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Research Update:

State and County-Level Estimates of Revenue Gains from Changes to California's System of Assessing Commercial Real Estate

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Introduction

While much has been written about the passage of Proposition 13 in 1978 and its long-lasting effect on residential property, only limited empirical analysis has been generated with regards to its effect on commercial and industrial property. In the report *Getting Real About Reform: Estimating Revenue Gains for Changes to California's System of Assessing Commercial Real Estate*, we explored the implications on commercial and industry property taxes due to one change enacted under Proposition 13: the shift in the property assessment system from one based on market value to one based on acquisition value.[1]

In the 2015 report, our specific research question was: How much additional revenue would be generated if commercial and industrial property were assessed at market value? We found that a range of an additional 8.2 to 10.2 billion dollars in statewide revenues would be generated in 2019-20. We noted in the report that it was a conservative estimate as the analysis was derived primarily from assessor roll data for the years 2012-13 and 2013-14, a period in which commercial real estate market prices were just starting to recover.

Since we published *Getting Real About Reform,* the commercial and industrial real estate market has continued to recover from the downturn triggered by the 2008 financial crisis. To reflect more recent real estate market trends, we have updated our analysis with assessor roll data current through December 2016. With data on more recent sales, we have updated our analysis of disparities between market and assessed values for all commercial and industrial properties (excluding agriculture and all residential uses including multi-family) statewide and for every county.

We now estimate that an additional **11.4 billion dollars**, or **between 10.8 and 12.0 billion dollars,** in property tax revenues **would be generated statewide in 2019-20** if all commercial and industrial property were assessed at market value.

Why are our estimates now higher?

A primary explanatory factor is a stronger market recovery in commercial and industrial real estate statewide than we projected. Our highest-growth scenario assumed nine percent annual average growth in market value for commercial and industrial properties between 2012-13 and 2019-20. Our lowest-growth scenario assumed seven percent. In applying our mid-growth scenario of eight percent annual average growth in market value, our previous assumptions were low. Yet, as noted in our original analysis, we were intentionally conservative in our methods, particularly as we were projecting out seven years and the analysis was based on data from a period of early recovery from the "trough" of the commercial and industrial real estate market crash. We made a deliberate decision to apply annual average growth rates to market values that were below our inferred rates; as it was the start of a recovery, we did not want to assume that it would last over the entire seven-year projected period. If

[1] See Ito, Jennifer, Justin Scoggins, and Manuel Pastor 2015. *Getting Real About Reform: Estimating Revenue Gains from Changes to California's System of Assessing Commercial Real Estate.* Los Angeles, CA: USC Program for Environmental and Regional Equity.

we had applied the inferred annual average growth rates to market and assessed values based on our calculations, our previous estimates would have been higher and very close to these new estimates.

Our current estimates utilize a more recent and "corrected" baseline of estimated market values and revenue gains in 2015-16—one that reflects the rapid market recovery between 2012 and 2015. They are also based on empirical data covering a longer arc of the real estate market cycle (from 2004 through 2016), and sale prices over the last two years of growth and recovery are more likely to reflect true market value than those that occurred when the market was at a low point in 2012. Furthermore, national indices show market growth over the past year that is closer to our assumptions when projecting the revenue gains forward from 2015 to 2019. Given these factors, and that we are projecting fewer years into the future, we believe our updated estimates are more accurate.

In this research brief, we provide a summary of the assumptions and methods underlying our analysis; updated tables, maps, and figures with estimates of total revenue gains, per capita gains by county, and sources of the revenue gain; a discussion of the factors contributing to the increase in revenue estimates; and a short appendix with more information on the methodological differences in estimating revenue gains from our previous analysis.

Assumptions

For this updated analysis, we keep the same following assumptions as in our previous analysis:

1. **Estimates are based on changes to current law.** The estimates are of new revenue that would be collected from a policy change that would assess commercial and industrial real property (i.e., land, buildings, and other permanent structures) at market value. Simply stated, the gains we estimate are the difference between revenues that would be collected if all commercial and industrial properties were assessed at market value (regardless of the last date of sales) and revenues that would be anticipated under current law. We attribute only gains in revenue to the estimates since downward assessments to meet market value are already allowable under current law. Furthermore, the estimated revenue gains include only the one-percent general tax levy and do not include voter-approved parcel taxes or personal property taxes.

