



Center on Wage and Employment Dynamics

POLICY BRIEF

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Institute for Research on Labor and Employment  
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# Increasing the Minimum Wage in San Jose: Benefits and Costs

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## Summary

I provide here an independent economic analysis of the likely effects of Measure D in San Jose.

*The benefits of Measure D:* 18.9 percent of San Jose's workers will obtain pay increases as a result of Measure D. The increased spending power of minimum wage workers will stimulate the region's economy by about \$190 million.

*The costs of Measure D:* Rigorous and prestigious academic studies of minimum wage effects across local boundaries indicate that Measure D will not have any disemployment effects. This research has invalidated previous studies that claim to find disemployment effects.

Measure D will increase operating costs of the average business by less than 0.25 percent. These costs will be partly offset by *cost savings to employers*, such as more workers applying for jobs, lower employee turnover costs and higher worker productivity. Prices in low-wage industries such as restaurants will increase by less than 0.71 percent, which translates into less than twenty-five cents on a \$30 meal. Price increases of this magnitude do not measurably hurt sales.

*The recently released report by Beacon Economics* finds much smaller benefits (only 6.5 percent of workers would receive pay increases) and much larger costs. However, this report uses poor data (inadequate sample size) and incorrect assumptions about Measure D (omitting that workers now paid between \$8 and \$10 will be affected). Its assumptions about job loss effects are not consistent with research on the effects of minimum wages in local areas and it misreads *by a factor of ten* the study that it used to estimate the effects of minimum wage increases on prices. Without their incorrect price effect, the negative economic effects in the study mainly disappear. Beacon thus underestimates the benefits of Measure D by a factor of three and their estimates of the costs of Measure D have no credible scientific basis.

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*Conclusion:* Measure D is affordable and on net it will be beneficial to the San Jose economy.

| <b>Reich</b>  | <b>Beacon</b>  |
|---|--|
| Large number of workers benefit<br>No job losses<br>Minor price effects | Small number of workers benefit<br>Large job losses<br>Large price effects |

Major flaws in the Beacon analysis

- Calculating benefits—model errors
  - tiny sample size
  - fail to consider effects over \$8.00/hour
- Job losses--based on lack of understanding of previous studies
  - Neumark and Wascher findings have been disproven.
  - Potter results mischaracterized
  - Yelowitz results disproven
- Price increases – gross errors in calculations
  - Aaronson citation off by factor of 10

## Introduction

San Jose is a relatively prosperous city, but also an expensive place to live and economic inequality has grown substantially in recent decades. The relative pay of workers in low-wage industries such as restaurants has been falling. Poverty rates are above 15 percent (Census QuickFacts) and many low-wage workers cannot afford to live in San Jose.

San Jose’s Measure D would establish a citywide minimum wage of \$10, beginning early in 2013, and then increasing in subsequent years in line with a regional cost of living index. Proponents of Measure D argue that the statewide minimum wage of \$8, which has not been increased since 2008, is not enough to live on in San Jose. They argue also that increasing the minimum wage will reduce the public costs of programs such as Food Stamps and Medicaid, while stimulating consumer spending and thereby boosting the local economy. Opponents argue that Measure D will increase substantially the costs of doing business, reduce the number of jobs and harm the San Jose economy. The opponents argue also that it will cost the city \$600,000 in enforcement costs, at a time when the city is experiencing budget cuts.

This Policy Brief provides an independent academic analysis of the likely impacts of Measure D. I also assess the report issued recently by Beacon Economics (commissioned by the California Association of Restaurants) concerning the possible effects of Measure D.

## Measuring the Benefits of Measure D

The benefits of Measure D consist primarily of higher pay for low-wage workers in San Jose. The additional spending by these workers will further stimulate the San Jose economy. Employers will also

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experience cost savings because of lower employee turnover costs and having more experienced workers. This local economic stimulus will increase the city’s revenue from sales taxes. The enforcement efforts mandated by Measure D will more than pay for themselves by increasing compliance with state and local employment law.

*What proportion of San Jose’s workers are low-paid?*

Table 1 shows the proportion of low-waged workers in San Jose. The source for this table consists of the U.S. Census Bureau’s 2010 *American Community Survey* “Place of Work” files (ACS-pw).<sup>1</sup> The ACS-pw has the advantage of identifying respondents according to whether they work in the county, while other datasets are based on where workers live.

