

CITY AND COUNTY OF SAN FRANCISCO
BOARD OF SUPERVISORS
BUDGET AND LEGISLATIVE ANALYST
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Policy Analysis Report

To: Supervisor Ahsha Safai
From: Budget and Legislative Analyst's Office
Re: **Updated** estimate of unpaid commercial rent in 2021 in San Francisco due to COVID-19 pandemic and related public health orders
Date: September 21, 2021



SUMMARY OF REQUESTED ACTION

Your office requested that we update for 2021 our previous estimates of the amount of unpaid commercial rent in 2020 in San Francisco due to the COVID-19 pandemic and related public health orders. Our estimates for 2020 were provided in a report to Supervisor Hillary Ronen dated March 18, 2021.¹

Summary of Report

We estimate that unpaid commercial rent in San Francisco for the office, retail, and industrial sectors for January – August 2021 due to COVID-19 ranged from \$15.6 to \$29.1 million per month, or \$124.6 to \$232.6 million for the eight month period. These amounts represent a reduction in unpaid commercial rent compared to our estimates for April – December 2020 but are still significant amounts compared to unpaid rent prior to the COVID-19 pandemic. Our range of estimated unpaid rent for the same commercial sectors for the nine months through December 2020 was \$19.1 to \$44.9 million per month, or \$172.1 to \$404.5 million for all months. Totals for the entire seventeen month period range from \$296.7 to \$637.1

Exhibit 1: Estimates of Unpaid Commercial Rent in San Francisco, April – December 2020 and January – August 2021 (\$millions)

	Per month		All months	
	Low	High	Low	High
April - December 2020*	\$19.1	\$44.9	\$172.1	\$404.5
January - August 2021	\$15.6	\$29.1	\$124.6	\$232.6
Total	\$34.7	\$74.0	\$296.7	\$637.1

Source: BLA analysis

*Note: April – December 2020 estimated prepared for March 18, 2021 BLA report.

¹ San Francisco Budget and Legislative Analyst, *Estimate of unpaid commercial rent in San Francisco due to COVID-19 pandemic and related public health orders*. March 18, 2021.

For further information about this report, contact Fred Brousseau, Director of Policy Analysis, at the Budget and Legislative Analyst's Office.

Background

The COVID-19 pandemic has had an immediate and direct impact on San Francisco's economy, particularly on certain industries and businesses. The nature of the virus's transmission and related efforts to prevent its spread required reductions in in-person working, limits on travel, and restrictions on in-person commercial activity. This situation translated into increases in unpaid rent and mortgages for many businesses, particularly small neighborhood-based enterprises. Though the economy has shown signs of improving in 2021, key economic indicators have still not returned to pre-pandemic levels, including full payment of commercial rent and mortgages.

Though better than the \$2.8 billion in taxable sales in San Francisco for the second quarter of 2020 when the pandemic took hold, taxable sales for the first quarter of 2021 were approximately \$3.1 billion. However, this still represents a decrease of 28 percent compared to one year prior, or the first quarter of 2020.² The unemployment rate in San Francisco was 5.2 percent in July 2021, an improvement compared to the 11 percent rate one year prior, but still higher than the pre-pandemic rate of 2.2 percent in February 2020.³ Additionally, retail trade employment in the wider San Francisco Metropolitan area⁴ in July 2021 was 10.6 percent lower than in July 2019, a slight improvement from being 13.3 percent lower in July 2020.⁵

Prior BLA estimates of unpaid commercial rent in San Francisco during 2020 due to the pandemic

In March 2021, we reported our estimates of unpaid commercial rent due to the pandemic for the period April – December 2020. We found that declines in rent and mortgage payments for certain commercial business segments were documented nationally and locally to a lesser extent for those months by commercial property information and management companies and mortgage broker associations since the start of the pandemic.

Applying mostly national loan and mortgage delinquency rates to the major segments of commercial real estate in San Francisco, we previously estimated unpaid or partially paid rent of between \$19.1 and \$44.9 million per month for the nine months between April and December 2020. Applying the estimated amount of unpaid rent to that full

² California Department of Tax and Fee Administration

³ U.S. Bureau of Labor Statistics

⁴ Includes the counties of San Francisco, San Mateo, Contra Costa, Alameda, and Marin.

⁵ U.S. Bureau of Labor Statistics and Federal Reserve Bank of St. Louis

nine month period in 2020 resulted in total unpaid rent of between \$172.1 and \$404.5 million.