2. **All residential and agricultural uses are excluded from commercial.** We analyze only those properties that are dedicated to commercial and industrial land uses, such as offices, retail, manufacturing facilities, and hotels. We exclude agricultural land uses, such as farms, pastures, and orchards, as well as all residential uses including multi-family apartments, vacation homes, and vacant residential land. We also exclude properties that are state-assessed such as rail transportation properties and utilities.

3. **Estimates based on scenarios of moderate recovery.** In our previous analysis, we had assumed that if a constitutional amendment were on the November 2016 ballot and passed by voters, commercial properties would be reassessed at market value by the January 1, 2019 lien date and property taxes collected in the fiscal year 2019-20. For consistency's sake, we have kept our estimates to 2019-20—although we realize it would be too early for a new assessment system

to be in place given that there has not yet been a constitutional amendment. Our projections to 2019-20 stem from baseline estimates derived from assessor roll data and market value estimates for 2015-16. We applied the same assumptions about average annual growth in market value and made a very slight upward adjustment the assumptions about growth in assessed value to account for the rapid market recovery between 2012 and 2015. See Table 1 for the low, middle, and high growth scenarios that determine the range in the estimates reported for 2019-20. For more information on how we derived these rates, please see the appendix of this brief and the Technical Appendix in *Getting Real About Reform.*

Table 1. Scenarios for Average Annual Growth Rates, Assessed and Market Value

GROWTH SCENARIO	ASSESSED VALUE	MARKET VALUE
LOW	3.9%	7.0%
MID	4.5%	8.0%
HIGH	5.0%	9.0%

Methods

The general method for estimating revenue gains is the same as documented in *Getting Real About Reform* (2015). To summarize, the main approach requires determining disparity ratios, or the ratio of market value to assessed value, where market value is defined by a property's sales price and where sold properties reflect non-sold properties.

This approach also requires classifying properties within a county by base year, which is the last year when the property was reassessed at market value. Properties with older base years have larger disparity ratios than properties with more recent base years. Therefore, we classify properties within a county by base year, calculate weighted-mean disparity ratios based on sales for each base year (weighted by assessed value), then apply the weighted-mean disparity ratio to the assessed value of all non-sold properties of the same base year to estimate their combined market value, and sum market values for both sold and non-sold properties to determine the total market valuation in 2015-16.

We then carry both total market and assessed values forward to 2019-20 using the assumptions described in Table 1. We apply an 8 percent average annual growth rate to market values and 4.5 percent average annual growth rate to assessed values. This is based on an assessment of the state's historical real estate market cycles and the annual growth projections for total assessed property values by the Legislative Analyst's Office. To provide lower- and upper-bound estimates, we applied 7 percent and 9 percent average annual growth rates to market values which correspond to 3.9 and 5.0 percent average annual growth rates for assessed value. Finally, we calculate new revenue for each county as the difference between revenue that would be collected from fair market valuation of all commercial properties and that which would be collected under current law. The statewide gain is the sum of gains across all counties.

The key methodological differences between this and our previous analysis are as follows: The first is the difference in data sources. For this analysis, we use three additional data files prepared by CoreLogic (assessor roll data current as of December 2016, deeds for properties sold between 2010 and 2016, and historical assessor roll data from 2011-12 to 2015-16. Based on the new data, we made adjustments both in determining "true" sales and in determining the last date sold for properties in the 2011-12 through 2016-17 files. We now have twelve consecutive years of assessor data that cover the roll years of 2004-05 through 2016-17. This robust dataset allows us to generate estimates for all counties (including smaller counties with few sales of commercial properties) and to better understand how revenue gains perform under different market conditions. For a longer discussion of the data sources and methodological differences in our analyses, please see Appendix: Notes on Methodology.

Updated Results: Estimated Revenue Gains

We find that re-assessing commercial/industrial property at market value would generate an estimated **11.4 billion dollars**, or **between 10.8 and 12.0 billion dollars,** in additional property tax revenues statewide in 2019-20. While every county would gain additional revenue, the counties that would see the greatest gains include: Los Angeles (3.6 billion dollars), Orange and Santa Clara (1.1 billion dollars each), San Diego (848 million dollars), and San Francisco (836 million dollars). See Table 2 for the estimated range and mid-point of total revenue gain for each county.