To estimate the proportion of low-wage workers in the City of San Jose I assume that their proportion is similar to the proportion in Santa Clara County. The smallest geographical identifier in the ACS-pw is Santa Clara County. Most central cities have higher proportions of low-wage workers than do their suburbs. Consequently, this assumption is likely to understate the relative number of low-wage workers in San Jose.

I find that 8.8 percent of San Jose’s workers are paid less than \$8 per hour and that 5.3 percent are paid between \$8 and \$10. Adding these figures, I find that 14.6 percent of workers in San Jose are paid under \$10 per hour. Under Measure D all workers in San Jose who are currently paid under \$10 will receive increases.<sup>2</sup>

I also find that 4.3 percent of San Jose’s workers are paid between \$10 and \$12 per hour.<sup>3</sup> Thus, 18.9 percent of workers in San Jose are paid under \$12 per hour.

**Table 1 Proportion Low-Wage who Work in Santa Clara County, 2010**

| Hourly wage   | Percent |
|---------------|---------|
| \$8 or less   | 8.8     |
| 8.01 to 10.   | 5.8     |
| 10.01 to 12.  | 4.3     |
| 12.01 or more | 81.2    |
| Total         | 100.0   |

Note: Based upon ACS 2010 place of work files. Excludes those with no earned income, worked fewer than 4 hours per week or worked 13 weeks or less. Figures are larger without these exclusions. Source: American Community Survey 2010. IPUMS: Version 5.0. Minnesota Population Center, 2010.

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<sup>1</sup>The ACS-pw sample for Santa Clara County (the smallest geographical level in the ACS-pw) includes 9,145 employed workers in 2010 (the most recent year available). This sample is large enough for confident statistical inference.

<sup>2</sup>Not just those paid under \$8, as the Beacon report mistakenly assumes in its calculations.

<sup>3</sup>As I explain below, workers currently paid between \$10 and \$12 are also likely to obtain pay increases because of Measure D.

As a check on this ACS-pw-based estimate, I have also used a different data source: all twelve 2011 Monthly Outgoing Rotation Group (MORG) files of the Current Population Survey (CPS).<sup>4</sup> Compared to the 19.8 percent in Table 1, the estimated proportion of workers paid \$12 or less using the CPS MORG files is much higher: 26.4 percent. In order to obtain a conservative estimate of the benefits of Measure D, I will use the lower ACS-pw data for this report.

Table 2 summarizes the demographic characteristics of workers paid \$10 or less.

**Table 2 Demographic composition of San Jose’s Low Wage Workforce**

| Group               | Percent who are paid \$10 or less |
|---------------------|-----------------------------------|
| Male                | 53.5                              |
| Female              | 46.5                              |
| Hispanic            | 47.5                              |
| African American    | 3.3                               |
| Asian               | 25.2                              |
| Non-Hispanic white  | 21.4                              |
| Other or mixed race | 24.3                              |

Source: American Community Survey 2010 place of work files.

*How many workers will receive pay increases and how much?*

To convert the proportion of workers in Table 1 into absolute numbers, I first compute the number of employed workers in San Jose in 2012q2. As Table 3 shows, there were 357,127 jobs in San Jose in 2010, the most recent year available. To update this number to 2012 I use CALMIS data, which indicates that employment in Santa Clara County grew by 3.041 percent between 2010 and 2012q2. To generate an estimated 2012q2 employment figure for San Jose, I assume that employment in San Jose grew at the same rate as in the County. This method yields an estimated total employment of 369,306 in San Jose in 2012q2.

Table 3 then multiplies this total estimated employment figure by the proportions low-paid in Table 1. Table 3 provides more detail than Table 1 by showing separately the proportion of workers who are currently paid between \$7 and \$8 as well as those making less than \$7. As a relatively conservative estimate, I assume that these workers will obtain pay increases averaging \$2.25 per hour. I also make the conventional assumption that the pay increase of workers currently paid between \$8 and \$10 will average \$1.

<sup>4</sup>The CPS has the disadvantage that it can only identify respondents by where they live, not where they work. This distinction is important for areas with high number of workers commuting in both directions across city boundaries. I use all twelve CPS-MORG months in order to obtain a sufficient sample for statistical estimates. The Beacon report draws on just one month’s CPS sample, which is inadequate for analysis at the local level. I discuss this problem in more detail later in the appendix to this brief.