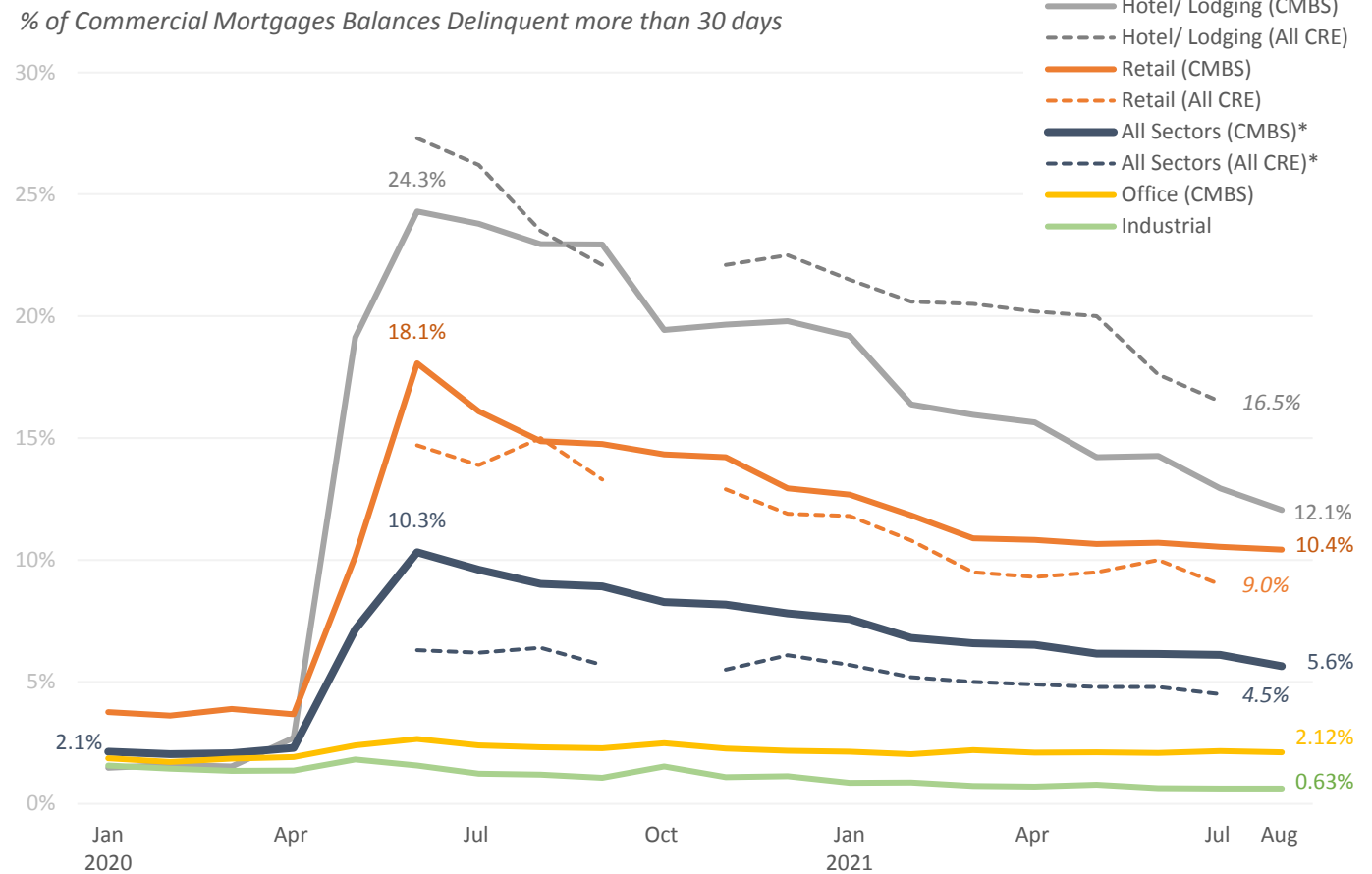
To prepare our prior estimates of unpaid rent, we identified the total square footage of City real estate by commercial sector (office, retail, and industrial), adjusted those amounts to remove the commercial real estate owned (vs. leased) and unoccupied, identified average rent in San Francisco per square foot by sector, then applied the percentage of unpaid rent based on national measures of rent and mortgage delinquency. We also incorporated available local information on non-payment of rent by using a survey by the San Francisco Apartment Association (SFAA) of its commercial landlord members from May to October 2020.

Using the same model as we did for our prior estimates for April-December 2020, we have updated those amounts for the months January 2021 through August 2021. During this period, national data show that commercial loan delinquency rates declined from the peak of May and June 2020 but are still substantially above the rates before the pandemic took hold and related public health orders were imposed starting in March 2020. Similarly, reductions in unemployment and improvements in taxable sales have occurred through June 2021 in San Francisco, but neither indicator has returned to pre-pandemic levels, indicating reduced but ongoing economic hardship for businesses and workers and continuing nonpayment of commercial rent.

