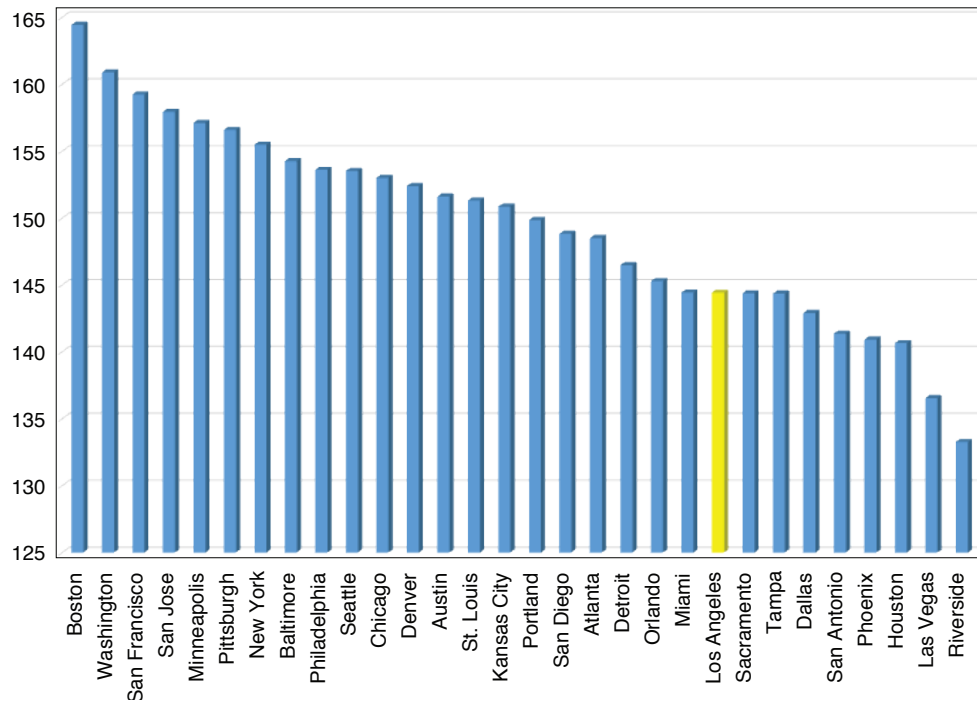
City Human Capital Index by Age Category

So far we have shown the aggregate CHCI by metros, counties, and zip codes. How will it look differently based on different age cohorts? Here, we use a similar formula to measure CHCI for the (1) young ages of 25 to 34, (2) ages 35 to 44, (3) ages 45 to 64, and (4) elderly ages above 65. In 2010, L.A.'s CHCI for ages 25 to 34 is 144.4; its CHCI for ages 35 to 44 is 141.3; its CHCI for ages 45 to 64 is 141.1; and its CHCI for ages above 65 is 135.1. As cohorts age, their CHCI decline. This simply explains the expansion of higher education in America after World War II.

The rankings of CHCI for the 30 largest metros based on its corresponding age cohorts are displayed in Figures 16 to 19. We find that L.A. ranks better in the young cohort

(ages of 25 to 34) and the elderly cohort (ages above 65). Why? We suggest three possible reasons. First, L.A. used to have 20% of manufacturing jobs in 1990 that did not require high skill and education. Unfortunately, those jobs are now gone but less-educated workers (ages of 35 to 64) are still struggling to find a job. Second, the Great Recession and its aftermath reduces the attraction of young and less skill immigrants from Mexico and Latin America. Third, L.A. is home of many colleges. When the college students graduate, they stay. So the young cohort has a relatively higher CHCI. Because of the poor public schools in L.A., when residents have children, those who care about education might leave the city, therefore driving down the middle-age CHCI. When they are older, when they don't need to worry about their children's education and finding a good job, the more educated and the rich come back to expensive L.A. to retire.