Table 2. Estimated Revenue Gains by County, 2019-20

Estimated Revenue Gains by County, 2019-20 (millions)

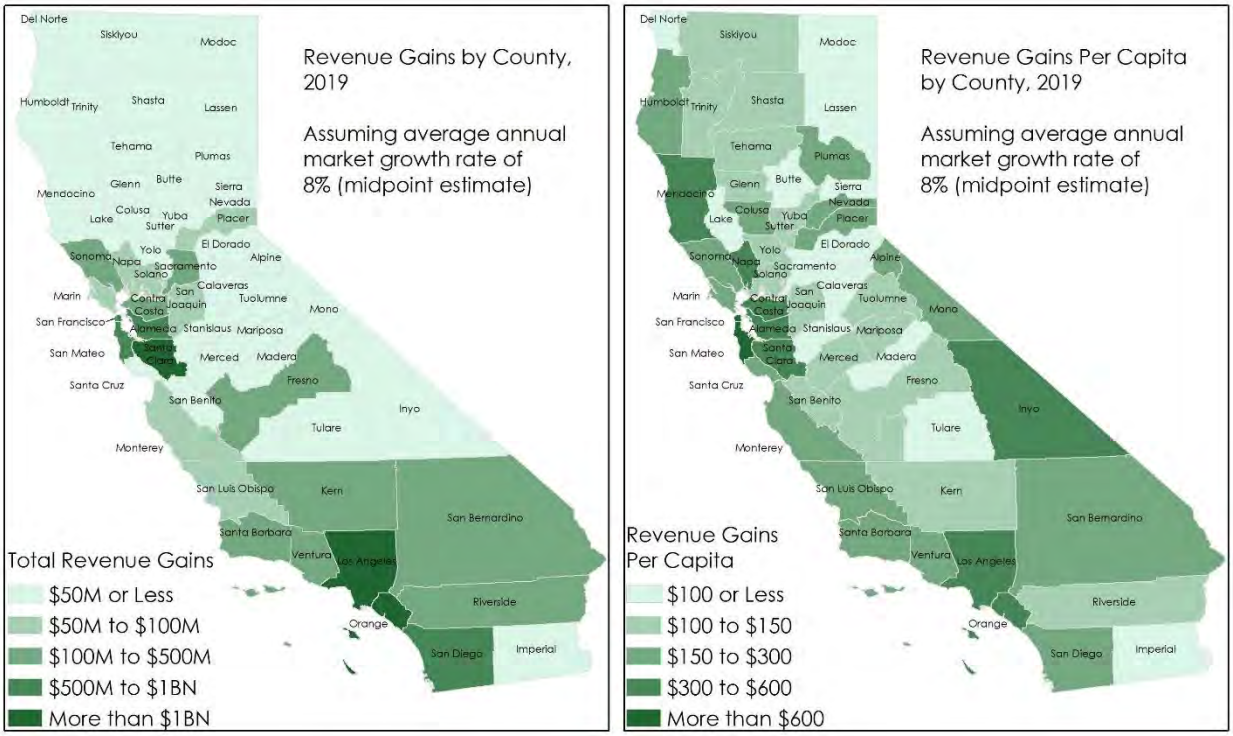
County	Estimate Range	Mid Estimate	County	Estimate Range	Mid Estimate
ALAMEDA	523.9 - 583.9	553.4	PLACER	58.3 - 66.5	62.4
ALPINE	.2 - .2	0.2	PLUMAS	3.8 - 4.3	4.1
AMADOR	2.4 - 2.9	2.7	RIVERSIDE	314.6 - 356.7	335.3
BUTTE	15.0 - 17.5	16.3	SACRAMENTO	134.2 - 155.5	144.7
CALAVERAS	2.3 - 2.7	2.5	SAN BENITO	5.8 - 6.5	6.2
COLUSA	4.0 - 4.4	4.2	SAN BERNARDINO	387.5 - 438.2	412.4
CONTRA COSTA	329.5 - 366.7	347.8	SAN DIEGO	800.1 - 898.4	848.4
DEL NORTE	1.4 - 1.6	1.5	SAN FRANCISCO	795.4 - 877.7	835.9
EL DORADO	16.1 - 18.4	17.2	SAN JOAQUIN	84.0 - 96.1	90.0
FRESNO	106.7 - 120.4	113.4	SAN LUIS OBISPO	54.8 - 61.8	58.2
GLENN	3.2 - 3.5	3.3	SAN MATEO	559.5 - 615.7	587.2
HUMBOLDT	20.8 - 23.2	22.0	SANTA BARBARA	122.7 - 137.4	129.9
IMPERIAL	14.4 - 16.3	15.3	SANTA CLARA	1,011.4 - 1,121.3	1,065.5
INYO	6.8 - 7.9	7.3	SANTA CRUZ	43.5 - 48.7	46.1
KERN	105.4 - 119.1	112.1	SHASTA	18.6 - 21.3	19.9
KINGS	15.6 - 17.6	16.6	SIERRA	.1 - .1	0.1
LAKE	1.7 - 2.1	1.9	SISKIYOU	4.5 - 5.2	4.9
LASSEN	1.3 - 1.5	1.4	SOLANO	57.6 - 66.2	61.8
LOS ANGELES	3,443.8 - 3,826.9	3,632.2	SONOMA	109.0 - 122.0	115.4
MADERA	10.4 - 12.1	11.2	STANISLAUS	43.6 - 50.2	46.8
MARIN	67.1 - 75.1	71.0	SUTTER	13.3 - 15.0	14.1
MARIPOSA	1.9 - 2.2	2.1	TEHAMA	6.3 - 7.0	6.6
MENDOCINO	25.8 - 29.0	27.4	TRINITY	1.4 - 1.6	1.5
MERCED	29.5 - 33.2	31.4	TULARE	30.1 - 35.2	32.6
MODOC	.3 - .4	0.4	TUOLUMNE	5.6 - 6.4	6.0
MONO	2.0 - 2.5	2.2	VENTURA	163.0 - 183.2	172.9
MONTEREY	61.9 - 70.6	66.2	YOLO	25.2 - 29.2	27.1
NAPA	62.9 - 70.7	66.7	YUBA	7.1 - 7.9	7.5
NEVADA	15.8 - 17.8	16.8	**Total**	**10,778.8 - 12,031.3**	**11,394.7**
ORANGE	1,025.3 - 1,145.4	1,084.4			