In Table 3 the pay increases to all the workers making under \$10 comprise the *direct* effects of Measure D.

Workers who are currently paid above \$10 per hour will also benefit from the ripple or indirect effects of Measure D. This ripple effect occurs, for example, to maintain some of the relative pay differentials of the supervisors of workers who receive increases to \$10. In Table 3 the pay increases to workers currently paid between \$10 and \$12 comprise the *indirect* effects of Measure D.<sup>5</sup> Based upon previous studies, the likely increases among this group will average \$0.75 per hour.

In summary, as Table 3 shows: 53,505 workers would receive pay increases directly because of Measure D; 15,787 additional workers would receive increases indirectly because of Measure D. Adding these together, an estimated 69, 292 San Jose workers would receive pay increases.

**Table 3 Number of San Jose workers receiving pay increases**

|  |               |
|--|---------------|
| San Jose employment, 2010<br>(from LEHD <i>On the Map</i> )                          | 357,127       |
| Percent employment growth in Santa Clara County 2010 to 2012q2 (from CALMIS website) | 3.041         |
| San Jose employment, 2012 q2   | 367,987       |
| Number of workers currently paid less than or equal to \$7                           | 23,404        |
| Number currently paid \$7.01-\$8   | 8,832         |
| Number currently paid \$8.01-\$10  | 21,270        |
| Number of workers <i>directly</i> affected   | 53,505        |
| Number of workers <i>indirectly</i> affected (currently paid \$10.01-\$12)           | 15,787        |
| <b>Total number of workers directly or indirectly affected</b>                       | <b>69,292</b> |

Source: ACS place of work sample, from IPUMS

Note: Data exclude respondents working less than 4 hours/week and less than 13weeks/year

### *How much will businesses' labor costs increase?*

This analysis uses the assumptions above and my estimate, from the ACS-pw data, that workers currently paid \$10 and under average about 1,500 hours of work per year. The results, presented in Table 4, indicate that the wage bill will increase by about \$158.46 million per year.

<sup>5</sup>Previous studies (such as Wicks-Lim 2006) indicate that this indirect effect of measure D would gradually diminish and disappear fully at \$12.

**Table 4 Increase in employers' wage bill**

|  | Measure D will increase average hourly wage by | Number of workers | Wage bill increase   |
|--|--|-------------------|----------------------|
| Workers currently paid less than or equal to \$8 | \$2.25   | 32,236            | \$108,796,500        |
| Workers currently paid between \$8.01 and \$10   | \$1  | 21,270            | \$31,905,000         |
| Workers currently paid between \$10.01 and \$12  | \$0.75   | 15,787            | \$17,760,375         |
| <b>Total wage bill increase</b>                  |  |                   | <b>\$158,461,875</b> |

Source: ACS-pw 2010.

Notes: Data exclude respondents working less than 4 hours/week and less than 13 weeks/year

Wage Bill increase equals hourly wage increase \* Number of workers\*1500 (average hours worked per year)

*How does this wage bill increase compare to the size of the San Jose economy?*

To put \$158.46 million into context, I compare it to the total 2012 wage bill in the San Jose economy. To estimate the 2012 total wage bill I multiply average earnings in San Jose by the number of workers employed in San Jose. According to the ACS-pw, annual earnings among all workers in Santa Clara County averaged \$69,770 in 2010. However, average hourly earnings of all workers in the San Jose metro area rose from \$37.01 in 2010 to \$40.14 in 2012q2, equivalent to an increase of 8.46 percent (Bureau of Labor Statistics). Adjusting 2010 average annual earnings for the 8.46 percent subsequent increase in average pay then yields average annual earnings of \$75,673 in Santa Clara in 2012. Multiplying this annual earnings figure by the number of San Jose workers yields a 2012 wage bill of \$27.9 billion.

A wage bill increase of \$158.46 million therefore equals 0.57 percent of the 2012 San Jose wage bill of \$27.9 billion. Since labor costs make up less than forty percent of the operating costs that are relevant for firms' price-setting behavior, the actual cost pressure is likely under 0.25 percent. This figure seems quite affordable.