Exhibit A below presents national commercial loan delinquency data for Commercial Mortgage-Backed Securities (CMBS) from January 2020 to August 2021 and for conventional commercial real estate mortgages (CRE mortgages) from January 2020 to July 2021. Mortgage loan delinquency rates were used as the basis of our unpaid commercial rent estimates because such delinquencies reflect unpaid commercial rent by tenants that leaves property owners less able to meet their mortgage obligations.

Commercial Mortgage-Backed Securities are commercial mortgages in which mortgages have been resold as securities in equity markets. Though CMBS mortgages are only a portion of the commercial mortgage market, we used their delinquency rates for January 2021 through August 2021 in our estimate model for 2021 because: a) unlike CRE delinquencies, delinquency rate data for CMBS loans are available from before the pandemic, allowing us to isolate and remove the portion of the rate not attributable to the pandemic, and b) CMBS delinquency rates were similar to those for CRE mortgage loans, thus representing an even greater amount of commercial real estate mortgage loans and giving us greater confidence that the CMBS rate was representative of the commercial mortgage market in general. The delinquency rates for both types of loans are shown in Exhibit A.

Exhibit A: Delinquency Rates by Property Type for National Commercial Mortgage-Backed Securities (CMBS) and Commercial Real Estate (CRE) Mortgages, January 2020 to August 2021



Source: Trepp, Inc. (CMBS); Mortgage Bankers’ Association (All CRE)

Notes: * All Sectors includes retail, hotel/ lodging, office, industrial, and multi-family properties.

Percent of CMBS mortgages delinquent for the specific month (measured relative to total outstanding balance) from Trepp, Inc. CMBS are Commercial Mortgage-Backed Securities or mortgages that have been resold as securities in equity markets. All CRE includes all commercial real estate mortgages (conventional and CMBS) as captured by the Mortgage Bankers’ Association monthly CREF Loan Performance Survey, for which data is only available through July 2021.

Even with a steadily improving economy starting in January 2021 and continuing through August of this year, we estimate that unpaid commercial rent in San Francisco averaged between \$15.6 and \$29.1 million per month, for a total of between \$124.6 and \$232.6 million for the January to August 2021 period. This estimate includes the office, retail, and industrial segments of all commercial real estate in San Francisco but excludes hotels and multi-family housing. This compares to between \$19.1 to \$44.9 million estimated monthly unpaid commercial rent for April to December 2020, an 18 to 35 percent reduction. Exhibit B presents our updated estimates of unpaid commercial rent for 2021 by month.

Exhibit B: Estimated Unpaid Commercial Rent in San Francisco, January - August 2021

<i>(\$millions)</i>		
Month	Low	High
Jan-21	\$18.3	\$35.2
Feb-21	\$16.6	\$31.1
Mar-21	\$15.5	\$28.0
Apr-21	\$15.1	\$27.9
May-21	\$14.9	\$27.5
Jun-21	\$14.9	\$28.6
Jul-21	\$14.8	\$27.3
Aug-21	\$14.5	\$27.0
Total	\$124.6	\$232.6
<i>Monthly Average</i>	\$15.6	\$29.1

Source: BLA estimates; methods detailed in Appendix A.

The distribution of our unpaid rent estimates by commercial market segment is shown below in Exhibit C. As can be seen, retail businesses, which includes restaurants, bars, and other retail establishments made up approximately \$118.9 to \$206.6 million of total estimated unpaid rent during 2021, the largest share during the period covered by our estimates relative to the office and industrial sectors. This is despite retail properties only making up around a quarter of total rented commercial property space (between 24 and 27 percent). This amount compares unfavorably to the much lower \$5.7 to \$9.5 million for office properties and up to \$16.4 million for industrial properties.

As shown in Exhibit C, we distinguished two submarkets within the retail segment: 1) single use/office and retail, and 2) mixed use with residential. The first submarket covers large stand-alone retail establishments as well as those often found in ground floors of office buildings. The second group covers retail establishments in buildings that also include residential uses. We were able to identify such businesses using parcel-level data maintained by the Assessor-Recorder’s Office with classifications of “mixed use”, or a combination of residential and commercial uses in a single building.

A typical configuration in neighborhood commercial areas, we estimated that approximately 12.9 million square feet, or 27 percent, of all retail property space is classified as mixed residential/commercial uses in San Francisco. These are primarily located outside of the downtown area, with the greatest presence in the Mission, Sunset, Richmond, Noe Valley, Bernal Heights, and Hayes Valley neighborhoods.