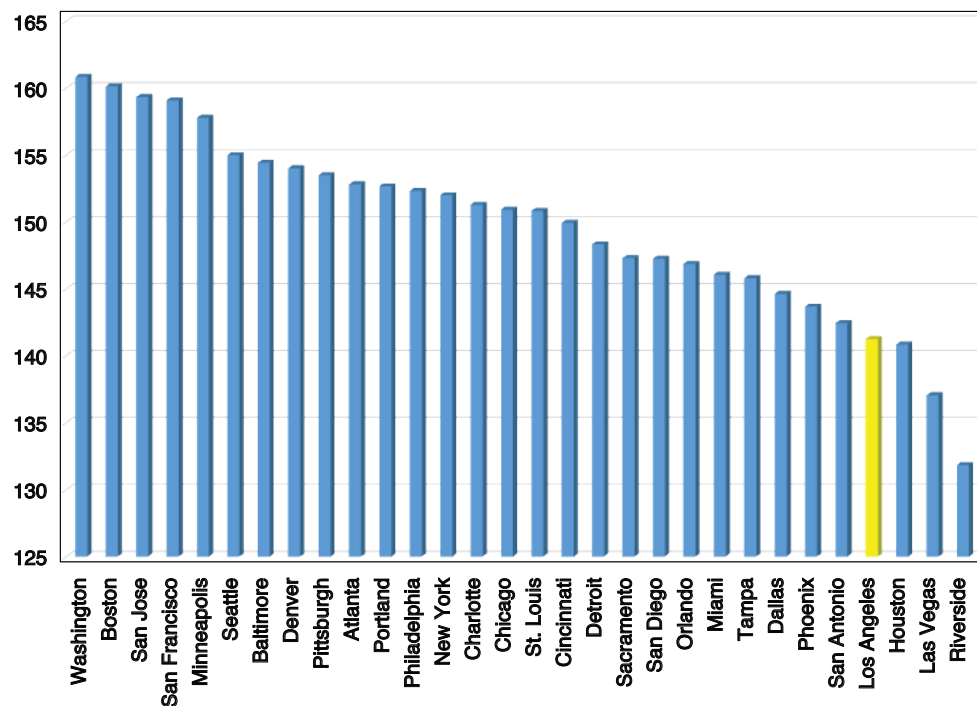
Figure 16 2010 City Human Capital Index for Ages 25 to 34 in the 30 Largest Cities



Source: 5-year American Community Survey, 2008-2012. The med-year is 2010

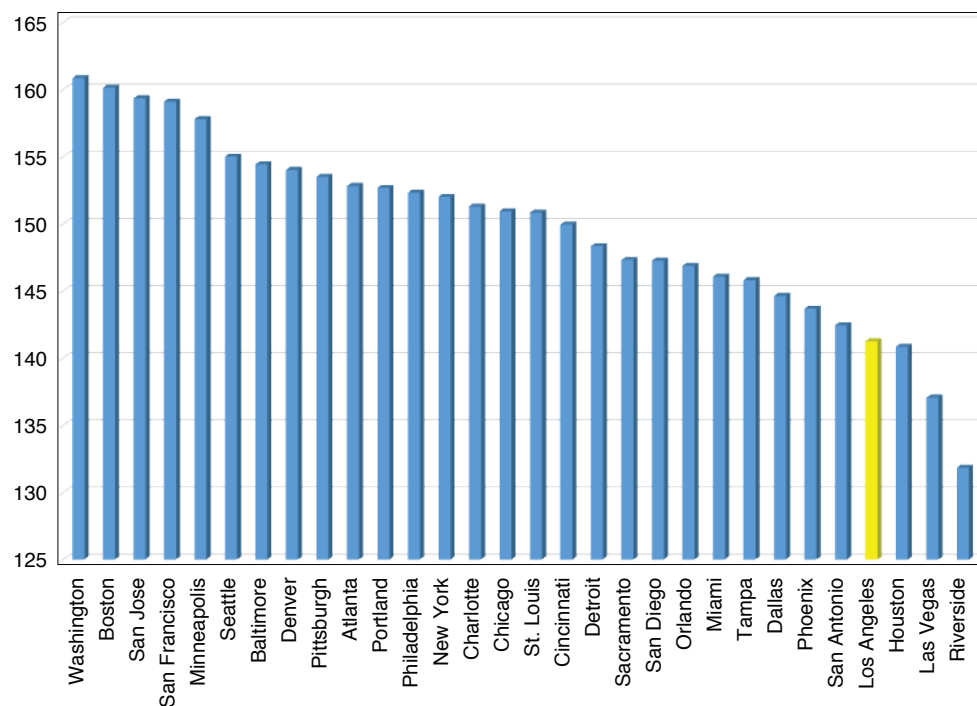
PROBLEMS AND SOLUTIONS FOR LOS ANGELES' ECONOMY