To understand the gains in relation to the size of the population, we calculated the per capita gain based on the 2011-2015 American Community Survey five-year total population estimates. The per capita revenue gain by county ranges from 994 dollars for each person living in San Francisco to 28 dollars in Sierra County. While the Bay Area counties of San Francisco, San Mateo (784 dollars), Santa Clara (570 dollars), and Napa (476 dollars) rank in the top, Inyo (399 dollars), Los Angeles (362 dollars) and Orange (348 dollars) also see significant gains per capita. The estimated per capita gains for the Inland Valley are 197 dollars for San Bernardino and 146 dollars for Riverside. In the Central Valley, Kern would gain an additional 130 dollars per person; Merced, 119 dollars per person; and Fresno, 119 dollars per person. See Table 3 for estimated revenue gains per capita by county.

Table 3. Estimated Revenue Gains Per Capita by County, 2019-20

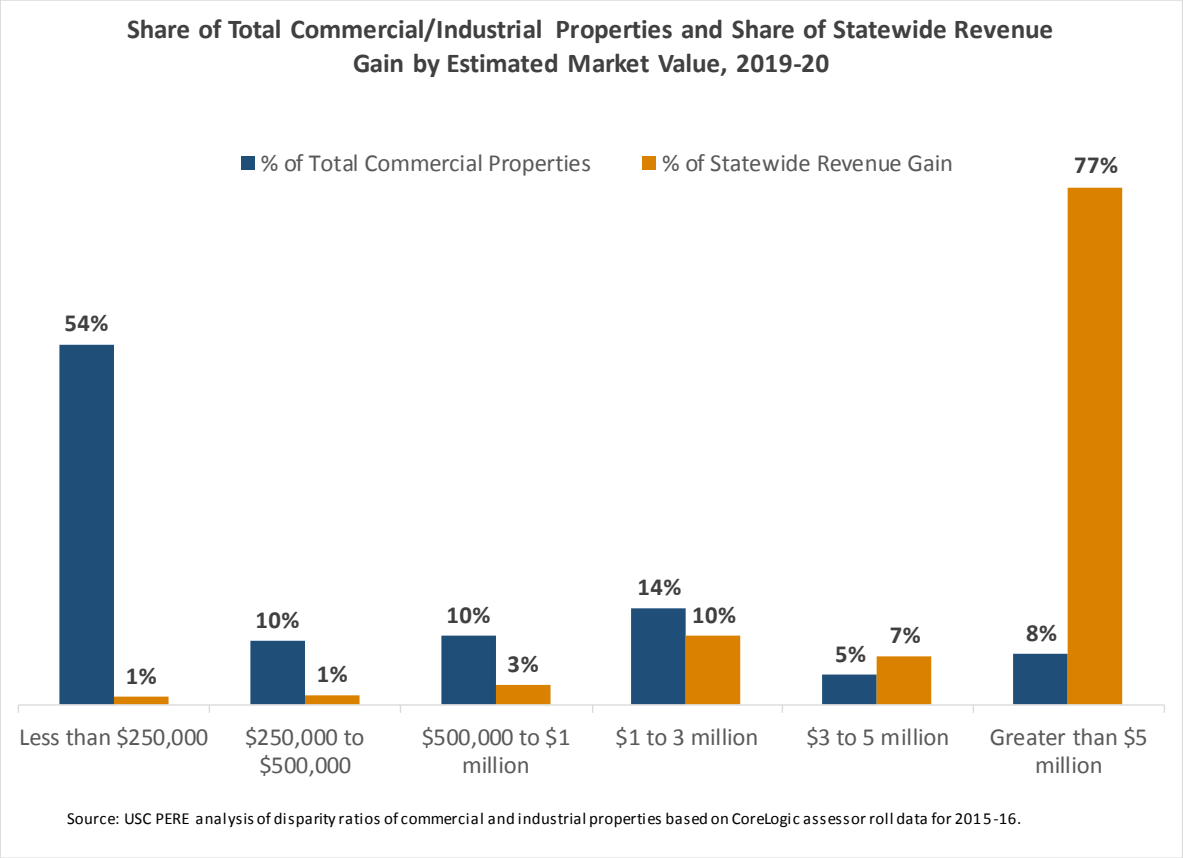
Estimated Revenue Gains Per Capita by County, 2019-20 (millions)					
County	Estimate Range	Mid Estimate	County	Estimate Range	Mid Estimate
ALAMEDA	330.6 - 368.4	349.2	PLACER	159.3 - 181.6	170.2
ALPINE	193.2 - 219.8	206.3	PLUMAS	199.1 - 228.9	213.8
AMADOR	66.1 - 78.1	72.0	RIVERSIDE	136.9 - 155.2	145.9
BUTTE	67.5 - 78.8	73.1	SACRAMENTO	91.5 - 106.1	98.7