Exhibit C: Low and High Estimates of Rent Partially or not Paid by San Francisco Business Tenants by Office, Retail and Industrial Properties, April 2020 - August 2021

Sector	Avg. Per Month		Total		
	Apr - Dec 2020	Jan - Aug 2021	Apr - Dec 2020	Jan - Aug 2021	Apr 2020 – Aug 2021
Office	\$0.6 - 1.5m	\$0.7 - 1.2m	\$5.3 - 13.3m	\$5.7 - 9.5m	\$11.1 - 22.8m
Retail (Single Use/ Office & Retail)	\$8.3 - 19.4m	\$7.7 - 15.4m	\$91.8 - 183.6m	\$61.7 - 123.4m	\$153.5 - 307m
Retail (Mixed Use with Residential)*	\$10.2 - 20.4m	\$7.1 - 10.4m	\$75 - 174.5m	\$57.2 - 83.2m	\$132.2 - 257.6m
Industrial	\$0 - 3.7m	\$0 - 2.1m	\$0 - 33.2m	\$0 - 16.4m	\$0 - 49.7m
Total	\$19.1 - 44.9m	\$15.6 - 29.1m	\$172.1 - 404.5m	\$124.6 - 232.6m	\$296.7 - 637.1m
<i>Retail (Total)</i>	<i>\$18.5 - 39.8m</i>	<i>\$14.9 - 25.8m</i>	<i>\$166.8 - 358.1m</i>	<i>\$118.9 - 206.6m</i>	<i>\$285.7 - 564.7m</i>

Sources: BLA estimates

Notes: See Appendix A for detailed information on the inputs and methodology used to produce these estimates.

* Common in neighborhood commercial areas.

The higher rate of unpaid rent for businesses in mixed use retail/residential is based on surveys conducted by the San Francisco Apartment Association showing that landlords with residential and commercial tenants have had higher levels of unpaid rent during the pandemic. The Association’s surveys of a limited number of owners of buildings with commercial and residential tenants indicates that from May through October 2020 between 52 to 63 percent of their commercial tenants were unable to pay rent in full. A survey by San Francisco State University conducted from Jan. 14 to Feb. 28 2021, found that 35 to 45 percent of retail, accommodation, and other services businesses had missed a lease payment since the start of the COVID-19 pandemic.⁶ Since more current survey data was not available for our 2021 estimates, we adjusted the rate of retail tenants unable to pay their rent in mixed use buildings

⁶ San Francisco State University, Lam Family College of Business, “San Francisco Small Business COVID-19 Impact Survey.” May 10, 2021.

to reflect the improving economy during the first eight months of 2021, but assumed the level of non-payment was still higher than before the pandemic.

As mentioned above, hotels are not included in our estimates. Indicators such as occupancy rates and revenue per available room indicate that the hotel industry has been hard hit during the pandemic. However, the ownership and operator payment structures of hotels is very different than traditional rent per square foot arrangements and data about delinquency for such payments are not readily available for incorporation into our estimation methods.

The level and distribution of unpaid rent among the different commercial sectors is supported by data on other local economic indicators. Among businesses subject to sales and use tax, those most likely to have been closed or scaled back due to public health orders saw the greatest declines in sales as did gas stations due to stay-at-home orders limiting non-essential travel.

As we reported in our March 2021 report, food services, which includes restaurants and catering services, saw the greatest decline in sales in 2020, with a 79 percent reduction between April and June 2020 compared to the same period a year prior. Clothing and clothing accessories stores also saw a 72 percent reduction in sales following the start of the COVID-19 pandemic and retail and food services overall were down 53 percent compared to 2019. While some of these businesses were able to reopen with various capacity restrictions after June 2020, data from credit card processors indicates sales did not recover to pre-pandemic levels before further public health closures were ordered in December 2020.⁷

The latest taxable sales data, for January to March 2021, indicates sales at retail and food establishments continued to be significantly below pre-pandemic levels. Total taxable sales were 29 percent below their 2020 levels for this period. Food services and drinking places as well as clothing and clothing accessory stores were 58 percent and 21 percent below their 2020 levels, respectively. While this data captures a period of additional public health restrictions and COVID-19 transmission, the impact of such reductions likely continued to impact businesses well after state and local restrictions were lifted during summer 2021. More recent data shows modest improvements in spending following reopening. Data from credit and debit card processor Affinity

⁷ Data from Harvard's Opportunity Insights "Economic Tracker" (<https://tracktherecovery.org/>) shows small business revenue in San Francisco rose to 47 and 44 percent of January 2020 levels in July and early December 2020, respectively, compared to 69 percent at the end of March 2020.