Figure 17 2010 City Human Capital Index for Ages 35 to 44 in 30 Largest Cities



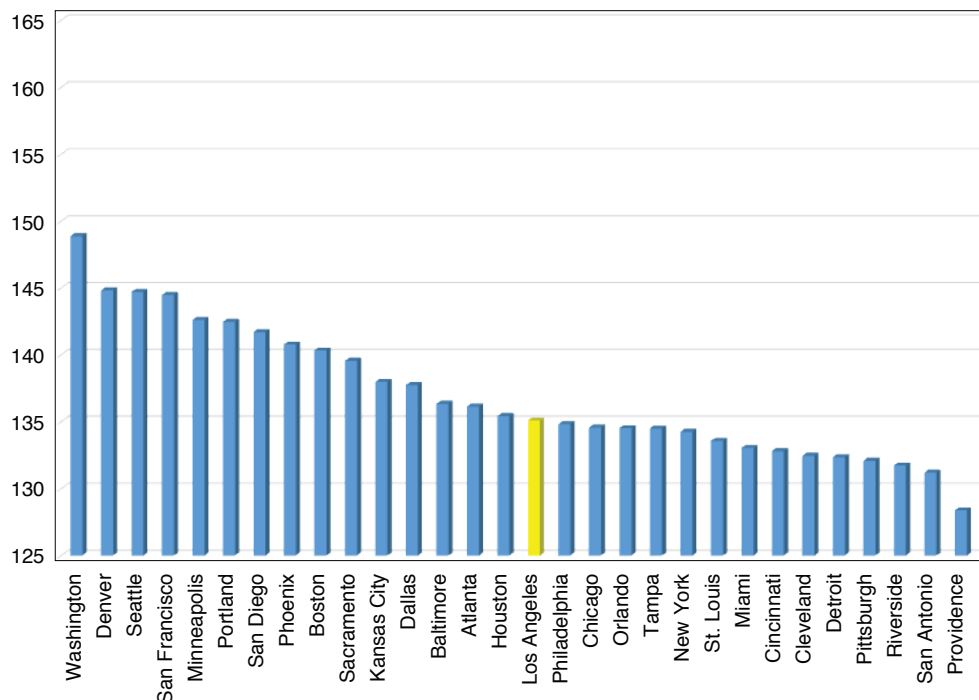
Source: 5-year American Community Survey, 2008-2012. The med-year is 2010.

Figure 18 2010 City Human Capital Index for Ages 45 to 64 in 30 Largest Cities



Source: 5-year American Community Survey, 2008-2012. The med-year

Figure 19 2010 City Human Capital Index for Ages Above 65 in 30 Largest Cities



Source: 5-year American Community Survey, 2008-2012. The med-year

Bifurcated L.A. Might Need Bifurcated Policies

Combined Figures 16 to 19 and Figure 8, we know that young Angelenos with high human capital living in West L.A. are more likely to get a good job while those middle-age Angelenos with low human capital living in the rest of L.A. are not. In the long run, it is imperative to enhance human capital through improving our public education as suggested in Figure 11. But how about in the short and medium run? How can we help those middle-age Angelenos with low education who got trapped in the 21st century to get a job?

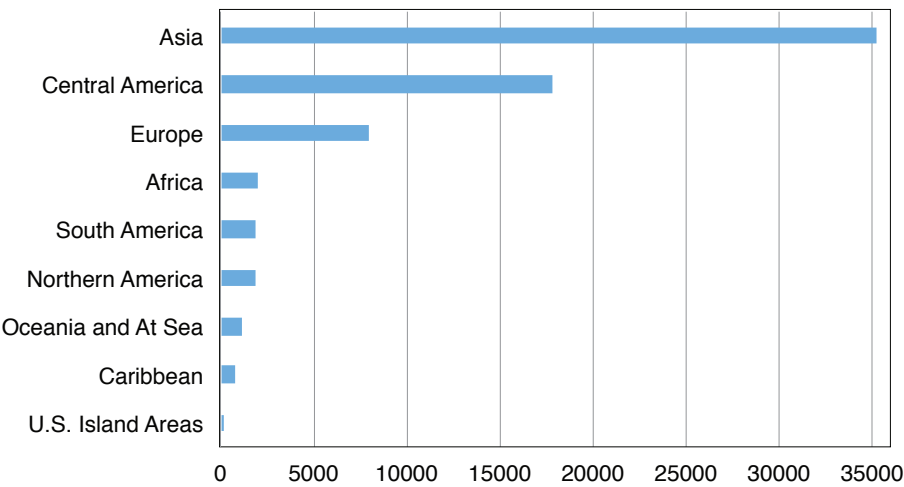
Figures 17 and 18 might provide cue. Two cities, Houston and San Antonio, with low human capital still see impressive job growth over the past two decades, mostly because of its business-friendly environment. Therefore, L.A. could develop bifurcated policies toward these two L.A.s. For high human capital L.A., we continue to maintain its high quality of living to attract and retain the best and most creative talents. For low human capital L.A., we provide more business friendly incentives to generate jobs for those less-educated to gain foot.