CALAVERAS	52.4 - 60.5	56.4	SAN BENITO	101.2 - 113.7	107.4
COLUSA	187.3 - 206.7	196.8	SAN BERNARDINO	185.0 - 209.2	196.9
CONTRA COSTA	300.6 - 334.5	317.3	SAN DIEGO	248.2 - 278.8	263.2
DEL NORTE	49.0 - 57.8	53.3	SAN FRANCISCO	946.1 - 1043.9	994.2
EL DORADO	88.4 - 101.3	94.7	SAN JOAQUIN	118.6 - 135.6	127.0
FRESNO	111.6 - 125.8	118.6	SAN LUIS OBISPO	198.1 - 223.4	210.5
GLENN	113.2 - 125.2	119.1	SAN MATEO	747.3 - 822.4	784.2
HUMBOLDT	153.9 - 171.9	162.7	SANTA BARBARA	281.4 - 315.3	298.1
IMPERIAL	80.5 - 91.4	85.9	SANTA CLARA	541.4 - 600.2	570.3
INYO	370.6 - 428.8	399.2	SANTA CRUZ	161.7 - 181.0	171.2
KERN	121.8 - 137.6	129.5	SHASTA	104.1 - 119.0	111.4
KINGS	103.6 - 116.8	110.1	SIERRA	24.2 - 31.3	27.7
LAKE	26.4 - 32.6	29.4	SISKIYOU	103.6 - 118.8	111.1
LASSEN	38.4 - 46.3	42.3	SOLANO	135.4 - 155.4	145.2
LOS ANGELES	343.1 - 381.2	361.8	SONOMA	220.1 - 246.4	233.1
MADERA	68.1 - 78.7	73.3	STANISLAUS	82.7 - 95.1	88.8
MARIN	259.7 - 290.7	275.0	SUTTER	140.0 - 157.1	148.4
MARIPOSA	108.7 - 122.7	115.6	TEHAMA	99.1 - 111.0	105.0
MENDOCINO	294.9 - 331.6	313.0	TRINITY	107.4 - 120.3	113.7
MERCED	112.0 - 125.9	118.8	TULARE	66.2 - 77.6	71.8
MODOC	37.1 - 46.5	41.7	TUOLUMNE	103.4 - 118.7	110.9
MONO	140.7 - 177.3	158.6	VENTURA	193.8 - 217.9	205.6
MONTEREY	144.5 - 164.8	154.5	YOLO	121.3 - 140.7	130.9
NAPA	448.5 - 503.8	475.7	YUBA	97.0 - 107.9	102.4
NEVADA	160.3 - 181.0	170.5			
ORANGE	329.0 - 367.6	348.0			