Of course, some industries, such as restaurants, that employ a higher proportion of low-paid workers would experience greater increases. To compute the impact on the restaurant industry we use the CPS MORG files and find that about 80 percent of restaurant workers in San Jose are paid less than \$12. This proportion equals four times the proportion of such low-paid workers in all industries. It follows that the impact on the restaurant industry wage bill would be four times 0.57, which equals 2.3 percent. However, as is presented in many studies-- such as Aaronson (2001) -- IRS and other government data show that labor costs in restaurants amount to one-third of business operating costs. The cost pressure on restaurants would therefore be one-third of 2.3 percent, which equals 0.71 percent. I return to this

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point below in the discussion of possible price effects.

*How much additional spending will be injected into the regional economy as a result of Measure D?*

The economics literature recognizes that increases in wage income will result in further rounds of spending that will boost a local economy. The most common computational method estimates this multiplier effect using the given change in wages, propensities to spend and to save at different wage levels, and a regional input-output matrix (such as IMPLAN or the U.S. Bureau of Economic Analysis' RIMS II model). The model then works through the direct and indirect effects of these increased earnings upon industry-level spending for each of the industries in the region.<sup>6</sup>

According to Chang's (2001) exhaustive study, this approach yields a multiplier of 1.43 for the San Jose metro area and an estimated multiplier of 1.2 for the city of San Jose. The Beacon report uses a multiplier of 1.48; their higher multiplier may arise because they have already reduced the wage increases by 15 percent to account for taxes that will be paid at the state and federal levels. Recall that the increased wage bill is \$158.46 million. Using the more conservative multiplier of 1.2, the additional boost to the regional economy equals \$190 million.

This money, which will be spent upon a range of consumer goods and services, could generate more than 200 jobs in the region. Since many consumer industries are not heavy users of low-wage workers, the majority of these jobs are likely to be in middle-paying occupations.

Beacon makes a great deal of the fact that only 40 percent of San Jose's workers live in the city, arguing that much of the increased income would be spent outside the city, presumably in the suburbs. Yet many of those workers will spend some of their increased income in San Jose; they buy lunch during the work day and shop or drink after work, etc. At the same time, some of the increased income of workers who do live in San Jose will be spent in suburban malls and restaurants as well as outside the metro area. These effects probably do not offset each other exactly, since central cities generally are a magnet for consumer spending on items, such as sports events and concerts (HP Pavilion) that are not located in the suburbs. For this reason, Beacon underestimates the positive multiplier effects of the minimum-wage generated increase in spending.

## **The costs of Measure D**

*Will some workers lose their jobs?*

Recent peer-reviewed scholarly research in prestigious economics journals shows that employment of low-wage workers does not change after minimum wage increases, for the magnitude of increases proposed by Measure D, and whether in good times or in recessions.<sup>7</sup> Some of the earlier research, according

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<sup>6</sup>The multiplier is larger to the extent that low-wage workers spend their increased earnings faster and more locally than the average income recipient. The multiplier is lower when the local economy is smaller relative to its surrounding area, since a greater amount of spending will take place outside the local area in question.

<sup>7</sup>See Dube, Naidu and Reich (2007), Dube, Lester and Reich (2010, 2012), Allegretto, Dube and Reich (2011), Schmitt and Rosnick (2011) and Giuliano (forthcoming). Beacon seems unaware of most of this research.

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to the summaries in Neumark and Wascher (2006, 2008), had found small negative employment effects, but only among teens, not among adults. In any case, the newer research has identified statistical biases toward finding negative employment effects in almost all the studies favored by Neumark and Wascher.

The new research shows that minimum wage increases attract more workers to a local area and make it easier for employers to recruit and retain their workers. This effect occurs especially in low-wage industries, such as restaurants and retail, which typically have annual turnover rates in excess of 100 percent. Minimum wage increases are then absorbed in part through employer savings on turnover costs and increases in the productivity of more experienced workers.<sup>8</sup>

The Beacon Report nonetheless draws three scenarios for job loss effects. Their Scenario A accepts the findings of Dube, Naidu and Reich (2007) of no employment effects.<sup>9</sup> They claim that Scenario B, their medium job-loss scenario, is based upon Potter (2006), who studied the impact of Santa Fe's minimum wage increase to \$8.50 for businesses with 25 workers or more. Contrary to what Beacon reports, however, Potter finds an *increase* in employment--compared to two different control groups-- in the industries and companies most affected by the Santa Fe policy and no negative effects on other industries.<sup>10</sup>