Migration of Human Capital

As we mentioned in the previous report,¹⁰ the exodus of high-skill workers due to the contraction of the aerospace industry out of L.A. with the influx of low-skill immigrants into L.A. in the 1990s explained the deep slump of L.A. human capital. What is the current migration trend in L.A.? Based on the latest data, the 5-year American Community Survey for county-to-county migration flows, we can see the migration pattern on average in the midst of the Great Recession during the period of 2007 to 2011. During this period, L.A. County saw a net domestic migration outflow of 115,651. Meanwhile, L.A. has a net international migration inflow of 68,856 as shown in Figure 20. As a result, the total net migration is an outflow of 46,795.

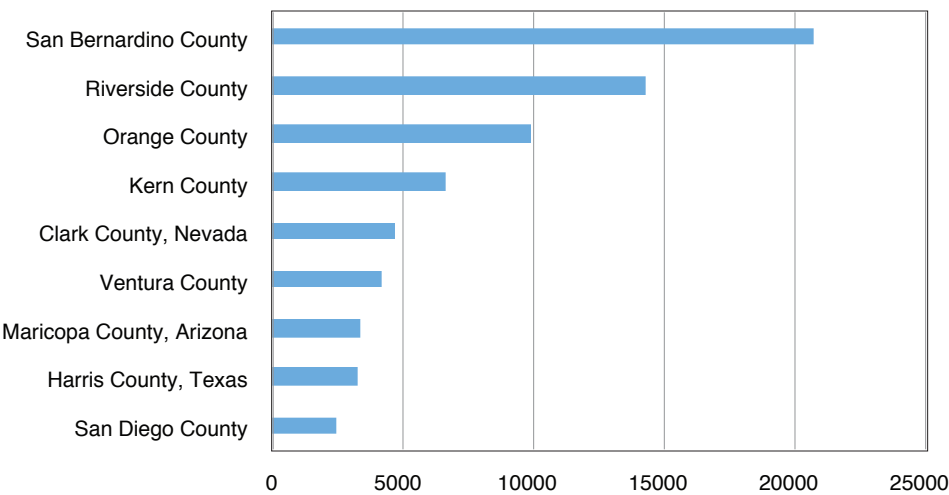
From Figure 20, we can see that most of the international migration is from Asia, followed by Central America, including Mexico, and finally Europe. While we do not know the education attainment of these international immigrants, we do know about domestic migration's human capital and which counties they are moving from and where

Figure 20 Net International Migration Inflow from Foreign Countries into L.A. County, 2007-2011



Source: U.S. Census County-to-County Migration Flows based on 5-year American Community Survey, 2007-2011

Figure 21 Net Domestic Migration Outflow from L.A. County to Other Counties, 2007-2011



Source: U.S. Census County-to-County Migration Flows based on 5-year American Community Survey, 2007-2011

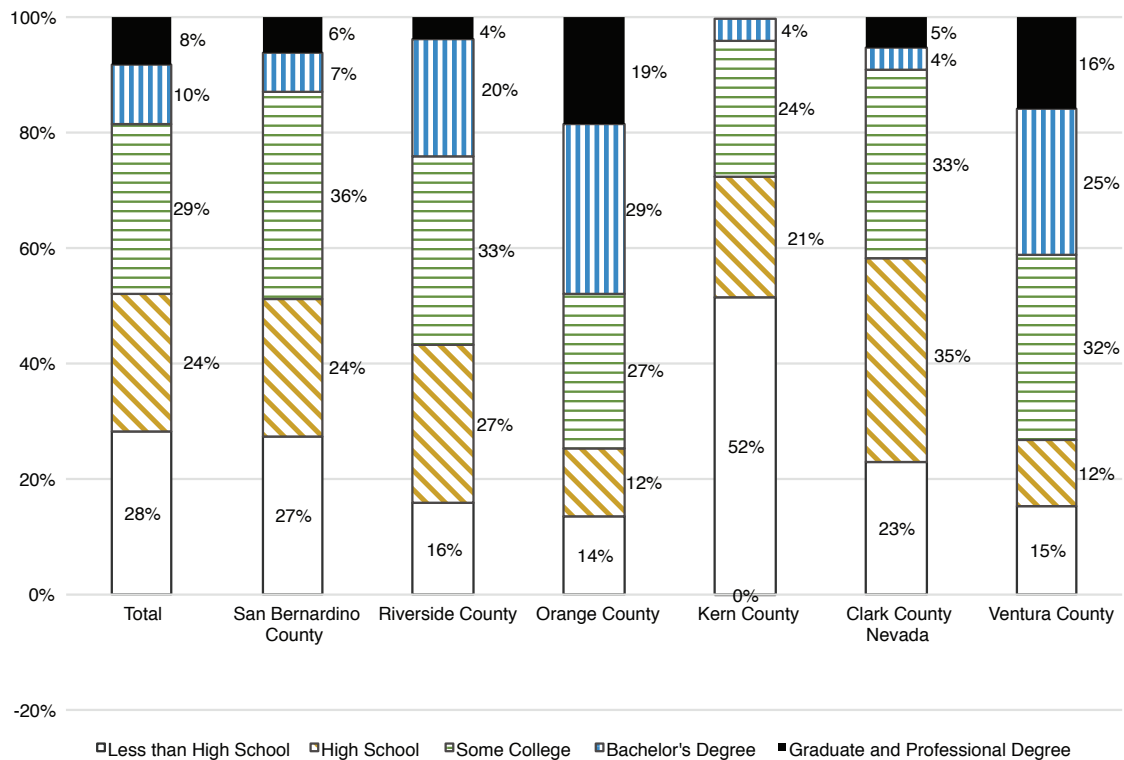
they move to. Figure 21 displays the 9 largest counties attracting residents moving from L.A. It is not surprising to see most of the migration outflow is to L.A. neighboring counties, such as San Bernardino, Riverside, and Orange Counties.