indicates that consumer spending was around 11 percent higher than January 2020 levels at the end of the first week of September 2021.⁸

Significant pandemic impact on hotels measured in occupancy decline

Separate data on hotel occupancy and revenues indicate similarly significant declines due to restrictions on international and domestic travel as well as reductions in business-related travel, including conventions. Compared to 2019, when San Francisco-San Mateo county hotel occupancy averaged 82 percent, real estate firm CBRE forecasts a 43.4 percent occupancy rate for 2021.⁹ The latest occupancy data for the week of August 22-28 2021 showed the San Francisco-San Mateo occupancy rate was 50.3 percent, the steepest decline compared to 2019 among the top 25 hotel markets.¹⁰

Office rent payments less impacted by pandemic

Despite the significant estimate of unpaid rent in neighborhood commercial areas shown in Exhibit B, continuing uncertainty around the timing and number of office-based workers returning to non-residential neighborhoods (i.e. Downtown, Financial District, etc.) may lead to longer periods of reduced commercial activity in these areas, and therefore reduced ability for retail tenants to pay rent. The impact of the pandemic on office-based sectors appears to be more muted and less clear cut. Employment in traditional office-based industries such as professional, scientific, financial, and analytical services has been relatively stable (and even increasing in some sectors) in the City. However, several large Bay Area employers have announced relocations or downsizing of some of their local offices and office vacancy has risen sharply since the start of the pandemic from 4 percent, in the first quarter, to 21 percent in the second quarter of 2021, the highest level since the 2003 recession.¹¹ The high vacancy rate alone does not necessarily translate into higher unpaid rent by tenants though it does reduce the amount of San Francisco real estate occupied by office tenants and thus has a small impact on total unpaid rent when nonpayment rates are applied to total occupied office space for our estimates.

⁸ Harvard's Opportunity Insights "Economic Tracker" for Consumer Spending.

⁹ CBRE report (online).

¹⁰ STR/ CoStar (online). Covers San Francisco and San Mateo counties.

¹¹ CBRE MarketView, "[San Francisco Office, Q4 2020.](#)" January 2021 (online).

Unpaid rent estimate details

Exhibit D below provides details on our estimates of unpaid rent for the period January to August 2021.

Exhibit D: Assumptions for Low and High End Estimates of Amount of Unpaid Commercial Rent in the Office, Retail, and Industrial Sectors in San Francisco, January - August 2021

Sector	Total Rented CRE		Rent Due		Unpaid Rent	
	Total CRE Sq. Ft. ¹	Total Occupied Rented CRE Sq. Ft.	Rental Rate per Sq. Ft. per year ²	Total CRE Rent Due per Month (\$m)	% of Rent Unpaid ³	Total Unpaid Rent per Month
Office	82.2 - 103.8m	58.5 - 73.9m	\$58.24 - 76.47	\$283.8 - 470.7m	0.3 - 0.3%	\$0.7 - 1.2m
Retail (Single Use/ Office & Retail)	27.8 - 34.5m	21.1 - 26.1m	\$55.73 - 65.47	\$97.8 - 142.2m	7.3 - 7.3%	\$7.1 - 10.4m
Retail (Mixed Used with Residential)	12.9 - 12.9m	9.7 - 9.7m	\$44.9 - 44.9	\$36.4 - 36.4m	21.2 - 42.4%	\$7.7 - 15.4m
Hotel/ Accommodation	19.3 - 27.7m	NA	NA	NA	NA	NA
Industrial	23.4 - 40.5m	20.6 - 35.6m	\$29.64 - 29.64	\$50.9 - 87.9m	0 - 2.3%	\$0 - 2.1m
Total	165.6 - 219.3m	109.9 - 145.2m	\$51.22 - 60.91	\$468.9 - 737.2m	3.3 - 3.9%	\$15.6 - 29.1m
<i>Retail (Total)</i>	<i>40.7 - 47.3m</i>	<i>30.8 - 35.8m</i>	<i>\$52.31 - 59.88</i>	<i>\$134.2 - 178.6m</i>	28.5 - 49.7%	\$14.9 - 25.8m

Sources: BLA analysis, full details on sources and methodology in Appendix A.

Notes: CRE = Commercial Real Estate

¹ Total commercial real estate was estimated using commercial real estate services and broker estimates (i.e. CBRE, CoStar) and BLA estimates based on Assessor-Recorder's Office Secured Property Rolls data for FY 2019-20.

² Rental rates for each sector were derived from commercial real estate services and broker estimates (i.e. CBRE and CoStar).

³ Unpaid rent estimates for each sector are based on survey estimates or commercial mortgage delinquency rates.