Scenario C—Beacon's high impact scenario, is based upon a paper by Yelowitz (2005) that also examined Santa Fe's minimum wage increase.<sup>11</sup> Yelowitz claimed that Santa Fe experienced unemployment increases that reflect declines in employment because of the minimum wage increase. However, Yelowitz did not actually examine employment; he looked only at unemployment data. Using the same data and model as Yelowitz, Pollin and Wicks-Lim (2005) analyzed employment data directly and found that the number of jobs did not in fact decrease. Instead, unemployment increased because more workers sought the now higher-paying jobs in Santa Fe.<sup>12</sup>

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<sup>8</sup>Dube, Lester and Reich (2012) document the reductions in employee turnover. Giuliano (forthcoming) documents the increased worker availability and increases in their productivity.

<sup>9</sup>Beacon's literature review critiques the Dube, Naidu and Reich study. Their criticisms reveal basic misunderstandings of the San Francisco law and of our methods. Our study was validated by the more extensive national study of Dube, Lester and Reich (2010).

<sup>10</sup>Potter (2006), p. 5 summarizes: "The retail and accommodations and food services sectors, so often targeted as being hurt by minimum wage laws, show stronger growth in both employee's earnings and the number of jobs for large Santa Fe businesses than for both small Santa Fe businesses and large Albuquerque businesses [his two control groups]." Beacon also incorrectly cites Potter to calculate negative job effects of Measure D in the construction industry, itself surprising since construction works generally pays well over the minimum wage. After some discussion of the industry, Potter actually concludes, p. 6: "the decline in the construction industry has little to do with the living wage."

<sup>11</sup>This paper appeared as a working paper of the Employment Policies Institute, an organization that is closely aligned with the National Association of Restaurants. It has not been published in a peer-reviewed scholarly journal.

<sup>12</sup>Yelowitz never responded to the Pollin and Wicks-Lim study. The Beacon report claims that Neumark and Wascher (2006) supported Yelowitz's methods, but there is in fact no mention of the Yelowitz paper in their article.



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In summary, the best research on minimum wage effects does not find negative employment effects on low-wage workers.<sup>13</sup> The job loss calculations in Beacon’s Scenarios B and C are not supported by any credible scientific evidence.

*Effects on prices and sales*

Among the ways that employers may respond to minimum wage increases, one is by raising their prices. Substantial increases in prices, in the magnitudes estimated by Beacon, could hurt sales and cause a negative effect on the local economy. However, our cost pressure calculations suggest that San Jose restaurants might increase prices by as much as 0.71, with much smaller increases in other industries. For restaurants, this increase translates into less than 25 cents on a \$30 meal. Such a small price increase would not have a measurable effect on sales.<sup>14</sup>

The Beacon report nonetheless estimates that prices would increase by 7 percent. They state:

“According to Daniel Aaronson in the *Review of Economics and Statistics* of February 2001, the price impacts of an increase in the minimum wage is 0.72—in other words, a 10% increase in the wage costs results in a 7.2% increase in prices in the local economy.”

In that article, however, Aaronson reports a minimum wage price elasticity of *only one-tenth* as large: 0.072, not 0.72! Moreover, his data apply only to restaurants, not as Beacon claims, to prices in all industries. Here is what Aaronson actually writes (on p.163):

“...a 1% increase in the minimum wage increases restaurant prices by approximately 0.072 (with a standard error of 0.021), as shown in columns (1) and (2).

According to Aaronson, a 10 percent increase in the minimum wage would imply a price increase in *restaurants* of 0.72 percent, not 7.2 percent. An error of this magnitude undermines the credibility of Beacon’s price calculations. And restaurants account for less than ten percent of the local economy, making Beacon’s price calculation off by a factor of more than 100 percent. There is more. Aaronson’s .072 finding is based on data for 1978-95. He finds a much smaller price effect-- 0.037 for a 1 percent minimum wage increase-- when he removes the highly inflationary years of 1978-82 from his sample.<sup>15</sup> Multiplying Aaronson’s 0.037 times 25 percent (the increase in Measure D) yields an estimated price effect for restaurants of 0.93 percent, close to the 0.71 percent that I calculated above using present-day data.