How about the human capital component of migration? On the bar furthest to the left in Figure 22, we see the breakdown of education attainment for the net migration. 28% is less than high school, 24% is with a high school diploma, 29% is with some college, 10% is with a bachelor's

degree, and 8% is with a graduate or professional degree. That said, on average, during the period of 2007 to 2011, low-educated residents out migrate more than high-educated residents. This might partly explain the CHCI improvement in L.A. over this period.

For these six largest destination of out migration from L.A., we can see an interesting dichotomy. Residents who moved to San Bernardino, Riverside, Kern, and Clark Counties, Nevada tend to be less educated while those who moved to Orange County and Ventura County tend to be

Figure 22 The Education Attainment Percentage of L.A. Migration Flow, 2007-2011



Source: U.S. Census County-to-County Migration Flows based on 5-year American Community Survey, 2007-2011

more educated. Why? There might be three reasons. First, the former counties have fewer high-skilled jobs so they attract fewer high-educated workers while the latter have more high-skilled jobs so attract more high-educated workers from L.A. Second, the cost of living in the former counties is lower, thus attracting more lower-educated workers who are less likely to be able to afford living in L.A. Third, Orange County and Ventura County have better schools so they attract higher-educated parents.

Note that this was the migration pattern for L.A. during the Great Recession. We are not sure that in a period of normal expansion, the migration of human capital will remain the same.

Conclusions

The take-away points from this report are as follows:

- L.A. has anemic job growth over the past two decades as a whole. West L.A. with high human capital has a better

job recovery while the rest of L.A. with low human capital still lags behind.

- In the long run, it is imperative for L.A. to improve its human capital by improving its public education and by attracting higher-educated talents to L.A.
- In the short run, L.A. could become more business friendly to create jobs particularly for those with low human capital.
- L.A. County's human capital is low compared to other major metros, but the City of L.A.'s human capital could be much lower.
- Considering its student demographics, LAUSD is neither outperforming nor underperforming. But it is crucial for LAUSD to outperform its public education outcome for our next generation.

Endnotes

1. See William Yu, "What Predicts the Long-Term Home Price Appreciation of A City?" *Anderson Forecast*, June 2013.
2. http://www.tomtom.com/en_gb/trafficindex/
3. <http://www.thumbtack.com/ca/los-angeles/#2013/city>
4. The regression assumes that the business friendliness ranking and the relative housing affordability do not change substantially during the sample period (1990 to 2014).
5. We cap the value of Housing Affordability Index to 260 because we assume that when the index above this threshold level, the affordability is less relevant and the extreme affordability is driven mostly by the lack of housing demand dominated by the demand side. The cities with the value higher than 260 are Atlanta, Cincinnati, Cleveland, Columbus, Detroit, Rochester, St. Louis, and Wichita.
6. The meaning of the coefficient value of 0.007 for business friendliness is that if L.A.'s business friendliness increases from the current 47th to 7th, its job growth over this 23-year period is predicted to be 28% higher.
7. See William Yu, "Human Capital: The Key to Los Angeles' Long-Term Prosperity." *Anderson Forecast*, March 2013.
8. See William Yu, "Growing Apart in Los Angeles." *Anderson Forecast*, December 2013.
9. Alpine County is not in the sample because there is no students taking SAT due to its small population.
10. See William Yu, "The Evolution of Human Capital, Workforce, and Innovation in Los Angeles over the Past Two Decades." *Anderson Forecast*, September 2013.