Project staff: Cody Xuereb, Fred Brousseau

APPENDIX A

Detailed Explanation of Methodology for Estimating Unpaid Commercial Rent Estimates

The tables below set out the analytical methodology, key assumptions, and data sources used to estimate unpaid commercial rent in San Francisco from April 2020 to August 2021. The approach and sources are largely unchanged from our previous report which estimated unpaid commercial rent for April to December 2020. Updates and changes to the methodology, assumptions, and sources are highlighted in red.

Exhibit A1: High-Level Steps Used to Estimate Unpaid Commercial Rent (updates for estimation from January to August 2021 in red)

Step	Calculation	Assumptions
1	<p>Estimated total occupied rented commercial real estate by industry in square feet. We started with estimates of the total amount of commercial real estate space and adjusted these to account for the share of property area that is rented versus owned and that is currently occupied.</p>	<ul style="list-style-type: none"> - Data on total commercial real estate square footage by industry from real estate broker reports and BLA analysis of Assessor-Recorder's Office data is accurate and captures all commercial real estate in the City. - Data from commercial real estate brokers and property information and management companies on percent of commercial space leased is accurate and captures all leased commercial space. - Data from commercial real estate brokers and property information and management companies on occupancy/vacancy is accurate and captures all leased commercial space. - Month to month changes in inputs from March 2020 to December 2020 were not significantly different than quarterly averages used. - Quarterly vacancy rates for commercial office real estate for 2021 Q1 and Q2 data were not significantly different from monthly levels. August 2021 vacancy was similar to 2021 Q2 average vacancy.

<p>2</p>	<p>Estimated total commercial rent due by industry per month. We multiplied the total rented commercial space estimates by average rental rates for each industry from commercial real estate brokers and property information and management companies.</p>	<ul style="list-style-type: none"> - Rental rates used generally reflect rates paid by business tenants during the period.
<p>3</p>	<p>Estimated total unpaid commercial rent by industry per month. Total commercial rent for each industry was then multiplied by associated estimates of unpaid rent (or proxy measures for unpaid rent). These were primarily obtained from national data on commercial mortgage delinquency but also included survey estimates for smaller residential neighborhood-based retail properties.</p>	<ul style="list-style-type: none"> - Proxy and direct estimates of non-payment of rent are generally representative of actual non-payment rents from March – December 2020 and January to August 2021. - For Retail (Mixed Use) low-end estimate: assumes non-payment represents an average payment of 50% of rent due. - For Retail (Mixed Use) high-end estimate: assumes non-payment represents an average payment of 0% of rent due. - January and February 2020 commercial mortgage delinquency rates provide a suitable estimate of average pre-COVID-19 pandemic delinquency rates (to isolate the impact of the COVID-19 pandemic on non-payment of commercial rent/ mortgages). - The SFAA rental non-payment rate for commercial members and the national CMBS retail delinquency rate were similarly correlated from January to August 2021 (imputed period) as from May to October 2020 (observation period).

Exhibits A2, A3, and A4 provide more detail for the specific sources and values used as inputs for the unpaid commercial rent estimate model.

Exhibit A2: Information Sources Used for Unpaid Commercial Rent Estimates

Row	Variable	Purpose	Sector	Source (Low Estimate)*	Source (High Estimate)*
A	Total Commercial Real Estate (CRE) Square Footage	To identify total commercial real estate space	Office	CBRE (2020Q4)	BLA/ASR data
			Retail (Single Use)	Diff. b/w CoStar Retail total and BLA/ASR data	BLA/ASR data
			Retail (Mixed Use)	BLA/ASR data	BLA/ASR data
			Hotel	BLA/ ASR data	BLA/ASR data
			Industrial	CBRE (2020H1)	BLA/ASR data
B	% of CRE Square Footage Leased	To estimate CRE space leased	Office	CoStar (Dec 2020)	CoStar (Dec 2020)
			Retail (Single Use)	CoStar (Dec 2020)	CoStar (Dec 2020)
			Retail (Mixed Use)	CoStar (Dec 2020)	CoStar (Dec 2020)
			Industrial	SFMADE Interview**	SFMADE Interview**
C	% of CRE Square Footage Occupied	To estimate share of CRE space occupied (i.e. non-vacant)	Office	CoStar (Dec 2020)	CoStar (Dec 2020)
			Retail (Single Use)	CoStar (Dec 2020)	CoStar (Dec 2020)
			Retail (Mixed Use)	CoStar (Dec 2020)	CoStar (Dec 2020)
			Industrial	CBRE (2020H1)	CBRE (2020H1)
D	Total Occupied Rented CRE Square Footage	To estimate total occupied CRE square footage	All Sectors	Multiplication of rows (A), (B), and (C)	
E	Rental Rate per Square Footage per Year	To estimate total rent due	Office	CoStar (Dec 2020 - Asking Rent)	CBRE (2020Q4 -Asking Rent)
			Retail (Single Use)	CoStar (Dec 2020 - Asking Rent)	CoStar (Dec 2020 – Market Rent)
			Retail (Mixed Use)	CoStar (Dec 2020 – bottom of Typical Market Rent)	CoStar (Dec 2020 – bottom of Typical Market Rent)
			Industrial	CBRE (2020H1 – Asking Rent)	CBRE (2020H1 – Asking Rent)
F	Total CRE Rent Due per Month	To estimate total CRE rent due by industry	All Sectors	Row (D) divided by 12 to determine monthly rent and then multiplied by row (E)	
G	% of CRE Rent Unpaid		Office	Trepp (Dec. 2020 - CMBS YoY Delinq.)	Trepp (Jun. 2020 - CMBS YoY Delinq.)