Figure 1. Map of Estimated Revenue Gains and Revenue Gains Per Capita by County, 2019-20



In addition, we calculated the distribution of commercial and industrial properties by estimated market value in 2019-20 and shares of the statewide revenue gain that would come from different groups of properties by estimated market valuation. Figure 2 shows that a small share of properties account for the majority of the revenue gain. Only eight percent of properties account for 77 percent of the revenue gain—properties that we estimate will have a market value in 2019-20 of greater than five million dollars.

Figure 2. Share of Total Commercial and Industrial Properties and Share of Statewide Revenue Gain by Estimated Market Value, 2019-20



Discussion: Why the Increase in Estimates

Why are these estimates higher than our previous results?

A primary explanatory factor is a stronger market recovery in commercial and industrial real estate statewide than we projected. Our previous analysis assumed a "high" growth scenario of nine percent annual average growth in market value for commercial and industrial properties between 2012-13 and 2019-20. In making assumptions about growth in market value, we were intentionally conservative in our outlook, particularly because we were projecting seven years into the future. While there is little information on actual growth in market value of commercial industrial properties in California, national indices suggest that average annual growth was well above nine percent between 2012 and 2015 (for example, see the Federal Reserve Bank of St. Louis for data from the International Monetary Fund.)[2] We would presume that market growth in California has been at least as high, suggesting that our earlier estimates for 2019-20 were too low. Given that our current estimates utilize a more recent and "corrected" baseline of 2015-16, that national indices show market growth over the past year that is

[2] International Monetary Fund. "Commercial Real Estate Prices for United States© [COMREPUSQ159N]." Retrieved from FRED, Federal Reserve Bank of St. Louis on October 2, 2017. (https://fred.stlouisfed.org/series/COMREPUSQ159N).

closer to our assumptions, and that we are projecting fewer years into the future, we believe our updated estimates are more accurate.

Another factor is the timing in the market cycle in which we are conducting the analysis. Our previous analysis was largely based on assessor roll data for 2012-13 and 2013-14, which was a period of early recovery from the "trough" of the commercial and industrial real estate market crash triggered by the 2008 financial market crisis. While the trough in the residential market hit earlier, the commercial real estate market appears to lag by a few years. Because our method uses sales price as a proxy for market value, the extent to which "fire sales" (i.e. when properties are sold below market value due to financial distress) were prominent during this time period would have push down our estimate of market values—and thus our estimate of revenue gain. The updated analysis is based on empirical data covering a longer portion of the real estate market cycle (from 2004 through 2016). And sales prices over the last two years of growth and recovery are more likely to reflect market value.

While not a reason for our current estimates for 2019-20 being higher than our previous estimates, it is important to point out that the relationship between change in market value and change in revenue gain is not one-to-one. Rather, a given percentage change in market value can result in a much greater percentage change in estimated revenue gains. Increases in market value are magnified when translated into the resulting incremental additional property tax revenues that would be generated. So while the percentage increase in the mid-point estimate (over our previous estimate) for the revenue gains is 24 percent (from 9.2 to 11.4 billion dollars), the actual market value gain is not as sharp.