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<sup>13</sup>Spending boosts are likely to increase jobs. As mentioned above, many of these jobs are likely to be for middle-paying occupations.

<sup>14</sup>Neumark and Wascher, the chief academic progenitors of the negative effects of minimum wages, conclude that price effects are likely to be very small (2008, p. 248).

<sup>15</sup>p. 163: “...excluding the high-inflation period of 1978–1982 reduces the passthrough estimate to 0.051 (0.020) when city- and time-fixed effects are included and 0.037 (0.021) with a full set of price and employment controls.”

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To summarize, Beacon makes a series of errors in calculating price effects, leading to grossly exaggerated effects. But without a large price effect, the negative economic effects in the Beacon study mainly disappear.

## Discussion and Conclusion

Measure D will increase pay for nearly one-fifth of San Jose's workforce. This group has experienced real pay declines while many of San Jose's workers have experienced pay increases. The increased purchasing power generated by Measure D will stimulate the city's economy as well as that of the surrounding area. Experience in the numerous cities with local living wage and minimum wage laws (Luce 2004) suggests that the benefits will be realized to the extent that the city creates an effective enforcement mechanism.

The increased wage costs for employers translate into quite modest increases in operating costs, 0.71 percent in the case of restaurants. Much of this increase will be offset by employer savings in turnover costs and through higher productivity of retaining more experienced workers.

Measure D thus appears to be affordable, fair and beneficial for San Jose's economy.

## Appendix: The data used by the Beacon Report

The ACS-place of work data we use draws from a sample of 9,145 employed workers in Santa Clara County 2010, compared to approximately 790 workers in the San Jose metro area the 2011 March CPS ASEC sample used by Beacon.<sup>16</sup> Multiplying this sample size by Beacon's 6.5 percent who were paid \$8 or less implies that their San Jose metro area sample contains only 51 workers paid \$8 or less. The sample for the city of San Jose is even smaller. About 40 percent of the San Jose metro area workers are employed within the city of San Jose. Multiplying 51 by this ratio yields a city-based sample size of only 20 workers. The margin of error for this estimate is quite large and one cannot draw confident statistical inferences with such a small number of observations.

For this reason, The Census Bureau cautions that CPS data are appropriate only for populations over 75,000, which is greater than the low-wage workforce in San Jose. Academic researchers either avoid using the CPS for such local levels of disaggregation or they increase their sample size by pooling the data from multiple CPS survey months or years. Beacon, however, used just one survey month for their data analysis.<sup>17</sup>

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<sup>16</sup>CPS ASEC refers to the Annual Social and Economic Supplement of the Current Population Survey. The March CPS ASEC sample used in the Beacon report contains 99,000 households nationally (not 55,000 as Beacon reports), which translates into a sample of 790 employed workers for the San Jose MSA. Based upon the San Jose MSA population of 1.85 million as 0.59 percent of the U.S. population of 311 million and using 1.34 as the average number of employed workers per household in the San Jose MSA (BLS and Census QuickFacts).

<sup>17</sup>In both the ACS and CPS ASEC the earnings question refers to annual earnings. To calculate hourly earnings we divide by weeks worked and usual hours worked per week. The monthly CPS MORG files ask about weekly earnings and usual hours last week for salaried workers and hourly rates for hourly workers. The ACS and the CPS surveys differ on item non-response rates to earnings questions. About 30 percent of CPS respondents do not respond to the earnings question; the

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Moreover, the CPS records respondents only according to where they live, while the ACS provide data for respondents according to both where they work and where they live. This distinction is important when, as is the case for San Jose, a large number of residents commute to jobs outside the area and many workers commute into the area from other locations.<sup>18</sup>

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tem non-response rate in the ACS for earnings is 16 percent. Both surveys allocate earnings to these individuals based upon their other characteristics. [http://www.census.gov/acs/www/methodology/item\\_allocation\\_rates\\_data/](http://www.census.gov/acs/www/methodology/item_allocation_rates_data/)

<sup>18</sup>The ACS-pw geographic identifiers are at the county level while the CPS identifiers are at the metro area level. The San Jose metro area includes Santa Clara and San Benito Counties. The city of San Jose has a population of about 800,000 and lies entirely within Santa Clara County. Santa Clara contains about 1.8 million residents, San Benito about 55,000.

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