			Retail (Single Use)	Trepp (Dec. 2020 - CMBS YoY Delinq.)	Trepp (Jun. 2020 - CMBS YoY Delinq.)
			Retail (Mixed Use)	SFAA Survey (May – Oct 2020, Avg.)	SFAA Survey (May – Oct 2020, Avg.)
			Industrial	Trepp (Dec. 2020 - CMBS YoY Delinq.)	MBA (Dec. 2020 – Total % Delinq.)
H	Total Unpaid CRE Rent	To estimate total unpaid CRE rent by industry	All Sectors	Multiplication of rows (F) and (G)	

Notes: *Detailed description of data sources provided in the table below.

** BLA interview with SFMADE Executive Director Kate Sofis

Exhibit A2a: Information Sources Used for Unpaid Commercial Rent Estimates for January to August 2021 Estimates (changes from April to December 2020 source estimates are in red)

Row	Variable	Purpose	Sector	Source (Low Estimate) ¹	Source (High Estimate) ¹
A	Total Commercial Real Estate (CRE) Square Footage	To identify total commercial real estate space	Office	CBRE (2020Q4)	BLA/ASR data
			Retail (Single Use)	Diff. b/w CoStar Retail total and BLA/ASR data	BLA/ASR data
			Retail (Mixed Use)	BLA/ASR data	BLA/ASR data
			Hotel	BLA/ ASR data	BLA/ASR data
			Industrial	CBRE (2020H1)	BLA/ASR data
B	% of CRE Square Footage Leased	To estimate CRE space is leased	Office	CoStar (Dec 2020)	CoStar (Dec 2020)
			Retail (Single Use)	CoStar (Dec 2020)	CoStar (Dec 2020)
			Retail (Mixed Use)	CoStar (Dec 2020)	CoStar (Dec 2020)
			Industrial	SFMADE Interview ²	SFMADE Interview ²
C	% of CRE Square Footage Occupied	To estimate share of CRE space occupied (i.e. non-vacant)	Office	CBRE (2020Q1 & Q2)	CBRE (2020Q1 & Q2)
			Retail (Single Use)	CoStar (Dec 2020)	CoStar (Dec 2020)
			Retail (Mixed Use)	CoStar (Dec 2020)	CoStar (Dec 2020)
			Industrial	CBRE (2020H1)	CBRE (2020H1)
D	Total Occupied Rented CRE Square Footage	To estimate total occupied CRE square footage	All Sectors	Multiplication of rows (A), (B), and (C)	
E	Rental Rate per Square Footage per Year	To estimate total rent due	Office	CoStar (Dec 2020 - Asking Rent)	CBRE (2020Q4 -Asking Rent)
			Retail (Single Use)	CoStar (Dec 2020 - Asking Rent)	CoStar (Dec 2020 – Market Rent)
			Retail (Mixed Use)	CoStar (Dec 2020 – bottom of Typical Market Rent)	CoStar (Dec 2020 – bottom of Typical Market Rent)
			Industrial	CBRE (2020H1 – Asking Rent)	CBRE (2020H1 – Asking Rent)
F	Total CRE Rent Due per Month	To estimate total CRE rent due by industry	All Sectors	Row (D) divided by 12 to determine monthly rent and then multiplied by row (E)	

G	% of CRE Rent Unpaid		Office	Trepp (monthly CMBS delinquency rate for Jan. – Aug 2021 relative to Jan. – Feb. 2020)	
			Retail (Single Use)	Trepp (monthly CMBS delinquency rate for Jan. – Aug 2021 relative to Jan. – Feb. 2020)	
			Retail (Mixed Use)	Trepp monthly CMBS delinquency rate for retail multiplied by the ratio of SFAA Survey to Trepp CMBS delinquency (May – Oct 2020, Avg.) ³	
			Industrial	Lower bound assumed to be 0% non-payment based on negative Trepp CMBS delinquency compared to pre-COVID-19 rates.	MBA (monthly mortgage delinquency rates for Jan – Aug 2021)
H	Total Unpaid CRE Rent	To estimate total unpaid CRE rent by industry	All Sectors	Multiplication of rows (F) and (G)	

Notes: ¹ Detailed description of data sources provided in the table below.