Finally, it is important to note that estimates for small rural counties (e.g. Glenn, Mono, and Sierra) are likely to have a greater range and are more sensitive to fluctuations because of the relatively smaller number of sales. And because we exclude agricultural land and timberlands from our analysis, rural counties are not as impacted. It is the larger, older, more urban and suburban counties where we continue to see some of the greatest disparities between market and assessed value.

Conclusion

When we produced *Getting Real About Reform*, we developed a set of assumptions around average annual growth rates for both assessed value and market value. We assumed a moderate recovery in the commercial real estate market and applied the same average annual growth rates for assessed and market values to all counties. While we recognized that recovery rates would not be even throughout the state's 58 counties, it was not feasible to predict how the real estate market would recover in different counties. The additional three years of market recovery reflected in the data used for this research brief have given us a better estimate of what the revenue implications are for the Golden State and its diverse 58 counties under a system that assesses commercial and industrial property based on market rather than acquisition value.

Appendix: Notes on Methodology

The general method for estimating market value is the same as documented in *Getting Real About Reform*. The following is a brief summary of the differences in the updated analysis.

Our analysis conducted in 2015 was based on the historical assessor roll files for all non-government-owned properties in all 58 counties of California for the roll years 2004-05 through 2013-14 purchased from DataQuick. Our current analysis is based on additional data for the years 2011-12 through 2016-17 purchased from CoreLogic, which acquired DataQuick in 2014. In general, the CoreLogic data were more complete and more detailed. As a result, our universe of parcels and accompanying data for the latest year of data that serves as the baseline for our estimates (2015-16) is more complete than in our previous analysis.

For this updated analysis, we drew from a total of five datasets. Three were prepared by CoreLogic: assessor roll data for 2016-17, a historical file on properties for the years 2011-12 through 2015-16, and deeds for properties sold between 2010 and 2016. Two were from our previous analysis and were prepared by DataQuick: assessor roll data for 2012-13 and a historical file for the years 2004-05 through 2013-14.

The CoreLogic data have more detailed land use codes. We included 174 land uses out of a total of 277 in the updated analysis. We excluded agricultural, all residential land uses, government properties, and properties assessed by the state such as railroads and utilities. There are also no counties missing data. In our earlier analysis, Santa Clara and Kern were missing data in the last year of the DataQuick data; therefore, we used data lagged by one year then adjusted the values forward one year using external information from loopnet.com.

There were differences in the deed and historical files that required minor adjustments to determining "true" sales (versus a refinance) and an approach to determining base years for properties sold between 2011-12 and 2016-17. The CoreLogic historical data do not have the same fields as the historical DataQuick file, which are organized such that there is a separate year last sold for each parcel in each year. In the CoreLogic files, there is only a year last sold variable in the current roll data. Therefore, we drew from the data on deeds prepared by CoreLogic and on our previous DataQuick data to fill in base years, and did so for all years from 2003-04 through 2016-17. Following a similar approach to match in owner names for all years of the CoreLogic data proved to be more challenging so we dropped the requirement of a change in owner name when identifying "true" sales—that is, sales that triggered a reassessment and were thus included in disparity ratio calculations.

A final difference in methodology is a slight difference in our growth assumptions for aggregate market and assessed value in projecting our 2015-16 baseline estimates to 2019-20. As described in the Technical Appendix in *Getting Real About Reform,* historical data was used to impute a ratio the growth rates for market to assessed value of 1.8—or, more precisely, 1.7987. That historical data was for the period from 1996-97 to 2003-04, which arguably resembled a similar portion of the market cycle could anticipate between 2012-13 and 2019-20. Given that the baseline of our updated projections is three years later, we shifted the reference period from which we imputed the ratio of market to assessed

value growth from the historical data forward to cover 1999-00 through 2002-03, resulting a slightly lower imputed ratio of 1.7971. We chose not to extend the reference period through 2003-04 (which would make it four years and align it with the length of our projection period) because the historical data on residential market values exhibited a large increase in 2003-04, and we wanted to avoid embedding the early years of the housing bubble into our growth assumptions.

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