² BLA interview with SFMADE Executive Director Kate Sofis

³ The SFAA survey of commercial members was not available after October 2020, we therefore calculated the ratio of the local SFAA non-payment of rent rate for May to October 2020 to the Trepp national CMBS delinquency rate for retail for the same period. We then applied this rate to the Trepp national CMBS delinquency rates for retail for 2021.

Exhibit A3: Detailed description of data sources used for unpaid commercial rent model estimates, January – August 2021

Source Name – Sector	Source Description	Unit/ Metric	Geographic Coverage
CBRE - Office	CBRE SF Office MarketView (2020Q4 – 2021Q2)	Various (see above)	SF County
CBRE (2020H1) - Industrial	CBRE SF Industrial MarketView (2020H1)	Various (see above)	SF County
CoStar (Dec. 2020)	CoStar reports for Office and Retail properties	Various (see above)	SF County
BLA/ ASR data	BLA analysis of Assessor-Recorder’s Office Secured Property Rolls data for FY 2019-20*	Total square footage by industry (see detailed discussion in Appendix B)	SF County
SFAA Survey (May – Dec 2020) - Retail	SFAA Commercial Rent Survey	% of commercial tenants unable to pay rent in full	SF County
MBA (monthly total % Delinq.) - Industrial	Mortgage Bankers Association (CREF Loan Performance Survey)	% of Industrial outstanding CRE & multifamily mortgages that are not current	National
Trepp (monthly CMBS Delinq., adjusted for pre-COVID-19 levels)	Trepp, Inc. CMBS Research	% of CMBS Loan Balance Delinquent for each sector (adjusted for change relative to Jan. – Feb. 2020)	National

Source: Budget & Legislative Analyst’s Office

Notes: *See Appendix B for detailed discussion of our analysis of Assessor-Recorder’s Office data.

The numeric inputs used from the sources referenced in Exhibits A2 and A3 to produce the unpaid commercial rent estimates are included in Exhibit A4 below.

Exhibit A4: Assumptions for Low and High End Estimates of Amount of Unpaid Commercial Rent in the Office, Retail, and Industrial Sectors in San Francisco, April – December 2020

Sector	Total Rented CRE		Rent Due		Unpaid Rent	
	Total CRE Sq. Ft.	Total Occupied Rented CRE Sq. Ft.	Rental Rate per Sq. Ft. per year	Total CRE Rent Due per Month (\$m)	% of Rent Unpaid	Total Unpaid Rent per Month (\$m)
Office	82.2 - 103.8m	60.9 - 77m	\$ 58.24 - 76.47	\$ 295.9 - 490.8m	0.2 - 0.3%	\$ 0.59 - 1.47m
Retail (Single Use/ Office & Retail)	27.8 - 34.4m	21 - 26m	\$ 55.73 - 65.47	\$ 97.7 - 142.2m	8.52 - 13.63%	\$ 8.33 - 19.38m
Retail (Mixed Use with Residential)	12.8 - 12.8m	9.7 - 9.7m	\$ 44.9 - 44.9	\$ 36.4 - 36.4m	28 - 56%	\$ 10.2 - 20.4m
Hotel/ Accommodation	19.2 - 27.6m	NA	NA	NA	NA	NA
Industrial	23.4 - 40.5m	20.5 - 35.5m	\$ 29.64 - 29.64	\$ 50.8 - 87.8m	0 - 4.2%	\$ 0 - 3.69m
Total	165.6 - 219.3m	112.3 - 148.4m	\$ 51.37 - 58.29	\$ 481 - 720.9m	6.1 - 6.2%	\$ 19.12 - 44.94m
<i>Retail (Total)</i>	<i>40.7 - 47.3m</i>	<i>30.7 - 35.8m</i>	<i>\$ 52.3 - 59.87</i>	<i>\$ 134.2 - 178.6m</i>	13.8 - 22.27%	\$ 18.53 - 39.78m

Sources: BLA analysis

Notes: CRE = Commercial Real Estate. An explanation of the sources and calculations for each column is included in Exhibit A2.